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Archaeological Projects

BELSAY CASTLE, NORTHUMBLERLAND
Site Archive Completion and Assessment for Belsay Castle evaluation, June 2018

Thomas Cromwell, Julie-Anne Bouchard-Perron, Nicola Hembrey, Duncan H Brown, Florian Ströbele, Karla Graham, Matt Canti, Polydora Baker

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SUMMARY
Three trenches were excavated at Belsay Castle to examine the archaeology in areas likely to be impacted by planned development of new café facilities.

Footings of the coach-house west wall were exposed extending 0.75m below ground, along with bedrock discovered 0.8metres below ground level, but this is 0.7m above the internal floors and thresholds of the doorways on the east side of the structure. Archaeological features are present below the topsoil. The footings were probably a terrace retaining wall with insubstantial foundations, before later structures were built on top culminating in the present coach-house.

South of the coach-house two roughly parallel walls were found, running north-south in line with the coach-house. The western wall possibly began as a retaining wall, while the east wall was always free-standing, with no evidence for a floor between them. A deep stone box drain runs along the east face of the coach-house, with side branches visible. Two parallel lines seen in the geophysics running east across the lawn towards the kennels from the south corner of the coach-house could be a demolished "north range" for the manor house.

In the walled orchard topsoil gave way to boulder clay with large slabs of stone approximately 0.6metres below surface. A single east-west linear feature was found but this was badly disturbed by a large tree root from a massive stump.

CONTRIBUTORS
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ARCHIVE LOCATION
Fort Cumberland, Portsmouth

DATE OF EXCAVATION
11-29 June 2018

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BACKGROUND

As part of the Shared Services agreement, English Heritage Trust asked the Archaeological Projects team at Historic England to be involved with archaeological work associated with the plan to convert the currently empty shell of the old coach-house at Belsay Castle into a café facility. A successful Stage 1 bid to the Heritage Lottery Fund called for some evaluation of areas likely to be impacted by new services and by a terrace to be created on the west side of the building. Further activities for community engagement are outside the scope of this report.

While details of the new works were yet to be decided in spring of 2018, it was clear that some archaeological evaluation would be required on the west side of the coach-house, as well as south of it where services might be routed. Another target was the walled orchard east of the main Castle enclosure, as there were suggestions of putting sumps there.

At the time the evaluation project design (Cromwell 2018) was being developed the plan was to submit a Stage 2 bid to HLF in the autumn, leading to urgency to carry out the evaluation in May or June 2018 at the latest. The project design proposed four trenches (see Fig 1) – one behind the coach-house to explore the west side, two to the south of the gable-end of the building (to work around an existing tree), and a fourth in the orchard. Each was to be opened by machine under watching-brief to remove modern topsoil before hand-excavation of archaeologically significant features by a small team. In the event it proved impossible to place a trench near the gable wall, north of the tree, so this trench was dropped. Excavation ran for three weeks, from 11-29 June. All trenches were duly backfilled at the end.

Ordinarily at the end of fieldwork a Site Archive Completion (SAC) report would be generated, eventually followed by a separate Assessment report once all the evidence had been examined, but with such a short project the volume of records and material does not warrant such an approach. Instead, this report serves as SAC and Assessment, and given the lack of further potential for the data to yield more results this report is also the final report for the evaluation.

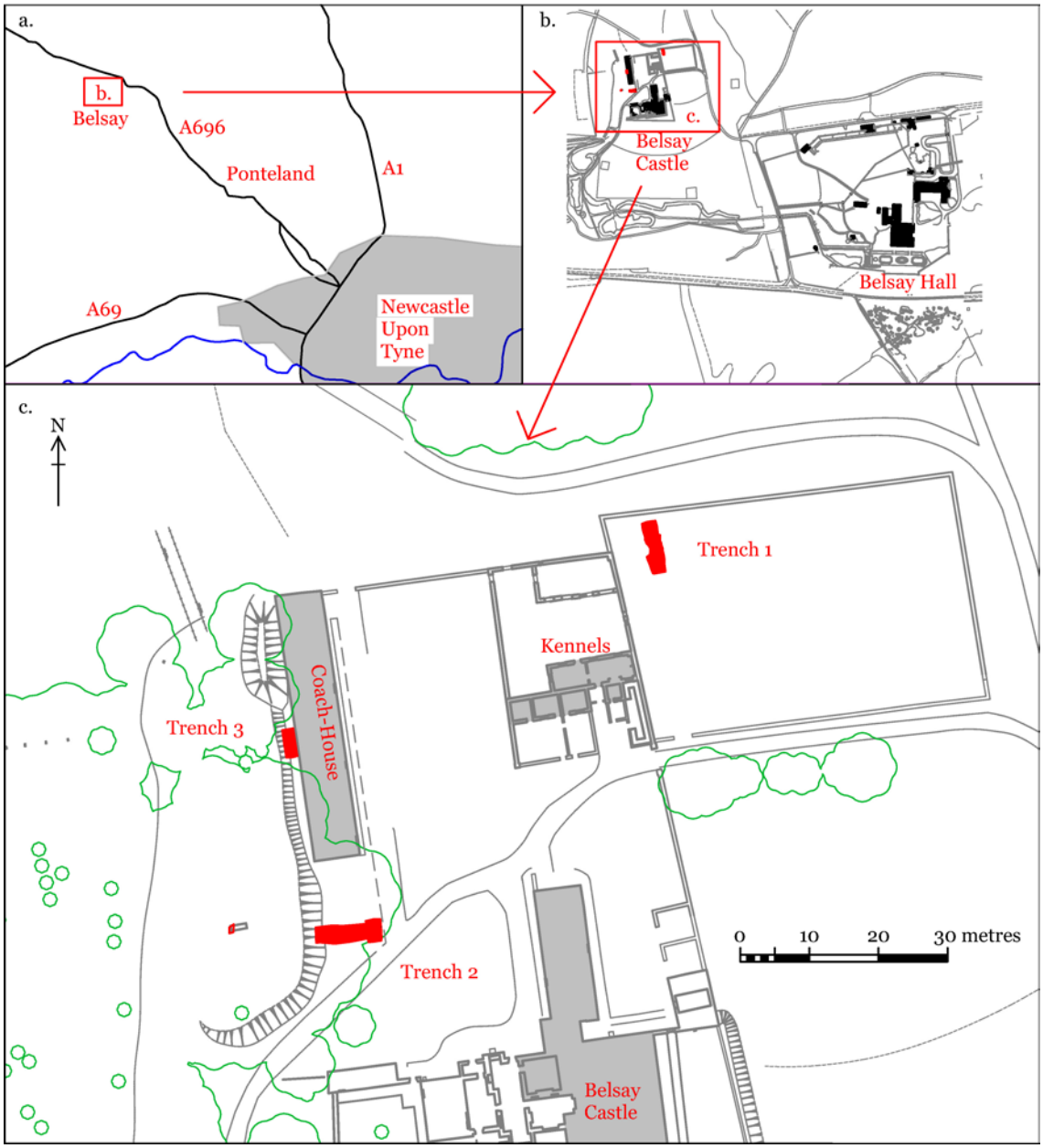

Figure 1: Site and trenches location plan.

TRENCH NARRATIVES

Trench 1

Trench 1 (see Fig 1) was located in the northwest corner of the orchard, extending south from the north wall in order to catch the 'trackway' feature reputed to run around the perimeter as seen on the early OS maps and reported in the 1985 excavations (Kerr 1985, 1986 & pers. comm.)(Fig 2). The southern third of the orchard is in the Schedule area, so was avoided.

The trench measured 2m wide by 7.4m long, with its edges 2m south of the north orchard wall and 4.2m east of the west wall - the presence of modern materials piled against the walls prevented closer contact. (Fig 3, Fig 5)

Below the modern turf (91006) was a brown soil (91001) through which a single large linear feature [91003/91004] was cut. This feature spanned the width of the trench, starting 2m from the north edge, and was 1.9m across, with a depth of 0.5m. It was filled with brown soil mixed with large amounts of stone fragments, as well as occasional fragments of what appeared to be ceramic roof tile. A large tree root had grown along the feature. Below the soil (91001) was a band of subsoil (91002) approximately 0.2m thick, which in turn overlaid the top of the boulder clay natural (91005) across the entire trench. The boulder clay contained extremely large stone fragments, some measuring over 0.5m in both width and length, and started approximately 0.6m below present ground surface.

The sole feature was interpreted as a possible robber trench where a wall was demolished and its foundations quarried for re-usable stone, before being backfilled with whatever fragments were deemed unwanted (Fig 4). The alignment of this feature suggests it might be an earlier north wall to the orchard, lining up with the northeast corner of the Castle enclosure wall (Fig 5). The present north wall is made of handmade bricks on its south façade and stone on its north, and runs 6m north of the perimeter wall, with a definite corner at its west end where it turns south to meet the stone perimeter wall. There was no sign of the 'trackway' (Fig 2) within the trench seen on the first-edition OS 25inch map (LXXVIII.4, published 1866) – either this ran in the narrow 2m gap between the trench and wall, or it did not exist at this location.

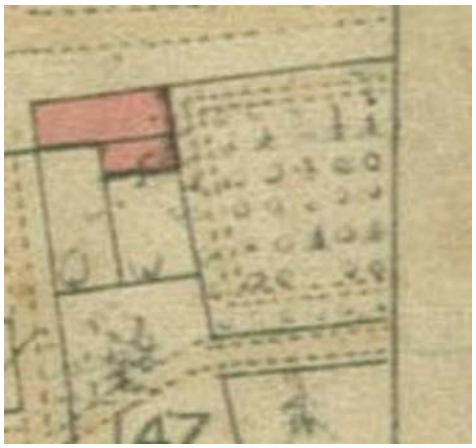

Figure 2 (L): Orchard path from 1st Ed OS map.
Figure 3 (R): Trench 1 looking north. Stump is visible on left of trench.

Figure 4: Linear feature seen in east section of Trench 1.

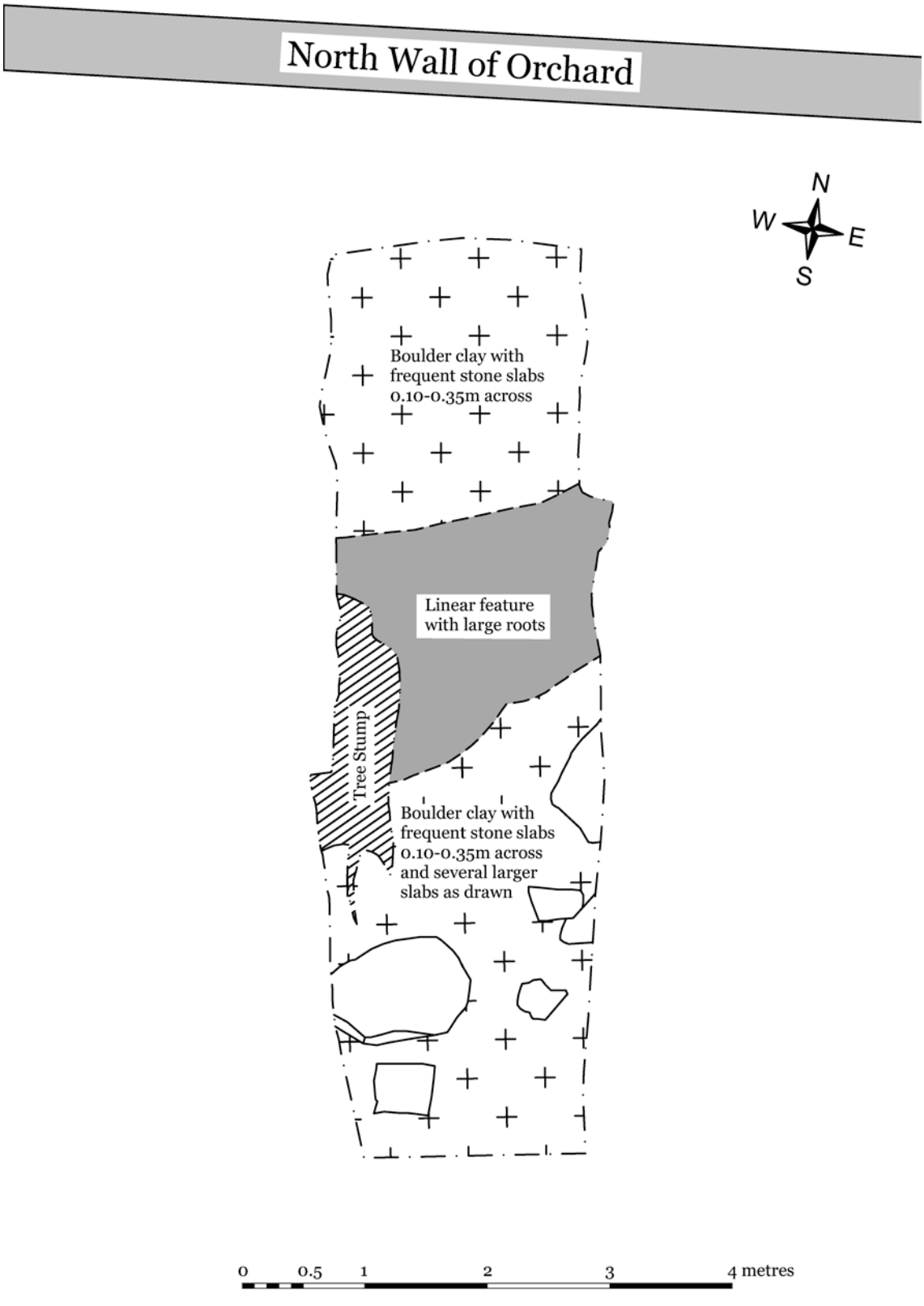

Figure 5: 1:50 Plan of Trench 1 showing linear feature [91004].

Trench 2

Trench 2 was placed on the small open green south of the coach-house (see Fig 1). This wedge of land is dominated by a large tree, so the trench had to be located 9.5m away from the south gable wall. It measured 9.2m long by 3.2m at its widest. Because the west end extended into a bank of soil the overall depth below ground surface tapered from 0.75m at the west to 0.3m at the east. The east end of the trench was extended slightly to expose the walls that originally appeared in section.

Below the modern turf the most recent feature was a deep narrow cut [92024] and fill (92023) in the middle of the north edge of the trench that extended down to bedrock at the base of the trench, effectively dividing the north side in half. It cut into the topsoil (92001) that effectively sealed all the archaeological deposits. (Fig 10)

The three key features in this trench were the footings of a wall [92007] near the west end, another wall [92009] near the east end, and a drain [92020]. (Fig 9)

Below the topsoil the east end of the trench was covered by soil layer (92005), which butted up to the earlier wall [92009] and sealed the drain. Below the soil was a line of rectangular slabs [92010] that formed the drain capping. Some of these slabs were clearly recycled masonry from other buildings, a phenomenon seen elsewhere such as at Apethorpe Hall in Northamptonshire (excavated by author in 2007). The drain is built of two stone walls, with a channel 0.2m wide by 0.8m deep to a stone base, and had only a thin layer of silt at the bottom (Fig 10). At least one opening was seen in the east side wall near the base, indicating side-channels running out under the gravel path. The drain stands in a cut [92021] filled with a mix of soil and stone fragments (92022) that clearly laps over the cut and foundation fill of the east wall, indicating it was added some time after the wall (and its attendant structures?) had been built. The line of the drain was observed for a number of metres in both directions (Fig 8), and appears to run along the front of the coach-house. The southern extent is less clear, but it lines up with a large resistivity anomaly (r5) from the recent geophysical survey (Linford, N, P Linford, and A Payne, 2017), just north of the surviving manor ruins, and this may be a deep sump. At the north end of the drain the slabs were covered in mortar (92017), and the end of a brick wall [92012] was seen in the east section, standing just east of the slabs. It appears that at some point after the drain was constructed a brick structure was built running east under the current gravel path, and there may have been some work to investigate the drain that led to the slabs being mortared back into place. This brick structure stands almost directly above a side-channel opening seen in the wall of the drain. A soil-filled deposit (92018) was seen in section south of the bricks, also covered by (92005).

West of the wall and east of the cut [92024] was a layer of subsoil (92004) that also butted up to the earlier wall. West of the cut, another layer (92027) overlay (92004), and it became clear that both sat in a larger cut [92025], along with a silty layer (92002) with pebbles that looked like a possible floor or yard surface, and more soil (92003) below. This cut and its fills butt up to the east wall [92009] and overlie subsoil (92026) at the west, which in turn sealed a rubble layer (92006) that covered wall [92007] – it is

likely the rubble is from the demolition of that wall. The east wall [92009] survives to just under the modern turf, so there is no evidence to suggest that soils (92003), (92002), and (92004) overlap its demolition – they could have built up while the wall was still standing. The net result is that there is no direct relationship surviving for the two walls, so it is not possible to prove that they were contemporary or that they formed a building.

West wall [92007] had a thin spread of mortar (92014) across the top, and stood in a cut [92008]. Below it were yellowish boulder clay (92015) to the west, and a blue clay (92003) between it and the east wall. These clays are both thought to be natural, and sit over bedrock (92016). The wall was 0.75m wide and only survived as a single course of stones, which appeared to be faced on the east but not so well on the west. This was interpreted as possibly representing its function as a retaining wall for the higher ground to the west rather than being a free-standing structure visible from both sides.

East wall [92009] survives to a height of two courses at the south, but only one at the north, and is 0.4m wide. There is a gap in the wall that nearly corresponds to the trench as originally machined, hence the need to extend half a metre in both directions to examine the wall. The north portion is a bit ragged, but the south part has a clear straight edge at the gap, confirming that there was a planned opening here. It stands on a fill of small stone fragments (92011) in a cut [92013].

The two walls line up neatly with the front and back walls of the coach-house, and it was noted that the west wall fell in a line between the coach-house and a stack of masonry projecting above the southwest corner of the ruined manor. It is tempting to see these as the remnants of an early building that may have connected the coach-house to the manor, as suggested in the draft conservation plan (Built Heritage Consultancy, 2016). However, there was no firm evidence of a contemporary floor, and the stratigraphy seen in the trench sections is more complex than it appeared in plan.

Figure 6: Trench 2, drain 92020 (opened) and wall 92009 (two stumps at either side of trench).

Figure 7: Trench 2, drain 92020 (opened) and wall 92009 on left.

Figure 8: Trench 2, view inside drain 92020, looking north towards coach-house.

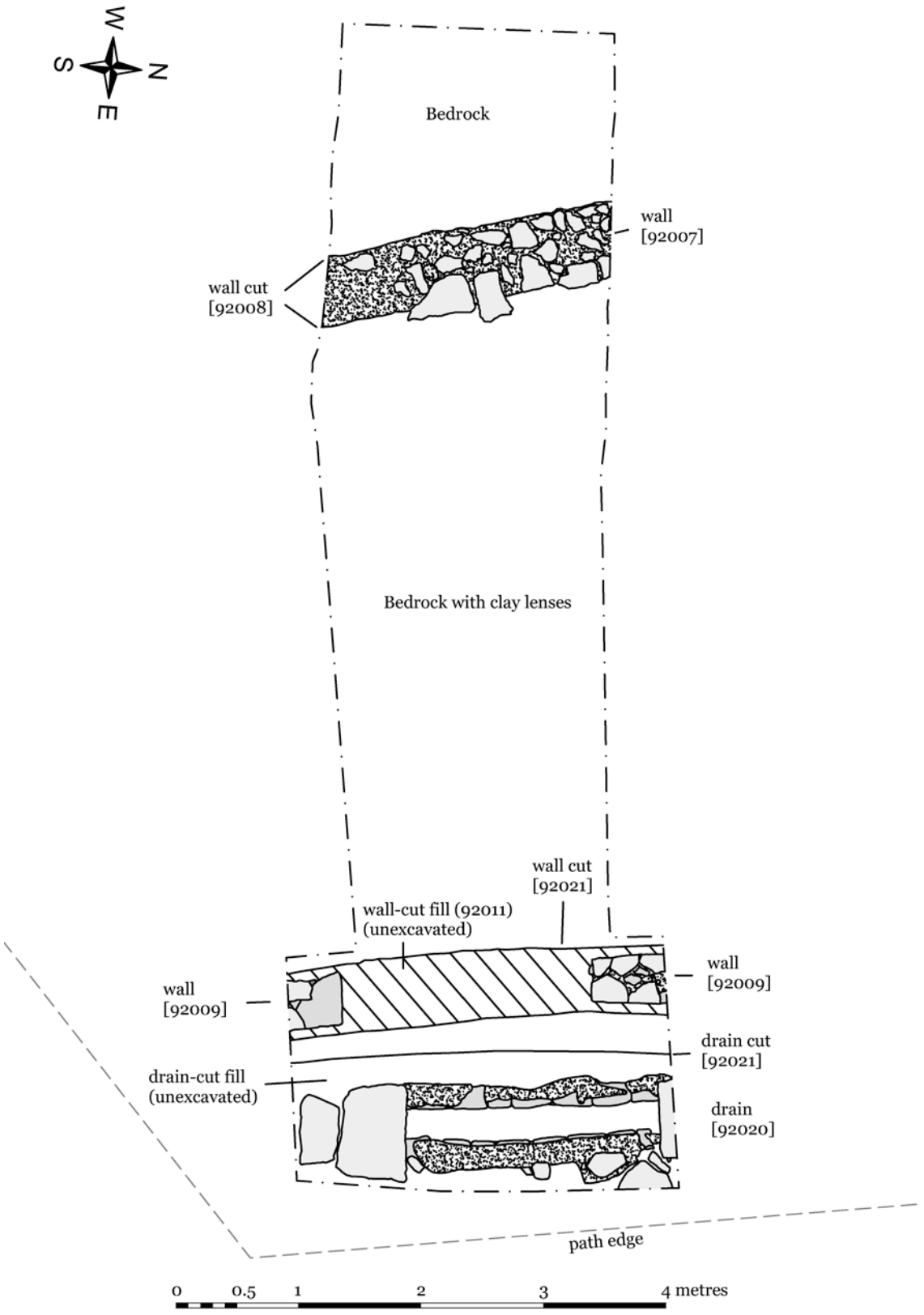

Figure 9: Plan of Trench 2 showing drain at bottom, walls 92009, and wall 92007.

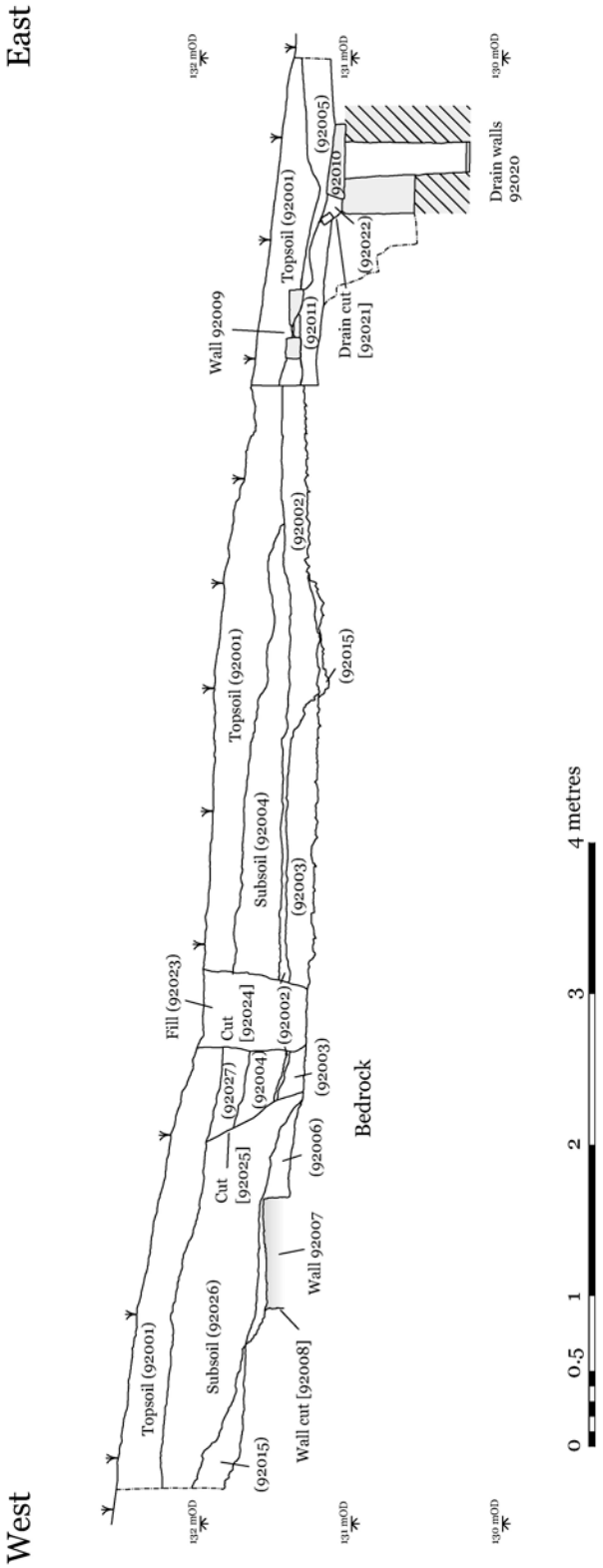

Figure 10: South-facing section of Trench 2, looking north towards coach-house, showing walls 92007, 92009, and drain 92020.

Trench 3

Trench 3 was placed on the west side of the coach-house to look at the wall footings and general soil profile, since this area might be reduced in height to accommodate a terrace in the new café scheme. (Figs 1 & 11) The 4m x 1.6m trench was placed against the centre of the back wall, directly under an area of sagged and repaired brickwork that corresponds with 1980s photos of roof collapse. It should be noted the entire area behind the building is approximately 1.4m above the threshold height on the east face of the building.

Two features were cut from the very top of the topsoil (93001) – a linear feature [93013/93018] running parallel to the wall, and what turned out to be a modern cut [93004] to examine the foundations. Cut [93013/93018] was a service trench that had two fills, a brown redeposit of the excavated topsoil (93017) and a lower fill of clean grey gravel (93005) that marked it out as very recent. (Figs 11, 15, 16) Sitting on the gravel bed was a service made of ceramic pipe sections joined together with a black plastic spacer, which suggests it is a foul-water pipe. However, there is no logical source for any foul waste nearby. It may be the ceramic pipe acts as protection for a flexible water pipe inside, perhaps feeding the tap attached to the south gable of the coach-house.

The wall cut was divided into two records - cut [93004] in the north half of the trench and cut [93016] in the south - because there appeared to be a distinct curving-in towards the wall in the middle, suggesting two different digging actions working in from opposite ends. (See Fig 11) Wall cut [93004] was filled with a brown soil (93003) that had large stones packed into the base of the cut. The upper reaches of the fill were distinctly more friable than the topsoil, but aside from a lack of stones it was impossible to see the difference between fill and topsoil, suggesting it was a recent cut backfilled with topsoil. The result is that it is unclear if any original wall-cut fill remains due to re-excavation in recent times. Where the cut continues down into the yellow sandy natural soil the outer edge is lined with stones – it is unclear if these are natural or perhaps the lining of an earlier feature whose contents have been removed.

Wall cut [93016] at the south end of the trench seems to pre-date the other cut, and is itself cut by a later feature [93021] with a yellow fill (93020) that was originally thought to be the upper fill of another linear cut feature [93010]. (Figs 15 & 16) This section of wall cut has a distinct line of stones at its edge, suggesting they were placed in before the soil infill (93015). Again, this does not appear to be a construction cut, and suggests there is a history of trenches being dug to examine the wall footings.

The wall footings themselves do not extend far into the cuts. (Figs 12-14) What appears to be natural yellow sand was encountered 0.5m below ground surface, and the bottom course of footings only extended down another 0.25m into the cut. The lowest course projected out approximately 0.05m, and below this was brown soil for another 0.2m to the base of the cut. Attempts to probe the soil showed that at least the outer face of stones stood on nothing but soil below the stepped-out base course, although logically the inner face of stones should be encountered if probed deep enough since the

interior of the building extends down 0.55m below the observed footings and 0.30m below the base of the wall cut. Safety reasons prevented full removal of the soil under the footings.

An L-shaped linear feature [93010] ran up the middle of the trench from the south edge to just beyond halfway, before turning a right-angle away from the building and exiting the west edge of the trench. This cut was 0.5m wide by 2.3m long, and had a flat bottom that cut through the yellow natural sand to expose blue clay similar to the natural clay found in Trench 2. The fill (93009) was similar to the brown topsoil. This feature was cut by the modern service trench that encompassed the entire west edge of the trench, but sat over the fill of the southern wall cut. Unfortunately there was a lack of dating evidence that might allow better phasing. The function of this feature is uncertain. (Figs 11, 15, 16)

The yellow sand deposits (93006) and (93025) encountered 0.5m below ground were excavated in a narrow slot to hit solid rock less than 0.2m further down. The sand is natural, and the rock is almost certainly the top of the bedrock outcrop. The jagged rocks forming the west sides of the wall-cuts may be where this bedrock was hacked back to form a terrace where the coach-house and the lawn in front of it stand.

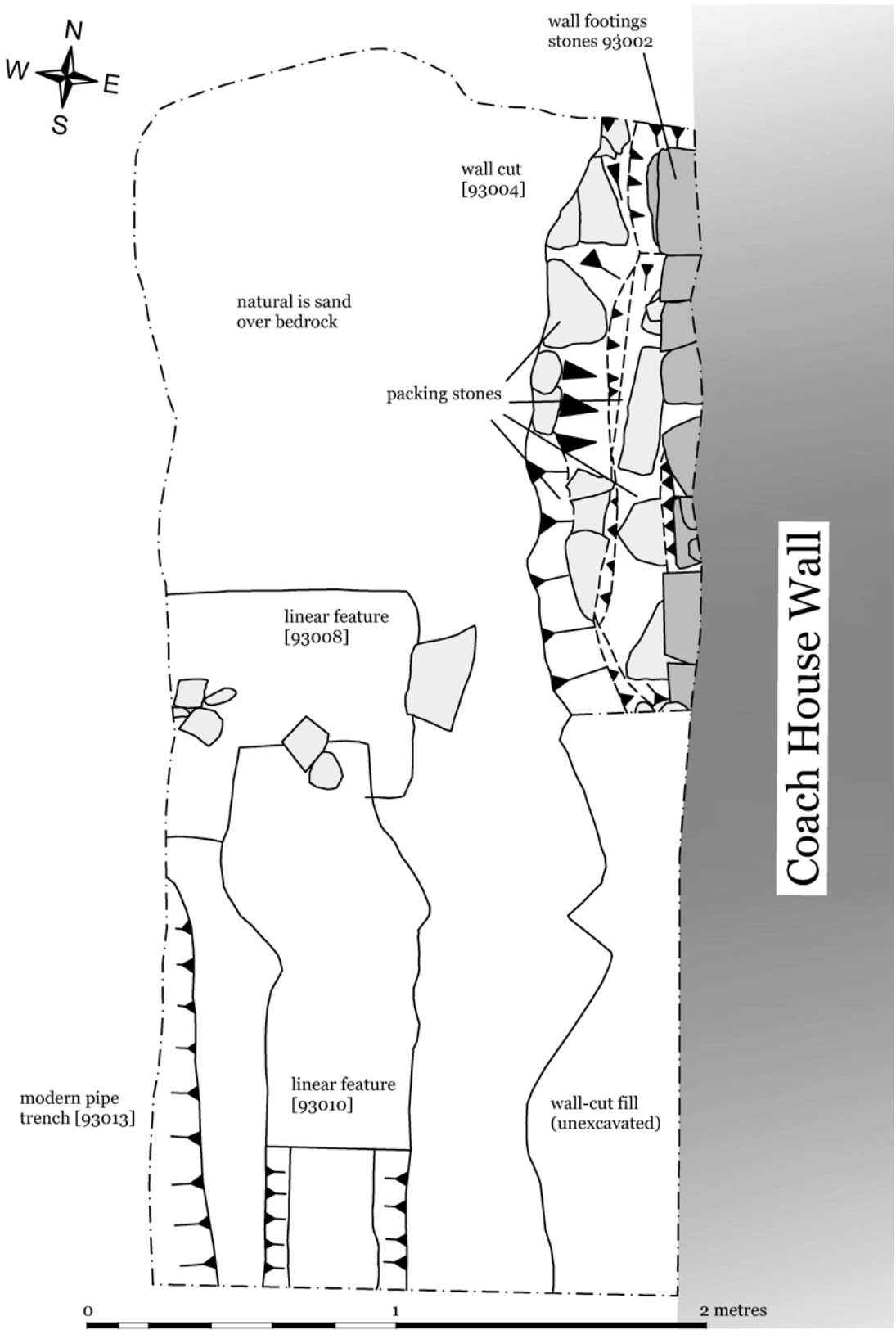

Figure 11: Plan of Trench 3, showing wall cuts and modern pipe trench.

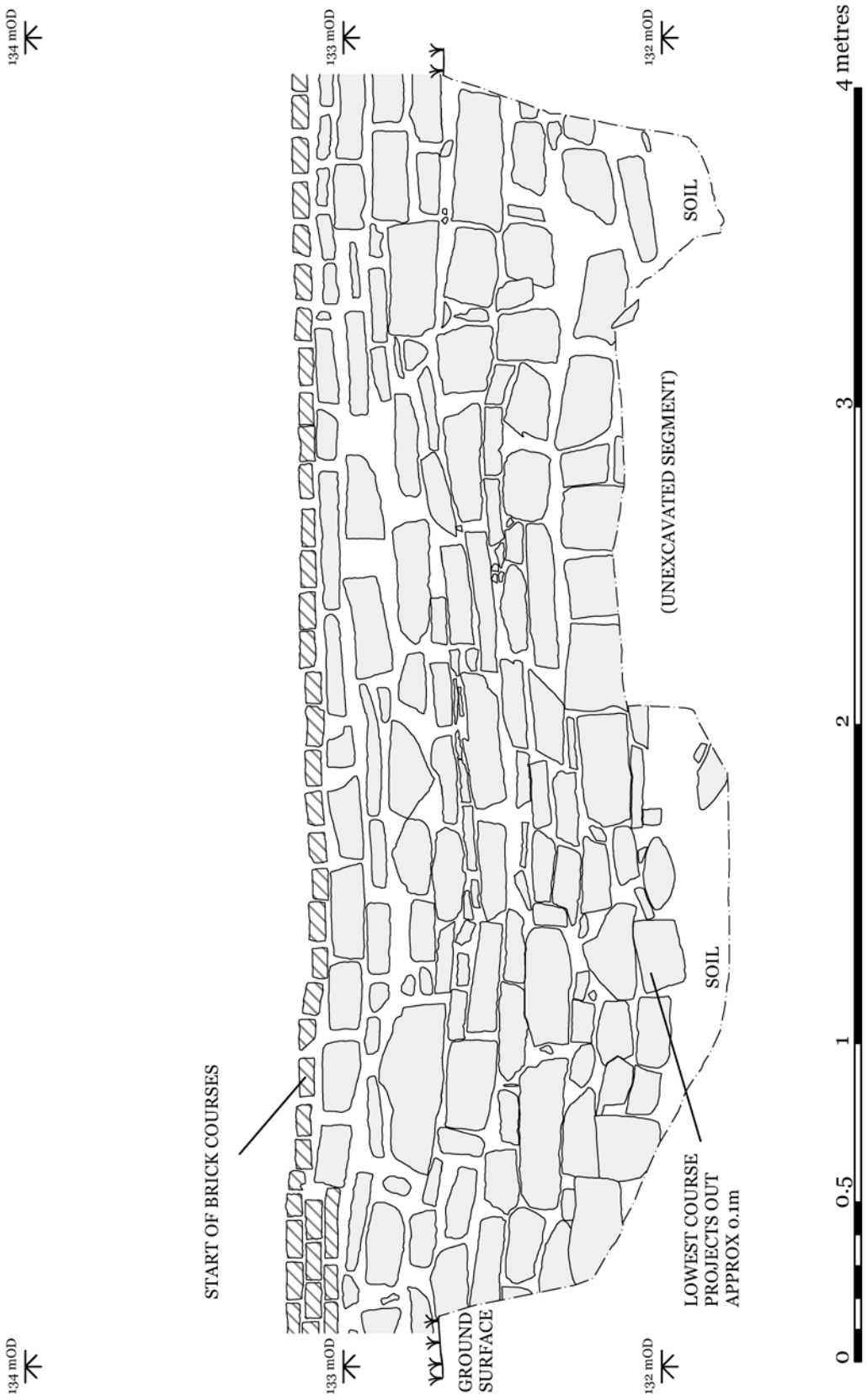

Figure 12: Elevation of the wall foundations, looking east.

Figure 13: Wall footings (north end).

Figure 14: Wall footings (south end).

Figure 15: Section at south of Trench 3.

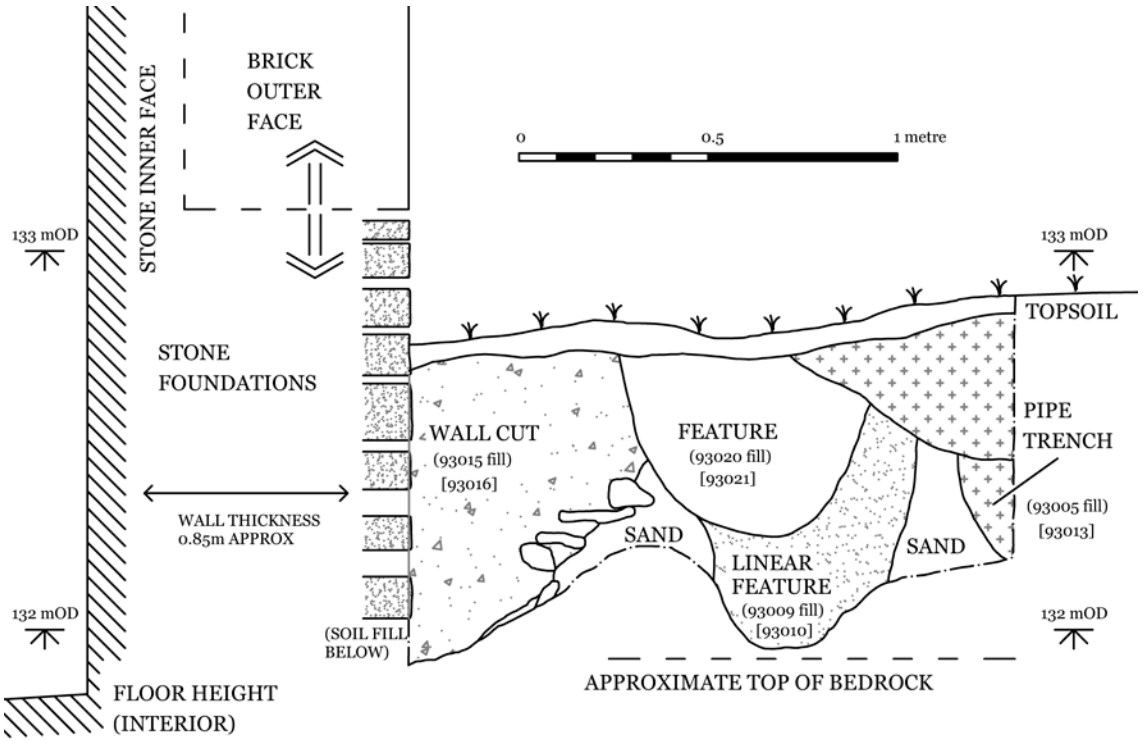

Figure 16: Section at south of Trench 3 looking south, with coach-house floor added.

ARTEFACTS

All find records were entered into Intrasis 3 on site by Julie-Anne Bouchard-Perron. Finds were quantified, measured and weighed then boxed by material (see Table 1) and a list of the box contents was created in Intrasis.

Table 1: Material archived

Box		Contents	
Number	Size	Find type	Material
1	Skull	Small finds	Iron / Metal (general)
2	Standard	Bulk finds	Bone / wood
3	Skull	Bulk finds	Glass / Pottery
4	Standard	Bulk finds	Ceramic (building material) / Plaster and Mortar

Summary of finds

Few finds were retrieved during Belsay Castle 2018 excavations (see Table 2 below). These include low quantities of structural evidence in every trench, the majority of which has been identified as bricks or brick fragments. Trench 1 also yielded some mortar and a large carved stone.

Material evidence related to domestic life is likewise scant. It encompasses few sherds of pottery in each trench and a few fragments of glass (mostly recovered in Trench 2). After a quick visual appraisal at Fort Cumberland, Nicola Hembrey noted the presence of a Roman pottery sherd among those finds (context 93009) and identified fragments of window glass, glass bottles and glass cups.

Domestic life is further evidenced by a few organic remains: two animal bones from trenches 2 and 3 and three charcoal fragments from trench 1 topsoil.
The small finds retrieved were all collected from Trench 2 and are either iron or iron-composite. These objects are likely to be modern in date and have been subjected to X-Radiography for identification.

ENVIRONMENTAL EVIDENCE

All sample records were entered into Intrasis 3 onsite by Julie-Anne Bouchard-Perron.

Summary of environmental samples

Two environmental samples were collected during Belsay Castle 2018 excavations. Both, from trench 2, were sampled with clean tools and sent to Fort Cumberland in clean plastic buckets to be processed and analysed.

Sample <52001> was collected from context 92003 for sediment analysis. It comprises some blue clay lumps which were observed in different areas of the site. This sample was taken in the hope further analysis could reveal the provenance of the blue clay.

Sample <52002> was collected from context 92019 which consisted of a thin layer of sediment accumulated at the bottom of drain 92020. It was collected to enable the isolation and identification of any organic or inorganic evidence that could reveal the function of the structure. The volume of this sample is relatively low (less than 10 litres) but represents the totality of the sediment accessible at the bottom of the drain. This sample has been processed by bucket wash over floatation at Fort Cumberland and is ready for assessment by Bouchard-Perron.

ASSESSMENTS

Stratigraphy

There is no real potential for further analysis of the stratigraphic record at this time. Should further information be unearthed this can be reassessed.

Finds and Sample Assessment

Few material finds or samples were retrieved during the Belsay Castle excavation in 2018. They were assessed with the aims of dating the deposits and features recorded on site and documenting the activities that took place in the coach-house area during the post-medieval period. The assessment results are presented below.

Finds – Julie-Anne Bouchard-Perron and Nicola Hembrey

The Belsay Castle material assemblage was recovered and recorded in accordance with the Historic England Recording Manual. All finds were entered into Intrasis 3 after being quantified, measured and weighed. Once cleaned (if relevant) and labelled, the finds were archived in boxes by material type.

The assemblage from Belsay Castle comprises in total some 51 bulk finds including brick, glass, pottery, mortar fragments, animal bone and charcoal (Table 2), and just four small finds. Structural evidence is (unsurprisingly) the best represented material category in the assemblage, with ceramic building material recorded in all trenches.

Evidence for domestic life was mostly retrieved from Trench 2, but remains were limited to a few pottery sherds and glass fragments.

Table 2: Belsay Castle excavation bulk finds and small finds

	Context	Find type	Material	Quantity
Trench 1	91001	Bulk	Pottery	2
		Bulk	Charcoal	3
		Bulk	Mortar	2
	91003	Bulk	Ceramic - Building material	2
	91006	Bulk	Stone - Architectural	1
Trench 2	92001	Bulk	Artefacts - Glass	9
		Bulk	Ceramic - Building material	5
		Bulk	Pottery	3
	92002	Bulk	Ceramic - Building material	1
		Bulk	Artefacts - Glass	3
	92005	Small	Artefacts - Metal (iron)	3
		Bulk	Artefacts - Glass	4
		Bulk	Ceramic - Building material	1
		Bulk	Bone - Animal	1
	92006	Bulk	Artefacts - Glass	1
	92011	Small	Artefacts -Metal	1
		Bulk	Ceramic - Building material	1
	92012	Bulk	Ceramic - Building material	1
	92017	Bulk	Ceramic - Building material	1
	92019	From sample	Bone - Animal	3
		From sample	Artefacts - Glass	1
Trench 3	93003	Bulk	Bone - Animal	1
	93003	Bulk	Ceramic - Building material	1
	93009	Bulk	Artefacts - Glass	1
	93009	Bulk	Pottery	1

In addition to the material evidence collected during the excavation, three animal bones and a small glass fragment were retrieved from flotation samples (Table 2).

All the finds from Belsay Castle have been assessed by specialists, and are summarised in the sections below.

Small Finds – Nicola Hembrey

Only four small finds were recovered from Belsay Castle (Table 2); small finds SF3001-3004 inclusive. They were all corroded iron or iron-composite objects, and were collected from Trench 2. These objects are likely to be post-medieval or modern in date and were subjected to X-Radiography for site archive completion (see conservation section below).

Trench 2, Context 92005

- SF3001 Iron/wood composite knife handle; length 120mm, width 33mm, diameter 15mm.
- SF3002 Iron object, visible on X-Ray as flattish-sectioned wide-U-shaped fitting, perhaps structural, or perhaps part of a clamp
- SF3003` Iron object, visible on X-Ray as roundish-sectioned long-stemmed U-shaped fitting, perhaps structural, or perhaps a spring-loaded piece of hardware of some sort

Trench 2, Context 92011

- SF3004 Stone fragment, with slight copper-alloy corrosion adhering (discard recommended)

No objects that might be interpreted as being of a personal nature were found.

Ceramic building material – Duncan Brown

Thirteen fragments of ceramic building material were recovered during the Belsay Castle excavation with a total weight of 7.4 kg. With the exception of a curved roof tile in context 91003, all the material assessed was whole or fragmented brick. The bricks and brick fragments can be subdivided in two groups according to their fabric: the first is purplish and very coarse while the second is less coarse and more orange in colour (Table 3).

Table 3: Belsay Castle bricks and brick fragments weight and fabric

	Context	Fabric	Items/frags	Weight (g)
Trench 1	91003	Orange	1	1003.2
Trench 2	92001	Orange and Purple	5	2782.7
	92002	Orange	1	14.3
	92005	Orange	1	5.6
	92011	Purple	1	1198.1
	92012	Purple	1	2329.2
	92017	Purple	1	13.7
Trench 3	93003	Purple	1	10.1

The bricks from Belsay Castle are very crude and bear no evidence of manufacture. They thus appear to be handmade. Their fabric and general morphology suggest they are likely to date from the 18th-19th century. The dimensions of the most complete bricks indicate they were probably used as wall bricks, but their width indicates some might equally have been used as flooring.

No further analysis of the ceramic building material is required although it is recommended to keep a sample of each brick fabric type as a reference.

Pottery – Duncan Brown

Six pottery sherds were retrieved at Belsay Castle. They weight 93g in total, were recovered from three post-medieval contexts in different trenches, and belong to different typological groups:

Trench 1, context 91001

- One sherd of fine brown glaze red ware, probably from Northeast England. It is production waste (glazing accident).
- One sherd of refined white earthenware dating to the 19th-20th century.

Trench 2, context 92001

- Two sherds of blue transfer printed refined earthenware dating to the 19th century and most probably after 1840.
- One sherd from the collar of a drain/water pipe.

Trench 3, context 93009

- One sherd of highly abraded Roman Samian ware bowl base.

It seems likely that all the sherds were redeposited. No further analysis is recommended.

Glass – Florian Ströbele

A total of six glass fragments was recovered during the excavation at Belsay Castle. Four fragments from previously undated contexts were selected for analysis in order to gain information on the age of the respective contexts.

Methods

From each glass fragment selected a small chip (~2mm) was cut with pliers in order to create a fresh, unaltered break. This fresh break was investigated using an X-ray fluorescence analyser (XRF).

XRF analysis is a fast and non-destructive method to gain knowledge on the chemical composition of most inorganic solid samples. The analysis is conducted by focussing an x-ray on the region of interest. These X-rays interact with the object and induce so called fluorescence or secondary x-rays. The secondary x-rays hit the detector of the device and are translated into an electronic signal.

Depending on the elements present, these secondary x-rays have distinctive energies and thus, all elements that are present can be identified. By means of model calculations (Fundamental parameters) or by using a calibration curve based on various well known reference materials (standard based), the result, also called x-ray spectrum, can be evaluated and quantified. In a best case scenario, this allows very exact quantification that gives details about how much of each element (usually given in weight %) is present.

The XRF method is a surface sensitive analytical method. The x-rays do not penetrate the material very deep. Depending on what kind of material is analysed, only information of the upper most layer (in the case of glass up to a depth of ~1.5mm, in the case of most metals only a few microns) is gathered. It might be necessary to remove corrosion products potentially present on the surface to expose the unaltered material. This manipulation is minimal and can be kept smaller than 1mm as the analysed area has only a diameter of 25µm. However, most archaeological materials are not homogeneous. So in all cases where it is possible multiple spots on the object in question will be analysed to grasp the range of the material composition.

Analytical details
Device: Bruker M4 Tornado
Atmospheric conditions: Vacuum
Acceleration voltage: 50kV
Anode current: 200mA
Filter: blank
Analysis time: 200s per spot (live time), 3 analyses per sample

Material

- <52002> (92019): A translucent, clear fragment of flat glass with a slight pale green 9mm x 7mm and about 1.5mm thick. It does not show corrosion features.
- (92002): There are three fragments of translucent, green, slightly curved glass 3.5cm x 3cm, 1.5cm x 1.6cm and 2.3cm x 2.4cm. Their thickness varies between 2.5mm and 5mm. The fragments have a dull appearance and seem to be corroded superficially.
- (93009): The sample is a heavily corroded fragment of probably colourless glass of 2.5cm x 1.9cm size and of variable thickness between 1mm and 3mm. Due to the heavy corrosion, slight colouring, if present, could also not be recognized on a fresh break. The fragment seems distorted and has probably seen some heat.
- (92006): This is a 3.4cm x 2.4cm fragment with a thickness of 4mm and a green colour. The fragment is corroded and shows an iridescent cover of glass corrosion.

Evaluation of the results
In the history of English glassmaking some distinct types of glass were produced in certain periods. Those periods, and the composition of the glass produced in those times, are broadly known and follow Dungworth (2012).

All analysed fragments did fit into one of the defined groups and the suggested dates are as follows:

Table 4: Glass analysis results and suggested dates.

Sample	Suggested dating	Remarks
• <50220> 92019	1700-1830	High strontium (Sr) indicates a glass made with kelp ash.
• 92002	1567-1700	HLLA glass – low manganese and phosphorus suggest 1610-1700 is more likely.
• 92006	1567-1700	Given the manganese (Mn) and phosphorous (P) values a date more towards 1700 is suggested.
• 93009	1830-1930	Synthetic soda glass - the sodium (Na) and strontium (Sr) values probably point to a date in the second half of the 19th century (1850-1900).

While the overall assigned time periods in Table 4 are quite solid, attempts to further refine the dating must be handled very cautiously (as for 92006, 93009 and 92002), because the reference values do not form a strict line, but more a general trend.

No further analysis is recommended.

Conservation – Karla Graham

For the purposes of site archive completion three small finds were X-rayed immediately following excavation (Table 2).

Method

Small finds 3001, 3002 and 3003 were X-rayed at Fort Cumberland, Portsmouth and two X-radiographs produced: P4533 and P4534. Object SF3004 was not X-rayed: on examination this was found to comprise stone material with a thin deposit of copper alloy corrosion adhering.

X-radiography was undertaken using a Gulmay HS 225kV Hi-Stability X-ray system and following established HE procedures. Computed Radiography (CR) was employed using a Kodak Industrex HPX-1 scanner and Carestream Industrex Digital Viewing Software.

Kodak Industrex XL Blue Digital Imaging Plates (with Copper) were scanned at 25 micron resolution; laser power: high and photomultiplier setting: 10. Quality was ensured by using an Image Quality Indicator (IQI): Duplex wire type EN462-5.

CR resulted in a digital archive: the scanner generated a primary (unprocessed) DICONDE file. Digital Imaging and Communications in Non-destructive Evaluation (DICONDE) files are the non-destructive testing (NDT) industry standard and require licensed software to view them. The DICONDE data file comprises the image and image attributes.

From the primary DICONDE file a further 3 digital image files were generated comprising:

- DICONDE file: labelled up with site name, code and object numbers.
- TIFF file: each labelled DICONDE file was exported as a TIFF screen capture for viewing outside of the licensed software and for archiving purposes.
- JPEG file: this file was created for quick reference and thumbnail image.

Assessment

Given the small number of finds, they were immediately assessed following X-radiography. The aim of the conservation assessment is to provide the following information:

- A summary of the type, quantity and condition of the finds recovered.
- A statement of their potential to address the aims and objectives of the project and, the investigative conservation methodology to achieve this (including costs).
- The work required (including costs) to make the assemblage suitable for deposition (Walker 1990, Brown 2007).
- The proposed investigative conservation will be undertaken according to Historic England (previously English Heritage) guidelines (Fell et al 2006, English Heritage 2008).

The objects were examined under binocular magnification alongside their X-ray images. The knife handle (SF3001) is assessed as unstable but fair condition: the corrosion of the iron and resulting expansion has cracked the organic handle. Storage with silica gel should slow the rate/halt this process. The other 3 objects are all stable and in a fair condition. SF3004 is not classed as a copper alloy object – it is a stone object with a thin layer of copper alloy corrosion adhering.

Visually, SF3002 and SF3003 appear as conglomerates of corrosion and soil. X-radiography reveals that they are objects: SF3002 is very dense and only some of the form is visible. The form of SF3003 is clearly visible on the plan and side view X-radiographs.

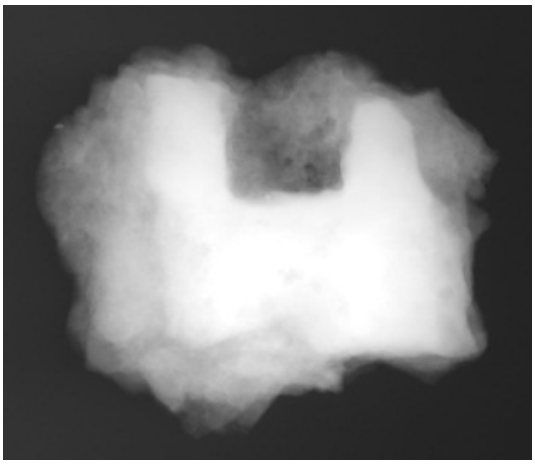

Figure 17: SF3002

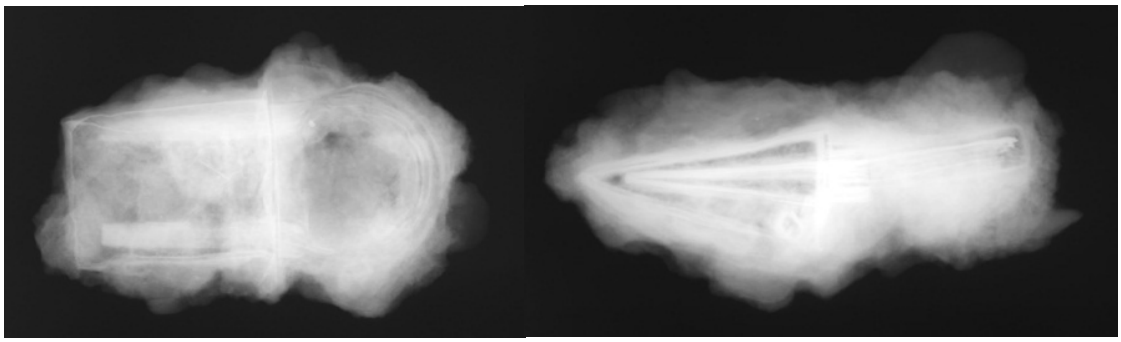

Figure 18: SF3003

At this point, no further conservation work is required as the forms are visible on the X-radiographs. Following the assessment of the finds and X-radiographs by the Small Finds Specialist, no further conservation work is recommended.

Intrasis records
Image (X-ray) and Conservation records have been created and entered.

Storage
All the finds have been placed in a single Stewart box containing silica gel.

Geology – Matt Canti

The Belsay Castle deposits were observed in the field by Matt Canti. The blue clay observed across the site was confirmed to be of geological origin. The abundance of blue clay recorded in Trench 2 is thus most likely related to the bedrock layout in the area. The assessment of sample <52001> for geological purpose is thus unnecessary. Unless it is required for other analysis, this sample can be discarded.

Archaeobotany – Julie-Anne Bouchard-Perron

One sample <52002> was collected for the assessment of plant remains and other biological material during Belsay Castle excavation. This sample comes from a thin deposit (92019) accumulated at the bottom of a post-medieval drain [92020] and represents the totality of the sediment accessible for collection.

Methodology
Sample <52002> was floated by hand using a wash-over technique given its small volume (2.7 litres). A 250µm sieve used to collect all the floating organic elements (flots). The organic and inorganic contents that did not float (heavy residues) were collected on a 1mm sieve.

The contents of the heavy residues and flots were scanned using a zoom stereomicroscope at magnitudes between 2x and 40x. All quantifiable organic and

inorganic items present were provisionally identified and an estimate of their quantity recorded on an abundance scale (Table 5) to determine if the sample contents should be fully analysed.

Table 5: Abundance scale used for the archaeobotanical assessment.

	Rare	Frequent	Common	Abundant	Super abundant
Abundance scale	1	2	3	4	5
Quantity of items	1-5	6-25	26-100	101-500	501+

Results and discussion

The heavy residue of sample <52002> contained a relatively large amount of carbonised organic matter, of which only one fragment could be identified as charcoal (Table 6). Other organic remains included some fragments of cortical bone and a single identifiable small bone. It also contained high quantities of coal fragments and a very small piece of window glass. None of these elements are of interpretive value.

Table 6: Relative abundance of organic and inorganic remains in sample <52002>

	Heavy residues	Flots
Plants		
Modern-looking seeds		3
Charcoal	1	3
Burnt organic matter	4	3
Animals		
Bone (cortical)	1	
Bone (identifiable)	1	
Molluscs		3
Fly puparia (recent?)		1
Coleoptera (elytra) (recent?)		1
Inorganic		
Coal	5	3
Window glass	1	

Other than a few pieces of charcoal and unidentifiable burnt organic matter, all the organic remains observed in the flots were modern-looking. Since there is no evidence to support the idea that the deposit they were extracted from was waterlogged it is very likely they are modern. As such they attest to contemporary depositional processes and are of little interpretive value.

Recommendations and UPD

The flot and residue from sample <52002> are of no scientific value and can be discarded.

Zooarchaeology – Polydora Baker

Five bones were recovered during the 2018 excavations and are described below by context. The bones are individually recorded in the project zooarchaological database (HE7451-Belsay-2018-ZooarchaeologicalDatabase.acc). Measurements follow von den Driesch (1976). Contextual information is from Cromwell and Bouchard-Perron (2018).

Context 92005, Trench 2. This context is described as a soil layer underlying the subsoil and abutting an earlier wall and sealing drain [92020]. The context yielded one fragment of a sheep (*Ovis aries*) left radius (following diagnostic criteria in Boessneck 1969, Prummel and Frisch 1986). The proximal articulation is fused indicating an age over 10 months at death (after Silver 1969). No pathologies were noted. The bone is well-preserved and 41-50% complete with ancient and modern breakage evident. No butchery marks were observed. Measurements include Bp 34.1mm, BFp 30.4mm.

Context 92019, sample 52002, >1mm heavy residue, Trench 2. This is the fill of drain [92020]. Three bones were recovered from this fraction, including the right humerus of a subadult vole (family Arvicolidae, criteria in de Beauclair et al 2009), in which the proximal epiphysis is unfused but present, an amphibian (frog/toad) scapula, and an unidentifiable fragment. The rodent and amphibian specimens are stained dark brown, while the unidentified fragment is light coloured and shows some recent damage. These specimens were not identified further.

Context 93003, Trench 3, brown soil fill of wall cut [93004]. It is unclear if the fill (93003) and any associated finds are *in-situ* or derive from recent re-excavation. A single bone, the right tibia of a large adult equid, was recovered from Trench 3, which lay adjacent to the stable. The specimen is identified to cf horse (cf *Equus caballus*) rather than donkey or mule based on the distal articulation which is more rectangular than trapezoidal in shape (after Peters 1998, in Johnstone 2004).

Discriminant Function Analysis has not been performed but would be useful to confirm the identification of the equid bone (see Johnstone 2004). The animal stood c 1.5m at the shoulder (c 15 hands), calculated using withers height multiplication factors in Johnstone (2004, after Kieswalter 1888 and May 1985), and can be classified as a 'large' horse (after May 1985) (Table 7). The withers height compares to values for modern Arab horses and exceeds data for ponies (see data in Johnstone 2004; also Thomas and Lacock 2000). The bone is slightly longer and more slender ((SD/GL)x100) than the Welsh cob HE3868 in the HE reference collection.

Table 7: Measurements, withers heights and slenderness index of cf horse tibia (context 93003)

Measurement	Value (mm)	Factor	Wither height	(SD/GL x 100)
Greatest length (GL)	387	3.947	1527.5	10.6
Lateral length (Ll)	355	4.361	1548.2	-

Bp	over 92.2	-	-	-
SD	41.2	-	-	-
Bd	est 73.2	-	-	-
Dd	est 46	-	-	-

The proximal and distal epiphyses are fused indicating an age at death of over 3-3.5 years (Silver 1969). No pathologies were noted. The bone is well-preserved and almost complete, but recent damage has broken the distal shaft and removed the lateral malleolus. Butchery marks were noted on the shaft: two transversal chop marks are evident on the anterior surface near the proximal end and just above the mid-shaft; a possible longitudinal chop mark runs along the distal shaft removing some of the anterior surface, but it is uncertain if this is ancient or recent damage; two possible short, transversal cut marks are present on the distal posterior shaft.

Discussion

The 2018 excavations at Belsay yielded only five bones, including microfauna, a sheep radius and a butchered horse bone. The sheep radius probably derives from food waste while the fill of the drain included species likely to have fallen in (vole species) or sought out humid conditions (amphibian), possibly after abandonment. The item of most interest is the complete horse tibia with butchery marks. The withers height of the animal is slightly greater than other post-medieval horses but not unusual for late post-medieval and early modern animals (see Thomas and Lacock 2000, Holmes forthcoming). Butchery of horse carcasses for skins, meat or disposal has been observed at other post-medieval sites and it is possible that this was the fate of the Belsay equid (Thomas and Lacock 2000 and references within; also Wilson and Edwards 1993; Holmes forthcoming; Daulby and Baker 2003). Kennels existed at Belsay indicating the keeping of packs of hounds so horses past their prime or usefulness may have been processed for dog meat. Disposal of the bone outside the stables may be indicative though given the uncertainty of the stratigraphic integrity of the context no further information can be deduced at present from the find or its location.

DISCUSSION

Trenching in the orchard failed to locate the putative path around the interior of the walls, and only a single linear feature was found. The area sampled was small, and the state of the brambles precluded any geophysical survey, so the negative results may not be fully representative of the entire orchard.

South of the coach-house there are complex deposits relating to a structure or structures that need to be understood before they can be mitigated for any service trenches. The two walls may be contemporary and form the east and west walls of a building in line with the coach-house, but there is the possibility they are not, in which case further excavation would be required to make sense of them. We cannot be certain that they run all the way north to the existing gable-end of the building. Dating has been poor, due in part to deliberate removal of deposits during demolition and levelling with what may be imported soil, and the general aceramic nature of the site – even the ubiquitous clay pipe fragments that are the hallmark of 18th/19th-century life are absent. The box drain running along the front of the building is no doubt related to the 18th-century stables and may connect to rainwater downpipes as well as any drains in the floor of the stables, but it also complicates any new service runs that might need to cross in front of the gable. This area should be subject to archaeological excavation of decent-sized trenches as part of any mitigation.

The west wall of the coach-house, which lines up with the wall in Trench 2, may have begun as a simple retaining wall for the terrace on which the coach-house sits. This would explain the poor foundations, as it may have been built against a landscaped vertical edge, with a dressed front facing east, and crude stonework on the west side that was built into the bank. The ragged stone in the wall cut in Trench 3 may be the edge to which the bedrock was cut back, with the resulting gap behind the wall being filled in with soil. Construction of the coach-house must have re-used this early retaining wall, without any attempt to investigate or underpin it. The evidence of sagging in the brickwork suggests a localised weakness – possibly a soft spot caused by a pre-existing feature – that has not coped with the weight of the roof above.

The choice of brick for the back wall of the coach-house and the north wall of the orchard is puzzling, given the proximity of good building stone in the immediate vicinity that was used on almost everything else in the area. These handmade bricks are likely to date to the 17th or 18th century, as machine-made bricks became available in the mid-19th. But the economic argument for hand-made bricks on 'lower status' buildings here has to be questioned. The west wall of the coach-house has a brick outer (west) face set above stone foundation courses, but the inner (east) face of the wall is stone, suggesting even here the status of the stables was too high for such a material as brick. The bulk of the brick is a purplish handmade fabric reminiscent of the late 17th century (a suggestion matching that of Clare Howard in her draft report on the Castle Courtyard structures, Howard 2017, p8), with patches of later orange hand-made bricks of possible 18th/19th century date and machine-made 20th century bricks from recent repairs. The brick face appears to be a full brick-and-a-half thick based on the exposed south corner and examination of photos showing the ruinous state of the upper floor at the time it entered Guardianship in the 1980s, suggesting it started out as essentially a complete

freestanding wall in its own right, and the stone structure of the 18th-century coach-house is a later addition. It is tempting to speculate on the source of the early bricks – were they brought to site for the wall they now form, or are they salvaged from some other structure that was built of brick? The remains of the manor house are 18th-20th century stonework, but could there have been an earlier manor from the 17th century made in then-fashionable brick?

In the orchard only the north wall is of the later orange handmade brick on its southern face, with the northern face being stone. There are rectangular stones in the orchard wall at intervals forming two rows at different heights and staggered to form a zig-zag pattern – this might be to support a trellis or other fixings for vines or fruit trees that would use the wall as both shelter and sun-trap. Presumably the brick here had some useful heat-retaining property? The same argument does not work for the coach-house wall as it would have been shaded by trees from at least the date of the first-edition Ordnance Survey in the mid-1800s, although the wall does appear to have a similar distribution of stones among the orange bricks in the upper half of the southern quarter – this area of the wall is a later phase of work and may indicate that a rebuild of the coach-house back wall coincided with the construction of the orchard north wall.

While the parallel stones reputed to be the entrance to an ice-house were located within the woods on the bank just west of Trench 2, the area was too overgrown and covered in piled tree limbs to be investigated with the limited resources available. It could form a separate project if this area is to be disturbed by the new play proposals. Ice houses are big features, and the backfilling ought to be investigated to make sure it is safe. A retired local resident approached one of the team members, recounting his childhood at the site when his grandfather worked in an office above the coach-house, and pointed out the location of the ice house. He said he remembered it being demolished and filled in when he was a boy.

CONCLUSIONS

Based on the assessments (above), no further analysis or formal peer-reviewed publication is recommended at this time. This SAC/Assessment report will be made available via the Historic England research reports series, and signposted in OASIS as a means of disseminating the results of the excavation.

In the orchard the almost complete lack of features suggests any future intervention here could start under a watching brief, with the contingency to expand if anything is encountered. However, if the area can be cleared of the brambles and hidden recent deposits of rubble and other detritus, a geophysical survey is recommended in advance of any plans here. The presence of boulder clay not much more than half a metre from the surface may pose drainage issues.

The area south of the coach-house should be subject to archaeological excavation of decent-sized trenches in advance of construction works as part of any mitigation

strategy, and if possible the area should be stripped first for access by geophysical survey.

The footings on the west side of the coach-house will need further investigation, as they did not appear to be as deep as the interior floor, and were resting on soil rather than the base of the wall-cut. This should be conducted by both structural engineers and archaeologists, as there are features in the soil that are poorly understood. If the area is to be reduced in height to match internal floor levels further area-excavation will be required to understand and record the features that will be removed.

ACKNOWLEDGEMENTS

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Thanks are also due to Laura and Peter de Wesselow the owners of the Belsay estate who kindly allowed us across their land for vehicle access to the Castle site, and to John Watkins (EHT) for arranging it with them.

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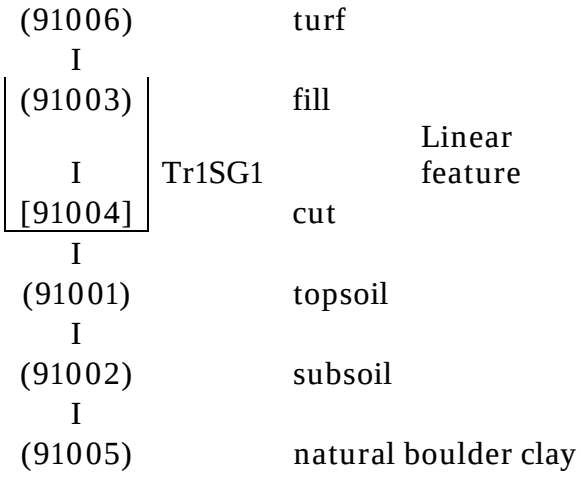
TABULATED ARCHIVE DATA

Table 8: Archive data

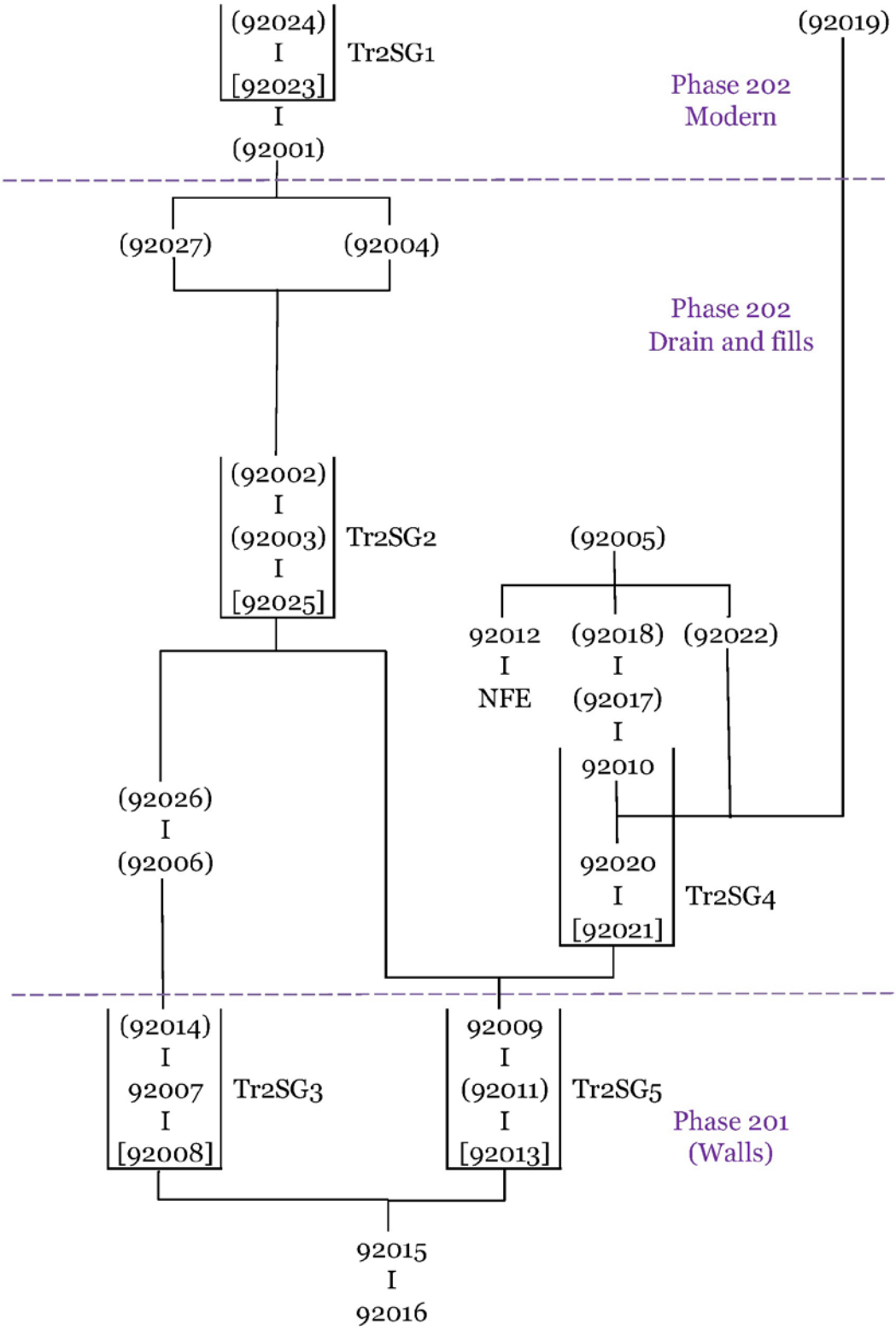
	Contexts	**Small Finds**	**Bulk Finds**	**Samples**	**Plans**	**Sections**	**Sketches**	**Photos**
Tr1	6		5		1	2		34
Tr2	27	4	14	2	7	8	24	70
Tr3	25		4		6	6		94
"Tr4"	11							
General								21
Totals	**68**	**4**	**23**	**2**	**14**	**16**	**24**	**219**

APPENDIX 1: MATRICES

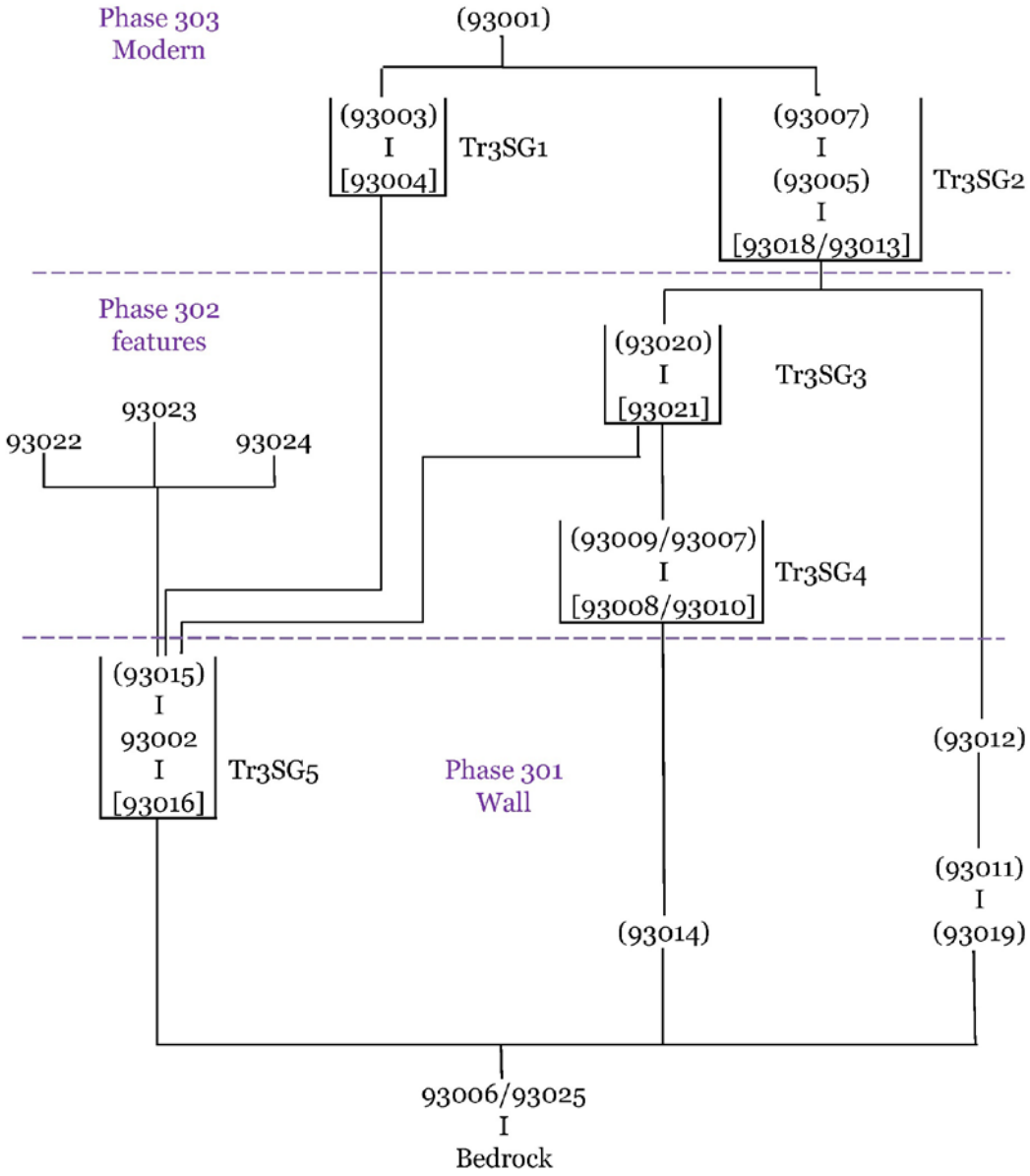
Trench 1 Matrix



Trench 2 Matrix


(92024)
I
[92023]
Tr2SG1
I
(92001)
(92019)
Phase 202
Modern
(92027)
(92004)
Phase 202
Drain and fills
(92002)
I
(92003)
I
[92025]
Tr2SG2
(92005)
92012
I
NFE
(92018)
I
(92017)
I
92010
(92022)
(92026)
I
(92006)
92020
I
[92021]
Tr2SG4
(92014)
I
92007
I
[92008]
Tr2SG3
92009
I
(92011)
I
[92013]
Tr2SG5
Phase 201
(Walls)
92015
I
92016

Trench 3 Matrix



APPENDIX 2: INTERPRETIVE CONTEXT INDEX

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
91001	Deposit	Topsoil in orchard	1			1000226, 1000227, 1000228, 1000229, 1000230, 1000231, 1000232, 1000233, 1000234, 1000235, 1000236		HE7451_7055, HE7451_7056, HE7451_7057, HE7451_7058, HE7451_7059, HE7451_7060, HE7451_7061, HE7451_7062, HE7451_7063, HE7451_7064, HE7451_7065	21001, 21002				1000014, 1000018, 1000064
91002	Deposit	Subsoil	1			1000226, 1000227, 1000228, 1000229, 1000230, 1000231, 1000232, 1000233, 1000234, 1000235, 1000236		HE7451_7055, HE7451_7056, HE7451_7057, HE7451_7058, HE7451_7059, HE7451_7060, HE7451_7061, HE7451_7062, HE7451_7063, HE7451_7064, HE7451_7065	21001, 21002				

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
91003	Deposit	Fill of linear feature	1			1000226, 1000227, 1000228, 1000231, 1000232		HE7451_7055, HE7451_7056, HE7451_7057, HE7451_7060, HE7451_7061	21001, 21002				1000387
91004	Cut	Cut of linear feature	1			1000226, 1000227, 1000228, 1000231, 1000232		HE7451_7055, HE7451_7056, HE7451_7057, HE7451_7060, HE7451_7061	21001, 21002				
91005	Deposit	Natural	1			1000224, 1000225, 1000226, 1000227, 1000228, 1000229, 1000230, 1000231, 1000232, 1000233, 1000234, 1000235, 1000236		HE7451_7053, HE7451_7054, HE7451_7055, HE7451_7056, HE7451_7057, HE7451_7058, HE7451_7059, HE7451_7060, HE7451_7061, HE7451_7062, HE7451_7063, HE7451_7064, HE7451_7065	21001, 21002	2102			
91006	Deposit	Turf	1						21001, 21002				1000383

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
92001	Deposit	Topsoil trench 2	2	203		1000022, 1000023, 1000024, 1000431, 1000432, 1000442, 1000468, 1000469, 1000470, 1000471, 1000472, 1000473	HE7451_92001.tif	HE7451_7001, HE7451_7002, HE7451_7003, HE7451_7584, HE7451_7585, HE7451_7597, HE7451_7596, HE7451_7595, HE7451_7594, HE7451_7593, HE7451_7592	22001, 22002, 22003, 22008, 22007, 22006, 1000483				1000140, 1000143, 1000221
92002	Deposit	Possible floor surface	2	202	Tr2SG2	1000172, 1000173, 1000443, 1000471, 1000472, 1000473	HE7451_92002.tif	HE7451_7539, HE7451_7540, HE7451_7594, HE7451_7593, HE7451_7592	22003, 22008	2201			1000138, 1000196, 1000210
92003	Deposit	Floor levelling deposit	2	202	Tr2SG2	1000172, 1000173, 1000444, 1000471, 1000472, 1000473	HE7451_92003.tif	HE7451_7539, HE7451_7540, HE7451_7594, HE7451_7593, HE7451_7592	22003, 22008	2201, 2202		52001	

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
92004	Deposit	Accumulation deposit - post-use - possibly natural silting	2	202		1000445, 1000468, 1000470, 1000471, 1000472, 1000473	HE7451_92004.tif	HE7451_7597, HE7451_7595, HE7451_7594, HE7451_7593, HE7451_7592	22002, 22003, 22008, 22007, 1000483				
92005	Deposit	Late ground levelling or demolition deposit	2	202		1000433, 1000434, 1000435, 1000436, 1000437, 1000438, 1000446, 1000468, 1000469, 1000470	HE7451_92005.tif	HE7451_7586, HE7451_7587, HE7451_7588, HE7451_7589, HE7451_7590, HE7451_7591, HE7451_7597, HE7451_7596, HE7451_7595	22007, 22006, 1000483		3001, 3002, 3003		1000373, 1000379, 1000381
92006	Deposit	Possible demolition deposit	2	202		1000447, 1000472, 1000473	HE7451_92006.tif	HE7451_7592, HE7451_7593	22002, 22003				1000375, 1000377

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
92007	Masonry	Wall foundation	2	201	Tr2SG3	1000350, 1000351, 1000356, 1000357, 1000358, 1000359, 1000360, 1000361, 1000448	HE7451_92007.tif	HE7451_7085, HE7451_7084, HE7451_7079, HE7451_7078, HE7451_7077, HE7451_7076, HE7451_7075, HE7451_7074		2204, 2203			
92008	Cut	Cut for wall foundation 92007	2	201	Tr2SG3	1000350, 1000351, 1000356, 1000357, 1000358, 1000359, 1000360, 1000361, 1000448, 1000449	HE7451_92008.tif	HE7451_7085, HE7451_7084, HE7451_7079, HE7451_7078, HE7451_7077, HE7451_7076, HE7451_7075, HE7451_7074	22002	2204, 2203			

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
92009	Masonry	Wall foundation	2	201	Tr2SG5	1000352, 1000353, 1000354, 1000355, 1000433, 1000434, 1000435, 1000436, 1000437, 1000438, 1000450, 1000468, 1000470	HE7451_92009.tif	HE7451_7083, HE7451_7082, HE7451_7081, HE7451_7080, HE7451_7586, HE7451_7587, HE7451_7588, HE7451_7589, HE7451_7590, HE7451_7591, HE7451_7597, HE7451_7595	22007, 1000483	2204, 2205			

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
92010	Masonry	Stone drain cover	2	202	Tr2SG4	1000516, 1000517, 1000518, 1000519, 1000520, 1000521, 1000526, 1000527, 1000528, 1000529, 1000530, 1000360, 1000361, 1000420, 1000421, 1000422, 1000423, 1000424, 1000425, 1000426, 1000427, 1000428, 1000429, 1000430, 1000433, 1000434, 1000435, 1000436, 1000437, 1000438, 1000451, 1000468, 1000470	HE7451_92010.tif	HE7451_7075, HE7451_7074, HE7451_7573, HE7451_7574, HE7451_7575, HE7451_7578, HE7451_7576, HE7451_7577, HE7451_7579, HE7451_7580, HE7451_7581, HE7451_7582, HE7451_7583, HE7451_7586, HE7451_7587, HE7451_7588, HE7451_7589, HE7451_7590, HE7451_7591, HE7451_7597, HE7451_7595, HE7451_7598, HE7451_7599, HE7451_7600, HE7451_7601, HE7451_7602, HE7451_7603, HE7451_7608, HE7451_7609, HE7451_7610, HE7451_7611, HE7451_7612	22007, 1000483	1000487, 2204, 2206, 2207			

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
92011	Deposit	Wall construction backfill	2	201	Tr2SG5	1000433, 1000434, 1000435, 1000436, 1000437, 1000438, 1000452, 1000468, 1000470	HE7451_92011.tif	HE7451_7586, HE7451_7587, HE7451_7588, HE7451_7589, HE7451_7590, HE7451_7591, HE7451_7597, HE7451_7595	22004, 22007, 1000483	2204	3004		1000406
92012	Masonry	brick drain - E-W aligned	2	202		1000489, 1000433, 1000434, 1000435, 1000436, 1000437, 1000438, 1000469	HE7451_92012.tif	HE7451_7586, HE7451_7587, HE7451_7588, HE7451_7589, HE7451_7590, HE7451_7591, HE7451_7596	22006	2204			1000408
92013	Cut	Wall foundation cut	2	201	Tr2SG5	1000490, 1000470	HE7451_92013.tif	HE7451_7595	22004, 22007, 1000483	2204, 2205			
92014	Deposit	Mortar - part of construction of wall 92007	2	201	Tr2SG3	1000491, 1000350, 1000351	HE7451_92014.tif	HE7451_7085, HE7451_7084		2203			

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
92015	Deposit	Natural boulder clay	2	201		1000431, 1000432		HE7451_7584, HE7451_7585	22001, 22004, 22002, 22008	2204			
92016	Deposit	Natural bedrock	2	201		1000492, 1000352, 1000353, 1000354, 1000355, 1000435	HE7451_92016.tif	HE7451_7083, HE7451_7082, HE7451_7081, HE7451_7080, HE7451_7588	22001, 22004, 22002, 22003, 22008	2204, 2207			
92017	Deposit	Mortar used in construction of drain 92020	2	202						2204, 2206, 2207			100404
92018	Deposit	Clay part of construction of drain 92020	2	202		1000493, 1000469	HE7451_92018.tif	HE7451_7596	22006				
92019	Deposit	Drain fill	2	203					22004	2207		52002	
92020	Masonry	Stone drain - lining of sides	2	202	Tr2SG4	1000494	HE7451_92020.tif		22004	2207			
92021	Cut	Drain construction cut	2	202	Tr2SG4	1000495, 1000469, 1000470	HE7451_92021.tif	HE7451_7596, HE7451_7595	22004, 22007, 22006, 1000483	2207			

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
92022	Deposit	backfill of drain construction cut 92020	2	202		1000496, 1000469, 1000470	HE7451_92022.tif	HE7451_7596, HE7451_7595	22004, 22007, 22006, 1000483	2207			
92023	Cut	Modern pit	2	203	Tr2SG1	1000497, 1000472, 1000473	HE7451_92023.tif	HE7451_7593, HE7451_7592	22003				
92024	Deposit	Backfill of pit 92023	2	203	Tr2SG1	1000498, 1000472, 1000473	HE7451_92024.tif	HE7451_7593, HE7451_7592	22003				
92025	Cut	Cut associated with area bounded by walls 92007 and 92009	2	202	Tr2SG2	1000499, 1000472, 1000473	HE7451_92025.tif	HE7451_7593, HE7451_7592	22002, 22003				
92026	Deposit	Naturally deposited subsoil	2	201		1000500	HE7451_92026.tif		22002				
92027	Deposit	Dump deposit in cut 92025	2	202		1000540, 1000472	HE7451_92027.tif	HE7451_7593	22002, 22003				
93001	Deposit	Topsoil trench 3	3	303		1000026, 1000027, 1000028, 1000029, 1000461		HE7451_7005, HE7451_7006, HE7451_7007, HE7451_7008, HE7451_7087	23006, 23001, 23003				

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
93002	Masonry	Brick wall of stable block	3	301	Tr3SG5	1000071, 1000072, 1000073, 1000074, 1000075, 1000076, 1000077, 1000078, 1000079, 1000080, 1000081, 1000082, 1000083, 1000084, 1000085, 1000086, 1000087, 1000088, 1000089, 1000090, 1000091, 1000092, 1000093, 1000094, 1000095, 1000096, 1000097, 1000098, 1000099, 1000100, 1000125, 1000126, 1000127, 1000128, 1000310, 1000311, 1000313, 1000314, 1000315, 1000316, 1000317, 1000318, 1000319, 1000320, 1000321, 1000322, 1000323, 1000324, 1000325,		HE7451_7501, HE7451_7502, HE7451_7503, HE7451_7504, HE7451_7505, HE7451_7506, HE7451_7507, HE7451_7508, HE7451_7509, HE7451_7510, HE7451_7511, HE7451_7512, HE7451_7513, HE7451_7514, HE7451_7515, HE7451_7516, HE7451_7517, HE7451_7518, HE7451_7519, HE7451_7520, HE7451_7521, HE7451_7522, HE7451_7523, HE7451_7524, HE7451_7525, HE7451_7526, HE7451_7527, HE7451_7528, HE7451_7529, HE7451_7530, HE7451_7042, HE7451_7043, HE7451_7044, HE7451_7045, HE7451_7548, HE7451_7549, HE7451_7551, HE7451_7552, HE7451_7553, HE7451_7554, HE7451_7555, HE7451_7556, HE7451_7557, HE7451_7558, HE7451_7559, HE7451_7560, HE7451_7561, HE7451_7562, HE7451_7563,	23005				

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
93003	Deposit	Repair Cut Backfill	3	303	Tr3SG1	1000125, 1000126, 1000127, 1000128, 1000309, 1000311, 1000313, 1000314, 1000315, 1000316, 1000317, 1000318, 1000319, 1000320, 1000321, 1000322, 1000323, 1000324, 1000325, 1000326		HE7451_7042, HE7451_7043, HE7451_7044, HE7451_7045, HE7451_7547, HE7451_7549, HE7451_7551, HE7451_7552, HE7451_7553, HE7451_7554, HE7451_7555, HE7451_7556, HE7451_7557, HE7451_7558, HE7451_7559, HE7451_7560, HE7451_7561, HE7451_7562, HE7451_7563, HE7451_7564	23005	2301			1000182, 1000185

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
93004	Cut	Cut for repair of wall	3	303	Tr3SG1	1000125, 1000126, 1000127, 1000128, 1000309, 1000310, 1000311, 1000313, 1000314, 1000315, 1000316, 1000317, 1000318, 1000319, 1000320, 1000321, 1000322, 1000323, 1000324, 1000325, 1000326		HE7451_7042, HE7451_7043, HE7451_7044, HE7451_7045, HE7451_7547, HE7451_7548, HE7451_7549, HE7451_7551, HE7451_7552, HE7451_7553, HE7451_7554, HE7451_7555, HE7451_7556, HE7451_7557, HE7451_7558, HE7451_7559, HE7451_7560, HE7451_7561, HE7451_7562, HE7451_7563, HE7451_7564	23005	2301, 2304			
93005	Deposit	gravel backfill of modern service line	3	303	Tr3SG2	1000161, 1000190, 1000248		HE7451_7050, HE7451_7052, HE7451_7051	23001	2301			

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
93006	Deposit	redeposited natural? Same as 93025	3	301		1000125, 1000126, 1000327, 1000330, 1000331, 1000332		HE7451_7042, HE7451_7043, HE7451_7565, HE7451_7568, HE7451_7569, HE7451_7570	23001	2301			
93007	VOID	VOID number, same as 93009	3	302	Tr3SG4					2301			
93008	VOID	VOID number, same as 93010	3	302	Tr3SG4					2301			
93009	Deposit	Fill of L-shaped feature 93010	3	302	Tr3SG4	1000125, 1000126, 1000127, 1000309, 1000327, 1000330, 1000331, 1000332, 1000363, 1000365, 1000366, 1000367, 1000368, 1000369		HE7451_7042, HE7451_7043, HE7451_7044, HE7451_7547, HE7451_7565, HE7451_7568, HE7451_7569, HE7451_7570, HE7451_7072, HE7451_7070, HE7451_7069, HE7451_7068, HE7451_7067, HE7451_7066	23001, 23002, 23003	2301, 2303			1000194, 1000198

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
93010	Cut	Cut earlier drain? building extension?	3	302	Tr3SG4	1000125, 1000126, 1000127, 1000309, 1000327, 1000330, 1000331, 1000332, 1000356, 1000357, 1000358, 1000359, 1000363, 1000364, 1000365, 1000366, 1000367, 1000368, 1000369		HE7451_7042, HE7451_7043, HE7451_7044, HE7451_7547, HE7451_7565, HE7451_7568, HE7451_7569, HE7451_7570, HE7451_7079, HE7451_7078, HE7451_7077, HE7451_7076, HE7451_7072, HE7451_7071, HE7451_7070, HE7451_7069, HE7451_7068, HE7451_7067, HE7451_7066	23001, 23002, 23003	2301, 2303, 2305			
93011	Deposit	Lense of clay over natural	3	301		1000125, 1000126, 1000127		HE7451_7042, HE7451_7043, HE7451_7044		2301			
93012	Deposit	subsoil observed in south facing elevation trench 3	3	301		1000461		HE7451_7087	23006				

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
93013	Cut	cut of modern service drain	3	303	Tr3SG2	1000190, 1000248, 1000327, 1000330, 1000461		HE7451_7052, HE7451_7051, HE7451_7565, HE7451_7568, HE7451_7087	23006, 23001	2301, 2302, 2305			
93014	Deposit	natural lens of clay in natural	3	301		1000307, 1000308		HE7451_7545, HE7451_7546	23003	2303			
93015	Deposit	backfill of original construction wall cut	3	301	Tr3SG5	1000327, 1000328, 1000329, 1000330, 1000331, 1000332, 1000333, 1000334		HE7451_7565, HE7451_7566, HE7451_7567, HE7451_7568, HE7451_7569, HE7451_7570, HE7451_7571, HE7451_7572	23001, 23005				
93016	Cut	original construction wall cut	3	301	Tr3SG5	1000127, 1000327, 1000328, 1000329, 1000330, 1000331, 1000332, 1000333, 1000334		HE7451_7044, HE7451_7565, HE7451_7566, HE7451_7567, HE7451_7568, HE7451_7569, HE7451_7570, HE7451_7571, HE7451_7572	23001, 23005	2305			

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
93017	Deposit	backfill of modern service drain	3	303	Tr3SG2	1000461		HE7451_7087	23006, 23001, 23003				
93018	Cut	VOID number, same as cut 93013	3	303	Tr3SG2				23001, 23003				
93019	Deposit	Natural clay lense	3	301		1000362, 1000419		HE7451_7073, HE7451_7086	23004	2303, 2305			
93020	Deposit	fill of cut 93021	3	302	Tr3SG3	1000327, 1000330, 1000331		HE7451_7565, HE7451_7568, HE7451_7569	23001				
93021	Cut	most likely linear feature	3	302	Tr3SG3	1000327, 1000330, 1000331, 1000332		HE7451_7565, HE7451_7568, HE7451_7569, HE7451_7570	23001				
93022	Deposit	limewash on wall 93002	3	302		1000127		HE7451_7044	23005				
93023	Deposit	limewash on wall 93002	3	302		1000127		HE7451_7044	23005				
93024	Deposit	limewash on wall 93002	3	302		1000127		HE7451_7044	23005				

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
93025	Deposit	Natural boulder clay	3	301		1000127, 1000327, 1000330, 1000331, 1000332, 1000465, 1000466		HE7451_7044, HE7451_7565, HE7451_7568, HE7451_7569, HE7451_7570, HE7451_7091, HE7451_7092	23001, 23002	2305			
94002	Masonry	Outline of coachhouse											
94003	Masonry	Coach-house south doorway floor height point											
94004	Masonry	Coach-house second doorway floor height											
94005	Masonry	Coach-house third doorway height											
94006	Masonry	Coach-house north archway floor height											
94007	Masonry	spot heights on gravel paths				1000448	HE7451_92007.tif			2203			
94008	Masonry	gravel path edges in castle yard											

Context	Subclass	Interpretative Summary	SSD	Phase	Structural Group	Image Ids	Sketch Filename	Photo Filename	Section Ids	Plan Ids	Small Finds	Samples	Assemblage Ids
94009	Masonry	north face of mansion											
94010	Masonry	SW corner wall of stable block											
94011	Masonry	Spot heigh on wall 94011											

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