



NAA

THE CURTAIN RISES

THE HALL

ARCHAEOLOGICAL
INVESTIGATIONS

NATIONAL TRUST
SEATON DELAVAL HALL
NORTHUMBERLAND

on behalf of
The National Trust

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Location Seaton Delaval Hall

District Northumberland

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THE HALL, SEATON DELAVAL HALL, NORTHUMBERLAND
ARCHAEOLOGICAL INVESTIGATIONS
FINAL REPORT

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THE HALL, SEATON DELAVAL HALL, NORTHUMBERLAND
ARCHAEOLOGICAL INVESTIGATIONS
FINAL REPORT

Summary

Northern Archaeological Associates Ltd was commissioned by the National Trust to undertake a programme of archaeological investigation during conservation works within the main Hall complex at Seaton Delaval Hall, Northumberland (NZ 32368 76541). This was completed as part of the 'The Curtain Rises' project and undertaken in accordance with a Written Scheme of Investigation prepared by the National Trust; approved in advance by Northumberland County Council.

Results from Archaeological Work Packages (AWP) 10, 11 and 13 of the project brief are detailed in this report, relating to the schedule of conservation works conducted in the West Wing, Central Hall and East Wing (including Carriage House). The programme fulfils the following planning conditions: West Wing (17/04410/FUL) Condition 8 parts b) and c); Central Hall – No formal archaeological conditions but related to works associated with listed building consent (17/04409/LBC); East Wing (including carriage house) (17/04415/FUL) Condition 6 parts b) and 6c) and works associated with listed building consent (17/04416/LBC), and electrical supply (20/02609/LBC) Condition 4 parts a) and b).

A Grade I listed building, Seaton Delaval Hall was initially designed by the architect Sir John Vanbrugh for Admiral George Delaval (d.1723) and is one of the most important 18th-century country houses and associated designed landscapes in England. The complex is U-shaped in plan with an ornate double-fronted Central Hall (built c.1719 to 1724), flanked by two service wings (built 1730 to 1740)) set around a central courtyard, and is considered one of the best surviving examples of the English Baroque in Vanbrugh's 'castle air' style.

One of the objectives of the Curtain Rises project was to arrest the decline of the building through a schedule of sensitive conservation repair and stabilisation works, carefully designed to minimise negative heritage impact. A programme of archaeological investigation was conducted alongside this to ensure any residual loss of heritage significance was suitably mitigated by archaeological record. This comprised an archaeological watching brief during any below-ground excavation, and historic building recording and monitoring during fabric intervention. Overall, the project provided a rare opportunity to investigate beneath the surface of the 18th-

century Seaton Delaval Hall, providing a valuable insight into the construction and development of this nationally important heritage asset.

AWP 10 related to the conservation of the West Wing. The archaeological work in this area comprised a survey of the exposed roof structure and subsequent monitoring during repairs. Monitoring was also conducted during the replastering of the underside of the front arcade, replacement of the roof-access hatch, installation of the heating system and lifting of the floor surface in the kitchen passage, as well as recording of the graffiti in the same area. AWP 11 related to the Central Hall. The archaeological work in this area included recording and monitoring during masonry repairs to the north and south portico steps; masonry repairs in the basement; works to the east and west stairs, and excavation in the basement prior to the laying of a new floor. Graffiti in the basement area was also recorded. AWP 13 related to the East Wing. The archaeological work in this area included building recording of the roof structure of the Carriage House and the monitoring of groundworks during the installation of a free standing 'pod' inside this building. Recording was also conducted during the dismantling of stone partitions in the central stables, and during installation of new drains and resurfacing in the stable yard.

No in-situ evidence pre-dating the construction of the 18th-century Hall was identified, although a considerable amount of reused building material was found, that was likely associated with earlier buildings on the site. Perhaps the earliest of these was a masonry block with mason's mark which may have come from the former medieval tower. Extensive evidence was also found of material associated with the Tudor/Stuart mansion pre-dating Vanbrugh's 18th-century Hall. The most significant evidence of this was a surface (133) in room B10 (the Footmen's Room, which was constructed of reused 16th or 17th-century brick).

The archaeological work provided a much greater understanding of the 18th-century construction process. This focused on both the basement excavations in the Central Hall and recording of the West Wing roof. The basement work revealed the degree to which local geology, and related issues of drainage, influenced construction during the early stages of the build. The front (north) of the Central Hall was built directly on permeable sandstone bedrock, while the rear (south) was on clay and sand; the dividing point being the central east to west corridor. The brick surface (133) previously mentioned is believed to have been laid in response to poor ground conditions on this side of the building. It provided a stable, temporary construction surface for Vanbrugh's workmen during the early stages of the build when the ground was exposed to the elements.

In the West Wing, the exposure of the roof revealed significant information regarding the layout and form of the original superstructure. The roof was constructed of softwood, probably pine imported from the Baltic to Seaton Sluice. Considerable variation in the colour and treatment of upper roof timbers indicated several phases of repair and modification, dating largely from the mid-19th to mid-20th century. However, much of the lower structure — tie-beams, ceiling joists and struts — were original, particularly in the central range. Evidence of damage attributed to the 1752 fire was identified on the east and south sides of the roof, with the most severe evidence of burning recorded on the south-west hip truss of the central range, which sits just above the kitchen.

In the East Wing, dismantling of the stall dividers in the central stables confirmed these were let into the wall of the 18th-century building and were clearly a later addition. This supports the claim that the large, double-height central room was originally built as a riding house, and only converted to stables post 1770. Evidence was also identified during monitoring of the lost 18th-century range on the south side of the stable yard, and further information gathered on the construction and development of the 19th-century Carriage House.

The finds assemblage recovered during the works comprised mainly 18th- to 20th-century pottery, glass and ceramic building materials. Considerable amounts of demolition debris and reused building material dating to the 16th and 17th century were also recovered, largely in the backfill of the basement (135). This included bricks, stone roof tile and masonry fragments.

*Overall, the conservation work was carefully designed to minimise intervention into the historic fabric and preserve *in situ* as much of the original structure as possible. As such, the majority of archaeological interventions were relatively limited in extent, with only glimpses captured beneath floorboards and service runs. Exceptions to this were the roof works in the West Wing, basement excavation in the Central Hall, roof works in the Carriage House, and dismantling of the stall dividers in the East Wing, all of which provided a unique opportunity to expose and record an extensive area of historic fabric. Even the smaller interventions, such as the service trenches in the East Wing stable yard often revealed small pieces of the archaeological puzzle and prove the validity and importance of archaeological monitoring. Together, with the more extensive elements, the work undertaken as part of The Curtain Rises project has uncovered previously unrecorded evidence at sub-ground, ground and roof level, informing a greater understanding of how the Hall was built and modified over its 300-year history.*

1.0 INTRODUCTION

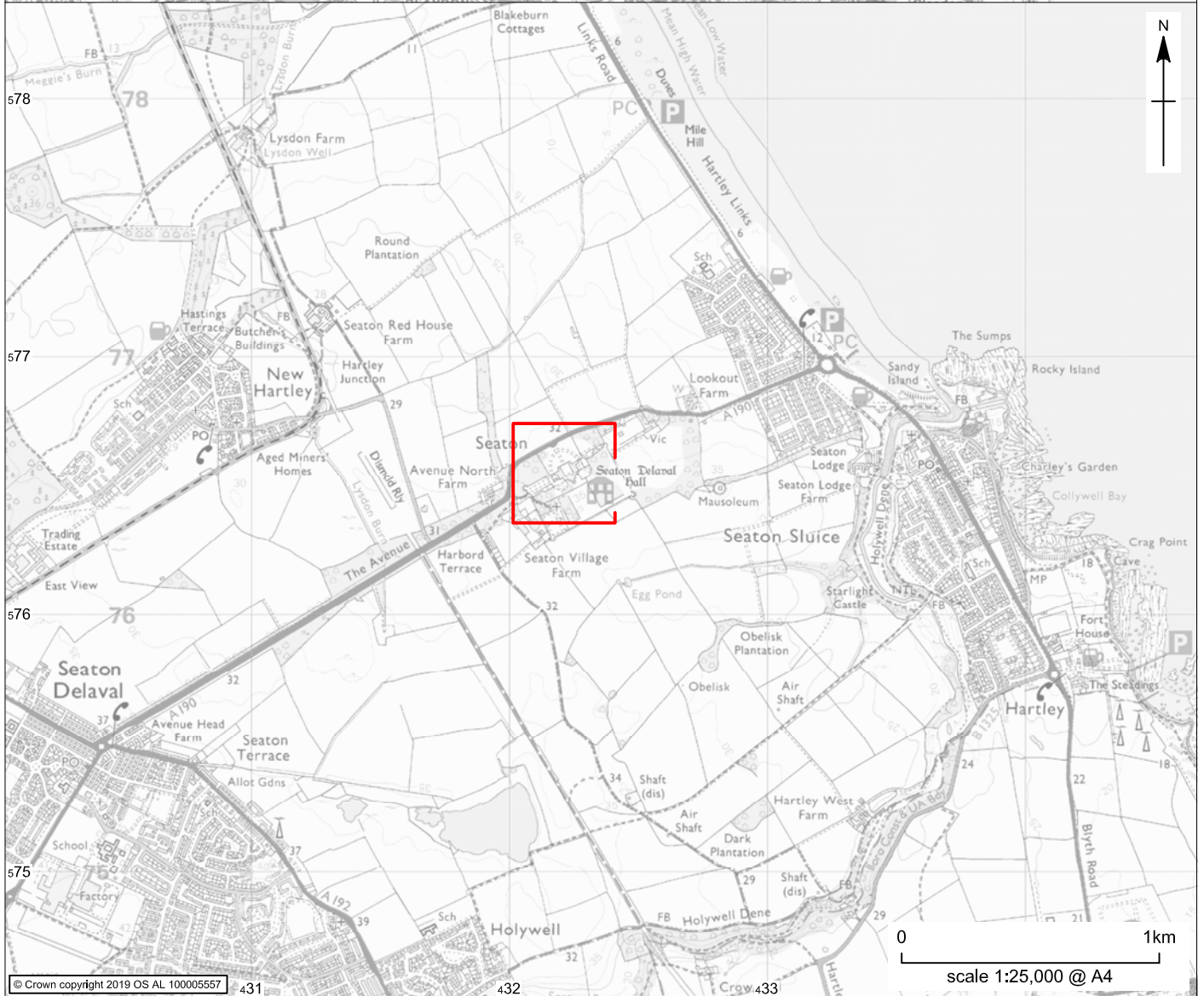
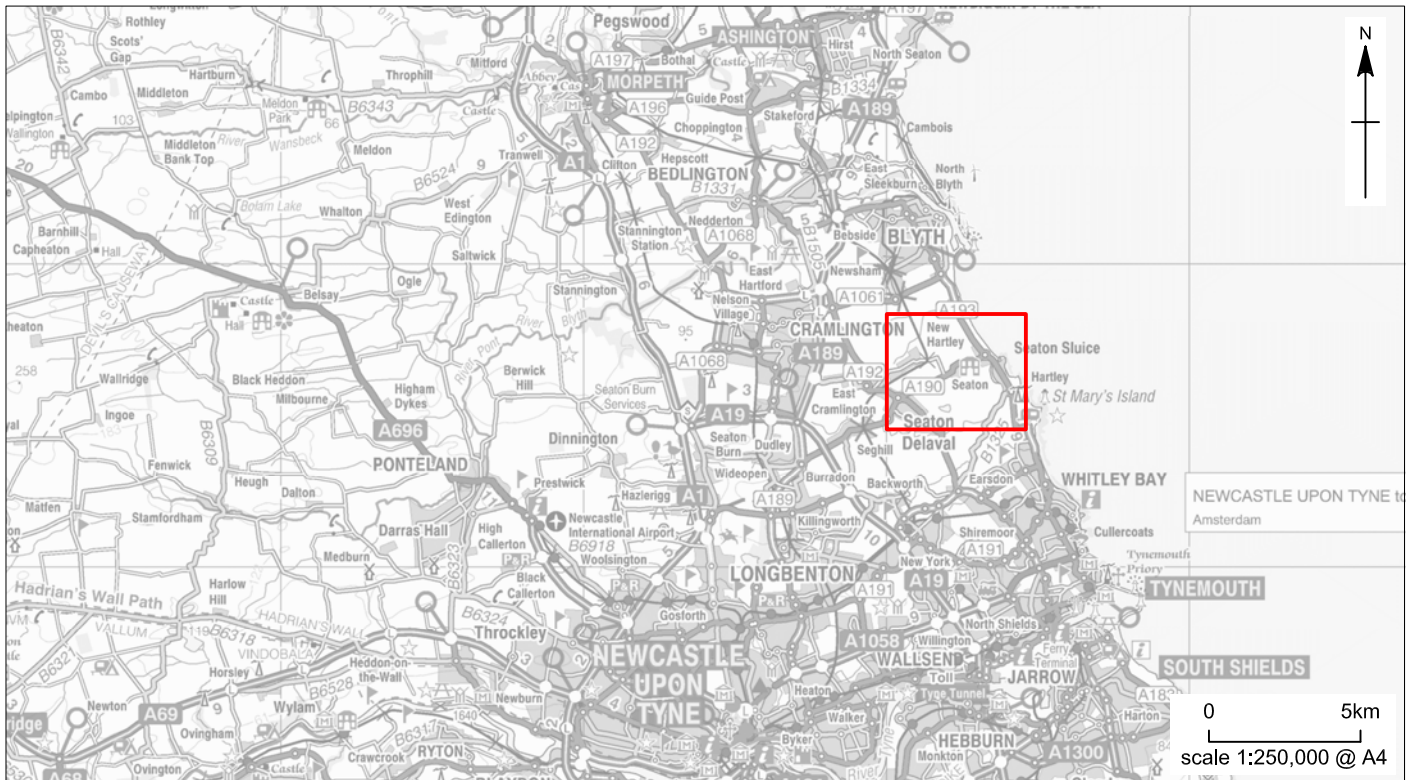
1.1 Northern Archaeological Associates Ltd was commissioned by the National Trust to undertake a programme of archaeological investigation during conservation works within the main Hall complex at Seaton Delaval Hall, Northumberland (NZ 32368 76541; Fig. 1). This was completed as part of the 'The Curtain Rises' project, a two-year conservation and interpretation project, part funded by the National Lottery Heritage Fund, aimed at repairing the 18th-century Seaton Delaval Hall and improving the overall visitor experience.

1.2 This report relates to mitigation work conducted as part of Archaeological Work Packages (AWP) 10, 11, 13 (National Trust 2018a–d), associated with the conservation of the main Hall complex. The work comprised a schedule of historic building recording and monitoring during interventions into the historic fabric, and archaeological watching brief during any required below-ground investigation.

1.3 Fieldwork was conducted at intervals between December 2018 and June 2020 in accordance with a Written Scheme of Investigation (WSI) prepared by the National Trust (National Trust 2018e) and approved in advance by the Northumberland County Council (NCC) Assistant County Archaeologist. The investigations undertaken, in combination with the report and archive, fulfil the following planning conditions:

- West Wing – 17/04410/FUL – Condition 8 parts b) and c)
- Central Hall – No formal archaeological conditions but related to works associated with 17/04409/LBC
- East Wing (including carriage house) -17/04415/FUL- Condition 6 parts b) and 6c), and relates to works associated with 17/04416/LBC- and electrical supply 20/02609/LBC – Conditions 4 parts a) and b)

1.4 A Grade I listed building, Seaton Delaval Hall (NHLE: 1041321), set in a grade II* RPG (NHLE: 1001052) is one of the most important 18th-century country houses and designed landscapes in England (Simpson and Brown Architects 2017, 4). It was designed by architect Sir John Vanbrugh for Admiral George Delaval (d.1723). The complex is U-shaped in plan with an ornate double-fronted Central Hall (built c.1719 to 1724), flanked by two service wings (built 1730 to 1740), set around a central courtyard, and is considered one of the best surviving examples of the English Baroque in Vanbrugh's 'castle air' style. (Fig. 2). A residential range – the south-east range (now lost) - was later added to the east of the Central Hall.



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Seaton Delaval Hall: Site location

Figure 1

- 1.5 A devastating fire in 1822 destroyed much of the south-east range and gutted the Central Hall, evidence of which is still visible in the twisted ironwork of the staircase balustrades and fire scorching of the brickwork. The south-east range was so badly damaged that it was later demolished. The two flanking service wings – the East Wing and West Wing – on either side of the courtyard escaped relatively unscathed.
- 1.6 After the fire, the Hall was largely abandoned by the family. In the 1860s, the architect John Dobson was consulted with regards the consolidation of the Central Hall, to avoid collapse. Moderate repairs were also undertaken on the two wings between 1862 and 1863. In the 20th century, further repairs were undertaken to stabilise the complex in the 1960s. In the 1990s Lord and Lady Hastings took up residency, living at the Hall until his death in 2007. The estate was then purchased by the National Trust in 2009 following a national fund-raising campaign (Mosedale Gillatt Architects 2017a).



Figure 2: aerial photograph showing components of the main Hall complex. Image © Google 2018 5/27/2018.

- 1.7 One of the principle aims of The Curtain Rises project was to undertake a further stage of work to arrest the decline of the building through completion of a series of sensitive conservation repairs and stabilisation works. It also aimed to create new opportunities to engage visitors in the unique history and development of the Hall. Conservation work within the Central Hall included remedial measures to address issues of water ingress

and damp in the basement, and repairs and conservation works to the east and west circulation stairs (Mosedale Gillatt Architects 2017a). Works in the West Wing mainly comprised the replacement of the bitumen felt roof, repair and consolidation of the building fabric, and stabilisation of movement in the south-east corner (Mosedale Gillatt Architects 2017b). In the East Wing, the principal area of concern was the stall dividers in the stables, and structural repairs to the masonry and roof of the adjoining Carriage House (Mosedale Gillatt Architects 2017c).

- 1.8 Archaeological monitoring was conducted during below-ground intervention, and historic building recording during fabric intervention. Further details of the various elements are given under each AWP in Sections 4.0, 8.0, 9.0 and 10.0.

Orientation

- 1.9 The Hall complex is aligned north-north-west to south-south-east, running on an orientation approximate 30° west of north. However, for ease of reference this report assumes a nominal north-to-south alignment.

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 Hall complex now comprises three principal buildings – (1) Central Hall, (2) West Wing (3) East Wing – arranged around a central courtyard which opens to the north (centred on NZ 32276 76463) (Fig. 2).

Geology and soils

- 2.2 Seaton Delaval Hall is located on Devensian Diamicton, which is poorly sorted glacial till deposited at the end of the last ice age. This lies above the Carboniferous Pennine Middle Coal Measures Formation – a compilation of mudstones, siltstones and sandstones created in shallow seas (BCS 2021). Near surface presentation of the underlying geology varies in depth very considerably across the site, from a few centimetres to several metres in high localised patches.

Topography and land use

- 2.3 The Hall is set with c.26ha of mature parkland, comprising the south pleasure ground, north pleasure ground, hall court, walled garden, Hare Park, Sea Walk and part of the West Avenue, and is surrounded in all directions by agricultural farmland. The main Hall

complex sits centrally on the north side of the south pleasure grounds. This is a c.8ha rectangular enclosure bounded on the west, east and south by a ha-ha and set with four penannular bastion towers at each corner (NAA 2020b). The enclosure forms part of the setting of the Grade I listed Hall and is often cited as an archetypal example of Vanbrugh's 'fortified' garden design, although it was not actually constructed until some years after the architect's death (Newman 2017a). To the front of the Central Hall is a square courtyard – the Central Courtyard – that is open to the north and flanked on each side by the East and West Wings. Beyond this is the sweeping arc of the carriage drive leading to the main entrance from the A190 coast road.

Designations

- 2.4 Seaton Delaval Hall is a Grade I listed building (NHLE: 1041321), granted statutory protection under the *Planning (Listed Buildings and Conservation Areas) Act 1990*. This encompasses the Central Hall, East Wing and West Wing.
- 2.5 The Carriage House is not included in the Hall listing and is a separate Grade II listed designation, described as 'coach house and attached yard walls' (NHLE: 1303613). The yard walls and attached outbuildings to west of the West Wing also form part of a separate Grade II listing (NHLE: 1041322), and both are also considered to form part of the curtilage and setting of the Grade I listed Hall.
- 2.6 The gardens and park (including woodland) are designated Grade II* on the Register of Parks and Gardens of Special Historic Interest in England (NHLE: 1001052).
- 2.7 The site also forms part of the Seaton Delaval Conservation Area.

Previous work

- 2.8 A series of surveys have been conducted across the estate in recent years to inform a greater understanding of the archaeological and historical evolution of the site. In 2012 a Historic Park Management Plan was prepared by Southern Green, followed in 2014 by a detailed Conservation Management Plan, revised and updated in 2017 (Simpson and Brown Architects, 2014, Moody 2017).
- 2.9 Since acquiring the property in 2009 the National Trust has conducted several phases of conservation work including reroofing of the East Wing and rewiring of the West Wing in 2012–13, improvements to surface drainage in 2014–15, and stabilisation of the

Central Hall exteriors, muses and marble floor. The latter was part of the 'Saving the Hall' project in 2014 (Simpson and Brown Architects 2017, 47).

- 2.10 In 2014, in advance of the drainage works, geophysical survey was conducted across the North Lawn which identified a possibly earlier routeway and various north-east to south-west aligned anomalies. Subsequent evaluation trial trenching across the area identified evidence of medieval or early post-medieval remains comprising sandstone wall footings, a metallated surface and possible pond. Material relating to 18th-century landscaping was also recorded (ARS 2014).
- 2.11 In 2017, a series of archaeological investigations were conducted in and around the Hall complex as part of Phase 1 of The Curtain Rises project. A watching brief was also maintained during the dismantling of one of the stone stall partitions in the East Wing stable block.
- 2.12 In September 2017, test pits were excavated in the basement of the Central Hall (Solstice 2017b), which provided further information on the nature of the Hall foundation. However, excavations at the time were too limited to draw any firm conclusions and further investigation was recommended and carried out as part of AWP 11.
- 2.13 A final phase of monitoring took place in November 2017, during the installation of new surface water drains around the perimeter of the Central Hall. On the south-east side of the building, sandstone wall footings and remains associated with the lost south-east range were identified. This was demolished after the devastating fire of 1822 (Solstice 2018).

2.14 Previous work is discussed in more detail under the results section for each AWP.

3.0 SUMMARY ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 3.1 The name Seaton is of Old English origin, meaning 'settlement by the sea', suggesting there was probably 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.
- 3.2 After the Conquest, William I granted the area around Seaton Delaval and the manor of Seaton to the De Laval family, so establishing a Norman presence in this part of the volatile North. Guy de Laval is recorded as constructing a private chapel at Seaton,

- consecrated by Bishop Flambard, as early as 1102. This now forms part of the Church of Our Lady, located to the south-west of the Hall, which constitutes the only extant surface remains in the immediate environs of the Hall associated with the former medieval settlement (Simpson and Brown Architects 2017, 24).
- 3.3 In 1297, an inquisition recorded the manor of Seaton as comprising 24 bondage holdings, 300 acres of arable lands, and 5 acres of meadow (*ibid.*, 24). In 1353, a manor house, garden, dovecote and windmill are all noted in relation to the manor, and the land holding had increased to 360 acres of arable and 10 acres of plantation (Newman 2017a, 5). Given the instability of medieval Northumberland it is highly likely there would have been a fortified manor house at Seaton from an early period. By 1415, a tower is documented to have existed on the site by 1415, recorded in a list of fortresses of Northumberland known as the recorded in the '*Turris de Seton de la uale*'. The property at this time was held by Willimi Wychester Chlr (ARS 2014; Simpson and Brown Architects 2017). In 1539, the poet and antiquarian John Leland wrote about 'Delaval Castle' in an account of his travels through Northumberland (*ibid.*).
- 3.4 By the mid-16th century, a mansion had been constructed adjacent to the tower, and is depicted on Speed's 1611 map of Northumberland (not reproduced). The 1860 First Edition Ordnance Survey (OS) map locates the 'supposed site of the Castle' to the south-west of the Church of Our Lady, to the east of the south-west bastion and ha-ha (NHLE: 1001052). However, the location of the Tudor manor house has not been established archaeologically and may lie, at least partially, beneath the present Hall complex.
- 3.5 The site of the medieval village also remains uncertain, although the most likely location centres on Seaton Village Farm to west of the Hall. A block of well-preserved ridge and furrow survives associated with the farm which is of medieval or early post-medieval date. More extensive evidence of historic cultivation survives at Hare Park, on the east side of the estate, where blocks of ridge and furrow on different alignments indicate a prolonged and multi-phased period of use.
- 3.6 In the early 17th century, Sir Ralph Delaval (1577–1628) made considerable modifications to the house and estate, constructing a large Jacobean hall around the core of the Tudor mansion. A eulogy written on his death in 1628 references approximately 14 buildings, including a brewhouse, bakehouse, stables, dovecote and a granary. The mansion was described as being arranged around a forecourt and back-court, and surrounded on three sides by formal gardens. The old medieval tower was

retained as part of the 17th-century mansion complex (Simpson and Brown Architects 2017, 25).

- 3.7 The estate was inherited in 1660 by Sir Ralph Delaval (1622–1691). He was High Sheriff of Northumberland in 1648 and was created baronet of Seaton in June 1660. His eldest son, also Ralph Delaval, later inherited the estate but died without issue in 1696, the property then passing to his younger brother Sir John Delaval (1654–1729). In 1717 Sir John was obliged to sell the estate to his cousin, Admiral George Delaval (1668–1723) to avoid bankruptcy. Soon after the purchase the Admiral commissioned the architect Sir John Vanbrugh (1664–1726) to design a new house reflecting the Admiral's status and political aspirations (NHLE: 1001052).

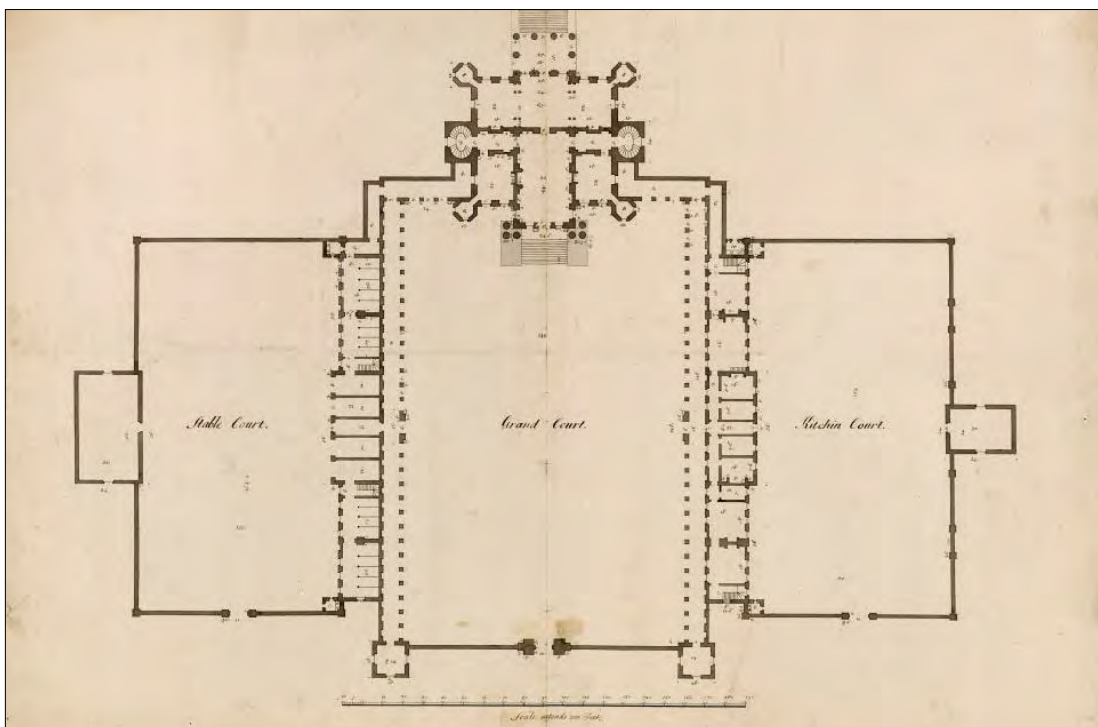


Figure 3: plan of Seaton Delaval from Colen Campbell's Vitruvius Britannicus. vol. III, 20, published in 1725.

18th century – construction on the Hall

- 3.8 There are several documentary references to works being underway onsite in 1719, including a letter to Admiral Delaval noting the quarrying of large quantities of stone transported to Seaton for construction of the new house (Simpson and Brown Architects 2017, 52). None of Vanbrugh's original drawings for the Hall are known to have survived, the earliest depiction of the house being a plate in Campbell's *Vitruvius*

Britannicus vol. III, published in 1725 (Fig. 3). This shows the Central Hall with service ranges different from those eventually built.

- 3.9 Almost all the buildings associated with the former Jacobean/Stuart mansion and medieval tower were demolished c.1720 in advance of the new building project. The exceptions were the building that forms the southern boundary of the West Wing service yard, two rows of cottages associated with the old village of Seaton, and a mixed-used agricultural building (the brewhouse) to the east. All of these elements are notably on a slightly different alignment to the 18th-century hall and gardens (Newman 2017a).
- 3.10 In 1723 Admiral Delaval died after a fall from his horse, never seeing his new mansion completed. The estate then passed to his nephew, Captain Francis Blake Delaval (1692–1752) who continued work on the house. The Central Hall was roofed a year later, in the summer building season of 1724, with Vanbrugh reputedly in attendance (Simpson and Brown 2017, 53). The architect himself died two years later, on 26th March 1726.
- 3.11 The two service ranges (East and West Wings) were constructed in the 1730s/40s and the degree of Vanbrugh's involvement in the design of these elements is uncertain. The plans in *Vitruvius Britannicus*, although published just a year before the architect's death, were possibly produced as early as 1720 and represent an early draft of the building that was later modified. The similarity in style with the Central Hall, together with the overall quality and execution of the design, suggest the two wings were either drafted by Vanbrugh or executed by someone with an intimate knowledge of the architect's work. The most likely candidate is the York architect, William Etty (1675–1734), Vanbrugh's draftsman and clerk of works on the scheme (Simpson and Brown Architects 2017). Both service wings were completed c.1750.

1752 fire in the West Wing

- 3.12 In May 1752 a fire started in the kitchen chimney of the West Wing. This damaged the roof and first-floor rooms on the south side of the building but was extinguished before spreading to the Central Hall. Correspondence indicates that the first-floor bedrooms of the West Wing continued to be used by the Delaval family throughout the 18th century, indicating repairs must have been made fairly promptly to the roof and damaged accommodation (*ibid.*).
- 3.13 A few months after the fire, in December 1752, Captain Francis Blake Delaval died following a fall down the steps of the south portico. He was succeeded by his son eldest

Sir Francis Blake Delaval (1727–1771). Sir Francis showed little interest in the Seaton Delaval estate preferring instead to reside in London where he accumulated considerable debt. In 1755–56, in a bid to pay off some of his creditors and save the estate from ruin, some of the Delaval properties were sold and the estate vested to his younger brother, John Hussey Delaval (1728–1808), in return for an annual allowance. Sir Francis remained living at the Hall while John and their younger brother Thomas took over the management of the estate. In an inventory dated 1761, Sir Francis renounced the entire content of the Hall to John, an act which suggests he may have vacated the property completely by this date. He died in 1771.

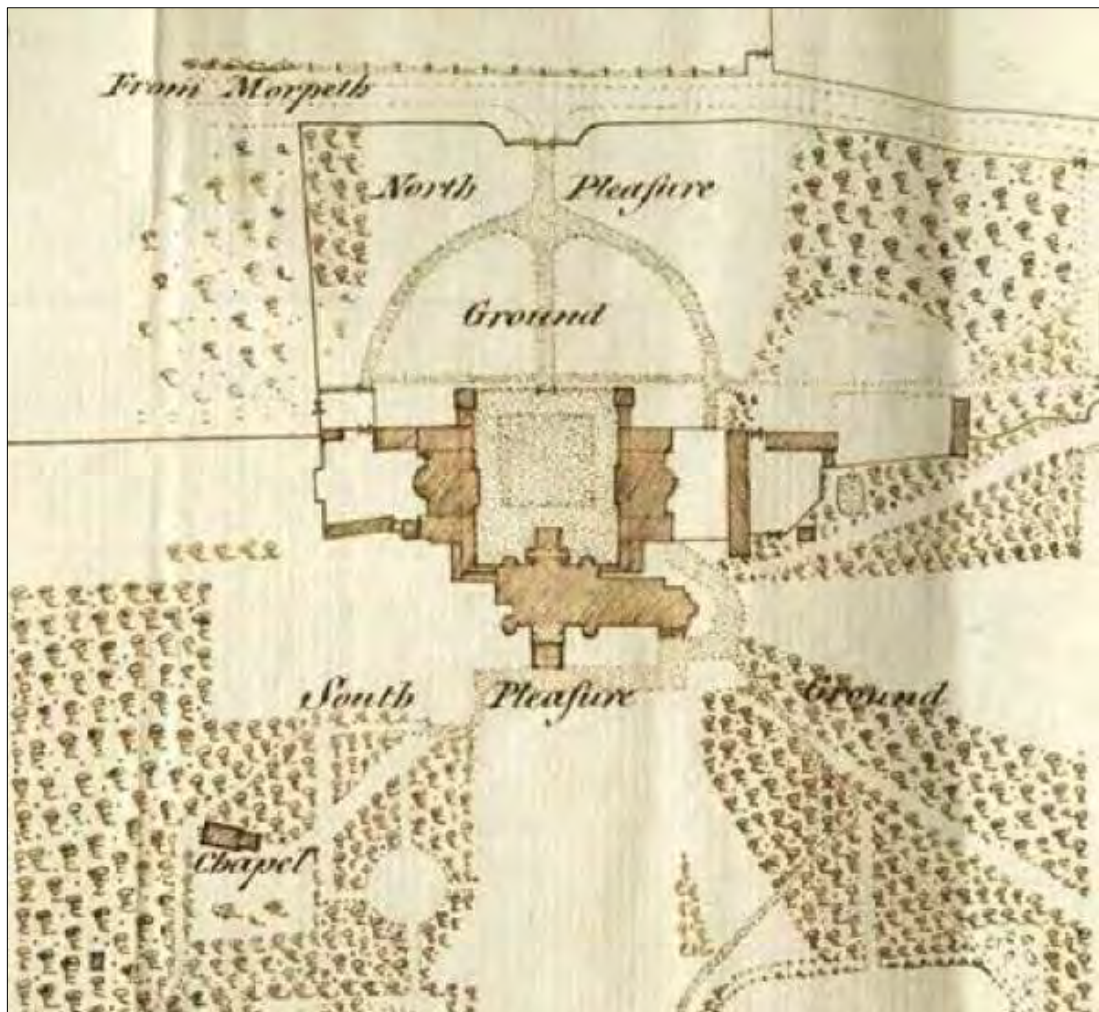


Figure 4: 1781 plan of the estate showing the layout of the main Hall complex (NRO 740/Box 14).

- 3.14 Sir John Hussey Delaval, a leading industrialist and politician, made significant changes to the house and estate, including expanding the south-east range by the addition of an upper floor with associated staircase and north façade. Correspondence and accounts indicate that this occurred in early 1770s. Sir John had plans to balance the symmetry

of the building by the addition of a south-west range. This was depicted on several paintings of the Hall by a succession of artists but was never actually built (Simpson and Brown Architects 2017, 58). Only the south-east range is shown on the earliest known plan of the estate, dated 1781 (Fig. 4).

19th century – a period of decline

- 3.15 Sir John died in 1808, the estate passing to another of his brothers, Edward Hussey Delaval (1729-1814). This prompted the preparation of a new estate survey (not reproduced), compiled in August the same year. Again, there is no indication of a south-west range balancing that on the south-east side of the Central Hall. Neither does it appear on detailed plans of the Hall prepared by John Dobson a few years later in 1817 (Simpson and Brown 2017, 60).
- 3.16 Edward's death in 1814 marked the end of the direct Delaval line. The estate then passed to his nephew Sir Jacob Astley (1756–1817), who between 1814 and 1817 commissioned the Newcastle architect John Dobson (1787–1865) to prepare a scheme to enlarge the Hall. Dobson's plans and elevations shows the layout of the Hall complex in detail, including the function of all of the rooms. The new scheme included proposals for a south-west range, which clearly supports the conclusion that Sir John's earlier plan was never executed.
- 3.17 On the death of Sir Jacob in 1817, Seaton Delaval was inherited by his son, also Jacob Astley (1797–1859), the 16th Baron Hastings, and plans for the expansion of the Hall appear to have been abandoned. On 3rd January 1822, a second devastating fire gutted the Central Hall and south-east range, although the East and West Wings survived relatively unscathed. The fire is thought to have started in the in the south-east range and been driven through the Central Hall by the prevailing west wind, spreading along the upper storey and eventually causing the roof collapse.
- 3.18 The Ordnance Survey First Edition six-inch map, published in 1860, shows the extent of the hall complex after the 1822 fire and any subsequent collapses or depredations (Fig. 5). The south-east range was largely destroyed by the fire, and the Central Hall is depicted as unroofed. The rest of the buildings appears, at least in plan, to be unaltered. There are artistic – and indeed even very early photographic – depictions of the site that conform the veracity of the OS's depiction.
- 3.19 Following the fire, the 16th Baron Hastings decided for whatever reason not to repair

the house, and instead moved most of the surviving furniture and goods to the main family seat in Melton Constable, Norfolk. However, although the family vacated the main Hall complex the estate continued to prosper, with most of the mining ventures run under lease and the agricultural interests managed by an agent. The 1841 census indicates that there was a small retinue of labourers, artisans and estate staff probably living in the two flanking service wings (Simpson and Brown Architects 2017, 66).

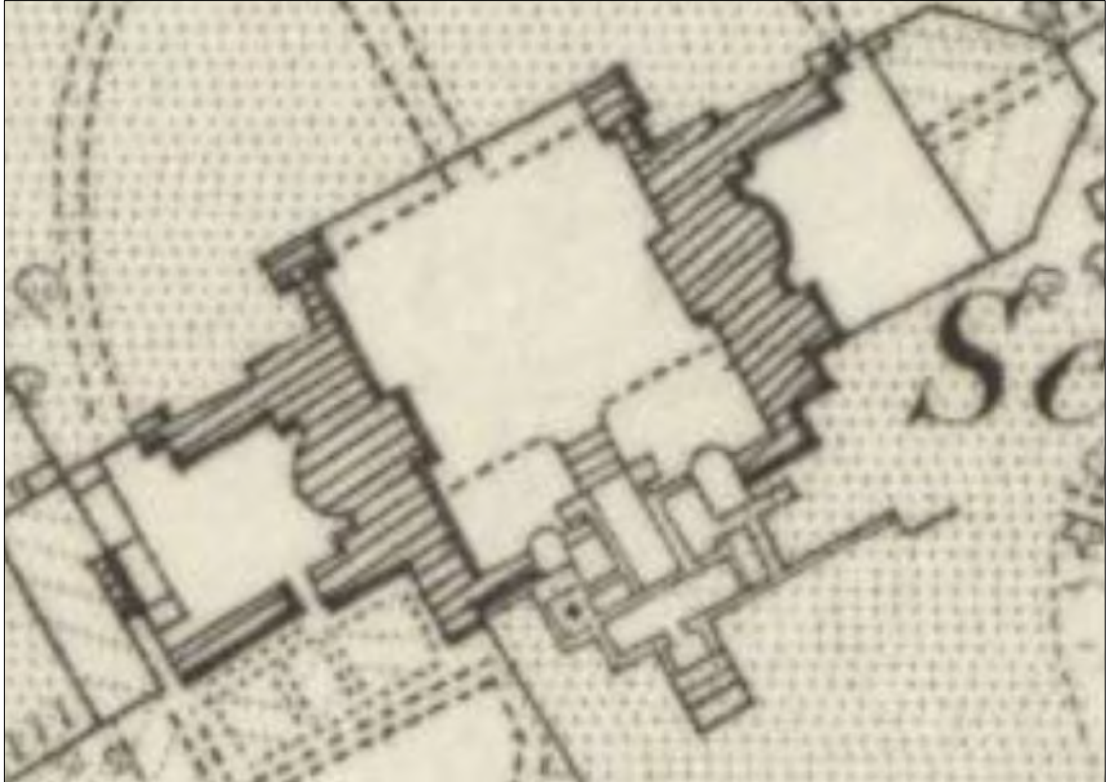


Figure 5: 1860 Ordnance Survey First Edition six-inch map showing the Hall complex after the fire. The Central Hall is un-roofed and only a fragment of the south-east range remains standing.

3.20 In 1860 John Dobson was again commissioned to undertake work on the Hall, this time by the 17th Baron Hastings. This may have been prompted by fears of substantial structural collapse following the previous decades of decline. The intention seems to have originally been the complete restoration of the property but, ultimately, the work did not progress much beyond reroofing and stabilising the Central Hall. There was no attempt to save the south-east wing (Simpson and Brown 2017). Dobson died in 1865 and Baron Hastings in 1871, after which no further work was conducted. The remains of the south-east wing would be cleared away in the early 1870s.

3.21 The Ordnance Survey Second Edition 25-inch map, published in 1897 (Fig. 6), shows

the extent of the property at the end of the 19th century. The Central Hall is depicted as roofed, while very little remains of the south-east range.

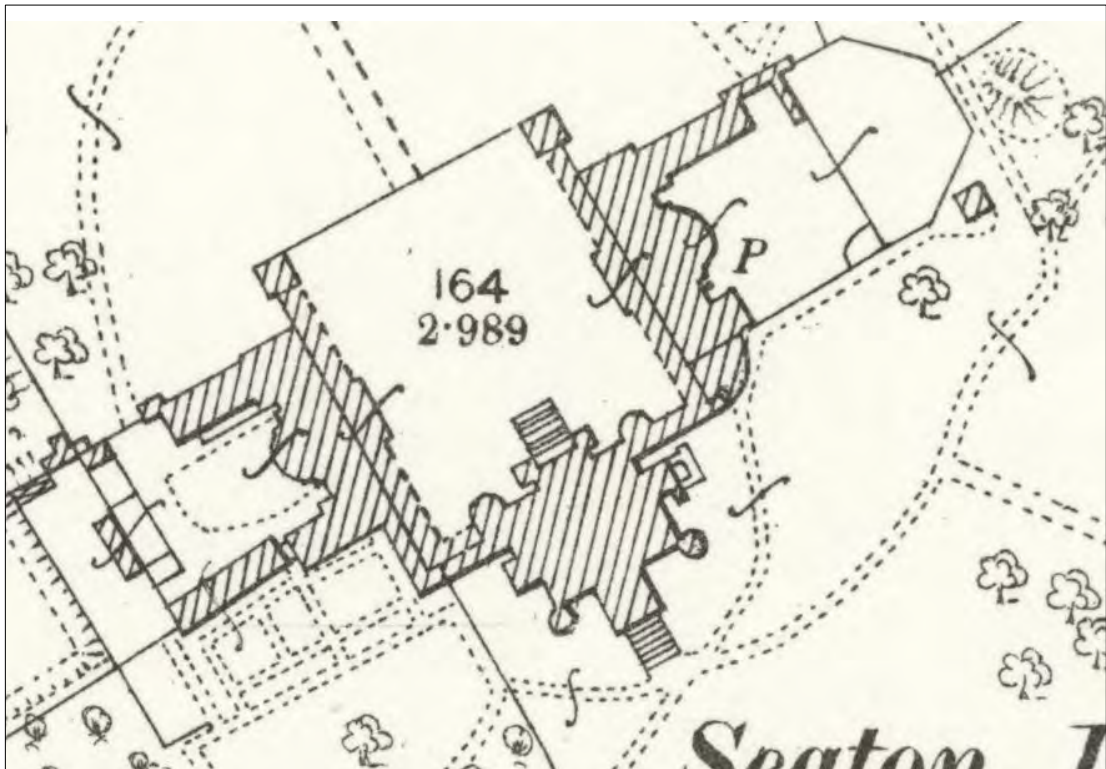


Figure 6: 1897 Ordnance Survey Second Edition 25-inch map showing the layout of the Hall by the end of the 19th century.

20th century – restoration and conservation

- 3.22 Throughout much of the 20th century the estate was managed by a resident agent. The Hall was requisitioned by the military during the First World War and again during the Second World War when it was used, in part, as a British military prison and subsequently a prisoner of war camp. In the mid-1950s Edward Astley, the 22nd Baron Hastings, inherited the property and prepared to open the estate to the public for the first time. He later moved permanently to Seaton Delaval Hall and remained in residence until his death in 2007.
- 3.23 In 2009, following a national fund-raising campaign, the National Trust purchased the Hall and surrounding landholding. Several schemes were conducted over the following years to stabilise the Hall and better understand both the significance of the building and its landscape, as well as the degree of conservation requirement. In 2018 work began on the delivery phase of The Curtain Rises, an ambitious conservation project part funded by a £3.7million National Heritage Lottery Fund award. It entailed a programme of critical repairs to stabilise and consolidate the built heritage of the estate and

introduction of a suite of installations and new facilities to enhance the visitor experience.

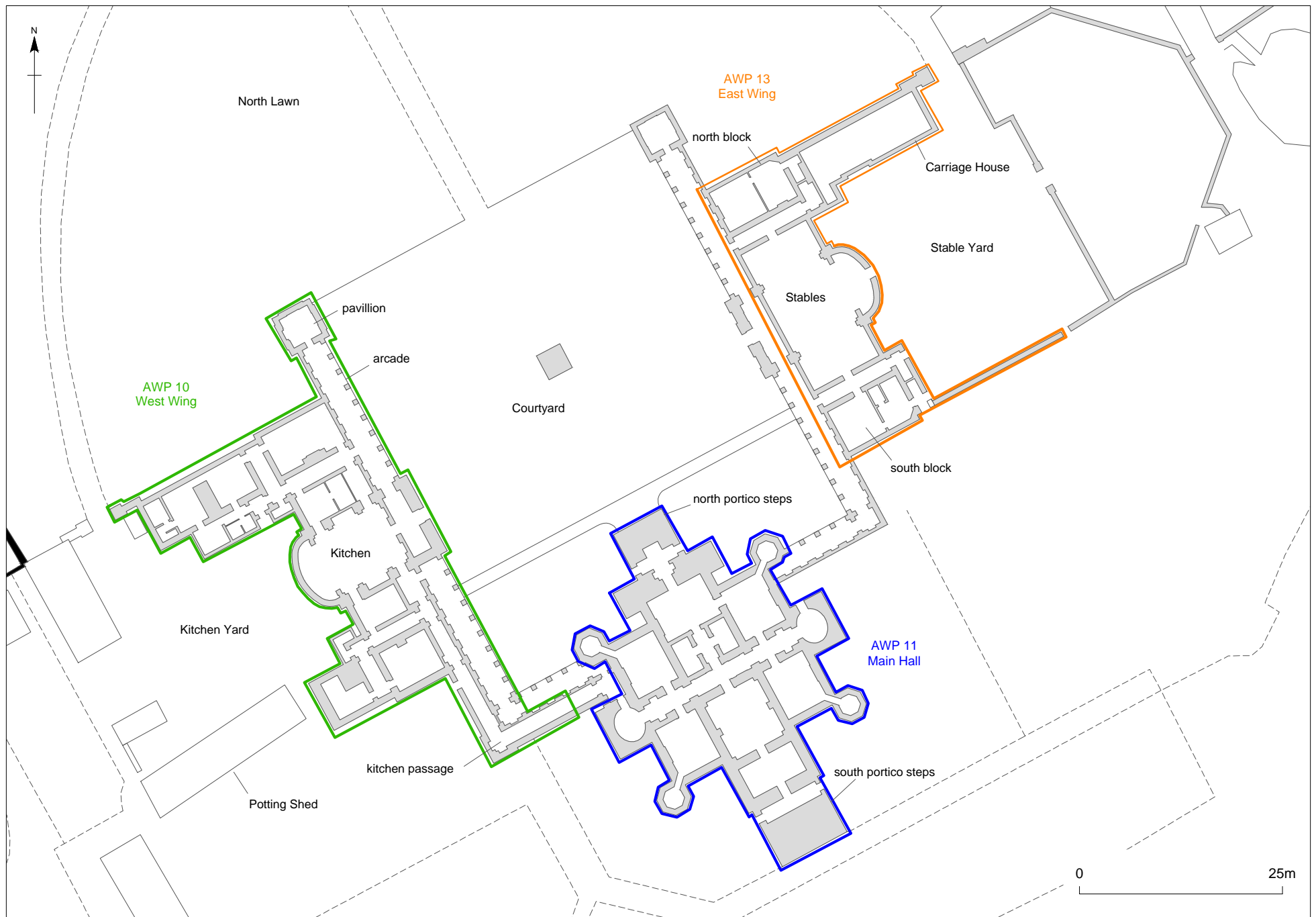
3.24 A series of 15 Archaeological Works Packages (AWPs) were devised as part of the scheme to ensure any potential loss of significance or heritage value arising as a result of the conservation works was suitably mitigated by archaeological record. The following sections describe the results from three of these packages (AWPs 10, 11, 13), and this volume accompanies four other reports covering works associated with the Brewhouse (NAA 2020a), the Pleasure Grounds (including the bastions) (NAA 2020b), Walled Garden (NAA 2021a), and the Mausoleum (NAA 2021b, forthcoming).

4.0 SCOPE OF WORKS

4.1 This report covers AWP 10, 11, 13 relating to the West Wing, Central Hall, and East Wing. The individual elements covered are illustrated on Figure 7. All of the conservation and redevelopment work was assiduously designed to cause minimal impact to both sub-surface archaeology and the remaining historic fabric wherever possible.

4.2 Package 10 related to the West Wing (Fig. 7). The archaeological work in this area comprised a survey of the exposed existing roof structure and subsequent monitoring during a repair programme. Monitoring was also conducted during the replastering of the underside of the front arcade, replacement of the roof-access hatch, installation of the heating system and lifting of the floor surface in the kitchen passage, as well as recording of the graffiti (Mosedale Gillatt Architects 2017a; National Trust 2018b).

4.3 Package 11 related to the Central Hall. The archaeological work included recording and monitoring during masonry repairs to the north and south portico steps; masonry repairs in the basement; works to the east and west stairs; the laying of a new floor in the basement, and limited laying of new drains. The primary focus of the programme was archaeological monitoring in the basement during the reduction of levels for new flooring and the recording of graffiti and exposed masonry in the same prior to repair works (Mosedale Gillatt Architects 2017b; National Trust 2018c). Originally anticipated interventions to the wall masonry, which would have required further archaeological recording, were significantly scaled back as works progressed to allow the walls to dry out before a scheme of consolidation and repair will be designed in future.



Seaton Delaval Hall: location of Archaeological Work Packages and key built elements.

- 4.4 Package 13 related to the East Wing. The archaeological work included building recording of the exposed existing roof structure during the reroofing the Carriage House, and subsequent monitoring of repairs. Recording was also conducted during the dismantling of stone partitions in the stables and other stonework repairs where required. An archaeological watching brief was maintained during the installation of a free standing 'pod' in the Carriage House providing toilet facilities, excavations to repair paving and tethering posts in the stables and the laying of new drains and surfacing of the stable yard (Mosedale Gillatt Architects 2017c; National Trust 2018d).
- 4.5 The country went into lockdown in March 2020 as a result of the escalating Coronavirus pandemic. After a short break in March, the contractors Heritage Property Restoration Ltd (HPR) continued work onsite with strict control measures in place in accordance with government guideline. However, the added complication of continuing works under lockdown meant there were some issues with communication, with attendance not always requested when required. NAA continued to provide archaeological support throughout this period as requested, with all staff adhering to enhanced company safety procedures and working practices.

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 2014a);
 - *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (ClfA 2014b);
 - *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide* (Historic England 2015);
 - *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 2018e).

6.0 AIMS AND OBJECTIVES

Archaeological monitoring

6.1 Given the high potential for the survival of post-medieval remains associated with the construction of the 18th-century hall and its later development, together with the moderate potential for the possible survival of earlier remains associated with earlier buildings on the site, the NCC Assistant County Archaeologist requested archaeological monitoring be conducted during any below-ground intervention. This work also subscribed to, and met, the National Trust's conservation management practices.

6.2 The aim of the work was to identify any archaeological remains encountered during the course of below-ground intervention and, where present, either ensure their survival through detailed design modification or 'preserve by record' where that was not possible.

6.3 The objectives of the archaeological monitoring were to:

- establish the presence, nature, extent, preservation and significance of any archaeological remains;
- provide a detailed record of any such archaeological remains;
- where preservation *in situ* was not achievable, recover and assess any associated structural, artefactual and environmental evidence;
- undertake a programme of investigation that meets with national and regional standards (Historic England 2015; ClfA 2014a–d); and
- prepare an illustrated report on the results of the archaeological monitoring (to the satisfaction of the planning conditions) to be deposited with the NCC Historic Environment Record (HER) and National Trust Sites and Monument Record (SMR).

Building recording and monitoring

6.4 The aim of the building recording and monitoring was to provide a record of structures and fabric exposed during the course of the conservation work. To generally facilitate a record of an element before it was obscured behind plaster or new fabric, however, in a small number of cases it preserved by record historic material that was, of necessity, replaced.

6.5 The objectives of the building recording were to:

- produce a written, drawn (using the architect's plans where applicable) and photographic record of structures, fittings, features or fabric exposed during the course of the conservation works, including existing roof structures;
- prepare an illustrated report that discusses the form, use, development and date of the elements recorded and how they relate to the overall narrative of the Hall complex;
- prepare a labelled and catalogued digital photographic record to be archived with the National Trust; and
- prepare an illustrated report on the results of the archaeological monitoring (to the satisfaction of the planning conditions) to be deposited with the NCC HER and National Trust SMR.

7.0 METHODOLOGY

7.1 The methodology varied in accordance with the demands of each element and is discussed in detail for each AWP in the results section. The following is therefore a general statement only on the core methodology.

Archaeological monitoring

7.2 Except where stated otherwise, excavation and groundworks were conducted by the building works contractor (HPR). All works resulting in sub-surface intervention were monitored (where possible) under a continuous watching brief. Where structures, features, deposits or finds of archaeological interest were exposed, 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 HPR operatives.

7.3 A full record (written, drawn and photographic, as appropriate) was made supported by the use of pro-forma record sheets. Plans and section drawings were created at 1:50, 1:20 and 1:10 scales as appropriate or captured through orthographic photomontage, using Structure from Motion (SfM) technologies. The location of any archaeological features, together with the edges of the excavated areas, were recorded in relation to the existing architect's plans.

7.4 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.

- 7.5 All stratified finds were collected by context. 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 that was demonstrably modern.
- 7.6 No undisturbed deposits were encountered that 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. 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 2018e) 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 Level 3 (analytical) or Level 2 (descriptive) building survey was conducted during the course of the conservation works, according to the significance of the material exposed and/or the nature of any pre-existing record. A photographic and written record was kept by the attending buildings archaeologist, and existing architects' plans annotated and enhanced where required.
- 7.10 All photographs were taken from a position as near parallel to the subject matter as possible, using a Canon EOS5d MkII digital camera (20 megapixel), 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.

7.11 A general written record was made of construction type, purpose, plan, date and development. A more detailed record of any elements of particular significance was made where warranted.

7.12 All architects plans and elevations are reproduced with the kind permission of Mosedale Gillatt Architects.

8.0 RESULTS OF ARCHAEOLOGICAL WORK PACKAGE 10: THE WEST WING

Background

8.1 The degree of Vanbrugh's involvement in the design of the West Wing is uncertain. It is believed to have been completed in the 1730s/40s, a number of years after the architect's death in 1726 and differs in design from that published in *Vitruvius Britannicus* in 1725. As built, both the East and West Wings are shorter and wider than those shown on the earlier drawing, although the reason for this modification is not known. One theory is that it relates to the local topography. The shorter wings serve to place a greater emphasis on the Central Hall which sits on the crest of a gentle rise. To compensate for the changing ground level, the longer wings would have required the movement of considerable amounts of earth to level the ground for construction; this in turn would have been much more costly (Simpson and Brown Architects 2017, 78; citing M. Newman pers. comm.). The variation may also reflect the changing requirements of the new owner, most notably the increased size of the kitchen and introduction of the riding house (see Section 10.0).

8.2 The West Wing is aligned north-west to south-east and linked to the Central Hall by an arcaded gallery. This runs c.12.5m south-west from the north-west turret of the central hall before turning north-west to run along the front of the wing for a further 52.75m, terminating at the north-west pavilion. At the southern end of the wing the kitchen passage runs to the rear of the arcade, connecting the west stair tower of the Central Hall with the main kitchen. This was formerly a single through-passage but was later blocked by the addition of a brick partition wall. This partition was dismantled as part of the conservation works.

8.3 The two-storey accommodation extended west of the arcade and originally comprised service rooms on the ground floor with bedrooms above. At the centre was the main kitchen, with a double-height vaulted roof and an apsidal west end, set with a Venetian window. On each side of the kitchen were a further two blocks of rooms, projecting

west into the kitchen yard. The north block extended c.29m from the arcade, and the south block was 16.4m. To the rear was the kitchen yard, also referred to as the west service yard.

8.4 John Dobson's plans of the West Wing, prepared c.1817, provide a detailed layout of the building in the early 19th century and record the functions of the various rooms. The ground floor comprised a series of service rooms (Fig. 8). On the north side of the double-storey kitchen was the laundry, washroom (including a range and coppers for heating water) and dairy, together with areas for general storage. On the south side was the main scullery, further storage areas and the coal house. The first floor provided accommodation for the Delaval family rather than servants and comprised eight heated bedrooms, four on each side of the kitchen. These were linked by the long gallery that ran the full length of the front (east) side of the building.

8.5 In the 18th century the bedrooms appear to have included attendant dressing rooms. These are referenced by Rhoda Astley in a letter to Mrs Delaval describing the fire of 1752. She explains that c.1740 a workman came to stop the kitchen chimney smoking, and 'pared away the wall, at the back of the Chimney till he came to one of the beams of the dressing room above' (cited by Jo Moody, *pers. comm.*). When the fire first started the flame appeared in the ceiling 'no bigger than a candle' but eventually spread through the rooms on the south side of the wing where the family lived before being extinguished (Simpson and Brown 2017, 79). The damaged rooms were later refurbished, and in 1786 there is a reference to a 'hunting hall' in this location (Simpson and Brown Architects 2017, 80).



Plate 1: northern end of the front façade of the West Wing prior to restoration.



- 8.6 The wing was not seriously damaged during the 1822 fire, which gutted the Central Hall. Afterwards it continued to provide accommodation for visiting members of the family, staff, the land agent and their household. The property was requisitioned for use during the First World War, although there is some uncertainty as to whether this was restricted only to the East Wing (*ibid.*, 81). During the Second World War it was used in part as a British military prison, and subsequently as a Prisoner of War camp.
- 8.7 From the mid-1960s until 1980 the West Wing was let out as a public events and banqueting venue. The kitchen was used for eating and the present dining room (former laundry, dairy and wash house) functioned as a bar. In 1980, Lord and Lady Hastings took up permanent residence in the wing, and most of the interior alteration and decoration dating to this period and was 'surprisingly low quality' (*ibid.*, 82).

Previous archaeological works

- 8.8 There have been no previous archaeological works conducted within the interior of the West Wing, but some in and around the courtyard to the west
- 8.9 In December 2012, a watching brief was conducted in the kitchen court during a programme of improvements and repairs (ARS 2013). Several features were identified thought to be associated with the construction of the early 18th-century wing, including a substantial culverted drain and courtyard surfaces. The course of the drain was subsequently identified on a below-ground services scan conducted as part of the current conservation works and taken into account in the planning of any below ground intervention.
- 8.10 In February to April 2017, further excavation was conducted in the kitchen yard as part of the preparation of the Phase 1 NLHF The Curtain Rises bid. Three trial pits (T1–3) were excavated to the rear of the West Wing (TP2) (Solstice 2017; Fig. 8). **TP1** against the external wall at the south-west corner of the kitchen exposed the stepped foundations of the wing, although at a depth of 1m the base of the wall was not reached. No construction cut was identified. **TP2** was excavated against the external wall at the south-west corner of the south block where the foundations were exposed, the base of which was established at a depth of 1.1m. The trench was excavated through black garden soil that overlay a mid-brown sandy silt. A late-Victorian drain cut through the base of the trench. Finally, **TP3** was excavated against the exterior wall at the south-west corner of the kitchen passage where a shallow foundation course was exposed. This was composed of rock-faced sandstone blocks with a total depth of 0.5m below ground level

at which point excavation ceased. Below the foundations, a dark-grey silty sandy subsoil with sandstone fragments was observed.

- 8.11 In October 2020, NAA conducted a watching brief during the installation of services in the kitchen yard. At the southern end of the yard the natural clay and bedrock sat very close to the surface, sloping down to the north where a substantial levelling deposit of mixed ash, coal dust and cinders was identified. No features were encountered (NAA 2020c).

Archaeological work package 10

- 8.12 Work on the West Wing took place between June 2019 and February 2020. The AWP comprised 12 separate tasks (listed as 'items' below), and involved a mixture of pre-intervention building recording, monitoring during repairs and archaeological watching brief. It was agreed with the NCC Assistant County Archaeologist, prior to the commencement of fieldwork, that all work would be conducted in accordance with the WSI prepared by the National Trust (National Trust 2018e), negating the need for item 1. The results of the remaining 11 tasks are detailed below.

Item 2: general recording of the exposed roof structures of the West Wing

- 8.13 This, together with item 3, comprised the largest component of AWP 10. It comprised the recording and analysis of the roof superstructure following the removal of the bitumen felt covering. This had been installed in the 1960s and was reaching the end of its serviceable life. It was stripped off as part of the conservation work and, following repairs to the supporting superstructure, replaced with a terne coated stainless steel covering. A precedent for this approach had previously been set in the replacement of the East Wing roof in 2013–14 (Mosedale Gillatt Architects 2017a).
- 8.14 A photographic survey of the West Wing roof was carried out on 25th June 2019 after the removal of the roof covering. The locations of the photographs were annotated on the architect's plans, as well as any areas of specific interest (Fig. 9). Prior to this, monitoring had been conducted during the removal of stone capping from some of the chimneys, and full dismantling of chimney **108**. The results of this work were initially discussed in an interim report (NAA 2019) which included proposals for further monitoring during repair works as part of item 3. The bulk of the interim reporting has been included below to ensure a single comprehensive record.



Seaton Delaval Hall: plan of West Wing roof showing context numbers and areas of monitoring

Figure 9

- 8.15 The roof was covered by five layers of a bituminous roof membrane (Kevin Dunn, HPR, *pers. comm.*). Fragments of lead sheeting remained visible along the gutters, associated with an earlier lead roof, replaced when the felt was laid in the 1960s. Traces of lead flashing were also preserved just below the parapet on the inner face of the outer wall (Plate 2). Each of the structural elements were given a separate context number (Appendix A, Table 1) and is illustrated on figure 9.
- 8.16 The felt roof covering was supported on pine board sarking, the majority of which had been removed before survey. Some elements were retained to facilitate movement around the roof, although this was still fairly precarious and access to some areas was restricted on health and safety grounds. Specifically, there was limited safe access to the lower roof structure including tie-beams, joists and ceiling struts.



Plate 2: evidence of lead flashing surviving beneath the coping of the pediment chamber roof (130).

- 8.17 A general survey of the roof was made to inform a better understanding of its construction and method of build, as well as provide a context for subsequent archaeological recording during monitoring. Photographic scales were used where practical, but it was not possible to locate scale safely when recording the lower roof structure, including the ceiling vaulting supports, so these elements were all photographed without scale.

Overall form

- 8.18 The West Wing roof was constructed of softwood, probably pine, however, detailed analysis of the species or age of the Seaton Delaval timbers was not conducted as part of the restoration works. Across the roof, there was considerable variation in the colour and quality of the wood used, and these changes almost certainly correspond with later phases of renovation and repair. This was particularly noticeable on the north range (Iona Howell, Mosedale Gillatt Architects, pers. comm.).
- 8.19 The roof was divided into three ranges: the north range (110), central range (120) and south range (140). A pediment chamber (130) at the front (east) of the central range formerly housed a clock mechanism. What remained of the clock had previously been removed for conservation, although part of the supporting wooden gantry (131) survived *in situ*. At the opposite end of the range an apsidal bay (123) projected out from the rear (west) of the building. There were two further rear projecting bays on each side of this (114, 145). All three were covered by flat roofs, although the apsidal roof had been modified to include an east-sloping rake.



Plate 3: looking south-east across the west roof showing both main chimney stacks and the pediment chamber (130). The north stack (102) is clearly older than the south stack (103), the latter being replaced in the late 19th century.

- 8.20 There were seven extant chimneys: two large central stacks (102, 103), three stacks in the north range (104, 105, 106) and two in the south range (107, 108). A rectangular platform in the south-west corner (109) related to a third stack on this side of the

building, matching that on the north range (104). This would have originally blocked the main gutter so must be a later insert.



Plate 4: south range looking east towards the south-east stack (108). The remains of the of the central stack (107) are also visible in the valley between the two hipped sections.



Plate 5: date stone referencing the restoration of the main south stack 103.

8.21 The two central stacks were of ashlar build and feature a cluster of six flues each. The southern stack (103) was a later replacement, the stone was much cleaner and crisper

than the north stack (102) which was blackened and abraded. A date plaque on the south-central stack dates the replacement to a phase of renovation in 1985 (Plate 5).

8.22 Only one other chimney stack – the south-east stack (108) of the south range – remained extant at the time of recording. This was a double flue, similar in construction and design to the two main stacks (102, 103), comprising an ashlar superstructure on a brick base. The condition of the stonework suggested it may have been replaced in the latter half of the 19th century, when the southern main stack was also replaced (103). The four other stacks had been found to be structurally unstable and taken down prior to survey (104–6, 107). A watching brief was conducted during the dismantling of 107 (see below).

8.23 Assuming the south-west platform (109) in the south range was a double-flue chimney, this means there were potentially 24 flues associated with the West Wing.

Chimney 107

8.24 Chimney 107 (assigned 63 at the time of survey) had proved structurally unsound and was dismantled during the initial strip of the felt roof in May 2019. It was located between the north (143) and south (144) roofs of the south range (140). The chimney plinth was constructed of brick with ashlar copings above (Plate 6). The plinth measured 1.48m by 0.82m, with only one flue exposed on the west side. The internal measurements of the flue were 0.38m by 0.15m. Above the plinth was a section of sandstone coping which was later removed. The bricks were orange-red, each measuring 0.23m by 0.11m by 0.06m set in running bond and held in a hard creamy-white lime mortar.



Plate 6: chimney 107 during dismantling, looking south.

- 8.25 The sandstone coping stones of the other chimneys were also removed and stored prior to repair and reinstatement (Plate 7).
- 8.26 A low, stone parapet ran around the outer edge of the roof (101) to conceal views of the pitched sections from the ground, to create the illusion of a flat roof in the classical style. Evenly spaced along the top of the parapet were a series of decorative stone urns (Plates 8 and 9). This type of exaggerated roof adornment is typical of British Baroque and was used to great effect by Vanbrugh at both Castle Howard and Blenheim. The urns make a considerable contribution to the character and interest of the Seaton Delaval roof line. Twelve urns were recorded, positioned on the north and east parapet only.



Plate 7: chimney copings removed and awaiting repair and reinstatement.



Plates 8 and 9: decorative urn (north-east corner) and section of parapet (101) with urns (north range).

- 8.27 Drainage was obviously important, particularly given the number of flat sections and the shallow pitch of the hipped sections. The roof was designed so that water was directed through vents to the rear (west) of the building, meaning that the front elevation remained clear of guttering and vertical downpipes that would have interrupted the horizontal emphasis and uncluttered classical aesthetic of the facade.
- 8.28 The main gutter (**116**) ran along the top of the rear external wall, situated between the main structure and the three projecting bays. Fragments of lead flashing indicate that this was originally lead lined. The timbers of the existing structure were all modern. The drain ran the full length of the building to vent into hoppers and downpipes running down the rear façade. These ran through a square aperture in the two east-to-west cross walls of the central range.
- 8.29 The arrangement at the southern end of the building varied from that in the central and north ranges. There was evidence of fire damage in this area relating to the 1752 fire, suggesting the two end ranges originally had a slightly different layout (see south range section below).
- 8.30 In addition to the main north-to-south gutter (**116**), there were a series of east-to-west gutters. On the north and south ranges, a valley gutter ran between the main roof sections (**115**, **141**). Gutters also ran along the sides of cross walls **118**, **121**, **142**, and there was a further north-south gutter (**119**) between the two hipped sections and the flat roof on the north range. All the east-to-west gutters were raked to ensure water flowed west towards the rear of the building.
- 8.31 Three rooflights were inserted into the roof, two in the south range and one in the north. These were all relatively modern in date and of poor construction (M. Newman *pers. comm.*). All were removed prior to the survey.

The north range (110)

- 8.1 The north range measured approximately 13.1m by 12.15m internally, not including the rear projecting bay (**114**). It comprised a central section spanned by two hipped roofs (**111**, **112**; Roof 2, 3), a flat roof to the front (**113**; Roof 1), and flat projecting bay to the rear (**114**; Roof 4) (Plates 10 and 11; Fig. 9). The north hipped roof (**111**) measured c.6.65m by 8.12m, making it slightly larger than that to the south (**112**), which was only 6.05m wide. The two roofs also varied slightly in form, the mid-section of the north roof being carried on two trusses, the south roof on three. The north range appeared to be

slightly earlier than the south, although there had clearly been a number of phases of modification and rebuild including the repair and consolidation of the western hip trusses.



Plate 10: north range looking east across northern hipped roof (111).



Plate 11: the south hipped roof (112), looking north-east towards the pediment chamber.

- 8.2 The surviving upper structural elements – sarking boards, rafters, ridge and purlins – were all modern in date, comprising machine-cut timber dating to the mid-20th century.

The lower structure – tie-beams, ceiling joists and struts – were earlier and included original elements. There was also evidence of later repairs and modification, like the replacement of some of the lath and plaster with modern plasterboard (Plate 12).



Plate 12: section of replacement roof structure in the north range – purlins truss and ceiling are all modern.



Plate 13: flat section of roof (113) running along the front of the north range, looking south towards the pediment chamber. Note the base of the dismantled chimney stack (105) in the bottom right corner of the photograph.

- 8.3 The hip trusses were shallow pitched and comprised a simple king post morticed into the tie beam. At each end, a timber packer divided the tie and the principal rafter, allowing for a shallower pitch. The two hipped sections were divided by a central valley gutter (115). All of the timbers associated with this were modern, which would be anticipated given this was a vulnerable area susceptible to damage from water run-off collecting in the valley.
- 8.4 Along the front of the building was a rectangular section of flat roof (113) (Plate 13) which measured internally c.13.25m by 2.4m and was orientated north to south. This was supported on rafters inset into the wall plate of the cross wall and front wall. The rafters were spanned by purlins running north to south. Timber struts set along the purlins maintained an even distance between the roof and the joists of the lath and plaster ceiling suspended beneath.



Plate 14: looking north-west across the western end of the north range showing the projecting bay (114) and the roof access hatch (117).

- 8.5 At the rear of the building was a section of flat roof associated with the north-west projecting bay (114). This measured c.2.5m by 7.4m and was divided from the central section of the range by the rear wall. The rafters supporting the roof were inset directly into wall plate and covered by wooden sarking that was fairly uniform in nature. The ceiling was set a short distance beneath, the rafters braced by timber spacers.

- 8.6 A hatch (117) in the centre of Roof 4 provided access from the interior of the building up onto the roof. This was a wooden structure with a cat-slide roof and simple plank door, hinged to the west. To the rear of the hatch was the remains of the third chimney (104) on this side of the building.

The central range (120)

- 8.7 The central range (Plate 15) contained a substantial amount of original material. It comprised three sections: a gabled pediment chamber (130, Roof 5); pitched central section (122, Roof 6); and rear apsidal bay (123, Roof 7). Excluding the rear bay, it measured internally c.13.3m by 9.15m. The pediment chamber projecting slightly in front of the façade.



Plate 16: looking west across the central range (120) towards the pediment chamber (130).

- 8.8 The pediment chamber (130) measured c.3.2m by 9.15m and was aligned north to south along the front of the building (Plates 17 and 18). It formerly held a clock mechanism, removed prior to survey. Part of the timber gantry (131) which supported the clock remains *in situ* within the chamber.
- 8.9 The room was entered via an opening in the west wall (132) that was flanked on each side by a narrow rectangular window (133) which lit the interior. These were boarded over at the time of the survey and it is uncertain if they were ever glazed. The chamber was ashlar built with a timber floor and pitched roof.

- 8.10 The pediment roof structure was a simple A-frame design, the purlins set directly into the wall head. These supported the common rafters, which are morticed into the ridge and lower purlin and covered by softwood sarking. The sarking boards in this area were shaped by an adze on the underside to receive the rafters. Similarly, some of the purlins were also adze dressed rather than planed. This suggests an early date and that the timbers were dressed *in situ* during construction.
- 8.11 Water run-off from the roof pitch collected in two 0.4m-wide gutters (134) on the north and south side of the chamber. Both the gutters and the roof had at one time been covered with lead; evidence of lead flashing survived just below the roof coping on the east wall and extending partway along the main parapet. Notably, the gutter did not drain to the front of the building but ran west to collect in gutter 121, where it was channelled to the main drain (116).



Plate 17: view of the west façade of the pediment chamber showing the entry and flanking windows (132, 133).

- 8.12 The central section (122) of the central bay had a pitched roof, the rafters and sarking of which were relatively modern and probably dating to the early to mid-20th century. There was, however, clear evidence of an earlier hipped truss structure at the west end (124) relating to the original roof design (Plates 18 and 19). The hipped section has been levelled out by removing the crown and jack rafters then extending the central ridge and adding a tie-beam with a shallow pitched timber gable.

- 8.13 It is unclear why the roof was reconfigured in this way but may relate to drainage issues. Notably the rake on the apsidal bay had also been increased, so there may have been a problem with run-off from the hip flooding the main gutter and causing damp within the interior. Alternatively, there was evidence of fire damage in this area which may have weakened the structure, necessitating the modifications.
- 8.14 Considerable charring was identified on the south-west hip truss where it joined the wall plate. This related to the 1752 fire which started behind the kitchen flue, spreading south. Notably, evidence of charring was limited to the south-west section of the roof.



Plate 18: looking south-east across the central roof (122) showing the reconfiguration of the west end.



Plate 19: detail of the inserted gable and flat roof (123).

- 8.15 There are at least three phases of development visible at the west end of the central roof: (1) the original hipped structure; (2) the insertion of the gable roof; (3) the later replacement of the purlins, rafters and struts (Plates 20 and 21).



Plate 20: looking east across the west end of the central range towards the apsidal bay, showing the modifications to the earlier hipped section (124).



Plate 21: bracing associated with the inserted wooden gable. There are clearly three phases of development visible at this end of the roof.

- 8.16 The removal of the roof covering provided a rare opportunity to view the underlying superstructure of the vaulted kitchen ceiling beneath. The arrangement of the crossing

wooden support braces and complexity of suspension struts has an aesthetic as well as evidential value and was reminiscent of the hull of a ship (Plates 22 to 29).



Plate 22: north-west hip truss. This is carried over the ceiling vaulting, visible beneath. It has subsequently been built up to support the gable roof and the insertion of a later tie beam.

Various phases of development are visible in both the age and treatment of the timber, and nature of the carpentry.



Plate 23: crossing braces carrying the vaulted ceiling structure beneath.



Plate 24: evidence of timber reuse or reconfiguration visible on the joist running below the central ridge of roof 122.



Plate 25: section of the south-west lower roof structure showing a principal truss, main joists, vaulting joists and ceiling struts. There is clear evidence of charring on the hip truss, just visible at the top of the picture



Plate 26: detail of lower roof and ceiling structure at the west end of the central range. The strut at the centre of the picture has been either reused or was intended to be in an alternative position. It has been shaped to accept a cross timber.



Plate 27: detail of vaulted and groined ceiling structure beneath central range.



Plates 28, 29: detail of vaulted ceiling structure beneath central range (left) and (right) one of the vertical timbers and connecting floor joists tying the pediment chamber to the main roof structure.



Plate 30: chalked inscription on timber joist at the east end of the central range.

- 8.17 Much of the ceiling structure associated with the central range (kitchen) appeared to be original, although there was evidence of later repairs. The dating of the structure was aided considerably by a chalked inscription on one of the principal joists at the east end of which read 'Francis Black [sic] Delaval Esq' (Plate 30).
- 8.18 The apsidal bay (123) at the west end of the central range was covered by a flat roof. This comprised a collection of rafters set into the curved wall of the projecting apse and the rear wall of the building (Plate 31). The sarking was laid directly over the rafters and secondary timbers attached to these to create a more pronounced rake. This was probably to facilitate better drainage into the main gutter (116). This was a relatively modern intervention, dating to the last phase of repair, probably in the 1960s.



Plate 31: timber rafters associated with the apsidal bay (123). Later timbers have been added to the earlier rafters to increase the rake.

The south range (140)

- 8.19 The south range was slightly smaller in length than the north range, measuring c.12.91m by 12m internally, not including the projecting rear bay (145). The main body of the section was dominated by two, shallow pitched roofs, orientated east to west (143, 144, Roofs 8 and 9). These extended from the rear wall to the front wall of the building and measured c.11.4m in length. The south roof was 5.9m wide, which was slightly wider than the north roof which measured 5.25m in width. The east end of both was pitched and set up against the east wall, while the west end was hipped.



*Plate 31: south range looking north, roof **143** to the north (left) and **144** to the south (right).*

- 8.20 The purlins at the east end of the roof were set directly into the east wall and not supported on trusses. These had limited purchase into the wall despite bearing the weight of the sarking and roof covering, as well as the suspended lath and plaster ceiling below. Such a structurally precarious arrangement suggests that the roof has been reconfigured. A wall scar at the interface of the front (east) wall and the roof indicates that the modification occurred some time ago, probably during renovations in the early 19th century, although extensive later repairs were also evident. The ceiling struts were all modern, although there were fragments of wood projecting from the east wall associated with an earlier iteration of the roof structure. Most of the structural timbers in this section were not original, although they were earlier than those of the north range. Evidence suggests that there were several phases of repair and modification, the last of which dated to the late 19th or early 20th century.
- 8.21 Four trusses supported each of the pitched sections. Based on the distance between the last truss and the east wall, the roof was originally hipped. One issue with this interpretation is the position of the south-east chimney (**108**), if original. As previously discussed, the chimney dated to the late 19th century and sat on a section of brick cross-wall which extended across the width of the south roof and was probably also a later addition. Or there may have been an arrangement similar to that of the north range, i.e. two hipped central roofs with a flat roof to the front.

8.22 At the west end of the range was a projecting bay (145) that was similar to that on the north side of the building (114). One element of note was extensive evidence of charring on the end of the rafters where they extended into the wall plate. The timbers in this area had been cut back to remove some of the damaged wood, although the burning did not appear to extend deep into the fabric. This, together with the evidence of charring in the south-west corner of the central bay, and the reddening of the stonework, indicate a fairly localised, but intense, episode of burning. There was little sign of fire damage observed elsewhere across the roof.

Item 3: localised more detailed recording of significant elements

Roof 120 (Roof 6) central range

8.23 Following the roof survey, a series of recommendations were made for further monitoring and recording during the implementation of roof repairs carried out by the contractor. The repair schedule used roof numbers allocated by the architects eg. Roof 6. These have been included in brackets in the following section. In total, 19 separate interventions were assessed and detailed in Table 1 of the interim report. Only 11 of these interventions required further recording and monitoring, illustrated on figure 9. These are labelled according to the intervention number used in the earlier report (NAA 2019, table 1).

8.24 The purpose of this work was to advance a greater understanding of construction techniques used, as well as key phases of later modification and repair, and any further evidence of charring or burning. The additional recording was conducted over two visits, one in May and one in December 2019. Again, there was some limitations to access based on health and safety constraint; however, it is not considered that this markedly compromised the comprehensive nature of the record.

8.25 The south-west corner of the central roof (120) was badly decayed and burnt, requiring replacement (Fig. 9, intervention 9). Monitoring was carried out during the dismantling of the various components to inform a greater understanding of construction. Special attention was paid to recording the burnt timbers.



Plate 32: view of decayed hip truss in the south-west corner of the central roof. The timber is located at the junction of three gutters, draining south past the wall.



Plate 33: evidence of charring is visible on the timbers adjacent to gutter 121.

8.26 The repair was located at the junction of three gutters (125, 121 and 146) that channelled water into drain 211 (Fig. 9). Water collecting at this point had resulted in damage to the surrounding fabric requiring remediation (Plate 32). The western end of hip truss

207, which supported the south-west corner of the central roof (122), had decayed and was no longer tied into the wall, requiring repair and reinforcement. The associated truss was a simple 'king post' which was morticed into the tie beam. On the end, a timber packer separated this from the principal rafter. The timbers adjacent to the east gutter (121) all showed signs of charring (Plate 33), although this did not penetrate deep into the wood which suggest an intense fire consistent with a chimney fire, rather than an extensive burn.

Roofs 143, 144, 145 (Roof 8, 9, 10) the south range

- 8.27 On the south range (140), recording took place during the repairs to hip trusses, purlins and guttering at either end of roof 143 and 144.
- 8.28 At the west end (Fig. 9, interventions 11, 12, 17, 18), adjacent to gutter 146, construction of the hip trusses were similar to those observed in in the south-west corner of the central range (repair 9; 207), the main difference being that the tie beam extended beyond the packer and principal rafters into the wall, thereby tying the structure into the wall plate (Plate 34). At the junction of roof 143 and 144 (repair 12) the tie beam (truss 204) was tied neither into the wall plate or truss 203 (Plate 34), making the structure very unstable.

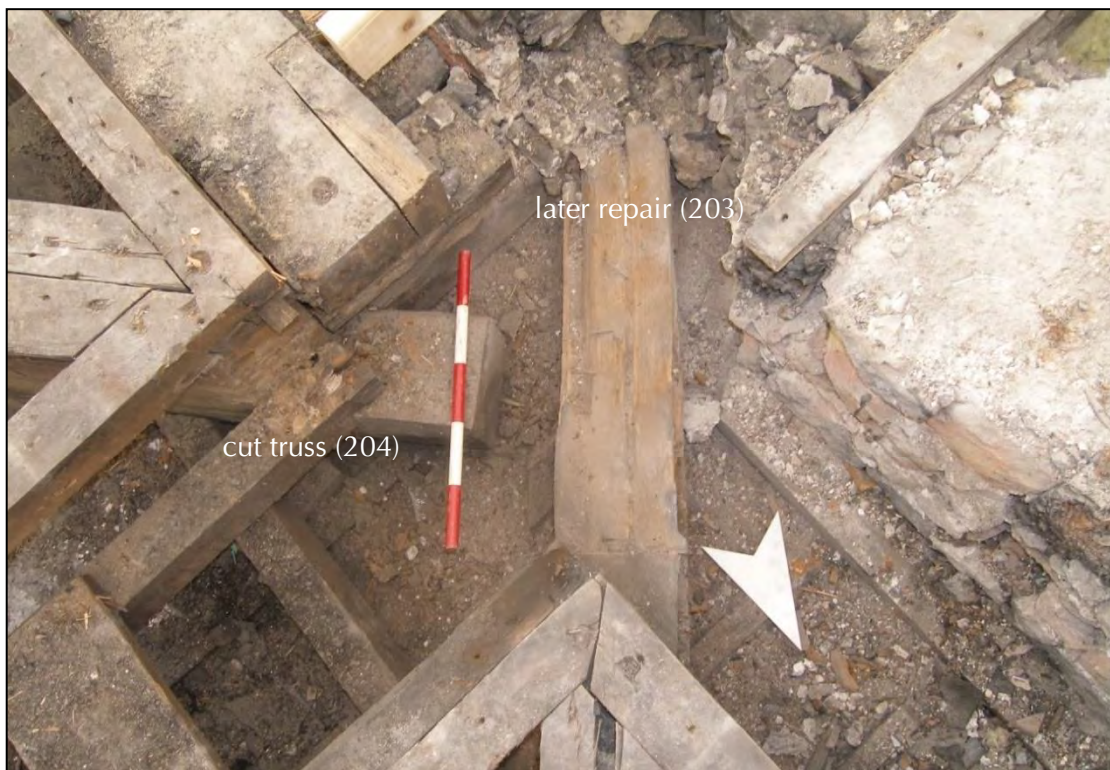
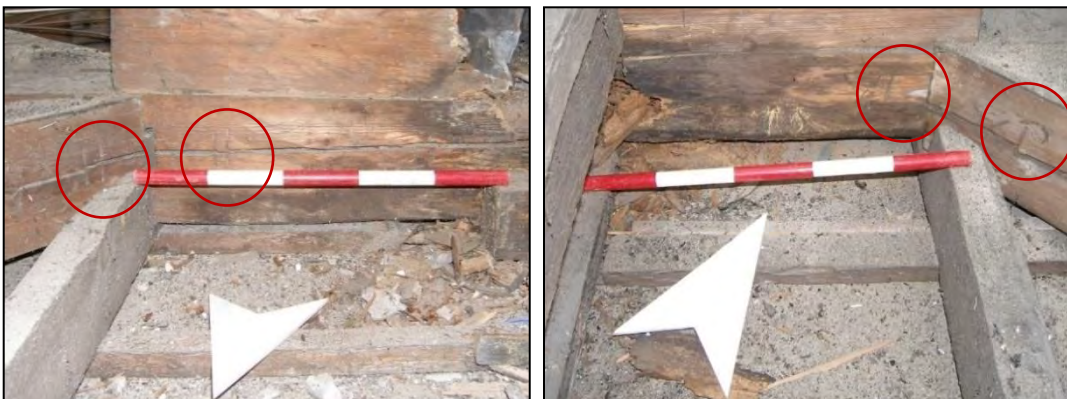


Plate 34: intersection of truss 203 and 204. The latter tied neither into the wall or truss 203. Gutter 146 is visible in the upper-left corner.



Plate 35: hip truss 201 in the north-west corner of roof 143. This originally spanned gutter 146 to tie into the wall but had been cut. The gutter passed under the stone wall at the top of the photo.

8.29 Unlike under the central roof where there was a complex arrangement of joists, struts, and braces associated with the vaulted ceiling beneath, on the south range the lath and plaster ceiling, and the joists above, were carried by the trusses. Many of these (the tie beams and principal rafters) were marked with carpenters' marks. Most were located on only one side of the truss, although there was some variation and there was no obvious consistency in the placement of the numbers. On truss 202, for example, 'II' was marked on the north side and 'VI' was written on the south side of the same truss (Plates 36 and 37). These marks likely indicate joins between the timbers, rather than the timbers themselves.



Plates 36, 37: (right) carpenters marks on truss 207 looking south and (left) truss 202 looking north.

- 8.30 There was clear evidence of burning on the timbers on the west side of the south roof, with the purlins that supported roof **145** evidently charred (Plate 38).



Plate 38: charring of the trusses of roof 145 visible at the junction of truss 203 and 204.

- 8.31 The southern end of gutter **146** (assigned **62** at the time of survey in May 2019) was recorded prior to removal. The gutter ran north-south and was 0.28m wide, 5.95m long and 0.1m deep on the north side, sloping to 0.28m deep on the south side. It ran flush with the end rafter of roof **144** (Plate 39). On the west side it was offset c.0.08m from the brick wall by a series of timbers laid flush with the sarking boards of roof **145**. This was to accommodate the width of chimney **109**. The main board was slightly narrower than the gutter at 0.25m and attached together using large flat nail heads each 0.01m in diameter. A separate piece of timber tucked into the north-west corner of the beam was evidence of repair. Traces of bitumen and roofing felt were visible, also indicative of later repair.
- 8.32 At the eastern end of roofs **143** and **144** the purlins ran directly into the east gable rather than being supported by a truss. Many of the ends were decayed and had fallen out of their sockets, supported only by struts suspended from the ceiling joists. Monitoring was conducted during replacement of the timbers (Fig. 9, repairs 13 and 15).



Plate 39: gutter 146 looking south. Chimney 109 can be seen at the end of the ranging rod.

- 8.33 At the east end of roof 143, beneath the shallow gable formed by the purlins (Plate 41) was evidence of a horizontal wall scar. This was distinguishable as a change of colour in the stonework, with blackened stone above and cleaner stone below, the upper section having clearly been exposed to the elements. This suggests a former hipped roof set back from the façade. This would have mirrored the arrangement at the western end of the roof. Several blocked voids were visible in the east wall associated with the principal and jack rafters (Plate 40). At some stage, the eastern hip trusses were removed from both roofs and the later purlins tied directly into the wall. The cross wall was also likely raised during this phase of alteration, partly to support the modified roof structure. The treatment of the timber and nature of the nails suggests a late 19th- to early 20th-century date.
- 8.34 Just west of the façade, the existing purlins cut through the stone cross wall that ran the full length of the building. Where it ran across the south range the upper courses of the wall had been extended in as part of a later phase of modification, to support the purlins when the two east hip trusses had been removed. On roof 144, brick was clearly visible on each side of chimney 108 (Plate 41). On roof 143, truss 208 followed the line of the

wall. However, the ceiling joist below was not tied into the cross wall and seemed to be carried on the ceiling struts. Notably this was a reused timber probably associated with the earlier roof configuration (Plate 42).



Plate 40: east end of the roof 143 looking east. The purlins can be seen tied directly into the east wall beneath the line of the inset gable (marked by a line of lead flashing).



Plate 41: chimney 108 and raised section of the cross wall which supported the shallow pitched roof, replacing the former hip truss.



Plate 422: truss 208 on roof 143, looking south.

Roof 130 (Roof 5) pediment chamber

- 8.35 A small number of the sarking boards on the clock chamber gable were in poor condition and had to be removed or repaired. The ends of six boards were removed - five on the south gable and one on the north. On close inspection, the sarking boards had been shaped by adze *in situ* to fit the rafters (Plate 43). Each was adzed at 0.3m intervals to create a 0.12m-long groove to fit the 0.1m rafters.
- 8.36 On the north side of the gable, the central support beam of gutter **134** was replaced (Fig 9, repair 6). The timber forming the guttering was c.0.3m wide and 3.8m long. It sloped slightly to the west, sitting 0.37m above the height of the clock room floor to the west and 0.5m to the east, and was flanked by the gable roof purlin. Evidence of bitumen and roofing felt was still in place (Plate 43).
- 8.37 As part of the pediment chamber repairs, a corner of masonry on the south side of the clock chamber gable was cut to accommodate new joists. The stone was photographed prior to alteration (Plate 44).



Plate 43: underside of one of the sarking boards removed from the pediment chamber roof. The groove formed to hold the rafters can be seen evenly spaced along the board.



Plates 44, 45: (left) gutter 134 looking west; (right) masonry alterations to the stone at the south-west corner of the pediment roof.

Item 4: recording any exposed understructure of the arcade when the plaster is replaced

- 8.38 The open arcade extends from the Central Hall to run along the front of the kitchen passage, and then turns north along the east façade of the West Wing, terminating at the north-west pavilion (Fig. 8). It is divided centrally by the projecting pedimented porch (Plate 1), which today forms a closed vestibule but was originally open, the corridor passing all the way through the building until modified in the early 20th century (Simpson and Brown Architects 2017, 82).
- 8.39 Recording of the understructure was conducted during a single visit in February 2020. The ceiling of the arcade was covered with lath and plaster work which was being removed and replaced as part of the conservation works. Prior to recording this had been removed from three bays to the north of the porch, eight bays to the south, and four bays running east to the Central Hall. Associated with each of the bays was a dropped keystone arch (Plate 46 and 47).



Plates 46,47: (left) door into the north-west pavilion marking the end of the northern end of the arcade, and (right) the east end of the arcade terminates in a round vestibule with the door to the kitchen passage just out of view on the south (right) wall.

- 8.40 The construction of the ceiling was different on the north side of the central porch from that on the south. On the south side the principal joists were spaced c.0.35m apart with

timber c.0.1m thick (Plate 48). Between these were smaller, secondary joists, 0.07m wide and 0.03m thick, set with a diagonal brace at intervals to provide further support and rigidity. At the junction with the kitchen passage and the main body of the West Wing, the ceiling joists were set further apart at c.0.43m (Plates 49 and 50). On the north side of the porch the ceiling joists were also set 0.35m apart but there were no secondary joists between. This arrangement was repeated in the section running west to join the Central Hall west arcade (Plate 50).

- 8.41 The joists sat on a stone cornice running around the interior of the arcade set just above the top of the dropped keystones. Fragments of brick and plaster were visible between the joists in some areas. Of particular interest was a brick located just above the cornice at a point broadly corresponding with a wall scar recorded inside the kitchen passage. This may relate to an earlier phase of structural repair.



Plates 48, 49: (left) ceiling configuration on the north side of the arcade with secondary timbers and braces, and (right) arrangement on the south side without secondary supports.

- 8.42 At the junction between the west arcade and the south arcade the ceiling structure was different in form from that in the rest of the arcade. This area was square in plan, formed by four symmetrical arches. The ceiling was supported on two back-to-back dragon

beams with branching floor joists on either side (Plate 51).



Plates 50, 51: (left) ceiling above the west arcade connecting with the Central Hall. A repair is visible on one of the joists; (right) the junction between the west arcade and the south arcade.

Item 5: watching brief (to recover underfloor finds) during replacement of boarding of loft floor

- 8.43 A watching brief was conducted during removal of floor timbers from the pediment chamber on 23rd May 2020. Only some of the floorboards were being replaced as part of the conservation works (Mosedale Gillatt Architects 2017a). Access to the chamber was from the central roof (130) via a small door (Fig. 9). Four wooden steps led down onto the floor of the chamber, which was set c.0.8m below the threshold of the door.
- 8.44 The floorboards, like the sarking boards previously discussed, had been adzed to fit snugly above the supporting floor joists (Plate 52). The nails holding the boards in place were handmade. The upper side of the lathe and plaster ceiling below was clearly visible through the floor joists.
- 8.45 Within the area exposed during the repair works, no finds were recovered from the below floor voids.



Plate 52: removed floorboard of the clocktower. The access steps are visible to the left (south).



Plates 53, 54: (left) remains of clock gantry inside the pediment chamber; (right) nails removed from floorboards during repairs.

8.46 An 18th-century cage-clock movement had been removed for conservation prior to the survey. This had been located against the pediment tympanum on the east side of the chamber where only the support gantry and a number of cogs and related fragments remained *in situ*. The barrel of the clock was set into a brick pier, but this was constructed

of modern brick and was likely added later to provide additional support to the circular aperture which formerly held the clock face. This may have been in the 1980s when the last phase of roof repairs was undertaken (see date stone on stack **102** above).

Item 6: watching brief (to recover underfloor finds) during lifting of floor in the long gallery

- 8.47 An intermittent watching brief was maintained during the lifting of the first-floor long-gallery floorboards on the east side of the wing. No finds or features of note were recorded.

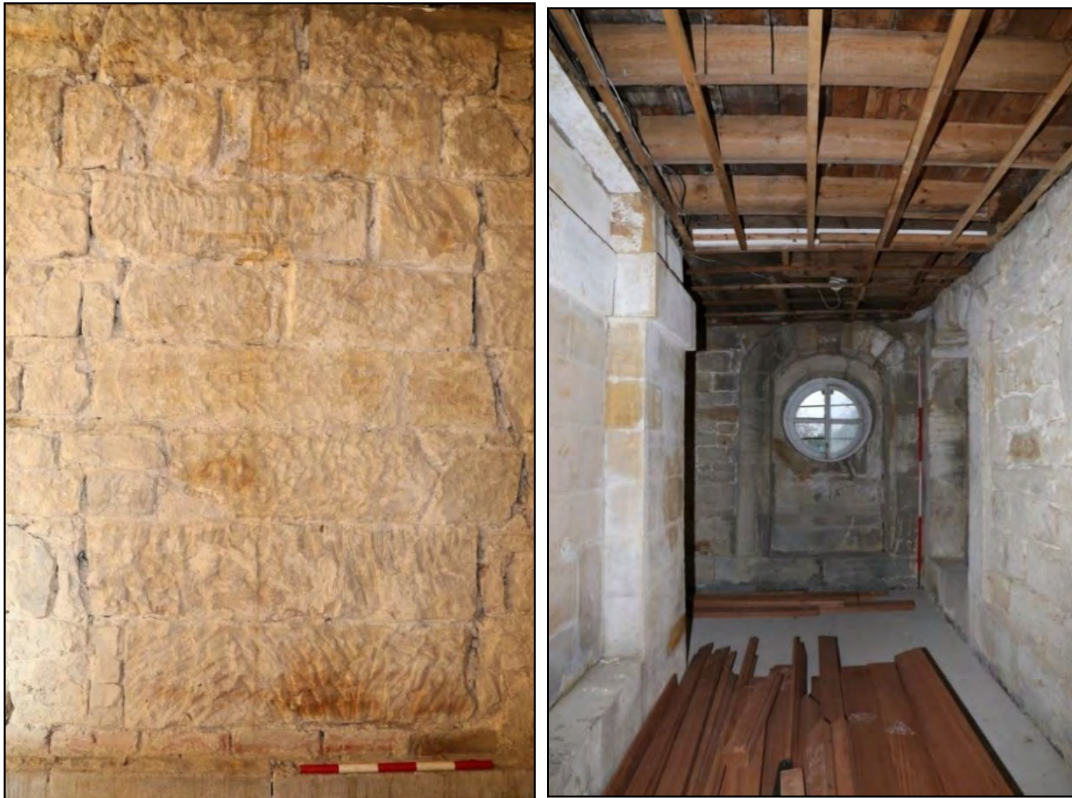
Item 7: watching brief during preparations for the repaving of the kitchen passage

- 8.48 A pre-intervention record of the kitchen passage area was conducted in October 2019 prior to the proposed repaving of the area and removal of the partition wall dividing the Central Hall from the West Wing.

- 8.49 The kitchen passage is shown on Dobson's c.1816 plan as a continuous corridor running from the kitchen in the West Wing into the Central Hall (Simpson and Brown Architects 2017, fig. 59). The brick partition wall was probably added following the fire in 1822 when the Central Hall was effectively abandoned. This formed two separate areas – the west and east kitchen passages.

West kitchen passage

- 8.50 The west kitchen passage comprised an L-shaped corridor that ran along the east side of the ground floor, with the shorter section pointing east (Fig. 8). Along the west and south walls were five oculus windows that look out onto the gardens (two on the south wall, three on the west). The east and north walls were windowless, although there was evidence on both of blocked openings to the arcade. The floor in this area was of concrete screed.
- 8.51 On the north section of wall to the east of the corner turn, two cracks or joints were observed extending from the ceiling joists down to the base, covering the full height of the wall. These ran roughly parallel to each other, set approximately 1m apart. Spanning between, set just above the skirting, was a line of bricks. The feature lined up with a blind archway in the arcade behind the wall, indicating a former opening (Plate 55).



Plates 55, 56: (left) blocked opening on north wall in the west kitchen passage; (right) view down the kitchen passage looking south towards the oculus window.

- 8.52 The blocked opening on the east wall was approximately 1.5m wide and 0.3m deep. The stone visibly curved just below the ceiling joists, forming an archway that disappeared into the floor above. This formerly opened out to the arcade, providing access to the central courtyard and north portico. The extension of the arch into the ceiling indicates this has been lowered since construction.

East kitchen passage

- 8.53 The east kitchen passage was accessed from the courtyard via a door in the arcade or from the interior of the Central Hall via a door at the base of the west stair tower (Fig. 8). Both doors led into a small vestibule, separated from the rest of the corridor by a flat stone archway with dropped keystone (Plate 57). The entrance at the base of the stair tower was set in a rounded arched doorway with dropped keystone, within this a four-panelled door had been set, with boarded overlight above (Plate 58). The entrance from the courtyard was also set within an arched doorway. The floor at the time of survey was beaten earth. The brick partition wall blocked the west end of the passage.



Plates 57, 58: (left) looking east down the east kitchen passage towards the end vestibule. The flat arch with dropped keystone is visible in the foreground, and wooden plank door entrance into the arcade can just be seen to the left of the picture; (right) door into the west staircase of the Central Hall.

- 8.54 Three oculus windows lined the south wall of the passage, all of which were boarded up. There was also a small rectangular window set into the west wall adjacent to the door into the stair tower (Plate 59). Fragments of plaster remained *in situ* between the windows on the south wall. This had been scored to give the impression of ashlar. A similar treatment was recorded in the west passage and in the main corridor running along the front of the building. This treatment was rather poorly executed and fairly recent in date, perhaps dating from the period when the wings was in use for medieval banquets from the 1960s to 80s. The fact such treatment occurs in both passages suggests it was done before the brick partition was erected, this in turn dating the wall to a phase of modification by Lord Hastings in the 1980s.
- 8.55 Graffiti was observed in the east kitchen passage, written on the plaster on the south wall. This was recorded as part of item 11 (see below).



Plate 59: south-west corner of the east kitchen passage vestibule. The lit patch of plaster between the oculus windows contains the graffiti. The edge of the arched doorway is just visible in the far-left side of the photo.

Watching brief in the kitchen passage

- 8.56 In June 2020, a section of the concrete floor was removed (Fig. 8). Previously it was believed that the original flagstone surface in this area had been lost, and laying new paving was scheduled as part of the conservation works. However, during the excavations for the service trench the original flagged floor (167) was discovered intact and well-preserved beneath the modern concrete surface.
- 8.57 An area c.5m long and running the full width of the corridor (1.75m) was exposed during monitoring (Plate 60; Fig. 8). The flagstone floor was exposed across this area. It was constructed of sandstone flags, measuring c.0.55m by 0.55 to 0.70m. Above the floor had been placed a protective membrane over which a c.0.08–0.1m concrete screed floor had been laid. During investigations the concrete was carefully removed with a small electrical chisel prior to hand clearance, to ensure no damage to the underlying historic fabric.
- 8.58 Plans to lay new paving were subsequently revised, and the original flagstone surface left *in situ*. There was no excavation beneath the flagstone floor.



Plate 60: flagstone floor 167 in the west kitchen passage.

Item 8: recording of the upper flight of stairs replaced for new roof access

- 8.59 Historically, the upper flight of stairs in the north-west stairwell provided access to a roof hatch. However, at some stage (possibly in the 1960s) the roof hatch had been sealed and the stairs removed, and a new hatch opening inserted above the top landing. As part of the conservation work the original roof access arrangement was reinstated. A watching brief was conducted during installation works in February 2020.
- 8.60 Prior to modification, the upper flight of stairs had ended at a landing below the original loft hatch (Plate 61). Evidence of an earlier set of stairs remained visible as a scar in the plasterwork. Above the line of the stair, a patch of plaster was missing, exposing a brick wall beneath. This ran the whole length of the building, forming part of the west wall of the wing.
- 8.61 The upper landing cut across an 18-light sashed window located within a segmented-arched window frame on the west wall, that disappeared below the height of the landing. Around the window, a brownish-yellow plaster covered the wall (Plate 61). This had been scored to represent ashlar. The same decorative scheme was observed on the ground floor and within both sections of the kitchen passage.

- 8.62 The hatch opened onto roof 110, which was a flat roof with an eastward sloping rake toward gutter 116 (Fig. 9). The ceiling around the hatch was lath and plaster, with the laths laid across joists spaced 0.19m apart. The hatch opened onto the new sarking boards that rested upon the stone walls flanking either side of the stairwell. The wall joists supporting the ceiling were each set c.0.25m apart and were 0.1m wide.



Plates 61, 62: (left) looking south down the stairs to the original roof-hatch opening. The scar in the plasterwork associated with the original flight of steps can just be seen on the left side of the picture and on the right the wall is covered in 'mock-ashlar' plaster; (right) view up the stairs to the new roof hatch. The modern sarking boards are visible above.

Item 9: recording any historic paint detail exposed by the removal of paintwork

- 8.63 The historic paintwork of the ground floor and methods for its removal were the subject of a report produced for the National Trust by Cliveden Conservation Workshop Ltd (2018). Recording of exposed motifs and paint analysis was conducted by the National Trust conservation team. Following discussion, no additional work was carried out by NAA.

Item 10: recording during installation of the heating system

8.64 An intermittent watching brief was maintained during the installation of new heating and electrical services within the building. This was conducted alongside other site works.

8.65 During the installation of radiator piping in the front office of the West Wing (Plate 63) rough stonework was observed in the centre of the room, c.0.02m below the floor joints. Such a small area was exposed during the works that it was difficult to determine the nature of the feature and it was potentially the top of a drain (as observed in the East Wing) or an outcropping of bedrock. To avoid damage to the feature, the floor joists were cut and reinforced rather than risk breaking through into the possible historic fabric.

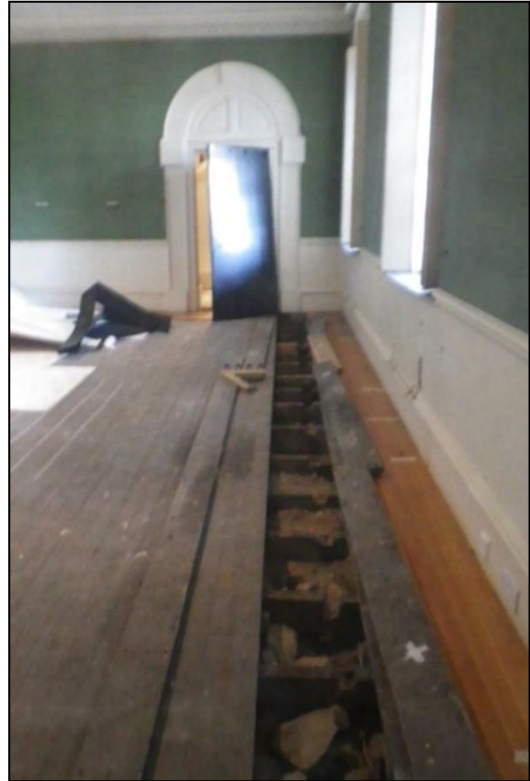


Plate 63: removal of the floor in the front office for installation of new pipework for heating.

8.66 No other remains or finds were identified during attendance.

Item 11: recording of graffiti in kitchen passage

8.67 Historic graffiti was identified in the east kitchen passage on the plaster between the two oculus windows on the south wall (Plate 64). This was recorded in October 2019, before the removal of the partition wall.

8.68 Some of the graffiti in this area was obviously modern, such as the blue 'FRED was ere 1972' and the name 'Ray' scrawled both above and below this. However, beneath all of these was an older inscription written in chalk in a flowing cursive script. This was well-preserved (despite the later over-writing), although the name was difficult to determine apart from the leading initial 'W'. Beside this was the word 'Ward,' in faint text and the date 'July'.

8.69 No other graffiti was observed in this area during recording, although more was found in the basement of the Central Hall.

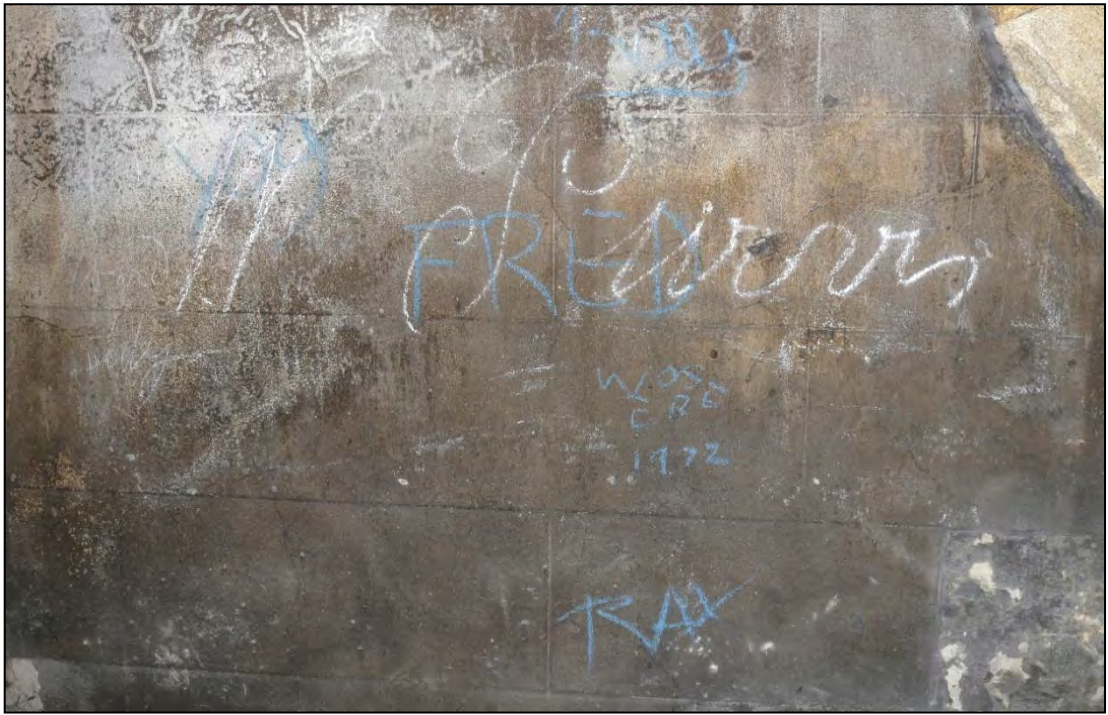


Plate 64: historic graffiti on the east wall of the kitchen passage.

Item 12: recording relating to masonry repairs

- 8.70 Additional recording was undertaken in June 2020 during the removal of the partition walls in the kitchen passage and discussed as part of item 7. All other masonry repairs were covered as part of items 2 to 8.

Additional works

- 8.71 In December 2018 additional monitoring was carried out during investigative drainage works in the service courtyard to the rear (west) of the West Wing. This entailed a watching brief during the hand excavation of an exploratory pit, c.1.0m in diameter, in the south-east corner of the yard (Fig. 8). This encountered the upper portion of a drain (32) running north-west across the area.
- 8.72 The drain had an oval or elliptical profile, with heavily mortared walls between 0.15m and 0.2m thick, constructed of roughly squared, unworked sandstone blocks, with sides averaging 0.15–0.4m in length. The upper arch of the stonework was 0.4m below the current yard surface and had been disturbed by the installation of two modern salt-glazed ceramic pipes (Plate 65). The drain was badly damaged as a result, and partially infilled with rubble and silt.



Plate 65: drain 32 with salt-glazed drain insertion.

9.0 RESULTS OF ARCHAEOLOGICAL WORK PACKAGE 11: THE CENTRAL HALL

Background

- 9.1 The Central Hall was designed by Vanbrugh c.1718–20 and largely completed by the summer of 1724 (Simpson and Brown Architects 2017). It is the only component of the Hall complex known to have been designed and fully implemented before Vanbrugh's death in 1726 and is aesthetically and socially the main focal point of the estate, encapsulating the social standing and aspirations of the Delaval family.
- 9.2 The building is square in plan, with polygonal angle turrets at each corner and two flanking square stair towers to the east and west. These are connected internally by a central corridor which runs along the spine of the building at all levels. The main accommodation spanned three storeys. The basement featured ervant halls, kitchen and storage areas; the ground floor comprised the entrance hall and saloon; and the upper floor contained bedrooms.
- 9.3 The depiction of the Central Hall in *Vitruvius Britannicus* varies slightly from the structure as built, although not to the same extent as is the case in the two service wings. Dobson's c.1816 plans of the Hall show the layout and function of each room in the building just prior to the 1822 fire which largely gutted all but the basement area (Simpson and Brown Architects 2017, 61; fig. 29). The conflagration is thought to have started in the south-east range which was so badly damage that it was eventually

demolished, with few surviving above-ground remains visible apart from the masonry scars and an appendage on the east walls of the central hall.

- 9.4 Dobson was commissioned to replace the roof c.1860 as part of a proposed consolidation programme, although this was never completed and much of the building appears to have remained unoccupied from this point onwards. At some point in the late 19th or early 20th century, the flagstones in the basement were removed (Simpson and Brown Architects 2017, 68).
- 9.5 In the 1950s the roof was again repaired, and various floors were re-laid in concrete. In 1960–62 the south portico architrave and frieze lintels were replaced. In 2014, the National Trust undertook repairs to the external masonry and interior stonework (Mosedale Gillatt Architects 2017b). As such, much of the structure was stable and in sound condition. The primary focus of The Curtain Rises conservation work was, therefore, the basement area where significant water ingress had resulted in damage to the historic fabric, exacerbated by a lack of ventilation. The exposed earth floor was also a concern, the uneven surface creating a trip hazard throughout (*ibid.*)

Previous archaeological works

- 9.6 In September 2017, 25 archaeological test pits were excavated throughout the basement as part of the preparation of the Phase 1 NLHF bid (Solstice 2017b). This work indicated that the Central Hall was constructed directly over the underlying sandstone with very little depth of soil between the existing ground surface and the bedrock. Deposits observed during the test pitting related to levelling and bedding for the former flagstone floor and were recorded as containing significant amounts of sandstone debris, degraded mortar and sand. These were, in part, interpreted as deriving from the demolition of the earlier Tudor/Stuart mansion.
- 9.7 The only room with a significant depth of deposits was B10 (Fig. 10), in the south-west corner of the building, identified on Dobson's plan as the Footmen's Room. Here evidence of a brick floor and drain were identified, interpreted at the time as evidence of a building pre-dating Vanbrugh's 18th-century Hall, although subsequent investigation suggests that this was not the case.
- 9.8 Between November 2017 and January 2018 archaeological monitoring was also conducted during the installation of new drainage around the western, southern and eastern sides of the Central Hall (Solstice 2018). This uncovered fragment of the

demolished south-east range illustrated the accuracy of Dobson's 1817 plan. However, the demolition was found to be extensive with most of the worked stone elements previously removed, although fragments of brick forming the rubble core of the south wall were recorded.

Archaeological works package 11

9.9 Works on the Central Hall as part of The Curtain Rises project took place between June 2019 and February 2020. AWP 11 comprised seven separate items, predominately related to archaeological monitoring during ground interventions in the basement, but with some limited historic building survey. As with the West Wing, all work was conducted in accordance with the WSI prepared by the National Trust (National Trust 2018e), negating the need for Item 1. The results of the remaining six items are detailed below.

9.10 The architect's room-numbering system was used throughout to ensure ease of reference. This was also used during the 2017 evaluation (Solstice 2017b). Within each room, contexts numbers were allocated to archaeological features and deposits. These are listed as part of Appendix A and illustrated on figure 10.

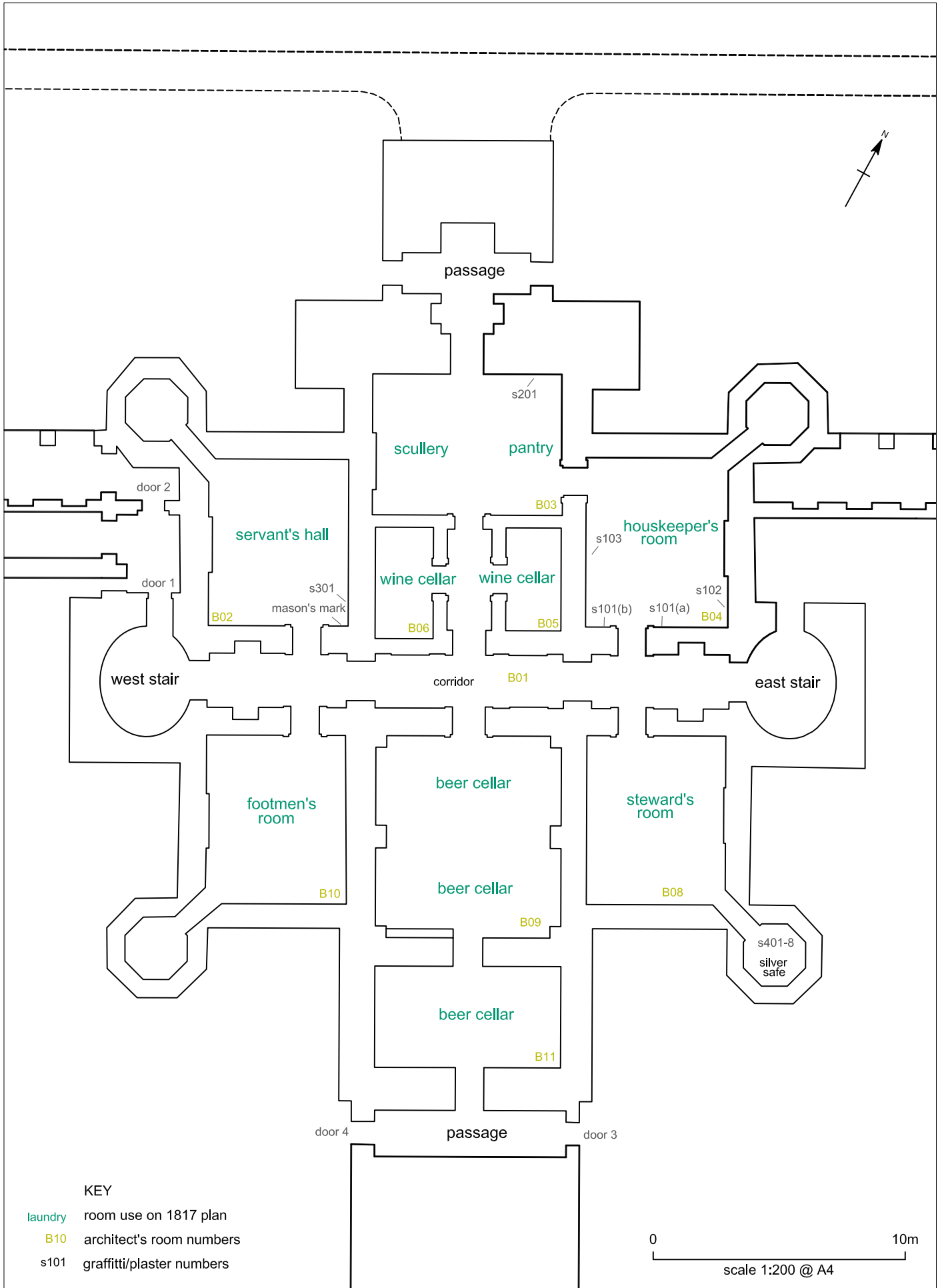
Item 2: archaeological record (photographic and written) of doors and overlight

9.11 There was some confusion as to what this item related to that was never fully resolved. However, a record was made of the main doors effected by the conservation works.

Kitchen passage

9.12 The door leading from the east kitchen passage (Fig. 10) into the basement of the Central Hall via the west stair tower (door 1) was a four-panelled door, with fielded panels which were longer at the top. This type and form of door suggests a late 19th-century replacement rather than original Georgian timberwork. The door opened to the right, to enable it to be opened with the left hand if the right hand was carrying goods from the kitchen. Both the handle and lock plate were missing. A wooden panel blocked the overlight (Plate 66).

9.13 A wide door that seems cramped in the frame raises the question of whether the arch was originally open to provide easy through-access from the kitchen to the service areas and servant's (west) stair. Obviously, with the current configuration draughts would be an issue coming through the opening at the east end of the arcade, although this may be a later modification.





Plates 66 and 67: (left) door into the Central Hall from the east kitchen passage; and (right) door from the arcade into the same.

- 9.14 The door leading from the arcade into the kitchen passage (door 2) was of a simple plank and batten construction with iron hinges, latch and lock. The door was fitted in a crude wooden architrave with wooden panel in the overlight space. The threshold was c.0.25m above ground level of the kitchen passage. This type of poor-quality door is usually consigned to areas away from public view; however, this would have been clearly visible from the front arcade. With the height of the threshold and the interrupted stonework, it is clear that this was a later modification in what would have been a blind arch along the rear wall of the arcade. It was likely inserted when the kitchen passage was blocked, probably in the late 19th century.

South portico

- 9.15 With reference to the architect's proposals (Mosedale Gillatt Architects 2017b) the only other doors to be extensively modified as part of the conservation works were the two doors located beneath the south portico (doors 3 and 4). These were to be removed and replaced by metal gates to improve air flow into the basement. Both were plain wood-and-batten doors, installed fairly recently and of no specific heritage significance.

Item 3: record exposed masonry in the cellar after removal of cementitious render and prior to masonry repair works

The basement

- 9.16 Archaeological monitoring and recording in the basement was conducted over several phases from December 2019 to February 2020. The basement covers an area of approximately 450m² and was located c.2m below the ground level of the central courtyard. A limited amount of natural light was cast into the interior through windows, enhanced by additional artificial lighting provided by the contractor during site works.
- 9.17 The basement is divided into a number of rooms (Fig. 10), separated by a central access corridor running east to west between the two stair towers (B01). Doorways beneath the flanks of the north and south portico steps provide direct access to the area from the pleasure grounds and central courtyard. Dobson's c.1816 plan shows that accommodation in the basement at the start of the 19th century comprised: Servants' Hall in the north-west corner (B02); Housekeeper's Room (B04) in the north-east corner (with lockable storage area in the base of the north-east tower); Steward's Room in the south-east corner (silver safe in the south-east tower), and Footmen's Room (B10) in the south-west corner. The rooms in the intervening central space (B05, B06, B09, B11) were used for the storage of beer and wine; except for B03 on the north side, which was formerly divided in two, with a scullery on the west side and pantry on the east.

Pre-intervention record

- 9.18 A pre-intervention record of the basement walls was conducted in October 2019. Each room was visited and any areas where plaster and/or graffiti was found were photographed. Features were then marked on the existing architect's drawings (Fig. 10).
- 9.19 At the time of the survey, plaster was preserved *in situ* in only four rooms (B02, B03, B04, B08), two of which also featured graffiti. Each feature was assigned a context number, prefixed with the letter 's' for survey to distinguish them from the later monitoring. The architect's room numbers were used throughout.

Room B04

- 9.20 The south wall of B04 featured several examples of graffiti, some of which were very faded. There was plaster (s101) on both sides of the door leading through to the central corridor (B01) but graffiti only on the east side (s101a). The most prominent graffito on this wall was the name 'John Jineson' (?) written in pencil and dated July 1893 (Plate 68).

Below this was an inscription, the bottom of which had unfortunately been rubbed out making it illegible. A further, faded inscription was identified just above this which was again indiscernible. There were several other markings below the aforementioned inscriptions, none of which were legible.

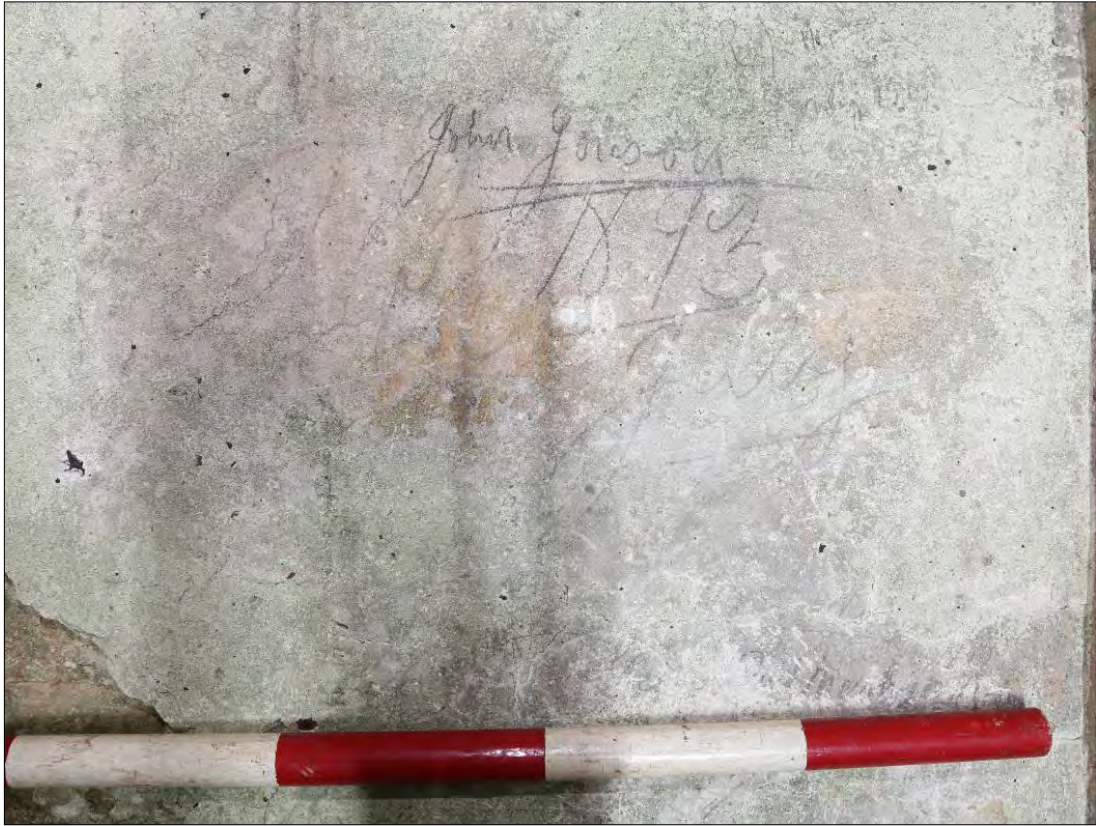


Plate 68: 'John Jineson(?) 1893 on the south wall of B04 (s101a).

- 9.21 On the west wall of B04 was a small panel of plaster (**s103a**) surviving to the south of the door (Plate 69). Several names were written on the plaster in pencil, not all of which were legible. In the upper south (left) corner, below a faint inscription, was the word 'winter'(?). There were a number of other names below, most of which could not be deciphered except for the name 'George Gibb' written in large text, and 'George Parkers' written diagonally.
- 9.22 Most of the graffiti on the west wall (**s103b**) was on the plaster by the door apart from three inscriptions marked directly on the masonry in the centre of the wall (Plate 70). The first was very faint and read 'Delaval'. To the south (left) of this was a large 'W' in a different colour and probably of a later date. White lettering was written over the top of 'Delaval' but was so faint it was impossible to discern what it said.



Plate 69: panel of plaster (s103a) beside the door on the west wall of room B04.



Plate 70: graffiti on centre of west wall of room (s100).

Rooms B03 and B02

9.23 Plaster was found in both of these rooms, but no graffiti was identified.



Plate 71: plaster (s201) preserved on the north wall of the pantry (B03).

Room B08

9.24 Graffiti was found on seven (s402–408) of the walls of the octagonal silver safe in the south-east turret (B08) of the Steward's Room. This was accessed through a metal door inscribed 'FBD 1753' for Francis Blake Delaval. On the other side of the door (s401) was the name 'B Watson' written in black. Further down the wall were several initials. An 'N' was visible above a possible 'H J' above further initials reading 'D G H'. Indistinct lettering was also found further down the side of the door but could not be discerned.



Plate 72: graffiti beside door to s400, looking north-west.

9.25 Several names were inscribed on the north wall of the silver safe including:

- 'Vera Hettic,' near the top of the wall (Plate 73);
- 'Jon ...' whose surname was indecipherable;
- 'May Laidler';
- 'Hoyt', dated 1907;
- 'W E Pears' and 'R Pears' (?) dated 1919;
- 'S F' dated 1919 (?);
- 'B Parker' dated 1991 (?); and
- 'H Heston' dated 1975.

9.26 There were also several indecipherable names.



Plate 73: graffiti on wall s402, looking north.

9.27 Names inscribed on the north-west wall (s403) (Plate 74) were:

- 'Mark Hedley, Seaton Sluice';
- 'N. Ross' and 'N Woolford,' dated 1941 (?);
- 'Richard Shippen', 'Lewis Nainey (?)' and 'Mark Melkerren (?)', who all wrote their names above each other;
- 'Jose Felts,' dated May 1995(?); and

- 'S Jack 18(?)97'.

9.28 A line is also marked on the wall reading 1300 beside which was written 'MT 12½ RS' (?) associated with a measurement, perhaps a child's height.

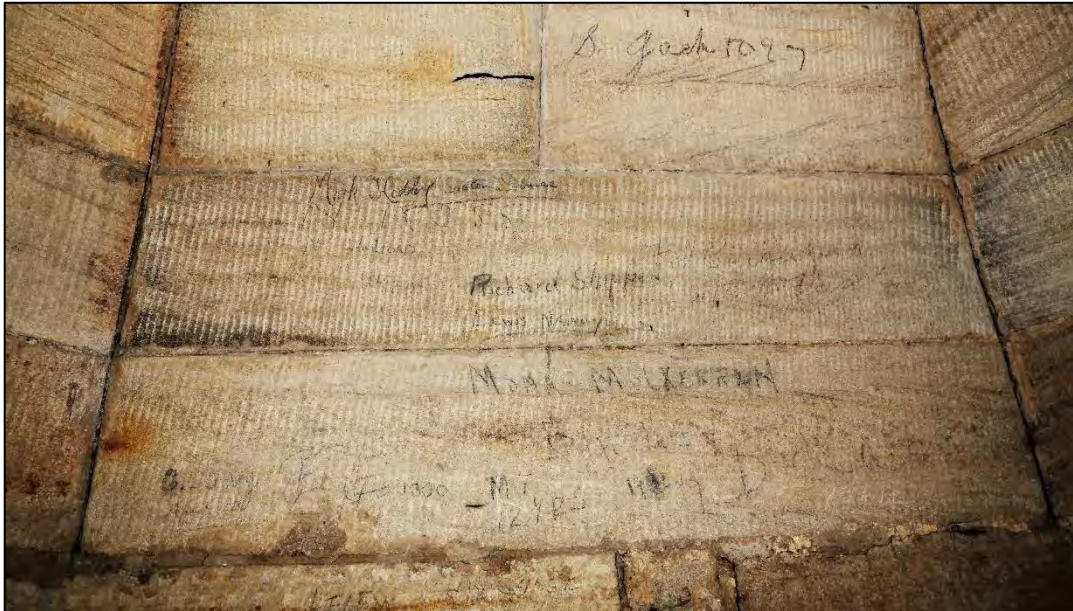


Plate 34: graffiti on north-east wall (s403).

9.29 The east wall (s404) featured some distinctive graffiti (Plate 75) that read 'M Richardson Alston, O Fryer Alston, P Chaplin 1928'. Beside these names was the name 'R Hedley FJN... 1956' and '... Findlay' dated 10th September 1953.

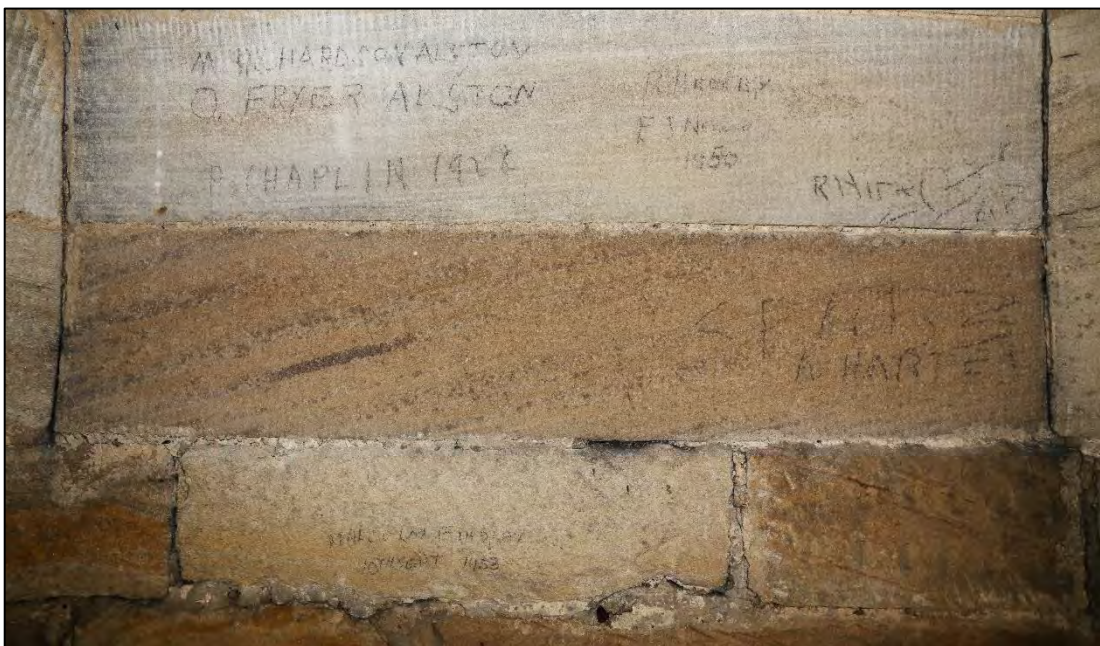


Plate 75: graffiti on east wall (s404).

9.30 On the south-east wall (s405) (Plate 76) were the inscriptions:

- 'W. Stewart 1950';
- 'DH 1951';
- 'BP 1990';
- 'RR 1915';
- 'TK 1951'; and
- 'JO ST(?)'.



Plate 76: graffiti on south-west wall (s405).

9.31 The inscriptions on the south wall (s406) and south-west wall (s407) were largely indecipherable except for the name 'Ana'. The west wall (s408) was devoid of graffiti.

Recording after the removal of the render

9.32 A second visit was made in June 2020 when most of the plaster/render had been removed. During this visit, no features of significance were observed.

Item 4: watching brief during excavations to reduce levels to install new bedding for flooring in basement

9.33 Excavation in preparation of the installation of a new flagstone floor began in December 2019. The backfill in the basement rooms was removed by hand by the contractor, under

archaeological supervision. The area was then cleaned and recorded by the attending archaeologist.

9.34 In the rooms to the north of the building (B02–06; Fig. 11), the walls of the building sat directly on the natural bedrock. In the southern rooms (B08–10), a 0.3m-thick foundation course of heavily mortared rough sandstone blocks (200) was identified, bedded into the underlying natural clay. This variation in foundation technique was employed to accommodate changes in the topography and geology, providing an interesting insight into the 18th-century design and construction process.

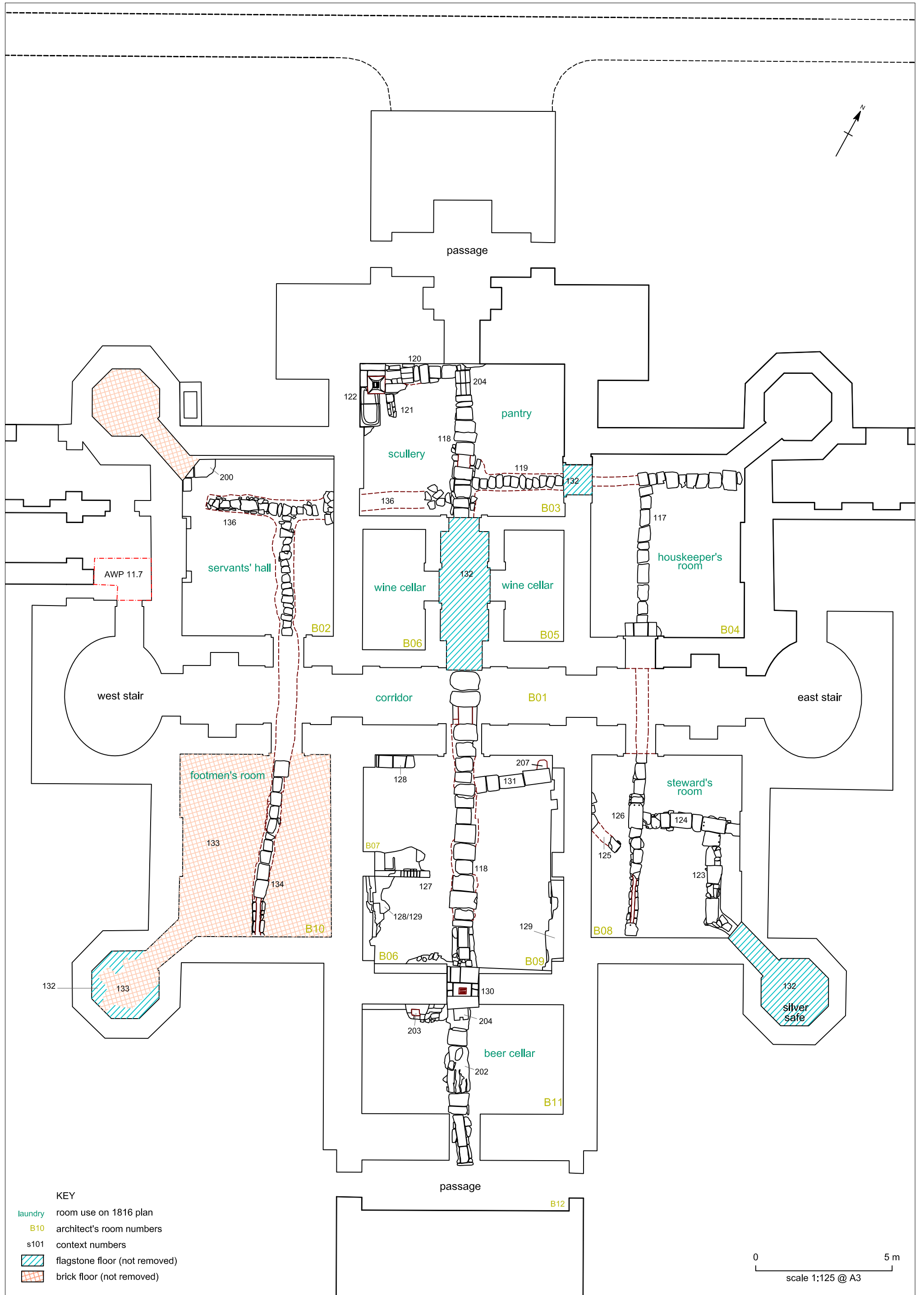
9.35 A similar variation was observed in the backfill of the rooms. On the south side, the rooms were backfilled with up to 0.3m of heavily compacted crushed sandstone and cream/brown sandy clay (135), forming a level surface and bedding layer for the flagstone floor (132). On the north side, the flags were bedded on a thin layer of sand laid directly over the natural sandstone.



Plate 77: remains of flagged floor 132 in the doorway between the pantry and Housekeeper's Room.

Flagstone floor

9.36 Fragments of the previous flagstone floor remained (132) in a number of rooms, with well-preserved *in situ* surfaces between room B03 and B04 (Plate 77), between rooms



B06 and B07, and in the locked south-east turret leading off from B08 (Fig. 11). The floor was the same in form as that observed in the kitchen passage, the flags measuring 0.55m by 0.5–0.7m and up to 0.12m thick. Across the majority of the area the surface had been removed in the late 19th or early 20th century.



Plate 78: drain 118 running north through the centre of the basement.

Drain 118

- 9.37 Running along the north-south axis of the building was drain **118**. This was the largest of the basement drains and ran northwards from B11, beneath the south portico, through to B03 (Plate 78). The exposed element of the feature was 29m long and investigations were made at intervals along its course, where modern activity had already disturbed the historic fabric. The drain was square in section with internal dimensions of 0.5m in width and 0.4m in depth. The side walls of the feature stood 0.3m high and were 0.15–0.2m thick, constructed of two courses of roughly squared sandstone blocks with a dressed surface on the inner face. Sandstone slabs were laid along the base of the drain, the full dimensions of which were obscured. The feature was capped with large flat

sandstone slabs, measuring an average of 0.4m by 0.65m and c.0.15m thick. These lay directly beneath the flagstone floor (132) (Plate 79).



Plate 79: drain 118 in B03, with capping stone removed to expose the interior construction.

Rooms B11 and B12

9.38 The southern end of drain 118 began at the door opening between B11 and B12. This was the highest point of the feature (the feature draining northwards) and had suffered considerable damage as a result, probably during the removal of the flagstone floor. There was evidence that the stone capping had been badly repaired by the addition of copious amounts of creamy white mortar (202). There was no trace of any form of inlet (Plate 80).

9.39 Moving north, in room B11 (located beneath the south portico) the remains of an outlet (203) were identified along the north-west wall. The outlet may have been associated with a 'stills sink', used in this case for the disposal of sediment associated with the storage of beer and wine. Masonry and architectural elements from this feature were recovered from the adjacent area during ground reduction. A sink (137) comprising a carved quarter-circle stone hopper was recovered, with a radius of 0.51m and a height of 0.23m (Plate 82). The exterior was heavily chisel-dressed while the interior was 0.16m in depth and quite smooth. There were eight perforations drilled through the base. The

setting for the sink (203) was a square, mortared-brick plinth with a curved stone upper surface matching the dimensions of 137. This stood 0.45m above the original floor level. At the junction of drain 202 and 118. The capping stones had been replaced by finely tooled coping stone measuring 0.52m by 0.45m (204). It is uncertain whether this formed part of later repairs or functioned as access for maintenance.



Plate 80: southern extent of drain 118 with capped end.

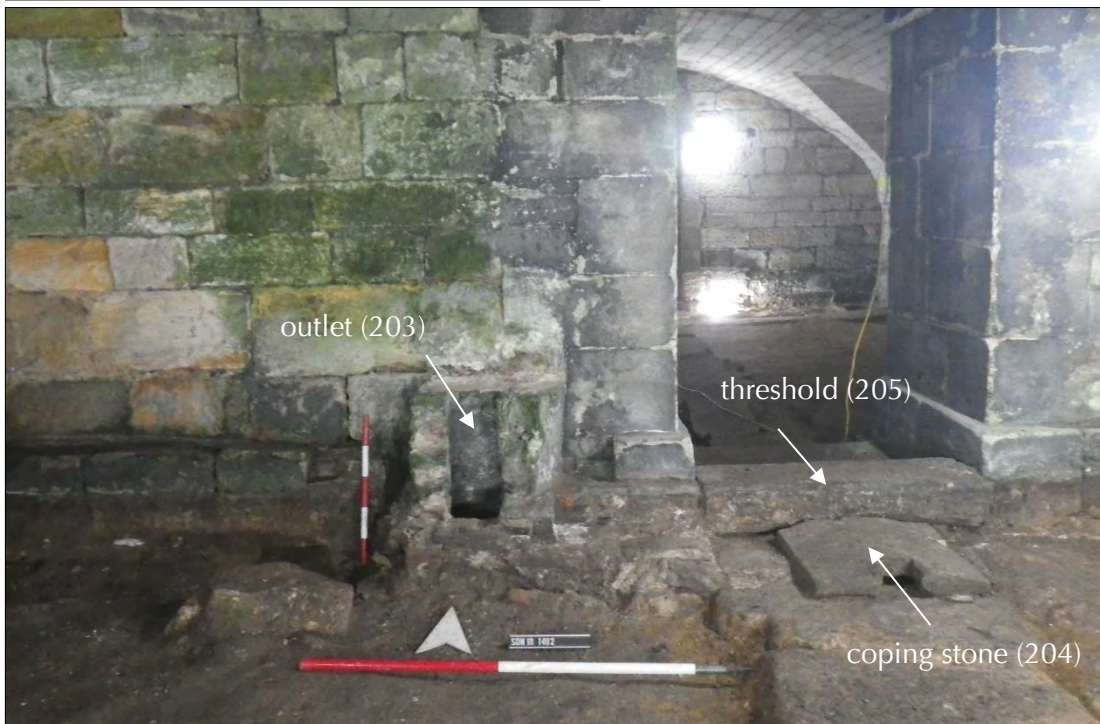
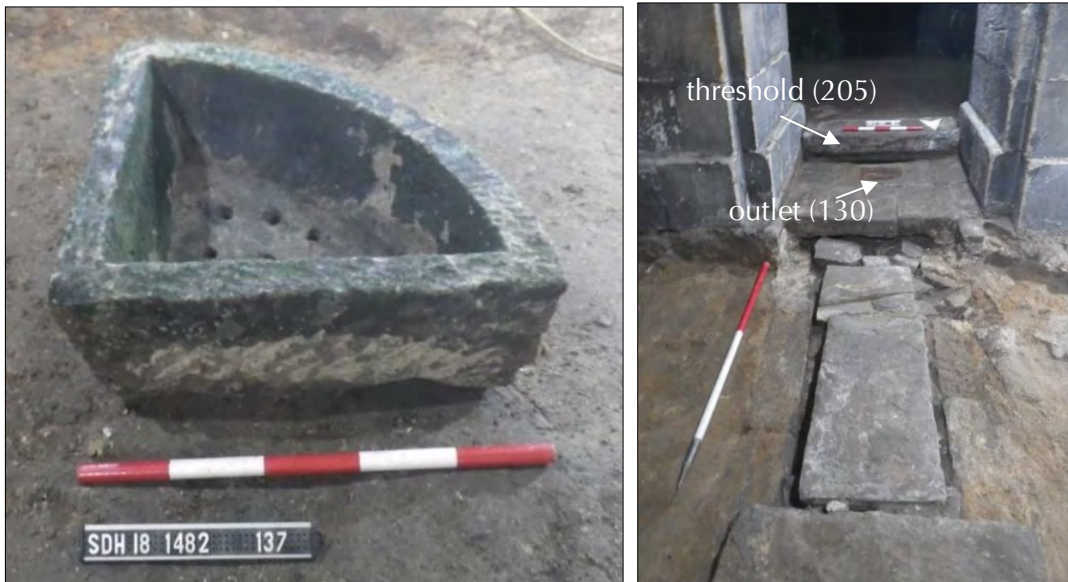


Plate 81: outlet 203 with coping stone 204 over drain 118 and step 205 on the right.



Plates 82, 83: (left) carved stone sink 137 with rough tooling and perforated base; and (right) drainage inlet 130 with threshold stone 205 in doorway and damage to drain 118 visible (room B09).

- 9.40 The threshold between B06/09 and B11 was set with a 0.25m² metal grille inlaid into a 0.65m² chamfered paving slab (130). The grille facilitated drainage from the flagstone surface. A threshold step, 0.2m high (205), had been inserted above the remains of this, partially covering the metal grill (Plate 83). This was therefore clearly a later addition.

Room B06/07/09

- 9.41 Combined these three rooms formed the largest open area within the basement, measuring 7.3m east to west and 8m north to south. Dobson's plan shows this area was used as a beer cellar (Fig. 10), divided east to west along a central access route. This ran along the line of drain 118, which would have been concealed beneath the flagstone floor. On both sides of the room, a low barrel-vaulted ceiling rose from a central pier.
- 9.42 Excavations within B06/07/09 exposed the remains of a brick wall (127) and a series of surfaces (128 and 129). Three courses of wall 127 survived, built of red-orange handmade brick, measuring 0.08m by 0.11m by 0.24m and set in grey mortar flecked with white. This was bedded directly onto the natural sandstone. The wall ran east from the south side of the central pier and was 2m long, creating a bay within the south-west corner of the room (Plate 84).
- 9.43 Running south of the wall was a 0.15m-thick deposit of coarse, friable, black ash and clinker (207) featuring large amounts of broken glass and other debris. This had been

compacted and overlain with c.0.05m layer of compact, set white mortar (128), in top of which were visible the impressions of a series of paving slabs (129). These remains relate to a platform for the storage of beer casks and barrels (there would have been a wooden cradle above) and are similar in construction, if not in exact design, to the wine bins which survive *in situ* in B06. The debris in deposit 207 is interesting and is likely to be evidence of demolition debris from former Tudor/Stuart mansion, utilised as backfill during the Hall's construction. Evidence of similar material was identified during the 2017 evaluation (Solstice 2017b). Alternatively, it could be debris from the 1822 fire or possibly associated with restoration in the 1860s. However, there was little evidence that the basement was badly impacted by the fire, nor is there much other evidence of Victorian remaking in this part of the building.

- 9.44 In the south-west corner of the room (B06), within the area defined by wall 127, the floor level had been raised by 0.28m through addition of two courses of mortared bricks measuring 0.06m by 0.11m by 0.23m. Above this was an upper surface of stone flags, measuring 0.35m by 0.4m and up to 0.12m thick, bedded onto a layer of white mortar. This raised level was also evident in the arched recesses along the east wall. All are likely evidence of storage platforms.



Plate 84: wall 127 with mortared floor surface 128 to the south, overlain by raised area 129 against the west wall.

- 9.45 Another drainage outlet (207) (similar to 203 in B11) was situated in the north-east corner of the room B09. This was connected to 118 by a stone-capped drain (131) which ran on a slight south-west alignment. The area along the east wall, to the south of 207 and deposit 128, was heavily disturbed and a channel had been excavated beneath the main wall to connect with a small drain (125) in B08 (Plate 85). However, this apparently did not adjoin drain 126 that runs south to north across the room. This is an anomaly.

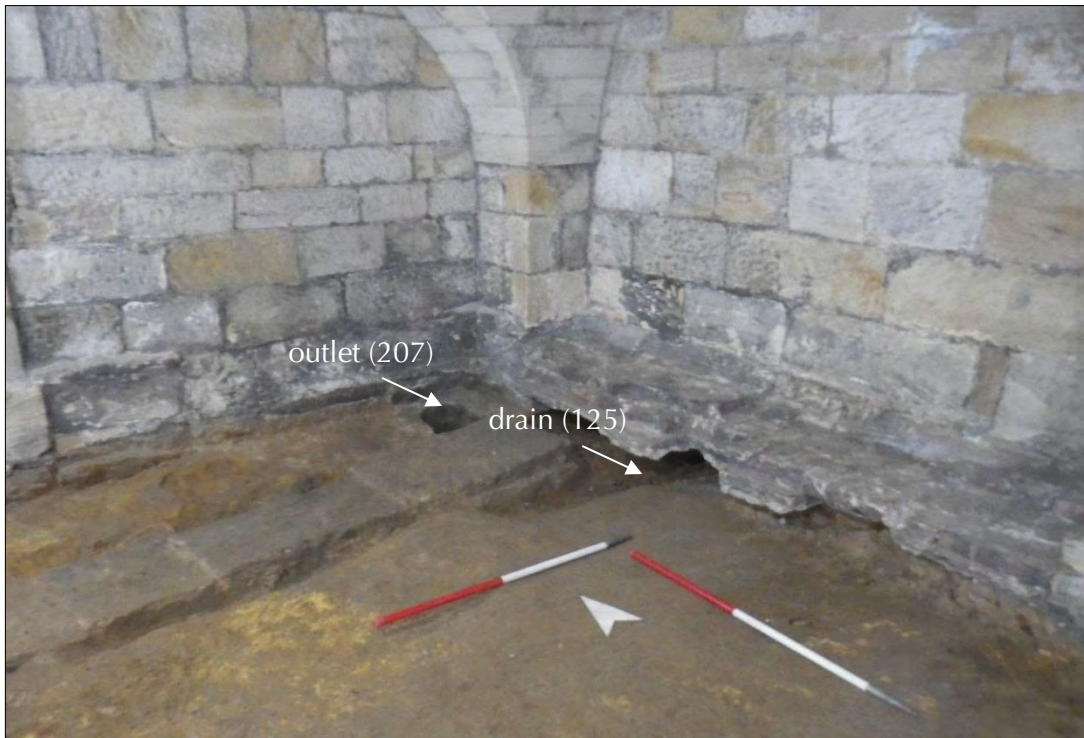


Plate 85: drain 131 and inlet 207 in the north-east corner, with disturbed area beneath floors 128 and 129.

Rooms B05 and B06

- 9.46 The flagstone floor (132) was *in situ* along the central access route north of corridor B01. Both these rooms are marked as wine cellars on Dobson's plan of the basement, and fitted with surviving three-tier wine bins built of brick with stone flag shelves (208). These structures were bedded onto the natural rock, with the lower shelf raised above floor level and the uppermost forming decorative arches below the ceiling of the barrel-vault (Plate 86). The flagstone floor in these areas would not have run to the edges of the room but butted against the lower courses of the wine bins.



Plate 86: brick storage wine bins in B06, facing east.

Room B03

- 9.47 At the time of recording, B03 was a single open space, measuring 7.4m by 5.6m. It was originally divided into two service areas, with a scullery to the west and pantry to east. However, no partition walls were evident either on the ground or on Dobson's 1817 plan of the basement, the north-to-south access route provided the only division between the two spaces. The room was spanned by a barrel-vault roof which supported the north portico and front façade (Fig. 11).
- 9.48 Drain **118** ran northward across the room, terminating at the doorway leading to the passage beneath the portico steps. A second drain (**120**) connected with the main drain at this point, running west along the north wall of B03 towards the north-west corner of the room. This was different in construction from **118**. The side walls of the feature comprised five courses of red brick, rather than stone, each measuring 0.8m by 0.11m by 0.24m and held in white mortar. The internal dimensions of the drain were 0.35m

wide by 0.5m deep, and it was capped by stone slabs. At the junction of 118 and 120 the capping stones had been replaced with reused finely tooled coping stones (209) of the same type as 204 in B1, and a section along the course of the drain had been re-set with large quantities of thick white mortar (210). These were obviously episodes of later repair, potentially the result of water collecting in the area.

- 9.49 In the north-west corner of the room, drain 120 was overlain by a flagged area (122) that extended south for 2.3m along the west wall. South of this was a fireplace and range (211) used for heating water for the scullery, among other things. Two large stone slabs were positioned between the hearth and drain. These measured 0.65m by 0.8m and were 0.15m thick. A finely tooled raised lip had been cut around the outer edge of the stones to form a shallow dished area to channel waste water into 120 via a 0.2m-thick carved stone slab. This covered a 0.6m² area and was fitted with a 0.25m² metal grille, similar in design to 130 in B11.



Plate 87: drain 118 and hearth 211, with drainage area 122 and drain 120 in the corner, facing south-west.

- 9.50 Another small brick channel (121) adjoined 120 and ran parallel to the hearth for c.1m. The base of this was a line of slates, measuring 0.3m by 0.35m that were c.0.02m thick, laid directly onto the natural sandstone bedrock. On each side of the slates was a single course of orange-red bricks, measuring 0.6m by 0.12m by 0.25m, forming a narrow

channel. These were set in a thin white mortar bonding and capped with slate tiles 0.3m wide. The purpose of **121** was unclear. The northern end had been blocked by later alterations (**210**).



Plate 88: drainage area 122 and brick drain 121, with a phase of repair and alteration (210) to drains 118 and 120 visible along the north wall.

- 9.51 Drain **120** appeared to run beneath or through the west wall of the north portico to the exterior of the building, although there was no evidence of this visible at surface. It possibly ran beneath the north-west turret to connect with drain **32** recorded in the kitchen yard.
- 9.52 In the south-east corner of B03, a stone drain (**119**) ran east through the doorway leading into B04 to connect **118** with drain **117** (Plates 89 and 90). Drain **119** was square in section, 0.5m wide and 0.35m deep, and was cut into the natural sandstone. The edges of the drain were lined with unworked sandstone blocks, laid on edge to support square capping stones. These were generally 0.4–0.45m in width and 0.1m thick.
- 9.53 There was an area of disturbed ground in the south-west corner of B03, where a scatter of construction stones (**136**) was recorded immediately west of **118**. These were similar in dimensions to those used in the construction of **119**. Some were clearly bedded on the upper surface of the natural sandstone and appeared to be associated with the remains of a drain extending west into B02. Drain **119** flowed west from the B03 to

connect with the central drain (118), and drain 136 ran east from B02 to connect with the same (Fig. 11).



Plate 89: B03 looking south-east with drain 118 running south beneath the preserved area of flagstone floor between B05 and B06. Drain 119 also visible running east into B04.

Room B04 and B08

- 9.54 Drain 119 ran parallel to the north wall of B03, extending from the doorway to the north-east turret to run beneath the *in situ* fragment of flagstone floor (132). The drain consisted of a simple channel cut directly into the bedrock and was not lined. It was intersected by a second drain (117/126) that ran northwards along the east side of the basement (Plate 90; Fig. 11). This crossed through corridor B01 into B08 to exit the basement beneath the south wall of the Central Hall.

The construction of the drain changed in B08 (Plate 91), with a move from stone construction to a mixture of reclaimed bricks and masonry held in mortar. The reason for this is uncertain. It may indicate the drains on this side of the property were installed at a different time from those on the north. Alternatively, it may reflect a change in the readily available building material, or possibly it is associated with the changing nature of the underlying geology south of corridor B01, because the permeable nature of the

drift clays and sands here required a more water-tight solution than the sandstone bedrock to the north.



Plate 90: B04 during ground reduction, with drain 126 running north-west and drain 119 on the north side of the room.



Plate 91: B08 with drain network 123/124/126 and fireplace 212, facing north-east.

- 9.55 Three further drains were identified in B08, forming an interconnecting network beneath the floor surface. Drain **124** was of the same build as **126** and ran east, exiting the building beneath fireplace **212** in the east wall. Drain **123** intersected **124** and ran south, parallel to **126**, into the silver safe in the south-east tower (Plate 92) from where it probably vented out of the building.



Plate 92: hearth 212 overlying drain 124, with capping to drain 123 in the foreground.

- 9.56 The stones capping the drains in this room were reused stone roof-slates; the carved peg-holes are clearly visible. These, and the supporting handmade bricks used in the construction of the drains, were probably reclaimed from the demolition of the earlier Tudor/Stuart mansion house (Plate 93). Many of the roofing slabs showed signs of damage prior to reuse. One complete example was recorded at the junction of drains **126** and **124**. This substantial roofing stone measured 1m by 0.55m, with a thickness of just over 0.05m (Plate 94) and was carefully removed and retained for future display.
- 9.57 To the west of drain **126**, a disturbed alignment of stones (**123**) ran north-west beneath the west wall of B03 and into room B09. This coincided with an area of disturbed ground observed beneath floor **128** around drain inlet **207** in the same room. The reason for this arrangement remains uncertain. It may have been a later insert to provide additional drainage or provide access to clear a blockage.

- 9.58 In the south-east corner of B08, drain 123 ran beneath the doorway to the silver safe. The iron door into this area was locked and corroded shut until recently which probably accounts for the preservation of the flagstone floor in this area. A section cut beneath the threshold to the door provided a good indication of the sequence of deposits in the room (Plate 95).



Plate 93: drainage network 123, 124 and 126 in room B08, looking south-west.



Plate 94: reused roofing slab overlying junction of drains 126 and 124.

- 9.59 A single course of orange-red bricks (201) overlay the levelled natural clay and capping of drain 123. Although showing traces of mortar, these were not bonded together but laid face down to form a level surface. The bricks were handmade, the visible dimensions being 0.11m by 0.06m. The layer of bricks was set at the same level as the base of the wall foundations and overlain by a 0.12–0.15m-thick deposit of mixed sands and clays (135). Above this was a thin deposit of white mortar, providing a bedding layer for flagstone floor 132.



Plate 95: section showing sequence of basement deposits as preserved beneath the door to the silver safe. Drain 123 in the foreground.

Rooms B10 and B02

- 9.60 Ground reduction within the B10 – the Footmen’s Room - in the south-west corner of the basement revealed a substantial brick surface (133) covering the full extent of the room together with the adjoining south-west turret (Fig. 12). A stone-capped drain (134) ran northwards, bisecting the room (Plate 96). This was lined with sandstone blocks and similar in construction to 126 in B08 (Plate 96). The interior dimensions of the drain were 0.12m wide by 0.2m deep, and it was capped with stones measuring c.0.4m by 0.7m, that were 0.05 thick. These were very similar to the stone roofing tiles covering drain 126. However, a liberal amount of white mortar had been applied to the upper surface of the stones, either during construction or as part of a later repair, obscuring



detail of the stonework. As such, it was not possible to confirm any evidence of peg holes which would identify these as roof tiles.

- 9.61 Surface **133** comprised a single-course brick floor covering the whole room. This was laid directly above the natural clay deposits. The handmade bricks were dark orange in colour and measured the standard 0.23m by 0.11m by 0.06m. They were laid in rough lines generally running south-west to north-east across the room, although there was a marked change in direction in the areas around the doorway into B01 and along the sides of drain **134**.



*Plate 96: drain **134** and brick surface **133** in B10, the Footmen's Room, facing south-east.*

- 9.62 The bricks were laid face down (none were frogged) and pressed into the underlying clay without any form of bonding material. Traces of a creamy-white mortar were visible on the surface of some of the bricks, although not in significant amounts. Also, there was no discernible pattern of distribution of this across the room. Instead, the mortar was more consistent with the type of residual remains left on reused brick which had formerly been set in a wall or similar structure. Later analysis of the B10 bricks indicated they were all 16th to early 17th century in date. This, together with the mortar, would be consistent with them being salvaged from the demolition of the earlier Tudor/Stuart mansion.



Plate 97: southern extent of drain 134, showing stone walls and brick surface 133.

- 9.63 The surface appeared to be similar in construction to that observed in the south-east turret (silver safe) as did the sequence of deposition. Brick surface **133** was laid directly over the natural clay at the same height as the bottom of the wall foundations (**202**). Above **133** was a compacted deposit of mixed clays and coarse sands c.0.15m thick, which was overlain by a thin white mortar bedding for the flagstone floor (**132**) (Plate 98). This sequence was also observed within the south-west turret where fragments of **132** remained *in situ* (Plate 100).
- 9.64 Drain **134** was the primary drain on the west side of the basement. At its northern extent it adjoined drain **138** in B02, and then ran southwards for 16m to vent out beneath the south wall in B10. It probably then continued outside the building to connect with the wider drainage network, such as that observed in the kitchen yard, although the exact nature of this is unknown. Like drain **127** in B08, **137** had stone side-walls and stone capping but no base, being cut directly into the natural geology.
- 9.65 In B02, drain **136** ran east to connect with the main drain (**118**), corresponding with drain **119** on the east side of the basement (Plate 99). Both channelled wastewater and seeping groundwater from the side rooms into **118**. Extensive disturbance of the deposits beneath the east wall of B02, where the drain had been excavated beneath the wall foundations, indicate that the drainage system was added to or modified at some stage

after the setting out of the walls, although the length of time between the two events is unknown.



Plate 98: brick surface 133 at foundation level, with the remains of infill 135 visible under flagstone floor 132 and fireplace 213; facing south-west.



Plate 99: drain 136 and damage to the east wall caused during construction.



Plate 100: foundation course 201 and remains of floor make-up within the south-west turret, with groundwater seepage in brick surface 133 at the far wall.



Plate 101: monitoring during drainage works to the east of the Central Hall.

Item 5: watching brief during excavations for new drainage

- 9.66 An archaeological watching brief was maintained during the installation of new drainage on the south-east side of the Central Hall in August 2019 (Plate 101). A 0.3m-wide channel was cut through modern gravels revealing a substantial modern drain running north to south along the base of the adjacent embankment which was over 1m wide and filled with hardcore and terram. This was inspected and found to be functional without the need for further intervention, and plans for the installation of new drainage in this area were modified. No other drainage works were monitored in this area. However, a watching brief was maintained during the installation of new paths and reported in the Pleasure Grounds report (NAA 2020b).

Item 6: north and south portico steps – record exposed masonry substructure once exposed by buildings works contractors

- 9.67 Water ingress over time had resulted in significant damage to both the north and south portico steps. Water had also tracked through cracks and permeated into the rubble superstructure and had seeped into the basement, adding to the issues in these areas. As part of the conservation works the principal flight of steps and the upper platform of both stairs were dismantled, repairs implemented, and a damp proofing system installed to arrest water ingress (Mosedale Gillatt Architects 2017b).



Plate 102: south portico steps prior to repair.

- 9.68 Both sets of stairs had been extensively repaired probably by Lord Hastings in the 1950s/60s, during which the original sandstone flags had predominantly been replaced by cast-concrete pavers.

The south portico steps

- 9.69 The south steps comprised an initial flight of concrete paved steps leading to a half landing set with stone flags. Above this is the principal flight of steps, the risers of which were situated directly above B12 and B11 in the basement. These steps led to the upper landing and the south portico. This was set with plain flagstones around the perimeter and a rectangular decorative section immediately below the portico roof.



Plate 103: pre-intervention survey of the portico steps showing cast-concrete pavers of the upper flight and flagstones of the intermediate half landing.

- 9.70 Several monitoring visits were made during the dismantling of the south portico steps in July and August 2019. Initially the concrete pavers were removed from the principal flight and the upper landing, revealing the concrete risers beneath. These were removed to reveal fragments of the original sandstone risers preserved beneath, although badly damaged.
- 9.71 The flagstones on the landings were also set in concrete, beneath which was a layer of cement mortar above a yellow-sand bedding layer (Plate 104). Below this was a mixed-rubble sandstone infill that formed the superstructure of the feature. Fragments of dressed

sandstone were evident in the fill, some of which from their dimensions were part of the original steps, while others were possibly demolition debris from an earlier structure. No diagnostic pieces of moulded stone or tracery were recovered. The original masonry sandstone risers of the upper landing were exposed during the works. These were set in finely jointed even courses, and measured c.0.6m by 0.35m (Plate 105).



Plate 104: principal flight of the south portico steps during excavation with the remains of the original sandstone risers exposed.



Plate 105: south face of the original upper landing riser exposed during excavation with rubble from the infill visible in the foreground.

North portico steps

- 9.72 The north portico steps were recorded during repair works in February 2020. At the time of recording, the concrete pavers had been removed exposing the concrete risers beneath; however, the lower flight of stairs had been covered for protection, leaving only the upper flight and half landing exposed for inspection.



Plate 106: sand-covered masonry, with one of the joints of the masonry visible.



Plate 107: concrete risers of the upper landing.

- 9.73 The steps were similar in construction to those of the south portico. A sandy bedding layer was visible extending across the half landing, below which was a sandy layer overlying the rubble infill (Plate 106). Only the surface of the infill was exposed at the time of the visit. Above the sandy bedding layer was a layer of cement mortar into which the concrete pavers had been set.
- 9.74 The risers were constructed of shuttered concrete, overlain on a sandy bedding layer (Plate 106).
- 9.75 No finds were identified during the monitoring.

Item 7: maintain watching brief during interventions to east and west stairs

- 9.76 The contractor's progress reports note that work on the stair repairs was conducted over several months beginning with the west stairs in July 2019, followed by the east stairs in February 2020. All repairs were largely complete by May 2020. No archaeological presence was requested by the contractor during this period. The conservation work was relatively limited in scope, comprising only the cutting away of damaged fabric and inseting of new stonework (Kevin Dunn pers. comm.). A photographic record was maintained by the contractors (see below).



Plate 108: primary and secondary indents in west stairs. Image provided by HPR.

Excavation at the base of the west stair

- 9.77 An archaeological watching brief was required during the excavation of a 1m by 1.6m area at the base of the west stair tower during the installation of an electricity supply to the basement. This was excavated by hand in June 2020 in a series of steps to a depth of 1m below the ground floor to a level at the base of the west stair tower. Disturbed

material (199) caused by earlier attempts to install a water pipe in this area was removed, leaving the existing archaeological features and stratigraphy *in situ* (Plate 109).

9.78 Natural sandstone bedrock (30) was encountered 0.9m below the current level of the corridor floor. A substantial 0.35m-high foundation course of mortared ashlar blocks (165) was recorded located directly onto the bedrock. This was 1m wide beneath the passage wall and 1.5m wide at the base of the west stair tower.

9.79 Within the trench, the passage had been infilled with dark brown/grey silt and clays with frequent angular sandstone fragments (164). This backfill deposit was over 0.6m thick and overlain by a flagstone stone floor surface (166) situated 0.3m above the wall footings and 0.25m below the current floor level in the passage. The individual stone flags were typically 0.50-0.7m and c.0.08m thick.

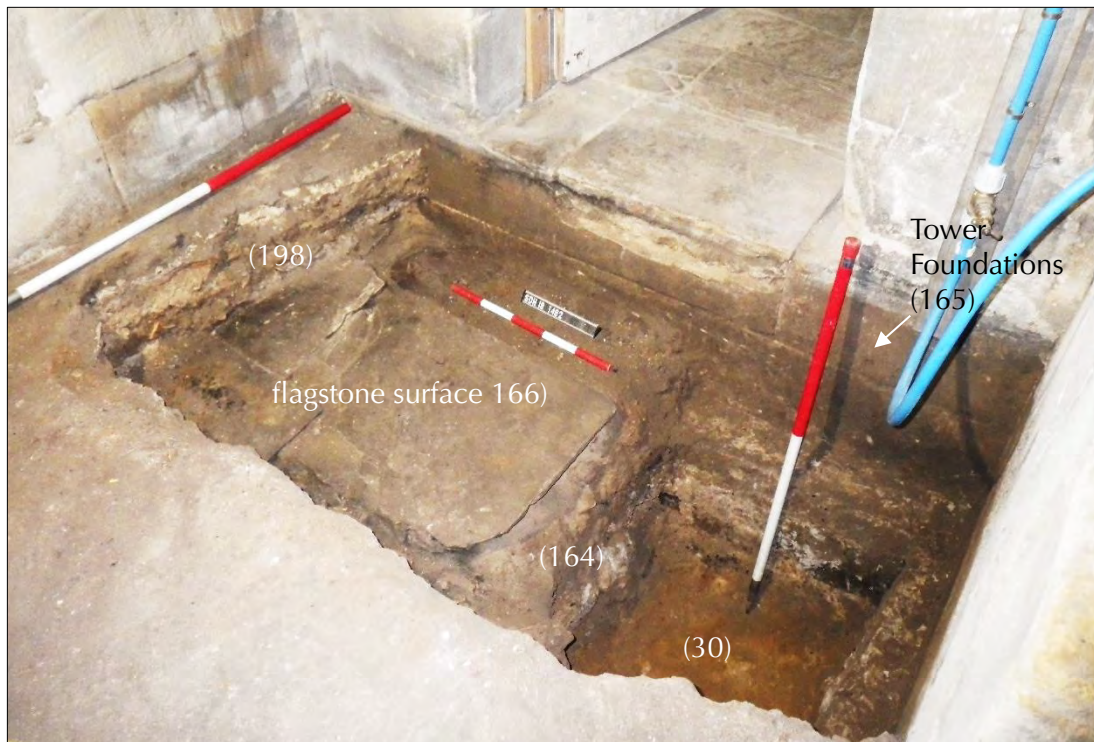


Plate 109: stepped excavation at the doorway to the west stair tower showing damage to the tower doorway, flagstone floor 166, and the tower foundations 165; facing south.

9.80 Above floor surface 166, the corridor had been backfilled and levelled with a mixed deposit of crushed sandstone, mortar and coarse soils (198). This compacted layer was over 0.24m thick and raised the passage floor to its current level.

10.0 RESULTS OF ARCHAEOLOGICAL WORKS PACKAGE 13: THE EAST WING

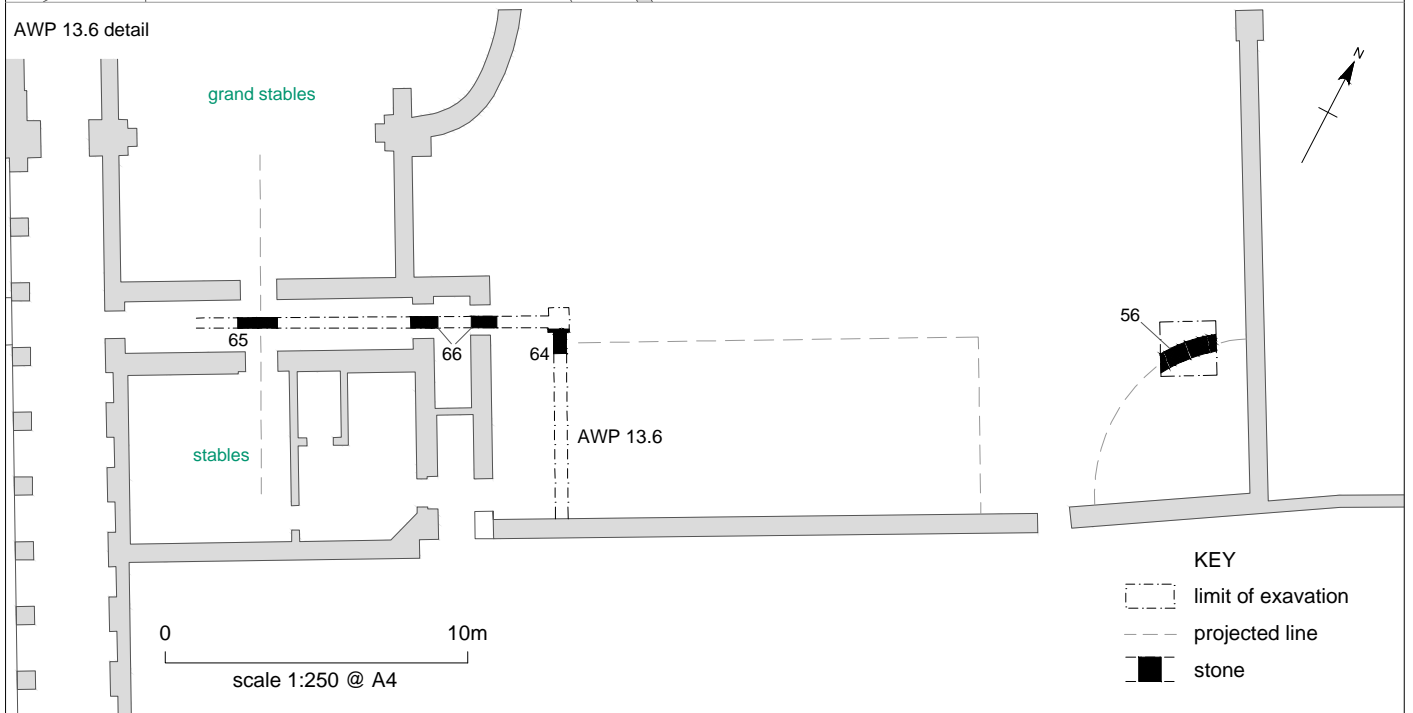
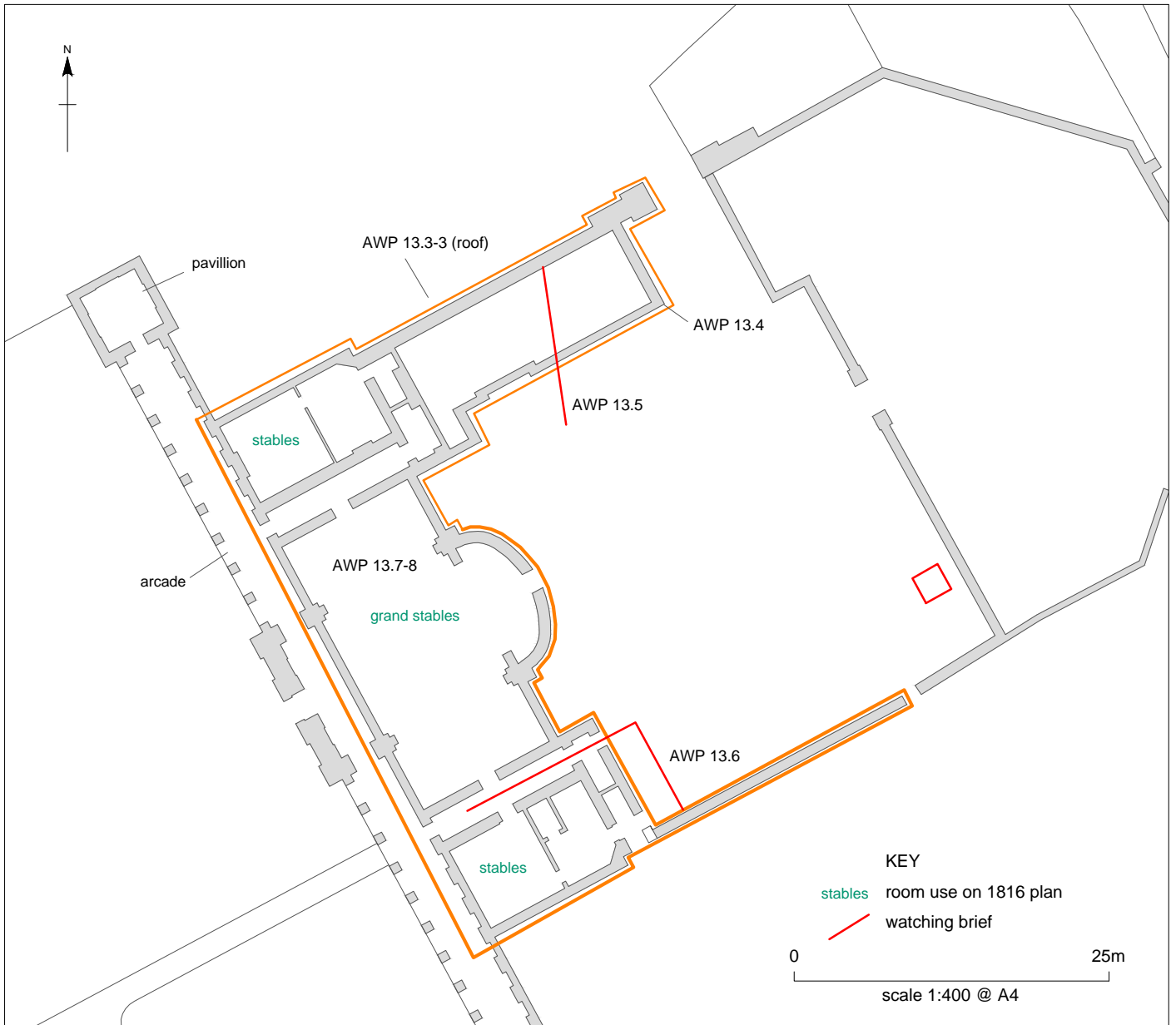
Background

- 10.1 Like the West Wing, the degree of Vanbrugh's involvement in the final design of the East Wing is a matter of some debate. Constructed in the 1730s to 1740s, the building is similar in design and form to the West Wing, although the internal layout is different. The gallery arcade shares the same dimensions as its counterpart across the courtyard, although there is no connecting passage to the rear. The south-east range, which originally would have adjoined the western arm of the arcade, was demolished in the mid- to late 19th century.



Plate 109: the East Wing before conservation works.

- 10.2 The double-height central stables dominate the East Wing, featuring an apsidal east bay that reflects the design of the West Wing kitchen. The room measured c.18.4m by 9.4m and was noted on Dobson's 1816 plan as the 'Grand Stables' (Simpson and Brown Architects 2017; fig. 59). At the centre of the Wing is the apsidal central stables, divided by an east-to-west through-passage from a room at each end. That at the north end (termed the north stables in this report) is adjoined to the east by the Carriage House, and that to the south (termed the south stables in this report) was formerly adjoined by a building (a conservatory?) now lost. The south passage led directly out to the east service yard, referred to as the stable yard. The north passage was modified when the Carriage House was constructed in the early 19th century. This later rectangular building forms the north side of the east courtyard (Fig. 13). The first-floor rooms were not visited during the works reported here but are recorded as bedrooms on Dobson's plan.



- 10.3 There is evidence – not least the building’s form - to suggest that the central stables were originally designed as a riding house and were converted to stables c.1770 following a visit by Sir Francis Blake Delaval to Lord Hopetoun’s stables in Scotland in 1768. There are two separate documentary references to the presence of a riding house at Seaton Delaval, the first in 1760 and the second 1769 (Simpson and Brown Architects 2017, 88).

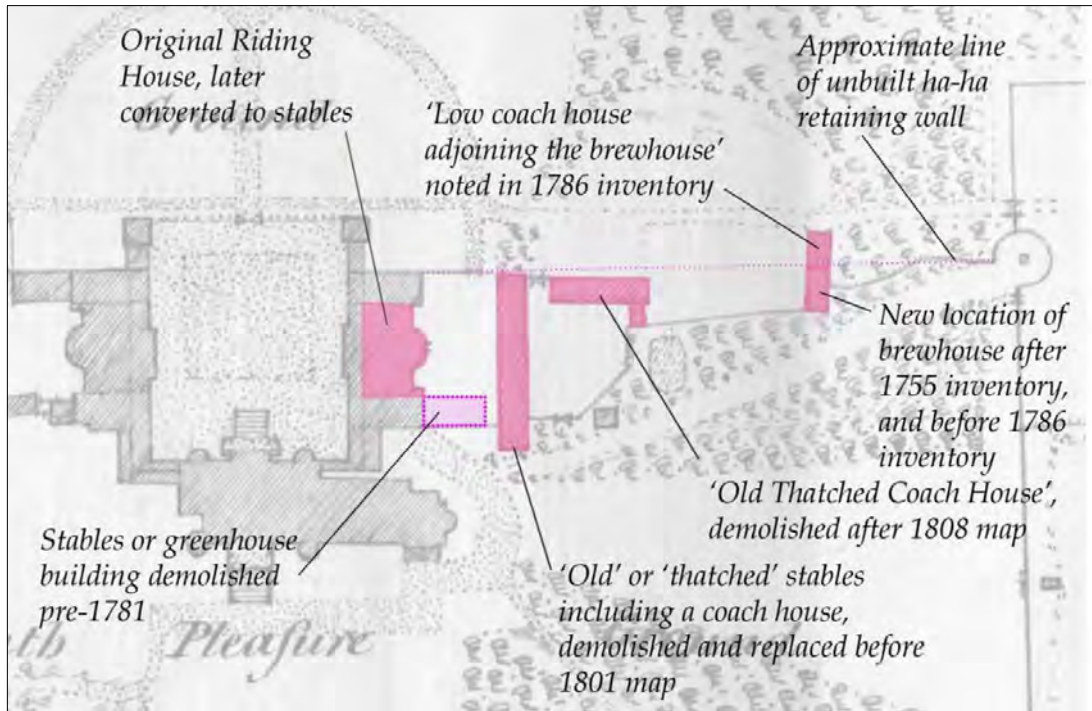


Figure 14: the area to the east of the East Wing showing the riding house, stables, coach house and brewhouse (from Simpson and Brown Architects 2017; Fig. 58).

- 10.4 Before the addition of the central stables there were three, possibly four, earlier stables and a two-coach house located in the area to the east of the East Wing. These were associated with the former Tudor/Stuart mansion, remaining in use some time after its demolition. A reference dated to 1778 mentions repairs to the thatch of the ‘old stables’ indicating some of the buildings were retained into the late 18th century and are shown on the 1781 estate map (Fig. 14).
- 10.5 John Dobson’s 1816 survey of the East Wing refers to all three ground-floor rooms as stabling, with stalling depicted for 22 horses: 12 in the central stable and five each in the north and south blocks. At first-floor level, two bedrooms were located at each end of the wing, flanking the double-height central stable. These provided accommodation for male servants and grooms. Access to the bedrooms was via a passage running along the front arcade.



Plate 110: apsidal end of the central stable and the north block, adjoined to the east by the 19th-century Carriage House.

- 10.6 The Carriage House is not shown on the 1781 estate plan or Dobson's 1816 plan and was presumably built just before the 1822 fire (it appears on the 1860 First Edition OS; Fig. 5). It replaced the two earlier coach houses shown on Figure 14.
- 10.7 As with the West Wing, the 1822 fire appears to have caused relatively little damage to the East Wing. When the Delaval family abandoned the Hall after the fire it is highly probable that they took many of the riding horses with them, leaving only those belonging to the agent and his household, along with the draught animals used on the estate. The ground-floor rooms of the north and south blocks were then used by Lord Hastings' land agent and their household, and estate workers.
- 10.8 The wing was likely requisitioned for use during the First World War, although there is some debate about whether this was limited to the West Wing only (Simpson and Brown Architects/Moody 2017, 93). During the Second World War the wing was used in part as a British military prison, and subsequently a Prisoner of War camp.
- 10.9 In 2012, the National Trust reroofed the East Wing and conducted a series of repairs. This was followed in 2014–15 by the installation of new drainage on the north side of the stable yard (Mosedale Gillatts Architects 2017c).

Previous Archaeological Works

- 10.10 In 2014 an archaeological watching brief was conducted during the installation of new drainage to the south of the Carriage House and east of the central stable (ARS 2014). No features of significance were identified.
- 10.11 In 2017 an archaeological watching brief was conducted during the dismantling of one of the surviving stone-built stall partitions in the central stables. Monitoring was also conducted during the excavation of a small hand-dug test pit to investigate the make-up of the deposits beneath the flagstone floor and presence of a possible drain (Solstice 2017b). Beneath the flagstone floor an unusually thick bedding layer of soft yellow sand was observed which contained 20th-century glass, indicating that the flags had been lifted and re-laid relatively recently. Beneath was a series of compacted dumps of angular sandstone chips, small fragments and flecks of lime mortar in a light brown sandy silt matrix. Excavation ceased at 0.75m below existing floor level. The natural bedrock was not reached.

Archaeological work package 13

- 10.12 Work on the East Wing took place between June 2019 and July 2020. The AWP comprised eight separate items and involved a mixture of pre-intervention building recording, monitoring during repairs and archaeological watching briefs. As with the other packages, all work was conducted in accordance with the WSI prepared by the National Trust (National Trust 2018e), negating Item 1. The results of the remaining seven items are detailed below.

Item 2: recording of the exposed roof structures of the carriage house

- 10.13 The Carriage House roof was covered with felt of unknown date that had reached the end of its serviceable life and urgently needed replacement (Mosedale Gillatts Architects 2017c). It was divided into two sections of unequal size by a brick cross-wall, set with a single chimney (Plate 111; Fig.15). The eastern section was the larger and comprised a shallow-pitched, felt-covered roof, with a broad drainage channel running along the two long sides (Plates 112 and 113). These vented into a flat 'sump' area west of the chimney to be discharged via an internal drainpipe. The gable, and pitch of the roof was concealed by the parapet, creating the impression of a flat roof when viewed from the ground, in-keeping with the classical style of the architecture.
- 10.14 The western section comprised a smaller flat roof with an east-sloping rake.

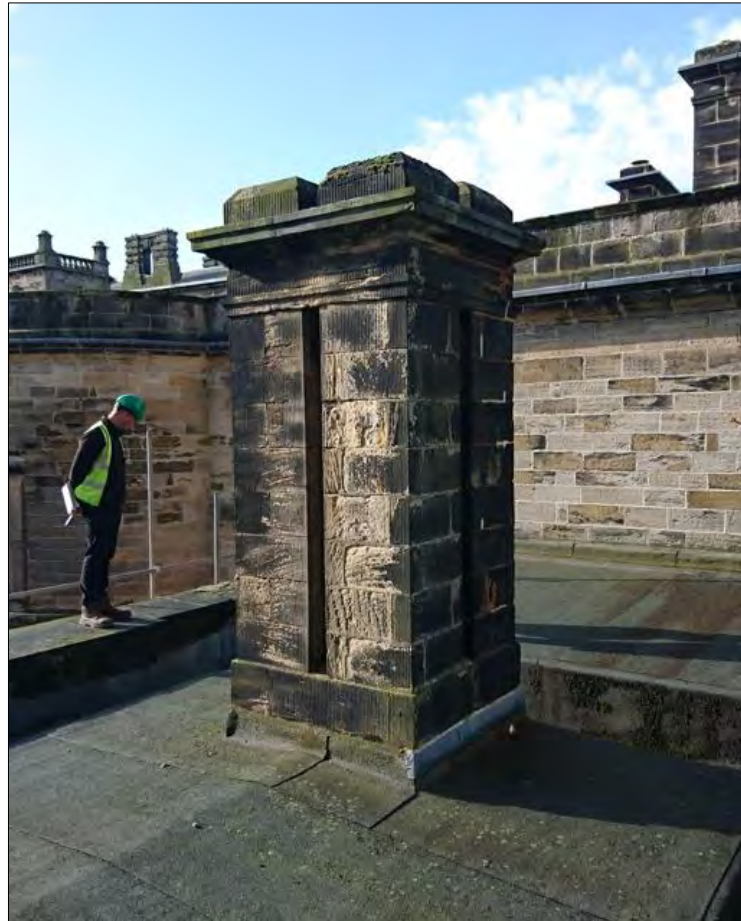


Plate 111: Carriage House chimney, looking west. Image reproduced by kind permission of Mosedale Gillatt Architects.



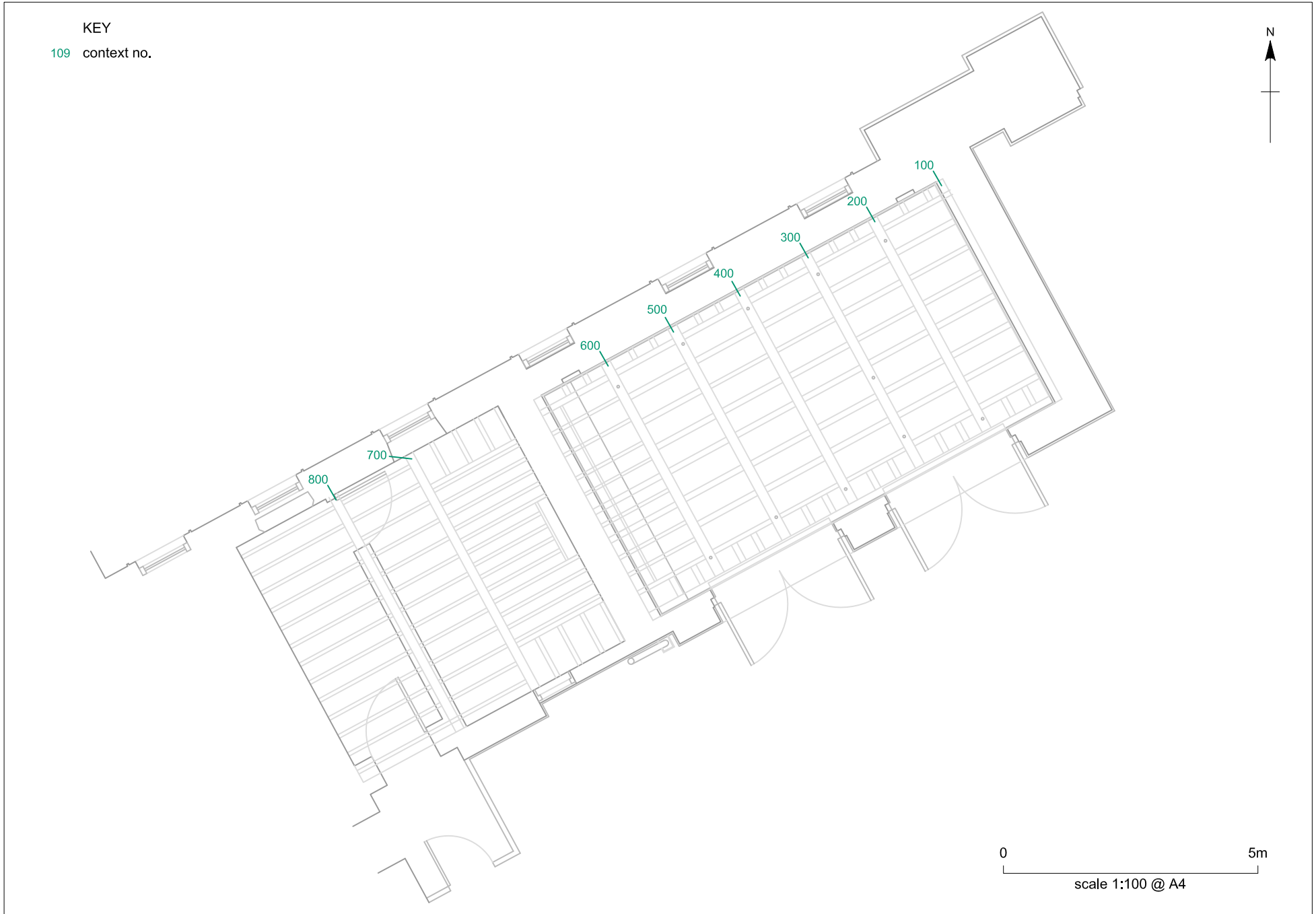
Plate 112: east roof of the Carriage House looking east, showing the shallow-pitched gable hidden by the parapet, and two flanking drainage channels. Image reproduced by kind permission of Mosedale Gillatt Architects.



Plate 113: east roof of the Carriage House looking west, with the west roof visible in the background (west of the chimney). Image reproduced by kind permission of Mosedale Gillatt Architects.

East roof structure

- 10.15 Access to the east roof was provided in January 2020. The east roof structure comprised six shallow principal rafter trusses (100–600) (Fig. 15). Trusses 200 to 600 comprised two horizontal tie beams (each 0.09m wide) clamped together at the centre by a metal bracket and set into the wall plate. The two principal rafters were joined together by two iron braces, set into the centre of the tie beams to form an apex. This was held in place by a large iron bolt. This tension of the ironwork supported the truss. Six short timber hangers were between the tie and rafters to maintain stability.
- 10.16 Truss 100 at the east end of the Carriage House varied slightly in construction. Here, two timber beams had been positioned above one another, the upper one cut by adze to form a shallow apex. The other principal timbers had also been dressed by adze and were likely original to the building's construction (Plate 114).
- 10.17 Eight purlins notched into the rafters ran from truss 100-600. The west bay of the roof (west of truss 600) featured eleven purlins connected with a truss on the opposite side of the chimney, forming part of the west roof. Each truss was spaced at roughly 1.3m intervals with purlins spanning across. These were c.0.09–0.15m in width and spaced between 0.4m and 0.5m apart (Fig. 15).



Seaton Delaval Hall: plan of Carriage House roof showing truss numbers

Figure 15



Plate 114: truss 600; looking west toward the cross wall and chimney. The iron brackets are visible on either end of the tie beam.

West roof structure

- 10.18 Access to the west roof was provided in May 2020. At this time, much of the upper support structure had been removed. However,
- 10.19 The roof originally featured two trusses (700 and 800), both of a similar structure to those of the east roof, although set with 13 purlins rather than nine. The west truss (800) had been removed at the time of survey and a new timber inserted. The purlins ran over the truss and directly into the wall plate (Plate 115). Thirteen evenly spaced purlin holes were visible in the masonry on the west wall.
- 10.20 The east truss (700) was also set with 13 purlins, although these were spaced closer together than on the west side. Rather than resting on the top of the truss, as was the case elsewhere, these were held by ties attached to the east side of the truss (Plate 115). This modification in design was to accommodate the chimney. On the east roof, the chimney was straddled by nine purlins, five on the south side, four on the north. These were evenly spaced along the length of the roof, set between the wall plate on the south side and the masonry on the north side (Fig. 15).



Plate 115: east side of truss 700 with the purlin holes visible in the masonry to the rear.



Plate 116: truss 700; looking east with the purlins visibly supported from the truss above.

10.21 The purlins and sarking boards were examined after their removal. Some of the sarking boards had been adzed to sit more snugly on the purlins, which in turn had been shaped to fit the trusses. The profile of the cut (Plate 116) reflected the shape of the truss, comprising a cut of about 0.09m for the first tie beam next to a shorter deeper cut for the iron clamp (Plate 117).



Plate 117: purlin cut to accommodate trusses with a deeper cut for the internal iron clamp.

Item 3: more detailed recording of significant elements during replacement if proved necessary

- 10.22 Unlike the West Wing roof, the carriage house roof was fairly uniform in nature with little evidence of later modification. Conservation on the east roof was limited largely to the replacement of the easternmost tie, which had failed as a result of wet rot, and repairs to the end of the other timbers where they met the wall plate. The roof was then re-covered. No further recording was required during this work. More extensive repairs were conducted on the west roof, involving the replacement of much of the structure. This was recorded as part of item 2 and described above.

Item 4: record dismantling of high-level stonework on the Carriage House

- 10.23 Several monitoring visits were made between January and May 2020 during high-level repairs to the stonework of the Carriage House. The repairs principally involved replacing damaged masonry on the south-east corner of the structure which had moved significantly out of alignment projecting the south wall forward. Large horizontal cracks had formed in the stonework revealing concealed ironwork, the erosion of which was exacerbating the problem, placing the roof structure at risk from rot (Mosedale Gillatt Architects 2017c). To remediate the situation the outer ashlar facing stones and inner brick leaf on the south-east corner were dismantled, the iron clamps removed and the structure rebuilt. Prior to dismantling, the masonry was recorded and numbered by layer (1–12) in the order of their removal so they could be correctly reinstated.



Plates 118, 119: (left) looking north, the removal of the coping stones along the eastern side of the building; (right) iron beam, pin, and brackets revealed behind masonry.

- 10.24 The masonry on the south-west corner was also removed over the course of consolidation works, beginning with the parapet. This comprised a course of large coping stones that projected 0.06m out from the face of the wall below. The coping stones were 0.17m thick and 0.73m wide on the east wall, and 0.79m wide on the south wall. Below the coping stones the main fabric of the wall was exposed, comprising an inner and outer leaf of stone set with lime mortar, with no inner core material between (Plate 118).
- 10.25 Below the coping stones on the south wall was an RSJ which ran the whole length of the building. It was joined with a tie that ran down into the masonry and was attached at each level of stonework to a large metal clamp inserted into the stone (Plate 119). The support structure terminated at the sixth course of stone in a large clamp (Plate 120), which held in place another RSJ that also ran the length of the building, extending across the top of the three stone-arched doorways (Plate 121). The concealed steel framework was probably the product of early 20th-century repair work which, ironically, had itself resulted in structural instability.



Plates 120, 121: (left) iron bracket tied in the masonry; (right) view of the inside of the carriage house looking south.



Plates 122, 123: (left) cavity visible at the top of the chimney; (right) the chimney tapers out near the base of the wall and was tied to the masonry through iron brackets.

10.26 Further north along the east wall, a large cavity was uncovered associated with a brick flue (Plate 122). This was tied into the masonry by large iron clamps. The flue was constructed of red handmade brick and was c.0.5m at its widest point, tapering out near the base of the wall (Plate 123). At the time of survey the Carriage House was being used for storage and there was no access to the interior to look for evidence of a hearth; however, the architect's drawings show no such feature surviving *in situ*. The feature therefore likely dates to the early 19th century construction but was later blocked.

Item 5: watching brief during installation of new pod and underfloor wiring

10.27 A watching brief was conducted in June 2020 during the installation of new visitor toilet facilities in the Carriage House. An independent timber 'pod' was installed, designed to sit above the existing Carriage House stone floor, resulting in minimum intrusion into the historic fabric apart for the provision of drainage. A 0.3m-wide trench was excavated near to the centre of the building, running at a slight north-east to south-west alignment across the width of the structure and out through the double door into the stable yard where it connected with an existing drainage running south-west (a total length of c.10m) (Fig. 13).

10.28 The interior of the Carriage House was paved with a flagged stone floor (169). The flags were laid in rows running the length of the building, each element was 0.58m wide with a varying length of 0.4–0.75m and a general thickness of 0.09–0.12m. Work began with the careful removal of a portion of the floor surface and excavation of a 0.3m-wide trench which was 0.55m deep at the north wall of the interior and 0.75m deep at the doorway to the stable-yard service trenches.

10.29 Removal of the flags along the length of the proposed trench revealed a series of brick plinths (170) measuring 0.24m wide and 0.14m deep, which were set 0.32m apart acting as supports to the stone floor above. The bricks were red-orange and unstamped, the dimensions were 0.22m by 0.11m by 0.06m and bonded with a creamy-white mortar (Plates 124 to 126).

10.30 Portions of the brick supports along the length of the ducting were removed and the modern concrete door-sill was cut through with minimum excavation of the underlying ground surface (168). This consisted of compacted ash and black silty sand typical of the ground make-up of both the kitchen and stable yards.

- 10.31 After the insertion of the drainage ducting, the raised floor of the pod was constructed with the electrical wiring laid in the voids between the two floor surfaces.



Plate 124: brick support structure 170 after lifting of flagstone floor 169.



Plate 125: Carriage House floor structure; looking north-west.



Plate 126: interior of the Carriage House after removal of flagstone floor 169 and brick supports 170, with the service trench cutting courtyard soil 168 in the doorway.

Item 6: watching brief during installation of new drains and surfacing in stable yard

- 10.32 In May 2019 a watching brief was maintained during the installation of new drains and services in the east courtyard. A trench for electrical ducting was excavated from a point approximately halfway along the south passage (Figs. 13 and 16). This ran north-east for c.6.4m extending into the stable yard before turning south-west to run for a further 7.5m parallel with the east wall of the East Wing. The trench was c.0.3m wide and was excavated to a depth of c.0.4m below present ground level.
- 10.33 The modern concrete surface of the passageway was cut, exposing a mortared sandstone feature (65) immediately beneath. This was situated c.7.5m west of the external east wall, running north-west to south across the passage on the same alignment as the doors between the central stables and south block. The feature was hand cleaned and a section excavated on the east side to a depth of 0.45m. It was found to be a substantial stone culvert with arched roof and was presumably the same as that identified in the 2017 excavations, running through the centre of the East Wing (Plate 127).



Plate 127: upper surface of culvert 65 directly beneath the concrete floor surface in the passage between the central stables and south block.



Plate 128: wall foundations 66 beneath the passage between the central stables and south block.

10.34 At the eastern end of the trench the wall footings of the East Wing (66) were exposed spanning the two easternmost openings. These were each c.1m wide and comprised two outer faces of dressed stone infilled with a heavily compacted crushed sandstone core with small clay lenses (196). The upper surfaces of the footings lay 0.25m below the concrete floor. The bottom of the foundations continued at a depth greater than 0.45m, which was the required depth of the service trench, and were therefore not exposed (Plate 128). The continuation of the foundations between the two openings is odd but there was no evidence that the passageway was a later modification. It might suggest a change of design after construction began, or simply it was considered more prudent to run the foundations along the full length of the building without variations to accommodate openings.



Plate 129: wall foundation 64 in the electrical ducting trench with the south wall of yard in the background.

10.35 Where the service trench turned to run along the exterior of the east wall of the wing (Fig. 13), the remains of a substantial wall (64) were identified c.0.25m below the

existing ground surface. This ran parallel to the south wall of the stable yard (Plate 129) (197), located c.5.4m to the north. The wall was similar in construction to the two foundation walls (66) previously described and constructed of heavily mortared sandstone blocks, surviving two courses high, forming a foundation 1m wide with a relatively level upper surface. The wall had been damaged by the insertion of later cast-iron waterpipes. No trace of ashlar masonry was evident above the foundation course although corresponding markings on the East Wing's elevation confirmed the existence of a range extending east (Plates 130 and 131). There is documentary evidence to suggest that this might have been a greenhouse/conservatory or stables (Newman 2017a; Simpson and Brown Architects 2017) (Figs 4 and 14).

- 10.36 To the south of wall 64 was a coarse, gritty ash deposit (194). There was no evidence of any type of surviving floor surface. Deposit 194 had been disturbed by the insertion of salt-glazed drainage pipes (192) running beneath the south courtyard wall (197). The electrical ducting was inserted through this pre-existing gap in order to avoid any unnecessary disturbance of the historic fabric.



Plate 130: east-facing wall profile with traces of the former south range.



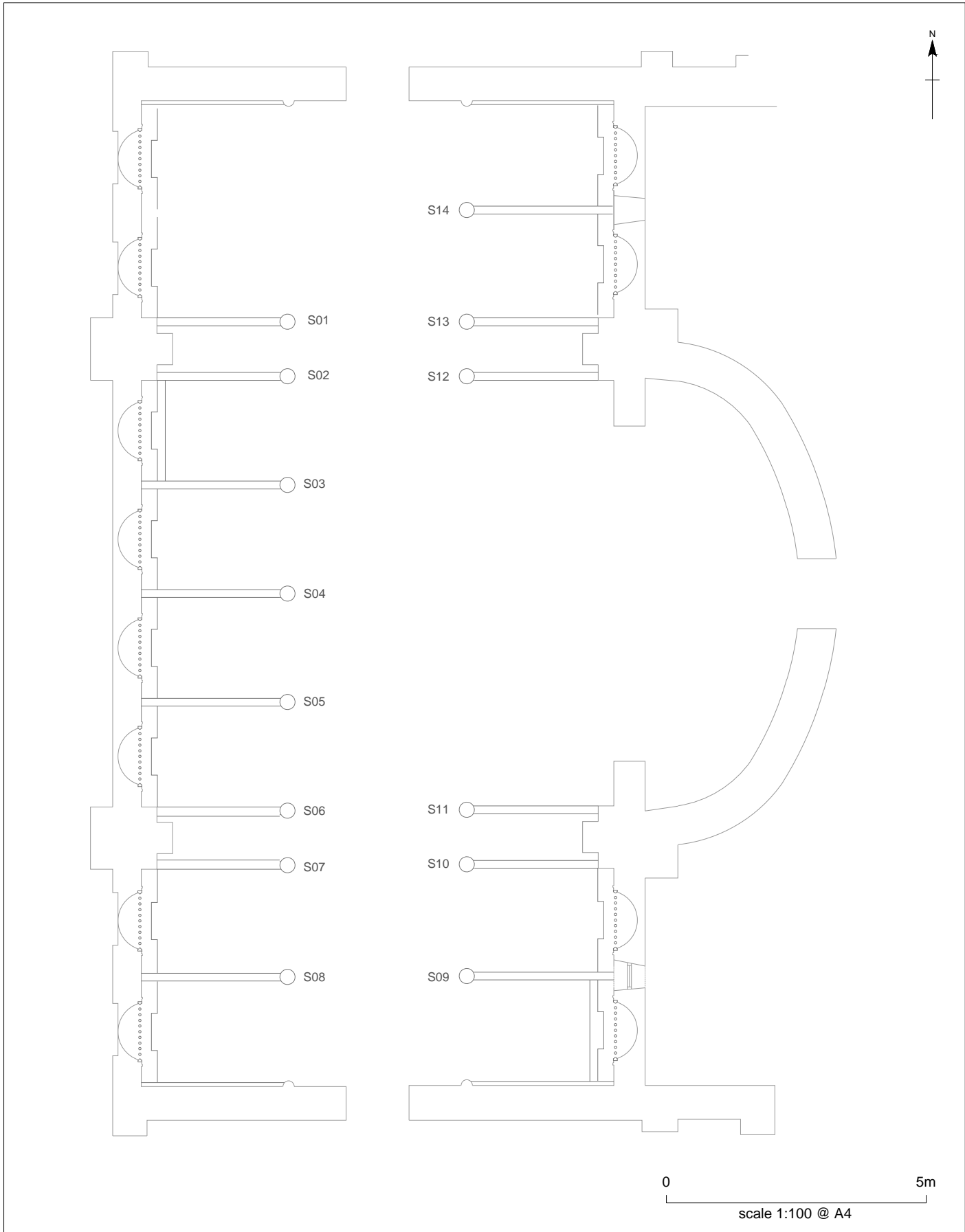
Plate 131: north- and east-facing internal elevations of the missing range on the south side of the stable yard.



Plate 132: low kerb or boundary 56 directly below the turf in the south-east corner of the yard, facing south.

Installation of display material

10.37 In the south-east corner of the stable yard, an area of turf was removed, measuring 1.8m by 1.8m, for an educational display in the south-east corner of the stables courtyard in [insert date]. (Fig. 16). A single curved course of sandstone slabs (56) was observed



Seaton Delaval Hall: central stables plan

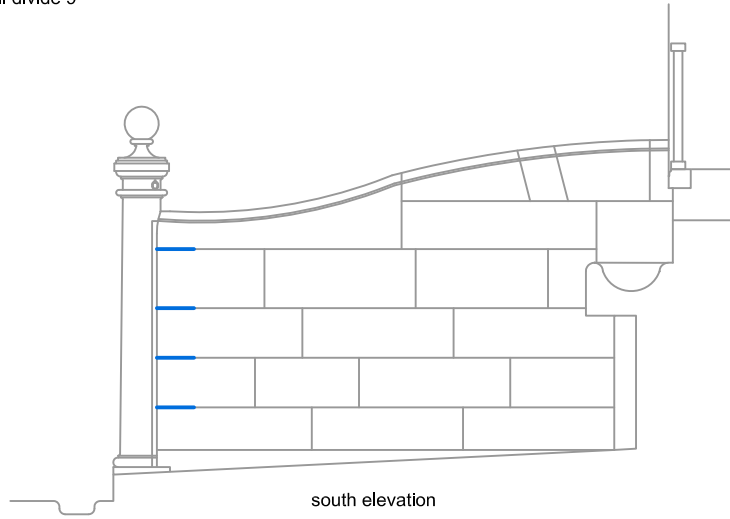
Figure 16

immediately under the thin covering of turf. The slabs were up to 0.15m thick, 0.55m wide and 0.6–0.7m long and formed a low curb with an outer radius of 5.4m, demarcating the corner of the yard (Plate 132). It bore no resemblance to any other of the flagged areas typical of the Hall and there were no traces of mortar bonding or any other structural remains evident above the slabs. As such, **56** was interpreted as the boundary of a flower bed or parterre rather than a free-standing structure. This feature appears in LC19 EC20 OS coverage.

Item 7: record dismantling of six stone dividers

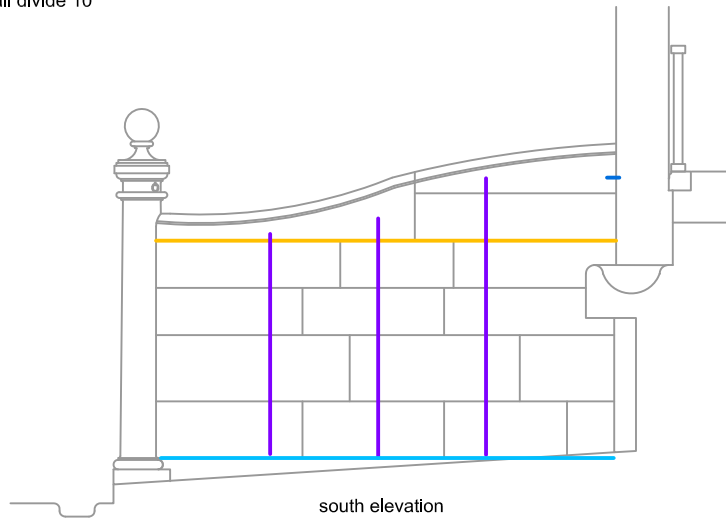
- 10.38 There were 12 stalls in total in the central stables, eight along the west wall and four along the east. Between these were four narrow storage bays (two on each side), each measuring c.2m by 0.85m, used for feed and bedding (Plate 133; Fig. 17). On the rear of each stall was a stone feeding trough built into the wall above which was a hay rack. This comprised a stone arched recess, with central keystone, set with an iron grille at the base.
- 10.39 The 14 surviving stall dividers were built of ashlar which were keyed into timber end posts painted to give the appearance of stone (Plate 133). These were set directly into the ground beneath, through the level of the flagstone floor which remained *in situ* across the south and central areas of the stable. Previous archaeological investigation had established this surface had been extensively re-laid in the 20th century (Solstice 2017b). On the north side of the stables the flags had been replaced by a cast-concrete floor. In the two north-east stalls, the cast concrete featured a chevron design. This is, typically found on stables and is designed to improve drainage into a channel behind the stall.
- 10.40 Six of the dividers (**S01**, **S04**, **S08**, **S09**, **S10** and **S13**) had been identified as unstable and required dismantling and repair as part of the conservation works (Mosedale Gillatt Architects 2017c). Divider **S01** had already been dismantled and recorded as part of the Phase I works (Solstice 2017b). Three of the other dividers (**S13**, **S10**, and **S09**) were recorded during visits in January and May 2020 (Fig. 17). All of the dividers were of similar construction and, after the final monitoring visit in May 2020, discussions were entered into between the architects and contractors regarding the need to fully dismantle the remaining two dividers (**S04** and **S08**). No further monitoring was requested after this date. A full record had, however, been collected during earlier visits suitable to inform a record of the construction and development of these historic features.

Stall divide 9

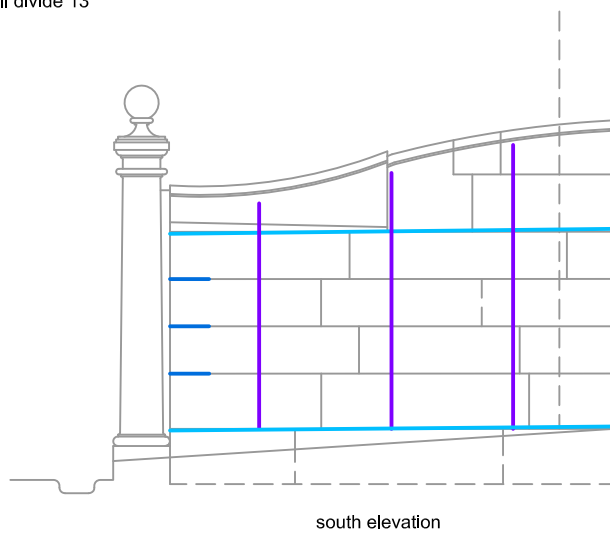


- KEY
- iron bracket
 - iron dowels
 - iron strap
 - timber strap

Stall divide 10



Stall divide 13



0 1m
scale 1:50 @ A4



*Plate 133: stall dividers **S08**, **S07**, **S06**, **S05** and **S04** along the west wall of the stable. The bars of the hay racks in the arched recesses can just be seen.*

- 10.41 All stall dividers were of very similar construction, with slight variations in internal support (Fig. 18). Each was 2.37m long, 0.14m wide and 1.59m tall at the wall. They were built of seven courses of ashlar sandstone, with a curved and moulded top course. An outer timber shutter on each side of the stall wall provided additional warmth and protected a horse from damaging itself on the stonework. The timberwork encased the stone superstructure which was carefully dismantled block by block and laid flat on the ground adjacent to its former position so it could be accurately rebuilt once repairs had taken place.
- 10.42 Just below the first course of ashlars in **S013** was a horizontal iron tie bar set in a shallow channel in the masonry. This ran along the full length of the stall (Plate 134; Fig. 18). Evenly spaced along this were three iron pins which fasten the upper bar to a lower bar, set just above the bottom course of ashlars (Plate 135). Holes had been drilled through the masonry to accommodate the iron pins. At the west end, iron clamps on each course pinned the stone structure to the wooden end post.
- 10.43 Stall divider **S10** was very similar in construction but the upper tie had been replaced by a wooden batten and there were no end clamps. However, **S09** had no iron support structure apart from the end clamps (Plate 136).



Plates 44, 135: (left) iron strap found across the upper part of the divider S13 with two of the three vertical iron dowels emerging upwards from the tie; (right) the lower strap near the base of divider S10.



Plate 136: dismantled divider S09; view is south-east toward the trough, with iron brackets visible along the post. The remainder of the divider could not be removed because it supported the trough.



*Plates 537, 138: (left) the masonry of **S10** was cut flush with the stone divider; and (right) timber batten in **S13** filling the gap between the post and masonry.*

- 10.44 The treatment of the end posts varied. At the west end of **S09** the post was designed to sit flat against the straight ends of the masonry (Plate 137), whereas the masonry of **S10** had been cut in a curve to sit flush with the timber end post. Different again, a vertical baton of wood, 0.14m wide, had been inserted between the stonework and the post in **S13** (Plate 138). Some of the timber end posts retained iron rings for tethering the horses.
- 10.45 The dividers were set directly into a c.0.15m-deep sandy deposit which also provided a level bedding layer for the flagstone floor (Plate 139). Previous excavation had identified this as being unusually deep, measuring up to 0.25m in places (Solstice 2017b).
- 10.46 Dividers **S13** and **S10** were attached directly into the stone wall through a series of notched joints poured with lead at the time of construction (Plate 136). There were no notches in **S09**, which was set directly into the east wall between the two stone mangers (Plate 140) which would have provided additional stability and may account for the absence of the lead jointing. The inner core of the East Wing walls was visible in the gap left after the removal of the stall dividers, indicating that these were a later modification cut into the earlier fabric.



Plates 139, 140: (left) lead-filled notched in wall of divider S10; (right) troughs on either side of divider S09.



Plates 141: timber tethering post of S13 after removal.

Item 8: watching brief during excavation for tethering post replacement and floor repairs

10.47 Monitoring of the resetting of the tethering post of S13 was conducted as part of Item 7 (Plates 141). The post was removed as part of the dismantling of the stall and found to

extend 0.79m below the flagstone surface into the underlying sand. At the base of the post pit was a mixed rubble layer, but this was exposed in only a 0.40m² area. However, there was no indication of an earlier surface pre-dating the flagstone floor.

10.48 Separate monitoring was not undertaken during floor repairs apart from those conducted as part of the dismantling of the stall dividers.

11.0 THE FINDS

11.1 This section contains summaries of the specialist finds reports. The full reports are in Appendices B–E.

Clay pipe, pottery and glass (Appendix B)

11.2 Three fragments of clay pipe, 145 fragments of glass, including glass waste, and 251 fragments of pottery were recovered during excavations of the Hall complex. These all dated to the post-medieval and modern periods.

11.3 The three clay pipe fragments dated to the 17th–19th century and consisted of a bowl and two stem fragments. These were exclusively recovered from floor levelling deposit in the basement of the Central Hall (135). The assemblage represented a maximum of three individual pipes that were all British in origin, and probably produced locally.

11.4 A total of 251 sherds of post-medieval pottery was recovered that dated to between the 18th and 20th centuries. The assemblage represented a maximum of 67 separate vessels. All the pottery was British in origin, and mostly produced within the local region except for a transfer-printed plate produced in Burslem, Staffordshire. The wares identified were highly typical of the period and comprised utilitarian and tablewares. The latter included flat wares such as plates, platters and saucers, and hollow wares such as bottles, bowls, cups, jars, jugs, a tureen and possible porringer.

11.5 The decorations and surface treatments identified included clear, yellow and brown glazes and slips, and common transfer-printed patterns such as Willow pattern, Asiatic Pheasant pattern, romantic scenes and Chinese scenes, as well as other floral and foliate designs. Hand-painted designs were common in the tableware assemblage, alongside plain whiteware.

11.6 Most of the pottery assemblage was recovered from the mixed levelling deposit 135 in the basement. Additional material came from drain fills 118 and 120 including one

fragment of a glass bottle and eight sherds of pottery recovered from a primary deposition context. The remaining material was residual from unstratified layers.

- 11.7 The glass assemblage dated from the 18th century to the modern period and included window and vessel glass, as well as glass waste. There were a maximum of 46 vessels, three windows and 63 fragments of waste in the form of wasters, slag, trails and additional casting waste, perhaps all from the nearby Hartley Bottle Works at Seaton Sluice.
- 11.8 Eleven sherds of window glass dating to the 18th–20th centuries, were recovered from deposit 135. All were transparent and probably made from either high-lime low-alkali (HLLA) glass or soda-lime-silica plate glass. Vessel types included beverage containers (wine, beer, ginger beer and water bottles), three small medicine/perfume bottles, four possible drinking vessels and a sherd of plate glass from an unknown vessel.

The small finds (Appendix C)

- 11.9 A total of six artefacts were recovered from the hall complex, all coming from the basement of the Central Hall: five from deposit 135 and one from 118. These finds from floor make-up deposit 135 included an iron chisel (RF13) with a faceted grip, long shank and narrow blade, which was probably a paring chisel used for fine work. It was in good condition, with little corrosion on the surface, which suggests either good preservation conditions or, more likely, indicates that the tool was a relatively recent loss. Also found were two pulley elements (RF14 and RF21) likely to have been part of the same mechanism and possibly from a sash window; a doorknob (RF19) which is difficult to date beyond a broad 18th–20th century range, and a baluster moulded object (RF20), likely to be part of a candlestick or furniture fitting. A two-part circular lock plate (RF15) was recovered from drain 118, the north–south drain running through the centre of the basement. The lock plate bore the name Chubb on the front and was relatively modern, being of a type similar to models which remain on sale today.

Building materials (Appendix D)

- 11.10 Eight of the bricks and brick fragments were recovered from the basement area during the works, seven of which were dated by form and fabric to between 1500 and late 1700 with one from 1784 to 1850. Two additional fragments were recovered from the Carriage House, one from the chimney, which could be broadly dated to 1500–1850, and one from a brick plinth, dated 1784–1850.

11.11 Two fragments of a post medieval chimney pot were also recovered.

Industrial debris (Appendix E)

11.12 A single item of possible industrial debris was recovered from the Hall complex. This was a fragment of glassy cinder weighing recovered from context **135**. This is normally considered diagnostic of ironworking, usually smithing, but can also be produced by other high-temperature processes and accidental fires. There is no other evidence for ironworking present in the assemblage, suggesting the material either related to the 1822 fire, or was part of the demolition debris associated with the earlier mansion on the site.

12.0 DISCUSSION

12.1 The Curtain Rises project provided a rare opportunity to investigate beneath the surface of the 18th-century Seaton Delaval Hall, exposing the internal structure and foundations of the building and providing a valuable insight into the construction and development of this nationally important heritage asset.

Evidence pre-dating the 18th-century Hall

12.2 No *in-situ* evidence pre-dating the construction of the 18th-century Hall was identified, although there was considerable amount of reused building material associated with earlier structures on the site. Perhaps the earliest of these was a masonry block with a medieval mason's mark, found built into the wall in the south-east corner of B02 (the Servant's Hall) (Plate 142; Fig. 10). This may have come from the medieval tower that previously stood on the site. The carving was very faint and was only identified during a recent visit to the Hall after the main recording work was completed. New lighting in the basement has facilitated the identification of such marks and more may be identified in the future.

12.3 During excavations in the Central Hall basement large quantities of brick, roofing tile and masonry from an earlier building or buildings were found. These were both built into the fabric of the present hall and used as aggregate in backfill deposit **135**. The most extensive evidence of re-used material was the brick surface (**133**) (Plate 143) in the room B10 (the Footmen's Room). Samples of the brick from this feature were dated to between 1500–1700s, suggesting they may have been from the Tudor/Stuart mansion pre-dating Vanbrugh's 18th-century Hall.



Plate 142: medieval mason's mark identified in the south-east corner of B02.



Plate 143: section of brick surface 133 in room B10 showing examples of mortar traces, uneven damage patterns and poor construction.

- 12.4 Evidence that the bricks were not *in situ* can be summarised as follows: 1) the surface was contained within, and respected line of the 18th-century walls with no evidence of truncation; 2) the bricks were laid in rows that followed the alignment of the room; 3) the surface was not well laid, with no bonding material or bedding surface below; 4) there was uneven damage on the edges and corners of the individual bricks, consistent with damage during dismantling rather than general wear and tear, and 5) there were isolated patches of mortar on the surface of some of the bricks that did not form a cohesive layer. Together, this indicates that surface **133** was built as part of the Central Hall, as opposed to being a repurposed *in situ* 16th or 17th-century floor.
- 12.5 In particular, the traces of mortar and localised uneven damage patterning on the bricks are strong evidence that the material was reclaimed from an earlier structure (Plate 143). The mortar was found on the upper surface of the bricks in discrete patches that did not extend to neighbouring areas as would be expected of a cohesive mortar surface, even if this had been worn away over time or purposely removed. Similarly, isolated patterns of damage on individual bricks were recorded, often at the corners or along the sides. Again, this generally did not extend to adjacent areas as might be expected from damage over time or sudden accidental impact. In both cases, the evidence was consistent with bricks being salvaged from a dismantled wall, or other built structure, and reused. A similar pattern was observed on the bricks recovered during the dismantling of the west wall of the walled garden.
- 12.6 Bricks dating to 1500–1700s were also found in deposit **135**, together with fragments of sandstone masonry. This ‘make-up’ levelling deposit comprised the primary backfill beneath flagstone surface **132**. Across much of the basement this was exposed when the flags were removed (probably in the early 20th century) and subsequently formed a trampled-earth floor surface that extended throughout the area until recently. As such it was a very mixed deposit that included 20th-century glass as well as evidence of older demolition debris. The finds assemblage retrieved was therefore of limited value in terms of comparative dating evidence.
- 12.7 Nevertheless, the 16th and 17th-century demolition debris was present in considerable quantities in the primary backfill deposits, suggesting the destruction of a large building in the vicinity either before, or during the construction of the 18th-century Hall, as is reported in other sources of evidence. That this building was high status can be inferred from the high quantity of brick, which was still relatively rare as a building material in the early 16th century, although increasing widespread and arguably ubiquitous by the

17th. Status is also inferred by the massive size of the recovered/identified reused stone roof tiles.

- 12.8 The reused stone roof tile recorded in B08 and elsewhere provides further evidence of repurposed building material, in this instance as stone capping over a drainage culvert. There was little indication that this formed part of a later repair and were probably contemporary with the original installation of the 18th-century drain. The tiles, therefore, were also salvaged from the earlier mansion on the site.

Evidence of the construction of the Hall

- 12.9 The basement excavations facilitated a much greater understanding of the construction of the 18th-century Hall. The foundations and ground preparations at this level would have been amongst the first, if not the first, pieces of work carried out as part of the construction of the new mansion complex.
- 12.10 What became immediately apparent during the archaeological excavation was the part played by variation of the local geology and topology in the design and construction of the Central Hall. Along the front of the building, north of corridor B01, was a ridge of natural sandstone that sloped away to the south, where it was overlain by drift clays and sand deposits. The slight rise in the landscape caused by the sandstone outcropping may have been instrumental in the location of Vanbrugh's Hall in the first place; placing the Central Hall in an elevated position as the focal point of the whole complex. The nature of the topology likely also accounts for the variation between the length of the East and West Wings as shown on the 1725 plan and those as built. As designed, the wings would not have fitted into the confines of the site, spilling impractically over the profile of the ridge (Simpson and Brown 2017). This has brought into question the degree of Vanbrugh's involvement with the final designs of the Hall, as this would have been an aspect he would almost certainly have corrected if he had spent much time on the project (Mark Newman *pers. comm.*).
- 12.11 Within the basement there was a marked difference between the construction of those elements on the north and south side of the building. The walls on the north side were built direct onto the bedrock, which provided stable foundations. The permeable sandstone also allowed for good drainage on this side of the building, assisted by a series of rock-cut drains, capped with sandstone flags. In contrast, the clay and sand on the south side of the building was more susceptible to waterlogging and related problems of poor drainage.

Drainage network

- 12.12 The network of drains in the basement was complex, with various phases of modification and repair evident. The removal of the flagstone floor (132) in the early 20th century, and subsequent disturbance of the underlying backfill deposit (135), made it difficult to phase these changes, although a broad sequence of construction can be established.
- 12.13 The provision of drainage would have been an essential part of the original design of the building. The basement drains were intended to facilitate the removal of waste water, slops and other liquid matter from the service areas as well as groundwater seepage and condensation. No *in situ* evidence of downpipes running into the drainage network from the upper storeys were observed, although this does not negate the potential that there would have been some form of internal drainage through the building. However, as built, there was no plumbed sanitation on the upper storeys. Waste water from the roof was channelled into external hoppers and drainpipes on the east and west elevations of the building.
- 12.14 Three main drains were recorded in the basement which appear to have run south to vent out beneath the southern wall of the building. The arrangement beyond this point is unknown, but they presumably fed into a culvert similar to that observed in the West Wing kitchen yard. The main drain, 118, ran centrally through the spine of the building, to vent both north and south. The forethought that this feature may need to be serviced and repaired over time potentially influenced the layout of the basement, the line of the drain notably being reflected in the location of the central north-to-south passageway (Fig. 11)
- 12.15 The two parallel flanking drains, 117/126 and 134, were not as substantially built as the central drain and might have been later additions. This is particularly true of the west drain (134) which was linked to 118 by connecting drain 136 and tunnelled beneath the pre-existing east wall of B04. The plan may have originally been for a single drain (118) to serve the building, but this was modified soon after construction began because of drainage problems. This could have been only a matter of months after the foundations and lower courses of the building were laid.

The Footmen's Room floor (133)

- 12.16 On the south-west side of the basement, drain 134 cuts through brick surface 133. This sits below the level of flagstone floor 132, separated by a 0.15 - 0.20m-thick levelling deposit of mixed sands and clays (135). The fireplace on the west wall is at the same

- level as the flagstones, clearly confirming this as the original floor level. As previously discussed, **133** was constructed of reused handmade brick, set flat surface down in even rows aligned east to west. These respect the line of chamber walls and extend into the south-west turret where some of the flagstone surface still survives in situ above. The floor is not bonded and is poorly constructed, using fragments of broken brick in some places.
- 12.17 In addition to B10, a similar surface was also recorded in B08 (**201**) where it was preserved in section beneath the silver safe door. The evidence suggests **133** is a temporary construction surface, probably necessitated by the sand and clay deposits on this side of the building. Frequent use of the area by workmen during construction of the lower courses, particularly in poor weather, would have seen considerable damage to the area. The brick surface would have alleviated this, preventing soil poaching. The temporary floor may have stayed in use for a number of months, even years, during the construction of the Central Hall, until the flagstone floor was eventually laid. This could account for areas of wear noted across the surface. It would just have been easier to leave *in situ* and bury the surface rather than take it up when they were ready to lay the flagstones, and it may have also been seen as a boon to stability and sub-floor drainage.
- 12.18 A parallel for floor **133** has been identified at Hampton Court Palace during recent excavations by Oxford Archaeology (OA) during the development of the Royal School of Needlework. Here, excavation in room GF170 revealed the remains of a well-preserved brick construction surface, laid during Sir Christopher Wren's rebuilding of parts of the palace in the 1690s. This too was constructed of reused Tudor brick from earlier demolition on the site (Ben Ford, *OA pers. comm*; OA publication in preparation). Vanbrugh is known to have been working at the Palace in the early 18th century and may could feasibly have seen the technique employed during ongoing building work.
- 12.19 Continued problems with drainage on the south side of the building (or at least a desire to adopt a systematic scheme of drainage throughout the basement) potentially prompted the requirement for further drainage in addition to **118**, leading to the excavation of **134**, cut through surface **133**. Surface **133** was also identified in B04 but there was no counterpart in B06 or B09, culvert **118** being found adequate to drain those areas.
- 12.20 The east drain **117/126** and related elements were possibly added after **138**, once the need for the additional drainage requirement had been become apparent as the building

rose. This would account for the more ordered arrangement of the drains on the east side of the building, compared to those on the west. For example, the section through the deposits preserved beneath the silver room door in B08 shows drain **126** sealed beneath brick surface **201**, not cut through it as is the case in B10. In both rooms the brick surface was overlain by backfill deposit **135**, above which was a thin mortar bedding layer and then the flagstone floor (**132**).

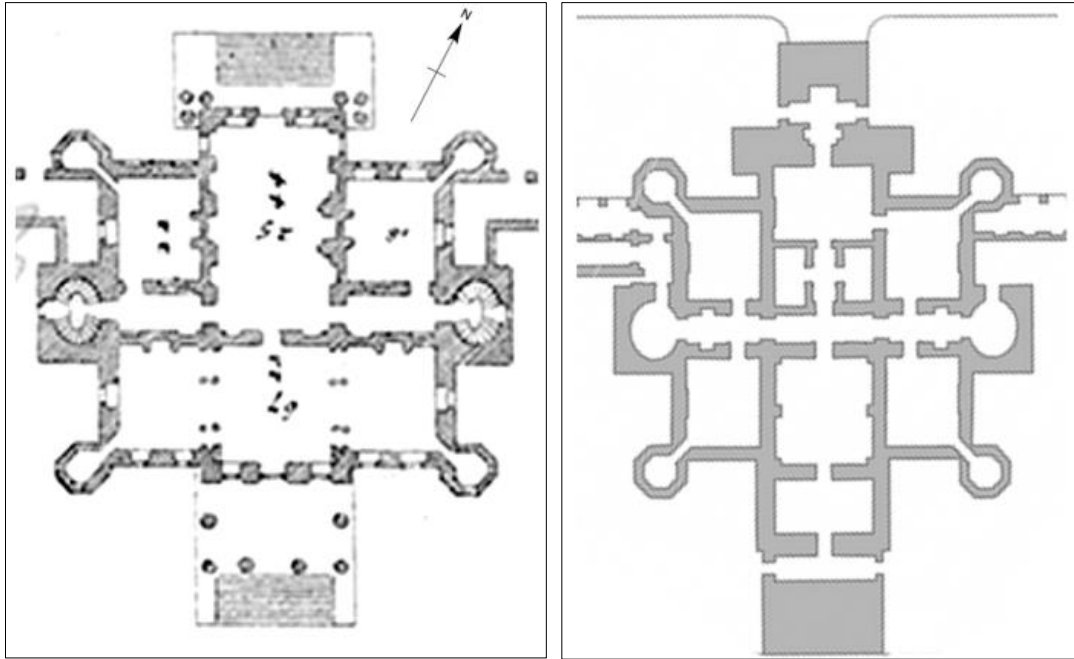


Figure 19: 1725 plan of the Central Hall compared with a modern survey of the building.

- 12.21 If the east drains are slightly later in date, then this may have had implications on the build sequence of the Central Hall, suggested the construction of the west side may have advanced before that of the east. This would seem unlikely, given the general practice would be to erect all the foundations first and then build the walls up in courses. One possible explanation could be a break over a winter season and subsequent replan, but this cannot be verified. However, there are other variations that suggest a minor redesign of the west side of the building. In the south-west and south-east turrets, the lower courses of the walls are slightly out of alignment with the upper courses (Plate 100), being set at a less acute angle to those eventually built. The original alignment of the lower courses would be akin to turrets as shown on the 1725 plan (Fig. 19). This, and the variation in drainage, suggest a slight adjustment in the layout of the west side of the building soon after construction began.

Addition of the West Wing

- 12.22 Further evidence of modifications on the west side of the Central Hall was provided by the excavations at the base of the west stair (AWP 11.7). This uncovered evidence of an earlier floor surface c.0.25m below that of the current entrance into the west stair tower. The dressed ashlar face of the north wall of the west stair tower extended well below the present threshold, indicating that door 1 is a later addition (Fig. 10). This arrangement accords with the 1725 plan which shows no entry into the stair tower from the north (Fig. 19).
- 12.23 The earlier flagstone surface (166) identified during the excavation is almost certainly contemporary with the completion of the Central Hall in the late 1720s. The most likely date for the raising of the ground level and insertion of the west stair door would be the erection of the West Wing in the 1730s-40s. However, this would not account for the degree of wear on floor 166 which suggests a prolonged period of use. One explanation is that the kitchen passage is a later addition. This is not shown on the 1725 plan, which shows only the east and west arcade (Fig. 19). The kitchen passage certainly does break the symmetry of the arrangement and arguably looks somewhat awkward.
- 12.24 Prior to the construction of north the door in the west stair tower, food and materials going to and from the main kitchen in the West Wing to the Central Hall would have had to be carried through the arcade and up the north portico steps. The addition of the kitchen passage greatly improved this situation by providing covered access direct into the Central Hall at a point of access both to the service areas in the basement and via the west stairs to the upper floors.
- 12.25 The inconvenience of access prior to the addition of the kitchen passage suggests it would have been added relatively early on. If it did not immediately form part of the construction of the West Wing then it would have been added fairly soon afterwards.
- 12.26 The trench at the base of the west stair was limited in size and did not extend north to allow an investigation of the relationship between the passage and the arcade. Nevertheless, the results and the evidence of blocked archways in the arcade identified during the kitchen passage works, all indicate there has been a considerable degree of modification in this area over time, which would warrant further investigation should an opportunity arise in the future.

Construction of the West Wing roof

- 12.27 The exposure of the West Wing roof structure revealed significant information regarding the layout and form of the original roof structure. It was constructed of softwood, probably pine. This was popular as a building material by the end of the 17th century, replacing the more traditional oak. It was easier to work than oak and more readily available, particularly in a suitable size for roof construction. Added to which softwood dried quickly, reducing its overall weight and helping to maintain the stability of the roof, this was in contrast to green oak which could buckle or split (Bispham 2001).
- 12.28 By the early 18th century much of the softwood used in England was imported from Norway and the Baltic. The Seaton Delaval timbers might have been shipped into Seaton Sluice from the Baltic. The long winters of the northern countries meant the growth rings of the timbers were tighter, making them denser and more robust than the home-grown softwoods. The Baltic timbers were also cut from virgin forests which produced very large trunks with few branches low down, enabling long lengths of 'clear grade' timber to be cut without knots.
- 12.29 The import of softwood coincided, and in part prompted, the widespread adoption of trussed elements – hipped trusses, partition trusses, truss beam – into Britain. These were an important element of Palladian architecture, enabling the creation of wide, uninterrupted expanses of ceiling in principal rooms. This can be seen to great effect in the design of the main kitchen and central stables (riding house) at Seaton Delaval.
- 12.30 Considerable variation in the colour and treatment of the West Wing roof timbers, especially in the upper roof structure, is concomitant with several phases of repair and modification dating largely from the mid-19th to mid-20th century. However, much of the lower structure – tie-beams, ceiling joists and struts – appeared to be original in date, particularly in the central range.
- 12.31 The original roof was divided into three ranges, corresponding with the layout of the wing below (Fig. 9). Each range was divided into three elements comprising the main roof and two smaller flat roofed areas to the east (front) and west (rear). The principal roof of the central range (122) had a shallow pitch. At the eastern end the purlins were set directly into the wall of the clock chamber to form a gable. There was no indication that this had ever been hipped. The roof of the clock chamber itself (131) was pitched, reflecting the form of the east pediment. This section of the roof was originally hipped at the western end but was later extended to form a shallow pitched timber gable. The

reason for this is uncertain but probably related to drainage. The apsidal bay at the west (rear) of the building was originally flat but later modified to accommodate an east sloping rake.

- 12.32 The north range originally comprised a central section spanned by two hipped roofs. East of these was a flat roof section at the front of the building (115) and there was another flat roof section projecting to the rear (114). While the upper timbers had been replaced, probably in the mid-20th century, the lower structural timbers were original, indicating that the basic form had remained unchanged since the 18th-century. The hip trusses were shallow pitched and comprised a simple king post morticed into the tie beam. At each end a timber packer divided the tie and the principal rafter, allowing for a shallower pitch. Evidence of a similar arrangement was found in both the central and southern ranges, although with later modifications.
- 12.33 The layout of the south range was originally the same as that of the north but had been extensively modified. In the central section, the two eastern hip trusses had been removed and the purlins replaced and extended east, to form a shallow gable against the east wall. This was similar in form to that on the west side of the clock chamber. It replaced the flat roofed section at the front of the building, evidence of which was preserved in the form of a horizontal roof scar visible on the east wall. The arrangement of the west hip trusses was the same as that on the north range, as was the flat projecting roof to the rear (145).

Evidence of the 1752 Fire

- 12.34 The reason for the variation of the south range design almost certainly relates to the damage caused by the 1752 fire. In her letter to Mrs Delaval, Rhoda Astley notes that the fire started in the kitchen chimney and spread up the flue to the dressing room above, before sweeping south through the rooms on the upper floor. The archaeological evidence certainly seems to bear witness to this account. The most severe evidence of burning was recorded on the south-west hip truss of the central range, which sits just above the kitchen (Fig.9; intervention 9). Charring was also observed on the timbers of the west hip trusses of the south range (interventions 11, 12, 17, 18), and on the projecting flat roof to the rear. This suggests the fire was carried along wooden guttering **146.**
- 12.35 Damage caused by the fire likely also accounts for the variation observed in the construction of the ceiling of the arcade, which was notably different on the north side

of the central projecting pedimented porch to that on the south. The timbers on the north were possibly original, displaying a complex arrangement of cross braces, while those on the south were a later replacement plausibly originating as refurbishment after the fire.

- 12.36 There was little evidence of intensive burning found elsewhere in the south range as would be expected given that much of the roof structure was replaced. Both the upper and lower structural timbers were obviously later in date than those observed on the north range and set in a slightly different configuration. That the fire was fairly localised was further supported by the absence of charred timbers in the north range and much of the central range. The date of the south range roof replacement was uncertain, as the structure had been considerably modified at various times. It also cannot be ruled out that some of the charring along the guttering relates to sparks taking hold during the 1822 fire, although the documentary evidence indicates that the West Wing was not badly damaged during this event. Smaller fires may have occurred, but gone unrecorded, at other dates too.
- 12.37 Drainage of the shallow pitched and flat area appears to have been a perennial problem that prompted a number of the later repairs, including the addition of the rake to roof **123** and modification of the west hip of the central roof (**122**). It might also account for the removal of the flat section at the front of the south range. To accommodate this the brick cross wall that runs through the building was raised to negate the need for a new truss. This may have also added further stability to the roof structure.

The chalk inscription

- 12.38 The chalk inscription 'Francis Black [sic] Delavall [sic] Esq' remains something of a mystery. It may have been written at the sawmill to indicate where a batch of timber was to be delivered. However, the text was quite crisp and not smudged as would be expected if the timber had been transported up to the roof and positioned into place. The inscription may, therefore, have been added *in situ* soon after erection.
- 12.39 The name relates either to Captain Francis Blake Deleval (1692–1752), or his son of the same name (1727–1771). However, the misspelling of Blake as 'Black' and Delaval as 'Delevall' suggests it was not written directly by either party but someone else. Added to which, the elegant cursive script would suggest this was not a workman. Interestingly, there is a marked similarity between the hand of the roof inscription and the 'W. Delaval' recorded in room B04 (**s100**) (Newman *pers. comm.*).

- 12.40 The roof inscription is not dated. If written in relation to the elder Delaval it might mark the completion of the West Wing (the roof being one of the last elements to be finished) in 1752, or equally the captain's death in December the same year after a fall down the south portico steps. However, it is notable that the honorific 'Esq' is used rather than 'Captain', which was more generally used in reference to his naval career. The inscription is therefore more likely to refer to the younger Delaval and was possibly intended as derogatory comment on the nature of his character—the 'Black Delevall' (or even devil) 'Esq' (Newman *pers. comm.*).
- 12.41 The timber bearing the inscription appears to be original and forms part of the superstructure of the vaulting for the kitchen ceiling at the front of the central range. No evidence of damage from the 1752 fire was found in this area, with charring only being found in the western half of the range. This suggests the inscription was written c. 1752, when Francis Blake was still the heir-in-waiting or, less likely, that the West Wing roof was not fully complete at the time of the fire.

Construction of the stable block

- 12.42 Dismantling of the stall dividers in the East Wing stables confirmed these were let into the wall and clearly a later addition. This supports the idea that the central stables were originally designed and constructed as a riding house (albeit not a vast one), and only converted into stables in the late 18th century.
- 12.43 The base of the dividers sat on a bedding layer of clean sand, beneath which was a mixed rubble deposit. This was only exposed within a 0.40m² area during the removal of one of the wooden end posts, but there was no indication of an earlier surface beneath. The height of the door stops and stone skirting all also indicate that the original floor height was the same as that of the present flagstone floor. Parts of this may be original, although modified, repaired and re-laid at various intervals (the 2017 excavations recovered 20th-century glass from the sand bedding layer). The riding house floor would have presumably been covered with a thick layer of sand when in use, some of which may have been used as backfill in the bedding layer, although that observed during excavation was fairly clean. The layer contained no datable finds recovered from the present work.
- 12.44 Popular in the early 17th century, riding houses developed alongside the equestrian art of haute école; an advanced form of dressage that involved horses enacting intricate steps, gaits and jumps (Worsley 2004, 160). This had largely fallen out of fashion by the

early 18th century and Seaton is one of only four riding houses known to have been built between 1660 and 1750 (Simpson and Brown Architects 2017).

- 12.45 In form, a riding house was an open space without stalls and internal division and usually with a viewing gallery at first floor level. The stone-lined, lofty double-height of the East Wing stables would therefore have been ideally suitable for this purpose. In contrast, as stabling it would have been far too draughty and cold to accommodate thoroughbred stock comfortably in Northumberland's severe climate. Indeed, Gotch in 1908 notes that timber boxes had been installed in an attempt to keep the horses warmer (Simpson and Brown Architects 2017, 91).
- 12.46 A resurgence of interest in the late 18th century, saw an estimated 14 new private riding houses built across the country between 1750 and 1780 as well as further public and military facilities (Worsley 2004, 160). Perversely, if the documentary sources are to be believed, it was it in the middle of this revival that Sir Francis Blake Delaval decided to convert the Seaton riding house into stables. The reason for this is uncertain. Age may have been a factor, Sir Francis would have been in his 40s by this period and perhaps found the high steps and gaits of haute école rather too demanding (Newman *pers. comm.*), or the simple the popularity of the style amongst even the middle classes meant it had lost its appeal as an elite pastime.
- 12.47 Alternatively, and perhaps most likely, the conversion was prompted by a new interest in the mid to late 18th century in the science of horse breeding and stable management, which was itself driven by the popularity of hunting and steeplechasing amongst the landed gentry (Worsley 2004). Several treatises on stable design and the management of thoroughbred stock were published during this period, and exemplars built — like the Adams stables at Hopetoun House which apparently inspired Sir Francis to 'modernise' the facilities at Seaton.

Construction of the stable block

- 12.48 Archaeological monitoring during the installation of services (AWP 1.6) in the stable yard to the rear (east) of the East Wing exposed a section of the north wall (64) belonging to the lost south range. This has been variously described as a stable or glasshouse/conservatory (Simpson and Brown Architects 2017; Fig. 58). This building was either contemporary with the East Wing, or constructed very soon afterwards, but was demolished prior to the preparation of the 1781 estate plan, which shows only the south wall surviving (Fig. 14). This wall remains standing today and, based on the

number of windows it contains, suggests the building on the south side of the stable yard was constructed as a conservatory rather than a stable block. Such windows would have been more fitting to a conservatory, as would have provided for a very cold and draughty stable in winter.

Evidence of later modification and development

- 12.49 The archaeological work identified numerous examples of the later modification of the Hall complex, most of which have already been discussed above. Like many stately homes, there would have been an ongoing programme of modification and redevelopment at Seaton Delaval throughout much of the 18th and early 19th-century.
- 12.50 Evidence of later work included the 19th-century Carriage House, built just before the 1822 fire. Of particular interest was the construction of the floating floor of the building which stood on brick piers. This would have optimised drainage so rainwater falling off the carriages did not pool on the ground and rot of woodwork of the vehicles over time (Newman *pers. comm*)
- 12.51 The graffiti in the basement and kitchen passage was a source of evidence of the later history of the Hall complex. The inscriptions covered a period from the late 19th-century through to the present day. The earliest observed was 'John Jineson(?) 1893 on the south wall of B04. The very faint 'W Delaval' in the same room is likely to be earlier but was undated. Others were from the early 20th century. One in the silver safe dated to the First World War (RF 1915) and several others dated to just after, written in 1919.
- 12.52 The inscriptions throughout the complex, from the medieval mason's mark to the 'Francis Black Delevall Esq' on the West Wing roof timber, and the graffiti in the basement and kitchen passage are an interesting collection in themselves. Added to which there are known to be other examples on the upper floors of the Central Hall and East Wing. These record a fleeting moment in time, anchoring for a moment some of those countless people who have passed through the Hall whose names do not appear in the history books. Further investigation, recording and preservation would certainly be warranted and might make an appealing topic for interpretation and public engagement work.

13.0 CONCLUSION

- 13.1 The conservation work was carefully designed to minimise intervention into the historic fabric of the building and preserve *in situ* as much of the original structure as possible. In many cases this meant that archaeological interventions were relatively limited in

extent, with only glimpses captured beneath floorboards and service runs. Exceptions to this were roof works in the West Wing (AWP 10.2-3), basement excavation in the Central Hall (AWP 11.4), roof works in the Carriage House (AWP 13.2) and dismantling of the stall dividers in the East Wing (AWP 13.7) which provided a unique opportunity to expose and record an extensive area of historic fabric. Even the smaller interventions, such as the service trenches in the East Wing stable yard (AWP 13.6), often revealed small pieces of the archaeological puzzle that contribute to an understanding of the broader picture, in this case the lost building on the south side of the yard and proves the validity and importance of archaeological monitoring.

13.2 Overall, the work undertaken across the main Hall complex as part of the Curtain Rises has uncovered previously unrecorded evidence at sub-ground, ground and roof level that has informed a greater understanding of how the Hall was originally built and modified over its 300-year history.

14.0 ARCHIVE DEPOSITION

14.1 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 be archived with the Archaeological Data Service (ADS).

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Maps and Plans:

Northumberland Record Office (NRO) 740/Box 14 Seaton Delaval Hall 1781 estate map

National Trust Item 1277212 John Dobson's survey of the hall c.1816

Ordnance Survey First Edition six-inch map (1860)

Ordnance Survey Second Edition 25-inch map (1897)

APPENDIX A
CONTEXT CATALOGUES

Table A1: West Wing roof context register.

Context No	Name	Associated Features	Date	Evidential Significance
100	West Wing Roof	110 north range 120 central range 130 pediment chamber 140 south range	Constructed e.18th c with later modifications	High
101	Parapet and decorative urns.	110 north range 120 central range 130 pediment chamber 140 south range	Early 18th c, but some may be replaced.	High
102	Main chimney stack (north)	110 north range 120 central range	Probably original but may be later replacement	High
103	Main chimney stack (south)	120 central range 110 south range	19th c replacement of original	High
104	North range, north-west chimney stack	102 chimney 105 chimney 106 chimney	E. 18th century?	Moderate
105	North range, north-east chimney stack	102 chimney 104 chimney 106 chimney	E. 18th century?	Moderate
106	North range, central chimney stack	102 chimney 104 chimney 105 chimney	E. 18th century?	Moderate
107	South range, central chimney stack	103 chimney 108 chimney 109 platform?	E. 18th century?	Moderate
108	South range, south-east chimney stack	103 chimney 107 chimney 109 platform?	19th century replacement	Moderate
109	South range, south-west platform – probably stack	103 chimney 107 chimney 108 chimney	Unknown	Moderate
110	North range (Roof 1-4)	111 north hipped roof 112 south hipped roof 113 front flat roof 114 projecting bay 115 valley gutter	e. 18th century in origin but with considerable later modification. Much of the surviving structure is 19th - 20th century	Moderate
111	North hipped roof (Roof 2)	110 north range 112 south hipped roof	Unclear if original layout – current structure 19th century?	Moderate
112	South hipped roof (Roof 3)	110 north range 111 north hipped roof	Unclear if original layout – current structure 19th century?	Moderate

Context No	Name	Associated Features	Date	Evidential Significance
113	Front flat roof section (Roof 1)	110 north range 111 north hipped roof 112 south hipped roof	Unclear if original layout – current structure 19th century?	Moderate
114	Rear projecting bay (Roof 4)	110 north range 111 north hipped roof 112 south hipped roof	Early 18th century, much of existing structure later in date.	Moderate
115	Valley gutter	110 north range 120 central range 140 south range	Unclear if location original but is likely to be 18th century in date but structural elements all 19th – 20th century.	Moderate
116	Main north gutter	125 main central gutter 126 main south gutter	Early 18th c but structural elements largely later replacements	High
117	Roof access	110 north range 114 rear projecting bay	Early 18th c but with later repair/replacement?	Mod/High
118	East to west gutters	110 north range 115 valley gutter 116 main north gutter 119 gutter 121 gutter 152 gutter	Probably e. 18th century in origin but the structural elements are later replacements.	Moderate
119	North to south gutter	110 north range 115 valley gutter 116 main gutter 118 gutters 121 gutter 152 gutter	As above	Moderate
120	Central range (Roof 5-7)	110 north range 130 pediment chamber 140 south range	Constructed e.18th c with later modifications	High
121	East to west gutters	120 central range 122 main roof 125 main central gutter	E. 18th century in origin but the structural elements are later replacements.	High
122	Main roof (Roof 6)	120 central range 121 gutters 123 apsidal bay 130 pediment chamber	E. 18th century in origin but later repairs and modifications	High
123	Apsidal bay (Roof 7)	120 central range 131 gutters	E. 18th century in origin and much of the structure is origin.	Mod/High
124	Hipped section	120 central range 122 main roof	e. 18th century	High
125	Main central gutter	116 main north gutter 146 main south gutter	Probably e. 18th century in origin but the structural elements are later replacements.	High
130	Pediment chamber (Roof 5)	120 central range 121 gutters 124 hipped section 130 pediment chamber	E. 18th century in origin but the structural elements are 19th and 20th century	High
131	Clock gantry	130 pediment chamber	E. 18th century	Mod/High
132	Doorway	130 pediment chamber 133 windows	E. 18th century	High

Context No	Name	Associated Features	Date	Evidential Significance
133	Windows	130 pediment chamber 133 windows	E. 18th century	High
134	Pediment gutters	130 pediment chamber	E. 18th century with later repairs	Mod/High
140	South range (Roofs 8-10)	110 north range 106-7 chimneys 109 chimney? 120 central range 141 valley gutter 142 gutters 143 projecting bay		
141	Valley gutter	140 south range 142 gutters 116 main gutter	Unclear if location original but is likely to be 18th century in date, but structural elements all 19th – 20th century.	Moderate
142	East to west gutters	140 south range 141 valley gutter 116 main gutter	As above	Moderate
143	North pitched roof (Roof 8)	140 south range 141 valley gutter 142 gutters 144 south pitched roof 116 main gutter 145 projecting bay	Unclear if layout is original but it could be 18th century in date, but structural elements mostly 19th – 20th century.	Mod/High
144	South pitched roof (Roof 9)	140 south range 141 valley gutter 142 gutters 143 north pitched roof 116 main gutter 145 projecting bay	As above	Mod/High
145	Projecting rear bay (Roof 10)	140 south range 111 north hipped roof 112 south hipped roof	Early 18th century, much of existing structure later in date.	Moderate
146	Main south gutter	116 main north gutter 125 main central gutter	Location is original, but likely includes 19th renovations	High
201	North-west corner truss roof 143	203 south west truss r.143 204 north west truss r.144 206 south west truss r.144 207 south west truss r.122	19th -20th century	Mod/high
202	West truss of roof 143	205 west truss roof 144	19th -20th century	Mod/high
203	South-west corner truss roof 143	201 north-west truss r.143 204 north west truss r.144 206 south west truss r.144 207 south west truss r.122	19th -20th century	Mod/high
204	North west corner truss roof 144	201 north-west truss r.143 203 south west truss r.143 206 south west truss r.144 207 south west truss r.122	19th -20th century	Mod/high
205	West truss roof 144	202 west truss roof 143	19th -20th century	Mod/high

Context No	Name	Associated Features	Date	Evidential Significance
206	South-west corner truss roof 144	201 north-west truss r.143 203 south west truss r.143 204 north west truss r.144 207 south west truss r.122	19th -20th century	Mod/high
207	South-west corner truss roof 122	201 north-west truss r.143 203 south west truss r.143 204 north west truss r.144 206 south west truss r.144	Maybe early 18th century but may have 19th -20th century	High/mod
210	South drain	211 south-west drain 212 north-west drain 213 north drain	E. 18th century	High
211	South-west drain	210 south drain 212 north-west drain 213 north drain	E. 18th century	High
212	North-west drain	210 south drain 211 south-west drain 213 north drain	E. 18th century	High
213	North drain	210 south drain 211 south-west drain 212 north-west drain	E. 18th century	High
220	East truss roof 143	221 East truss roof 144	19th -20th century	Mod/high
221	East truss roof 144	220 East truss roof 143	19th -20th century	Mod/high

Table A2: East Wing roof context register.

Context No	Name	Associated Features	Date	Evidential Significance
100	Carriage House roof truss (East)	200 truss 300 truss 400 truss 500 truss 600 truss	Early 19th century	High
200	Carriage House roof truss (East)	As above	As above	As above
300	Carriage House roof truss (East)	As above	As above	As above
400	Carriage House roof truss (East)	As above	As above	As above
500	Carriage House roof truss (East)	As above	As above	As above
600	Carriage House roof truss (East)	As above	As above	As above
200	Carriage House roof truss (West)	800 truss	As above	As above
200	Carriage House roof truss (West)	700 truss	As above	As above

Table A3: watching brief context register.

Context	Archaeological Work Package	Description	Type	Area	Notes
117	AWP 11	Drain	Masonry	Basement BR1	Soak-away in NE room same as 108
118	AWP 11	Drain	Masonry	Basement BR2	N-S drain centre of basement
119	AWP 11	Drain	Masonry	Basement BR2	Same as 117
120	AWP 11	Drain	Masonry	Basement BR2	Drain running west under 122
121	AWP 11	Drain	Masonry	Basement BR2	Brick addition to 120
122	AWP 11	Drain	Masonry	Basement BR2	Flagged floor drain in corner
123	AWP 11	Drain	Masonry	Basement BR3	SE-NW soak-away from Silver Room
124	AWP 11	Drain	Masonry	Basement BR3	E-W soak-away
125	AWP 11	Drain	Masonry	Basement BR3	Diagonal drain from BR3 Steward to Storeroom
126	AWP 11	Drain	Masonry	Basement BR3	S-N soak-away same as 117
127	AWP 11	Brick wall	Masonry	Basement BR4	Partition wall storage area
128	AWP 11	Floor make-up	Masonry	Basement BR4	Mortar brick and stone flagged floor
129	AWP 11	Floor make-up	Masonry	Basement BR4	Mortar brick and stone flagged floor
130	AWP 11	Drain	Masonry	Basement BR4	Flagged floor drain in doorway
131	AWP 11	Drain	Masonry	Basement BR4	Drain in NE corner from Steward's Room
132	AWP 11	Stone floor	Masonry	Basement BR7	Flagged floor
133	AWP 11	Brick floor	Drainage	Basement BR7	Brick underfloor
134	AWP 11	Drain	Masonry	Basement BR7	S-N soak-away
135	AWP 11	Floor make-up	dep	Basement	Compacted floor make-up all rooms
136	AWP 11	Drain	Masonry	Basement BR7	W-E soak-away into BR2 Kitchen
137	AWP 11	Sink	Masonry	Basement BR7	Carved stone trough in Laundry
164	AWP 11	Infill of corridor	dep	Base of west stair tower	Deposit below 166
165	AWP 11	Foundations	Masonry	Base of west stair tower	Building foundations at W Tower
166	AWP 11	Flagged floor	Masonry	Base of west stair tower r	Temp working floor surface
167	AWP 11	Flagged floor	floor surface	Base of west stair tower	Floor in corridor
168	AWP 13	Built-up soil	dep	Carriage House	Topsoil and dumping within E courtyard
169	AWP 13	Flagged floor	Masonry	Carriage House	Fixed floating floor in Carriage House
170	AWP 13	Brick plinth	Masonry	Carriage House	Plinth to 169
196	AWP 13	Wall	Masonry	Stable yard	Core material associated with wall 66
197	AWP13	Wall	Masonry	Stable yard	South wall of demolished building
198	AWP 11	Backfill	Dep	Base of west stair tower	Crushed sandstone, mortar and coarse soils
199	AWP 11	Disturbed material	Dep	Base of west stair tower	Disturbed material caused by insertion of water pipe

200	AWP 11	Foundation course	Masonry	Basement B08-10	Foundation course of heavily mortared rough sandstone
201	AWP 11	Brick surface	Masonry	Basement B08	Single course of orange-red bricks visible only in section.
202	AWP 11	Foundations	Masonry	Basement B10	Wall foundations in B10
203	AWP 11	Drain	Masonry	Basement B11	Drainage outlet
204	AWP 11	Coping stones	Masonry	Basement B1	Coping stones used as cap of drain
205	AWP 11	Threshold	Masonry	Basement B11	Threshold step
206	Void				
207	AWP 11	Inlet	Masonry	Basement B09	Modern outlet
208	AWP 11	Stone flags	Masonry	Basement B05	Stone shelves
209	AWP 11	Coping stone	Masonry	Basement B03	Re-used coping as drain covering
210	AWP 11	Mortar	Dep	Basement B03	White mortar over drain – repair
211	AWP 11	Hearth	Masonry	Basement B03	Hearth
212	AWP 11	Hearth	Masonry	Basement B08	Hearth/Fireplace
213	AWP 11	Hearth	Masonry	Basement B02	As above

APPENDIX B
CLAY PIPE, POTTERY AND GLASS ASSESSMENT

Charlotte Britton

INTRODUCTION

This report discusses the clay pipe, glass and pottery recovered from the 2018–20 archaeological investigations of the main hall complex at Seaton Delaval Hall, Northumberland. A total of three fragments (10g) of clay pipe, 145 fragments (8713.7g) of glass, including glass waste, and 251 fragments (3184.3g) of pottery were recovered that dated to the post-medieval and modern periods (Table B1).

Table B1: material by context, with count and weight.

Material	Clay pipe		Glass		Pot		Total count	Total weight (g)
	count	weight (g)	count	weight (g)	count	weight (g)		
0			4	451	1	10.6	5	461.6
118					3	35.4	3	35.4
120			1	761.5	9	137.7	10	899.2
135	3	10	140	7501.2	238	3000.6	381	10511.8
Total	3	10	145	8713.7	251	3184.3	399	11908

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). The glass, including glass waste, was recorded in line with both the national finds standards and find type specific guidance's (ClfA 2014; 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 and decoration were documented where practicable.

OUTLINE OF THE ASSEMBLAGE

The clay pipe

The clay pipe assemblage dated to the post-medieval period (17th–19th century) and consisted of a bowl and stem fragments (Table B2). Exclusively recovered from floor make-up 135, the assemblage represented a maximum of three individual pipes, and those present were in good condition. The pipes were British in origin, and probably produced within the local region. All the fragments were made from ball clay and the burnishing present was in good condition. Although fragmentary, the two stems were straight and thin and the bore hole diameters measured 8/64 inch, indicating the assemblage dated to 17th–19th century (Higgins 2017, 8–9). One example (4g) tapered from 8mm at the bowl end to 6mm at the mouthpiece end, further supporting this date range (*ibid*). The other stem fragment (3g) recovered was very clean and

white, indicating it may not have been used, or used very little, before being disposed of. The bowl fragment (3g) recovered was fragmentary showing no rim, heel or spur.

Table B2: clay pipe by context, with count and weight.

Clay pipe part	Bowl		Stem		Total count	Total weight (g)
	count	weight (g)	count	weight (g)		
135	1	3	2	7	3	10

The glass

The glass assemblage dated to the post-medieval (18th–20th century) to modern period and included window and vessel glass and was in good condition. The assemblage also included glass waste that may have originated from glassmaking processes taking place in the vicinity of the site, during the post-medieval period. The assemblage represented a maximum of 46 vessels, three windows and 63 fragments of waste in the form of wasters, slag, trails and additional casting waste (Table 3).

Table B3: glass type by context, with count and weight.

Object type	Vessel		Waste		Window		Total count	Total weight (g)
	count	weight (g)	count	weight (g)	count	weight (g)		
0	3	436.3	1	14.7			4	451
120	1	761.5					1	761.5
135	67	5467.8	62	1540.9	11	492.5	140	7501.2
Total	71	6665.6	63	1555.6	11	492.5	145	8713.7

The window glass

Eleven sherds (492.5g) of window glass dating to the 18th–20th centuries, were recovered from floor make-up **135**. All the sherds were transparent and probably made from either high-lime low-alkali (HLLA) glass or soda-lime-silica plate glass, both common to the post-medieval period (Historic England 2018, 50, 53–54). Nine sherds (471.2g) of clear, transparent plate glass showed a painted decoration (or remnants of) in the form of red squares/diamonds edged in black, between gold octagons. The sherds dated to 18th–20th centuries and probably originated from two painted glass windows in the Hall. The additional two fragments (21.3g) of window glass were also plate glass, aquamarine in colour and showed iridescence, having delaminated to a darker blue over time. These sherds probably dated a little later, to the 20th century, originating from another window in the Hall.

The vessel glass

A total of 71 sherds (6665.6g) of vessel glass was recovered dating to the 18th–20th centuries and modern period. The assemblage represented a maximum of 46 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. Vessel types largely included beverage containers including wine, beer, ginger beer and water bottles, along with three small medicine/perfume bottles, four possible drinking vessels and a sherd of plate glass from an unknown vessel.

Thirty-eight fragments (3949.7g) of the beer/wine bottles were recovered with some of them plausibly being produced close to the Hall at the Hartley bottleworks, between the 18th and 20th

centuries. Representing 22 individual vessels, most of the fragments were dark green to black in colour, transparent and often displayed seams indicating they were machine-made. Their appearance indicated that the vessels were made from HLLA glass, typical to the post-medieval period (Historic England 2018, 45, 48 and 65). Base fragments were usually large and always displayed a high punt, and the 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 large champagne/burgundy-type vessels or similar.

A beer/wine bottle fragment (41.6g) that was dark green in colour and transparent was recovered from floor make-up **135** and had a cork inserted in the neck. This probably dated to the 19th–20th century and was likely produced after the closure of Harlley in the 1870s. Similarly, six fragments (455g) from five additional bottles were recovered from the same context and embossed on the sidewalls with the name 'A.N Dodds wine and spirit merchant'. These also presumably contained beer and were recovered alongside stoneware bottles that displayed the same name (see below). Some of the glass fragments also featured a picture of a lion with 'old red lion' 'o&So Shiel' embossed on the side wall. This further indicated that they may have been produced for, or in association with, the Old Red Lion pub in North Shields (Pub wiki 2020).

Ten fragments (347.8g) of probable water vessels, dating to the 19th–20th century, were also recovered from floor make-up **135**, drain **120** and unstratified layer **0**. Comprising six separate bottles, all were transparent, usually aquamarine in colour and often displayed seams indicating they were machine-made. Two fragments (103.7g) of a complete bottle from unstratified layer **0** had an applied lip and was recovered with a ceramic and rubber stopper/flip-top which read 'Muter Bedlington 1883'. This held mineral water produced at this time by John Muter in Bedlington, located c.7 miles away from the Hall (Sixtownships). In addition, there were three fragments (152.6g), deriving from two separate bottles, that each had ceramic stoppers/flip-tops that read 'Wilkinson. North Shields. W.A'. This company produced soda water, ale and porter during the late 19th century and the bottle presumably held one of these products, most likely soda water, due to the aquamarine colour of the bottle (Northshields173 2020). Finally, three fragments (189g) of a single green/aquamarine translucent bottle were recovered that showed a rim and an applied lip, with the shoulder having evidence of pinching, indicating it may have derived from a Codd bottle that held soda water or a similar product.

Four other fragments (163.3g) of water or possible ginger beer bottles were recovered from floor make-up **135** and unstratified layer **0**. Originating from four separate bottles, the fragments were aquamarine in colour, transparent and displayed variants of the word 'CLEGG' embossed on the sidewalls and/or bases. One example also had 'Clegg's Crowtree Terrace Sunderland' on the sidewall.

In addition to drinking containers, four base fragments (408.5g) of clear, translucent machine-made glass vessels were recovered from floor make-up **135**, that may have originated from additional bottles or drinking vessels, dating to 20th century to modern period.

Seven fragments (99.7g) of three separate medicine/perfume bottles were recovered from floor make-up **135**, including a single complete tiny perfume bottle. Measuring 49mm in height, the bottle was clear, transparent, had a rolled rim and probably dated to the 20th century. Five sherds (41.1g) of a single small green/aquamarine transparent bottle with a laid on rim were also recovered as well as the base fragment (45.2g) of a green transparent bottle, both probably dating to between the 18th and 20th centuries and used to hold perfumes or medicines.

Finally, a single fragment (1.8g) of opaque white plate glass was recovered from floor make-up **135** that was very thin and had a slight curve to it. This derived from a plate, vessel or similar, and probably dated to the 20th century to modern period.

The glass waste

A total of 63 fragments (1555.6g) of glass waste were recovered from the site dating to the late 18th-20th century. The waste consisted of slag, trails, wasters and other possible casting waste that may have originated from the Hartley works (Table B4).

Table B4: glass waste type by context, with count and weight.

Waste type	Slag		Trail		Waste		Waster		Waster?		Total count	Total weight (g)
	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)		
0									1	14.7	1	14.7
135	17	632.4	16	86.3	4	66	18	554.5	7	201.7	62	1540.9
Total	17	632.4	16	86.3	4	66	18	554.5	8	216.4	63	1555.6

Twenty-six probable waster fragments (756.2g) were recovered mostly from floor make-up **135**, that derived from 18 separate vessels. Wasters have usually been subject to firing failures displaying faults, and so cannot be used (Historic England 2018, 66). The examples recovered were mis-shapen and light- to dark-blue, green, grey or cream in colour, usually opaque and sometimes with mortar attached. One sherd (45.4g) also had smaller fragments of green transparent bottle glass adhered to it. The discolouration and alterations in shape of these fragments derived from intense heat. The colours identified indicate that the wasters consisted of altered HLLA glass, the same material some of the locally made beer/wine bottles recovered were made from (*ibid.*, 29). Two complete rim fragments (69.5g) were recovered that were cream and opaque in colour, mis-shaped and displayed an applied lip and possible collar associated with glass bottles.

Glass slag was also recovered from floor make-up **135** and consisted of dark blue, brown, green and black opaque fragments, that were vitrified with bubbly surfaces. The colours present indicated these fragments also represented overfired HLLA glass (*ibid.*, 29). The fragments had metal inclusions and sometimes had mortar adhered to them.

Sixteen fragments (86.3g) of glass trails were recovered from floor make-up **135**. The fragments were opaque and ranged from black, blue, green to cream in colour and were also discoloured by extreme heat. Additional waste in the form of four glass lumps (66g) were recovered from floor make-up **135** that were light- to dark-blue in colour.

The pottery

A total of 251 sherds (3184.3g) of post-medieval pottery was recovered that dated to between the 18th and 20th centuries. The assemblage represented a maximum of 67 separate vessels and the material recovered ranged from poor to very good in condition. (Table B5).

Table B5: pottery by context, with count and weight.

Context	Count	Weight (g)
0	1	10.6
118	3	35.4
120	9	137.7
135	238	3000.6
Total	251	3184.3

All the pottery present was British in origin, and mostly produced within the local region except for a transfer-printed plate produced in Burslem, Staffordshire. The wares identified were highly typical of the period and encompassed utilitarian and table wares. The forms identified were typical of the period and wares, including flatwares such as plates, platters and saucers, and hollow wares such as bottles, bowls, cups, jars, jugs, a tureen and a possible porringer.

The decorations and surface treatments identified in the assemblage included clear, yellow and brown glazes and slips, and common transfer-printed patterns such as Willow pattern, Asiatic Pheasant pattern, romantic scenes and Chinese scenes, as well as other floral and foliate designs. Hand-painted designs were also common in the tableware assemblage, alongside plain whiteware. Twenty sherds (96g) of mochaware belonging to two separate hollow-ware vessels were recovered that displayed characteristic blue and brown bands. Of note in the transfer-printed assemblage were 25 sherds (410.9g) of a blue Willow pattern tureen lid from floor make-up **135**. Seven sherds (225.2g) of a transfer-printed plate were recovered from the same context. This displayed a green border of urns and vines and had a transfer-printed stamp on the base. This showed a cog with a crown above it and read 'Doulton, Burselm, England, Selborne RaNo251612 / RaNo280217', indicating that it was part of a mass-produced suite manufactured by Royal Doulton in Burselm, Staffordshire, during the 19th–20th century (The Potteries 2016).

The utilitarian assemblage included 12 sherds (220.9g) of yellow glazed earthenware belonging to a single large plate/platter that displayed a characteristic yellow and brown mottled slip, as well as two sherds (14.9g) of brownware and a large amount of stoneware. The latter consisted of bottle fragments that were decorated with brown salt-, or two-tone glazes. Of note, were nine fragments (735.5g) of three separate two-tone bottles that were recovered from floor make-up **135**. The fragments displayed red transfer-printed labels on the sidewall that as a whole read 'A.N Dodds spirit merchant...established 1863...Nth & Sth Shields & Tynemouth' alongside a prancing lion inside a circle. This indicated that these fragments were from three A.N Dodds wine and spirit merchant bottles dating to the 19th century (Collectors Weekly 2020). The bottles were probably produced in Glasgow and were used to hold beer, ginger beer or a similar product, brewed in the North and South Shields and Tynemouth area, and were possibly associated with the Old Red Lion pub located in North Shields (*ibid.*; Pub wiki 2020). Glass bottles with the same name embossed on the side wall were also recovered from this context, although may have dated a little later (see above).

Table B6: pottery by context, with wares, period, count and weight.

Context		0		118		120		135		Total count	Total weight (g)
Ware	Period	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)		
Brownware	18th–19th century							2	14.9	2	14.9
Edged ware	19th–20th century							1	8.9	1	8.9
Mochaware	19th–20th century							20	96	20	96
Slipware	18th–19th century							4	64.3	4	64.3
Slipware?	18th–19th century					1	2.4			1	2.4
Stoneware	18th–20th century							15	823.9	15	823.9
Stoneware?	18th–20th century							1	53.8	1	53.8
Transfer-printed ware	19th–20th century	1	10.6	2	12.5			82	930.9	85	954
Whiteware	19th–20th century			1	22.9	6	97.6	68	467	75	587.5
Whiteware – Painted	19th–20th century					2	37.7	33	320	35	357.7
Yellow glazed earthenware	18th–19th century							12	220.9	12	220.9
Total		1	10.6	3	35.4	9	137.7	238	3000.6	251	3184.3

Finally, a single fragment (53.8g) of salt-glazed stoneware recovered from floor make-up **135** displayed a very coarse and brittle fabric, indicating that it had been overfired, suggesting that it may have constituted a waster.

PROVENANCE OF OBJECTS

Most of the assemblage was recovered from deposit **135**, a mixed sandy clay deposit with fragments of demolition debris that extended throughout the basement in the Central Hall and was a levelling/bedding deposit for the flagstone floor. This was between 0.15m and 0.3m thick in places. Finds recovered from this context were therefore likely to result from secondary rather than primary deposition. Additional material was recovered from drain fills **118** and **120** including 1 fragment (761.5g) of a glass bottle and eight sherds (137.7g) of pottery, recovered from their primary deposition context. The remaining material was recovered from unstratified layers and so was residual.

DISCUSSION

The clay pipe

All the clay pipe was recovered from floor make-up **135**, found in three separate rooms of the basement. Clay pipes were disposable items, often used only a few times before they were thrown away and therefore their potential for dating a context is high (Pearce 2015, 286). However, this relies on being able to date the pipe accurately which usually requires comparing complete bowls to the known typology or through the presences of makers' marks. None of these features were present in the Hall assemblage. The bore size and stem size of a pipe can be a helpful indicator of age and those of this assemblage suggest a date of between the 17th and 19th centuries.

The fragments recovered showed indication of well-applied burnishing but no decoration, suggesting they were probably at the more expensive end of the common style of pipe at the time (Higgins 2017, 19–20).

The glass

The glass assemblage dated to the post-medieval to modern period and encompassed window and vessel glass, as well as glassmaking waste. Most of the material was recovered from floor make-up **135**.

The window glass

The window glass recovered represented three separate windows. The 11 sherds (492.5g) of painted glass recovered indicated that the Hall featured decorated windows and provides some indication of the pattern and colour scheme. The sherds were all recovered from two rooms in the basement. The decoration was interestingly painted rather than stained, which would have been a slightly cheaper method of decoration. The additional window glass recovered was plain and dated to the 20th century.

The vessel and waste glass

Many of the glass vessels recovered were connected to drink storage and consumption and associated with domestic occupation and entertainment from the 18th to the 20th centuries. Bottles were found from North Shields, Sunderland, and other areas across the North East, but notably not from further afield. The remainder of the vessels in the assemblage comprised beer and/or wine bottles that were probably also produced within the local region.

The glass waste recovered from the building may have originated from the nearby Harlley bottleworks at Seaton Sluice, about 1.7km away from the Hall (Seaton Sluice and Old Hartley Local History Society). This was established in 1763 by Sir Francis Delaval and was an influential production site in operation throughout the 18th and early 19th century, employing many local people and producing over one million bottles a year, that were shipped all over the UK and Europe (*ibid.*). However, as nearly all of the glass waste assemblage was recovered from floor make up 135 that was part of the building foundation that was laid in 1720 some 40 years previous to the opening of the bottleworks (Middleton, *pers. comm.*), this asks more questions than it answers, specifically how and why this material ended up in this deposit. Their presence may have been a result of later contamination, when the floor flagstones were removed, although this is not certain. Whatever the reason, the slag, trial and associated lumps were clearly derived from industrial processes and made from similar HLLA glass as some of the finished bottle fragments that were also recovered. The wasters recovered were also made from this material and all derived from bottles that were probably intended to be green beer/wine bottles when finished.

The medicine/perfume bottles are evidence of other domestic activities apart from storage and drink consumption.

The pottery

The wares and forms present within the post-medieval pottery assemblage encompassed table and utilitarian wares and indicated something of the nature of domestic activity taking place in the Hall. The decorations identified within the assemblage were common to the period with only a few examples of the more elaborate, and therefore expensive, wares the Delavals might have used for entertaining. The latter including the Willow pattern tureen lid and the Royal Doulton plate.

Most of the assemblage probably originated from local production centres apart from the stoneware bottles which were stamped with 'A.N Dodds' a wine and spirit merchant operating in the Tyneside area but produced in Glasgow.

Finally, the possible wasters found within the assemblage hint at a possible pottery production site within the local area during the post-medieval period, especially as wasters were also recovered from the Brewhouse and Pleasure Grounds. However, these were in no great number and could have been brought in as packing with a batch of pottery.

Conclusion

The assemblage described here contains several items that are indicative of particular activities taking place at Seaton Delaval Hall. For example, domestic food and drink consumption and leisure activities such as smoking and the entertainment of guests. There are connections with local manufacturing sites such as W.A. Wilkinson Ltd in North Shields, Cleggs of Sunderland and

the Old Red Lion Pub in North Shields, as well as connections with products made further afield, such as pottery coming from Staffordshire.

In terms of dating, most of the assemblage was recovered from floor make-up **135** and a lot of the glass material showed mortar adhesions indicating an assortment of collated waste used as a foundation for the basement floor. The late date of much of this material, including material from the 19th and 20th centuries, is a clear indicator of a mixed deposit with likely later contamination from after the flagstones were removed. In addition, each material was recovered from numerous rooms in the basement rather than from a single area.

RECOMMENDATIONS

All the clay pipe, glass and pottery recovered dated from 17th–20th century and modern period and ranged from poor to very good in condition. The assemblages recovered were highly typical of the period and no further study is recommended, although the entire assemblages should be retained and deposited with the site archive, being fragmentary evidence of domestic life at Seaton Delaval

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APPENDIX C
THE SMALL FINDS

Julie Shoemark

INTRODUCTION

A total of six artefacts were recovered from the main hall complex during the course of the archaeological works. Three of the artefacts were of copper-alloy; two were of mixed copper-alloy and iron and one was of iron.

METHOD

The finds were assessed by eye on 20th August and 11th September 2020. X-rays of ferrous objects and copper-alloy objects 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). The assemblage was then considered in terms of its stratigraphic relationship. All dateable finds were ascribed a post-medieval date and it is likely that those that 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.

OUTLINE OF THE ASSEMBLAGE

10: tools (one object)

A long, cylindrical faceted object (RF13) was recovered from basement floor make-up **135**. The object has a flat head with a slight overhang around the edge and appears to have been repeatedly struck. The shaft expands near the centre before tapering into a wedge-shaped blade which terminates in an old break. It is likely to be a chisel.

11: fasteners and fittings (14 objects)

An incomplete copper-alloy doorknob (RF19) was found in basement floor make-up **135**. The knob is hollow with a dished impact mark on the front and a circular break on the back, presumably from when the shank was broken.

Two copper-alloy pulley elements (RF14 and RF21) were also found in basement floor make-up **135**. They are almost identical in size and form. Both comprise a circular disc with two flanges forming a central recessed area around the circumference. The centre of each face is recessed and has a central perforation containing an iron shank.

A two-part circular lock plate (RF15) was recovered from drain **118**, the north–south drain running through the centre of the basement. The front plate has a ridged circumference forming a recessed central area engraved CHUBB. Above the inscription is a circular perforation with a copper-alloy pin holding the two plates together. The pin is brassy colour – a different alloy from the two plates. The back plate is flat with central keyhole-shaped perforation and a countersunk perforation on either side, both empty.

18: unidentified objects

An incomplete baluster-moulded cylindrical copper-alloy object (RF20) was recovered from basement floor make-up **135**. It has a solid cylindrical stem expanding into a baluster moulding, the widest ridge engraved with a series of diagonal lines. The object then tapers and expands back out to a second narrower expansion with a circumferential groove running below it. The second expansion has a flat surface with a cylindrical stem projecting from the centre, terminating in an old break. The object bears superficial resemblance to post-medieval candlesticks of late 15th–18th century date, for example DEV-11198D, recorded by the Portable Antiquities Scheme and examples cited by Brownsword (1985) and Hume (1978). However, insufficient remains for the identification to be confirmed and the object may equally be part of a furniture fitting of similar date.

PROVENANCE OF OBJECTS

Five of the six artefacts recovered from the building structure came from basement floor make-up **135**. The sixth object (RF15) was recovered from north–south drain **118** running through the centre of the basement.

DISCUSSION

Two (RF19 and RF15) were associated with doors. The lock plate (RF15) is relatively modern. Chubb was established in 1818 and RF15 is of a type similar to models which remain on sale today. It was probably discarded when a nearby lock was changed. The doorknob (RF19) is difficult to date beyond a broad 18th–20th-century range.

The iron chisel (RF13) has a faceted grip and a long shank with a narrow blade and is probably a paring chisel, used for fine work. The chisel is in good condition, with little corrosion on the surface. This may be a result of preservation conditions or may indicate that the tool is a relatively recent loss.

The two pulley elements (RF14 and RF21) are almost identical and are likely to have been part of the same mechanism, possibly a double rope pulley for a sash window; however, without the remainder of the mechanism it is difficult to state this categorically.

The baluster-moulded object (RF20) is likely to be part of a candlestick or furniture fitting. No good parallels have been found and it is not possible to speculate further about the purpose of this object.

RECOMMENDATIONS

The assemblage is small and, with the exception of chisel RF13, consists entirely of elements from larger objects. It is recommended that the chisel be retained as a suitable object for display. The pulley elements (RF14 and RF21) may also be visually interesting in a display, although they have little informational value.

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APPENDIX D
CERAMIC BUILDING MATERIALS

Chrystal M L Antink

INTRODUCTION

This report discusses the ceramic building materials (CBM) recovered from the 2018–20 archaeological excavations of the main hall complex at Seaton Delaval Hall, Northumberland (NZ 32334 76643). A total of 12 fragments (20,958g) of brick and two fragments (4933g) of chimney pot were recovered (Table D1).

Table D1: total CBM in grams by context.

Context	Brick		Chimney pot		Total count	Total weight (g)
	count	weight (g)	count	weight (g)		
120			2	4933	2	4933
121	1	2101			1	2101
126	1	2328			1	2328
129	1	2710			1	2710
133	1	2417			1	2417
135	4	7361			4	7361
170	1	2698			1	2698
Carriage House Chimney	1	1343			1	1343
Grand Total	10	20,958	2	4933	12	25,891

METHOD

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.

Samples of the CBM deemed most likely to be dateable were selected for recovery by the supervisor on site, as retrieving 100% of the material would have proved unviable and of limited diagnostic benefit.

Brick manufacture dates were estimated with comparison to historic measurements provided in Davey (1961), McComish (2015), and the PAYE Conservation (2017) using all surviving complete dimensions. As 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.

OUTLINE OF THE ASSEMBLAGE

Bricks

Eight of the bricks and brick fragments (16,917g) were recovered from areas of the basement, with an additional fragment (1343g) coming from the Carriage House chimney (dated 1500–1850), and one (2698g) from a brick plinth in the Carriage House (1784–1850). All were post-medieval circa 1500 to 1850s in manufacture (the majority broadly from 1500–1700), and all were handmade, suggesting they were produced before approximately 1900 (Table D2). 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.

Table D2: dated bricks from basement rooms.

Context/description	Date range		
	1500–1700s	1500 to late 1700s	1784–1850
121 Basement Room 2, scullery/pantry	1		
126 Basement Room 3, Steward Room	1		
129 Basement Room 4, beer cellar			1
133 Basement Room 7, brick underfloor	1		
135 Floor make-up			
Basement Room 5	2		
Basement Room 6	1		
Basement Room 8		1	

The quality of the recovered bricks was variable; some were very neatly made, while others were more slapdash; similarly, some were evenly dried and well-fired, while others have significant differential drying cracks.

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

Chimney pot

Two adjoining fragments of a post-medieval chimney pot were recovered from context **120**, a drain in basement room 2, the scullery/kitchen. The fragments retain decorative ridges running parallel to the rim (approximate diameter 0.4m); the main body of the fragments are approximately 0.25m thick, whereas the rim is 0.74m.

PROVENANCE OF OBJECTS

The majority of the CBM was sampled from contexts within the basement, which included drains, drains (118), and floor make-up (135). The remaining two fragments were from the Carriage House, one from the chimney, and one from a brick plinth to flagged floor 169.

DISCUSSION

Bricks are broadly dateable, and so can confirm or dispute historic sources, should these become available.

RECOMMENDATIONS

All the recovered building material was of the post-medieval period, ranging from the 14th through to the 19th centuries. Ideally, the entire assemblage should be retained and deposited with the site archive at the relevant depository.

No elements from this area of the Seaton Delaval investigations are recommended for illustration or display.

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APPENDIX E
INDUSTRIAL DEBRIS

Rachel Cubitt

INTRODUCTION

This report discusses a single item of possible industrial debris submitted for visual assessment recovered from the main Seaton Hall complex during recent investigations. The material recovered is a type normally taken to be indicative of ironworking, usually smithing; however, there is no corroborating evidence for that activity taking place.

METHOD

The material was assessed by eye on 1st September 2020 and details recorded in an Excel spreadsheet.

OUTLINE OF THE ASSEMBLAGE

The assemblage comprises a single fragment of glassy cinder weighing 40.4g, recovered from context 135. 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.

PROVENANCE OF OBJECTS

Context 135 is a floor make-up deposit in a basement.

DISCUSSION

While cinder is normally taken to be indicative of ironworking, usually smithing, this single fragment found in isolation cannot be taken as an indication of ironworking taking place at this location. It is not possible to draw any inference from this item, which is recommended for discard.

RECOMMENDATIONS

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