DigVentures

Gatehouse Project, Pontefract Castle

Community Archaeology Project

Analysis Report

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Purpose of document

This document has been prepared as a Final Analysis Report for Wakefield Metropolitan District Council, Historic England and other stakeholders. The purpose of this document is to provide a comprehensive account of the excavation undertaken in front of the gatehouse at Pontefract Castle, with specialist assessment and analysis of finds and samples. It is supported by an easily accessible online database of all written, drawn, photographic and digital data.

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Project summary

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Executive summary

DigVentures was commissioned by Wakefield Metropolitan District Council to undertake a community excavation on the Scheduled Monument at Pontefract Castle gatehouse, supported by Historic England with funding allocated under the terms of the NPPF Emergency Investigation Assistance.

Fieldwork took place in two stages. An initial community-focused excavation was undertaken between 30th September and 3rd November 2019 (DigVentures project code: PON19), followed by a targeted investigation of the drawbridge pit between 27th July and 14th August 2020. This project was designed to provide baseline information to contribute to the future management, research and presentation of the site, creating multiple educational and participatory learning experiences for community participants.

This report presents results from the excavation and remote sensing, incorporating specialist assessment and analysis. The potential of these results to achieve the aims and objectives of the project are discussed in the final section of this report.

Results summary

Fieldwork was undertaken initially between 30th September and 3rd November 2019 to investigate parts of the gatehouse structure exposed during an earlier archaeological watching brief at Pontefract Castle, located at the base of the Victorian steps leading from the visitor centre into the castle's inner bailey. The community excavation was conducted in two stages; the first three weeks comprised hand and machine excavation by a team of professional archaeologists, followed by a two-week programme of excavation, recording and finds processing involving members of the local community. Based on the results of the work in 2019, a second phase of excavation was undertaken in 2020 to complete a targeted investigation to excavate the full stratigraphic sequence within the previously identified drawbridge pit. This phase of work comprised hand excavation of sealed deposits exclusively within the drawbridge pit and was completed by a team of three professional archaeologists.

Significant remains were uncovered during the investigation, enabling a reinterpretation of the building and surrounding landscape during the medieval and post-medieval periods. The excavation area was an irregular shape in plan, measuring approximately 15m long and 10m wide between the existing footpath in front of the visitor centre and the base of the steps into the inner bailey. All data was recorded by project archaeologists using a web accessible relational database. This is housed on the project microsite and can be explored by following the links shown in green font throughout the report:

https://digventures.com/projects/pontefract-castle/

Seven distinct phases of activity were observed within the trench. The earliest represented by a casing wall which predated the construction of the gatehouse in the 14th or 15th century. The gatehouse structure is now understood to have been aligned north to south, forming a barbican passage bridge over the moat, within which was a large drawbridge pit. Mason's marks found inside this pit and on the surviving external elevations of the building indicate it was likely constructed as part of a larger scheme of castle renovation commissioned in the 14th century. Layers investigated from within the drawbridge pit demonstrated a gradual accumulation of deposits from as early as the 14th through to the 17th century.

Masonry of a different construction technique was found abutting one of the gatehouse towers. This structure has tentatively been interpreted as part of a redans built prior to the Civil War sieges in the 1640s. Further evidence for the sieges was found within the drawbridge pit where significant layers consisting of large stone rubble fragments indicated the castle's demolition. Numerous lead musket balls dating to this period were also found from these deposits.

Later episodes of robbing activity were evident around many of the walls, dating from the demolition of the gatehouse in 1649 through to the mid 19th century. By the 1880s much of the castle was subject to archaeological recording before the entire area was landscaped. At this time much of the upstanding gatehouse remains were remodelled to fit the aesthetic of a late Victorian romantic ruin.

Public engagement was a key part of the success of the project, providing a range of opportunities for local community members, school children and visitors to the area to learn more about the archaeology of Pontefract Castle. A significant impact was made on participants and visitors alike, attracting a diverse community of people from an area of high deprivation to explore their heritage in new and different ways. The project succeeded in changing people's perception of archaeology and local history while giving the opportunity to improve their skills and understanding of the discipline. Insights gained from this evaluation have established a clear community need and demand for more archaeological work at Pontefract Castle, and should assist with the impactful design and funding applications for any future activities.

Archive and publication

The physical archive will be deposited with Wakefield Museums and the digital archive will be fully accessible via ADS, with details available via the site's OASIS record (digventu1-347513).

The project microsite is accessible here: https://digventures.com/projects/pontefract-castle/

The project evaluation data and analysis has been published in an open access format: https://doi.org/10.11141/ia.57.18

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1 INTRODUCTION

1.1 Project background

1.1.1 DigVentures was commissioned by Wakefield Metropolitan District Council (WMDC) (hereafter 'the Client') to undertake a programme of archaeological investigations as part of the Gatehouse Project, a community-focused archaeological research project based at Pontefract Castle, West Yorkshire (hereafter 'the Site'; Figure 1). The Project Design was formulated by DigVentures (Casswell *et al* 2019) in consultation with the Client and Historic England. All DigVentures projects are designed in accordance with MoRPHE framework (*Management of Research Projects in the Historic Environment*, Historic England 2015. The project was supported by Historic England, with funding allocated under the terms of the NPPF Emergency Investigation Assistance.

1.1.2 The information contained in this report provides an account of the archaeological works focused on defining and characterising the physical extent of the remains of a recently discovered gate house through a programme of non-intrusive investigations and intrusive excavation, obtaining baseline data to facilitate its future management, research, presentation and enjoyment of Pontefract Castle. The results have been circulated for wider dissemination in accordance with the Project Design (Casswell *et al* 2019).

1.1.3 This report is one of several archive and dissemination products generated by the project, including the digital archive and metadata, the paper archive and the artefact and environmental material recovered and recorded. All archive material is currently held by DigVentures and will be deposited with Wakefield Museums and will be freely disseminated through West Yorkshire Historic Environment Record (HER), Archaeological Data Service (ADS) and the OASIS portal. The project has been published via an open access format: https://doi.org/10.11141/ia.57.18.

1.1.4 A short documentary, filmed and directed by Maggie Eno provides an insight into the dig, the archaeology, and introduces the team and our participating volunteers: https://vimeo.com/511121796. The site archive, research background information and social media broadcasts are available via the project microsite: https://digventures.com/pontefract-castle/.

1.2 Project scope

1.2.1 Pontefract Castle has a rich and nationally important heritage, one of England's strongest fortresses throughout the medieval period and beyond, it played a crucial role in politics and the balance of power in the North of England. It is mentioned in numerous historical sources, including by Oliver Cromwell, who described the castle as 'one of the strongest inland garrisons in the kingdom', and William Shakespeare, who wrote in his play Richard III of Pontefract Castle 'Pomfret, Pomfret! O thou bloody prison'. Nonetheless, relatively little is known about the archaeological resource and the recent discovery of a previously unidentified gate house indicate that much is still to be learned about physical structure of Pontefract Castle. In 2019, archaeological investigations were undertaken to define and characterise the physical extent of the site, and obtain baseline data to facilitate the future management, research, presentation and enjoyment of the historic monument (Wessex – report forthcoming).

1.2.2 Pontefract Castle is now situated within an area of significant deprivation, with 18% of residents falling within the top 10% of most deprived in England (Source: Index of Multiple Deprivation based on 2011 census data). The 'Gatehouse Project, Pontefract Castle' therefore provided a major opportunity to stimulate the heritage-led regeneration of the site and its environs, engage the local community in their heritage, provide skills training and practical experience to the public, and build an audience and local appreciation for the castle's instrumental contribution to regional and national history.

1.3 Site description

1.3.1 Pontefract Castle is strategically situated on an outcrop which formerly commanded two of England's principal highways – the north road and the route west over the River Aire and the Pennines. The site is located towards the north eastern extent of the historic core of modern Pontefract (Grid Ref: SE 46075 22320, Figure 1) on a promontory formed of Coal Measures sandstone (Pontefract Rock) at a height of c 50m AOD.

1.3.2 Now owned by the Duchy of Lancaster and managed by Wakefield Metropolitan District Council, Pontefract Castle is now a Scheduled Monument (NHLE ref. no. 1010127) and one of Pontefract's most identifiable landmarks. However, much is still unknown about the castle, made apparent by recent discoveries at the inner bailey gatehouse.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 Pre-Norman Conquest

2.1.1 Before the Norman Conquest, Pontefract consisted of two distinct townships, *Taddenesscylf* (*Tateshalle*) and *Kirkby*. *Taddenesscylf* is mentioned in the Anglo-Saxon Chronicles as a place of importance where Archbishop Wulfstan and men of Northumbria pledged their allegiance to King Eadred of Wessex, and *Kirby* (translating from Scandinavian as 'church-settlement') a significant ecclesiastical establishment with at least three potential pre-Conquest churches. It has been suggested that there is strong circumstantial evidence for the promontory upon which the castle is now situated having been the site of the royal Anglo-Saxon burh, and *Kirkby* a minster (Roberts 2013). It is possible that the large ditch surrounding the motte of the Norman castle was originally part of the town ditch to the Anglo-Saxon settlement.

2.2 Norman

2.2.1 *Tateshalle-Kirkby* and the former royal manor were granted to Ilbert de Lacy by William the Conqueror following the Norman Conquest, and it was there that Pontefract Castle was constructed in c.1070. Although Pontefract is not referred to in the Domesday Book (1086), 'Ilbert's Castle' is mentioned, signifying that work on its construction was well under way by this point. This first phase of construction likely consisted of an earthen motte and bailey enclosing timber buildings, including a wooden keep and Anglo-Saxon church, later refounded as St Clement's Norman chapel.

2.2.2 The castle was confiscated from the de Lacy family by Henry I during the 12th century, where it remained property of the Crown until King John gave it back in 1199, only for the King to take possession of it again in the early 13th century. During the 11th and 12th centuries the Norman borough of Pontefract was created to the southwest of the castle along Micklegate, its limits defined by Northgate and Southgate. As the borough grew in importance, so too did the castle. The fortifications were gradually rebuilt in stone during the 12th century. Early work included the construction of the curtain wall, gatehouse into the inner bailey and conversion of the keep into stone, all by the end of the 13th century.

2.3 Later medieval

2.3.1 Although the King had taken possession of the castle in the early 13th century, the de Lacy family continued to live in it until the early 14th century when, in 1311 the castle passed by marriage to the House of Lancaster. By the late 14th century the castle was in the hands of Edward III's son, John of Gaunt, who commissioned several major rebuilding works. The gatehouse was strengthened and given polygonal buttresses, new towers – including Swillington, Constable, King's and Queen's Towers – were constructed around the curtain wall, the barbican was walled and the keep extended. The strategic military and administrative significance of Pontefract Castle is visible through its association with some of the leading families of the medieval period, and was remodelled throughout the Wars of the Roses before gradually falling into decay during the 16th century.

2.4 17th century

2.4.1 The castle was a major Royalist stronghold, having profited greatly from substantial repairs made by Charles I between 1618 and 1620. Parliamentary forces first sieged the castle in 1644 but, despite irreparably damaging the Piper Tower, were forced to retreat. A second siege began the following year where, upon hearing of Charles I's defeat at the Battle of Naseby, the castle garrison surrendered. However, in 1648 Royalists regained control of the castle. The final siege of Pontefract Castle began in November 1648, led by Oliver Cromwell himself. Charles I was executed in January 1649 and the garrison agreed terms to hand the castle over to Major General John Lambert. Soon after this event, at the request of the local townspeople, the fortifications were slighted leading to the site's eventual strategic decline.

2.4.2 The site was subsequently used for liquorice cultivation before being converted into a public park by the Victorians in 1883, a move that has helped to preserve the buried remains of a wide range of structures and features relating to all phases of Pontefract's history.

2.5 Gatehouse

2.5.1 The original Norman gatehouse would have been of timber construction and its original location is not known; however, because of the nature of the local topology it is most likely to have been in approximately the same position as the stone one that followed. Its renovation to stone was, in all probability, made in the 12th or 13th century and consisted of a simple arched opening in the curtain wall, later converted to a simple rectangular gatehouse. A documentary reference form 1244-46 describes

roofing '…the wooden tower in Pontefract Castle with lead' (Roberts 2001, 17). The site was developed further during the 13th century to include two drum towers, one either side of the gate. It is known that the gatehouse was then added to in the late 14th or early 15th century, although any attempt to phase its construction from the visible extant remains is problematic because of its state or disrepair. Later paintings and engravings from the 17th century onwards depict how the structure may have looked before the fortifications were slighted. They show no ditch or drawbridge but do all identify flanking wall gate piers extending from the towers.

2.5.2 The presence of an additional tower between the two main drum towers has been suggested through a description of the site by Richard Holmes (1887), who apparently identified a small roundel projecting from the eastern drum tower at the gatehouse during excavations in the 19th century. This does not appear on any other illustrations and is at odds to what is currently understood to constitute the gatehouse. A large ditch is known to have passed the front of the gatehouse, which was filled by the time of the Civil War, and it is possible that there exist the remains of a drawbridge structure, at least one additional tower, and part of barbican dating from the 14th century between the Victorian steps and the Visitor Centre.

2.6 Previous archaeological work

2.6.1 Early investigations at the Castle appear to have taken place in the 1880s, with excavations referred to by Richard Holmes as taking place around the Great Gateway or Porter's Lodge (Holmes 1887, 403). Between 1982 and 1986 a major programme of work was carried out by the West Yorkshire Archaeology Service (WYAS - Roberts 2002). This work identified evidence of a Christian cemetery belonging to the 10th century royal town of Tanshelf underlying the inner bailey of the castle near the 11th century St Clements's Chapel. WYAS also conducted a geophysical resistance survey conducted in 2002, and together these reports have provided an archaeological framework for the 'Gatehouse Project' – motivated by the discovery of previously unidentified buildings associated with a gatehouse complex, revealed during pre-development works in 2016.

2.6.2 Preliminary assessment during the 2016 watching brief (Wessex Archaeology – report forthcoming) suggested that the 13th century gatehouse was re-fronted by the construction of a third tower set between the drum towers articulating with a drawbridge pit. The remains of this third tower consisted of a substantial curved masonry structure which appeared to incorporate an internal room. These structures appeared to represent a barbican, a further line of defence, added to the existing gatehouse, and most likely depicted in the 1560 survey drawing. The associated drawbridge pit measured c.2m wide and, although its length and depth were not revealed during excavation, comparative examples suggested that it may have measured *c.*5m long and 2m deep. It was suggested that the drawbridge pit was likely constructed within a pre-existing ditch, necessitating high retaining walls articulating with a bridge structure. The WYAS geophysical survey identified a substantial 10m wide ditch in this locality, though results were constrained due the upstanding Victorian tea house, lodge and access road, meaning that the survey could not extend beyond the gatehouse. Although this work is not yet unpublished, the project team have been granted access to the watching brief archive, and an appraisal of the

material pertinent to the excavation is included alongside the results of the 2019 investigation below.

3 PROJECT AIMS AND OBJECTIVES

3.1 Background

3.1.1 The aims and objectives articulated below were defined in the Project Design for this stage of research (Casswell *et al* 2019). The project has been designed in accordance with priorities articulated in the Historic England Research Agenda (2017b) and Historic England Corporate Plan (2018-21). During the fieldwork project, weekly meetings were held between the Site Director (DigVentures), Neil Redfern (HE), Ian Sanderson (WYAAS) and representatives from WMDC. This was undertaken to ensure the direction of the project was in accordance with the research aims outlined below, managed through the creation and updating of a compliance matrix.

3.2 Aims

3.2.1 The overarching aim of the archaeological excavation was to define and characterise the physical extent of the site through a scheme of non-intrusive and intrusive investigations combined with an integrated public engagement programme at its core. This approach enabled the collection of baseline data to facilitate its future management, research, presentation and enjoyment. The goal of this work was to fully record, analyse and report all archaeological remains within the area of interest ('preservation by record'); to place the results of this work in the public domain by publishing the results in an appropriate format as agreed by Historic England; and to inform how the Gatehouse might be presented to the public.

3.2.2 Aim 1: Identify the physical extent and character of the archaeological remains on the site with a programme of remote sensing. This aim entailed an initial review of the unpublished 2016 field archive and non-invasive survey of the site, including low-level aerial photography and photogrammetry to define and establish the physical extent and condition of the site. These low impact tools added to our understanding of the monument by addressing the following questions:

- Q1: In light of current findings from projects at similar Castle sites, do any outstanding research objectives from the earlier unpublished 2016 watching brief still remain to be addressed?
- Q2: Can the layout of the gatehouse and associated sub-surface archaeology be established by remote survey?
- Q3: Can we identify any phasing in the topographic or remote sensing anomalies indicative of an extended period of use?

3.2.3 Aim 2 – Characterise the results of non-invasive survey, refining the chronology and phasing of the site with a programme of trenching. In the light of the evidence base collated for Aim 1, this aim was addressed with a targeted trench to address the following questions:

- Q4: What evidence is there for the use of the site pre-Norman Conquest, and how does this compare with remains recovered through recent archaeological investigations within the castle and the surrounding area?
- Q5: Can we elucidate the plan, character, function, phasing, contemporary significance and chronological development of the gatehouse structures, with the aim of establishing the possible presence of bridge structures and / or a barbican in front of the gatehouse?
- Q6: What are the specific characteristics of the apparent ditch / drawbridge pit, including its width and depth?
- Q7: What is the date of the feature's original construction, and the date of its infilling?
- Q8: Can we establish and date the sequence and morphological development of archaeological remains encountered from the ditch through environmental sampling and scientific dating?
- Q9: Is it possible for a comparison to be made between masonry styles / techniques found during excavation with those identified from other dated structural elements of the castle?

3.2.4 Aim 3 – Understand the site's archaeological and palaeoenvironmental conditions. This aim was achieved with an assessment of the samples as defined and recovered in Aim 2, using appropriate palaeoenvironmental and archaeological techniques to establish preservation and significance.

- Q10: What is the current state of the archaeological and palaeoenvironmental material across the site?
- Q11: How well do deposits and artefacts survive, and how deeply are they buried?
- Q12: Can the palaeoenvironmental data recovered from sampling in the excavation inform us about the provision of consumable goods to a high-status residence, and any specialised food processing or industrial activities that may have taken place at the site?
- Q13: Can we increase our understanding of the local environment during the multi-period occupation of the site and the process by which the ditch was filled?

3.2.5 Aim 4 – Making recommendations, analysis and publication. This aim required all data from Aims 1-3 to be collated, with an integrated analysis of the archaeological and palaeoenvironmental resource at the site, making recommendations to conserve, enhance and interpret the heritage significance of the site.

- Q14: Following a comprehensive assessment of all archaeological material, how can the results of this work aid in our interpretation of contemporary regional sites?
- Q15: In light of the evidence recovered from this and previous work, can we articulate a link between the multi-phased use of the site and its different areas?
- Q16: Can we highlight any particular themes within the complete and stable archaeological archive that would benefit archives, local museums and education, improving regional accessibility?

3.2.6 Aim 5 – Public engagement. The project offered a range of opportunities for local community members, school children and visitors to the area to get involved and learn more about the archaeology of Pontefract Castle. Working closely with the wider

project team and other local stakeholders, participation opportunities included excavation, finds processing, photogrammetry and guided visits. The engagement and participation programme was designed to:

- Involve volunteers in supervised finds handling and processing sessions during the excavation, learning how archaeological materials are recovered and managed from professional staff
- Engage with local school children
- Host a series of open days and guided tours for visitors
- Reach thousands through digital engagement with the project microsite
- Provide full access to the archaeological results via the project microsite as the trenches, finds and feature are recorded
- Disseminate results of the excavations via media, broadcast, print and popular publications

4 METHODOLOGY

4.1 Remote sensing

4.1.1 A photogrammetric survey of the site and surrounding area was made in accordance with Historic England's Photogrammetric Applications for Cultural Heritage: Guidance for Good Practice (2017a), to assist in recording any remains encountered. The survey utilised Agisoft Metashape 3D Modelling software to detect the feature points of the structure and match these in different images to create a point cloud, from which photo realistic 3D models were generated. All models were georeferenced using eight coded targets for each model, surveyed into the National Grid using a robotic total station. The resulting DSM was intended to provide an accurate and versatile record of the form and condition of the site, and to provide baseline data for comparison with future surveys to place the castle's environs and interventions into a landscape context and facilitate more detailed invasive and non-invasive work at the site.

4.2 Excavation

4.2.1 All work was completed to CIfA *Standard and guidance for archaeological excavation* (2014a) and was undertaken in accordance with the standards set out within the WSI (Casswell et al 2019). Bespoke public programming designed by DigVentures was delivered in collaboration with WMDC. The excavation was carried out in accordance with the company Health and Safety Policy, to standards defined in The Health and Safety at Work etc. Act 1974, and The Management of Health and Safety at Work Regulations 1992.

4.2.2 Excavation at Pontefract Castle was undertaken in two phases of investigation. The first phase comprised hand excavation of an area measuring approximately 15m by 10m, in plan by a team of four professional archaeologists over the course of five weeks between 30th September and 3rd November 2019. Public engagement activities were key to the completion of the project, with Finds Lab Workshops every day for the last two weeks, and Dig Experience activities the final week. This integrated approach gave members of the public the opportunity to engage with the archaeology through a supervised programme of excavation and recording, while

aiding in the site's final recording. Where public participation was encouraged in the final weeks of the fieldwork, excavation and recording was undertaken at a ratio of one professional archaeologists for every two members of the public. Work undertaken with groups of volunteers included cleaning and defining masonry and excavating (cutting-back) sections. The second phase of investigation comprised a targeted excavation of the remaining depositional sequence from within the drawbridge pit identified during the initial phase of work. This was undertaken by a team of three professional archaeologists between 17th July and 14th August 2020.

4.2.3 Spoil was visually scanned and metal detected for artefacts throughout the excavation and as soon as archaeological deposits or features were recognised they were cleaned, planned and photographed prior to any further hand-excavation. All sections were recorded so that the full depositional sequence could be illustrated throughout. The drawbridge pit posed a particular issue during the first phase of investigation because of its depth. A running section was established down the middle of the length of the area and work proceeded by excavating to a depth of 1.2m, whereupon the section was recorded before the remaining half was excavated. This approach continued for the next 1.2m but the half that was left unexcavated remained that way to enable safe access to the area and to provide a platform for spoil removal. Following this a 1m test pit was excavated down for 1.2m in the deepest part to investigate the earlier depositional sequence. When no base to the pit was found the sondage was hand-augered in an attempt to find bedrock. The purpose of the second phase of investigation was to continue excavation within the drawbridge pit to the base using the previously described methodology safely. This required the installation of a winch on the north side of the drawbridge pit and the use of a ladder for access/egress.

4.2.4 All recording was undertaken using the DigVentures Digital Dig Team recording system. Digital Dig Team is DigVentures' bespoke, cloud-based, open data recording platform, designed to enable researchers to publish data directly from the field using any web-enabled device (such as a smartphone or tablet) into a live relational database. Once recorded, the born-digital archive is instantly accessible via open-access on a dedicated website, and published to social profiles of all project participants (community, professional and specialist). Links to all individual trench, feature and context records are provided in Appendix A, from where all associated finds, samples, plans, sections, photographic records and 3D models can also be explored. A single context recording system was used to record the deposits. All context numbers are a four-digit number; layers and fills are recorded with curved brackets (1001), whilst the cut of the feature is shown with square brackets [1002]. Feature numbers were assigned to groups of contexts pertaining to similar events and are displayed as three-digit numbers pre-fixed with the letter F (i.e. F601).

4.2.5 Full written, drawn and photographic records were made of each excavated section, even where no archaeological remains are identified. A plan at an appropriate scale was prepared, showing the areas investigated and their relation to more permanent topographical features, and the location of contexts observed and recorded in the course of the investigation. Plans, sections and elevations of archaeological features and deposits were drawn as necessary at an appropriate scale. Drawings were made in pencil on permanent drafting film and digital photography was used for all

photography of significant features, finds, deposits and general site working. The photographic record illustrates both the detail and the general context of the principal features and finds excavated, and the site as a whole.

4.3 Artefacts and ecofacts

4.3.1 Finds were treated in accordance with the relevant guidance given in the CIfA's *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (2014b), excepting where they were superseded by statements made below. Archaeological material was handled and sorted following advice in Watkinson and Neal (1998). All artefacts from excavated contexts were washed, counted, weighed and identified. Finds recovered were assessed by appropriately qualified specialists, who examined the finds to provide an identification, date and provenance of the material, and to also evaluate the significance of the assemblage.

Pottery

4.3.2 The pottery assemblage was identified to type and quantified using the number of sherds, the weight of the sherds and the estimated (maximum) number of vessels (ENV) following the principles set out in the current standards and guidance document (Barclay et al 2016). The classification system used to define and describe the pottery was the same as that used for the assemblages from the earlier phases of excavation on the site and is fully described in the published report (Cumberpatch 2002) and in archive reports. The major types of medieval pottery involved are also covered in the regional type series for the neighbouring area of South Yorkshire and north Derbyshire (Cumberpatch 2004) as there is currently no generally accessible or accepted ceramic type series for West Yorkshire.

Ceramic Building Material (CBM)

4.3.3 The CBM was recorded to a fabric series already used for other sites in West Yorkshire with form recorded where possible, and unidentifiable fragments recorded as 'B/T' (Brick/Tile). Metrics recorded were number of fragments (No), weight in grams (Wt) and number of corners (Cnr), with complete dimensions recorded in mm and evidence of sooting, mortar, or marks alongside comments as appropriate noted.

Animal bone

4.3.4 All animal remains were identified to element, side and to as low a taxonomic level as possible using the specialist's reference collection and published and online identification guides (BoneID; Hillson 2003; 2005). Quantification for mammal bones used the diagnostic zone method as presented by Dobney and Rielly (1988). Sheep (*Ovis* sp.) and goat (*Capra* sp.) or equid (horse/donkey/mule) distinctions were not considered. Bird remains were identified and quantified using the diagnostic zone method as presented by Cohen and Serjeantson (1996). Identification of fish remains was made using widely available identification guides (Archaeological Fish Resource; Camphuysen and Henderson 2017; Nabone Fish; Osteobase; Wheeler and Jones 1989), and quantification used the diagnostic zone method as presented by Barrett (2001) and Harland et al. (2003). Remains of cod family fish were allocated to size

categories as described by Cerón-Carrasco (2004). The molluscs remains were identified using online identification guides (Hayward and Ryland 1995), with quantification made useing a diagnostic zone method.

4.3.5 A taphonomic assessment of each fragment was undertaken, recording the presence and absence of cut and chop marks, burning and calcination, any evidence for animal activity (canid or rodent gnawing), pathology, and surface preservation; any other surface modifications of note were also recorded. Fragments of bones that could be identified to element but not any specific species were grouped as far as possible using size and class or order categories. At this stage, no attempt was made to sex any of the remains, or to measure any elements.

4.3.6 The assessment was undertaken in line with current standards and guidelines (CIfA 2014b; Baker and Worley 2019) with reference to the Project Design (Casswell et al. 2019) and the Yorkshire Archaeological Research Framework's resource assessment (Roskams and Whyman 2005) and research agenda (Roskams and Whyman 2007).

Environmental

4.3.7 Environmental samples were processed using a water separation machine. Floating material was collected in a 300µm mesh, and the remaining heavy residue retained in a 1mm mesh. Flots and heavy residues were air dried and the >4mm fraction of the heavy residues were sorted for organic remains and artefacts.

4.3.8 The samples were assessed in accordance with Historic England guidelines for environmental archaeology assessments (Campbell et al. 2011) and are presented in Table 21. A preliminary assessment of the samples was made by scanning using a stereo-binocular microscope (x10 - x65) and recording the abundance of the main classes of material present. Macroscopic plant material was quantified using a scale of abundance (- = < 5 items, + = > 5 items, ++ = > 10 items, +++ = > 50 items, ++++ = > 100 items, +++++ = > 500 items). The abundance of other palaeoenvironmental material such as molluscs was also recorded along with the abundance of other material such as coal / vitrified charcoal, cinders and the abundance of artefacts and organic remains from the >4mm fraction of the heavy residues. All charcoal fragments greater than 2mm in size in cross section were counted.

4.3.9 Preliminary identifications of plant material were carried out by comparison with material in the reference collections at the Department of Archaeology, University of Sheffield and various reference works (e.g. Cappers et al, 2006). Cereal identifications and nomenclature follow Zohary et al. (2012) and other plant nomenclature follows Stace (2010). The seed, in the broadest sense, of the plant is always referred to in the table, unless stated otherwise. The abbreviation cf. means 'compares with' and denotes that a specimen most closely resembles that particular taxon more than any other.

5 REMOTE SENSING RESULTS

5.1 Aerial survey

5.1.1 An aerial survey of Pontefract Castle was undertaken by the project team, led by Adam Stanford of Aerial-Cam. The principle aim of this work was to identify, define and map the physical layout of the gatehouse and associated remains (Aim 1). This fulfils Stage 2 and addresses Aim 1 Questions 1–3 of the Project Design (Casswell et al. 2019) by mapping the physical extent and condition of the site.

5.1.2 The aerial survey resulted in the production of an accurate Digital Surface Model (DSM) (Figure 2) and a photo-realistic 3D model of the survey area, which can be viewed at https://skfb.ly/6ROUA. It showed the full layout of the Castle, placing the final results of the excavation in context with the upstanding structural remains still extant. The angle at which the drawbridge pit was aligned with the gatehouse was clearly depicted, as were other elements of the structure. The Great Tower has also been recorded, illustrating in detail the multiple tower arrangement and providing an insight into the possible phasing of the structure (see Section 10.2).

6 EXCAVATION RESULTS

Chris Casswell

With specialist contributions by Chris Cumberpatch (pottery), Hannah Russ (animal bone), Elizabeth Foulds (small finds), Stuart Noon (small finds), and Ellen Simmons (environmental)

All digital context and feature records have been archived on the Digital Dig Team system and can be reviewed via the project microsite by clicking on the links in green in the text. The site records can be accessed directly here:

https://ddt.digventures.com/pontefract-castle/browser.php

6.1 Introduction

6.1.1 An archaeological excavation was carried out from 30th September and 3rd November 2019, and then again between 17th July and 14th August, on the site of the gatehouse structure at Pontefract Castle. Significant remains were uncovered during the investigation, enabling a reinterpretation of the gatehouse structure during the medieval and post-medieval periods. The following stratigraphic assessment fulfils Stage 4 (Tasks 4.1 and 4.2) and addresses Aim 2 Questions 4–9 of the Project Design (Casswell et al. 2019, see Sections 12.1.1 and above) by establishing a phased chronological narrative for development of deposits at the gatehouse.

6.1.2 The excavation area was an irregular shape in plan, measuring approximately 15m long and 10m wide between the existing footpath in front of the visitor centre and the base of the steps into the inner bailey. Figure 3 shows the final post-excavation plan of the site derived from a rendered 3D model. Figures 4 – 8 show the elevations of the walls of the gatehouse, Figure 9 the section through the drawbridge pit fills and Figures 10 – 11 the baulk trench sections. Detailed descriptions of every context are included in Appendix A.

6.2 Phase 1 – Casing Wall (12th to 13th century)

6.2.1 The earliest remains encountered during the excavation was a heavily degraded limestone wall F120 fronting the natural sandstone edge within the drawbridge pit (Figure 5). It comprised four courses of degraded ashlars to a maximum height of 0.8m mortared in a single 0.3m wide skin to the outer facing edge of the moat. The upper two courses had suffered from significant erosion, particularly towards the centre, and it is most probable this had occurred through weathering of the surface as water drained into the base of the drawbridge pit. Below the wall the natural sandstone upon which it had been constructed was noticeably redder than the surrounding geology and had begun to erode, almost undercutting it.

6.2.2 Dating the casing wall was problematic, but a comparison between it and other remains suggests it had been exposed for significantly longer. Sandstone was quarried locally for building works commissioned at the castle from the 13th century onwards; however, the construction of this wall in limestone indicates it may predate these works, having been erected in the 12th or 13th century.

6.3 Phase 2 – Gatehouse construction (14th century)

6.3.1 The remains of the gatehouse investigated within the trench were constructed during building works in the 14th century. Structural elements were built using sandstone ashlar and included part of the eastern gatehouse tower, an adjoining central tower, and a drawbridge pit extending from what would have been the inner end of a barbican passage.

6.3.2 The inside of the eastern gatehouse tower base F119 (Figure 3) was visible prior to excavation as it formed the side of the Victorian steps. Excavation of this structure was limited within the excavation area but did enable part of the front of the building to be exposed and its relationship with the adjoining tower to be established. These external remains were stepped for three courses and survived to a height of 1.2m. They were a polygonal shape in plan, with each of the two faces visible measuring 1.5m, splayed at an angle of 145˚. The previously exposed parts of the structure appeared to form a straight side next to the steps, however this part of the structure contained concrete replacements in the make-up of the masonry representing later Victorian remodelling.

6.3.3 The base of a central tower F108 had been keyed into the front of the eastern gatehouse tower, either as a contemporary build or later addition (Figure 4). This structure was circular in plan and formed a plinth course comprising five courses of sandstone ashlar constructed directly on top of bedrock. It formed part of the same building as the passage barbican bridge F101 that extended to the south, highlighting that these were constructed entirely at the same time. Seven courses of the eastern external side of the bridge were revealed, albeit staggered down into the moat, surviving as parts of the structure that were not demolished or removed from the 17th century onwards. Overall, the outer wall was 5.5m long with a 1.5m long, 0.4m deep angled recess where it met the circular tower at its northern end. The width of the east wall of the bridge was 2.5m and the north wall 1.5m; the external elevation of the west wall was not seen inside the trench, but was observed measured at least 1.5m wide.

6.3.4 A large rectangular drawbridge pit – measuring 5.6m long, 2.45m wide and 6.5m deep – was found in the middle of the bridge. As with external faces of the structure, it was constructed entirely with sandstone random ashlar blocks on top of cut bedrock. The north wall (Figure 5) had been built where the bedrock was at its highest point and eight courses survived in excellent condition. The west wall (Figure 6) was 27 courses deep to the base and the east wall (Figure 7) 26 courses. The smaller, 0.55m thick south wall of the pit had been robbed and 17 courses survived; on the third course down slightly worn stone corbels protruded 0.24m from the wall face. These architectural elements had evidently been placed during the initial construction of the wall and probably formed brackets upon which timber uprights were positioned, possibly related to the function of the drawbridge. Three recesses were observed further down the wall. The uppermost depression was roughly circular, measuring 0.12m diameter and 0.1m deep, slightly off-centre and had evidently worn through repeated motion of an object in this space. Below this was a larger, 0.35m deep recess on a similar vertical alignment that also appeared to have formed through repeated striking of a roughly circular object, leading to the removal of the masonry facing. The angle at which the hole had formed suggested striking had occurred from an elevated position. The lowest recess was found three courses from the base of the drawbridge pit and was positioned more centrally. Unlike the other two, this appeared to have formed through the deliberate removal of a square section of wall, possibly to support a horizontal beam; however, no working was found into the bedrock opposite to suggest it spanned the base of the pit. No structural elements were found within the recesses and none contained layers unique to their situation.

6.3.5 Mason's marks were found on each of the faced walls relating to the construction of the gatehouse; 22 in total. The east wall contained 15 unique marks, the west wall 13, the south wall four, north wall six, and external wall two. Many of these marks were found on more than one wall, and there were two instances in the east wall where blocks of masonry were found with two marks. There appeared to be no pattern to the placement of marked stones from the base of the drawbridge pit to the top, suggesting that the gatehouse was constructed as one scheme of work.

6.3.6 Vertical striations were found on both the east and west walls, appearing as very faint pale stripes from the top of the walls down towards the base. This pattern was most noticeable on the east wall where three were spaced at 0.75-0.9m intervals from the south wall. These stripes were not cut into the ashlar walls, had not formed through weathering and were observed down almost the full elevation of the walls. It is possible that they were areas where the wall has been less exposed.

6.4 Phase 3 – Drawbridge pit fill (14th to mid 17th century)

6.4.1 Following the initial definition of the gatehouse structure, most of the excavation work was focused on investigating deposits from within the drawbridge pit. Due to time constraints and safe depth of excavation, it was not possible to excavate to the bottom during the community excavation stage in October 2019. A second phase of excavation was undertaken in July and August 2020 whereupon the full stratigraphic sequence was recorded to an overall depth of 6.5m, as illustrated in an accurate photorealistic section in Figure 9.

6.4.2 The drawbridge pit was filled predominantly by soft laminated sands that had accumulated through the erosion of the natural local sandstone upon which the castle was constructed. Although numbers were assigned to different layers, it is best to think of the development of these contexts as a continuous process involving the slow build-up of sediment between the 14th and 17th century, with diffuse horizons between events.

6.4.3 Filling the base of the drawbridge pit was a hard, mostly sandstone layer within a silty matrix (1082), differing somewhat from the overlying layers in that there were considerably more stone inclusions and it had been heavily compacted. This layer may represent trample that formed during the construction of the drawbridge pit walls. No datable material was encountered from this basal fill, however sherds of predominantly Humberware pottery – dating to the 14th and 15th century – were found in over half of the 11 layers that had formed above (1098, 1100, 1097, 1096, 1080, 1079, 1099, 1101, 1095, 1094 and 1076). This initial phase of infilling produced a varied assemblage of animal bones that included diagnostic pieces from sheep/goat, cattle, deer, pig, carp, mussel and oyster, along with a range of bird remains: domestic goose, mute swan, fowl, chicken and grey heron. Many of the bones recovered displayed signs of carcass processing through butchery but there was evidence from some of the chicken remains that to indicate they were laying eggs. Other finds of note from these layers included a late medieval turned bone 'parchment pricker' or stylus SF21 (Cat no. 12), a heavy copper alloy object SF32 (Cat no. 53) that may have served as part of a pivot for the drawbridge mechanism, and a heavily corroded probable axe SF34 (Cat no. 14).

6.4.4 The late 15th to 16th century fill of the drawbridge pit was initially represented by two large rectangular masonry blocks (1088 and 1089) that had been placed 0.7m from the south wall against the east and west walls. They were found at the same level on opposite sides of the pit and shared similar dimensions, each measuring approximately 0.75m long, 0.45m wide and 0.3m thick. The apparent deliberate placement of these substantial masonry pieces 1.7m from the base of the drawbridge pit indicates a new phase of construction, with each one likely serving as foundations upon which large timber vertical supports were placed. This may have been required to either provide additional support for the drawbridge or could represent the establishment of a more permanent superstructure. Layers overlying these foundation stones produced notably later pottery than those beneath them, dating to the late 15th and 16th century. Although no clear cut was observed during excavation, it is possible that the drawbridge pit was cleared to a specified level before these stone blocks were placed and the pit began to fill again.

6.4.5 Late 15th and 16th century filling of the drawbridge pit was represented by 13 layers (1084, 1075, 1085, 1074, 1090, 1091, 1086, 1073, 1070, 1063, 1069, 1068 and 1067) measuring a total thickness of 1.5m. As with the layers that had been deposited before, each one consisted of mainly laminated sands, but with a slightly more clayey composition than those they overlay. Although some intrusive and residual sherds of pottery were evident, most of the assemblage comprised 15th to 16th century material. A range of animal species were represented in the bone recovered from these layers, including cattle, sheep/goat, goose, pheasant and edible oyster, with several of the remains exhibiting signs of butchery. Two stone cannon balls, SF29 (Cat

no. 32) and SF30 (Cat no. 33), were recovered, each with the roughly the same diameter (SF29 – 65.16mm, SF30 – 64.65mm), one of which had been damaged either through firing or other means. In addition to this, two stone discs of unknown purpose were recorded from the latest deposit in this sequence SF22 (Cat nos. 71 and 72) together with two fragments of heavily corroded iron.

6.4.6 Accumulation of more clayey sand layers into the drawbridge pit continued into the 17th century. Six contexts (1064, 1059, 1058, 1050, 1056 and 1055) measuring a combined thickness of 1.1m were identified as having formed during this period. Dating was done primarily through the pottery; 17th century material was present throughout, with an increase in the number of late medieval sherds from the earlier deposits, and some intrusive 18th century material from the later deposits. A 17th century coin from the Spanish Netherlands SF10 (Cat no. 3) was found alongside a small fragment of window glass SF9 (Cat no. 19) and 4 stone discs, SF17 (Cat no. 73) and SF18. (Cat nos. 74, 75 and 76) In general, there were more finds encountered in these layers, particularly in relation to the animal bone assemblage recovered. A wide range of domesticated livestock animals and birds, wild or managed mammals and birds, fish and shellfish were recorded, many of which displayed signs of butchery. Species present across most layers included cattle, sheep/goat, and edible oysters, with cod, hare, pig and chicken evident to a lesser degree. A particularly high species diversity was found in one of the later contexts from this part of the sequence (1050) where, in addition to the above, red and fallow deer, dog, cat, swan, and amphibian remains were also identified. The only layer that had not formed naturally was the penultimate one in the sequence; a deliberate mixed deposit of charcoal and coal (1056) that may have been backfilled from a hearth relating to industrial activity.

6.4.7 For the most part Phase 3 represents the natural accumulation of sands into the drawbridge pit for over three centuries, beginning in the 14th century and ending in the 17th. A distinct increase in the depth of deposits and amount of cultural material recovered from the latter stages of its filling suggests that less care was taken in its upkeep immediately prior to events surrounding the English Civil War in the mid-17th century.

6.5 Phase 4 – Civil War defences (mid 17th century)

6.5.1 Bonded to the outer face of the eastern gatehouse tower and the circular tower in front was a later piece of masonry F118 (Figure 12). No attempt had been made to tie the masonry into the Phase 2 gatehouse structure, rather it had been cemented onto the outside. It extended to the east, at right angles to the curve of the circular tower but was in poorer condition than the earlier remains having been truncated by later landscaping activity. The coursing was much thinner, comprising eight courses to a height of 1.36m, but just the southern side of the structure lay within the trench. Dating this feature was difficult but it seems likely this angular addition to the outside of the gatehouse tower was a redans relating to Civil War fortifications.

6.6 Phase 5 – Demolition (1649)

6.6.1 The demolition of the gatehouse is known to have occurred in 1649 and was clearly evident in the excavation as a 1m thick layer of stone rubble deposits (1052, 1046 and 1045) (Figure 9). The composition of this material comprised predominantly large

fragments of sandstone – some of which displayed elements of working – within a crushed sandstone and sand matrix. These layers represent a significant build-up over a very short space of time and almost certainly formed through the demolition of the gatehouse. Overlying these stony layers were a number a discrete, thin sandy deposits (1043, 1044, 1040 and 1041). Finds recovered from them and the layers below were scarce but did include seven musket balls, SF1 (Cat no. 40), SF2 (Cat no. 43), SF3 (Cat no. 44)and SF4 (Cat no. 38) (Figure 20), and a very small group of pottery dating to the late medieval period. Their stratigraphic position suggests that they may have been lain on top of the demolition rubble as levelling deposits following the slighting of the Castle.

6.7 Phase 6 – Deconstruction of the gatehouse (mid 17th to mid 19th century)

6.7.1 Following the demolition of the Castle at end of the Civil War the nature of archaeological remains encountered changed significantly. They were characterised initially by pitting over the walls surrounding the drawbridge pit for the extraction of building materials.

6.7.2 The earliest and most extensive stone-robbing event was found over the south wall of the drawbridge pit and along the inside edge of its west wall F111 (Figure 12). On the south side a cut had been made directly over the wall for the removal of masonry, whereas on the west wall a 0.45m wide trench had been tunnelled down into the demolition layer within the drawbridge pit deeper than the that of the robbing event. Pottery found within the backfill of the robber trench suggests that this activity was undertaken in the latter half of the 17th century, conceivably very soon after the demolition phase.

6.7.3 Two large intercutting pits with vertical sides were found having been excavated down directly onto the top of the wall west of the drawbridge pit. The earliest F113 was as long as the wall was wide and had been backfilled with mixed sandstone and 18th or 19th century CBM rubble. Sherds of 17th and 18th century pottery also recovered from the fill indicate that the pit was most likely created in the 18th century. The pit that cut it F114 was somewhat smaller and had a circular in plan; it was filled with similar material although a number of pottery sherds date it to the 19th century.

6.8 Phase 7 – Victorian remodelling (1880s)

6.8.1 Later remodelling of the castle was undertaken in the 1880s (Roberts 2002, 447) and was evident around the gatehouse through the deposition of thick landscaping deposits and rebuilding of medieval structural remains. This remodelling of the gatehouse area also included the consolidation of ground prior to the creation of steps down through the gateway, most notably at the northern end of the drawbridge pit.

6.8.2 A large pit F102 was found in the northwest corner of the drawbridge pit cutting through the 17th century demolition and levelling layers (Figure 8 and Figure 9). It had been cut down to bedrock and filled with large sandstone rubble to form a solid base upon which more regular, reused blocks had been cemented into the corner of the drawbridge pit with concrete. This concrete was also found bonding the large ashlar blocks immediately to the north forming the southern gatehouse tower F117.

6.8.3 The polygonal shape of the southern tower appeared to mirror that of the northern one; however, upon closer inspection the weathering and decay pattern on the masonry and bonding agents were very different. Whereas the northern tower had weathered consistently on the more elevated exposed edges, the opposite was true for the lower courses of the southern tower. In addition to this, the bonding agent was more pronounced, demonstrating it had been repointed more recently using concrete. Not only this, but upon excavation the entire stonework structure was found to lie on top of the same sand levelling deposit upon which the steps had been built (Figure 12). As a result, it is probably best to view the visible remains of the southern gatehouse tower as Victorian cladding to help consolidate what remains of the original tower below and form an aesthetic border to the steps.

6.8.4 The Victorian steps lead from the inner bailey down, through the assumed location of the gateway, to the bases of the extant towers. Half of the bottom step was excavated in order to record any buried remains beneath and establish the stratigraphic sequence. Upon excavation it was revealed there were no structural remains below and it is likely that, if there had been masonry there, it was removed in the construction of the steps. Following this initial assumed clearing stage, clean sand was lain to form a bedding deposit upon which the crazy paving steps were set.

6.8.5 Following the remodelling work on the southern tower and steps, the area was landscaped extensively to raise the ground level over the location of the moat on the east and south sides of the trench. This landscaping layer (1009) covered almost the entire trench and was up to 1.5m thick in places. Hand excavation of this deposit resulted in the collection of a large finds assemblage which included many 19th century finds (see Section 7) along with a selection of earlier material. Noteworthy earlier artefacts included nine musket balls, SF7 (Cat no. 41), SF19 (Cat no. 34), SF20 (Cat no. 39), SF23 (Cat nos. 46, 47 and 48) and SF24 (Cat no. 45) (Figure 20), lead window came and a bone or antler knife handle (Cat no. 10).

7 ARTEFACTS

7.1 Summary

7.1.1 The following artefact analyses fulfil Stage 4 (Tasks 5.2 and 5.5) and addresses Aim 3 Questions 10, 11 and 13 of the Project Design (Casswell et al. 2019, see Section 12.1.1 and above) by providing an insight into the chronological framework represented, as well as providing a better understanding of the site's archaeological conditions.

7.1.2 The excavations at Pontefract Castle yielded an assemblage of 918 sherds of pottery (Appendix B), 3179 vertebrate remains and 221 mollusc fragments (Appendix C), 513 CBM fragments (Appendix D), 239 fragments of metal, stone, glass, bone, antler/ivory, ceramic including 17 copper alloy objects, 40 lead objects, 11 stone objects, five fragments of window glass, two silver coins, one worked bone object, one antler or ivory artefact and one ceramic object (Appendix E) and 239 fragments of production waste, including clinker, iron slag, and glass waste (Appendix G). Twenty-eight small finds were recorded during the excavation. The finds assemblage was assessed and analysed by the appropriate specialists, and the results are discussed below.

7.2 Pottery

Chris Cumberpatch

7.2.1 In total, 918 fragments of pottery weighing 11,561g were recovered from 35 contexts during excavations at Pontefract Castle (Appendix A, Table 1). The earliest sherd in the assemblage came from the thick layer of 19th century landscaping (1009) and appeared to be of Roman date. It was associated with a later, mixed assemblage and was undoubtedly residual in a later context. Small quantities of Roman pottery have also been recovered from other excavations on the site (Cumberpatch 2002: 170) although the exact nature of the Roman activity remains unknown.

7.2.2 The earliest medieval pottery, dating to the period between the mid-11th and late 13th century, consisted of a relatively small quantity of local and regional wares. Local types included a range of white and buff gritty and sandy wares, typical of the types in use in West Yorkshire generally during this period. Yorkshire Gritty ware was represented by two sherds, Oxidised Gritty ware by one sherd, while three deposits within the drawbridge pit contained sherds of Buff Gritty ware. The distinctions between these types are probably the result of the fact that they originated either from different potteries or were manufactured using different clay sources in the same pottery. The oxidised wares tend to be orange rather than buff in colour, pointing to the use of a clay with a higher concentration of iron resulting in the formation of orange-coloured iron oxide compounds in the fired body. Further work at the regional level is required to obtain a more coherent view of the economy of the pottery industry in the earlier medieval period and to resolve the many unanswered questions pertaining to the origin and detailed chronology of these and related wares. Much the same applies to the contemporary sandy wares which include Buff Sandy ware and Oxidised Sandy ware. Possible reasons for the distinction between sandy and gritty fabrics have been discussed at length elsewhere (Cumberpatch 1997).

7.2.3 Regional wares were limited to two sherds of Beverley-type ware. Produced in the eponymous East Yorkshire town between the 12th and 14th centuries, Beverley wares achieved a regional distribution across eastern Yorkshire and neighbouring areas although outside the core area they generally form only a small part of typical assemblages. Work on the industry remains ongoing but reports from Hull and Beverley include details of the range of forms and the principal fabrics (Didsbury 2005, 2011, Didsbury and Holbrey 2009, Didsbury and Watkins 1992, Watkins 1987, 1991).

7.2.4 A single small sherd of Stamford type ware was recovered from the 19th century landscaping layer. Stamford-type wares were manufactured in Pontefract but the assemblage from the Simpson's Malt site (Roberts and Cumberpatch 2009, Roberts, Cumberpatch, Young, Ixer and Hughes 2013) included very few sherds with the kind of bright green glaze seen on the sherd found, and it is probable that this example was from Stamford rather than the local source and probably post-dated the short-lived phase of production in Pontefract. A single sherd of Shell Tempered ware was recovered and proved to be of North Lincolnshire Shell Tempered ware (NLST) type (Jane Young, pers. comm.). This type included a group of similar coarse shell-tempered fabrics with consistency of form and manufacture which appear most commonly in North Lincolnshire and South and West Yorkshire as well as occasionally

in North Nottinghamshire. It was also identified amongst the assemblage from the earlier excavations inside the castle (Young, in Cumberpatch 2002:170-1).

7.2.5 Overall, when compared to the assemblages from the main phase of investigation within the castle (Cumberpatch 2002), the quantities of earlier medieval pottery were not large and it would seem that the excavation encountered deposits of a mainly later date with the early material being largely residual in character. Later medieval pottery, dating to the period between the later 13th and mid 15th centuries, was considerably more abundant than was earlier material. Two principal types were identified; Humberware and Coal Measures Whiteware.

7.2.6 Humberware was manufactured on at least two sites in East Yorkshire (Cowick and Holme-upon-Spalding Moor; Hayfield 1992, Hayfield and Grieg 1990, Mayes and Hayfield 1980) and in Walmgate and Blue Bridge Lane in York (Vince and Steane 2004). The evidence from the castle suggests that the East Yorkshire sites were the primary source of the Pontefract material and that the quantities of pottery involved were considerable (Cumberpatch 2002:218). Humberware seems to have been the main type of tableware in use in the castle during the later medieval period, as suggested by the contents of Pit 290 which included large numbers of Humberware jugs alongside animal bones and other food waste (Cumberpatch 2002:198-202). In the present case, Humberware sherds were recovered from 19 contexts with Humberware type sherds from a further six. The latter group probably represents vessels from different sources or which were made from slightly, 'non-standard' fabrics. A degree of variability in the size and density of inclusions is inevitable in a type of pottery that was manufactured continuously from the later 13th to mid 15th century. Three sherds were identified as Late Humberware and may be of early post-medieval date. One sherd of Purple-glazed Humberware, a post-medieval variant of the type, was also identified (Watkins 1987). Vessel forms, where identifiable, included jugs, small drinking jugs (Jennings 1994), a jar, and a possible urinal although most of the body sherds were unidentifiable to vessel type.

7.2.7 Coal Measures Whiteware is a distinctive later medieval type, broadly contemporary with Humberware, which was manufactured at Firsby Hall Farm and in Rawmarsh, a suburb of Rotherham (Hayfield and Buckland 1989, Cumberpatch 2004). It is characterised by its robust character and coarse, gritty, white-firing fabric. The wares show a relatively high degree of variability in terms of the density of the typical quartz, iron-rich red grit inclusions and rock fragments; this accounts for the rather high number of 'Coal Measures Whiteware type' sherds listed in the data table. The glaze is typically green to brown in colour and tends to be somewhat haphazardly applied. Vessel forms known from the potteries include jugs, cisterns and bowls with smaller numbers of chafing dishes and other types. The industry originated in the late 13th or early 14th century and may be connected with the end of pottery manufacture in Doncaster and the movement of potters into the countryside, probably as a result of rising land values in the towns (Cumberpatch, in prep).

7.2.8 Both Coal Measures Whiteware and the later Coal Measures Purple ware (discussed below) occur in significant numbers amongst the assemblages from the castle (Cumberpatch 2002:175-6, Cumberpatch 2004b) and the present case is no exception

with sherds from nine contexts. Identifiable vessel forms include a jug and a cistern although most of the sherds were not identifiable to type.

7.2.9 Other later medieval wares were not identifiable to type but were identified on the basis of their specific characteristics and are described using generic names, notably Oxidised Sandy ware, Late Medieval Gritty ware, Late Medieval Sandy ware, Late Medieval Oxidised Sandy ware and Coarse Oxidised Sandy ware. Vessel forms included jugs or cistern but the majority of sherds were not identifiable to type.

7.2.10 Medieval pottery underwent a profound change around 1450, with the appearance of purple-glazed wares which mark the inception of a period of typically 'post-medieval' pottery. The reasons for this change have never been satisfactorily explained, although some of the issues involved have been explored in a preliminary manner elsewhere (Cumberpatch 2003).

7.2.11 Pottery of late medieval to early post-medieval date was represented in the assemblage by both late medieval style wares and early post-medieval wares. The former included Coal Measures Purple ware, Late Humberware, Purple-glazed Sandy ware, Purple Glazed Humberware and most of the sherds of Green Glazed Sandy ware. Early post-medieval wares included Cistercian ware and sherds of Midlands Purple ware; although, as noted in the data tables, this type continued in production into the late 17th century.

7.2.12 Coal Measures Purple ware was produced on the same sites as Coal Measures Whiteware and the fabrics are essentially the same although the later wares were fired to a significantly higher temperature and it was this that produced the characteristic very hard, dense fabrics, often with small purple pimples on the unglazed surfaces (the result of the impact of high temperatures on the grains of iron-rich rock in the clay) and the distinctive thick purple glaze. Similarly, the Humberware potters seem to have followed the prevailing trend and to have begun producing a purple-glazed variant alongside or slightly later than, the harder, denser versions of the earlier fabrics (Late Humberware).

7.2.13 Green Glazed Sandy wares were also a late medieval development and seem to have been manufactured particularly in a group of potteries on the western edge of the North York Moors. Although their existence is well known (Mainman and Jenner 2013, Cumberpatch 2014), the details of these potteries remain obscure as little detailed work has yet been undertaken on the various sites. Typical vessel forms include wide, shallow dishes and pancheons.

7.2.14 The most distinctive marker of the end of the medieval pottery tradition is the appearance of Cistercian ware, distinguished both by the range of forms (cups, multi-handled tygs, bottles, small bowls etc) and by their fine, dark red fabrics with black or dark brown glaze. While its appearance was originally dated to around 1485, more recent work has pushed this back to c.1450. Cistercian ware, together with Yellow ware and 17th century Blackware (described below), was manufactured in Wrenthorpe near Wakefield (Moorhouse and Roberts 1992) and there is little doubt that this was the source of much, if not all, of the type from Pontefract (although it was made much more widely). Sherds of Cistercian ware were recovered from six contexts, with all the identifiable sherds coming from cups or tygs. One example (1038) bore part of a white

pipeclay design externally. Such decorative motifs have been suggested to have an overtly religious and specifically Catholic significance (Spavold 2009) and as such may predate the Reformation, after which the overt display of Catholic affinity or sympathy became hazardous. Three sherds from the drawbridge pit may be of Cistercian ware type but equally may be later Blackware; lacking distinctive typological characteristics, the fabrics of the two wares are very similar.

7.2.15 Three contexts produced three sherds of Yellow ware, including part of a candlestick (1056). Yellow wares were produced alongside Cistercian wares and Blackwares but are more difficult to date within the period between the mid/late 15th and late 17th centuries. Sometimes referred to as 'Reversed Cistercian ware', they are characterised by their bright white fabrics and shiny lemon-yellow glaze. The range of forms includes jars (often with handles), bowls, dishes and cups along wide smaller numbers of candlesticks and similar domestic items, as documented in the Wrenthorpe volume (Moorhouse and Roberts 1992).

7.2.16 Regional imports dating to the earlier post-medieval period were represented by sherds of Surrey Whiteware or Border ware type (Pearce 1992) from four contexts and a cross-context join (1064) and (1068). Like the Cistercian wares, most of these vessels were small cups or bowls. Sherds of the same type were identified amongst the pottery from earlier investigations (Cumberpatch 2002:186) although the quantities were small. It is possible that the sherds discussed here were all from a single vessel although only four sherds could be shown to join.

7.2.17 Pontefract Castle remained in use as a military establishment until the end of the Civil War and, as a result, has produced some highly significant early to mid 17th century pottery assemblages (Cumberpatch 2002: 219-222). These included a considerable quantity of Blackware and related types from the basement of the Constable Tower. Blackwares were also common in the present assemblage alongside sherds of Blackware type. Vessel forms included cups and tygs (generally much larger than comparable vessels in Cistercian ware), bowls, jugs and/or jars and at least one bottle or flagon.

7.2.18 Other post-medieval types, mainly dating to the latter part of the period, included Midlands Purple ware, Midlands Purple ware type, Redware and Redware type, Slipware Type 1 and Early Brown Glazed Coarseware. Of these Midlands Purple and Midlands Purple type ware were the commonest group. The type is one that has been poorly defined in the past and the term has been applied to a wide variety of wares, linked only by the presence of dark brown or purple glaze. In the present context, use of the term has been limited to wares with hard, dense, semi-vitrified fabrics and varying but significant quantities of quartz inclusions. Even so, the term is a broad one, hence the frequency of 'Midlands Purple type' wares. Few sherds could be identified to vessel type although the presence of three handles indicated that some at least were jugs or cisterns.

7.2.19 Redware is a distinctive bright orange ware, generally with a soft fabric (harder examples have been listed as Redware type) and clear glaze giving shiny red finish. Vessel forms are typically bowls and dishes, often with an inturned rim and buff or buff-orange slip externally. Sherds were present in four contexts. The term Type 1

Slipware is used to denote Redware vessels, normally bowls, with trailed white slip decoration internally forming linear, zig-zag, curvilinear and sunburst patterns. The only examples of this sub-type came from the 19th century landscaping layer.

7.2.20 Brown Glazed Coarseware seems to originate in the mid to late 17th century and co-exists alongside other utilitarian wares (as Early Brown Glazed Coarseware) until the 18th century when it rapidly replaced other types, becoming the predominant utilitarian ware for much of the 18th and all of the 19th century. The early type is characterised by a much more inclusion-rich fabric with quartz and often red grit in red fabric, frequently with thin white streaks. The later Brown Glazed Coarsewares are discussed further below.

7.2.21 Imported pottery of later medieval and post-medieval date consisted of a small number of sherds of Frechen-Koln type stoneware and Raeren stoneware, both of north German origin and which were imported in large quantities through most of the major east coast ports during the later medieval and post-medieval periods (Gaimster 1997) before being distributed more widely as part of the trade in Rhenish wine. Unlike most types of European medieval and early post-medieval pottery, stonewares are found on a wide variety of sites outside the ports.

7.2.22 The sherds of Tin Glazed Earthenware may have been imports, but this type of pottery was also made widely in Britain and distinguishing between Dutch and British types is virtually impossible unless distinctive painted designs are present, which was not the case here. Both sherds came from flatware vessels, probably plates.

7.2.23 The early 18th century saw a second major change in the character of domestic ceramics although, unlike the earlier post-medieval 'revolution', this one has clearer and more well-defined parameters, as discussed at length elsewhere (Cumberpatch 2014). From 1720 onwards the pottery industry was transformed by the adoption of fully industrial working practices and the development of fine stoneware and, later, refined earthenware bodies designed to supplant imported Chinese porcelain and Tin Glazed Earthenware. These formal tablewares were an important part of the revolution in dining and sociability which were part of the inception and maintenance of the 'Georgian Order' in 18th century Britain.

7.2.24 In the present assemblage formal tablewares were represented by White Salt Glazed Stoneware, Creamware and Mottled Creamware, Pearlware and Edged ware. Although often associated with Staffordshire, all these types were produced widely across Yorkshire (Griffin 2012) and, although none bore maker's marks, there is no reason to suppose that they were anything but local or regional in origin. Transfer printed Pearlwares were limited to two sherds, one of them with a 'Willow' border. Despite the commercial and social success of the new formal tablewares, the production of more traditional pottery continued throughout the 18th century in the form of 'vernacular tablewares' (Cumberpatch 2014:73). These wares included four principal types; Late Blackware, Slip Coated ware, Mottled ware and Slipware. Late Blackwares and Slip Coated wares continued the earlier Blackware tradition while Mottled ware and Slipware were new developments, probably originally developed in Staffordshire in the 17th century but which were made in potteries across the country throughout the 18th century. The technology and working practices employed in

these 'country potteries' were largely unchanged from those which were the norm in the 17th century as, presumably, were the means of distribution through local markets. The outstanding problem is the relationship between the formal and vernacular tablewares in terms of their consumption and use. Archaeologically, the two classes of pottery generally occur together, implying their use in the same households. Documentary, literary and historical evidence tends to focus on the formal tablewares and their role in the formation and presentation of a 'civilised' or 'polite' lifestyle, an important part of the Georgian Order. In contrast, the role of the vernacular tablewares has been downplayed to the extent that they have virtually been effectively 'written out' of conventional historical accounts of the period. It seems likely that they were used in everyday situations while the formal wares were reserved for more public occasions, but this is a suggestion that it is difficult to demonstrate using archaeological data alone as the deposits that produce pottery are generally homogeneous in terms of their contents with all classes of pottery mixed together.

7.2.25 Late Blackwares were common in the 19th century landscaping layer but sparse elsewhere, with only four other sherds from two contexts. Slip Coated ware was distinguished by the use of a thin layer of dark red slip, generally on a light buff-firing body, to give a black appearance similar to that of Late Blackware. Its occurrence was limited to those from which Late Blackwares were also found.

7.2.26 Mottled ware, which takes its name from the presence of iron or manganese grains in the clear slip which gives a mottled brown 'wood-grain' appearance, was made at a number of sites in South Yorkshire, including Silkstone and Sheffield Manor (Cumberpatch 2014: 78-81). In the present assemblage it was unusually rare.

7.2.27 Slipware was also largely recovered from the 19th century landscaping layer with one small sherd also found. Both hollow wares and dishes were identified and the variety of fabrics suggests several sources. This is consistent with the evidence from potteries across South and West Yorkshire (Cumberpatch 2014: 78-85).

7.2.28 Eighteenth century utilitarian wares were also produced in country potteries and this mode of production persisted into the 19th century, long after the end of production of the vernacular tablewares. Indeed, a small number of such potteries continued into the 20th century, despite increasing competition from pottery factories. Two major wares were characteristic of this class of pottery: Brown Glazed Coarseware and -type and Yellow Glazed Coarseware and -type. The principal distinction between the two is the use of a layer of white slip in the latter which, under the clear glaze, appears yellow in colour. This contrasts with the unslipped Brown Glazed Coarsewares in which the glaze appears black or brown in colour. A smaller group has been termed 'Late Redware' and is similar to Brown Glazed Coarseware but with clear glaze, giving a shiny red finish, normally on the internal surfaces of bowls and pancheons. The significance of the colour distinction between these wares is unclear although there is some empirical evidence that Brown Glazed Coarsewares are commoner on urban sites while Yellow Glazed Coarsewares are commoner on rural sites. Unfortunately, despite its economic significance, the industry has attracted little in the way of detailed research so many aspects of it remain obscure. Notably, the dating of individual vessels or groups of vessels on typological or form grounds remains difficult. The date

ranges given in the data table should perhaps be considered indicative rather than exact.

7.2.29 Another aspect of the pottery industry that spans the 18th and 19th centuries is that involved with the production of Brown Salt Glazed Stoneware. Stoneware fabrics were fired to a higher temperature than are earthenwares, rendering them impermeable and non-porous. Unlike lead glaze, salt glaze is formed by adding salt to the kilns during the firing process whereupon a chemical reaction breaks the salt down allowing it to recombine with the surface of the clay to form a hard coating which does not craze or crack as normal lead-based vitreous glazes do. The by-product, gaseous hydrochloric acid, makes the industry a highly polluting one. Eighteenth century English salt glazed wares include the white variety described above which was used primarily for formal tablewares and a brown version which was used more widely for bottles, flagons, mugs, tankards, jugs and utilitarian items. During the 19th century the industry grew considerably with the introduction of the coal-fired cooking range which required robust stewpots, loaf moulds and similar 'oven-proof' vessels. Fragments of such vessels occur in large numbers on most 19th century sites. The majority of Brown Salt Glazed Stonewares in the present assemblage were of 19th century date with a smaller number of 18th century type.

7.2.30 The late 18th and early 19th centuries saw the end of vernacular tableware production and the proliferation of a wide variety of cheap and colourful refined earthenwares alongside later Pearlwares and Whitewares (both plain and transfer printed). In the present case Whiteware (plain and transfer printed) was common in later deposits. The range of transfer printed designs included the popular Willow, Asiatic Pheasants, Two Temples and Albion patterns but many more were unidentifiable owing to the small size of the sherds.

7.2.31 Other refined earthenwares included Banded wares, Relief Banded ware, Sponged and Sponge-printed wares and Mocha wares while wares with coloured bodies included Colour Glazed ware (notably sherds from up to three teapots), Slip Banded Cane Coloured (CC) ware and Cane Coloured ware. All of these types were ubiquitous in 19th century households and consequently are common on sites of 19th century date.

7.2.32 Bone China and Porcelain (plain and decorated) were also present in significant quantities, notably in topsoil and the 19th century landscaping layer. Both bodies were used extensively in the 19th and 20th century pottery industry with Bone China particularly suited to the mass production of moulded tablewares of all types.

7.2.33 Later deposits also contained a variety of sherds of Stoneware (salt glazed, as noted above, and mid 19th century and later lead glazed types, including jam jars, bottles, and flagons). Some of this pottery may be associated with the use of the site as a public park and 'romantic ruin' but the assemblage also included two sherds of biscuit-fired ware and the two pieces of tripod stilts from the same context. The presence of these pieces of production waste might suggest that at least some of the later material was dumped on the site from elsewhere. The fact that the early modern and recent phases of the site were excluded from the analysis of the larger assemblages from earlier excavations makes any discussion of the details of dumping, as opposed to

accumulation related to the later use of the site, difficult. A substantial quantity of Unglazed Red Earthenware from flowerpots and other horticultural vessels were also present in the assemblage.

7.3 Animal bone

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Summary

7.3.1 In total, 3695 vertebrate remains (Table 2) and 221 mollusc remains (Table 3) were recovered via hand collection and from bulk environmental samples during archaeological excavation at Pontefract Castle. Each of the specimens is given according to genus and species where possible and unidentifiable remains categorised according body mass. A detailed breakdown of the vertebrate remains according to element (e.g. scapular, humerus, radius, etc) is given from the material recovered from the lower sequence of the drawbridge pit dating from 14th-16th, 17th and 18th centuries AD in Appendix C. A wide variety of species were identified including mammal, bird, fish, amphibian and both marine and terrestrial molluscs. A description of the assemblage is given below.

Results

7.3.2 Vertebrate remains (3695 fragments weighing 15.93kg) were dominated by those of mammal, which included equid (Equus sp. – horse/donkey/mule), domestic cattle (Bos taurus), red deer (Cervus elaphus), fallow deer (Dama dama), domestic pig (Sus domesticus), sheep/goat (Ovis aries/Capra hircus), domestic cat (Felis catus), European hare (Lepus europaeus), European rabbit (Oryctolagus cuniculus) and small vole (Microtus agrestis/Myodes glareolus). Bird remains represented a diverse range of species including swan (Cygnus sp.), including mute swan (Cygnus olor), goose (Anser anser), grey heron (Ardea cinerea), domestic fowl (Gallus gallus), red grouse (Lagopus lagopus scotica), Northern lapwing (Vanellus vanellus), tern (Sterna sp.) and woodcock (Scolopax rusticola). Domestic fowl (chicken) remains indicate the presence of both hen (skeletal elements with medullary bone) and rooster or capon (a tarsometatarsus with spur). Fish remains included marine, freshwater and migratory taxa; marine taxa included Atlantic cod (Gadus morhua), common ling (Molva molva), haddock (Melanogrammus aeglefinus), gurnard (Triglidae), flatfish (right-eyed flounder(s) - Pleuronectidae), Atlantic mackerel (Scomber scombrus), Atlantic herring (Clupea harengus), and ray (Rajidae), freshwater fishes included European perch (Perca fluviatilis), northern pike (Esox lucius) and carp family (Cyprinidae), and migratory species were represented by the European eel (Anguilla anguilla) (Table 2).

7.3.3 Fragments of fish bone including spines, fin rays and ribs, that could be identified only as 'fish' or Gadiformes (cod order) were also recovered. The majority of the fish remains were recovered from the residues of bulk environmental samples, with only 39 specimens hand collected (5.4% of the overall fish bone assemblage by count), while 170 specimens were recovered from the >4mm sample residues (23.4% of the overall fish bone assemblage by count) and 516 from the 4-2mm sample residues (71.2% of the overall fish bone assemblage by count). The recovery of fish bones from the bulk environmental residues significantly increased the number of specimens

recovered, as well as the range of taxa recorded compared to hand collection only (Table 6). Atlantic herring, Atlantic mackerel, gurnard, haddock, flatfish, ray, European perch, northern pike and European eel remains only appeared in sample residues. The amphibian remains, likely one individual, were all recovered from context 1050 and were identified only to the order Anura (frog/toad), Table 1. Remains that could be identified at family (Cervidae – deer family; Canidae – dog family; Leporidae – rabbit/hare family), clade/order (ungulate/Gadiformes/Galliformes) or class (mammal/bird/fish/amphibian) level, within size categories where possible, formed 79.6% of the vertebrate assemblage by count (n=2941).

7.3.4 The mollusc assemblage (221 fragments weighing 550g) contained remains of marine (n=195) and terrestrial (n=25) species, and one fossil bivalve, Table 3. Marine taxa included edible/European flat oyster (Ostrea edulis), mussel (Mytilus sp.), edible/common cockle (Cerastoderma edule) and common whelk (Buccinum undatum). The terrestrial mollusc remains included 22 fragments of of garden snail (Cornu aspersum) from four contexts, two fragments of a hairy snail (Trochulus sp.), and one of either a brown-lipped or white-lipped snail (Cepaea sp.). The terrestrial species identified at Pontefract Castle are common in England and live in a range of habitats, excluding them from providing any information regarding past conditions at the site. No further comment on the terrestrial molluscs will be made. One fossil bivalve was recovered from a 17th century fill of the Drawbridge Pit, context 1056. The fossil is preserved in quartz, but species was not identified. It is not known if it's presence in the context is incidental or associated with any human activity.

Taphonomic assessment

7.3.5 Bone surface preservation varied throughout the assemblage from 'excellent' to 'awful' (categories 1-5). Most of the specimens displayed 'good' or 'moderate' surface preservation (94.7% by count, n=3014). Fragmentation was moderate throughout the hand-collected assemblage with some partial bones and teeth recovered and some re-fitting fragments of single specimens. Material recovered from the bulk environmental samples was extremely fragmentary.

7.3.6 Evidence for butchery in the form of fine cut marks, more substantial chop marks and saw marks was recorded on 214 specimens throughout the assemblage, Table 3. Remains from contexts 1001, 1009 and one bone from context 1074 provided the only evidence for carcass processing using a saw, which indicates the use of animal butchery techniques usually seen in the 18th century onwards (e.g. Albarella 2003, 74; Cameron *et al*. 2019). Sawn remains included cattle, pig and large mammal. The frequency of remains displaying evidence for butchery indicates that much of the material represents food waste. Ribs identified as large mammal, likely cattle and possibly some larger deer, were frequently observed having been chopped into lengths around 15cm.

7.3.7 Evidence for carnivore activity was limited, with only 15 specimens from nine contexts displaying evidence for gnawing. The gnawed remains included cattle, fallow deer and sheep/goat, some of which also had chop, cut and/or saw marks. Gnawing activity provides evidence for the presence of carnivores, likely domestic dogs and/or foxes,

at the site and that material was accessible to these animals at some point after their deposition.

7.3.8 Skeletal abnormalities possibly resulting from disease, injury or age were recorded in two instances: a large mammal rib from (1009) and a fowl order first foot phalanx from 17th century drawbridge pit (1050). Both elements displayed extra bone growth to the proximal articular surfaces. Twenty-one fragments of burnt and calcined bone were recovered, these included a sesamoid from a large ungulate and rib and unidentified fragments of bone from large- and medium-sized mammals.

7.3.9 Bone fusion data for estimation of age at death was recorded for one or both epiphyses of 217 specimens. Four sheep/goat and a cattle mandible and two loose cattle teeth were suitable for providing age at death data. Overall, there were only sufficient ageable remains to make some broad comments regarding age at death for the main domestic livestock taxa associated with meat production: cattle, pig and sheep/goat.

7.3.10 Three fragments of a canine tooth from drawbridge pit (1076) were from a male pig. A chicken tibiotarsus (1063) has a spur indicating that it is almost certainly from a rooster or capon (male); three chicken bones, from three contexts (1076), (1079) and (1091) had medullary bone lining the inside, indicating that they were from hen(s) (female) in their egg laying period.

Animal husbandry, provision and diet

7.3.11 Pontefract Castle was situated c. 3km to the southwest of the River Aire in what is now designated West Yorkshire. Nearby contemporary castles included Barwick-in-Elmet, Bardsey, Harewood and Weatherby to the north, Thornes, Aughton and Wressle to the east, Hangthwaite, Doncaster, Mexborough and Conisborough to the southeast, and Sandal, Wakefield, Almondbury and Sowerby to the west. Studies of the animal remains recovered during previous excavations at Pontefract Castle provide data for comparative analyses (Locker 1982; Roberts 2002; Richardson 2002; Burgess 2019). Sandal Castle, the closest contemporary castle to Pontefract, also serves as a good comparative site (Mayes and Butler 1983; Butler 1991). However, many of the other local castle sites have extremely limited or no data available for comparison at the time of writing. There have been some detailed studies of animal remains from castles further afield, which also serve as comparative castle sites.

7.3.12 When quantified by minimum number of individuals (MNI), the vertebrate remains represent few animals (Table 7), especially when the period over which the Drawbridge Pit fills accumulated is considered. However, it is still possible to make some comments about the roles of domestic livestock, wild and semi-managed resources, and marine resource use at the site. The Drawbridge Pit fills represent accumulation over a c. 350-year period during the latter part of the castle's occupation from the 14th century to the mid-17th. Evidence for carcass processing in the form of chop and cut marks (here used as a synonym for knife-marks) is consistent with that expected for butchery and food preparation, and recorded frequently on domestic livestock species, and are present on deer, bird and fish remains. The feature is located at the opposite side of the castle to the kitchens, in the first outer bailey, and would unlikely have been a primary location for the discard of food waste.

Cattle

7.3.13 In total, the drawbridge deposits contained a minimum of nine cattle, ranging in age from 4-6 months to over 42-48 months at death.

7.3.14 The earliest deposits (14th to 15th centuries) contained six specimens identified as cattle, four of which refitted, representing a mandible from an animal that died aged c. 4-6 months. A distal humerus from an individual over 12-18 months at death was also recovered, therefore the cattle remains from this phase represented at least two animals. The calf died at an age consistent with veal production/consumption; while veal consumption was suggested based on previous finds at the site (Richardson 2002, 371), it is not possible to confirm this based on a single find from the Drawbridge Pit. The humerus and pelvis are elements that were relatively high meat baring. Late 15th to 16th century deposits contained more frequent cattle remains (n=27), but still only representing a minimum of two animals, Table 7. There is no evidence for the presence of very young animals in this phase, with bone fusion data indicating that all animals were at least 12-18 months at death, with at least one animal over 42 months at death. Evidence for butchery was recorded on ten cattle elements from this phase of activity, Table 3. Seventeenth-century deposits contained 37 specimens identified as cattle, including a deciduous mandibular tooth (dp4) indicating an age of death under 6 months and a distally fused radius indicating an animal over 42-48 months at death. As in the earlier sub-phase of activity, butchery evidence is common on cattle remains, and when combined with age at death data suggests the consumption of beef (and possible veal) from cattle aged up to 4 years. The most frequently occurring element is the pelvis, which would have born a decent amount of high-quality meat. Eight fragments of bone from the 1649 demolition deposits were identified as Cattle and represented a minimum of two animals, Table 7. Skeletal fusion data was scant but indicated that animals were aged between 7-10 months and 42-48 months at death. The remains included both high meat baring and low meat baring elements, but non had any evidence for butchery.

7.3.15 Rib fragments are difficult to identify to species; at Pontefract Castle there were multiple rib sections from 'large mammals' that almost certainly include cattle, but possibly also larger deer, that have been cut into c. 15cm lengths. These were present in both 14th to 15th century (n=14) and late 15th to 16th century (n=11) deposits. This size suggests preparation of beef ribs for the dinner table, a cut known today as 'short ribs'.

7.3.16 While the assemblage is small, and there is insufficient data to carry out statistical analyses, the production and/or consumption of veal has been identified at both Launceston (Albarella and Davis 1996, 34) and Camber Castles (Connell *et al.* 1997, 13). Veal production/consumption is often a husbandry regime practiced alongside dairying, where calves, especially males, were removed from their mothers to increase the availability of milk for people. The presence of older (though not of any extreme age) cattle and veal aged-animals at Pontefract Castle may therefore reflect a dairy/veal regime in addition to cattle being raised primarily for meat, though this suggestion is tentative and one that should be further investigated should additional excavations be undertaken at the site in the future.

7.3.17 Cattle remains formed a proportion of the animal bone assemblages at all castle sites, ranging from just over half in late 13th to early-mid 16th century deposits at Prudhoe Castle, County Durham (Davis 1987) to 20% in 14th to 16th century deposits at Okehampton Castle in Devon (Maltby 1982) (only 14th to 17th century phases of activity at Castle in England were considered when presenting these values). However, even where the percentage of bones identified as cattle are low, the amount of meat provided by those animals likely still exceeded that provided by sheep/goat, pigs and deer. There is no question that beef was the staple meat consumed at castles across England, including at Pontefract.

Pigs

7.3.18 The consumption of pork and use of pork fat was in a period of decline through the medieval and early post-medieval periods (Albarella 2006, 74; Woolgar 2006), yet, the historic record suggests that pork was the second most common meat consumed in aristocratic households (Dyer 1998, 158) while also being the only meat that the poor could afford, when they could afford meat at all (Dyer 1998, 154). Overall, the pig remains from the Drawbridge Pit represent a minimum of four animals (Table 7), the least frequently recorded of the larger mammals associated with food production. Pig remains from the earliest deposits (14th to 15th centuries) included three tibiae, a metapodial, mandible and canine tooth from a male pig. One tibia was proximally and distally unfused indicating that the animal was under 18-14 months years of age at the time of slaughter; the metapodial was also distally unfused indicating an animal under the age of 24-36 months at death. None of the other pig remains were indicative of age at death, though the canine tooth was from an 'adult'. The scant age at death data for pigs from the earliest deposits is consistent with that expected for pigs slaughtered for consumption (see Albarella 2006, 83), and the frequency of tibiae suggests that the lower portion of pork leg, which were often preserved as ham, was the most commonly consumed joint. Thirteen specimens were from late 15th to 16th century deposits represented pigs under 24-42 months at death, and included a mandible and loose teeth, two distal radii, an ulna, a pelvis fragment with a chop mark, proximal femur and a metapodial. The radii and ulna represent two hock joints, while the pelvis and femur represent the upper part of the leg, which as for the lower part, could have been preserved as ham, and are high meat baring elements. Seventeenth-century deposits contained pig tooth fragments and a humerus fragment with cut-marks. No age at death data could be gleaned, but the humerus fragment is a high meat baring element, and perhaps was part of a shoulder roasting joint.

7.3.19 While there is evidence for 'young' pigs being consumed at Pontefract Castle, none are consistent with suckling pigs. Low meat baring elements may represent waste from stock or soup production, while there is evidence that pork, or perhaps ham, from high meat baring elements was being consumed. Previous excavations at Pontefract Castle demonstrate the decline in pork consumption from the Saxon period through to the 17th century (Richardson 2002, 368), also seen at nearby Sandal Castle (Griffith *et al*. 1983).

Sheep/goat

7.3.20 In total, 73 specimens representing a minimum of eight individuals were identified as sheep/goat, Table 7.

7.3.21 The earliest deposits (14th to 15th centuries) contained only five specimens identified as sheep/goat, though these represented at least two individuals. Skeletal element fusion data indicates at least one animal ages around or over 36-42 months at death and one under 20-28 months. Elements represent the fore and hind limbs. Late 15th to 16th century deposits contained 36 specimens identified at sheep/goat, representing a minimum of three individuals. Age at death data indicates at least one animal 6-12 months of age at death, while fusion data indicates that most animals were kept to an age of 3-4 years. Elements of the fore and hind limbs are frequent, and equally represented. Hind limb elements represent leg joints, a cut often roasted on the bone, with forelimb elements represent the shoulder cut, again a popular roasting joint. The age at death data indicates that mutton, rather than lamb, was being consumed most frequently. Seventeenth-century deposits contained 29 specimens identified as sheep/goat representing at least two individuals. Age at death data indicates at least one animal that died at 2-6 months of age, while fusion data indicated that most animals were older, around 3 years at death. As seen in the earlier phase of activity, elements of the fore and hind limbs are frequent, and equally represented. Three specimens from 1649 demolition deposits were identified as sheep/goat, including a tibia, femur and radius. Age at death data suggests that these could all represent one animal aged around 36 months at death.

7.3.22 Butchery marks were less frequently recorded on sheep/goat remains, perhaps a result of minimal butchery in producing whole leg or shoulder joints, which were manageable for sheep/goat, but not for the larger animals. The presence of sheep aged c. 3-4 years at death demonstrates the consumption of mutton rather than lamb, but may also is likely associated with the exploitation of secondary resources such as milk and/or wool, that made keeping sheep/goat to an older age more beneficial. While sheep/goat are present in similar numbers to cattle at the site, beef was still the staple meat given the difference in quantities of meat that would be provided by cattle compared to a sheep/goat.

7.3.23 As with cattle, pigs and deer, the remains of sheep/goat are always recovered from castle sites (Richardson 2002, 368-369). As a general pattern, sheep usually represent the second most frequently recovered species, after cattle, and this is also the case at Pontefract Castle, as demonstrated in the remains from the Drawbridge Pit, and those previously excavated at the Site (Richardson 2002; Burgess 2019).

Deer

7.3.24 The remains of deer were identified in 14th century to 1649 demolition period deposits (Phases 3 and 5), representing a minimum of five individuals, Table 7. In the earliest deposits (14th-15th centuries), only a first phalanx from a fallow deer was recovered. Both red and fallow deer were identified in the assemblages form the late 15th to 16th century period deposits, including a red deer pelvis fragment with chop marks, pelvis and mandible of red/fallow deer, a fragment from a deer metatarsal (Cervidae), and two antler fragments, radius, femur, calcaneum and metatarsal of

fallow deer. A pelvis fragment from red/fallow and a metatarsal from fallow deer were recovered from 17th century deposits while a red deer tibia with a chop mark was the only deer bone from the 1649 demolition deposits. During the medieval period deer (red, fallow and roe), for the most part, existed in forests, chases and parks where the animals were owned and managed, and their hunting and consumption largely reserved for the elite. Venison, the meat from deer, was highly prized and popular with the aristocracy of medieval England (Birrell 2006, 17). The closest deer park to the castle was Pontefract Park, which was recorded as having 434 fallow deer in 1539 (Silson 2003). While the remains of deer generally may indicate high-status, the elements present represent cuts of both high (pelvis and femur - haunch) and low quality (mandible, radius, calcaneum, metapodials and phalanges). This suggests that whole animals were brought to the castle, rather than only selected high-quality meat cuts. Previous excavations at Pontefract Castle identified all three deer species living in England at that time, red fallow and roe (Richardson 2002, 367), with fallow being the most frequently recovered followed by red and roe, which formed only small proportions of the overall assemblage. Fallow and red deer were identified at Sandal Castle, which too was located close to a deer park – Sandal Park. At Sandal Castle fallow deer formed a large proportion of the animal bone, 36.0% and 37.0% of the overall assemblage count for larger mammal remains in the 12th to mid-15th century phases of activity, though this steadily declined from the mid-15th century to mid-17th century by which time fallow deer formed only 11.5% of the larger mammal remains, replaced by cattle and sheep/goat (Griffith 1983, 342). Red deer consistently formed only a small part of the larger mammal assemblage (between 0.5 and 3.5%). Deer, and fallow deer especially, formed variable proportions of the animal bone assemblages at Castle sites across England (see Richardson 2002, 368-369), with the highest recorded being Okehampton Castle, Devon, though these counts were inflated by the numerous fragment of antler recovered (Maltby 1982). Fallow deer was well presented at Sandal, as already mentioned above, Barnard Castle, County Durham (Jones *et al*. 1985), Launceston Castle, Cornwall (Albarella and Davis 1996), Portchester Castle, Hampshire (1300-1570; Grant 1977), and Beeston Castle, Cheshire (Mulville 1993).

Hare and rabbit

7.3.25 Four fragments of bone representing a rabbit, a hare and one hare/rabbit were recovered from the drawbridge pit. Late 15th to 16th century deposits contained a rabbit ulna, while 17th century deposits contained two refitting fragments from a right femur from a young hare and a pelvis from a young rabbit or hare. In total, the remains from the Drawbridge Pit indicate rare hunting of these wild species for consumption and/or for fur exploitation, though they were recovered in greater proportions in the assemblage from excavations at the castle in 1882 to 1986 (Richardson 2002). This was especially true for rabbits in the 17th century deposits that are related to siege times, suggesting that they were a resource relied upon when provision of meat to the castle was interrupted. Rabbit and hare were also recorded in most phases of activity at Sandal Castle (Griffith *et al*. 1983). The presence of rabbit and hare in the Late 15th to 17th century is consistent with observations that rabbits at least were not common features in archaeological assemblages until the 16th century (Maltby 1979, 61), despite having being introduced to England some 500 years previously (Sykes 2007, 81-84).

Domestic, wild and managed birds

7.3.26 Domestic fowl/chickens are the most frequently represented bird species in the Drawbridge Pit deposit, introduced to England during the Iron Age, by the medieval period it was a well-established species, kept for meat, eggs, feathers and entertainment across all levels of society (Given-Wilson 1987, 94; Hammond 2005, 10; Serjeantson 2006, 147; Connell *et al*. 1997). It is possible that other bird remains within the Galliformes (land fowl) and medium bird categories represent additional chickens, but fragmentation and/or their juvenile status (epiphyses are not fully formed, and therefore not species diagnostic) it is not possible to determine species using comparative osteology. Previous excavations at Pontefract Castle had also recovered a high proportion of young Galliformes birds, interpreted as either demonstrating the ability of the aristocracy to demand the most tender of meat that would have been from younger birds, or in later deposits, the possible early slaughter of domestic fowl for meat during times of meat scarcity, and at the cost of eggs (Davies and Richardson 2002, 387), these interpretations may be supported by the evidence recovered from the Drawbridge Pit, from which juvenile Galliformes remains and hen bones with medullary bone indicating that they were slaughtered during their egg laying period were recovered. A chicken tarsometatarsus with spur was recovered from a late 15th to 16th century deposit, likely represents a cockerel (though spurs can occur in females). Cockfighting was popular in England from at least the 12th century, until it was made illegal in 1835 (Arlot 1975; Middleton 2003, 130). Evidence for cock fighting was found at Camber Castle in the form of a tarsometatarsal with spur and Cu alloy staining indicative of the animal wearing a brass-spurred ring (Connell *et al*. 1997); it is not however, possible to determine the cockerel's role in either nourishment or entertainment at Pontefract Castle. Other potential Galliformes species at Pontefract Castle include wild and semi-managed birds that may include pheasant, guinea fowl, and the smaller grouse and partridge. The introduction of the pheasant to England is not well understood, with some suggestion that it arrived during the Romano-British period, or possibly with the Normans in the 11th century. The guinea fowl was not introduced to England until sometime in the 16th century, a species native to Africa, it was introduced throughout Europe after the Portuguese began to import the birds from their colony in Guinea. Given that none of the remains could be certainly identified to any other Galliformes species other than domestic chicken (with the exception of a Phase 7 red grouse scapula recovered from elsewhere at the site) it appears that wild or semi-managed land fowl did not play a significant role in the diet during the late medieval and early post-medieval period based on the remains recovered from the Drawbridge Pit. It should be noted, however, that grey partridge (*Perdix perdix*) remains were identified in 14th to 17th century deposits during previous excavations at Pontefract Castle (Davies and Richardson 2002, 386; Burgess 2019, 13) so partridge remain a possibility as a species included in the juvenile Galliformes remains from the Drawbridge Pit. Chickens were also consistently present in 12th to mid-17th century deposits at nearby Sandal Castle (Griffith *et al*. 1983, 341), as well as other castle sites across England (e.g. Serjeantson 2006, 147; Albarella and Thomas 2002).

7.3.27 Domestic geese were also kept during the medieval and post-medieval period in managed and semi-managed flocks or on a small-scale basis; as with domestic fowl, they provided eggs, meat, down and quills (Given-Wilson 1987, 94; Hammond 2005,

10; Honka *et al.* 2018; Serjeantson 2006, 147). Distinction between graylag goose (*Anser anser*) and the domestic goose (*Anser anser domesticus*) was not attempted, and while it is probable that the remains represent the domestic variety, hunting and consumption of seasonally available (spring to autumn) wild geese cannot be ruled out. Goose remains were recovered from 14th to 17th century deposits (Phases 5 and 7) during previous excavations at Pontefract Castle (Davies and Richardson 2002, 386), and were consistently present in 12th to mid-17th century deposits at nearby Sandal Castle (Griffith *et al.* 1983, 341).

7.3.28 Some of the most interesting of the animal remains are those of swan and heron. As already discussed, a furcula (wishbone) from a mute swan had cut marks, indicating its butchery, presumably inflicted during its preparation for the dining table. A small number of swan bones were identified in 14-15th century (n=2) and 17th century (n=1) deposits, with only one 14-15th century bone (furcula) being identifiable specifically to mute swan rather than mute/whooper. From at least the 13th century in England swans were regarded as private property. Ownership was restricted and regulated by officials appointed by the Crown, and thus legal consumption was restricted to those highest of riches and status (e.g. Albarella and Thomas 2002; MacGregor 1995; Stone 2006, 155). Previous excavations at Pontefract Castle recorded swan in 14-15th century deposits (n=4) (Davies and Richardson 2002; Burgess 2019) and in 15th century deposits at nearby Sandal Castle (Griffith *et al.* 1983, 341). Swans have been recorded in small numbers at many of the castle sites where detailed faunal analyses have been undertaken, including Scarborough Castle, North Yorkshire (Weinstock 2002), Edlingham Castle, Northumberland (Foster 2016, 103), Barnard Castle, County Durham (Jones *et al.* 1985, 26), Dudley Castle (Thomas 2005, 100) and Wigmore Castle (Thomas and Vann 2015, 146) in the Midlands, Castle Mall Norwich Castle (Albarella *et al.* 2009, 18) and Castle Rising Castle, Norfolk (Jones *et al.* 1997) and Launceston Castle, Cornwall (Albarella and Davis 1996, 27).

7.3.29 Similarly, the consumption of grey heron appears to be a practice of the elite (Cosman 1976; Woolgar 1999; Albarella and Thomas 2002; Serjeantson 2006, 131), and some herons were also controlled within parks (Woolgar 1999; MacGregor 1995). Heron bones were recovered from 14th to 16th century deposits in the drawbridge pit (n=3, MNI = 2), and in the assemblage recovered from 14th to 17th century deposits during previous excavations at the site between 1982 and 1986 (Davies and Richardson 2002). Heron remains were not recovered during excavations at Sandal (Griffith *et al.* 1983) or Scarborough Castles (Weinstock 2002) in Yorkshire, but have been recorded at Dudley Castle (Thomas 2005, 100) and Wigmore Castle (Thomas and Vann 2015, 146) in the Midlands, Castle Mall Norwich Castle (c. 1067–70 to c. 1094; Albarella *et al.* 2009, 18) and Castle Rising Castle, Norfolk (Jones *et al.* 1997), Laugharne Castle, Wales (Hambleton and Maltby *forthcoming*), Camber Castle, East Sussex (Connell *et al.* 1997, 9) and Launceston Castle, Cornwall (Albarella and Davis 1996). The presence of heron remains may provide evidence for falconry hunting at Pontefract Castle, for which there is some evidence from previous excavations. Raptor (Accipitridae) and buzzard (*Buteo* sp.) remains may represent hunting birds; heron were one species that could be targeted using falconry; one that birds of prey could be trained to take (Jones *et al.* 1985, 27; Morris 1902). It has been suggested that a presence of juvenile Galliformes may also be indicative of falconry activity, as young domestic fowl are an ideal food source for birds of prey in captivity (Russ *forthcoming*). The presence of

these bird remains at the site therefore indicates high-status dining practices, consistent with those evidenced at other late medieval and early post-medieval castle and high-status sites in England (Albarella and Thomas 2002; Serjeantson 2006, 132).

7.3.30 Other identified bird remains included a woodcock tarsometatarsus and northern lapwing radius from late 15th to 16th century deposits and a tern tibiotarsus from a 17th century deposit. None have any evidence for being butchered for consumption. Evidence from other sites might suggest that the woodcock potentially represents food waste (Albarella and Thomas 2002, 33; Serjeantson 2006, 132), while the lapwing and tern are more likely to be there as a result of natural accumulation processes.

Marine resources

7.3.31 Evidence for food supply from the coast is present in the form of marine fish and mollusc remains, Table 3 and Table 6.

Marine Fish

7.3.32 Seven herring bones recovered from the 4-2mm fraction of the sample residues are the only evidence recovered from the 14th to 15th century Drawbridge Pit deposits for the consumption of marine fish. Herring was a popular and widely available food in later medieval and early post-medieval England (e.g. Barrett and Orton 2016; Serjeantson and Woolgar 2006, 116), preserved with salt, vinegar or smoke and packed in barrels in their millions and distributed throughout England. It was impossible to determine if the herring at Pontefract Castle were purchased in fresh or preserved form. Herring were also recovered from deposits excavated at the castle between 1982 and 1986 (n=34 including scales) (Nicholson 2002, 391), but were absent in the assemblages from the Bakery, Constable Tower, Chapel 11 (Locker 1982) and Sally Port (Burgess 2019). This could be explained as a recovery bias for the earlier excavations. Herring bones were recovered in abundance at Barnard Castle (Donaldson et al. 1980; Locker 1984), Wigmore Castle, Midlands (Thomas and Vann 2015, 168), Castle Mall, Norwich Castle (Locker 2000; 2009), Okehampton, Devon (Maltby 1982), as well as many other castles and later medieval and early post-medieval sites (Serjeantsen and Woolgar 2006, 113-114).

7.3.33 During the late 15th to 16th centuries marine fish consumed at the site included Atlantic cod, common ling, herring, flatfish, gurnard, Atlantic mackerel and ray, representing a minimum of ten fish in total. During the medieval period, from the 11th century, stockfish became a popular and widely available resource, favored for its long-term preservation, being dried (Locker 2000; Barrett et al. 2004; 2008; 2011; Serjeantson and Woolgar 2006; Orton et al. 2011). Stockfish was often produced from large Atlantic cod, but ling and conger eel were also used. It is sometimes possible to identify the use of stockfish at a site based on the species of fish identified, elements present and the presence and location of butchery marks. Sites using stockfish are expected to have abundant vertebrae, especially those from the caudal part of the fish, very few/no cranial elements, and cleithra fragments and vertebra with cut-marks (Locker 2000; Barrett et al. 2004). At Pontefract Castle, the presence of cranial elements for both Atlantic cod and ling indicate the provision of fresh, whole or gutted fish to the site, which is supported by evidence from previous excavations (Nicholson 2002, 394) and historical documents, which record the purchase of probable fresh fish

for Pontefract Castle in 1534 (Battye 1981); however, the use of stockfish in addition to fresh fish cannot be ruled out, and is likely to have been the case. At Sandal Castle fish remains recorded only as 'cod' were recovered from deposits of most periods at Sandal Castle (Griffith et al. 1983, 341), and is taken here to include fishes of the Gadiformes order generally rather than specifically Atlantic cod. As discussed above, herring became an increasingly available and inexpensive food item, especially in its preserved form; infrequent recovery of herring bones from the late 15th to 16th century deposits demonstrates the continued use of this fish at Pontefract Castle. Five flatfish vertebrae, a preopercular and a urohyal from medium- and small-sized flatfish were recovered from the late 15th to 16th century Drawbridge Pit deposits. While no specific species could be identified, the remains likely included European plaice (Pleuronectes platessa), European flounder (Platichthys flesus) and/or dab (Limanda limanda). Flatfish were recorded in assemblage from the Constable Tower and Chapel 11 at Pontefract Castle (Locker 1982) but were rare in the fish bone assemblage from excavations at the castle between 1982 and 1986, and present mainly in the 14th-15th century deposits (Nicholson 2002, 391). No flatfish were recovered during excavations at Pontefract Castle from 2015-2019 (Burgess 2019, 13). The remains from the Drawbridge Pit therefore provide evidence for the continuing use of flatfish as a dietary resource at the Site. No flatfish remains were recovered at Sandal Castle, possibly a result of there being no sampling or sieving during those excavations (Griffith et al. 1983, 341). However, flatfish are a common feature within fish bone assemblages from medieval and early post-medieval castles and other sites. Flatfish have been identified at Barnard Castle (Locker 1984; Donaldson et al. 1980), Castle Mall, Norwich Castle, Norfolk (Locker 2009, 131), Laugharne Castle, Wales (Hambleton and Maltby forthcoming), Camber Castle, East Sussex (Connell et al. 1997), as well as other castles and later medieval and early post-medieval sites (Serjeantson and Woolgar 2006, 113-114).

7.3.34 The species recorded in late 15th to 16th century deposits in the Drawbridge Pit were identified in the assemblages excavated between 1982 and 1986 (Nicholson 2006, 391), except for gurnard, mackerel and ray, which are recorded here at Pontefract Castle for the first time in the Drawbridge Pit assemblage. Gurnard is not a fish that is well represented at later medieval to early post-medieval sites. Gurnard was present at Barnard Castle (Locker 1984; Donaldson et al. 1980), Castle Mall, Norwich Castle, Norfolk (Locker 2009, 131), mid-16th to 20th century deposits at Camber Castle, East Sussex (Connell et al. 1997) and Laugharne Castle, Wales (Hambleton and Maltby forthcoming), some of which were more closely identified as tub gurnard (Chelidonichthys lucerna, previously Trigla lucerna), Oakhampton Castle, Devon, where three species of gurnard: tub, red (Chelidonichthys cuculus) and grey (Eutrigla gurnardus), were recorded, though quantities and date of accumulation were not presented (Maltby 1982), and Launceston Castle, Cornwall, but only in earlier, 13th century, deposits (Serjeanstson and Woolgar 2006, 112). In addition to castle sites, a small number of gurnard remains have been recovered from 15-16th century deposits at Finsbury Pavement, London (n=4) and 16th century despots at St Mary Graces, London (n=3) and Battle Abbey, East Sussex (n=4) (Serjeantson and Woolgar 2006, 113-114). Mackerel is an even rarer feature in later medieval and early post-medieval fish bone assemblages, with four bones recovered at Fishergate, York (Serjeantson and Woolgar 2006, 114) being the only record located for the species for sites dated between the 14th to 17th centuries in England. Ray, represented by two dermal

denticles, and the only cartilaginous fish recovered from the site, is a more difficult species to understand in terms of its role in the diet in later medieval and early post-medieval England. Historically, rays have sometimes been recorded as 'Elasmobranchii', which may also include remains of sharks, as well as those of skates and rays. Their cartilaginous skeletons almost never survive in the archaeological records, leaving only teeth and dermal denticles (spikes on the skin of these species), which are often only recovered through rigorous sampling and/or sieving. However, while no exhaustive search has been undertaken, historic records do indicate that rays were consumed (e.g. Serjeantson and Woolgar 2006, 119), and small numbers of cartilaginous fish remains are consistently recorded at archaeological sites of this period (Serjeantson and Woolgar 2006, 112-113).

7.3.35 Seventeenth-century deposits from the Drawbridge Pit contained the remains of Atlantic cod, haddock, herring and flatfish. The role and presence of cods (including haddock), flatfish and herring at late medieval and early post-medieval sites is discussed above. However, the role of herring and cods preserved as stock fish was changing in England at this time. Herring in its preserved form was now an extremely cheap and available food, while stockfish was decreasing in popularity (Locker 2016, 101-103).

7.3.36 A single Atlantic cod articular was the only fish bone recovered from the 1649 (Phase 5) demolition deposits in the Drawbridge Pit.

7.3.37 As discussed in the results section, environmental sampling significantly increased the number and range of fish remains recovered at Pontefract Castle during the archaeological excavations. Hand-collected material included remains of larger fish, three species in total. Material from the environmental samples included the remains of both large and small fish, which included 12 species from marine and freshwater environments, as well as the migratory European eel. In addition to increasing the range of species recovered during these excavations, the sample material added three species that had never been recovered from the site before: gurnard, Atlantic mackerel and ray (see Nicholson 2002, 391; Locker 1982).

Shellfish

7.3.38 Oysters were a popular food source in England from the Roman period onwards (e.g. Cool 2006; Hammond 2005, 21). Oyster remains were recovered from 14th to 17th century deposits in the Drawbridge pit, with fragment counts and MNI indicating and increase in their consumption from the late 15th century onwards, Table 2. The small size of the specimens recovered from Pontefract Castle suggests that oysters were being harvested young – perhaps a delicacy, or possibly a result of over fished oyster beds, or a demand for oysters that didn't allow them the time to grow to a larger size. The types and frequency of infestations in oysters can be used to determine source/oyster bed location (e.g. Winder 2015); two valves bore evidence for predation by boring sponges (Cliona celata), but no other evidence for infestation was recorded, preventing the source of the shellfish being identified.

7.3.39 Mussels are recorded on archaeological sites in England from the later prehistoric period onwards; mussel shells are particularly affected by post-depositional processes, and are frequently preserved only as small fragments, preventing formal quantification

and subsequently any true understanding of the significance of this dietary resource in the past. This is also the case at Pontefract Castle, where 26 fragments of mussel shell from Drawbridge Pit deposits dating between the 14th and 17th centuries included only one 'countable' specimen (complete umbo). Mussel fragments were more frequent in 14th-15th and late 15th to 16th century deposits, with only one fragment recovered from a 17th century deposit, possibly indicating a decline in mussel consumption in the latter years of castle occupation.

7.3.40 Other shellfish were only present in late 15th to 16th century Drawbridge Pit deposits and were represented by single fragments of edible cockle and common whelk, demonstrating that the consumption of shellfish other than oysters and mussels, which themselves seem not to have formed a significant part of the diet, was an extremely rare occurrence. Shellfish remains from excavations at Pontefract Castle were not included in the published 2002 volume, while only oysters, also noted as small specimens, were recovered during works at the Site between 2015 and 2019 (Burgess 2019, 13-14). Contemporary deposits at Sandal Castle contained remains of shellfish comparable with those from the Drawbridge Pit at Pontefract Castle: frequent oyster remains with smaller numbers of fragments of mussel, cockle and whelk (Norris 1983, 349).

Freshwater fish

7.3.41 Freshwater fish were also widely consumed during the medieval period (Locker 2018; Hammond 2005, 22). Remains from freshwater fish were recovered from 14th to 15th century (n=6), late 15th to 16th centuries (n=1) and 17th century (n=5) deposits. Vertebrae from the 14th to 15th century deposits included four from large and small carp family fish and two from northern pike. One pharyngeal tooth from a carp family fish was the only evidence for freshwater fish recovered from late 15th to 16th century deposits. Freshwater fish remains from 17th century deposits included two scales from European perch, a pike tooth, and a vertebra and ceratohyal from carp family fish. The presence of these remains demonstrates the rare inclusion of freshwater fish in the diet of those living in and visiting Pontefract Castle. Both carps and pike can be caught in freshwater environments and could have been sourced locally in the River Aire, located c. 3km northeast of the castle, in the castle moat or in ponds, constructed in the medieval period for the provision of freshwater fish (Locker 2018, 54-61). The remains of pike and carp family fish in the Drawbridge Pit may therefore be another indication of high-status dining, as access to these, often managed, resources was restricted to those with wealth (Maccarinelli 2020; 2021). Both carp family fish and pike were recorded in assemblages from previous excavations at the site (Locker nd; Nicholson 2002, 391), and 'carp', assumed to refer more generally to carp family (Cyprinidae), were also recovered at Sandal Castle (Griffith et al. 1983, 341).

Migratory fish

7.3.42 European eel was the only migratory fish represented in the Pontefract Castle assemblage, with other migratory species, including sturgeon and salmonids (salmon/trout), identified in previous assemblages at the site absent (see Nicholson 2002, 391; Locker 1982). Eel remains were recovered from the 4-2mm fraction of the sample residues from 14th to 15th century deposits (n=2), late 15th to 16th century

(n=3) and 17th century deposits (n=3). Previously, only one eel bone, from a 13-14th century deposit, had been recovered from Pontefract Castle (Nicholson 2002, 391), again demonstrating the importance of sampling in the recovery of and subsequent understanding of fish remains. The new evidence recovered demonstrates a continuing use of eels at Pontefract Castle into the 17th century. While the eel is migratory, spending parts of its lifecycle in marine and freshwater environments, it was caught during its freshwater phase, either in rivers or estuarine environments. It is also thought that some may have been caught and raised in abbey fishponds (Serjeantson and Woolgar 2006, 124). While eels were common in England at this time, the popularity of and demand for eels even saw them being imported to England from Belgium (Woolgar 2000, 36). Eels played an interesting role in the medieval and early post-medieval history of England, featuring in historical documentation as a form of currency often used/required in rent payment until the 17th century (Greenlee 2020). As such, eels could be considered a luxury food during this period, only consumed by those with wealth (e.g. Serjeantson and Woolgar 2006, 120).

7.4 Ceramic Building Material (CBM)

Phil Mills

7.4.1 In total, 513 fragments of CBM weighing 17,754g were recovered during the excavations (Table 8). The majority of these were medieval or post-medieval to modern in character, but there were also three fragments of possible Roman material.

7.4.2 The earliest CBM noted was some possible Roman imbrex fragments occurring residually in the 19th century landscaping. The brick fragments from the 15th and 16th century phase were in a handmade fabric with abundant fine lime inclusion (TZ22) and wiped, with dimension 120 x 45-50mm (4 ¾ x 1 ¾ -2 inches) which is in line with 14th to 16th century brick sizes (Brunswick 1925, 89). A number of these bricks also occurred residually in the 17th century phase with fragments also recovered from the final phase. The roof tile cannot be precisely datable. Its earliest occurrence is from the late 14th century phase. There is also a wide range of late 19th century and later bricks, pan tiles and floor tiles in the 19th century and later phase.

7.4.3 Table 10 shows the proportion of the different fabrics recorded with fabric descriptions given in Table 10. The occurrence of each fabric by provisional phase is shown in Table 11. The earliest occurring fabrics are TZ13 and TZ12.3, with TZ22, the early brick fabric, occurring from the 15th and 16th century phase. Most of the fabrics are first seen in the 19th century and later phase, showing deposition of a wide range of later CBM at this time.

7.4.4 The proportion of the different forms in the stratified group is shown in Table 9. Bricks were the most common CBM form in the group. The only brick type with surviving dimensions was an early brick of perhaps late 15th or 16th century date which was hand formed in a lime fabric (TZ22) with distinctive wipe marks on the upper surface with rounded irregular arrises with dimension 138-140 x 43-50mm, with length over 250 mm. The last phasing had several fragments of modern bricks in a variety of fabrics.

7.4.5 Floor tile included a worn tile fragment from 19th century landscaping which had a maximum thickness of 25mm. The other examples were several modern brown tiles with two oblong tiles at 104-105x40-65x18mm and most of a probable square tile at 104x15mm. There were three fragments of probable Toman imbrex which was in a probable south Yorkshire industry fabric T14. Other fragments included a fragment with a tapered edge and a possible ornamental or finial fragment from topsoil. Pan tiles, of probable 18th century or later date were noted in later layers, and peg tiles were represented by three fragments with a central square peg. There was a single example with a complete width with dimension 200 x 17 mm with the square peg having dimension of 11x12mm. There was one possible fragment of a plain ridge tile from an 18th century context, and plain tile, probably from peg tile comprised 29% of the group with thickness ranging from 12 to 20 mm, with most around 15-17mm in thickness.

7.4.6 Overall, 5% of the bricks had evidence of burning, including an example with a vitrified face which may have come from a hearth or chimney. 9% of the bricks, 33% of the peg tile, the ridge tile and 49% of the plan tile and 20% of the floor tile had evidence of mortaring. This is a high level of mortaring for tiles and may indicate that they were reused for purposes other than roofing (e.g. for a wall). One fragment of floor tile and one fragment of plain tile had evidence of reuse, in the form of mortar over a beak.

7.5 Small finds

Elizabeth Foulds with contributions from Carl Savage (coins), Ruth Shaffrey (stone) and Gerry McDonnell (XRF)

Summary

7.5.1 A total of 239 fragments of metal, stone, glass, bone, antler/ivory, ceramic were recovered. The assemblage was primarily composed of iron, most of which was in very poor condition, but there were also 40 lead objects, 17 copper alloy objects, 11 stone objects, five fragments of window glass, two silver coins, one bone object, one antler or ivory object, and one ceramic object (Table 13). The assemblage includes very few objects made of organic material, including those mentioned above, as well as wood and leather preserved in the iron corrosion product (see conservation assessment report).

7.5.2 The full small finds catalogue can be found in Appendix E. Nearly all the finds have been included in the following catalogue. Exceptions are the nails, very obvious modern objects (modern screws), and iron fragments that could not be identified further. The full data is also available in the project archive.

7.5.3 The artefacts comprise several functional categories, including dress, equipment (including tools and implements), architectural related objects, firearm and artillery, as well as other miscellaneous objects (Table 13). Most finds came from Phase 3 (14th–17th century) and Phase 7 (Victorian remodelling) contexts. There were no finds that could be specifically attributed to the Anglo-Saxon period or Norman period.

Coins and tokens

7.5.4 Two coins and two tokens were recovered during the excavations. Of the coins, one was identified as a 15th century penny from the reign of Edward IV (SF28 / Cat. no. 1), while the other was damaged and the condition did not permit identification beyond a suggestion that it was likely struck in the mid-14th to 15th centuries (SF37 / Cat. no. 2). The two tokens included a Nuremberg jetton and a Venus type jetton both dated c.1490–c.1550 (SF10 and SF27 / Cat. no. 3–4).

7.5.5 The Edward IV penny is a common type from England, as are the jettons which are also common in Europe. Jettons were used primarily for accounting purposes but were also used as gaming counters. It is worth noting that one jetton (SF27 / Cat. no. 4) has a circular perforation which suggests that this piece was turned into an item of jewellery or personal adornment. It is uncertain when the jetton became used in this way and it could have been converted anytime from the sixteenth to possibly the nineteenth centuries.

7.5.6 This small numismatic assemblage dates from the late fifteenth to mid sixteenth centuries. The unidentifiable silver penny (SF37 / Cat. no. 2) and the Venus type jetton (SF10 / Cat. no. 3) both came from the drawbridge pit, with the former from a late medieval fill and the latter from a 17th century fill. The silver penny of Edward IV (SF28 / Cat. no. 1) and Nuremberg ship jetton (Cat. no. 4) both came from the topsoil.

Dress

7.5.7 Very few of the artefacts related to dress or dress accessories. The only dress object from an undisturbed context was an iron heel reinforcement bar from a 17th century context (Cat. no. 5). This U-shaped bar preserves traces of mineralised leather within the iron corrosion and may indicate a discarded boot or heel from a boot. A similar iron heel reinforcement was found at Launceston Castle from 16th and mid-17th century contexts (Mould 2006, 325, Fig. 11.11 no. FE67).

7.5.8 The other dress related objects came from contexts that were disturbed by Victorian landscaping and topsoil. They consisted of a copper-alloy U-shaped bar (Cat. no. 6) that is probably a fragment from another shoe reinforcement plate, and a square shoe buckle fragment (SF25 / Cat. no. 7) with a hole for a separate spindle and decorated with incised lines forming a facetted surface. Similar shoe buckle examples from Launceston castle were dated to c.1720–c.1790 (Mould 2006, 325, nos NF64–66), while a floral relief decorated example from Norwich was dated 1730–1800 (Margeson 1993, 28 no. 180).

Equipment, tools and implements

7.5.9 This category contains a diverse group of objects and includes domestic equipment, writing implements and more conventional tools like the axe and several knives. Most of the artefacts came from late medieval or early post-medieval contexts, although the thimble and bone/antler knife came from the 19th landscaping layer.

Knives

7.5.10 Out of all the objects in this category, knives were the most numerous. Previous excavations at Pontefract Castle discovered the remains of 41 knives from both medieval and post-medieval contexts, but only three examples were intact enough to determine the shape. From the recent excavations there is evidence for four knives at most.

7.5.11 Cat. no. 8 is probably a highly corroded and fragmented iron knife. Mineralised organic matter in the iron corrosion suggests that the knife had a wooden handle, and the X-ray shows that it probably had a whittle tang. Fragments of copper alloy could be seen in adhering to the iron corrosion, which may be part of a hilt-plate. Unfortunately, the condition is too poor to identify the shape of the blade. It was found in a 15th–16th century silting context in the drawbridge pit.

7.5.12 Cat no. 9 is a hexagonal copper-alloy hilt-plate that is similar to a hilt-plate found at Winchester in a late 12th to early 13th century context (Biddle 1990, 861, no. 2863). It was found in a 17th-century context in the drawbridge pit (Figure 18).

7.5.13 There were two possible knives from the 19th landscaping layer. Cat. no. 10 consists of a neatly carved antler or ivory fluted handle with a carved decorative button end. A separate, possibly silver decorative hilt-plate is held in place by iron corrosion. The handle would have held an iron whittle tanged knife or another tool. Both ivory and antler objects are known from medieval contexts at Pontefract Castle (Duncan 2002, 265, Table 42), but the style of the handle is similar to post-medieval knives. A similarly shaped ivory knife handle (without the carved fluting and end button) was found during excavations at Baconsthorpe Castle, Norfolk that was thought to date to the early seventeenth century (Goodall 2002, 64, no. 104). But the style of the handle and separate hilt-plate suggests it may be more recent in date and could be contemporary with the Victorian landscaping activity at the site.

7.5.14 The other possible knife is a fragment of iron strip with a hole at one end and copper-alloy metal along the edge (Cat. no. 11). Although only a small fragment, it is possible that this is from a scale-tanged knife with the remains of an end cap. The earliest scale-tanged knives are known in London contexts from the mid-14th century (Cowgill et al. 2000, 26) and Goodall (2011, 107) argued that they were introduced in Britain in the 13th century.

Writing

7.5.15 There was one example of a turned bone pin with traces of an iron tip inserted into the point (SF21 / Cat. no. 12, Figure 15, 8). This example was decorated with turned decoration consisting of circumferential grooves, discs, a sphere, and ends in a knob. Other examples of these objects are well known from later medieval and early post-medieval contexts in both urban and ecclesiastical contexts (Egan 2010, 272; Biddle and Brown 1990, 734; MacGregor et al. 1999; Riddle 2006). There has been much discussion over what they were and how they would have been used, but most interpretations connect these objects with writing and literacy.

7.5.16 The dominant interpretations have described this type of object as 'parchment prickers', being a tool used to mark out sheets of parchment prior to writing. Biddle and Brown (1990, 735) have suggested that the form of these objects, in particular the rounded knob at the head indicates (along with the placement of wear along the shaft) that these objects were used for pushing a metal pin through sheets of parchment. They also point towards an example was found with a group of objects in the drain at a school in Lübeck, Germany, which they argued to connect this type of object with writing and literacy, although a number of the objects found in the well were not related to writing (Warncke 1912 cited by Biddle and Brown 1990, 734).

7.5.17 The other main explanation describes them as 'styli' for use on wax tablets, which was argued by Egan (2010, 272) and Riddle (2006, 365), who stated that there was '…no longer any real substantiation for the idea that they served as parchment prickers'. Other alternative interpretations have suggested that they were used as hairpins or to transfer embroidery patterns (MacGregor et al. 1999, 1974).

7.5.18 The Pontefract example was found in a 14th to 15th century context fill in the drawbridge pit. During previous excavations, a possible stylus was recovered from the early chapel at Pontefract, although it was unstratified (O'Connor and Duncan 2002, 303).

Domestic

7.5.19 Previous excavations at Pontefract Castle recovered both fixed and portable locks as well as keys (Duncan 2002, 250–251). While no examples of locks were discovered during the Gatehouse excavations, two fragments that were probably from the same iron rotary key were found in a 17th century context (Cat. no. 13). The fragments were in very poor condition, but X-ray revealed a kidney shaped bow and part of the shank on one fragment while the second fragment had part of a shank and part of the bit. From the X-ray it seems likely that the shaft is a solid type rather than hollow. Although it is not possible to specifically identify the type of key, it is similar to other late medieval keys identified by Goodall (2011, 240–242). Duncan (2002, 251) noted that kidney shaped bows dominated the Pontefract assemblage from the 1980s excavations, which is more characteristic of the later medieval period and popular in the post-medieval period.

Craft

7.5.20 An iron axe was found in a 14th to 15th century context within the drawbridge pit (SF34 / Cat. no. 14, Figure 17). The tool has two vertical cutting edges and a central oval eye. Similar examples are illustrated and catalogued by Goodall (2011, 52, C20: Fountains Abbey, North Yorkshire) and are described as axes used by stone masons for dressing stones. Another example that is similarly shaped but considerably smaller in size came from excavations at Norwich Castle (Mould 2009, 705) although it was interpreted as a woodworking axe. Other stone working tools have been found at Pontefract Castle previously, such as the maul or great-maul, punches for dressing stone and double-ended picks, but these were all associated with the Civil War activity (specifically the countermine excavation) in the 17th century (Duncan 2002, 260–263), rather than the late medieval building phase that the axe relates to.

7.5.21 Another possible tool comes from 15th to 16th century context. It is a long heavy bar of iron that is highly corroded and fragmented (L - 240mm, W - 20mm, 462g, Cat. no. 15, Figure 16). X-ray has revealed it may have a whittle tang. The edges of the possible working end are near parallel but one edge has broken away. Alternatively, it bears some resemblance in shape and size to a medieval (potentially early medieval) spearhead found previously at Pontefract Castle (Eaves 2002, 324, fig. 131 no. 1), but the X-ray suggests that Cat. no. 15 was tanged, rather than having a socket attachment.

7.5.22 A single thimble was recovered from the Victorian landscaping deposits (Cat. no. 16). It was made from copper alloy and is now flattened and damaged around the edge, but the style of the dimples and overall shape suggest it dates from the 18th century onwards (Holmes 1985) and a similar example is known from Winchester (Biddle and Elmhirst 1990, 812, no. 2494).

Architectural

7.5.23 In addition to iron nails, there was a small collection of artefacts that probably related to the architectural features of Pontefract castle. A U-shaped iron staple (SF33 / Cat. no. 17) was found in the 14th to 15th century layer in the drawbridge pit. These had two purposes: to attach two pieces of wood together, and as a means to attach fittings to either wood or stone (Goodall 2011, 162). A similarly sized U-shaped stapled was found during the excavation of a 17th century context in the Elizabethan chapel at Pontefract Castle (Duncan 2002, 253, no. 12).

7.5.24 Other finds, such as the fragments of window glass and lead window came lends support to an interpretation of glass used for windows at the castle and potentially in the gatehouse towers. However, only the glass fragments (Cat. nos 18, 19 and 20) were found in secure contexts. A fragment (Cat. no. 18) was found in a late 15th to 16th century context, while the others were found in 17th century contexts, all of which were from the drawbridge pit. All of the fragments of glass were very small, had no decoration and no original grozed edges. In contrast, all the lead came fragments were found in the Victorian landscaping layer. Two of the fragments of came had an H-profile (Cat. nos 21–22), which is Knight Type D (Knight 1983). This type was possibly made in a toothless mill and may date to the late 15th to early 16th centuries. A second type of window came had thin broad flanges and is of uncertain type (Cat. nos 23–27). It may be similar to Knight Types F and G, which are 18th and 19th century types (Knight 1985, 156).

7.5.25 There were 120 window glass fragments and eight lead cames recovered during previous excavations. The authors remarked at the small assemblage of both categories of objects (Butler, et al. 2002, 159–160). In the case of the window glass, the assemblage was considered small compared to the 600 fragments from Sandal Castle, Wakefield, West Yorkshire. The assemblage at Pontefract Castle was considered to be primarily post-1400 although the largest stratified deposit came from the Constable Tower Civil War early siege period. Interestingly, Roberts (2002, 425) pointed out that the sale of the demolished castle material only raised £1 from the sale of the glass, which suggests there was not much glass left to collect after the sieges. Window cames were also scarce during the previous excavations, but these

may have been stripped from the castle to cast ammunition during the sieges (Butler, Ford, Janaway 2002, 160).

7.5.26 Other finds likely related to architectural features included a fragment of worked sandstone (Cat. no. 30). Although small, it is finely carved with a section of moulding detail and was found in the lower fill of the drawbridge pit probably dating to around the 14th to 15th centuries. A large assemblage (600+) of dressed and carved stone was recovered from the 1980s excavations at Pontefract Castle, several of which included large fragments of decorative sandstone architectural features and the high quality of the carving evidence was noted particularly for the period 1360–1430 (Butler 2002, 141).

7.5.27 A strip of lead sheet with a rectangular hole (Cat. no. 31) may relate to other fragments found during previous excavations. These were similar in size and also had either circular or rectangular perforations. Along with the nearly complete large lead sheet (Roberts 2002, 154–156, no. 13), they were interpreted as part of the lead roof known to have covered many of the castle buildings at least from the 15th century (Roberts 2002, 154). The smaller lead sheet fragments were interpreted as lead roof 'fittings' that would have either helped to direct water run-off towards the gutters or used as clips to prevent the lead sheeting from lifting in the wind. Examples from the previous excavations (Roberts 2002) came from either 16th to 17th century contexts prior to the Civil War, or contexts related to the Civil War siege period. Cat. no. 31 came from the Victorian landscaping context (1009).

7.5.28 There were 51 fragments of iron relating to or possibly relating to nails, many of which were likely nail shafts (not catalogued). At least 28 nails are represented by head count. Of these, only nine were complete or near complete enough to measure the length, which ranged from 48mm to 78mm, with the largest being 160mm (possibly modern). Due to the high levels of corrosion and fragmentation it was often not possible to assess the type of head and most identifications relied on the X-rays to positively identify the fragments. Most nail heads appeared to be a flat type except for the very long (160mm) likely modern example with pyramidal head and other wire nails from recent disturbed contexts.

7.5.29 Nails were found throughout the excavated contexts, including in stratified contexts within the drawbridge pit (Table 14). The majority of nail heads came from 19th century landscaping context, but there were at least nine nails from the drawbridge 14th century contexts, at least four from late 15th–16th century contexts, and at least five from 17th century contexts related to this feature.

Firearm and artillery activity

7.5.30 Pontefract Castle played an important strategic role in the history of England, especially after becoming a royal castle in 1400. Evidence for firearm and artillery activity comes from two stone cannon balls, a single iron shot, and a collection of 16 lead balls.

Artillery shot

7.5.31 Two carved stone cannon balls ('gunstones') came from 15th–16th century layers in the drawbridge pit (SF29 and SF30 / Cat. nos 32-33, Figure 15, 8, 9). They are spherical in shape and although one was broken, they were nearly identical in size, measuring about 65mm in diameter. The complete example (Cat. no. 32) weighed 317.3g and the incomplete one probably would have weighed about the same.

7.5.32 The context of these two stone balls is intriguing as they were found together in the late 15th to 16th century fill of the drawbridge pit. A stone ball of the same size was discovered at Pontefract Castle, but in a Civil War era context (Eaves 2002, 352, no. 5) along with a medieval iron bolt-head (ibid., 352, no. 4). As other examples of stone shot from Civil War era sites is considerably larger and the use of stone as ammunition had declined by that time, Eaves had concluded that it was more likely to be medieval and cited a comparable example from Castle Rising, Norfolk (Bradfer-Lawrence 1954 cited in Eaves 2002, 325). Henry IV utilised gunpowder artillery to a greater extent than did earlier monarchs and 15th century manuscripts specifically record the construction and storage of guns and other armaments during his reign (Spencer 2020, 14, 16–18). It is not clear what specific type of guns were present at Pontefract Castle during the late medieval period, but Spencer (2020, Appendix J) lists a number of different guns known to have been used during this era, which used stone and/or iron shot.

7.5.33 The assemblage also included a single cast iron shot (SF19 / Cat. no. 34, Figure 20, 7), measuring 26.3mm (approximately 1 inch) in diameter and weighing 76.63g (2.70 ounces), It was also found in the Victorian landscaping layer, but may relate to the Civil War period activity. There were several types of small bored light artillery in the 17th century. Eldred (1646) recorded that the smallest was the rabonet, with a bore of 1.25 inches, which is about 0.2 inches larger than Cat. no. 34. Writing later in the 17th century, Nye (1670, 78–79) described the rabanet as having a larger bore of 1.5 inches and shot diameter being 1.375 inches and the base cannon having a bore of 1.25 inches and shot diameter of 1.125 inches. Credland (1983) suggested that 1/20 inch or 1/22 inch was the usual difference between cannon bore and shot size for culverin and demi-cannon sized artillery and that a greater difference could be tolerated by the larger cannons. However, while this may be usual, Nye (1670, 46–47) stated that while 1/20th inch is all that is need, most gunners used shot that was up to 0.25 inches smaller than the cannon bore. There was little standardisation of terminology and cannon size during this period but using 1/20 inch as a minimum and 1/4 inch as a maximum, then this iron shot could have been fired by a cannon that fits Eldred's dimensions for the rabonet or Nye's dimensions for the base. Alternatively, it may have been used as canister shot by a heavier cannon.

7.5.34 Artillery (possibly light) was present at the castle during the first and second sieges during the English Civil War, being placed on the King's Tower, Swillington Tower, on or near the Treasurer's Tower and near to the West Gate (Roberts 202, 431). Iron shot was not discovered during the 1980s excavations at Pontefract Castle, but there were 50 examples found at the nearby Sandal Castle, Wakefield, West Yorkshire (Credland 1983). However, all of the iron shot were of a larger type that corresponded with

Eldred's sizes for the cannon royal with an 8 inch bore at the larger end of the spectrum down to culverin with a 4.75 inch bore at the small end of the spectrum.

Lead shot

7.5.35 In total, there were 16 lead shot (SF1, SF2, SF3, SF4, SF5, SF7, SF20, SF23, SF24, Cat. nos 34–50, Figure 20 1-6, 8-17), nine of which came from the Victorian landscaping context while the remaining seven were from the 1649 demolition contexts. Size could be determined from eight of the ball shot examples, which ranged from 10.6mm to 17.3mm, with examples around 17mm being particularly well represented (Table 15). The remaining examples were too distorted from impact for diameter to be measured accurately.

7.5.36 Bullet size is described by a bore size, such as 12-bore, which means 12 bullets could be cast from a pound of lead. Determining the type of gun that was used to fire lead shot is complicated, as the diameter or bore of the gun is not necessarily the same size as the bullet and as discussed above regarding the artillery shot, there is a degree of tolerance between the shot bore and the and gun barrel bore. Further complicating the correlation between gun type and shot size is the lack of standards in early firearm construction. The difficulty of supplying troops with appropriately sized ammunition was recognised at least by 1630 in the 'Orders for the general uniformatie of all sortes of armes both for horse and foote' where the Council for War established that muskets should be 12 bore, caliver and arquebus should be 17 bore and the carbine and pistol of 24 bore (SP 16/179/25 summarised in Blackmore 1961, 24). This was an attempt to standardise the firearms being manufactured in the earlier 17th century, but there was nothing to prevent older firearms from being used alongside the newly manufactured firearms (Foard 2012, 65). However, although very imprecise, if we use these sizes as a guide, it can at least be suggested that the shot represents a range of different firearms. Using the 1630 Council for War document bore standards as a guide, the assemblage reflects different types of firearms being used (although the caliver may not have been in use by the time of the English Civil War – ibid.). At least four balls were sized for a musket (used by the infantry), there was at least shot with a bore suitable for the caliver and one ball for use by a carbine or pistol (used by the cavalry).

7.5.37 Careful examination of each lead shot revealed a number of features and can be traced to production, loading, firing, impact and post-depositional processes (Harding 2012). Mould seams and sprue scars were present on seven examples (Cat. nos 38–40, 42, 44, 46–47). Three examples had ram-rod damage (Cat. nos 38–39, 46) that occurred during the loading phases and one example may have set-up distortion from firing (Cat. no. 46). Impact damage was observed on seven examples, which ranged from hitting a thick membrane such as a wooden plank (Cat. no. 30), as well as moderate velocity impact against a smooth surface (Cat. nos 41, 44) and high velocity impact on a smooth surface such as a dressed stone wall (Cat. nos 36–37, possibly 49). There was one example where a lead shot had post-depositional damage due to animal gnawing (Cat. no. 43).

7.5.38 Only one of the balls without impact damage had possible evidence that it had been fired (Cat. no. 46) as it had setup damage. Although the ram-rod damage on Cat. nos 38–39 at least suggests that these shots were prepared for firing, Cat. nos 40, 42, 44

and 47 lacked evidence that they had been shot. Such evidence manifests as abrasions from the bore, dimpling from powder grains, set-up and gas erosion (Harding 2012). It is possible that these balls were never shot and may reflect accidental losses at the site, but Harding (2012, 68–69) has pointed out that if fired with wadding above and below the shot or with the shot wrapped in cartridge paper, then the balls are less likely to sustain damage from firing.

7.5.39 Slightly more than half of the lead shot was found in the Victorian landscaping contexts, while the remainder came from the 1649 castle demolition contexts. It may be that the lack of lead shot from the later phases of the drawbridge pit fill was a result of soldiers collecting used shot to be melted and recast into bullets, during the first siege due to low ammunition supplies (Roberts 2002, 414). Shot found in the castle demolition contexts may be the result of the shot still on the ground from the third siege that had not been collected during the stripping of the castle. It is not clear how much can be read into the shot from the Victorian landscaping contexts, as this soil could have been moved from elsewhere on the site, but the higher proportion of shot that had clearly been fired and impacted on a hard surface suggests is fitting for the location next to the gatehouse and castle wall.

7.5.40 Previous excavations at Pontefract Castle uncovered 105 examples of lead shot, but in contrast to the present assemblage, most were spherical and could be attributed to contexts from around the time of the Civil War. The distribution of shot size from the present assemblage fits in well with those previously analysed with examples measuring 15.5mm and 17.0mm being well represented, and to a lesser extent those measuring 12.0mm but shot measuring around 11.0mm being previously infrequent and 10.5mm not previously represented (Eaves 2002, 347, Fig. 147). Eaves (2002, 345) suggested that the that the impacted bullets probably represented the ammunition used by the assailants (i.e. the Parliamentarian forces that besieged the castle, except for the brief period between the second and third sieges when the Parliamentarian's held the castle), and this is also likely to be the case for the lead shot from the 2019 and 2020 excavations.

Other finds

Copper alloy

7.5.41 There was a small number of other copper-alloy objects. There was one composite object: a 19th century bone mouthpiece with a copper-alloy ferrule from a pipe (Cat. no. 51). Other artefacts mostly consisted of sheets and strips, most of which were lain and undecorated. One fragment of sheet (SF26 / Cat. no. 52, Figure 18, 12) was decorated with engraved linear and rocker-arm designs. It is similar to some of the belt fittings, sheet mounts, and a decorated plate riveted to a late medieval double-hooked as shown in Margeson (1993, e.g., nos 81, 149, 254, 456), but with no evidence for attachment method that may have indicated use.

7.5.42 Of particular note was a cast copper-alloy block roughly trapezoidal in section (SF32 / Cat. no. 53. Figure 18, 16) from a 14th to 15th century drawbridge pit layer (1079). A half cylinder cut away was present on one face, which allowed for some other piece to sit in it. There are wear marks along one of the faces that suggests rotational movement and it is likely that this is some sort of axle housing for a cross-beam of

some sort. The cut-away could only hold an axle of no more than 50mm in diameter, so it is unlikely that it was a fitting from the gatehouse drawbridge, or from a treadwheel, but it could indicate other simple machines used at the site perhaps used during the castle construction and maintenance purposes.

XRF

The possible axle housing (Cat No 53, SF32, Figure 18, 16, Figure 19, was analysed using X-Ray Fluorescence (XRF) to determine its composition. The locations of the as-received analyses are shown in

7.5.43 Figure 19 and the data, including the iron content are presented in Table 16 and the normalised non-ferrous data (i.e. without the iron, manganese etc.) are presented in. The raw analyses (Table 16) indicates that the block was cast from a leaded copper (Cu/Pb) with minor tin (Sn), arsenic (As), zinc (Zn), and antimony (Sb) contents. Two analyses stand out; the first (File Number 571) showed a high iron content which is expected due to the iron staining. The second (top left, File Number 569) also displayed a high iron value but also a high lead content (54%), and that location had a grey lustre in keeping with enhanced lead levels. The normalised copper alloy data derived from the data, eg the removal of the iron (Table 17), confirms that copper and lead are the major alloying elements, with mean values (excluding the lead rich analyses (File Number 569), of copper 67% and lead 27%. The remaining 6% comprises arsenic, tin, zinc and antimony. The arsenic value must be treated with caution because the arsenic Kα line overlies the lead Lα, and so the arsenic Kβ line can be examined and in the spectrum with the highest calculated arsenic value (File Number 575, 5%), the Kβ is very slight, hence it is very likely that the arsenic value is over estimated.

Two small areas, one on the base and one on the left-hand side were polished back to bright metal. The areas were analysed (Table 18) and iron was still present. The base area was re-polished (Base Clean 2, File Number 582) which showed it still present at a significant, but reduced level. This is due to corrosion penetration into the alloy, eg along grain boundaries or via porosity/casting defects. The normalised copper alloy composition of the cleaned area is presented in Table 19 which confirms the block was cast from leaded copper containing 85% copper and 11% lead, with the remaining 4% containing arsenic, tin, zinc and antimony exemplified by the spectrum derived from the cleaned are on the side of the block (

7.5.44 Figure 19).

Iron

7.5.45 While there were many fragments of iron that could not be identified (see full data for detail), there was a small number of miscellaneous artefacts with features that are worth highlighting here. There was a collection of iron strips with mineralised wood in the corrosion product found together in a 17th century deposit in the drawbridge pit (Cat. no. 59). Most of the strip fragments had regularly spaced holes, many of which contained a nail or rivet. Although each strip varied in length, they were all about 18–20mm wide, suggesting they probably came from the same object. Strips of iron with holes could be used for architectural purposes (e.g., to bind together wooden doors) or as binding strips on boxes or chests.

7.5.46 Another iron artefact was a large conical shaped object with no other features, but it was around 410mm long and had a maximum width of about 57mm (SF31 / Cat. no. 60, Figure 21). It is not clear what this object was from, but it came from a 14th to 15th century context (1094) related to the drawbridge pit. The large size suggests it was part of a large and substantial object and perhaps relates either to the construction of the castle or the drawbridge mechanism itself.

Lead

7.5.47 In addition to the lead window came and musket balls covered in previous sections, there were many lead objects (Cat. nos 63–69). Most of these fragments did not have diagnostic features, but consisted of sheets and dribbles, possibly related to casting waste. Most came from the 19th century deposits, but Cat. no. 64 came from a 17th century layer in the drawbridge pit (1050).

Stone

7.5.48 A total of seven stone discs were recovered. Six of these were found in 17th century fills of the drawbridge pit and the seventh in the 19th century landscaping layer. An eighth disc was made from a piece of ceramic tile. These were recorded with the aid of a x10 magnification hand lens and some 10% dilute hydrochloric acid to detect the presence of calcite.

7.5.49 The discs vary in diameter from 36mm to 84mm and in overall finish. Some are only very crudely chipped into shape (SF22 / Cat. nos 71–72, Figure 15, 5 and 6) whilst others have received some smoothing to the circumference (SF17, SF18c,b / Cat. nos 73, 74–75, Figure 14, 1, 3 and 4) or to one or more faces (SF17, SF18, SF22a,b, / Cat. nos 71–73, 76 Figure 14 and 15). One of the discs (SF17 / Cat. no. 73, Figure 14, 1) has a faint cross scratched into the surface and a second disc (SF22a / Cat. no. 71, Figure 15, 5) has some shallow grooves on one face. Neither appear to be deliberately decorative in nature and are probably incidental or perhaps the result of some reuse for sharpening.

7.5.50 Stone discs are typically made from locally available resources and the examples from Pontefract castle appear to be no exception. Three are made of Magnesian limestone, probably from the local Brotherton Formation and four are made from non-calcareous

micaceous sandstone, which are of varied colours but are probably all from the Coal Measures.

7.5.51 Whilst discs like these are a regular occurrence on both Roman and medieval/post-medieval sites, their function has not been firmly established. Occasionally there are very clear traces of burning suggesting their use as pan stands but small discs are usually interpreted as counters and larger discs as pot lids. In fact, it is likely that although the discs from Pontefract castle, although similar in appearance, actually represent more than one class of object. One small example has a much neater finish than any of the others, with its smoothed circumference and faces; this seems most likely to have been a recreational counter. The other examples are rather small for pan stands and their crude finish, as with many other discs, suggests their appearance was not especially important. It is possible they served as the lids of small pottery vessels or alternatively as counters in tally keeping.

7.5.52 Another possibility is that the smaller discs were intended for manufacture into spindle whorls but had not been finished. A large collection of perforated discs of comparable size to the smaller Pontefract castle examples was found at the monastic town of Whithorn and St Ninian. These were classified as spindle whorls (Hill 1997, 449) and similar perforated discs from Launceston Castle in Cornwall were subsequently also interpreted as spindle whorls (Saunders 2006, 359). Three of the Launceston Castle examples are not sufficiently symmetrical to have functioned well as whorls, but if they are viewed as incomplete, their size and appearance is similar to the Pontefract castle discs. Evidence from York, where spindle whorls weighed up to 55g suggests that the smaller Pontefract castle discs would have been an acceptable weight for spinning once they had received their final shaping and been perforated (Walton Rogers 1997, 1743). The interpretation of discs such as these awaits further research on their sizes, weights, finish, wear and contexts of recovery.

7.6 Production waste

Stuart Noon

7.6.1 In total, 239 waste fragments weighing 6495g and relating to various manufacturing processes were retrieved from contexts dating from the 19th century onwards (1001), (1009) and (1034); (Table 24). The finds included clinker, ferrous slag, glass slag, and miscellaneous burnt waste material. Most of the material was recovered from 19th century landscaping layer (1009) and almost certainly produced off-site and possibly intentionally dumped to backfill and level the ground surface.

8 ECOFACTS

Ellen Simmons

8.1 Summary

8.1.1 The following environmental assessment and analysis fulfils Stage 4 (Task 5.2) and addresses Aim 3 Questions 10, 12 and 13 of the Project Design (Casswell et al. 2019, see Section 12.1.1 and above) by baseline data for the preservation and significance

of palaeoenvironmental remains. A comprehensive archaeobotanical sampling strategy was implemented during excavation. In total, 17 60-litre general bulk samples were taken: six from 14th to 15th century deposits, three from late medieval 15th to 16th century layers and eight from 17th century layers within the drawbridge pit (Table 21). From this, 40 litres of each was processed for the recovery of plant macrofossils and wood charcoal.

8.2 Plant macrofossils

8.2.1 Very low concentrations of charred cereals, legumes and wild or weed plant seeds are present in the drawbridge pit fills. Low to moderate concentrations of uncharred plant remains are also present. The drawbridge pit fills were not obviously waterlogged, so the uncharred plant remains assemblage may be intrusive or may have been preserved by partially anoxic conditions resulting from burial in deep stratigraphy. The presence of mostly robust seeds and the low diversity of the uncharred seed assemblage does however suggest differential preservation.

Late 14th century

8.2.2 A charred seed of vetch/vetchling (*Vicia/Lathyrus* sp.) was present in Sample 58 from late 14th century layer (1098). The uncharred seed assemblage included a seed of fig (*Ficus carica*) (1079). Other uncharred seeds which were present in the assemblage such as black nightshade (*Solanum nigrum*), henbane (*Hyoscyamus niger*) and elder (*Sambucus nigra*) suggest nitrogen enriched soils. Thistles (*Carduus/Cirsium* spp.) and dandelion (*Taraxacum* sp.) suggest disturbed soils. Black mustard (*Brassica nigra*) is a plant of waste ground and the margins of arable fields as well as forming persistent populations by rivers. Most of the species of sedge (*Carex* spp.) which may be present are associated with damp soils. The seeds of willowherb (Epilobium sp.), which are small seeds easily dispersed by the wind, may not be from plants growing near the drawbridge pit.

15th – 16th century

8.2.3 A charred, small seeded grass seed (<2mm Poaceae) was present in Sample 44 from 15th – 16th century layer (1085). Nitrogen enriched soils are suggested by uncharred seeds of henbane and elder as well as nettles (*Urtica dioica*). Disturbed soils are suggested by thistles, dandelion and knotgrass (*Polygonum aviculare* agg.). Damp soils are indicated by sedges (*Carex* spp.).

17th century

8.2.4 One hulled barley grain (*Hordeum distichum/vulgare*) was present (1056). A charred oat grain (*Avena* sp.) was also present (1058), although it was not possible to determine whether this is a cultivated crop or crop weed. An indeterminate large seeded legume was present (1055), as were two charred small grass seeds (<2mm Poaceae) (1059). A charred fragment of parenchyma (undifferentiated plant storage tissue) was present in layer (1050), which was a lens of coal within the drawbridge pit. The diversity of taxa in the uncharred plant remains assemblage from 17th century layers was low, with only the most robust seed types being preserved. Nitrogen enriched soils are suggested by the consistent and frequent presence of elder

however, along with occasional seeds of henbane. Scrub type vegetation was suggested by bramble (*Rubus fruiticosus* agg.) and sedges suggest damp soils.

8.3 Wood charcoal

14th century

8.3.1 Preliminary assessment using low power microscopy indicated that the wood charcoal assemblage from 14th century layers in the drawbridge pit was composed primarily of a ring porous taxon tentatively identified as oak (cf. *Quercus* sp.), along with some unidentified diffuse porous taxa. A piece of hand collected whole roundwood charcoal (1076) was also tentatively identified as oak and has eighteen growth rings.

8.3.2 A relatively rich assemblage of seventy-seven >2mm^3 charcoal fragments was collected and so was selected for full identification using high power microscopy. Identification confirmed that the charcoal assemblage is dominated by oak (*Quercus* sp.), along with a small proportion of charcoal which could not be identified due to vitrification. Where sufficient growth rings were present to enable a determination of ring curvature this was always weak, indicating the use of predominantly large diameter wood from large branches or trunk material. Most of the oak charcoal fragments also had tyloses in the vessel cavities, indicating the use of heartwood. Closely spaced (<1mm) annual growth rings were present on seven of the oak charcoal fragments with weak ring curvature, indicating some use of slow grown oak. A high proportion of the charcoal fragments had been affected by vitrification.

15th – 16th century

8.3.3 Preliminary assessment using low power microscopy indicated that the wood charcoal assemblage from 15th-16th century layers in the drawbridge pit was composed of a mixture of ring porous and diffuse porous taxa. This suggests the exploitation of a variety of woodland and/or scrub taxa as fuel.

8.3.4 A relatively rich assemblage of seventy >2mm^3 charcoal fragments was identified in layer (1063) and so was selected for identification. Identification confirmed the presence of a diverse assemblage of eight different taxa. Oak was still the predominant taxon but small proportions of ash (*Fraxinus excelsior*), poplar/willow (*Populus/Salix* spp.), alder (*Alnus* sp.), birch (*Betula* sp.), hawthorn/apple/pear/whitebeam/rowan/service (Pomoideae), holly (*Ilex aquifolium*) and blackthorn (*Prunus* cf. *spinosa*) were also present. Most of the oak charcoal fragments again had tyloses in the vessel cavities but ring curvatures indicate that both large diameter and small diameter oak was present. A small proportion of the charcoal fragments had been affected by vitrification.

17th century

8.3.5 Preliminary assessment using low power microscopy indicated that the wood charcoal assemblage in most 17th century layers in the drawbridge pit were again composed of a mixture of ring porous and diffuse porous taxa. The uppermost 17th century layers however, produced assemblages which were dominated by a ring porous taxon tentatively identified as oak. Two whole pieces of hand collected roundwood charcoal

were of the birch family (cf. Betulaceae) and had nine growth rings. Two whole pieces of hand collected roundwood charcoal were of probable oak, one of which had twenty-two rings and one of which had fifteen rings.

8.3.6 Layer (1068) produced a relatively rich assemblage of ninety-five >2mm^3 charcoal fragments and so was selected for identification. Identification confirmed the presence of a moderately diverse assemblage of five different taxa. Oak was once again the predominant taxon, along with small proportions of ash, elm (*Ulmus* sp.), poplar/willow and hazel (*Corylus avellana*). A high proportion of the oak charcoal fragments had weak ring curvature and tyloses in the vessel cavities, but ring curvatures again indicated that intermediate and small diameter oak was present. Intermediate and small diameter hazel was also used. A small proportion of the charcoal fragments had been affected by vitrification.

9 PUBLIC IMPACT

Johanna Ungemach and Brendon Wilkins

Profiles for all project participants have been archived on the Digital Dig Team system and can be reviewed at https://digventures.com/dig-team/pontefract-castle/ and by clicking on each individual profile.

9.1 Introduction

9.1.1 This section details the social impact of the Gatehouse project public programming for visitors and project participants over the course of October 2019. DigVentures defines social impact as a measure of the positive and negative primary and secondary long-term effects produced by the programme, whether directly or indirectly, intended or unintended, over and above what would have happened in the absence of the project initiative. Results were analysed using a bespoke social impact methodology, drawing on DigVentures' Theory of Change and Standards of Evidence framework (Wilkins 2019, 77; Wilkins 2019, 30, Wilkins et al 2021).

9.1.2 Public engagement was integral to the research aims of the Gatehouse project (Aim 5), designed to provide 'a range of opportunities for local community members, school children and visitors to the area to learn more about the archaeology of Pontefract Castle' (Casswell et al. 2019, 15). Pontefract Castle is situated within an area of significant deprivation, with 18% of residents falling within the top 10% of most deprived in England (Source: Index of Multiple Deprivation based on 2011 census data). The project therefore presented a major opportunity to help address the strong social and educational needs of the surrounding communities, based on the principle that archaeology can do so much more than answer a planning brief: it can transform lives and communities and provide the kind of public support that underpins positive, sustainable growth (Wilkins 2020: 33)

9.2 Public programming

9.2.1 A carefully designed mix of professional excavation and public participation was programmed over the course of the five-week project (30th September until 3rd

November), creating a breadth and depth of participation opportunities from informal site visits to structured field training. This blended model comprised the first three weeks dedicated primarily to servicing commercial imperative and research brief, with public events running alongside, and followed by two weeks of participation and training in the trenches to National Occupational Standards:

- Guided tours (5th October until 3rd November) – 438 participants
- Educational sessions for school classes (8th until 17th October) – 372 children from six schools
- Excavation and finds room training for YACs (12th and 13th October) – 81 YAC members
- DigCamp in the trench and the finds room for children and parents (19th, 20th and 26th October until 3rd November) – 163 participants
- Excavation and finds room training for adults (21st October until 3rd November) – 132 participants
- Two photogrammetry workshops (26th November and 2nd November) – 10 participants
- Two creative workshops (3rd November) – 10 participants

9.2.2 In response to this additional archaeological programming, a substantial 138% year-on-year increase in visits to the castle were recorded during October 2019 (14,810, up from 6,800). The project's digital content also achieved significant breakthrough during the same period, achieving 500,000 combined impressions across Facebook and Twitter, and 12,000 post engagements (likes, shares or comments). A 3D virtual tour of the dig attracted 2,500 views on Sketchfab, driving 7,000 unique page views of the more in-depth archaeological content published on the project microsite: https://digventures.com/pontefract-castle/ including background information, dig updates, and archival site records. Traditional TV and print media also covered the project with news stories published by BBC Look North and BBC Radio Leeds, and featured in articles by the Wakefield Express and the Pontefract and Castleford Express. Whilst these results demonstrate a significant public appetite for the Gateway Project, any evaluation of social impact needs to go beyond a list of output numbers of participants and visitors (Gould 2016). DigVentures has developed a bespoke evaluation methodology for measuring the social impact of public archaeology programmes and this is discussed in specific relation the Pontefract Castle further below.

9.3 Evaluation methodology

9.3.1 The Gatehouse project audience was separated into two broad categories: project participants, who joined the project through a formal booking process, and site visitors, who attended site tours and events, with all opportunities delivered free of charge. DigVentures have developed a methodology for measuring the social impact of archaeology programmes for both participants and visitors, pictured as a Theory of Change detailing outputs, outcomes and impacts (see Appendix L). In this framework, social impact can be conceived as the difference that activities make to people's lives over and above what would have happened in the absence of that initiative. Outputs are a measurable unit of product or service, such as a community excavation; outcomes are an observable change for individuals or communities, such as acquiring

skills or knowledge. Impact is therefore the effect on outcomes attributable to the output, measured against two metrics: scale, or breadth of people reached; and depth, or the importance of this impact on their lives.

9.3.2 The credibility of a Theory of Change rests on the level of certainty that organisational activities are the cause of this change. In order for this certainty to be achieved, the correct data must be collected to isolate the impact to the intervention. The DV Theory of Change is therefore linked to a Standards of Evidence framework designed to articulate and highlight the causal links between activity and change. These tools are then used to create a bespoke, project specific evaluation table linking activities, outputs, outcomes and evidence base (Appendix L).

9.3.3 In support of this overarching methodology, two slightly different data collection strategies were undertaken for both project participants and site visitors; participants were interviewed pre and post dig experience (99% completion rate, or 347 in total), and visitors completed a questionnaire following their experience (24% completion rate, or 104 in total). The age, gender and professional background of participants was derived through digital analytics, with categories derived from the Office for National Statistics, followed by more in-depth analysis designed to reveal 'whether or not people will have learnt about heritage, developed skills, changed their attitudes and/or behaviour, and had an enjoyable experience'. Questionnaires combined closed-end questions easily convertible to statistical data (usually attitudinal questions using a four-point Likert scale to record responses) and open-ended questions designed to elicit extended responses which were then coded for statistical analysis or otherwise consolidated in order to address the observable implications. The social impact results for both groups are discussed in turn below, with evidence organised according to the specific social outcome that activities were designed to achieve (Appendix L, column 3).

9.4 Social impact – participants

9.4.1 A combination of activities for people to actively participate in the excavation was available during October 2019, designed to ensure the 'a wider range of people will be involved in archaeology and heritage'. To help decrease perceived barriers to participation, accessible half day sessions were offered including Finds Lab Workshops, Dig Experiences and DigCamps, all of which followed DigVentures' CIfA-endorsed Field School curriculum.

9.4.2 Gender profiles for participants were broadly balanced, with 54% female and 46% male, with the youngest aged 4 and the oldest 76. Participants represented a variety of full-time occupations (39%) and retirees (10%). The remainder were students, either of compulsory educational age or those attending university (48%), or people in long-term unemployment (3%). Those in full time employment were divided into categories based on the Office of National Statistics (ONS) classifications, the breakdown of which can be seen in Figure 22, illustrating that digging and finds lab opportunities were taken up by a significant number of people with low income, as well as young people. Examples of professions included photographer, vets practice manager, radiologist, translator, home-schooling mother, technician, local government officer, accountant, bar staff and librarian. The high number of 'under 16' and '35-44' age profiles and

'students' can be accounted for by the high take up for family-oriented Dig Camps providing activities for parents and children. Taking this into consideration, all age groups and socio-economic backgrounds were well represented in the data, with a marked improvement on existing community archaeology provision compared with the typically retired, over 65 local civic society groups (Wilkins 2020, 33).

9.4.3 Of the people who answered this question (n=219), 57% of project participants indicated that this was their first visit to the Pontefract Castle, indicating that the project raised the site profile in local, regional and national networks. This included participants from the immediate locality (19% from WF, BD, DN and LS postcode areas), regionally (two thirds of participants living no further than 50 miles from Pontefract Castle) and nationally (a third of participants having travelled more than 50 miles to have the opportunity to take part in the project, from as far as Norwich, South Gloucestershire and West Sussex) (Figure 23).

9.4.4 In addition to widening the demographic and socioeconomic range of participation (when compared to existing community archaeology provision), the project attracted an overwhelmingly new audience for archaeology, with 80% of participants having never taken part in archaeology activities before. Pre-experience interviews were completed with all project participants to help understand why each had decided to get involved in something entirely new to them, and provide a baseline understanding against which the impact of the experience could be determined through post-experience interviews. Participants answered in their own words, and the response were coded into ten categories.

9.4.5 The results show that just over 50% of participants described themselves as 'passive consumers of archaeology' who embraced the opportunity to finally get hands-on with their interest (Figure 24). Contrarily, 20% of participants joined a friend or family member who was interested in the project, but they did not have pre-existing interest in archaeology themselves. Some 17% of participants also took part in the project because they are interested specifically in Pontefract Castle and/or the excavation was local to them.

9.4.6 Post-experience 'exit' interviews were also undertaken for all participants, indicating how initial perceptions of archaeology changed and providing evidence for wider social outcomes, such as learning, skills acquisition and well-being. Participants were asked to summarise their highlight of the project in their own words, with responses then codified into five categories in order to visualise the results (Figure 24). The most important consideration for 68% of participants was the experience of real archaeology, and the opportunity to get hands-on experience with finds and in the trenches. Closely related to this was the 'thrill of discovery' for 23% of participants, indicating an overwhelmingly positive experience for first time participations. A closer assessment of interviewees answers (often elicited through follow up questions) reveals that in addition to having a good time (such as "This was the best day ever!"), more subtle impacts could be clearly discerned.

9.4.7 Further analysis of participant responses indicates a positive change in their perception of archaeology, history and Pontefract Castle, meeting the 'learning about archaeology and heritage, leading to change in ideas and actions' outcome. Rachel,

a 41-year old dinner lady, was surprised by how the experience had gripped her: "I'm not really much interested in history, but this made it really fun". Stephen, a 45-year old care manager, described how the experience had positively challenged his assumptions: "I found it different to what I thought it would be. I learnt that archaeology is more than just finding things". This broader understanding of the principles of archaeology was also supported by other participants, such as Joanne, a 35-year old events officer remarked on "learning so many things and honing my skills," indicating that the broader understanding of archaeology was also by the outcome that 'participants will have developed skills'.

9.4.8 The experience had cause for some individuals to become more reflective of their own behaviour in the present: "It really made me think about what people will find from us and how much unnecessary rubbish we leave behind for archaeologists to find" (Kristina a 38-year old PR consultant). Others similarly reflected on how excavating had made them feel: "digging and the thought of finding something that no one else has touched for ages" (Dianne, a 41-year old planning consultant).

9.4.9 Several participants described experiencing positive mental and physical health benefits, aligning with the outcome that 'participants will have greater wellbeing'. Jacqui, a 54-year old retiree described being "generally not a very patient person, but I find this very therapeutic". Similar positive effects were observed by Carole (65), a retired teacher: "Being […] with good company. It's a really good social exercise". Being part of a team and working towards a common goal also gave participants also a sense of achievement and ownership. Lynda (65), a retired teacher described feeling "like I've been very useful [cleaning finds] and hopefully someone will now be able to do some good analysis". This sense of achievement also resulted in strengthened self-confidence, as observed by Ian (62), retiree: "[I enjoyed] seeing how much I achieved at the end of the day". This effect was both visible in the finds room and the trench, as Ann (76), a retiree, described the positive feeling "Seeing the process [was fun] – standing back and looking at the area we cleaned and you can see what a difference we actually made". At the other end of the age spectrum, one parent remarked on the similar effect the experience had on her child: "Evie is very shy so to see her comfortable enough to answer questions was fantastic" (Beckie, a 36-year old Retail Buyer).

9.4.10 In addition to field skills training and finds room activities, an artistic programme was devised to run alongside the excavation as part of AHRC funded PhD scholarship by Jodie Harris. The goal of this experimental work was to further expand the range of people engaging with archaeological heritage through creative sketching workshops engaging aesthetically with the excavation. Every participant produced at least one drawing to take home, and all results were photographed to be included in the archaeological record (see Figure 25). Participating members of the Pontefract Art Club will also display selected pieces as part of their annual exhibition. Evaluation of this work is ongoing, with in-depth interviews of workshop participants, aiming to understand how similar creative interventions extend audience reach beyond typical consumers of archaeology, and how artistic activities might add value to the experience of those already interested in the subject.

9.5 Social impact – communities

9.5.1 Alongside structured activities for project participants, other lighter touch opportunities were provided for site visitors throughout the course of the project. Interpretation boards were placed alongside the trench-side fence, and observers were encourage to talk to and interact with the team, and drop into the adjacent finds room to see what had been discovered. These more informal audience activities were supplemented with structured, hour-long tours of the trench and finds room, detailing the history of the site, explaining the research process, and highlighting the day's latest finds. Visitors were encouraged to complete a short evaluation form after their experience (24% of those visitors who took part), to understand the impact the project had on the wider community.

9.5.2 A similarly diverse demographic profile was also observed for site visitors, in terms of age, gender and socioeconomic background. A quarter of respondents were younger than 44, with 6% under 16 and 13% over 75. In terms of gender, 53% were female and 47% male, and all professional categories were represented (according to ONS classifications) including postman, project manager, clinical nurse specialist, spiritual medium, housewife, paramedic, judge, writer, gardener and accountant (Figure 26).

9.5.3 Over the course of October, 14,810 visitors were registered at Pontefract Castle a 137% year-on-year visitor increase based on the same month in 2018. Given that 58% of visitor survey respondents stated that the dig was their main reason for visiting Pontefract Castle, it is not unreasonable to assign a large part of this uplift to the archaeological programming, supporting the wider project outcome that a 'wider range of people will be involved in heritage.' This audience was predominantly local, with 62% of visitors living within 10 miles of the site, 14% within 50 miles, and the remained (including a small group of Australians) traveling from further (Figure 23).

9.5.4 Although the visitor experience was designed to be as accessible as possible, evaluation feedback indicated that the social outcomes contributed significantly towards 'learning about archaeology and heritage, leading to change in ideas and actions.' 80% of respondents had never taken part in a site tour or visited an archaeological site before. Several visitors were surprised to have stumbled upon "an actual dig in progress" in the first place, and by "the sheer scale of it all", "the depth of the drawbridge pit" and how "much more [there is] to discover". Many also put forward what they learnt on the tour, such as "that Cromwell hadn't destroyed the castle", "how far back the town existed" or "the amount of knowledge you can find from the dig" in general. Visitors described an improved perception impression of archaeology (38%) or strengthened in their pre-existing interest for the discipline (61%). A further 51% of respondents found archaeology to be more exciting as a consequence of their visit, and when asked whether they would like to get more involved with archaeology in their local area, 80% agreed, of which 33% showed a very strong interest in future involvement.

9.5.5 As well as changing opinions of archaeology more generally, visitors also described an improved perception of the immediate Pontefract locality, supporting the social outcome that 'the local area will be a better place to live, work or visit'. 73% of respondents who claimed that their impression of the local area had changed, with

one respondent clearly stating: "Pontefract has more to offer than I thought". Another noted that they "hadn't been too impressed of [sic] Pontefract up till now", but now found it all very interesting. People from further away admitted, that they were "not aware of the area" before their visit. Locally, the positive impact of the project went even further and provided visitors with a better understanding of their local archaeology, with people saying that they gained "increased awareness of local history" as well as its former importance. Furthermore, Pontefract and its surrounding area has become a better place to live for visitors who now "feel privileged to live here".

10 DISCUSSION

10.1 Introduction

10.1.1 The overall aim of the project was to define and characterise the physical extent of the Castle through a programme of remote sensing and excavation. Specific aims and objectives for the Gatehouse Project are outlined in the Project Design (Casswell et al 2019) and are referenced, where appropriate, in the following discussion.

10.2 Remote sensing (Aim 1)

10.2.1 Remote sensing enabled the site to be mapped to a high degree of accuracy in a way which had not been achieved before (Aim 1 Q2; Figure 2; Figure 29). For centuries, much speculation has surrounded the development of Pontefract Castle's most enigmatic feature, its Great Tower. This feature survived 17th century demolition better than any other aspect of the Castle, but still perceptions of its developmental sequence differ greatly. It is argued here that its design may have focussed more on the utilitarian requirements of the castle dictated predominantly by the natural topography (Q3).

10.2.2 The results of the aerial survey show the extant remains of the five remaining towers constituting the Great Tower, and how these related to known and assumed positions of the curtain wall (Figure 30). The largest tower lies just to the north of the others, mostly within the inner bailey area, flanked by two smaller, equally sized towers situated on its intersection with the curtain wall. Another large tower extends to the south into the moat, entirely outside the inner and upper outer bailey. A curved fillet tower can then be found between the south and east towers bonded to the south wall of the upper bailey wall.

10.2.3 Writing in about 1530, antiquarian John Leland describes the Great Tower in 1643 as "…*being cast into 6 roundelles, 3 bigge and 3 smaull*…" (Robert 2002, 19), suggesting that one of the towers was lost during its demolition. It is speculated that this lost tower may have been a mirror of the small fillet tower on the opposite side of the eastern tower, thus creating symmetry across the entire structure (ibid, 25). However, this interpretation relies on the fact that the north tower mirrored the southern one, which clearly from the aerial survey it does not. An inspection of the c.1560 survey drawing of the Castle reveals that two towers were visible between the inner bailey wall and the curtain wall, with one in the inner bailey and one outside. This is corroborated by the remains currently exposed and do not account for another fillet

tower. If indeed there was another tower, it can be conjected that had a sixth tower existed it may have been positioned between the north and east towers to evenly distribute the towers around the building.

10.2.4 It is widely accepted that the Great Tower was initially constructed in the late 11th century from timber, positioned on the motte of the early Norman castle. Diagnostic architectural remains of the 12th century stone castle defences are scarce but can be found in the southwest curtain wall near the sallyport, where limestone was the principal building material (Robert 2002, 405). It is difficult to imagine the defences of the castle being renovated to stone while the Great Tower remained timber, therefore it is fair to assume this too was built at a similar time. Limestone continued to be used in the castle's construction into the 13th century, at which point local sandstone became the preferred option, demonstrated in the mixed use of materials during reconstruction of the Great Tower. External faces of the tower projections are made of sandstone, while limestone has been identified from internal features, indicating that almost the entire structure now visible was build, refaced or reconstructed to some degree in the 13th century or later. That being the case, the development of the tower from its inception to this point is relatively unknown; however, a reappraisal of the structure from the aerial survey provides new interpretation of its developmental sequence.

10.2.5 From the beginning of the 12th century masonry fortifications began to be added to a number of mottes previously surmounted by a timber tower. In almost all cases the stone walls encircling the summit of the mound took the form of a 'shell keep', such as at Arundel and Lincoln (Goodall 2011, 107). Due to its size and position a case can be made for the larger northern tower existing as such a structure, therefore representing the Great Tower's earliest phase of masonry construction. The curtain walls extended to the northeast and northwest from it, with additional towers added at a later date. The position of both the east and west towers – rather than conforming to any form of symmetry – served to fortify the points in the defences where the curtain wall met the original tower. The addition of the larger southern tower may well be contemporary with these flanking towers, all of which may have been built as late as the 14th century.

10.3 Chronology and phasing (Aim 2)

10.3.1 The site of the original main entrance into the Castle is unknown but likely to have been constructed in the 12th century in the location of the later gatehouse (Roberts 2002, 406). This was followed by addition of D-shaped towers flanking the main gate in the late 13th or 14th century. By the start of the 15th century the gatehouse had been transformed once again, this time incorporating a new circular extension to the eastern tower that realigned the approach to the Castle with Pontefract town to the west (Aim 2 Q5-7).

10.3.2 The earliest phase of the Gatehouse found during the excavation was the eastern polygonal tower base, which presumably would have been originally mirrored on the opposite side of the main gate, now masked by a late 19th century reconstruction. This structure was constructed entirely from sandstone marking a departure from the earlier use of limestone exhibited in 13th century remains of the castle. Although

dating remains tentative at this stage, twin D-shaped gatehouse towers became a prominent feature from the mid 13th century onwards in the north of England (Hislop 2016). The Great Tower was built by the latter part of the 13th century, demonstrating a transition to the use of local sandstone in building works at the castle from this period onwards. A late 13th or 14th century construction date therefore seems likely for its construction soon after the rebuilding of the Great Tower in stone.

10.3.3 Significant improvements to the defences of the Castle were commissioned by John of Gaunt in the latter part of the 14th century. This was evident in the excavation through the addition of a circular structure to the front of the eastern gatehouse tower and the construction of a passage barbican with drawbridge across the moat. Just the drawbridge pit of this much larger structure was found within the trench, but an appreciation of the complexity of this building may be gleaned from the 16th century survey drawing of the Castle. From this image the Gatehouse has traditionally been viewed as comprising a twin tower arrangement either side of the main gate; however, upon closer inspection, the side of what has been assumed to have been the eastern tower (to the right of the Gatehouse) can now confidently be interpreted as part of the original earlier structure. This not only demonstrates that the front of the Gatehouse contained not two but three towers, but that by the time this image was recorded all of them had circular facades.

10.3.4 The c.1560 drawing also shows the Gatehouse with a passage barbican bridge extending into the outer bailey turning towards the West Gate. This bridge was illustrated as having a series of arches leading down into what must be assumed is the moat. These were not found during the excavation, but immediately next to them another step-like feature rising up to the right could well be a depiction of the casing wall that was found inside the drawbridge pit. Excavation outside the pit did not go deep enough to confirm its presence but it seems likely this early strengthening of the cliff face extended some way between the Gatehouse and Constable Tower.

10.3.5 The late 14th remodelling of the Gatehouse was reflected in the buried remains uncovered during the excavation but is conspicuous in its omission from the Keirincx painting and various Civil War siege plans from the 1640s. It is conceivable that much of this structure had fallen into disrepair and was dismantled by the 17th century, or that it was deemed to be of little defensive purpose by the Civil War. What is evident from both the excavation and J.H Greaves's plan of the castle (Holmes 1887) is a redan constructed onto the outer face of the eastern tower. This additional defensive structure abutted the medieval building and is almost certainly of 17th century date because of its absence from the 16th century illustration and the fact that such structures were common additions to castles during this period, served to reinforce the Gatehouse by protecting it from cannon fire. The full extent of it was not seen within the excavation area but investigations in the 1880s indicate that it may have had a curved form and was matched by one on the western tower. There is a possibility that the high triangular pilasters illustrated on Alexander Keirincx's oil painting of c.1640 illustrate these features, however it is unlikely they would have been built so high and, as with much of this piece of artwork, a high degree of artist licence had been employed.

10.3.6 The focus of archaeological activity during the excavation was the drawbridge pit. Structurally, the sections that remained were in excellent condition having survived the demolition of the much of the rest of the Castle at the end of the Civil War, and careful excavation of the depositional sequence from within provided evidence for its gradual filling from as early as the 14th century (Q8).

10.3.7 Based on the excavated evidence, the most reasonable assessment of this feature is that it formed part of a turning bridge system and functioned as a pit into which the rear counterpoised section of a drawbridge was housed when the bridge was raised. The precise workings of the bridge are lost, but the sandstone corbels protruding from the south wall into the pit may have served some function in its operation, with the recesses lower down the wall demonstrating a repeated striking action from above. Alternatively, the bridge may have been operated using lifting bridge technology; however, the lack of chain holes or counterbalance beam slots above the gate on the 16th century drawing suggest that the drawbridge was not mechanised from above.

10.3.8 The nature of much of the remains from within the pit indicates a gradual accumulation of sands from the original construction of the drawbridge pit to the 15th century. In the late 15th or 16th century the bridge superstructure overlying the pit appears to have been reinforced or rebuilt through the addition of vertical timber uprights. The nature of this superstructure could not be ascertained from the excavated remains, but the 16th century drawing suggests the bridge was had become somewhat more permanent by this time. Deposition of material continued throughout the 17th century with no evidence to suggest that the pit was redefined or maintained prior to the Civil War sieges. This is corroborated by the pictorial depictions of the castle from the 17th century where no moat or bridge was illustrated. It seems unreasonable to assume that either of these features had been completely removed by this time, but a lack of emphasis on their defensive nature indicates the limited role they played.

10.3.9 Demolition rubble from the slighting of the Castle in 1649 overlay naturally accumulated layers and contained numerous musket balls from the sieges. The depth at which this layer was found is interesting because it was below the top course of the surviving masonry, suggesting that the feature was either cleaned of material before demolition or the bridge still served some perfunctory purpose during the sieges. If the latter is true, then it can safely be assumed that any walled passage barbican aspect of the bridge had been lost by this point.

10.3.10 Dating the construction of the drawbridge pit and associated structures can be made not only through the cultural material recovered but also tentatively through an analysis of the mason's marks (Figure 13) found in the structural remains (Q9). Caution should be used when attempting to draw comparisons between marks made on different parts of the Castle, however notable similarities can be drawn. In total, 22 unique mason's marks were found across the remains of the Gatehouse structure. Of these five have direct comparisons with those found on buildings known to have been erected as part of the late 14th and early 15th century work (Appendix M nos. 6, 7, 12, 14 and 22). This, together with known documentary evidence for its construction and cultural material recovered from the base of the drawbridge pit, strongly suggests this part of the Gatehouse was constructed towards the end of the 14th century.

10.4 Preservation (Aim 3)

10.4.1 The overall state of preservation of buried archaeological remains encountered was good (Aim 3 Q10). Structural remains found below the level of 19th century landscaping were sealed by 17th century demolition rubble and had been preserved in excellent condition. Artefacts were recovered throughout the entire excavated sequence and, with the exception of ferrous material, had survived well in the sandy conditions (Q11).

10.4.2 However, the recovery of palaeoenvironmental remains was poor. No evidence for the provision of consumable goods to a high-status residence or evidence for any specialised food processing was present in the charred plant macrofossil assemblage (Q12). The presence of coal in in one of the 17th century samples may be evidence for some form of industrial activity or evidence for high status. Cereal crops were also evident from the 17th century. Identifiable crop types present were oat, hulled barley and legumes, which are typical crops of the medieval and post medieval period in England (Grieg 1996). The cereal grain and legume fragment are likely to have been charred accidentally during parching or food preparation and redeposited into the drawbridge pit. The small size of the charred plant macrofossil assemblage indicates that domestic hearth waste was not disposed of directly into the pit or that conditions for the preservation of charred plant macrofossils were generally poor. The presence of bone, ceramic and other artefacts in the samples does however suggest that some domestic refuse was deposited in the drawbridge pit. The low concentration of charred plant remains found in the layers of the drawbridge pit may be due to cereals being brought to the site in a processed state and therefore less likely to become charred. Fig was found in a 14th century layer, with hulled barley, oats and legumes found in 17th century layers. The oat grain may however be a crop weed rather than a crop.

10.4.3 It was not possible to ascertain whether the assemblages of uncharred seeds found in several of the drawbridge pit fills are modern intrusive material or contemporary with the deposition of the sampled contexts. Preservation of uncharred seeds may however occur at urban sites with deep stratigraphy, where anoxic conditions result in the preservation of uncharred material in the absence of full waterlogging (Van der Veen 2013, 164). The presence of fig provides evidence that at least some of the uncharred seed assemblage may be contemporary with the deposition of drawbridge pit fills. Fig is common in medieval and post medieval urban waterlogged plant macrofossil assemblages, particularly in garderobe pits and cess deposits (Grieg 1996). Fig is also unlikely to have been growing wild at the site. Other edible taxa present in the uncharred seed assemblage were black mustard and elder. Black mustard was widely cultivated as a condiment in the medieval period and elder berries were used as a substitute for raisins or made into a medicinal cordial (Philips 1983). Taxa with medicinal properties are henbane and black nightshade (Bevan-Jones 2009). Black mustard, elder, henbane and black nightshade, along with other taxa present in the assemblage of uncharred seeds, are also plants of nutrient rich disturbed soils and damp habitats which are typical of medieval occupation deposits.

10.4.4 The wood charcoal assemblage indicates the availability and exploitation of mature oak trees, possibly from dense oak woodland, during the medieval and post-medieval

periods. A variety of underwood, scrub, hedgerow, and damp soil taxa were also used in the 15th-16th and 17th centuries. An increase in the diversity of taxa found in 15th-16th century layers in comparison to 14th century layers may indicate the exploitation of a wider range of woodland resources in the 15th-16th century compared to the 14th century. A comparable charcoal assemblage is present in 15th to 17th century deposits in the barbican ditch at Sandal Castle near Wakefield (Smith, Hooper and Bartley 1983). The assemblage included both ring porous taxa such as oak and ash along with diffuse porous taxa such as hazel, birch, poplar/willow and hawthorn/apple/pear/whitebeams. Huntley (2010, 38) notes that an increase in the diversity of taxa over time is evident in the assemblage from Sandal Castle, possibly indicating the exploitation of a wider range of woodland resources (Huntley 2010, 38). The increase in the diversity of taxa in the charcoal assemblage from the drawbridge pit may therefore also indicate the exploitation of a wider range of woodland resources in the 15th and 16th centuries at Pontefract Castle.

10.4.5 Marine fish and mollusc shell remains attest to trade connections with the coast, and an established transportation system that allowed these time and temperature sensitive food items to reach the inland site of Pontefract Castle while still fresh/edible. Fish remains from bulk environmental samples increase species diversity from two based only on hand-collected remains, to eight including those from samples, demonstrating the importance of this process in understanding fish consumption and the role that fish played in overall diet at the site. Religious practices during the medieval period have been linked to an increased fish consumption related to the avoidance of meat on Fridays (e.g. Woolgar 2000), and during certain periods avoidance on Mondays, Wednesdays and religious days and festivals meant that meat could not be eaten for around half of the year under Christian law. The presence of cod and ling cranial bones indicates that whole or gutted fresh fish were supplied to the castle, rather than, or in addition to dried stockfish. Gadiformes (codfish), herring and flatfish have been identified as common features of later medieval fish bone assemblages (see Serjeantson and Woolgar 2006, 110-114), as such the fish remains recovered from the Drawbridge Pit are consistent with those expected at later medieval sites in England, with the exception of the gurnard, Atlantic mackerel, which has been identified at comparatively few sites and usually only in small numbers. There is tentative evidence that oyster and mussel played a more equal role in the diet of those living at and visiting the castle in the 14th to 15th century, but that from the late 15th century oyster was the main shellfish being consumed. There is no evidence that shellfish other than oysters and mussels played a significant role in the diet of the castle occupants. Freshwater fish, including pike and carp family, were occasionally eaten, and while it is likely that they were sourced locally, it is not possible to determine if these were caught in the river, the castle moat, or were fish kept in ponds. Whatever the source, access to and consumption of freshwater fish was limited to those who could afford it.

10.4.6 It was not possible to identify any changes in diet that might have resulted from siege conditions at the castle in the mid-17th century. However, the animal remains from the excavations at Pontefract Castle in 2019 and 2020 provide further evidence for a diverse later medieval to early post-medieval diet, including the widely available meats and fish of the time, as well as meat from wild and semi-managed animals and fish indicative of high-status dining: high quality cuts of beef, venison, swan, heron,

chickens in their prime, fresh marine, freshwater and migratory fish and marine shellfish. While the remains attest to a diet that included a wide range of meats and fish, the animal bone remains from the Drawbridge Pit indicate that beef was the staple meat consumed throughout the later medieval and early post-medieval period at the castle, consistent with previous findings at the Site (Richardson 2002; Burgess 2019), as well as castle sites across England.

11 CONCLUSIONS

11.1 Archaeological investigation

11.1.1 The community excavation has both greatly increased understanding of the development of Pontefract Castle gatehouse and raised awareness of Pontefract's greatest asset through a targeted programme of public engagement. However, in achieving the aims and objectives for this project, several other questions about the castle may now be posed.

11.1.2 The earliest remains encountered were that of a poorly preserved casing wall found within the drawbridge pit. It is believed this feature was illustrated in the 16th century drawing of the castle extending to the northeast of the gatehouse creating a front for the cliff face. This was constructed before the gatehouse but how much before is still unknown. Sandstone was quarried from the moat in the 14th century to facilitate the construction of the Great Tower and renovations in other parts of the castle, but the poor preservation of the wall suggests it had been exposed to the elements for a significantly longer period than these works. Further work to the east of the passage barbican may give an insight into the extent of the masonry and how it might have functioned in relation to the earliest phase of gatehouse structure.

11.1.3 Aerial survey of the castle provided information regarding the possible construction sequence of the Great Tower. Interpretation of this enigmatic feature remains tentative but further research into the nature of the northern tower base – and comparisons between it and the external elevations of the better surviving parts of the structure – may reveal the origins of the earliest stone structure on the motte.

11.1.4 The centrepiece of the excavation was undoubtedly the drawbridge pit within a passage barbican bridge. Although work within the pit provided information about its date and use, many things remain unknown. The dimensions of the drawbridge pit are known but those of the larger bridging structure it was part of are not. Within the trench the side of the bridge appeared straight, however the 16th century drawing illustrates the structure turning towards the West Gate. This early survey of the castle proved to be remarkably accurate when compared to the remains encountered in the excavation. Therefore, it seems reasonable to assume that the bridge did indeed turn; but if so, how would this allow space enough to accommodate a drawbridge within the upper outer bailey?

11.1.5 Much of the visible above-ground masonry should now be considered reconstruction from the 19th century. As such, the true location of the 14th century western gatehouse tower is still not known, however its addition to Greaves's plan from the 1880s suggests the base of it had survived demolition. Also depicted on this

archaeological plan of the castle were two semi-circular features in front of the two large gatehouse towers, interpreted as Civil War fortifications. The edge of the eastern one was found abutting the tower; however, no evidence was found for the eastern one. If one had exited its remains would have been expected within the excavated area overlying the western side of the passage barbican. It may be that within the feature lay outside the limits of the excavation, or possibly that it was removed as part of the Victorian landscaping of the castle.

11.2 Public engagement

11.2.1 Structured through a Theory of Change, the evidence presented here shows significant impact for both individual participants and community visitors as a consequence of the Gatehouse project (Wilkins et al 2021). The project attracted a diverse community of people from an area of high deprivation to explore and investigate the heritage of Pontefract Castle in a new and different way. Evaluation shows that the project tackled the strong social and educational needs of the surrounding communities and was a success for public engagement. A high number of locals was engaged with archaeology and individuals gained pride for their heritage, as well as ownership of their involvement in the excavation. This project did not only change participants' perception of heritage and archaeology and improved their skills and understanding of the discipline, but also had an impact on visitors to the site. Their understanding of local history improved, while their interest and willingness to participate in local archaeology increased.

11.2.2 As described in Section 9.3 above, the credibility of a Theory of Change rests on the level of certainty that organisational activities are the cause of any impact observed. To address this DigVentures has developed a 'Standards of Evidence' framework drawing on evidential standards devised by Nesta. This framework determines the levels of certainty that project activities will have a positive impact on the intended outcome, ensuring that the correct data is collected to isolate the impact to the intervention, and that findings are validated externally.

11.2.3 This framework begins with Level 1, where practitioners are able to give an account of hypothesised impact, providing a logical reason why project activities could have an impact on outcomes, and how that would be an improvement on alternative provision. For a project to achieve Level 2 practitioners gather data that shows some change amongst participants, but this may not be sufficient to provide evidence of direct causality. At Level 3 practitioners will be able to demonstrate that they are causing the hypothesised impact, by showing less impact amongst those who don't participate in the project or receive the product/service. Progressing to Level 4 and practitioners can explain why and how the project is having the impact observed, with results potentially independently verified. Finally, at Level 5 the project methodology is robust and well-evidenced enough to be scaled up and operated by other teams or organisations, whilst continuing to have positive and direct impact on the outcome and remaining a financially viable proposition.

11.2.4 The Gatehouse Project offered different activity streams for participants and visitors, and as such, can be seen to have reached differing levels on the standards of evidence framework (level 2 for community and level 3 for participant impact). Evidence was

collected for both visitors and project participants indicating a change as a consequence of project activities (level 2), however, impact for participants was additionally established through a pre-and post-experience survey showing a significant improvement on similar data for other local archaeological society groups (Wilkins 2020, 33). Training activities were also independently accredited through CIfA – an independent body – ensuring that impact evidence for participants can be assigned to level 3.

11.2.5 The insights gained from this evaluation have established a clear community need and demand for more archaeological work at Pontefract castle, and should assist with the impactful design and funding applications for any future activities.

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Figures

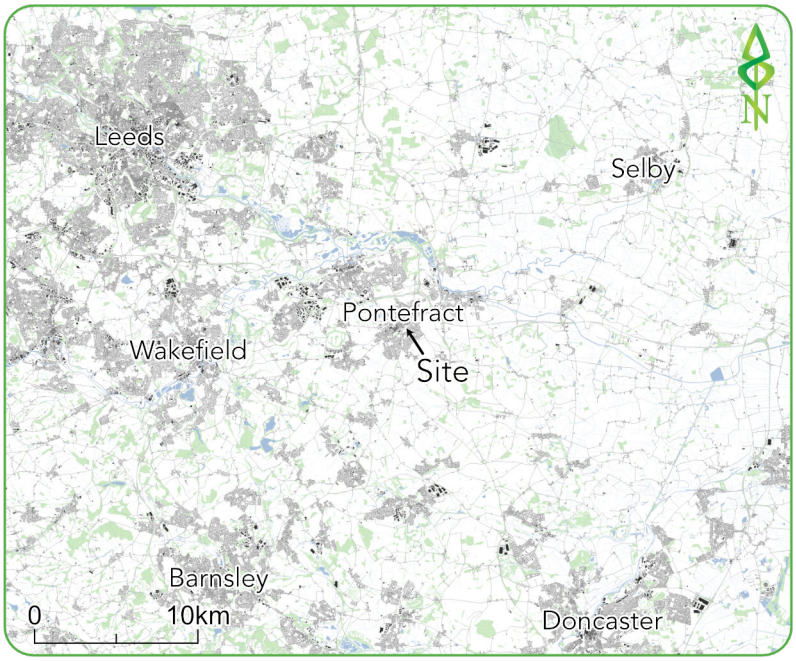
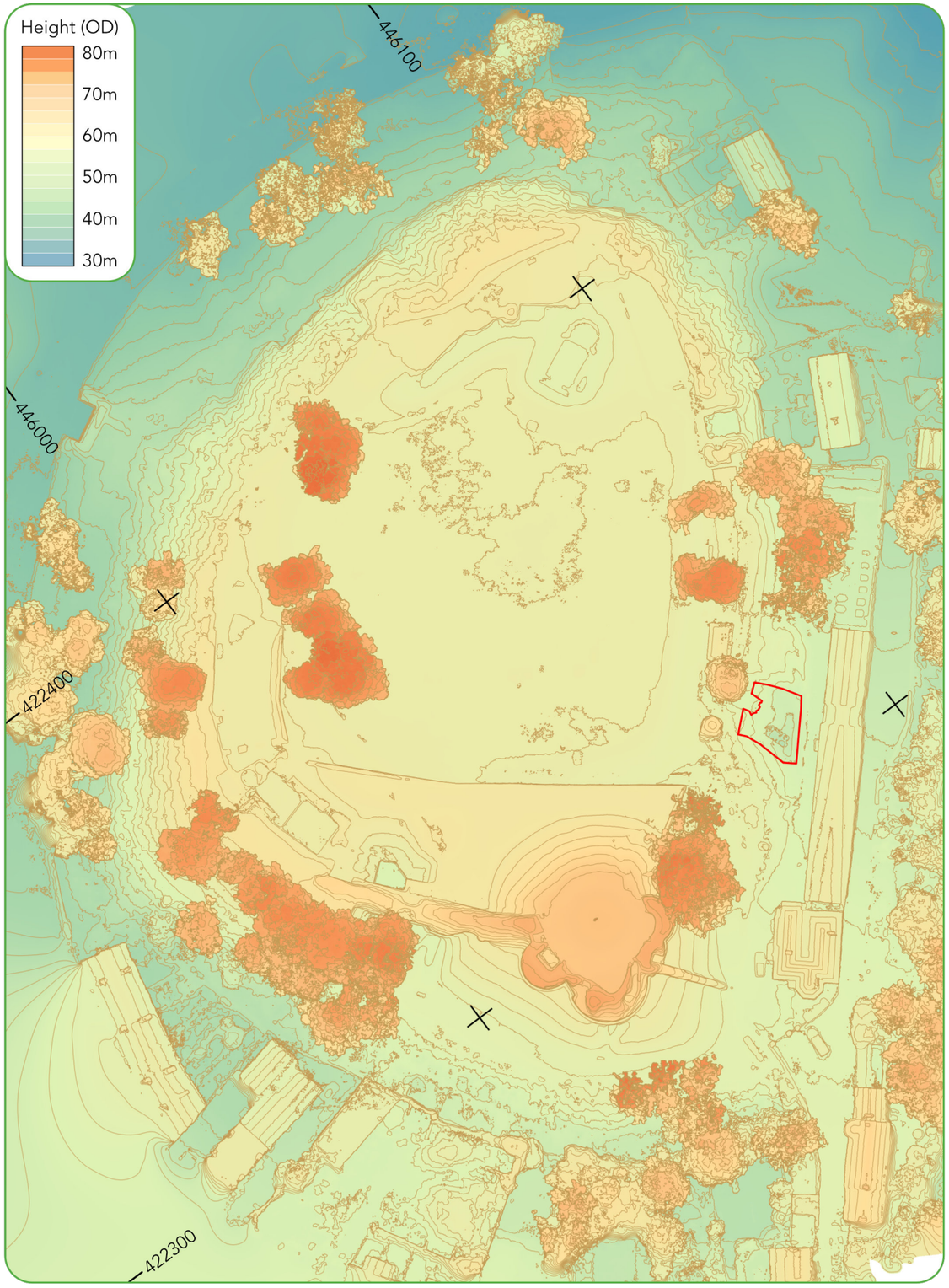


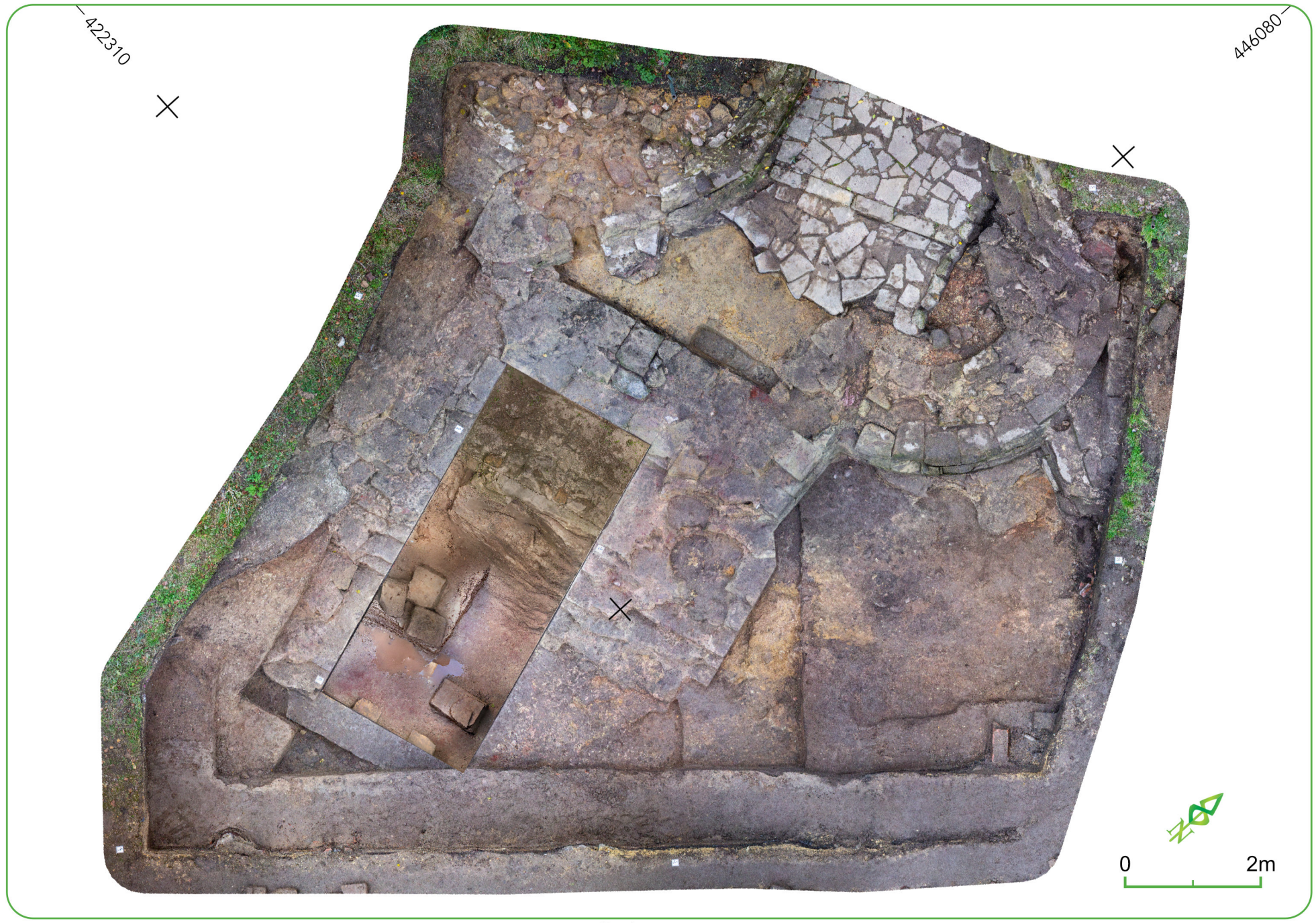
Figure 1: Site location

Aerial ortho-image



Digital Surface Model

Figure 2: Remote sensing results



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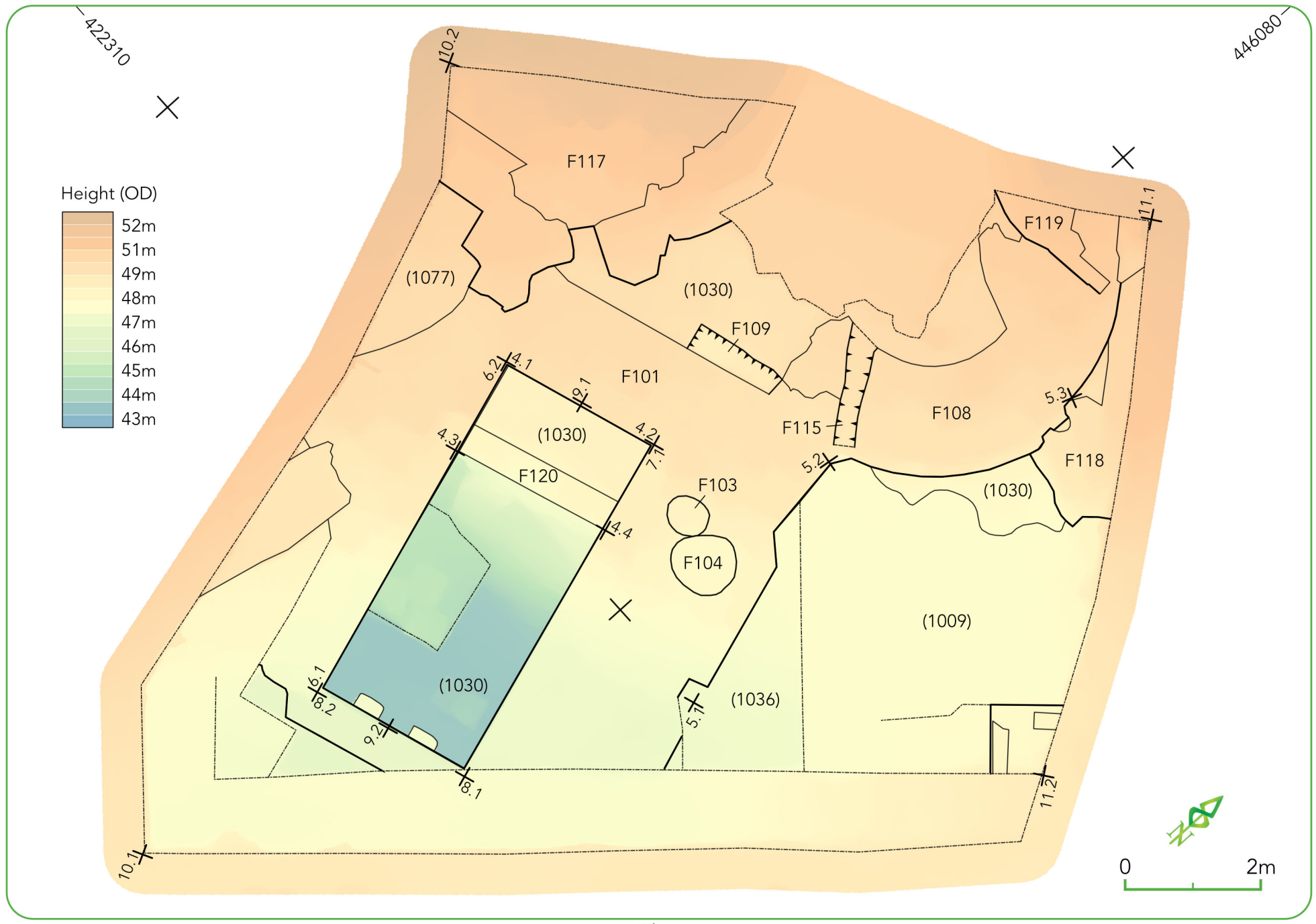


Plan

Figure 3: Post-excavation plan

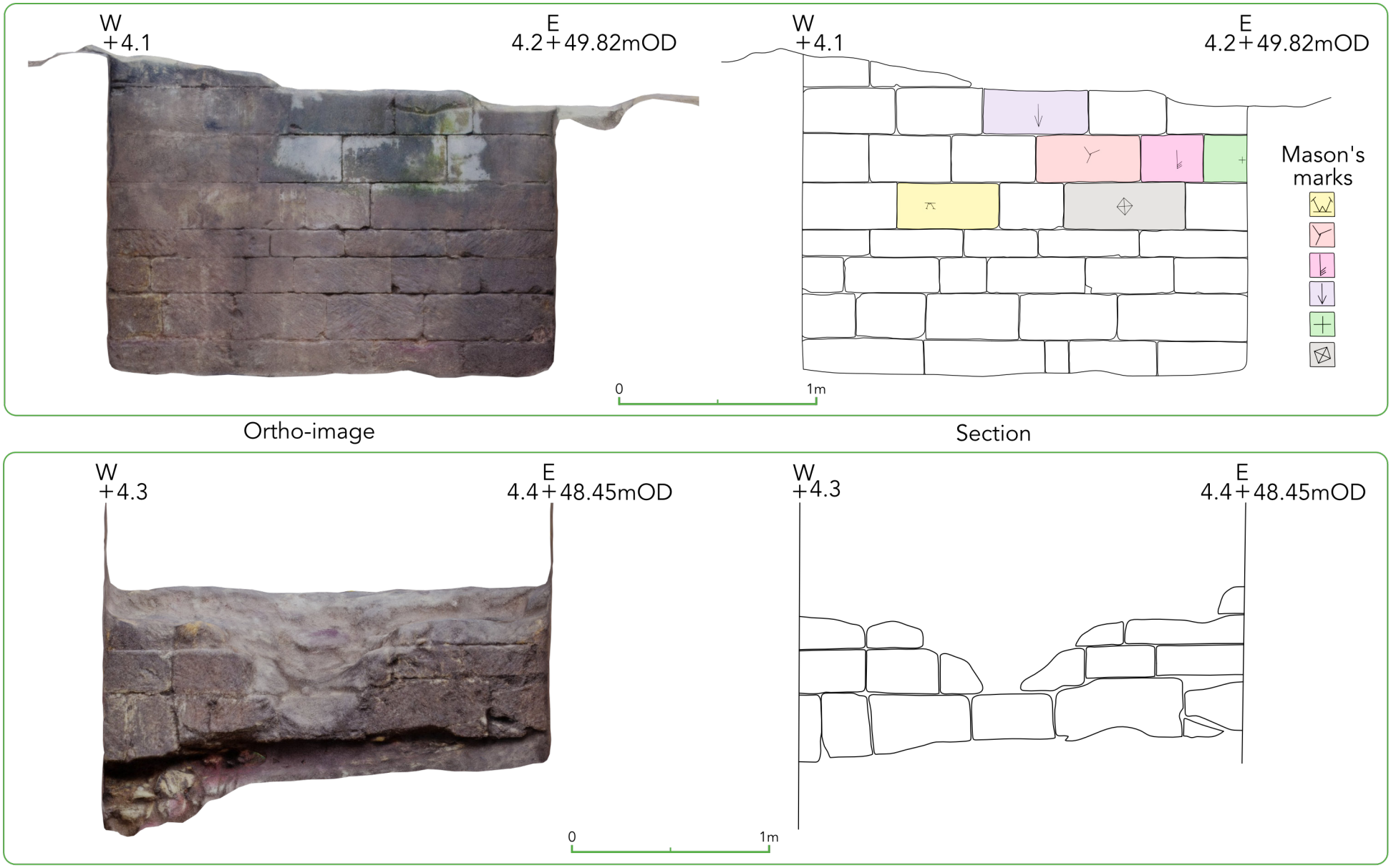
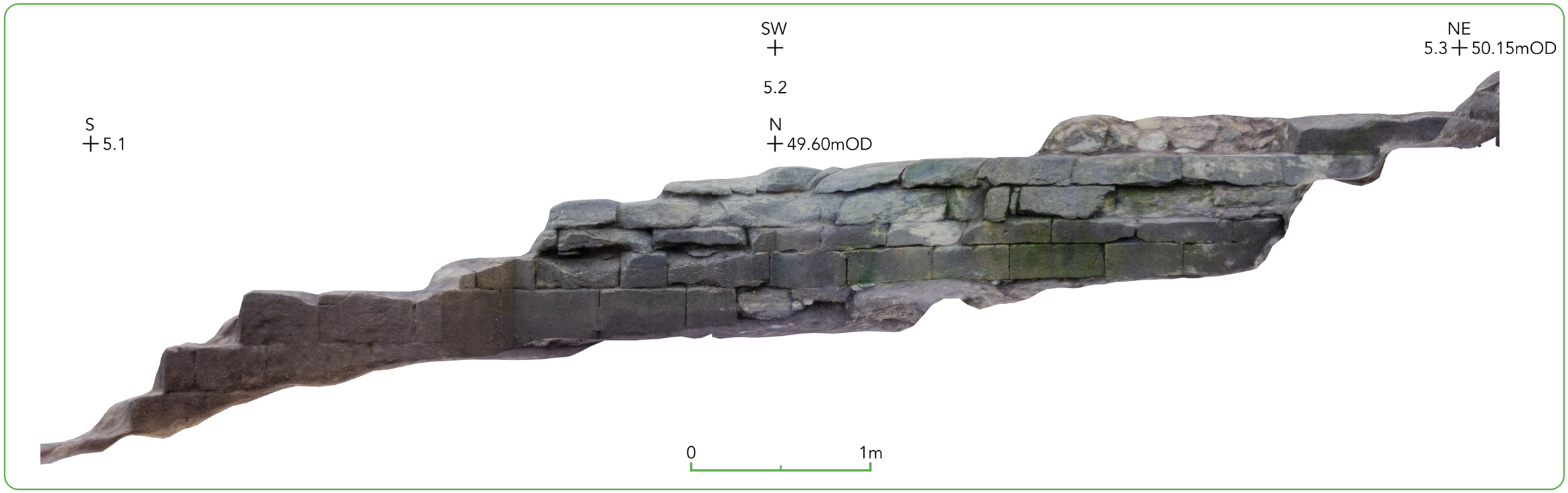


Figure 4: Casing wall and north drawbridge pit wall elevations



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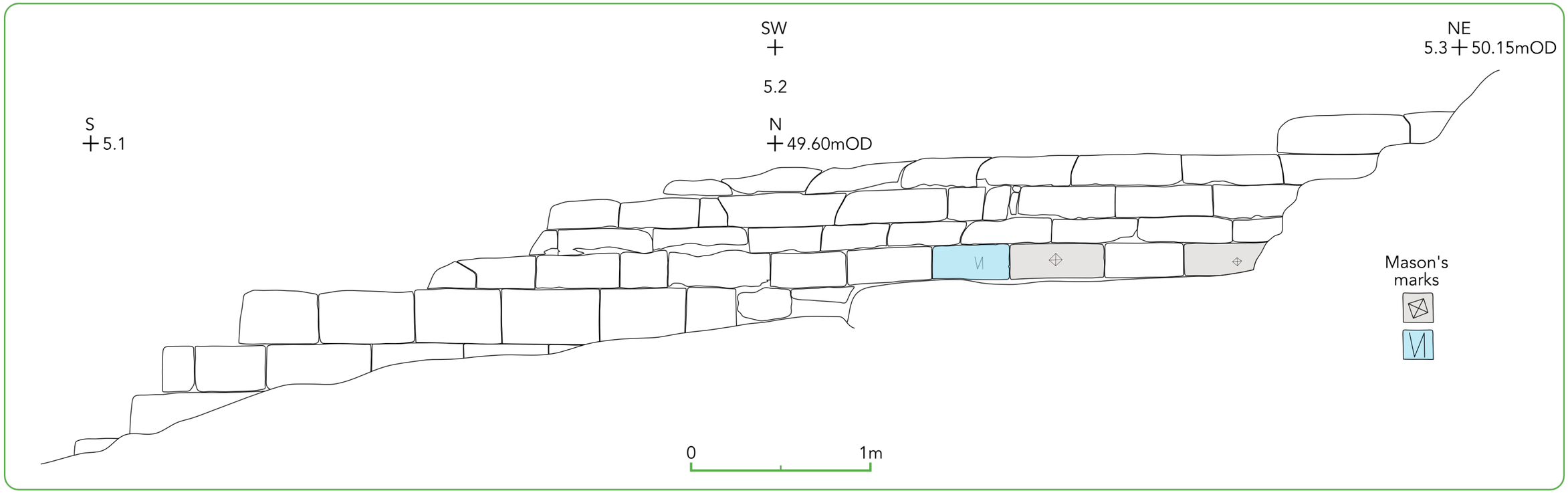

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Figure 5: External gatehouse wall elevation

Ortho-image

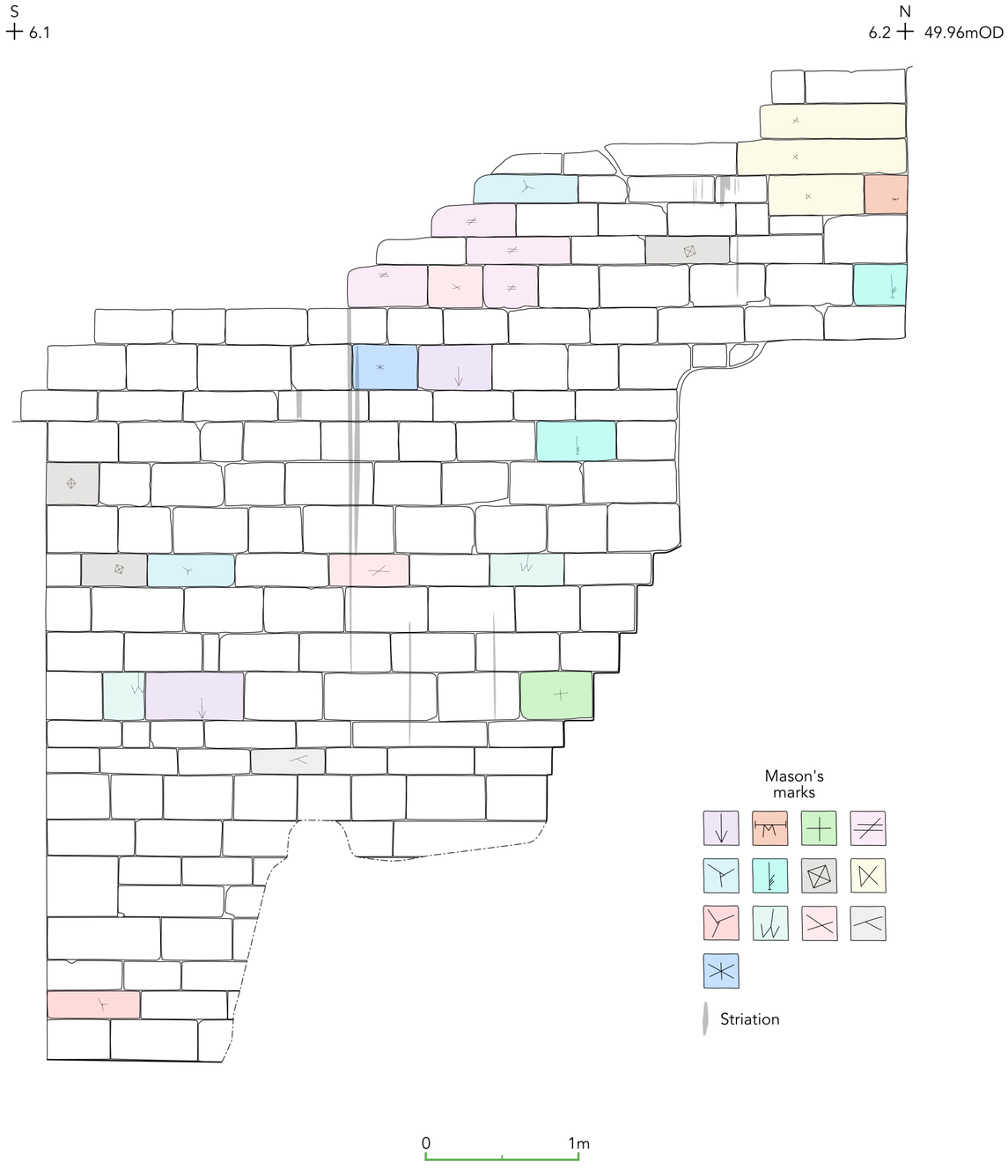

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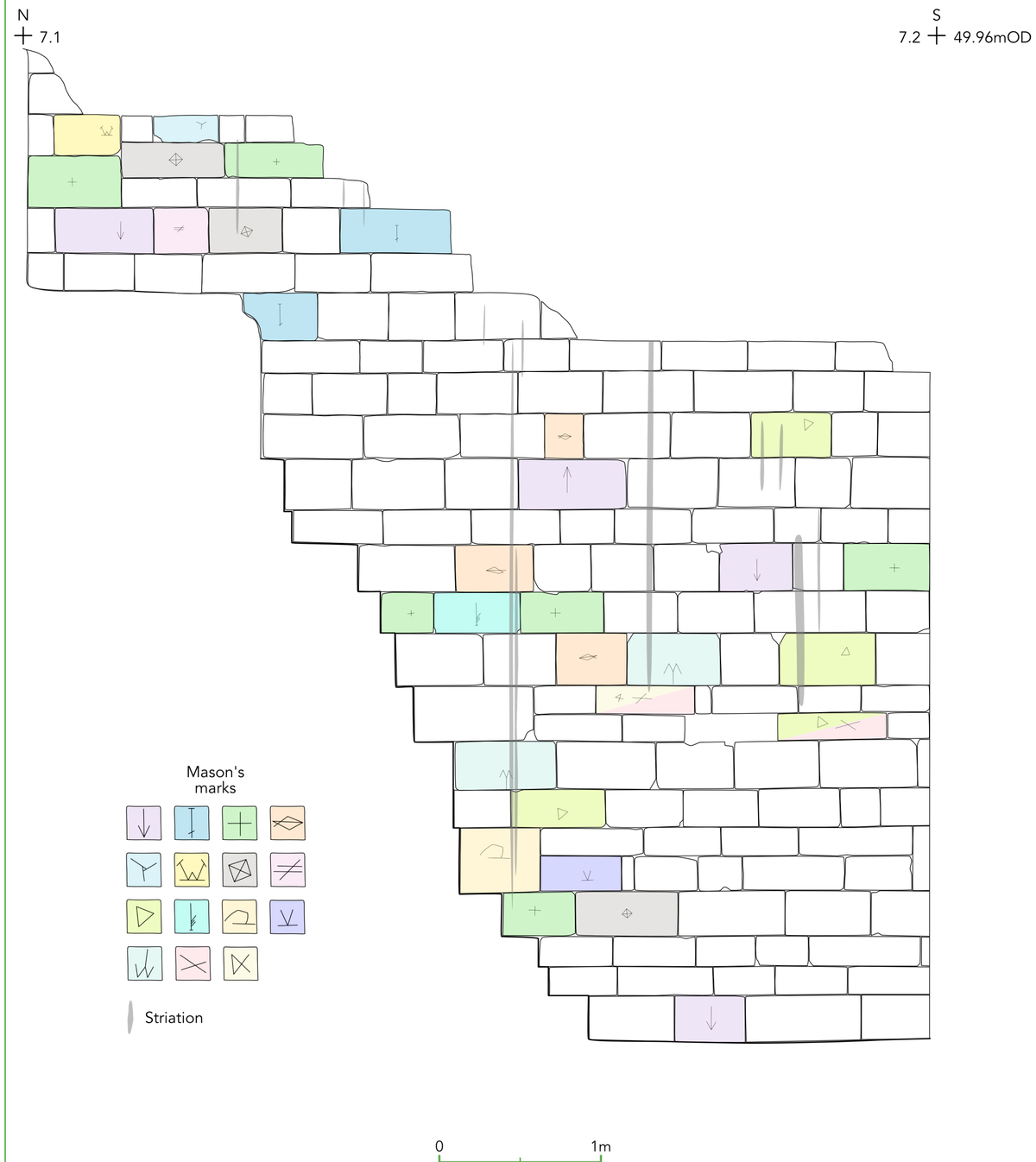
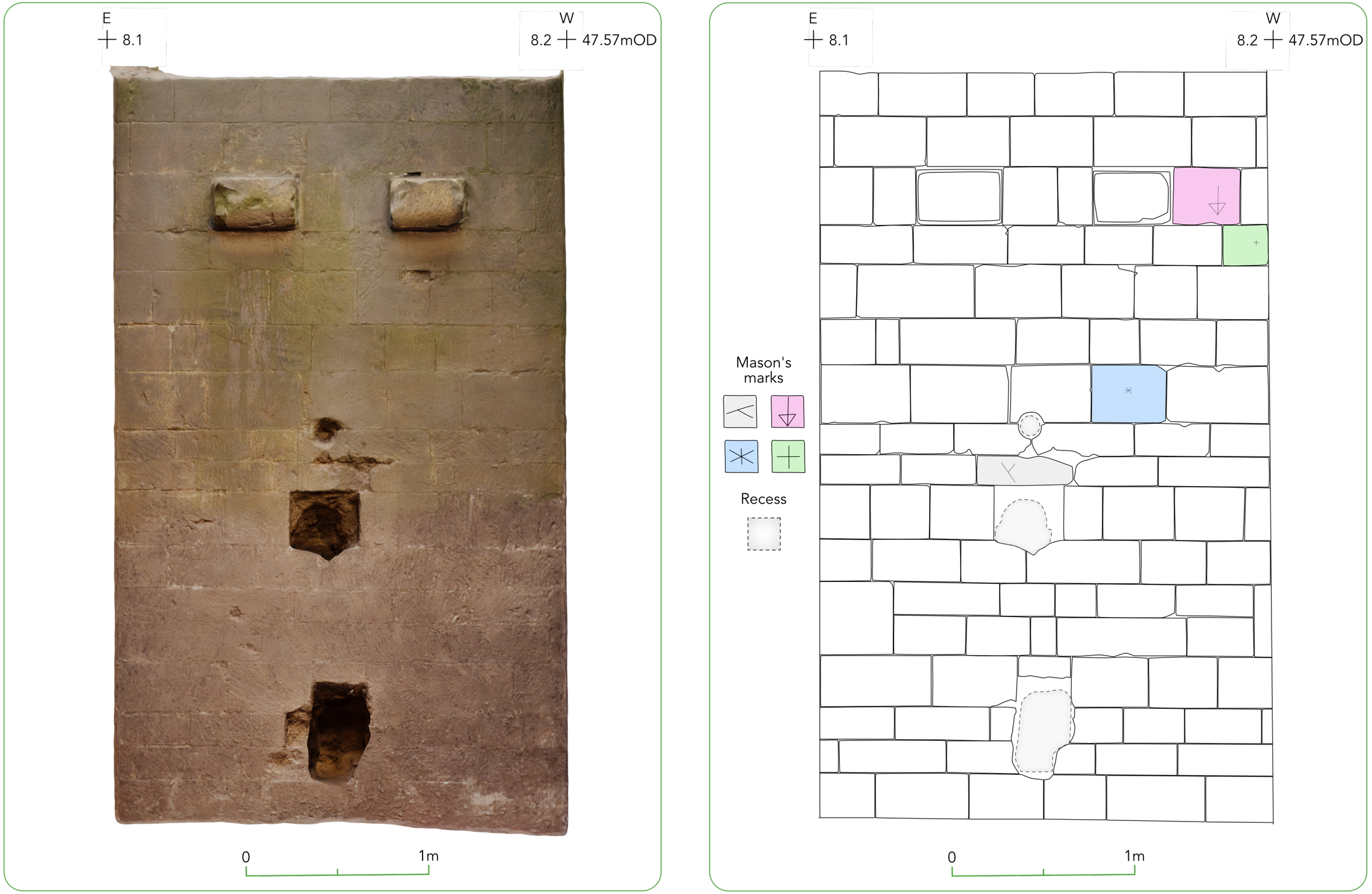
Figure 6: West drawbridge pit wall elevation

Ortho-image



Section

Figure 7: East drawbridge pit wall elevation

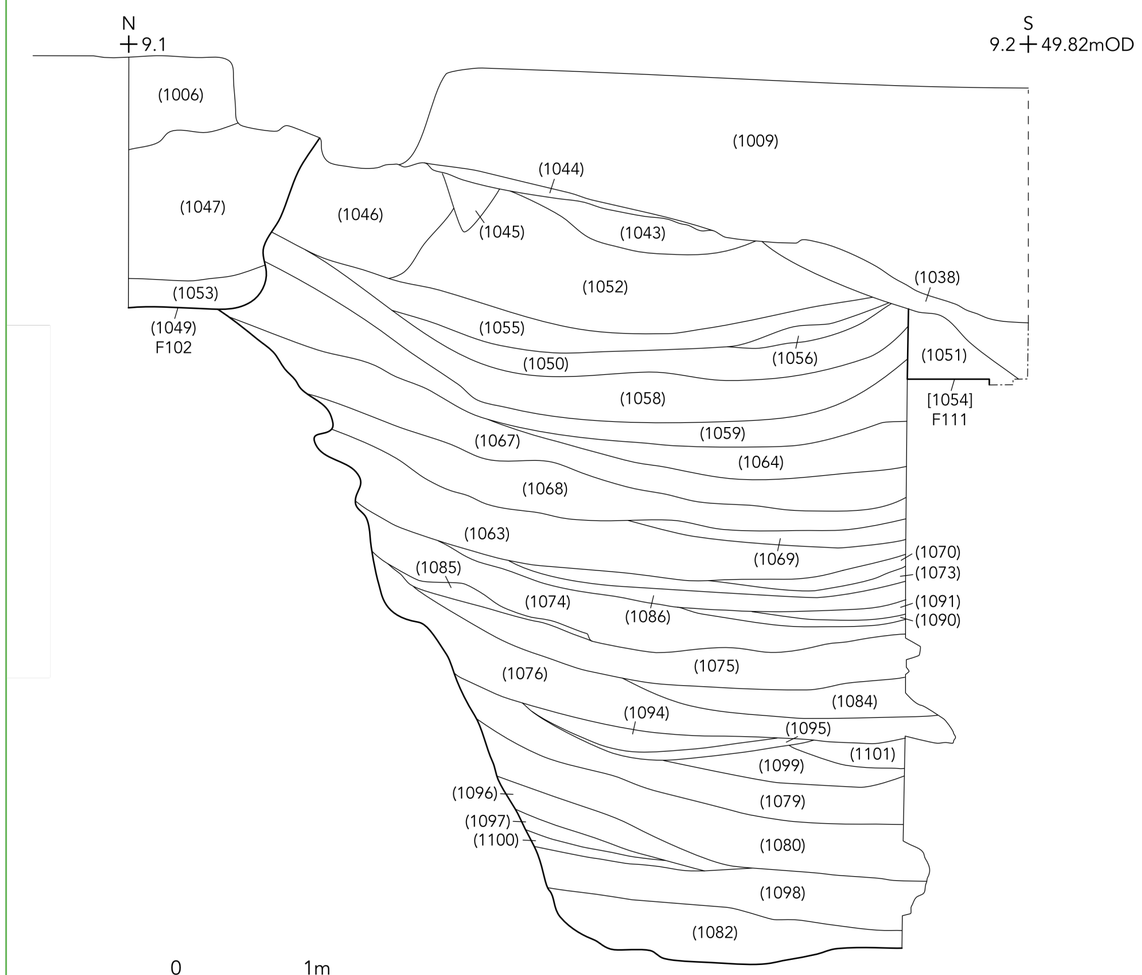


Ortho-image

Section

Figure 8: South drawbridge pit wall elevation

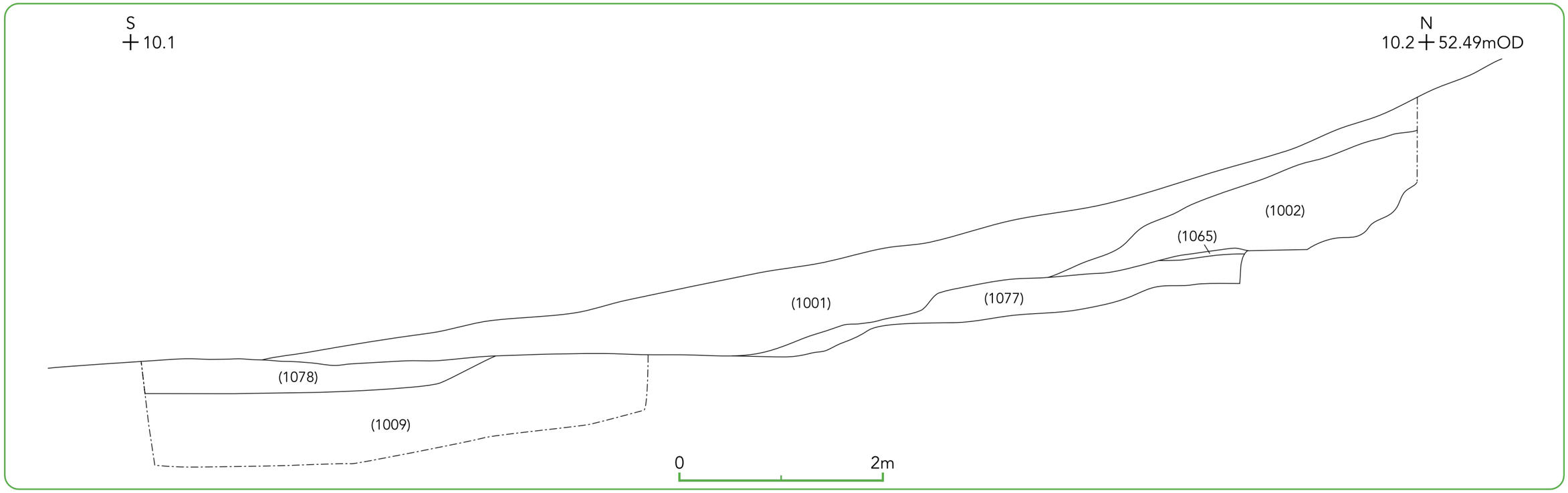
Ortho-image



Section

Figure 9: Section through drawbridge pit fills

Ortho-image



Section

Figure 10: West trench baulk section

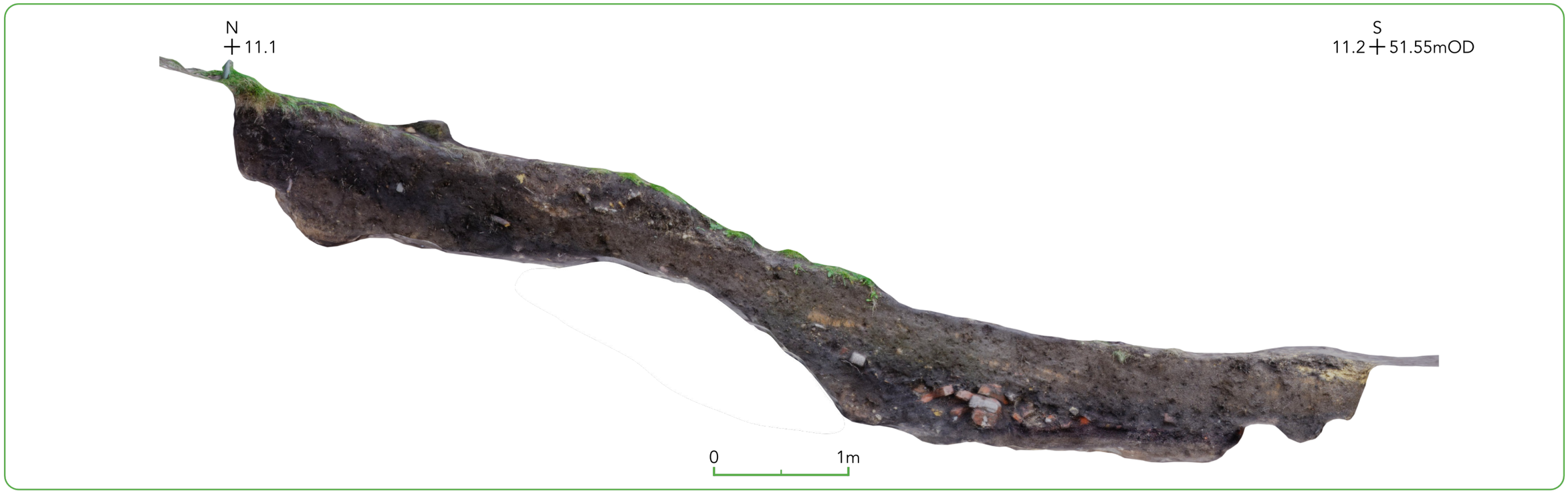


Figure 11: East trench baulk section

Mid-ex photo of south wall, showing large masonry blocks in the fill of the drawbridge pit

Recesses in the south wall

Post-ex photo of bedrock and casing wall

Post ex photo of south wall of the drawbridge pit

Post-ex photo of east wall of the drawbridge pit

Post-ex photo of west wall of the drawbridge pit

Figure 12: Excavation photographs

Mark 1, right-angled cross-form

Mark 5, slashed equals sign

Mark 6, simple three-line arrow form

Mark 8, W-form with line extending from apex

Mark 10, mitred W-form with baseline

Mark 11, Flat diamond bisected by horizontal

Mark 16, equilateral triangle

Mark 20, angled banner-form, three parallel lines at mitred end

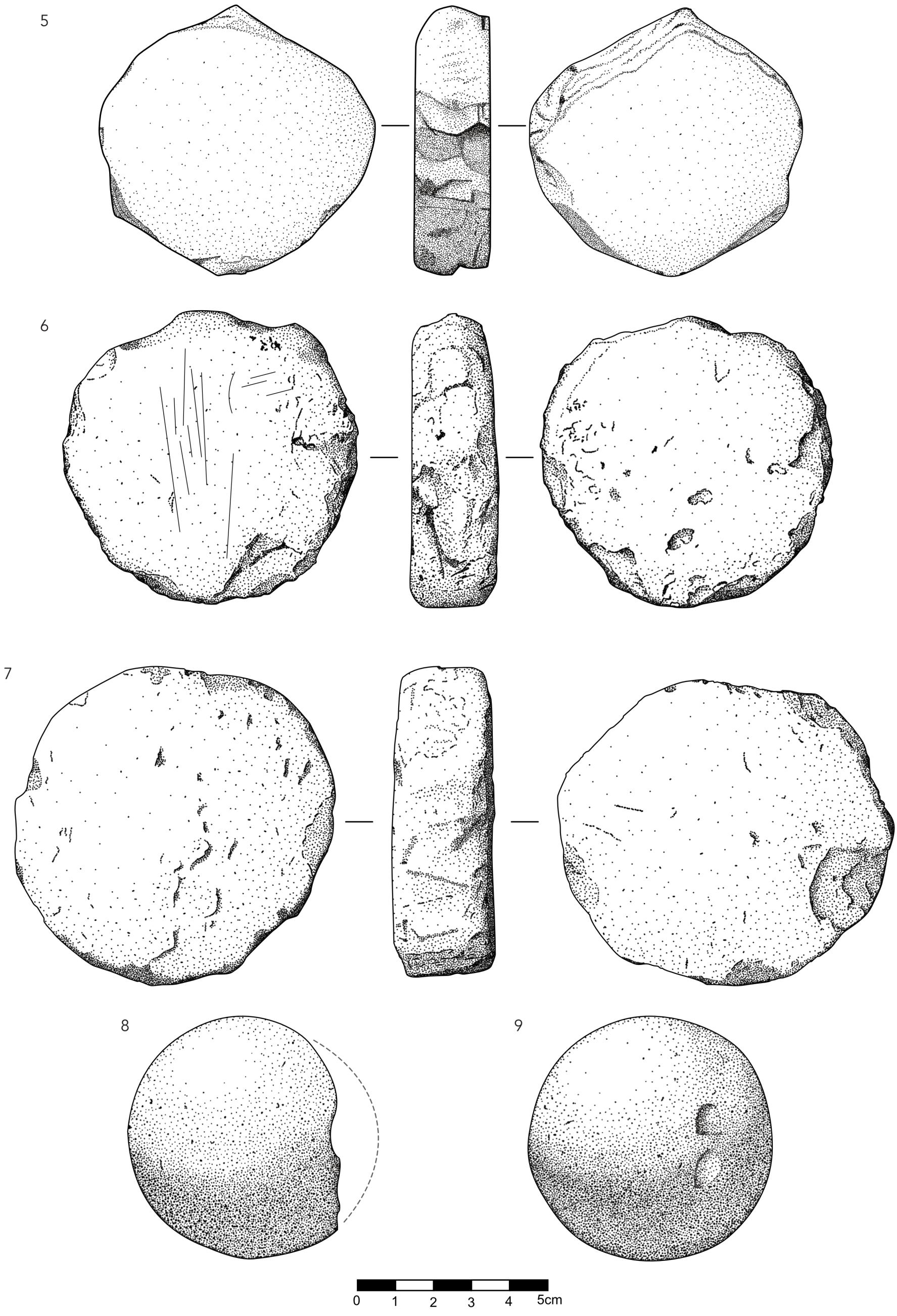
Mark 22, three-line asterisk

Figure 13: Mason's marks

1, Stone disc SF17 / Cat no. 73 (1064) 2, Stone disc SF18a / Cat no. 76 (1064) 3, Stone disc SF18b / Cat no. 75 (1064)
4, Stone disc SF18c / Cat no. 74 (1064)

Drawn by: E Foulds

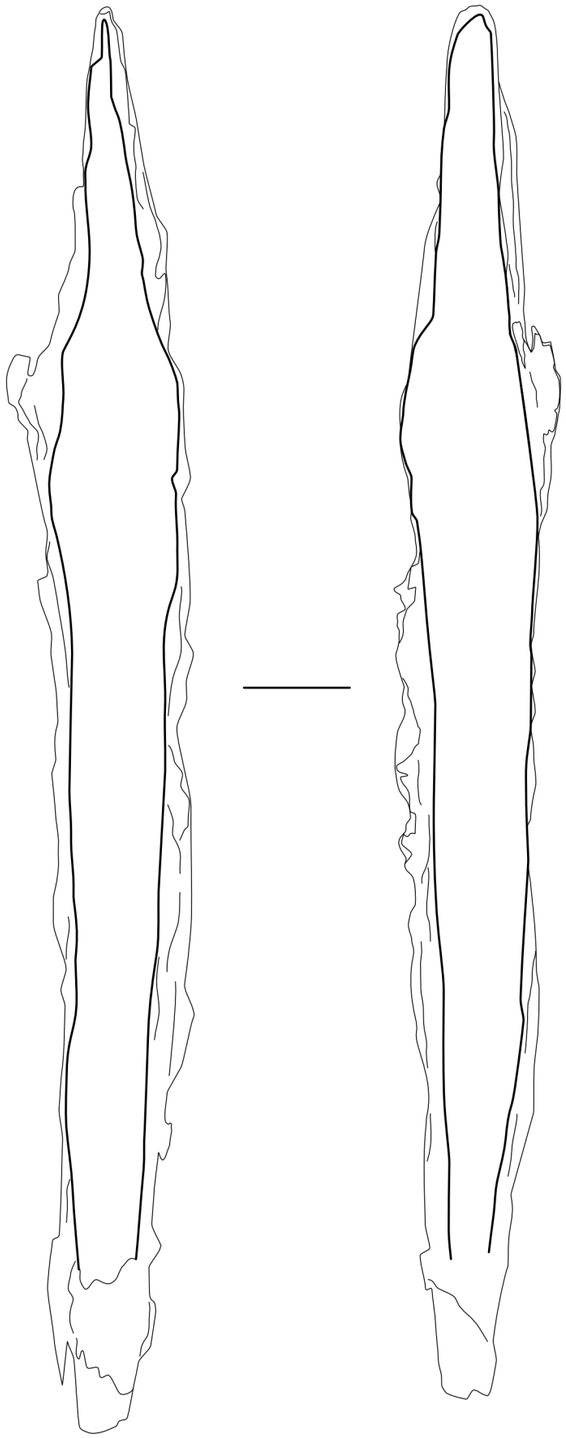
Figure 14: Artefact illustrations 1



5, Stone disc SF22a / Cat no. 71 (1069) 6, Stone disc SF22b / Cat no. 72 (1069) 7, Stone Disc Cat no. 70 (1009)
8, Stone cannon ball SF30 / Cat no. 33 (1074) 9, Stone cannon ball SF29 / Cat no. 32 (1074) Drawn by: E Foulds

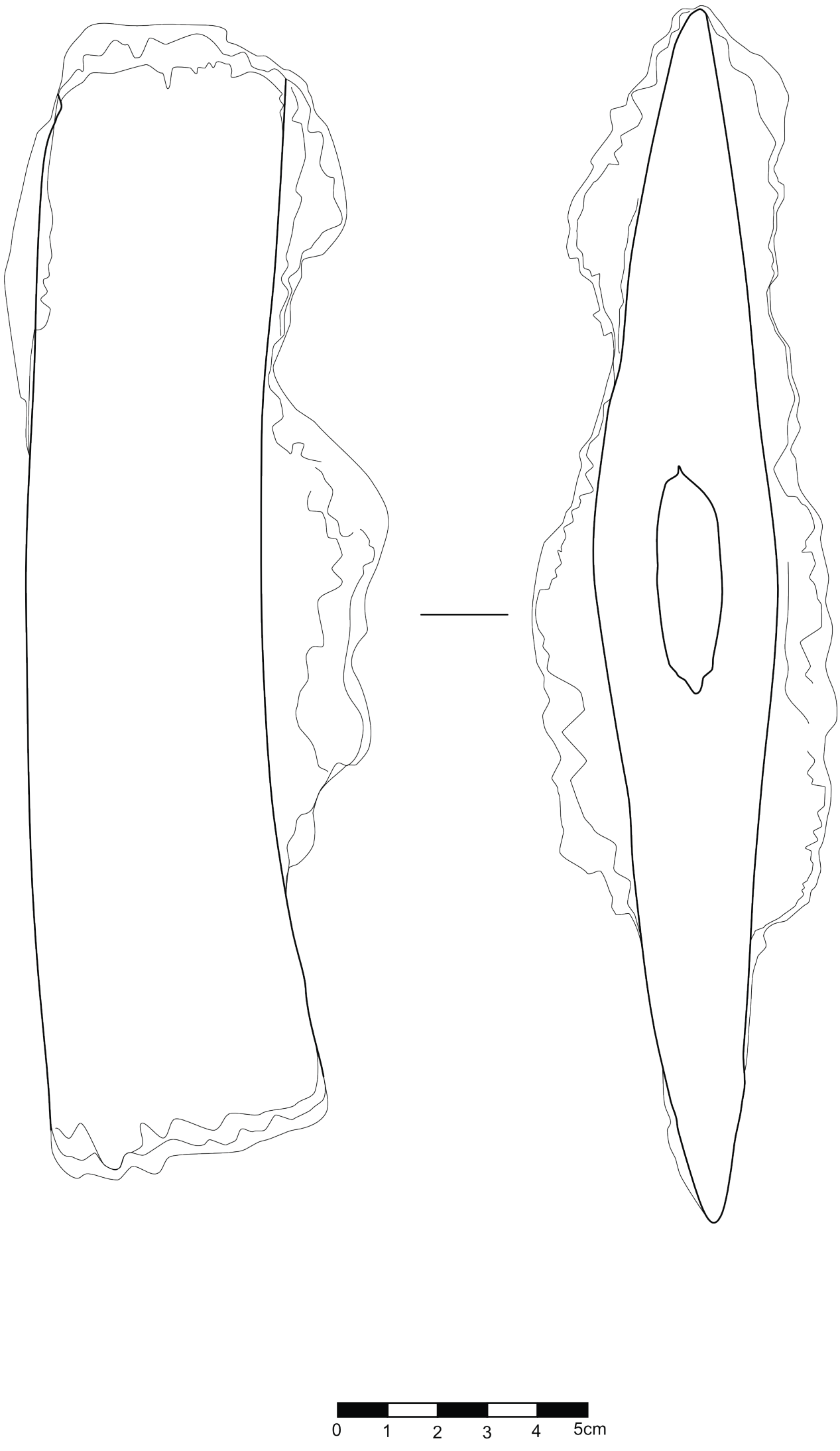
Figure 15: Artefact illustrations 2

10



10, Possible medieval tool, Cat no. 15 (1074), Photographs (L) Illustration (R)
Drawn by: E Foulds

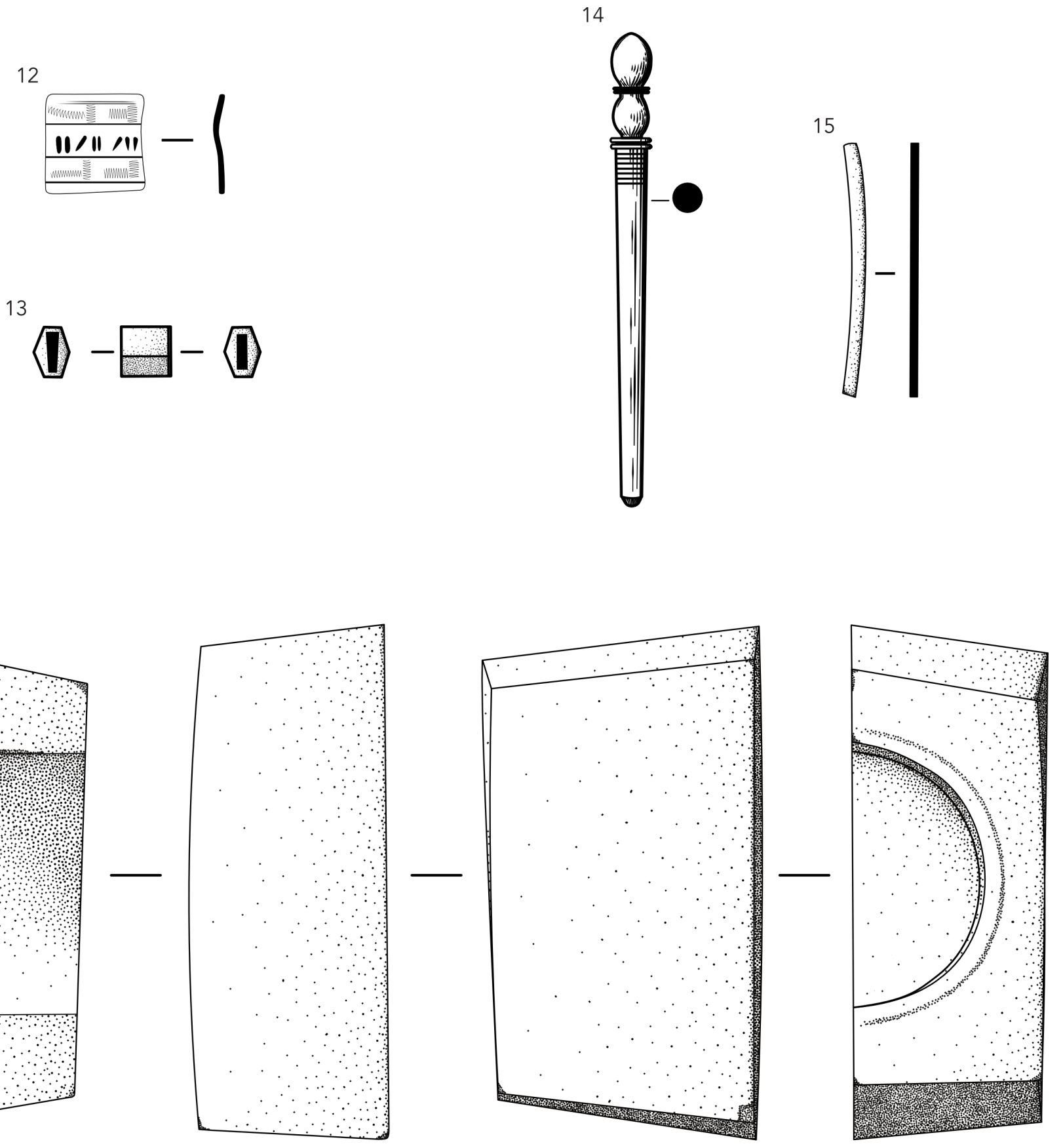
Figure 16: Artefact illustrations 3



11, Double Ended Axe Head SF34 / Cat no. 14 (1097)

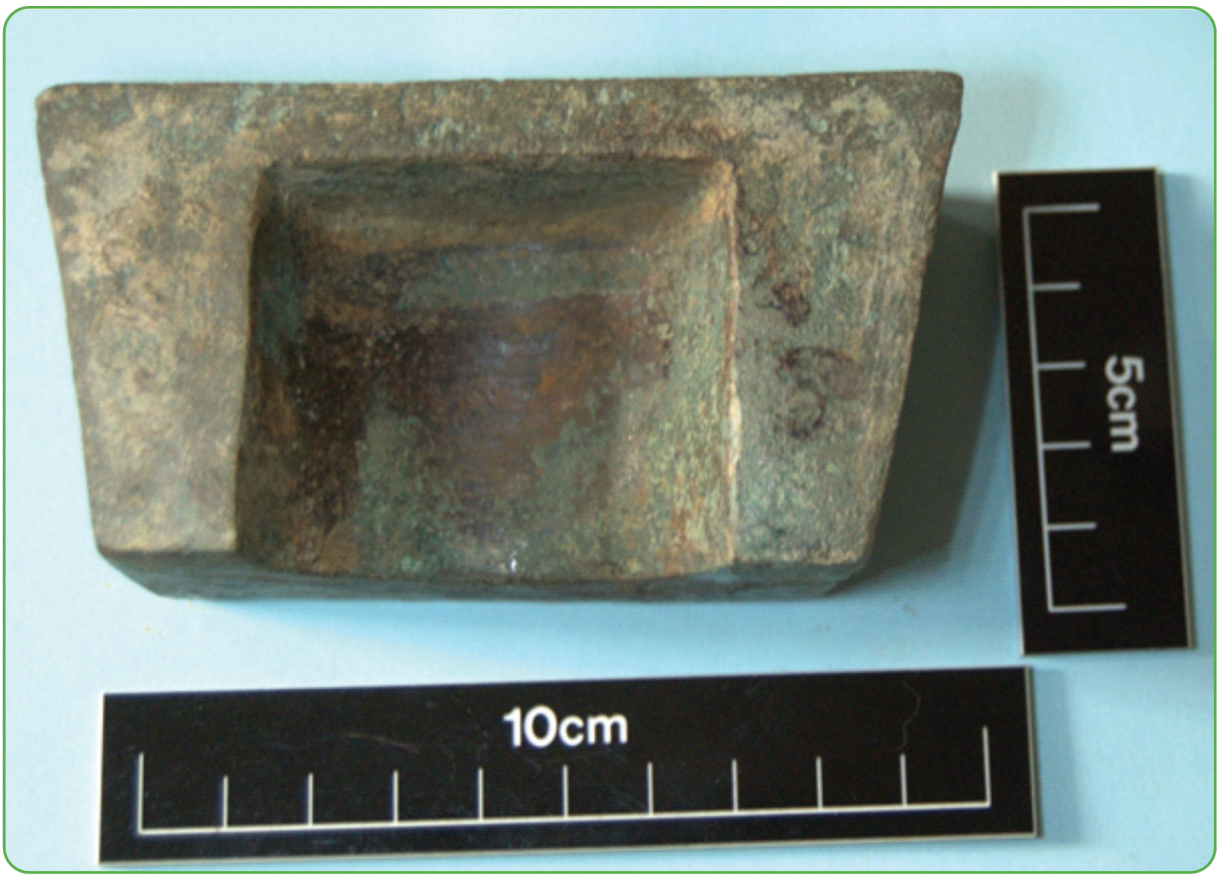
Drawn by: E Foulds

Figure 17: Artefact illustrations 4

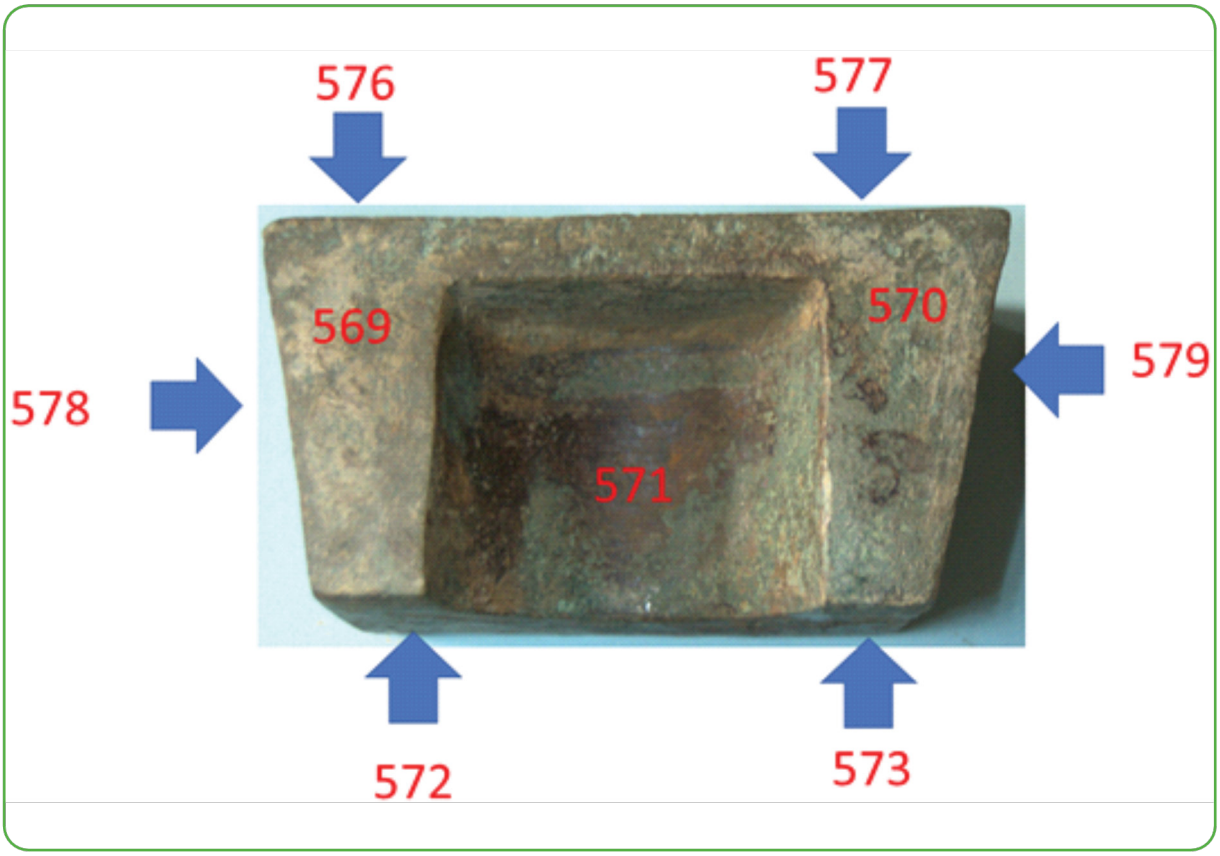


12, Copper alloy decorated strip SF26 / Cat no. 52 (1001) 13, Copper alloy hilt-plate, Cat no. 9 (1059)
14, Bone parchment pricker/stylus SF21 / Cat no.12 (1076) 15, Copper alloy strip SF35 / Cat no. 57(1098)
16, Copper alloy axle housing SF32 / Cat no. 53 (1079) Drawn by: E Foulds

Figure 18: Artefact illustrations 5

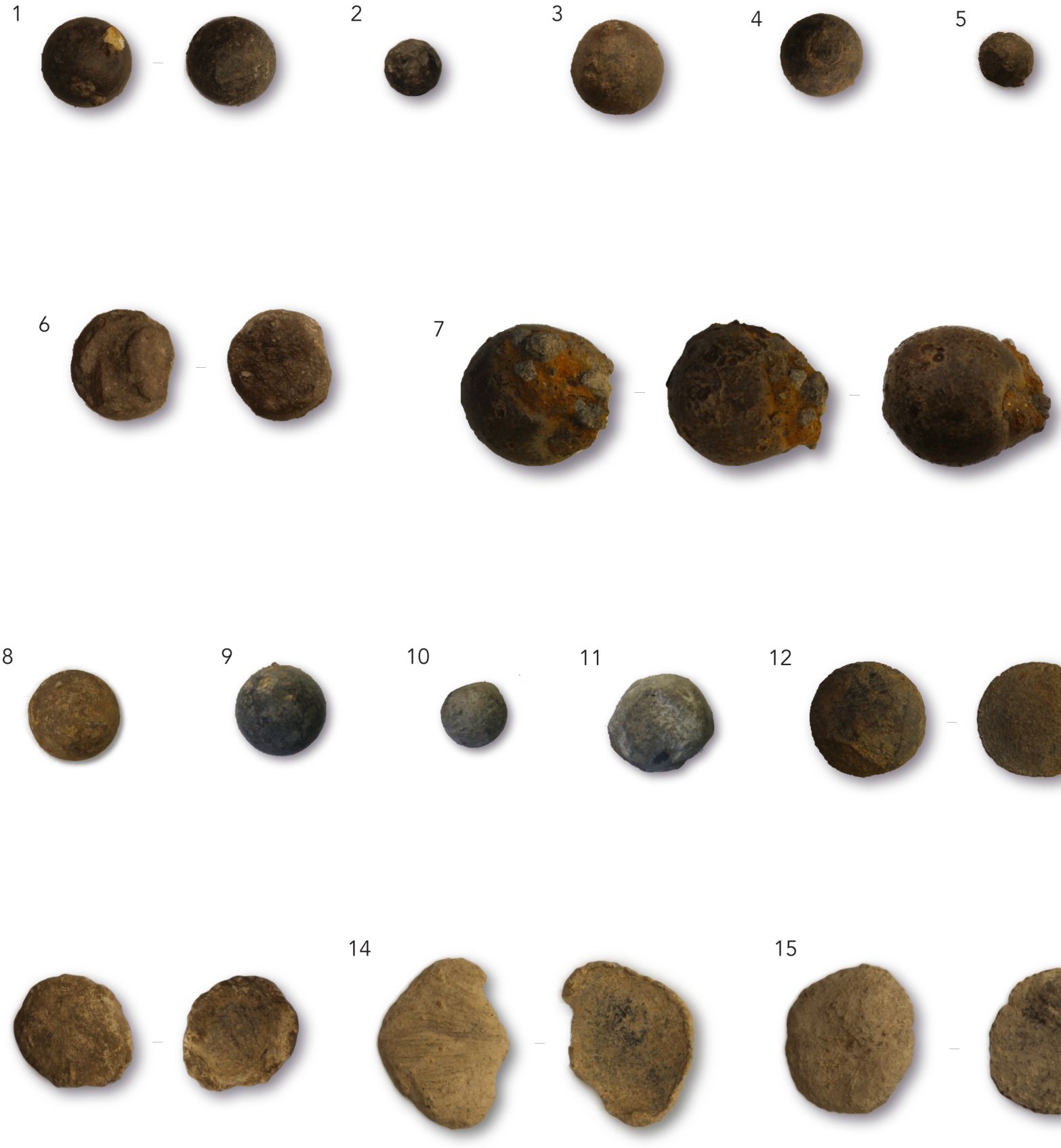


Top view of the 'axle-mount', note iron corrosion/staining in the axle-rest/pivot



Location of XRF analyses. Analyses 574 and 575 were taken from the base

Figure 19: XRF results on Copper alloy axle housing SF32 / Cat no. 53 (1079)



1, SF1 / Cat no. 40 (1043) 2, SF2 / Cat no. 43 (1044) 3, SF3 / Cat no. 44 (1044) 4, SF4 / Cat no. 38 (1048)
5. SF5 / Cat no. 42 6, SF7 / Cat no. 41 7, SF19 / Cat no. 34. 8, SF20 / Cat no 39 9, SF23a / Cat no. 46
10, SF23b / Cat no. 47 11, SF23c / Cat no 48 12, SF24 / Cat no 45 13, Cat no. 35 14, Cat no. 36
15, Cat no. 37 16, Cat no. 49 17, Cat no. 50

Figure 20: Artefact Photographs 1: Musket balls and shot

18

18. Corroded iron object, possibly associated with the drawbridge mechanism, SF31 / Cat no. 60

Figure 21: Artefact Photographs 2

Figure 22: Age, gender and socio-economic background of participants

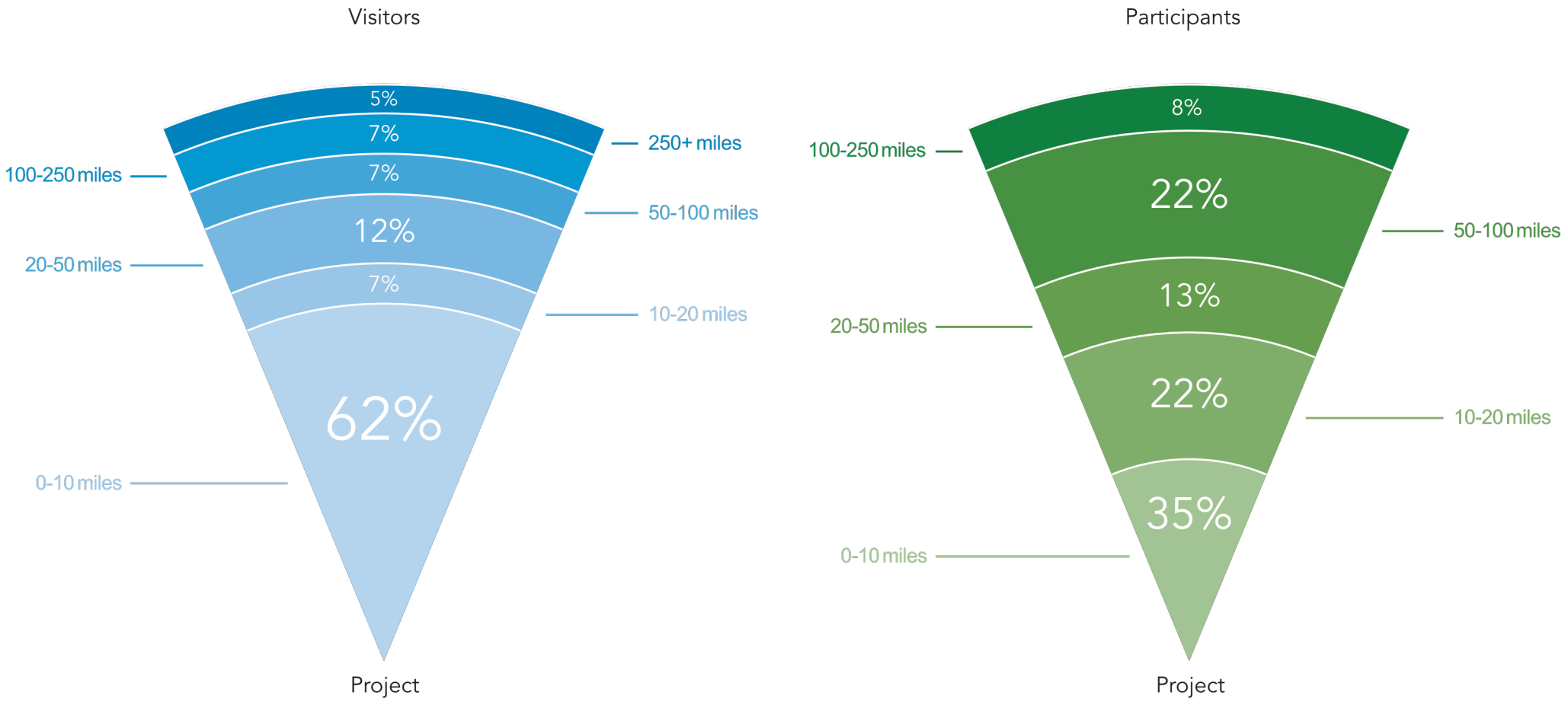


Figure 23: Average distance from site for visitors and participants of all visitors to the project

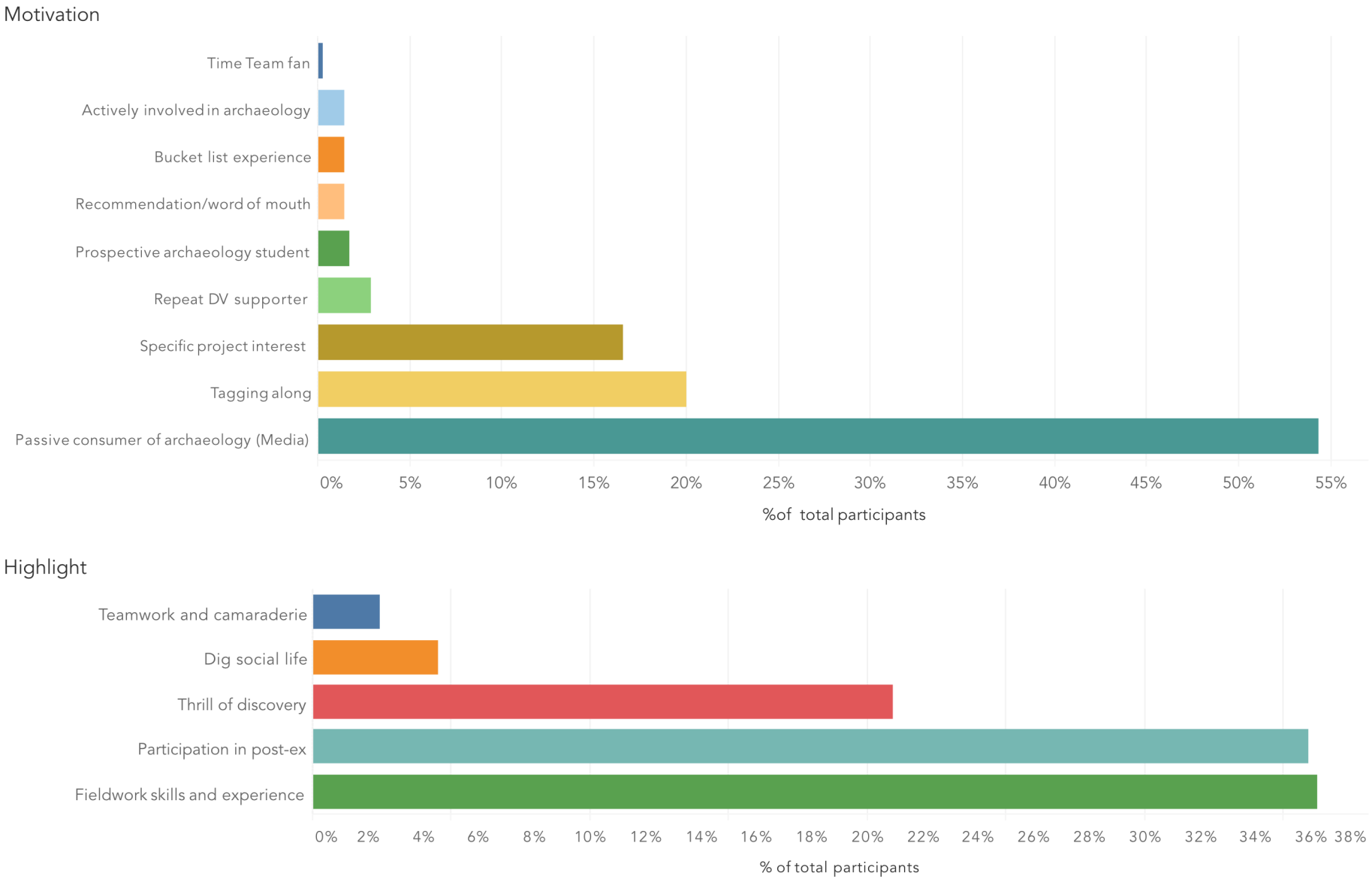
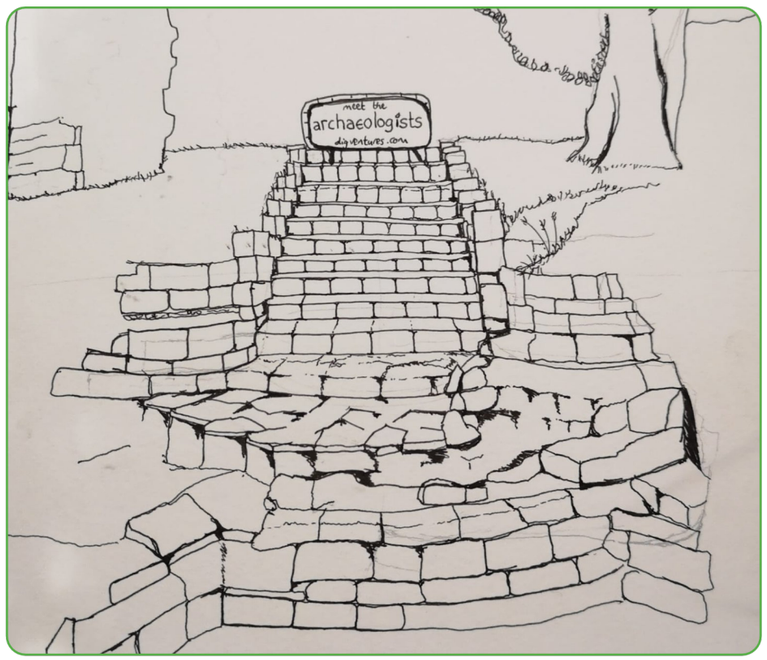


Figure 24: Motivations and highlights of participants



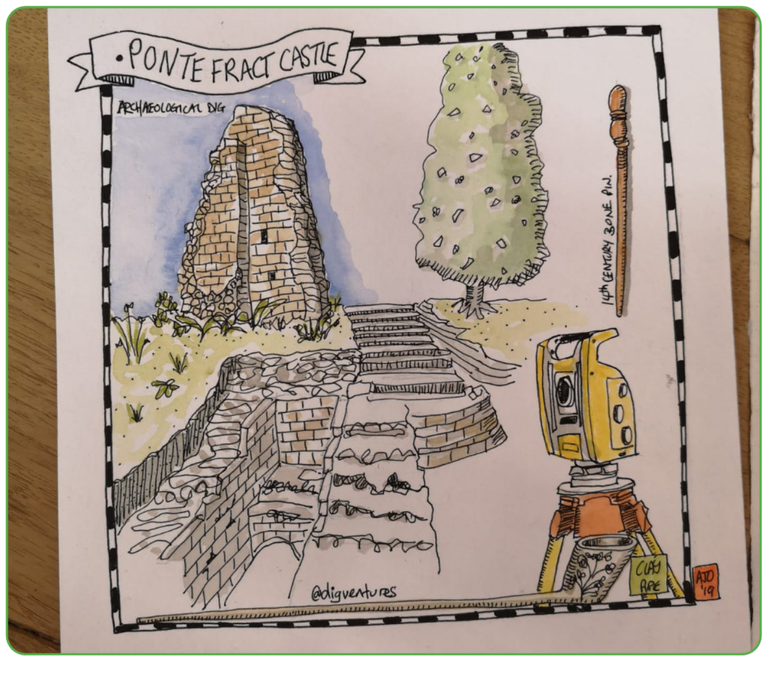
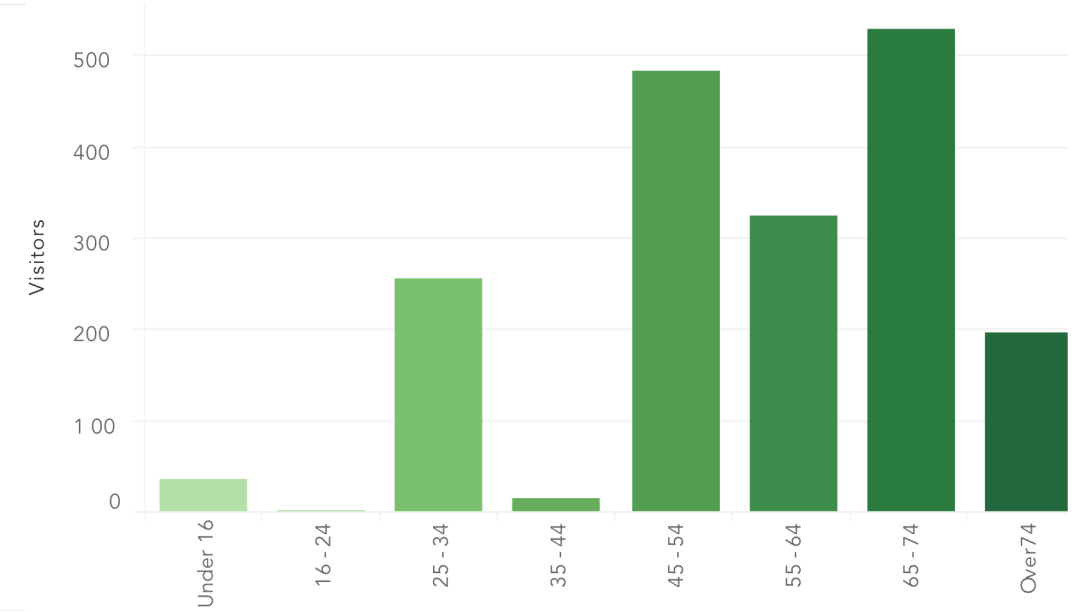
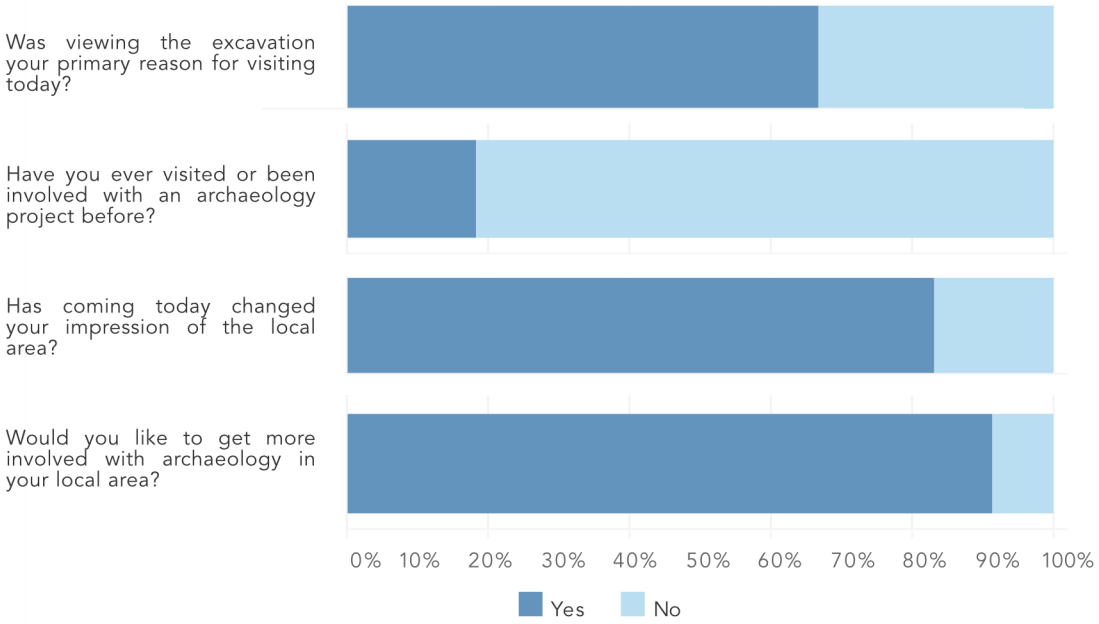


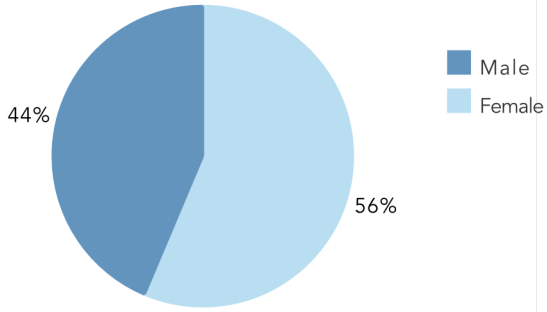
Figure 25: Drawings of the castle completed by public participants during creative sketching workshops

Age





Gender



60% of visitors stated that their impression of archaeology has changed after visiting the site and now think that...

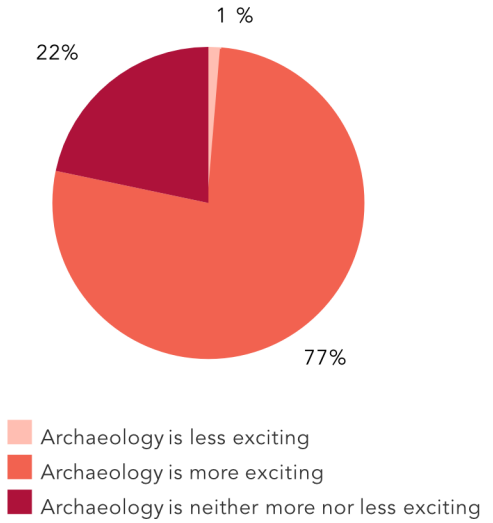


Figure 26: Age, gender and impressions of visitors

1) We were visited by 81 member of local Young Archaeologist Clubs who learnt about the history of Pontefract Castle...

2) ...and helped us dig through the Victorian layer. They were rewarded with many lovely sherds of pottery and even some musket balls.

3) 372 students from local schools visited us on site and received a special tour by site director Chris Casswell. He pointed out medieval mason's marks, Victorian reconstructions and illustrated the workings of the drawbridge.

4) Back inside, it was time to test the children's knowledge on medieval Pontefract, before they received hands-on learning experience on how archaeologists test the PH- value of soils. Finally, they got to do a mini- excavation at their tables and handled several finds fresh from the ground that day.

5) The excavation was a great opportunity for families (163 children and parents) to be active together. Side by side, children and parents learnt to excavate archaeological contexts and identify the finds they made …

6) … everybody had a good time and after digging, even the youngest of our venturers quickly put those toothbrushes and toothpicks to some good use and helped us whizz through many full finds trays.

Figure 27: Next generation archaeologists in action

1) The trench was a hub of activities with 93 venturers cleaning, digging, sampling, brushing and mattocking away, supervised and instructed by five community archaeologists.

3) Supported by two community archaeologists, 44 venturers in the finds room learnt how to properly clean, sort, count and weigh all the wonderful finds that came out of the trench.

2) The Gatehouse project was a great example of teamwork and community engagement, with 386 participants playing an important part in excavation as well as finds processing. 80% Had never taken part in an archaeological project before.

4) 10 participants of the creative workshops used the excavation as a live inspiration for archaeology art.

5) Getting down to the bottom of the drawbridge pit was no easy endeavour, but the venturers brought new enthusiasm and fresh muscle power to the trench every day

Figure 28: Community in the trench

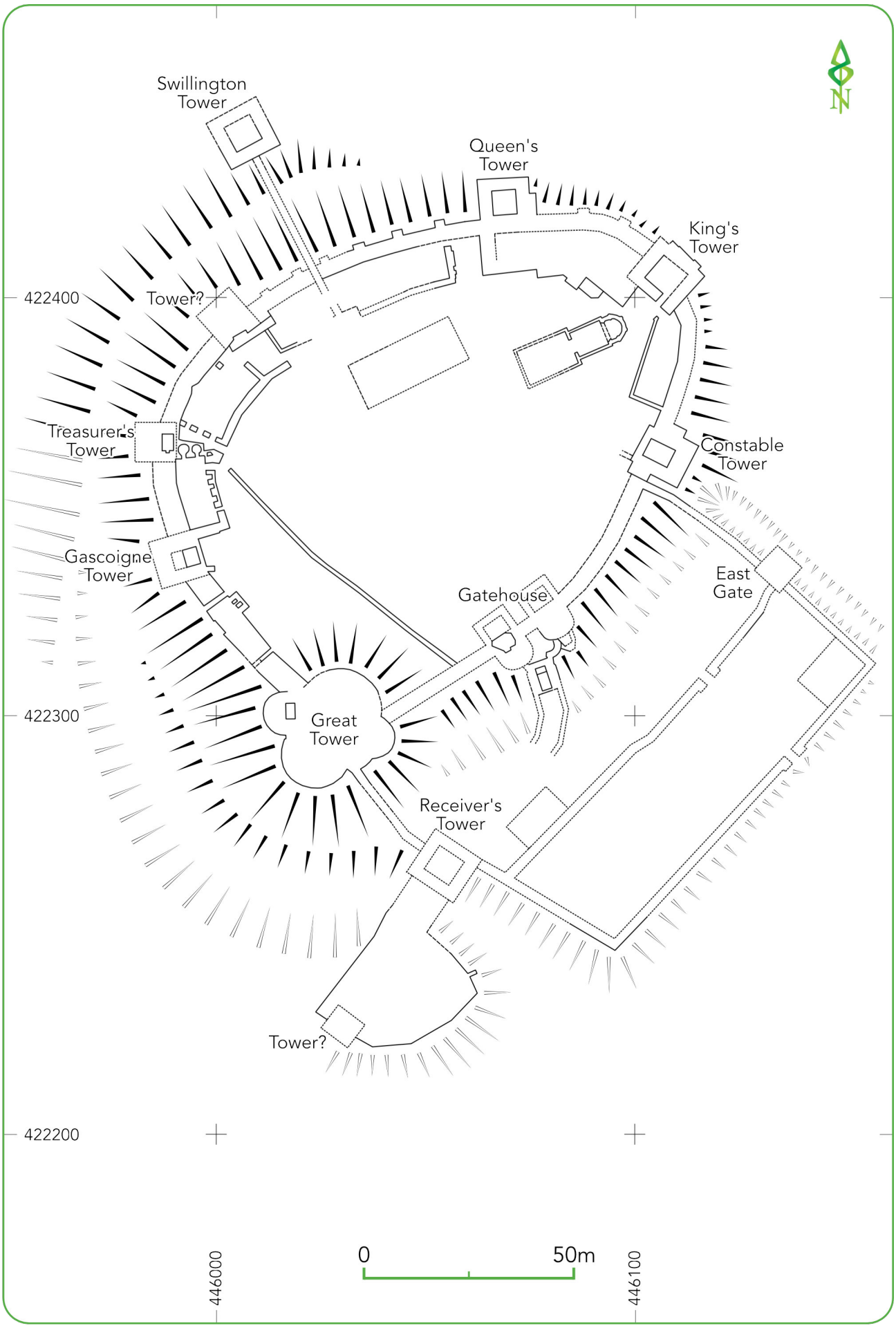
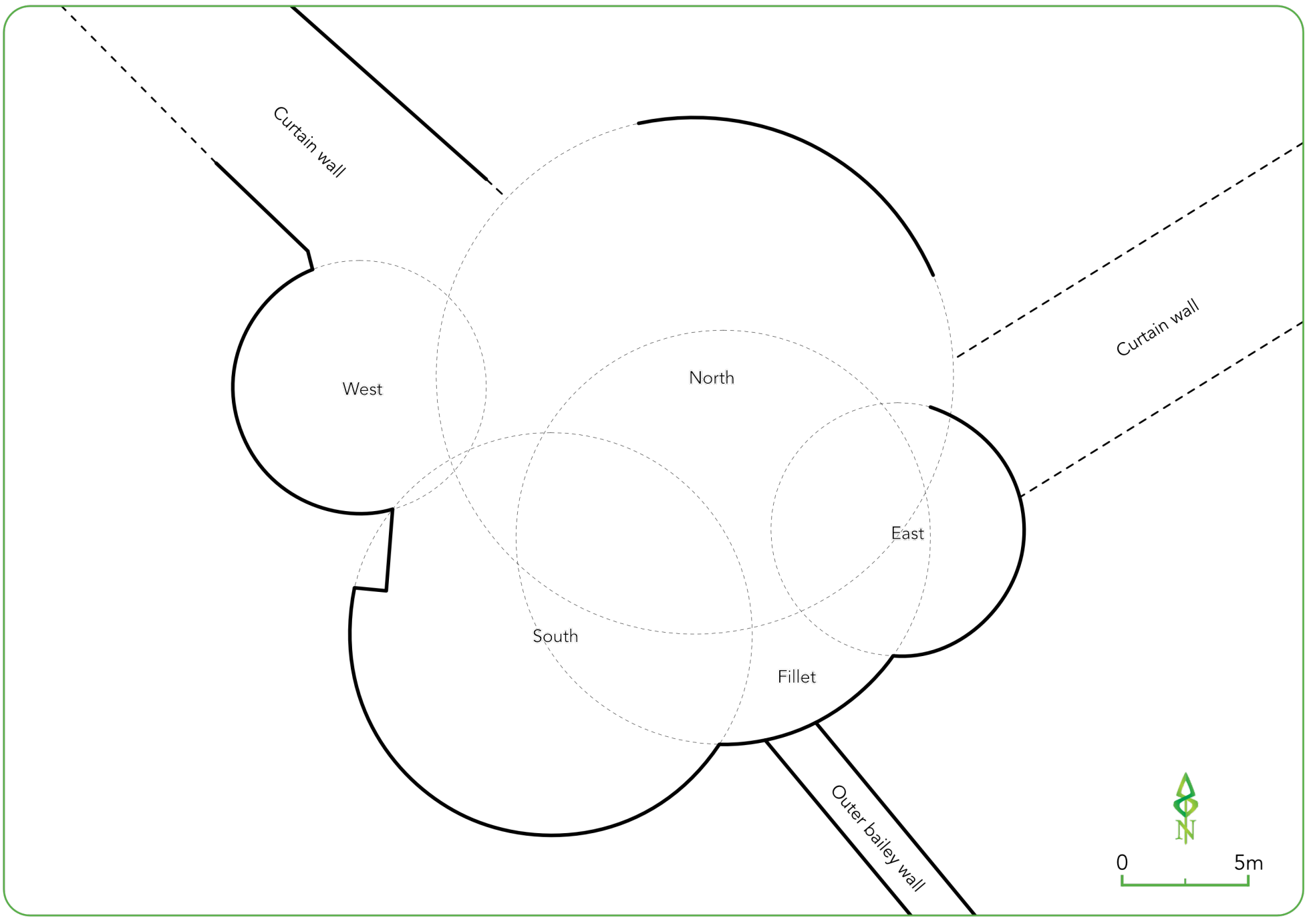


Figure 29: Reinterpretation of Pontefract Castle

Ortho-image



Plan

Figure 30: Projected elements of the Great Tower

Appendices

Appendix A: Context descriptions

Trench 1	Dimensions:	15 x 10 m						
	Orientation:	NE-SW						
	Reason for trench:	Investigate gatehouse						
Context	Description	Type	Interpretation	Dimensions (m)			Feature	Link
				Length	Width	Depth		
1001	Dark brown silty sand with sparse small stones	Layer	Topsoil	14	12	0.50	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1001
1002	Pink sand with small sandstone inclusions	Layer	Layer formed by wind/rain washed down from destruction layer	N/A	N/A	0.20	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1002
1003	Structural wall - finely tooled ashlar stone, with random core of sandstone and limestone	Masonry	West wall of drawbridge pit	<2.40	<1.20	0.70	F101	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1003
1004	Structural wall- very fine sandstone ashlar	Masonry	North wall of drawbridge pit	<3.60	1.50	040 - 0.75	F101	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1004
1005	Masonry block, or roughly worked sandstone	Masonry	Victorian block of stone potentially supporting a victorian path over drawbridge	0.70	0.50	0.40 - 0.60	F102	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1005
1006	Masonry, small sandstone blocks bound with cement	Masonry	Victorian support for path	0.55	0.50	0.20-<0.55	F102	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1006
1007	Structural wall - very fine sandstone ashlar	Masonry	East wall of drawbridge pit	<2.50	2.50	0.10-<0.46	F101	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1007
1009	Brown, sandy loam with fragments of sandstone, charcoal and limestone.	Fill	Victorian landscaping	2.45	2.20	<0.50	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1009
1010	Loose dirty pale brown, sandy loam. Many fragments of small sandstone with some large pieces of sandstone	Fill	Material from destruction of tower (?), circa 1650's	2.45	2.20	0.40	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1010
1011	Structural wall - two courses of sandstone ashlar	Masonry	Defensive wall - may be foundation of drum tower	1.60	0.60	0.50 - 0.70	F108	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1011
1012	Circular posthole not excavated	Cut	Posthole possibly associated with postholes [1014] and [1022].	0.50	N/A	N/A	F105	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1012
1013	Mottled pale and mid brown, sandy loam, with sandstone fragments pebbles with mortar fragments	Fill	Fill of posthole [1012]	0.50	N/A	N/A	F105	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1013
1014	Sub circular post hole not excavated	Cut	Late 19th century post hole or later. Associated with post holes [1022] and [1012].	0.65	0.55	N/A	F103	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1014
1015	Mid brown, sandy loam with fragments and small pieces of sandstone	Fill	Fill of unexcavated posthole [1014]	0.65	0.55	N/A	F103	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1015
1016	Sub circular shallow pit with a shallow dish base	Cut	Shallow pit with a late feature cut into the top of the wall foundation	1	0.80	0.30	F104	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1016
1017	Light yellow grey/ red, silty sand with sandstone fragments and small pieces	Fill	Fill of late (post 1650's) posthole [1016]	1	0.80	0.30	F104	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1017
1018	Masonry wall - very rounded chambered sandstone	Masonry	Probable Civil War modification to gatehouse defences	<1.40	<0.90	0.90-1.10	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1018
1019	Mid-light reddish brown, sandy loam	Layer	Victorian landscaping	2.45	2.10	<0.50	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1019

Trench 1	Dimensions:	15 x 10 m						
	Orientation:	NE-SW						
	Reason for trench:	Investigate gatehouse						
				Dimensions (m)				
Context	Description	Type	Interpretation	Length	Width	Depth	Feature	Link
1020	Linear masonry wall	Masonry	Victorian reconstructed wall	<5.00	<2.50	0.70	F117	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1020
1021	Pale dirty yellow sand with some decayed mortar, stone pieces and fragments	Fill	Possible Victorian rubble fill around reconstructed walls	<3.80	<2.05	0.70	F117	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1021
1022	Sub circular/ irregular rectangle posthole not excavated	Cut	Posthole, may be associated with postholes [1012] and [1014]	0.50	0.45	N/A	F107	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1022
1023	Mid brown, sandy loam with fragments of small pieces of sandstone and flecks of charcoal	Fill	Fill of posthole [1022] not excavated	0.50	0.45	N/A	F107	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1023
1024	Straight linear gully not excavated	Cut	Drainage channel	1.50	0.25-0.35	0.16	F115	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1024
1025	Light-mid brown sandy loam with fragments and pieces of sandstone and flecks of charcoal	Fill	Silted filled of drainage channel	0.30	0.20	0.16	F115	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1025
1026	Small sub-oval posthole not excavated	Cut	Posthole	0.30	0.20	N/A	F106	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1026
1027	Mid-dark brown sandy loam, with infrequent fragments and small pieces of sandstone	Fill	Fill of posthole [1026] not excavated	0.30	0.20	N/A	F106	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1027
1028	Former ground level, mid greyish brown silty sand	Layer	Victorian landscaping	N/A	N/A	0.40	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1028
1029	Destruction layer next to round tower, pinkish brown, silty sand with building debris and sandstone fragments and mortar	Layer	Layer formed during destruction of former tower flanking the drawbridge	N/A	N/A	0.60	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1029
1030	Natural bedrock, pale dirty yellow sandstone and the base is a reddish purple sandstone.	Layer	Bedrock on where barbican walls stand. The south-east, although not excavated, is likely to be the barbican ditch cut into the natural rock	N/A	N/A	N/A	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1030
1031	Fill of tower chamber, mid pinkish brown sandy loam with fragments of sandstone, limestone and charcoal	Fill	Upper fill of inner chamber of circular tower 1011, unexcavated but defined in plan	1.80	0.40	N/A	F108	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1031
1032	Fill of beam slot, loose dark brown silty sand, coal with large sandstone fragments of small, medium, large stones coal and charcoal flecks	Fill	Beam slot dug into natural sandstone filled with Victorian deposit possibly to level off for steps	1.42	0.36	0.42	F109	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1032
1033	Rectangular cut of beam slot with rounded corners orientated east-west, with sharp breaks of slope, vertical sides and a flat base	Cut	Beam slot dug into natural sandstone filled with Victorian deposit possibly to level off for steps	1.42	0.36	0.42	F109	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1033
1034	Loose yellow sand	Layer	Victorian levelling deposit to support Victorian steps	N/A	N/A	0.32	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1034
1035	Sub-circular pit with vertical sides, sharp breaks of slope and a flat base	Cut	Modern pit	1.35	1.22	0.20	F114	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1035
1036	Loose, mixed dark brown and brownish yellow sandy silt with frequent degraded sandstone pieces and occasional charcoal fragments	Layer	Victorian made ground	N/A	N/A	0.25	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1036
1037	Irregular cut with sharp break of slope, steep sides, and a flat(ish) base	Cut	Modern pit	<1.80	1.65	0.40	F113	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1037

Trench 1	Dimensions:	15 x 10 m						
	Orientation:	NE-SW						
	Reason for trench:	Investigate gatehouse						
				Dimensions (m)				
Context	Description	Type	Interpretation	Length	Width	Depth	Feature	Link
1038	Soft brown sand with occasional charcoal flecks and small pieces of sandstone	Layer	19th Century landscaping layer below (1009)	N/A	N/A	0.30	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1038
1039	Fairly loose, dark greyish brown silty sand with fragments of small, medium and large stones, charcoal flacks and concrete fragments	Fill	Fill of modern pit [1035]	1.25	1.22	0.20	F114	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1039
1040	Moderately compact, yellowish brown, silty sand, moderate small and medium stones, sandstone fragments, and charcoal flecks	Layer	Victorian made ground	N/A	N/A	0.15	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1040
1041	Loose, mid brownish yellow silty sand with frequent degraded sandstone pieces not excavated	Layer	Upper rubble layer below Victorian made ground	N/A	N/A	0.10	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1041
1042	Loose, light greyish brown, silty sand, with brick modern masonry fragments, small - medium stones and charcoal flecks	Fill	Fill of modern pit [1037]	<1.80	<1.65	0.40	F113	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1042
1043	Moderately compact, dark brown, sandy silt with frequent large sub-angular stones	Layer	Rubble layer within drawbridge pit	N/A	N/A	0.20	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1043
1044	Loose, light yellowish brown, silty sand, moderate small medium and large stones, sandstone fragments, and occasional charcoal flecks	Layer	Layer of sand in drawbridge pit	N/A	N/A	0.15	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1044
1045	Moderately loose, brown silty sand, with degraded pink sandstone, occasional sandstone fragments and charcoal flecks	Layer	Rubble layer within drawbridge pit	N/A	N/A	0.46	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1045
1046	Moderately loose, yellowy brown silty sand, with occasional sandstone fragments and charcoal flecks	Layer	Rubble layer within drawbridge pit	N/A	N/A	0.80	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1046
1047	Moderately compact, light yellow/light pink mottled fill of large degraded sandstone boulders in a matrix of silty sand with occasional roots and charcoal flecks	Layer	Victorian rubble fill to support masonry above [1005] and [1006]	N/A	N/A	1.05	F112	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1047
1048	Moderately compact, yellowish brown clayey sand with occasional sandstone pieces	Layer	Victorian made ground	N/A	N/A	0.15	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1048
1049	Rectangular with rounded corners in plan orientated east-west with vertical sides with sharp breaks of slope and a flat base	Cut	Cut of pit dug into drawbridge pit. Probably Victorian, maybe associated with the building of a path and plinth (1005) and (1006)	<1.25	1.00	1.20	F112	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1049
1050	Soft dark brown sandy silt with common charcoal inclusions and degraded sandstone	Layer	Silting layer in pit, 17th century	3.20	2.48	0.30	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1050
1051	Moderately compact, brownish yellow, silty sand, with small pieces of stone and occasional charcoal inclusions	Layer	Backfill of robber trench	4.65	0.45	0.62	F111	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1051
1052	Loose, pale yellowish brown, silty sand/ sand with large sandstone masonry fragments, small, medium and large stones, and occasional charcoal flecks	Layer	Rubble layer within drawbridge pit	5.60	2.48	1.10	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1052
1053	Compact, light yellow / buff, sand (probably very degraded sandstone)	Fill	Basal fill of Victorian pit, probably dug to support masonry 1005 and 1006.	<1.25	0.90	0.17	F112	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1053
1054	Straight linear cut with square corners, vertical sides and a flat base	Cut	Cut of Victorian robber trench, dug alongside the wall of the drawbridge pit	4.65	0.45	0.62	F111	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1054

Trench 1	Dimensions:	15 x 10 m						
	Orientation:	NE-SW						
	Reason for trench:	Investigate gatehouse						
				Dimensions (m)				
Context	Description	Type	Interpretation	Length	Width	Depth	Feature	Link
1055	Moderately compact, greyish brown, silty sand, with charcoal flecks, small, medium and large stones inclusions	Layer	Layer of silty sand within the drawbridge pit	4.55	2.48	0.30	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1055
1056	Moderately loose, black/very dark grey, coal	Layer	Lens of coal in between two silty sand deposits, possibly just a small dump	1.14	0.62	0.14	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1056
1058	Fairly compact friable, dark brown, silty clay, with occasional small stones and charcoal flecks	Fill	Silting layer within drawbridge pit, 17th century	4.21	2.48	0.44	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1058
1059	Soft, yellowy brown, sandy silt, with occasional small to medium stones and charcoal flecks	Fill	Silting layer in pit, 17th century	1.44	2.48	0.42	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1059
1060	Finley worked ashlar sandstone with mortar bonding, running east-west, bonded with 1003, 1007, 1072 and 1087	Masonry	South wall of drawbridge pit	2.92	0.55	<1.38	F101	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1060
1061	Loose, dark brown, sandy silt, with occasional stone	Layer	Thin layer of made ground	N/A	N/A	0.05	F101	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1061
1063	Loose, light brown, silty sand, with occasional small and medium sized stones, charcoal flecks, and roots	Layer	Late medieval silting layer in drawbridge pit	4.80	2.48	<0.55	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1063
1064	Moderately compact, bluey grey, silty clay, with occasional small medium and large stones, charcoal flecks, and roots	Layer	17th century silting layer in drawbridge pit	4.20	2.48	0.49	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1064
1065	Firm, dark reddish brown, sandy silt, with occasional degraded sandstone	Layer	Thin layer of made ground	2.00	1.30	0.05	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1065
1067	Compact friable, dark blueish grey, silty clay, with occasional small stones, and charcoal flecks	Fill	Clay deposit in the southern part of drawbridge pit	2.80	2.48	0.44	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1067
1068	Moderately compact, lenses of yellowy brown sand and blueish grey silty clay, with occasional charcoal flecks, and roots	Layer	Silting layer within drawbridge pit	3.88	2.48	0.31	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1068
1069	Compact friable, blueish grey, clay, with occasional small and medium stones and charcoal flecks	Layer	Silting layer within drawbridge pit	2.20	2.48	0.26	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1069
1070	Compact, blueish grey, silty clay	Layer	Silting layer within drawbridge pit	1.50	2.48	0.10	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1070
1071	Roughly worked ashlar sandstone	Masonry	Support natural bedrock	2.46	0.40	<0.58	F101	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1071
1072	Single sandstone block, bonded with wall 1060. Roughly worked, quite degraded. Flat on the top of the stone, the underside is worked into a curved shape	Masonry	Corbel/bracket supporting (presumably) a timber crossbeam or upright	0.40	0.24	0.28	F101 & F122	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1072
1073	Soft, light brown/ yellowish brown, silty sand with occasional degraded sandstone pieces	Layer	Silting layer within drawbridge pit	N/A	N/A	0.25	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1073
1074	Soft, bluish grey sandy clay with occasional sandstone flecks	Layer	Silting layer within drawbridge pit	N/A	N/A	0.40	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1074
1075	Loose, brown clayey sand with rare large sub-rounded/ sub angular stone pieces	Layer	Silting layer within drawbridge pit	N/A	N/A	0.30	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1075
1076	Loose, orange brown sand	Layer	Silting layer within drawbridge pit	N/A	N/A	0.46	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1076
1077	Moderately firm, dark brown, sandy silt, with occasional charcoal	Layer	Rubble layer within drawbridge pit	N/A	N/A	0.05	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1077

Trench 1	Dimensions:	15 x 10 m						
	Orientation:	NE-SW						
	Reason for trench:	Investigate gatehouse						
Context	Description	Type	Interpretation	Dimensions (m)			Feature	Link
				Length	Width	Depth		
1078	Very compact, mixed deposit of modern building, levelling and backfill, mainly yellow gravel, with common plastic inclusions including hazard tape and other modern waste	Layer	Modern levelling from temporary bridge a building work completed in the last 10 years	N/A	N/A	0.05	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1078
1079	Firm mid greyish brown sandy clay with frequent sandstone inclusions	Layer	Silting layer within drawbridge pit	N/A	N/A	0.20	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1079
1080	Friable mid yellowish brown sand with occasional charcoal flecks and small pieces of degraded sandstone	Layer	Silting layer within drawbridge pit	N/A	N/A	0.19	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1080
1082	Compact layer of small and medium sub-angular yellow sandstone pieces supported in a sand matrix	Layer	Rubble layer within drawbridge pit / burnt bedrock	N/A	N/A	0.38	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1082
1084	Moderately compact, yellow sand	Layer	Silting layer within drawbridge pit	N/A	N/A	0.32	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1084
1085	Moderately compact, dark greyish brown, clayey sand with a high organic content and occasional sub-angular sandstone inclusions and charcoal pieces	Layer	Silting layer within drawbridge pit	N/A	N/A	0.14	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1085
1086	Moderately compact, mid greyish brown, clayey sand, occasional charcoal pieces	Layer	Silting layer within drawbridge pit	N/A	N/A	0.09	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1086
1087	Single sandstone block, bonded with wall 1060. Roughly worked to be flat on the top of the stone, and the underside is worked into a curved shape	Masonry	Corbel/bracket supporting (presumably) a timber crossbeam or upright	0.45	0.20	0.28	F101 & F122	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1087
1088	Single sandstone block. Not bonded with or bonded to any other stones. Well worked ashlar block.	Masonry	Not bonded with drawbridge pit and sat on silting layers, possibly supporting a later timber structure	0.81	0.48	0.26	121	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1088
1089	Single sandstone block. Not bonded with or bonded to any other stones. Well worked ashlar block.	Masonry	Not bonded with drawbridge pit and sat on silting layers, possibly supporting a later timber structure	0.72	0.4	0.32	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1089
1090	Soft, mid brownish grey, sandy clay	Layer	Silting layer within drawbridge pit	N/A	N/A	0.08	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1090
1091	Moderately compact, mid yellowish brown, clayey sand, with occasional charcoal flecks and sandstone	Layer	Silting layer within drawbridge pit	N/A	N/A	0.11	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1091
1092	Large square well worked sandstone block, not bonded with or bonded to any other stones	Masonry	Not bonded with drawbridge pit and sat on silting layers, possibly supporting a later timer structure	0.56	0.45	0.29	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1092
1094	Moderately compact, light yellow, sand, with rare charcoal flecks	Layer	Silting layer within drawbridge pit	N/A	N/A	0.22	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1094
1095	Compact, greyish brown, clay, with occasional charcoal flecks and small very flecks of sandstone	Layer	Silting layer within drawbridge pit	N/A	N/A	0.07	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1085
1096	Compact layer of small and medium sub-angular yellow sandstone pieces supported in a pinkish sand matrix	Layer	Rubble layer within drawbridge pit	N/A	N/A	0.22	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1096
1097	Moderately compact, pinkish grey, clayey sand, with occasional sandstone and charcoal flecks	Layer	Silting layer within drawbridge pit	N/A	N/A	0.14	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1097
1098	Moderately loose, pinkish brown, clayey sand, with common charcoal flecks and very small sandstone pieces	Layer	Silting layer within drawbridge pit	N/A	N/A	0.30	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1098

Trench 1	Dimensions:	15 x 10 m						
	Orientation:	NE-SW						
	Reason for trench:	Investigate gatehouse						
				Dimensions (m)				
Context	Description	Type	Interpretation	Length	Width	Depth	Feature	Link
1099	Moderately compact, greyish brown, clayey sand, with occasional sub-angular sandstone pieces	Layer	Silting layer within drawbridge pit	N/A	N/A	0.21	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1099
1100	Compact, pinkish clayey sand, with occasional sandstone pieces and charcoal flecks	Layer	Rubble layer within drawbridge pit	N/A	N/A	0.08	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1100
1101	Moderately loose, small broken up pieces of yellow sandstone supported in a brown silty sand matrix	Layer	Rubble layer within drawbridge pit	N/A	N/A	0.15	N/A	https://www.digventures.com/pontefract-castle/ddt/cxt/PON_1101

Appendix B: Pottery catalogue

Table 1: Pottery catalogue

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1001	Blackware	4	19	4	BS	Hollow ware	Black glaze int & ext	C17th	Hard, fine dark red fabric		
1001	Bone China	1	10	1	Profile	Plate	Blue sprigged floral motif around the rim	C19th	Burnt & abraded		
1001	Bone China	1	9	1	Handle	Mug/jug	Lobate handle w/ a blue line on spine	M – LC19th			
1001	Bone China	1	4	1	Rim	U/ID	Relief moulded decoration ext	M – LC19th			
1001	Bone China	1	2	1	Rim	Cup/bowl	U/Dec	M – LC19th			
1001	Bone China	1	12	1	BS	Hollow ware	U/Dec	M – LC19th			
1001	Bone China	1	1	1	Footring base	Flatware	U/Dec	M – LC19th			
1001	Bone China	2	3	2	BS	Flatware	U/Dec	MC19th – EC20th			
1001	Bone China	1	2	1	Footring base	Flatware	U/Dec	MC19th – EC20th			
1001	Bone China	1	2	1	Fragment	U/ID	U/Dec	MC19th – EC20th	Moulded fragment		
1001	Brown Glazed Coarseware	1	15	1	BS	Hollow ware	Mottled brown glaze int & ext; rilled ext	C18th – EC19th			
1001	Brown Glazed Coarseware	1	7	1	BS	Bowl/pancheon	Black glaze int only	C18th – EC19th			
1001	Brown Salt Glazed Stoneware	1	1	1	BS	Hollow ware	Rouletted design ext	C19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1001	Cane Coloured ware	1	7	1	Footed base	Hollow ware	U/Dec	C19th			
1001	Colour Glazed ware	1	0.5	1	BS	Hollow ware	Dark brown glaze int & ext	C19th			
1001	Creamware	1	1	1	BS	Flatware	U/Dec	c.1740 – c.1820			
1001	Late Redware	1	2	1	BS	Dish/bowl	Clear glaze int	C18th			
1001	Porcelain	1	4	1	Rim?	Hollow ware	Black glaze on a dark porcelain body	MC19th – EC20th			
1001	Porcelain	1	2	1	BS	Hollow ware	Moulded fragment	MC19th – EC20th			
1001	Slip Banded CC ware	1	4	1	BS	Hollow ware	White slip lines ext	C19th			
1001	Sponged ware	1	8	1	BS	Hollow ware	Dark blue sponging ext	c.1830+			
1001	Stoneware	1	18	1	BS	Bottle	Pale green lead glaze	M – LC19th			
1001	Stoneware	3	15	3	BS	Hollow ware	Green lead glaze int & ext	M – LC19th			
1001	Stoneware	1	10	1	BS	Hollow ware	Brown salt glaze ext; grey glaze int	M – LC19th			
1001	Stoneware	1	70	1	Base	Flagon	Green glaze int	C19th			
1001	Stoneware	1	3	1	Rim	Bottle	Brown glaze band on rim	MC19th – EC20th			
1001	TP Pearlware	3	2	1	Rim/flake	Willow border	Willow border	c.1780 – c.1840	Internal flake		
1001	TP Whiteware	1	41	1	Footring base	Flatware	Asiatic Pheasants	M – LC19th			
1001	TP Whiteware	2	4	2	Rim	Plate	Willow border	M – LC19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1001	TP Whiteware	1	11	1	Footring base	Bowl	Black-printed design & illegible caption	M – LC19th			
1001	TP Whiteware	1	2	1	BS	Flatware?	U/ID flaked decoration	M – LC19th			
1001	TP Whiteware	1	10	1	Footed base	Mug	Multi-coloured lithograph; commemorative design	C20th	Text reads; '...ATE THE CORONATION OF …'		
1001	TP Whiteware	1	19	1	Rim	Mug/jug	Sepia printed scroll around ext; oak leaves, acorns & laths	M – LC19th			
1001	TP Whiteware	1	4	1	Footring base	Flatware	Albion?	M – LC19th			
1001	TP Whiteware	2	13	2	BS	Flatware	Asiatic Pheasants	M – LC19th			
1001	TP Whiteware	1	7	1	Rim	Plate	Willow border	M – LC19th			
1001	TP Whiteware	2	1	1	Rim/flake	Plate	Wild Rose?	M – LC19th			
1001	TP Whiteware	2	1	1	Flake	Flatware	U/ID TP design int	M – LC19th			
1001	TP Whiteware	1	1	1	Rim	Dish?	Geometric border int	M – LC19th			
1001	TP Whiteware	2	1	2	BS	Flatware	U/ID TP design int	M – LC19th			
1001	TP Whiteware	1	3	1	Footring base	Flatware	U/ID TP design int	M – LC19th			
1001	TP Whiteware	1	2	1	BS	Flatware	U/ID black printed design int	M – LC19th			
1001	TP Whiteware	2	0.5	2	Chip & flake	U/ID	U/ID TP design ext	M – LC19th			
1001	TP Whiteware	1	0.5	1	BS	Flatware	U/ID TP design int	M – LC19th			
1001	TP Whiteware	1	2	1	Footring base	Plate	Blue printed floral design int; odd mark on underside	M – LC19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1001	Unglazed Red Earthenware	1	1	1	BS	Hollow ware	U/Dec	MC19th – C20th			
1001	Unglazed Red Earthenware	1	105	1	Rim	Horticultural vessel	U/Dec	MC19th – EC20th	Rounded clubbed rim		
1001	Unglazed Red Earthenware	1	19	1	Rim	Horticultural vessel	U/Dec	MC19th – EC20th			
1001	Unglazed Red Earthenware	1	20	1	Rim	Horticultural vessel	U/Dec	MC19th – EC20th	Collared rim		
1001	Unglazed Red Earthenware	1	3	1	Base	Flowerpot	U/Dec	MC19th – EC20th	Perforated base		
1001	Unglazed Red Earthenware	2	52	2	Base	Flowerpot	U/Dec	MC19th – EC20th			
1001	Unglazed Red Earthenware	17	93	17	BS	Horticultural vessel	U/Dec	MC19th – EC20th			
1001	Unglazed Red Earthenware	1	70	1	Base	Horticultural vessel	U/Dec	MC19th – EC20th	Large, thick base in a coarse URE		
1001	Unglazed Red Earthenware	1	4	1	Rim	Flowerpot	U/Dec	MC19th – EC20th	Plain rim		
1001	Unglazed Red Earthenware	1	4	1	Rim	Flowerpot	U/Dec	MC19th – EC20th	Collared rim		
1001	Unglazed Red Earthenware	1	3	1	Rim	Flowerpot	U/Dec	MC19th – EC20th	Plain rim		
1001	Unglazed Red Earthenware	1	3	1	Rim	Flowerpot	U/Dec	MC19th – EC20th	Clubbed rim		
1001	Unglazed Red Earthenware	1	3	1	Rim/flake	Flowerpot	U/Dec	MC19th – EC20th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1001	Unglazed Red Earthenware	1	1	1	Rim	Flowerpot	U/Dec	MC19th – EC20th	Plain rim		
1001	Unglazed Red Earthenware	1	9	1	Base?	Horticultural vessel	U/Dec	MC19th – EC20th			
1001	Whiteware	1	3	1	BS	Flatware	U/Dec	M – LC19th			
1001	Whiteware	1	4	1	BS & handle	Mug/jug	U/Dec	M – LC19th			
1001	Whiteware	3	24	3	BS	Flatware	U/Dec	M – LC19th			
1001	Whiteware	3	2	3	BS	Hollow ware	U/Dec	M – LC19th			
1001	Whiteware	1	2	1	Recessed base	Hollow ware	U/Dec	M – LC19th			
1001	Whiteware?	2	55	2	Rim	Tureen lid	U/ID	MC19th – C20th	Very heavily burnt w/ clinker attached		
1001	Whiteware?	1	30	1	Rim	Bowl	U/ID	MC19th – C20th	Very heavily burnt w/ clinker attached		
1001	Whiteware?	1	24	1	BS	Hollow ware	U/ID	MC19th – C20th	Very heavily burnt w/ clinker attached		
1001	Yellow Glazed Coarseware	1	4	1	BS	Pancheon	White slip int under clear glaze int	LC18th – C19th	Fine red fabric		
1001	Yellow Glazed Coarseware type	1	12	1	BS	Dish	White slip int w/ dark streaky mottling	LC18th – C19th			
1001	Yellow ware	1	9	1	Rim	Bowl	Clear glaze on a white body	C16th – C17th	Everted rim w/ a shallow groove around the top of the rim		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Banded sponged ware	1	2	1	BS	Mug/jug	Pale blue sponging w/ incised lines ext	M – LC19th			
1009	Banded ware	1	5	1	BS/spout	Jug	Blue line on body	C19th			
1009	Banded ware	1	1	1	BS	Hollow ware	Red band ext	LC19th – EC20th			
1009	Banded ware	1	1	1	BS	Hollow ware	Thin overglaze green line ext	LC19th – EC20th			
1009	Biscuit-fired ware	1	5	1	Rim	Hollow ware	U/Dec	C19th	Unglazed biscuit-fired ware; see also tripod stilt (Table 2)		
1009	Biscuit-fired ware	1	2	1	Footed base	Hollow ware	U/Dec	C19th	Production waste; see also tripod stilt (Table 2)		
1009	Blackware	1	64	1	Rim & handle	Handled jar	Black glaze int & partially ext	C17th	Handle springs from everted rim; fine, dense dark red fabric		
1009	Blackware	1	75	1	BS	Hollow ware	Black glaze int & ext; rilled int & ext	C17th	Hard, fine dark red fabric		
1009	Blackware	1	20	1	BS	Hollow ware	Black glaze int & ext	C17th	Hard, fine dark red fabric		
1009	Blackware	15	28	15	BS	Hollow ware	Black glaze int & ext	C17th			
1009	Blackware	1	4	1	Rim/spout	Jug	Black glaze int & ext	C17th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Blackware	1	14	1	BS	Hollow ware	Black glaze int & ext	C17th	Hard, fine dark red fabric; narrow diameter vessel; form uncertain		
1009	Blackware	1	12	1	BS	Bottle/flagon	Dark brown glaze ext w/ fine yellow mottling	C17th	Hard, fine dark red fabric		
1009	Blackware	1	1	1	BS	Hollow ware	Black glaze int & ext; rilled profile	C17th	Hard, fine dark red fabric		
1009	Blackware type	1	21	1	Rim	Bowl	Dark brown glaze int & ext w/ darker mottling	C17th	Everted rim; fine dark red fabric		
1009	Blackware type	1	10	1	Rim	Bowl	Black glaze int & ext	LC17th – EC18th	Hard, fine dark red fabric w/ fine white rock frags up to 0.3mm		
1009	Blackware type	1	5	1	Rim	Bowl	Black glaze int & ext	LC17th – EC18th	Hard, fine dark red fabric w/ sparse white rock frags <0.3mm		
1009	Blackware type	1	1	1	Rim	Hollow ware	Black glaze int & ext	C17th	Hard, fine dark red fabric		
1009	Blackware type	1	12	1	BS	Hollow ware	Shiny black glaze int & ext	C17th	Hard, fine red fabric; not as dark as is typical		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Blue Banded ware	1	64	1	Profile	Bowl	Broad blue band ext	C19th	Round bowl; ring foot base; crazed & discoloured		
1009	Blue Banded ware	1	47	1	Base & body	Tazza	Blue band around body	M – LC19th	Splayed base w/ tazza-style body		
1009	Blue Banded ware	1	2	1	BS	Hollow ware	Blue band ext	C19th			
1009	Bone China	2	19	2	Rim & handle	Cup	Overglaze painted floral band below rim	LC19th – EC20th	Probably the same vessel		
1009	Bone China	5	30	1	Rim	Plate	Low relief moulded design around rim	MC19th – EC20th			
1009	Bone China	1	14	1	Ring foot base	Cup	U/Dec	LC19th – EC20th			
1009	Bone China	1	26	1	Ring foot base	Bowl	U/Dec	LC19th – EC20th			
1009	Bone China	1	12	1	Ring foot base	Bowl	U/Dec	LC19th – EC20th			
1009	Bone China	4	18	4	Rim	Saucer	Blue sprigged flower & vine motifs int	MC19th – EC20th			
1009	Bone China	1	12	1	Rim	Lid	U/Dec	LC19th – EC20th			
1009	Bone China	3	13	3	BS	Hollow ware	U/Dec	LC19th – EC20th			
1009	Bone China	1	2	1	Footring base	Plate	U/Dec	LC19th – EC20th			
1009	Bone China	1	6	1	Rim	Mug	Thin dark line around rim	LC19th – EC20th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Bone China	8	5	8	BS	U/ID	U/Dec	MC19th – EC20th			
1009	Bone China	1	1	1	Rim	Cup/mug	U/Dec	MC19th – EC20th			
1009	Bone China	1	0.5	1	BS	U/ID	Dark blue on one side	C19th			
1009	Bone China	1	8	1	BS	Flatware	Cream finish int & ext	M – LC19th			
1009	Bone China	9	40	9	Fragments	U/ID	U/Dec	C19th	Very heavily burnt w/ clinker/burnt waste attached		
1009	Brown Glazed Coarseware type	1	15	1	Rim	Dish	Black glaze int only	C18th			
1009	Brown Glazed Coarseware type	1	55	1	Rim	Bowl/pancheon	Black glaze int & over rim	C18th – EC19th	Hard fine red fabric		
1009	Brown Glazed Coarseware type	1	43	1	Base	Bowl	Black glaze int only	C18th – EC19th	Hard, dense dark red fabric		
1009	Brown Glazed Coarseware type	1	29	1	Handle	Jug/jar	Black glaze all over	C18th – EC19th	Pale buff-orange fabric w/ occ red grit		
1009	Brown Glazed Coarseware type	10	189	10	BS	Bowl/pancheon	Black glaze int only	C18th – C19th	Hard, fine red fabric		
1009	Brown Glazed Coarseware type	1	49	1	BS	Hollow ware	Thin, hard, matte brown glaze ext	C18th – C19th	A hard, fine, dense orange fabric w/ fine quartz & rock frags <0.3mm		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Brown Glazed Coarseware type	9	208	9	BS	Hollow ware	Dark brown glaze int & ext; mottling on some sherds	C18th – C19th	Some variation between fabrics; orange to red w/ varying quantities of quartz; may include Coarse Blackware		
1009	Brown Glazed Coarseware type	1	32	1	BS	Hollow ware	Thin, hard black glaze	C18th	Hard orange fabric w/ common fine quartz <0.4mm		
1009	Brown Glazed Coarseware type	1	15	1	BS	Hollow ware	Brown glaze int & ext; heavily flaked ext	C18th – C19th	Hard, fine dense orange fabric w/ a blocky fracture		
1009	Brown Glazed Coarseware type	1	11	1	BS	Hollow ware	Patchy brown glaze int; flaky brown glaze ext	C18th – EC19th	Fine orange fabric		
1009	Brown Glazed Coarseware type	2	5	2	BS	Hollow ware	Brown glaze ext	C18th	Fine orange fabrics		
1009	Brown Salt Glazed Stoneware	2	33	1	Base	Hollow ware	U/Dec	C19th			
1009	Brown Salt Glazed Stoneware	1	11	1	Footed base	Hollow ware	Pale brown salt glaze int & ext	C18th – EC19th	Recessed base w/ a rounded foot		
1009	Brown Salt Glazed Stoneware	1	4	1	BS	Hollow ware	Moulded ext surface	C19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Brown Salt Glazed Stoneware	1	1	1	Rim	Hollow ware	Pale brown salt glaze int & ext	C18th – C19th	Small rounded rim w/ slight overhang		
1009	Brown Salt Glazed Stoneware	1	7	1	BS	Hollow ware	Pale brown salt glaze int & ext	C18th	Could be earlier; ?German		
1009	Brown Salt Glazed Stoneware	2	4	2	BS	Hollow ware	U/Dec	MC19th – EC20th			
1009	Brown Salt Glazed Stoneware	1	0.5	1	BS	Hollow ware	U/Dec	C18th			
1009	Buff Sandy ware	1	6	1	Rim	Bowl?	Yellow to yellow green int & ext; ?splashed	C13th?	Clubbed everted rim w/a flat top; common quartz & sparse round red grit up to 0.3mm		
1009	Cane Coloured ware	1	18	1	Rim	Pie dish	U/Dec	C19th			
1009	Cane Coloured ware	1	60	1	Ring foot base	Bowl	U/Dec	C19th			
1009	Cane Coloured ware	1	5	1	Flat base	Dish	U/Dec	C19th			
1009	Cane Coloured ware	9	37	9	BS & flakes	Hollow ware	U/Dec	C19th			
1009	Cistercian type ware	9	80	9	BS	Hollow ware	Black glaze int & ext	c.1450 – c.1600	Could be Blackware (C17th)		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Cistercian ware	2	7	2	Handle	Cup/tyg	Black glaze all over	c.1450 – c.1600	Small rod handles; black glaze all over		
1009	Cistercian ware	1	13	1	BS & handle	Hollow ware	Black glaze int & ext	c.1450 – c.1600	Patchy black glaze int & ext; handle stump; fine red fabric		
1009	Coal Measures Purple ware	1	105	1	Rim & handle	Jug/cistern	Patchy brown mottled glaze ext	C15th – C16th	Strap handle; contact scar on rim		
1009	Coal Measures Purple ware	1	175	1	Neck & handle	Jug/cistern	Patchy purple glaze ext	C15th – C16th	Strap handle		
1009	Coal Measures Purple ware	1	27	1	BS	Hollow ware	Purple glaze ext	C15th – C16th			
1009	Coal Measures Purple ware type	1	50	1	Rod handle	Jug	Patchy dark green mottled glaze ext	C15th – C16th			
1009	Coal Measures type ware	1	8	1	BS	Hollow ware	Mottled brown glaze ext; dark green glaze int	C15th – C16th?	Streaky grey fabric w/ an orange ext margin; common quartz & black grit up to 1mm		
1009	Coal Measures Whiteware	1	16	1	BS	Hollow ware	Patchy green-brown mottled glaze int & ext	C14th – EC15th			
1009	Colour Glazed ware	13	458	1	Profile	Teapot	Brown int & ext w/ wide cream band around upper body	MC19th – EC20th	Lid fits this teapot		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Colour Glazed ware	23	564	1	Profile	Teapot	Mottled brown glaze w/ three cream bands ext	MC19th – EC20th			
1009	Colour Glazed ware	1	145	1	Complete	Teapot lid	Brown glaze	MC19th – EC20th			
1009	Colour Glazed ware	1	52	1	Spout	Teapot	Black glazed int & ext	MC19th – EC20th	Not part of the two teapot bodies		
1009	Creamware	1	11	1	Rim	Plate	Relief moulded border	c.1740 – c.1820	Flaked int & ext		
1009	Creamware	1	6	1	Footring base	Plate	U/Dec	c.1740 – c.1820			
1009	Creamware	1	4	1	Footring base	Plate	U/Dec	c.1740 – c.1820			
1009	Creamware	1	2	1	BS	Hollow ware	Rilled body	c.1740 – c.1820			
1009	Creamware	4	4	4	BS	Flatware	U/Dec	c.1740 – c.1820			
1009	Creamware	3	17	3	BS	Hollow ware	U/Dec	c.1740 – c.1820			
1009	Creamware?	1	2	1	U/ID	U/ID	Moulded w/ an orange line on rim	c.1740 – c.1820?			
1009	Edged ware	2	50	1	Rim	Bowl	Plain rim w/ blue feather-edge paint	C19th			
1009	Edged ware	1	14	1	Rim	Plate	Plain rim w/ blue feather-edge paint	C19th			
1009	Edged ware	2	15	2	Rim	Plate	Wavy rim w/ blue feather-edge paint	C19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Edged ware	2	23	2	Rim	Plate	Wavy rim w/ low-relief moulding & blue feather-edge paint	E – MC19th			
1009	Edged ware	1	14	1	Rim	Plate	Wavy rim w/ sharply moulded edge & blue feather-edge paint	LC18th - EC19th			
1009	Edged ware	1	10	1	Rim	Plate	Wavy rim w/ moulded 'grass' pattern & dark blue feather-edge paint	E – MC19th			
1009	Edged ware	1	13	1	Rim	Dish	Wavy edge w/ low relief moulding & blue feather-edge paint	LC18th – EC19th			
1009	Edged ware	1	8	1	Rim	Plate	Wavy rim w/ low relief moulding & blue feather-edge paint	E – MC19th			
1009	Edged ware	1	3	1	Rim	Plate	Wavy rim w/ dark blue feather-edge paint	C19th	Contact scar on rim		
1009	Frechen-Koln stoneware	1	2	1	BS	Hollow ware	Mottled brown salt glaze ext	LC14th – C16th			
1009	Green Glazed Sandy ware	1	22	1	Rim	Bowl	Pale green glaze int only	C`16th – C17th	A fine, even pale orange sandy fabric		
1009	Green Glazed Sandy ware	1	51	1	Rim	Pancheon	Finely mottled greenish glaze int	C15th – C16th	Heavy round clubbed rim		
1009	Green Glazed Sandy ware type	1	5	1	BS	Hollow ware	Green glaze int & ext	C15th – C16th	Hard, fine red sandy fabric		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Greyware	1	8	1	BS	Hollow ware	U/Dec	Roman?	A fine even sandy fabric		
1009	Humberware	1	89	1	Strap handle	Jug/cistern	Patchy green glaze ext & upper surface of handle	LC13th – C15th	Finger impression internally		
1009	Humberware	1	46	1	Strap handle	Jug	Patchy green glaze on upper surface	LC13th – C15th	Fine Humberware		
1009	Humberware	1	8	1	Base	Hollow ware	Patch of glaze on underside	LC13th – EC15th	Reduced throughout		
1009	Humberware	1	11	1	Rim	Jug	U/Dec	LC13th – EC15th	Small clubbed, slightly inturned rim		
1009	Humberware	6	35	6	BS	Hollow ware	Spots of glaze on one sherd	LC13th – EC15th			
1009	Humberware type	1	31	1	BS	Hollow ware	Thin streaky overfired purple glaze ext	C14th – C15th	Slightly sandier than typical Humberware		
1009	Humberware type	1	5	1	BS	Hollow ware	U/Dec	LC13th – C15th	A fine Humberware fabric		
1009	Late Blackware	1	21	1	Footed base	Cup/bowl	Black glaze int	C18th	Hard, fine, dense red fabric		
1009	Late Blackware	1	47	1	Flat base	Hollow ware	Black glaze int & ext above base	C18th	Trickles of glaze indicate that the vessel was fired right-way up		
1009	Late Blackware	2	36	2	BS	Hollow ware	Black glaze int & partially ext	C18th	Fine hard, dense red fabric		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Late Blackware	3	27	3	Footed base	Mug/tyg	Black glaze int	C18th	Hard, fine red fabric		
1009	Late Blackware type	7	14	7	BS	Hollow ware	Black glaze int & ext	C18th	Some variation in fabrics; pale orange to dark red		
1009	Late Blackware type	1	3	1	BS	Hollow ware	Dark brown glaze ext, thin patchy brown glaze int	C18th	Could be Blackware		
1009	Late Blackware type	2	5	2	BS	Hollow ware	Black glaze int & ext	C18th	Fine red fabric		
1009	Late Blackware type	1	0.5	1	BS	Hollow ware	Black glaze ext only	C18th	Fine buff fabric		
1009	Late Medieval Gritty ware	1	34	1	BS	Hollow ware	U/Dec	Late Medieval	Hard, dense reduced fabric		
1009	Late Medieval Sandy ware	1	2	1	BS	Hollow ware	Mottled yellow-brown glaze ext	Late Medieval	Hard, pale grey sandy fabric w/ abundant sub-angular quartz up to 1mm		
1009	Late Medieval Sandy ware	1	31	1	BS	Hollow ware	Thin discoloured & flaky glaze int & ext	C14th – C15th	Hard, dense pale grey to orange fabric w/ common, poorly sorted quartz up to 1mm, mainly finer		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Late Redware	1	84	1	BS	Dish/pancheon	Clear glaze int only	C18th – C19th	Orange fabric w/ fine red & white grit		
1009	Late Redware	1	42	1	BS	Dish/pancheon	Clear glaze int only	C18th – C19th	Dark orange fabric w/ abundant fine quartz & red grit		
1009	Late Redware	1	19	1	Rim	Hollow ware	Partial clear glaze int & on rim; red slip int & ext	C18th – EC19th	Sub-triangular clubbed rim		
1009	Midlands Purple type ware	1	2	1	BS	Hollow ware	Purple-brown glaze ext	C17th	Dark red to grey fabric w/ common fine quartz up to 0.5mm; not as dense as typical Midlands Purple ware		
1009	Midlands Purple type ware	1	16	1	BS	Hollow ware	Patchy, streaky purple glaze int & ext	C15th – C16th	Hard, dense, semi-vitrified fabric w/ abundant quartz <0.5mm		
1009	Mocha ware	1	8	1	BS	Hollow ware	Blue Mocha tree on a white band above a blue line	C19th	Cane coloured body		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Mocha ware	2	7	2	Rim	Bowl	Two black lines below rim above a very dark Mocha pattern	C19th	White body		
1009	Mottled Creamware	1	8	1	Lid	Teapot	Green-purple mottling on top of lid	c.1740 – c.1820			
1009	Mottled Creamware	1	2	1	BS	U/ID	Yellow-brown and green mottling on one side	c.1740 – c.1820			
1009	Mottled ware	2	9	2	BS	Mug/tankard	Rilled band ext; mottled glaze int & ext	C18th			
1009	Mottled ware	1	5	1	Base	Mug/tankard	Unglazed rilled band around rim	C18th			
1009	Mottled ware	1	7	1	Footed base	Bowl	Mottled glaze int & ext	C18th			
1009	Mottled ware	2	10	2	BS	Hollow ware	Mottled glaze int & ext	C18th			
1009	Mottled ware	1	10	1	BS & handle	Mug/tankard	Mottled glaze int & ext	C18th			
1009	Mottled ware	1	1	1	BS	Hollow ware	Dark mottled glaze int & ex6t	C18th	Fine red fabric; may be part of a small pot disc; diameter 16.8mm		
1009	Mottled ware?	1	5	1	Base	Hollow ware	Dark brown mottled glaze int	C18th	Hard, fine buff-white fabric		
1009	Oxidised Gritty ware	2	5	2	BS	Hollow ware	U/Dec	C12th – C13th	A hard orange fabric w/ common, poorly sorted quartz up to 1mm		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Pearlware	1	4	1	Recessed base	Plate	U/Dec	c.1780 – c.1840			
1009	Redware	6	60	6	BS	Bowl	Flaky clear glaze on an orange body; red slip ext	C17th – EC19th			
1009	Redware	1	15	1	BS	Hollow ware	Clear glaze ext on a red fabric	C17th – EC18th	Fine bright orange sandy fabric w/ fine quartz		
1009	Redware	1	46	1	BS	Dish	Clear glaze int; red slip ext	C17th – EC18th			
1009	Redware	1	6	1	Rim	Bowl	Clear glaze int only	C17th – EC18th	Fine soft orange fabric		
1009	Relief Banded ware	1	10	1	BS	Hollow ware	Raised bands ext	M – LC19th			
1009	Slip Banded CC ware	1	15	1	BS	Hollow ware	Multiple thin white slip lines ext	C19th			
1009	Slip Banded CC ware	1	5	1	Rim	Hollow ware	Multiple thin white slip lines ext	C19th	Slightly everted rim		
1009	Slip Banded CC ware	1	7	1	BS	Hollow ware	Multiple thin white slip lines ext	C19th	Very pale cane coloured body		
1009	Slip Banded CC ware	1	1	1	Handle	Mug	U/Dec	C19th			
1009	Slip Banded CC ware	2	3	2	BS	Hollow ware	Pale blue painted line ext	C19th			
1009	Slip Banded CC ware	1	9	1	BS	Hollow ware	Pale blue painted line w/ a thin white slip line ext	C19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Slip Banded CC ware	1	9	1	Rim	Bowl	Brown and white slip lines ext	C19th	Plain rim		
1009	Slip Banded CC ware	1	1	1	BS	Hollow ware	White slip lines ext	C19th			
1009	Slip Banded CC ware	2	19	1	Rim	Bowl	Pale blue painted band above multiple white slip lines ext	C19th	Plain rim		
1009	Slip Banded CC ware	1	16	1	BS	Hollow ware	Two brown slip lines above a white band ext	C19th			
1009	Slip Banded CC ware	1	2	1	Rim	Bowl	Irregular brown line above white slip lines ext	C19th	Plain rim		
1009	Slip Banded CC ware	1	1	1	Base	Hollow ware	Brown slip line ext	C19th			
1009	Slip Banded CC ware	1	0.5	1	BS	Hollow ware	White slip line ext	C19th			
1009	Slip Coated ware	1	14	1	BS	Hollow ware	Red slip ext; clear glaze int & ext	C18th	Fine light buff fabric		
1009	Slip Coated ware	1	12	1	BS	Hollow ware	Red slip int under glaze; unglazed ext w/ traces of red slip	C18th	Fine light buff fabric		
1009	Slip Coated ware	1	31	1	Flat base	Dish/bowl	Partial white slip int under clear glaze; mottled effect	C18th	Fine red fabric w/ sparse quartz & red grit		
1009	Slip Coated ware	1	1	1	BS	Hollow ware	Thin red slip under dark glaze int & ext	C18th	Fine buff-white fabric		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Slipware	1	37	1	Rim	Dish	Pie crust rim; white slip int w/ lobate orange slip design int	C18th	Press-moulded dish; fine buff sandy fabric w/ fine red grit		
1009	Slipware	2	5	1	BS	Hollow ware	White slip band ext w/ incised 'S' motifs; glazed int & ext	C18th	Fine bright orange fabric		
1009	Slipware	1	9	1	BS	Dish	Black, red-brown & white linear feathered slip int	C18th	Press-moulded dish; fine red fabric w/ white streaks		
1009	Slipware	1	6	1	BS	Dish	White slip int w/ thin brown lines int	C18th	Fine red fabric		
1009	Slipware	1	6	1	BS	Dish	Red & white slip int under clear glaze	C18th	Press-moulded dish; fine red fabric		
1009	Slipware	1	5	1	BS	Hollow ware	Thin white slip line ext	C18th	Fine red fabric		
1009	Slipware	1	3	1	BS	Dish?	White on red-brown slip int; diffuse brown lines; glaze int & ext	C18th	Fine, hard dense white fabric w/ fine red & white grit		
1009	Slipware	1	2	1	Rim	Hollow ware	Thin red slip ext w/ white blobs	C18th	Fine buff fabric w/ fine red grit		
1009	Slipware	1	0.5	1	BS	Hollow ware	Thin red slip lines on one side	C18th			
1009	Slipware type	1	30	1	Dish/bowl	Dish	Partial white slip int; heavily chipped & flaked	C18th?	Very fine buff fabric; odd sherd		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Slipware type 1	1	18	1	Rim	Bowl	Wavy white slip line int; spots of white glaze on rim	C17th – EC18th	Deep bowl; narrow everted rim		
1009	Slipware type 1	1	17	1	Rim	Dish	Zig-zag white slip line inside rim; thin red slip ext	C17th – EC18th	Wide shallow rim w/ clubbed lip		
1009	Slipware type 1	1	35	1	Rim	Dish	Trailed white slip zig-zag line inside rim; thin red slip	C17th – EC18th	Wide, dished rim w/ prominent ridge int; harder fabric than typical		
1009	Slipware type 1	3	11	3	BS	Dish	Traces of white slip lines int	C17th – EC18th	Chipped & flaked		
1009	Sponge-printed ware	1	7	1	BS	Plate	Blue printed floral design int	c.1840+			
1009	Sponged ware	1	4	1	Rim	Saucer	Dark blue sponging int	c.1830+			
1009	Sponged ware	1	5	1	BS	Hollow ware	Blue sponging ext	c.1830+			
1009	Sponged ware	2	4	2	BS	Flatware?	Blue sponging int	c.1830+			
1009	Sponged ware	1	0.5	1	BS	Flatware	Blue sponging int	c.1830+			
1009	Stamford type ware	1	2	1	BS	Hollow ware	Bright green mottled splashed glaze ext	C11th – C12th	Fine white fabric		
1009	Stoneware	1	165	1	Base	Bottle	Green glaze int & ext; iron mottling around base	MC19th – EC20th			
1009	Stoneware	1	63	1	Base	Bottle	Green glaze int & ext; iron mottling around base	MC19th – EC20th	A very thick base		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Stoneware	1	14	1	Rim	Jam jar	Pale green glaze int & ext; wide-spaced fluting	MC19th – EC20th			
1009	Stoneware	1	19	1	BS	Jam jar	Pale green glaze int & ext; wide-spaced fluting	MC19th – EC20th			
1009	Stoneware	2	56	2	BS	Bottle	Green glaze int & ext	MC19th – EC20th			
1009	Stoneware	1	28	1	BS	Bottle	Green glaze int & ext; part of an iron-wash band ext	MC19th – EC20th			
1009	Stoneware	1	30	1	BS	Bottle/flagon	Green glaze ext w/ an iron-wash band on shoulder	MC19th – EC20th			
1009	Stoneware	1	33	1	BS/Shoulder	Bottle/flagon	Pale grey glaze int & ext	MC19th – EC20th			
1009	Stoneware	1	15	1	BS/shoulder	Bottle/flagon	Pale brown iron-wash band w/ a deep groove	MC19th – EC20th			
1009	Stoneware	1	29	1	Rim & shoulder	Bottle	Matte green salt glaze ext	MC19th – EC20th			
1009	Stoneware	5	15	5	BS	Hollow ware	Green glazed stoneware	MC19th – EC20th			
1009	Stoneware	1	32	1	BS/Shoulder	Hollow ware	Pale brown salt glaze int & ext; groove on shoulder	C19th – EC20th			
1009	Stoneware	2	10	2	BS	Hollow ware	Off-white stoneware	MC19th – EC20th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Stoneware	1	7	1	BS	Hollow ware	Iron-wash band ext	MC19th – EC20th			
1009	Stoneware	1	6	1	BS	Jam jar	Widely spaced fluting ext	MC19th – EC20th			
1009	Stoneware	1	3	1	BS	Jam jar	Fluted ext	MC19th – EC20th			
1009	Stoneware	1	1	1	BS	Hollow ware	Pale green glaze	MC19th – EC20th			
1009	Stoneware	1	5	1	BS & handle	Hollow ware	Pale green lead glaze int & ext	Post-medieval	A small rod handle; unusual form and unidentified fabric		
1009	Stoneware	1	18	1	Handle	Jug	Relief moulded oval handle	C19th			
1009	Stoneware	3	3	2	BS	Flatware	U/Dec	M – LC19th	Fresh break; buff stoneware		
1009	Tin Glazed Earthenware	2	2	2	BS	Flatware	U/ID pale blue design int	MC16th – MC18th			
1009	Tin Glazed Earthenware	2	9	2	BS	Flatware	White tin glaze int & ext	MC16th – MC18th	Severely flaked		
1009	TP Bone China	2	4	2	Rim	Saucer	Chinese style border	LC19th – EC20th			
1009	TP Bone China	1	9	1	Ring foot base	Cup	Diffuse blue pattern ext; floral pattern int	M – LC19th			
1009	TP Bone China	1	1	1	BS	Hollow ware	Grey printed design ext	M – LC19th			
1009	TP Bone China	1	5	1	BS	Plate	Chinese style border	M – LC19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	TP Pearlware	1	18	1	Recessed base	Mug	U/ID TP design ext	c.1780 – c.1840	Angular recessed base; cylindrical mug		
1009	TP Porcelain	1	8	1	Recessed base	Mug/jar	Chinese landscape ext	MC19th – EC20th			
1009	TP Whiteware	1	12	1	Rim	Plate	Albion	M – LC19th	Large plate or possibly a carver/server		
1009	TP Whiteware	1	15	1	Flat base	Dish	Albion	M – LC19th			
1009	TP Whiteware	1	19	1	Base	Carver/server	Asiatic Pheasants	M – LC19th			
1009	TP Whiteware	1	54	1	Handle	Jug	Floral design on spine	M – LC19th			
1009	TP Whiteware	1	43	1	Rim	Chamber pot	Floral/geometric pattern around rim; rural scene ext	M – LC19th			
1009	TP Whiteware	1	16	1	Double footring base	Plate	Stylised scroll around rim; floral/landscape int	MC19th – EC20th			
1009	TP Whiteware	1	43	1	Rim & handle	Mug	Stylised Chinese landscape ext; geometric border inside rim	MC19th – EC20th			
1009	TP Whiteware	1	7	1	BS	Hollow ware	Wavy rim; stylised landscape w/ 'banana trees'	M – LC19th			
1009	TP Whiteware	1	8	1	Rim	Bowl	Two Temples	M – LC19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	TP Whiteware	1	4	1	Rim	Cup	Stylised geometric/curvilinear border int & ext; blurred	M – LC19th	Small angular handle		
1009	TP Whiteware	1	3	1	BS	Carinated bowl	Two Temples	M – LC19th			
1009	TP Whiteware	1	9	1	Beaded base	Hollow ware	U/ID TP design ext	M – LC19th	Some bleeding of blue into white glaze		
1009	TP Whiteware	1	5	1	BS/spout	Jug	Floral designs int & ext	M – LC19th			
1009	TP Whiteware	1	3	1	BS	Hollow ware	Parallel blue lines (?chevrons) ext	M – LC19th	Crazed & discoloured		
1009	TP Whiteware	1	5	1	Rim	Plate	Geometric border	M – LC19th	Contact scar on rim		
1009	TP Whiteware	1	4	1	Rim	Hollow ware	Diffuse blue geometric / floral design inside rim	M – LC19th			
1009	TP Whiteware	1	3	1	Rim	Cup/bowl	Stylised floral pattern on pointilliste background int & ext	M – LC19th			
1009	TP Whiteware	1	3	1	BS	Hollow ware	Red printed designs int & ext	M – LC19th			
1009	TP Whiteware	1	5	1	BS	Plate	U/ID diffuse printed design int	M – LC19th			
1009	TP Whiteware	1	3	1	Rim	Bowl	U/ID geometric border design; flaked	M – LC19th			
1009	TP Whiteware	1	1	1	Rim	Hollow ware	U/ID TP design int	M – LC19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	TP Whiteware	1	2	1	BS	Hollow ware	U/ID TP design ext; heavily flaked	M – LC19th			
1009	TP Whiteware	1	4	1	BS	Plate	U/ID TP border	M – LC19th			
1009	TP Whiteware	1	4	1	BS	Flatware	Stylised dendritic/snowflake design int & ext	M – LC19th			
1009	TP Whiteware	1	4	1	Rim	Flatware	Stylised geometric design int & ext	M – LC19th			
1009	TP Whiteware	1	3	1	BS & handle stump	Cup	U/ID scroll pattern int & ext	M – LC19th			
1009	TP Whiteware	1	2	1	BS	Hollow ware	Stylised building design ext	M – LC19th			
1009	TP Whiteware	1	1	1	BS	Hollow ware	Thin intersecting blue lines ext	M – LC19th			
1009	TP Whiteware	2	2	2	BS	Flatware	U/ID TP design int	M – LC19th			
1009	TP Whiteware	1	13	1	BS	Flatware	U/Dec	M – LC19th			
1009	TP Whiteware	1	16	1	Flat base	Carver/server	Willow int & ext	M – LC19th			
1009	TP Whiteware	4	38	4	Rim	Plate	Willow	M – LC19th			
1009	TP Whiteware	1	6	1	Footring base	Plate	Willow (flaked int)	M – LC19th	Part of maker's mark on underside; 'IRON ST[ONE CHINA]		
1009	TP Whiteware	4	3	4	BS/Flakes	Flatware	Willow	M – LC19th			
1009	TP Whiteware	3	1	3	BS	Flatware	U/ID TP design int	M – LC19th			
1009	TP Whiteware	1	2	1	BS	Flatware	Willow?	M – LC19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	TP Whiteware	1	1	1	BS	Flatware	U/ID TP design int	M – LC19th	Heavily burnt fragment		
1009	Unglazed Red Earthenware	2	112	2	Base	Flowerpot	U/Dec	MC19th – EC20th	Perforated bases		
1009	Unglazed Red Earthenware	2	48	2	Base	Flowerpot	U/Dec	MC19th – EC20th			
1009	Unglazed Red Earthenware	1	28	1	Rim	Flowerpot	U/Dec	MC19th – EC20th	Deep collared rim		
1009	Unglazed Red Earthenware	10	72	10	BS	Flowerpot	U/Dec	MC19th – EC20th			
1009	Unglazed Red Earthenware	4	28	2	BS	Flowerpot	U/Dec	MC19th – EC20th			
1009	Unglazed Red Earthenware	1	13	1	BS/Rim	Flowerpot	U/Dec	MC19th – EC20th	Part of deep collared rim; rim missing		
1009	Unglazed Red Earthenware	1	14	1	Rim	Flowerpot	U/Dec	MC19th – EC20th	Narrow collared rim		
1009	Unglazed Red Earthenware	1	4	1	Rim	Flowerpot	U/Dec	MC19th – EC20th	Plain rim		
1009	Unglazed Red Earthenware	1	9	1	Rim	Dish	U/Dec	MC19th – EC20th	Shallow dish or tray		
1009	Unglazed Red Earthenware	1	4	1	Rim	Flowerpot	U/Dec	MC19th – EC20th			
1009	Unidentified	2	3	2	Fragments	U/ID	U/Dec	Undated	Very heavily burnt w/ clinker attached		
1009	White Salt Glazed Stoneware	5	5	5	BS	Flatware	U/Dec	c.1720 – c.1780			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Whiteware	1	44	1	Profile	Small jar	U/Dec	M – LC19th	Small jar w/ a footed base & lid-seated rim		
1009	Whiteware	3	23	2	Rim & BS	Mug	Hand-painted 'Samu …' w/ red & green stylised floral motifs	MC19th – EC20th			
1009	Whiteware	19	11	19	Flakes	Flatware	U/Dec	M – LC19th	May include Pearlware		
1009	Whiteware	1	14	1	Rim	Plate	U/Dec	M – LC19th			
1009	Whiteware	1	7	1	Handle	Jug	U/Dec	M – LC19th	Heavily flaked ext		
1009	Whiteware	1	13	1	Rim	Cup	Curved fluting ext; three gold lines around rim	LC19th – EC20th			
1009	Whiteware	1	18	1	Recessed base	Hollow ware	U/Dec	M – LC19th	Crazed surfaces		
1009	Whiteware	1	11	1	Footring base	Plate	U/Dec	M – LC19th			
1009	Whiteware	1	4	1	Footring base	Flatware	U/Dec	M – LC19th			
1009	Whiteware	4	15	4	BS	Flatware	U/Dec	M – LC19th			
1009	Whiteware	6	13	6	BS	Hollow ware	U/Dec	M – LC19th	Sherds from various vessels		
1009	Whiteware	11	19	11	BS	U/ID	U/Dec	M – LC19th			
1009	Whiteware	2	1	1	Rim	Flatware	Odd silver band int	M – LC19th			
1009	Whiteware	2	1	2	Rim	Hollow ware	U/Dec	M – LC19th			
1009	Whiteware	2	1	2	BS	Hollow ware	U/Dec	M – LC19th			
1009	Whiteware	1	9	1	Footed base	Hollow ware	Profiled splayed foot	M – LC19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Whiteware	2	9	2	BS	Flatware	U/Dec	M – LC19th	Heavily burnt & discoloured		
1009	Whiteware	1	6	1	Footring base	Flatware	U/Dec	M – LC19th	Heavily burnt & discoloured		
1009	Whiteware	1	2	1	Fragment	U/ID	U/Dec	M – LC19th	Spherical object?		
1009	Whiteware	3	35	3	Fragments	U/ID	U/Dec	C19th	Very heavily burnt w/ clinker/burnt waste attached		
1009	Whiteware?	5	34	4	Fragments	U/ID	U/Dec	C19th	Very heavily burnt w/ clinker/burnt waste attached		
1009	Yellow Glazed Coarseware	1	62	1	BS	Bowl/pancheon	White slip int	LC18th – C19th	Knife-trimmed ext		
1009	Yellow Glazed Coarseware	2	27	1	BS	Hollow ware	White slip int under clear glaze; patchy clear glaze ext	LC18th – C19th	Dark red fabric		
1009	Yellow Glazed Coarseware	1	26	1	BS	Hollow ware	White slip int under clear glaze; trickles of white slip ext	C19th	Hard fine red fabric		
1009	Yellow Glazed Coarseware	1	2	1	BS	Pancheon	White slip int under clear glaze	LC18th – C19th			
1009	Yellow Glazed Coarseware	1	3	1	BS	Dish	White slip int under clear glaze int; red slip ext	C18th – C19th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Yellow Glazed Coarseware	1	1	1	BS/Flake	U/ID	White slip int under clear glaze	C18th – C19th			
1009	Yellow Glazed Coarseware	1	51	1	Rim	Dish	Red slip ext; white slip int	C18th – EC19th	Distinctive wide, dished rim w/ clubbed lip; laminated fracture		
1009	Yellow Glazed Coarseware	1	12	1	BS	Dish	Streaky mottled white slip int	LC18th – C19th	Fine red fabric		
1009	Yellow ware	1	19	1	Flat base	Hollow ware	Thin clear glaze int & ext	LC15th – C17th	Hard, fine, dense white fabric w/ sparse white grit		
1009	Yellow ware	4	21	4	BS	Hollow ware	Thin clear glaze int & ext	LC15th – C17th	Hard, fine dense white fabric		
1009	Yorkshire Gritty ware type	1	8	1	BS	Hollow ware	U/Dec	LC11th – C13th	A buff gritty fabric w/ moderate quartz up to 1mm; sooted ext		
1009	Green Glazed Sandy ware	1	15	1	BS	Hollow ware	Dull green glaze ext	C15th – C16th	Sandier than Humberware		
1009	Humberware	2	8	2	BS	Hollow ware	Green glaze ext	C14th – C15th	Fine reduced fabric		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1009	Late Medieval Gritty ware	1	25	1	BS	Hollow ware	Thin patchy, partial green glaze ext	C14th – C15th	Hard, dense reduced fabric w/ a thin buff int margin; moderate quartz & vesicular black grit up to 1mm		
1009	Late Medieval Gritty ware	1	9	1	BS	Hollow ware	Pale green glaze ext over shallow grooves ext	C14th – C15th	Hard, grey fabric w/ common sub-angular quartz up to 1mm		
1034	Porcelain	1	2	1	Rim	Cup/bowl	Blue Chinese landscape style TP design ext	C19th – EC20th	Blue-white porcelain		
1034	Relief Banded ware	1	4	1	BS	Hollow ware	Raised band ext	MC19th – EC20th			
1034	Sponge-printed ware	1	7	1	BS	Hollow ware	Green line & blue sponge-stamped floral pattern ext	c.1840+			
1034	Sponged ware	1	0.5	1	BS	Hollow ware	Blue sponging ext	c.1830+			
1034	Stoneware	1	22	1	Rim	Jam jar	Wide grooves ext; groove below rim	MC19th – EC20th			
1034	Stoneware	1	7	1	Rim	Jam jar	Narrow fluting ext; groove below rim	MC19th – EC20th			
1034	Stoneware	1	12	1	BS	Jar	U/Dec	MC19th – EC20th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1034	Stoneware	1	12	1	BS	Hollow ware	U/Dec	MC19th – EC20th	Buff stoneware		
1034	TP Whiteware	1	2	1	BS	Flatware	Blue floral design int	MC19th – EC20th			
1034	Whiteware	1	10	1	Footring base	Hollow ware	U/Dec	MC19th – EC20th	Heavily burnt w/ industrial residue on surfaces		
1034	Whiteware	1	17	1	Splayed base	Mug/jug	U/Dec	MC19th – EC20th	Splayed, round foot		
1034	Whiteware	1	12	1	BS	Hollow ware	U/Dec	MC19th – EC20th			
1034	Whiteware	1	5	1	BS	Hollow ware	U/Dec	MC19th – EC20th			
1034	Whiteware	2	6	2	Footring base & BS	Plate	U/Dec	MC19th – EC20th	Heavily burnt & discoloured		
1034	Whiteware	1	2	1	Rim	Hollow ware	U/Dec	MC19th – EC20th			
1034	Whiteware	4	10	4	BS	Hollow ware	U/Dec	MC19th – EC20th			
1034	Whiteware	1	1	1	BS	Hollow ware	Thin red line ext	MC19th – EC20th			
1034	Yellow Glazed Coarseware	1	4	1	BS	Bowl/pancheon	White slip under clear glaze int	MC19th – EC20th	Fine pale orange fabric w/ fine quartz & sparse red grit		
1036	Cistercian ware	1	5	1	Handle	Cup/tyg	Black glaze all over	c.1450 – c.1600	Small rod handle		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1036	Coal Measures Whiteware type	1	46	1	BS	Hollow ware	Thin yellow-green glaze int & ext	C14th – C15th	White to pale grey fabric w/ abundant quartz & round red grit up to 1mm, mainly 0.5 – 1mm		
1038	Cistercian ware	1	15	1	Footed base	Cup/tyg	Applied linear white pipeclay pattern ext	c.1450 – MC16th	Hard fine red fabric; prominent square foot		
1038	Coal Measures Whiteware type	1	24	1	BS	Hollow ware	U/Dec	C14th – C15th	Buff to orange fabric w/ quartz & black grit up to 0.6mm		
1038	Early Brown Glazed Coarseware	1	67	1	Rim	Jar	App & thumbed band below round clubbed rim	LC17th – C18th	Hard fine red fabric w/ sparse red grit		
1038	Early Brown Glazed Coarseware	1	46	1	BS	Hollow ware	Mottled brown glaze int & ext w/ part of a thumb-impression	LC17th – C18th	Fine red fabric w/ sparse fine quartz grit		
1038	Humberware	1	21	1	BS	Hollow ware	Dark green glaze ext w/ shallow grooves ext	LC13th – C15th	Fine Humberware		
1038	Late Blackware	1	0.5	1	BS	Hollow ware	Black glaze int & ext	C18th	Fine red fabric		
1038	Late Humberware type	1	11	1	BS	Drinking jug?	Knife-trimmed ext	C14th – C15th	Hard, dense red fabric w/ fine muscovite		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1038	Midlands Purple type ware	1	7	1	Rim	Hollow ware	Black glaze int & ext; finger-impressed rim	MC15th – C17th			
1038	Redware	2	128	2	BS	Dish	Clear glaze int; thin buff-orange slip ext	C17th – EC18th	Fine pale buff-orange fabric		
1038	Redware	1	12	1	BS	Dish	Clear glaze int; thin red slip ext	C17th – EC18th	Fine orange fabric		
1038	Redware	1	32	1	BS	Dish	Red slip ext; buff slip int under clear glaze int	C17th – EC18th	Hard, fine bright orange fabric		
1038	Redware type	1	21	1	BS	Dish/bowl	Buff slip int under clear glaze; red slip ext	C17th – EC18th	Hard, dense red fabric		
1038	Slip Coated ware	1	8	1	BS	Hollow ware	Thin buff slip int & ext under clear glaze	C18th	A very hard, dense, semi-vitrified buff fabric, close to stoneware		
1038	Slipware	2	15	1	BS	Hollow ware	Brown on white feathered slip all-over ext; clear glaze int	C18th	Fine buff fabric		
1039	TP Bone China	1	3	1	BS	Saucer	Two Temples?	C19th			
1039	TP Whiteware	1	1	1	BS	Hollow ware	U/ID TP design ext	M – LC19th			
1039	Whiteware	1	4	1	BS	Flatware	U/Dec	M – LC19th	Burnt & discoloured		
1039	Yellow Glazed Coarseware	1	48	1	Base	Pancheon	White slip under clear glaze int; red slip ext	C18th – C19th	Use-wear on underside of base		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1039	Yellow Glazed Coarseware	1	6	1	Rim	Bowl	White slip int w/ red unslipped band inside rim	LC18th – C19th			
1040	Humberware	1	22	1	BS	Hollow ware	U/Dec	LC13th – C15th	Reduced int w/ oxidised ext margin		
1042	Blackware	1	12	1	BS	Hollow ware	Metallic black glaze ext & partially int	C17th	Hard fine dark red fabric		
1042	Brown Salt Glazed Stoneware	1	5	1	BS	Mug/tankard	Wide rilled band ext	C18th			
1042	Midlands Purple type ware	1	17	1	BS	Hollow ware	Black glaze int & ext; shallow grooves ext	C16th – C17th	Hard dark red fabric		
1043	Late Medieval Oxidised Sandy ware	1	9	1	BS	Hollow ware	U/Dec	C14th – C15th	A hard orange fabric w/ moderate quartz up to 1mm; coarser texture than Humberware		
1047	Early Brown Glazed Coarseware	2	12	2	BS	Hollow ware	Hard, thick purple-brown glaze int & ext	C17th – EC18th	A hard red fabric w/ thin white streaks & fine quartz <0.5mm		
1047	Late Blackware type	3	21	3	BS	Hollow ware	Black glaze int & ext	C18th	Slightly sandier than typical		
1048	Cistercian ware	1	5	1	BS	Cup/tyg	Black glaze int & ext	c.1450 – c.1600	Fine dark red fabric		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1048	Coal Measures Whiteware type	1	35	1	BS/spigot hole	Cistern	Patchy mottled green glaze int & ext	C14th – C15th	Pale grey w/ thin buff int & ext margins; common quartz & rock frags up 1mm, occ up to 2.5mm		
1048	Humberware	1	5	1	BS	Hollow ware	Streaks of green glaze ext	LC13th – C15th			
1048	Humberware type	1	11	1	BS	U/ID	Green glaze int; patchy green glaze ext	C14th – C15th			
1048	North Lincolnshire Shell-tempered ware	1	13	1	BS	Hollow ware	Smoothed int & ext	LC12th – MC14th	NLST: Hand-made sherd; grey ext, oxidised int		
1048	Slipware	1	3	1	Rim	Dish	Thin white slip int; groove inside rim	C18th	Abundant fine quartz w/ occ red grit		
1050	Blackware	1	115	1	Footed base	Cup/tyg	Shiny black glaze int & ext	C17th	Hard fine red fabric; curved parallel wire marks underside of base		
1050	Blackware	2	26	1	Footed base	Cup/tyg	Shiny black glaze int & ext	C17th	Hard fine dark red fabric		
1050	Blackware	1	5	1	Handle	Cup/tyg	Shiny black glaze	C17th	Fine hard dark red fabric		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1050	Blackware	3	3	2	BS	Hollow ware	Shiny black glaze int & ext	C17th	Fine hard dark red fabric		
1050	Blackware type	1	1	1	BS	Hollow ware	Mottled brown glaze int & ext	LC16th – C17th	Fine red sandy fabric		
1050	Brown Glazed Coarseware	1	16	1	Base	Pancheon	Flaky brown glaze int	C18th	Thick base; dense red fabric w/ sparse white rock fragments		
1050	Humberware	1	9	1	BS	Hollow ware	Mottled shiny green glaze ext	LC14th – EC16th	Late Humberware		
1050	Midlands Purple type ware	1	6	1	BS	Hollow ware	Patchy purple glaze ext; glaze fuming int	MC15th – C17th	Hard, dense, semi-vitrified fabric; MPW / CMP type fabric		
1050	Midlands Purple type ware	1	3	1	BS	Hollow ware	Mottled brown glaze ext	MC15th – 17th	Hard, fine dense dark grey fabric		
1051	Blackware type	1	4	1	BS	Hollow ware	Black glaze int & ext	C17th	Fine dark red fabric		
1051	Brown Glazed Coarseware type	1	25	1	Base	Hollow ware	Hard brown glaze int & ext	LC17th – C18th	Bright orange fabric w/ sparse fine red grit		
1051	Late Humberware	2	15	2	BS	Hollow ware	Spots of clear glaze ext	C15th – EC16th	Fine red sandy fabric		
1051	Midlands Purple type ware	2	39	1	BS	Hollow ware	Thick purple-brown glaze ext & patchy glaze int	LC15th – C17th	Hard red fabric but not semi-vitrified		
1051	Midlands Purple ware	1	12	1	BS	Hollow ware	Thick purple glaze ext only	LC15th – C17th	Rilled int; could be a flagon		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1052	Humberware type	1	7	1	BS	Drinking jug?	U/Dec	C14th – C15th	Fine even orange fabric w/ common fine grit <0.2mm		
1052	Humberware type	2	4	1	BS	Hollow ware	U/Dec	C14th – C15th	Fine even orange fabric w/ fine quartz grains		
1052	Oxidised Sandy ware	1	5	1	BS	U/ID	U/Dec	Late Medieval	Oxidised sandy fabric w/ common round quartz & red grit up to 0.8mm		
1055	Blackware	3	10	3	BS	Hollow ware	Black glaze int & ext	C17th	Hard, fine dark red fabric		
1055	Blackware	1	0.5	1	BS	Hollow ware	Black glaze int & ext	C17th		2	
1055	Blackware type	1	5	1	BS & handle	Mug/tyg	Black glaze int & ext	C17th	Fine bright red fabric; not typical of Blackware		
1055	Cistercian ware	1	2	1	BS	Cup/tyg	Black glaze int & ext	c.1450 – c.1600	Thin hard, dark red fabric		
1055	Coal Measures Whiteware type	1	11	1	BS	Hollow ware	Thick mottled clear/brown glaze ext	C14th – C15th	Somewhat finer than typical CMW	2	

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1055	Early Brown Glazed Coarseware	1	5	1	BS	Hollow ware	Dark brown glaze int & ext	C17th – EC18th	A hard, fine red fabric w/ abundant round quartz up to 0.5mm		
1055	Late Medieval Sandy ware	2	2	2	BS	Hollow ware	Purple glaze on one side	C14th- 15th	Hard orange sandy fabrics	2	
1055	Midlands Purple type ware	1	10	1	BS	Hollow ware	Overfired purple glaze ext	C15th – C17th	Hard, dense semi-vitrified fabric w/ quartz & sparse black grit		
1055	Midlands Purple type ware	1	25	1	BS	Hollow ware	Purple glaze int & partially ext	C15th – C17th	Hard, dense semi-vitrified dark grey to dull red fabric		
1055	Oxidised Sandy ware	1	1	1	BS	Hollow ware	Bright green glaze on one side; patchy brown glaze on other	C14th – C15th		2	
1055	Raeren Stoneware	1	8	1	BS	Hollow ware	Shiny brown salt glaze int & ext	C15th – C16th			
1055	Raeren Stoneware	1	3	1	BS	Hollow ware	Mottled brown salt glaze ext; glaze fumed int	C15th – C16th			
1056	Blackware	1	0.5	1	BS	Hollow ware	Black glaze int & ext	C17th		3	
1056	Brown Salt Glazed Stoneware	1	6	1	BS	Hollow ware	Shiny brown salt glaze int & ext; thin incised lines ext	C18th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1056	Raeren type ware	1	1	1	Base/Rim?	Hollow ware	Mottled brown salt glaze ext	C15th – C16th		3	
1056	Yellow ware	1	20	1	Base	Candlestick	Clear glaze ext	LC15th – C17th	Splayed foot cut-outs around foot w/ knife-trimming int		
1058	Blackware	1	2	1	BS	Hollow ware	Black glaze int & ext	C17th			
1058	Cistercian ware	1	5	1	BS	Cup/tyg	Black glaze int & ext	c.1450 – c.1600	Could be Blackware		
1058	Cistercian ware?	1	0.5	1	BS/Chip	U/ID	Black glaze on only surface	c.1450 – c.1600	Could be Blackware (C17th)	5	
1058	Coal Measures Whiteware type	1	102	1	BS	Hollow ware	Yellow-green glaze w/ dark mottling int & spots & splashes ext	C14th – EC15th	White fabric w/ moderate quartz & black grit up to 0.5mm, occ larger & sparse rock frags		
1058	Late Humberware	1	11	1	BS	Hollow ware	U/Dec	LC14th – C15th			
1058	Late Medieval Sandy ware	1	5	1	BS	Hollow ware	Thick brown glaze ext & spots int	LC14th – C15th		5	
1058	Late Medieval Sandy ware	2	1	2	BS & flake	U/ID	U/Dec	LC14th – C15th		5	

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1058	Midlands Purple ware	1	23	1	Handle	Jug/jar	Glaze fumed ext	LC15th - C17th	Very hard, dense semi-vitrified dark red fabric w/ abundant quartz		
1058	Midlands Purple ware	1	19	1	Handle	Jug/jar	Purple glaze on top of handle	LC15th - C17th	Very hard, dense semi-vitrified grey fabric w/ abundant quartz & vesicular black grit		
1059	Blackware	1	173	1	Footed base	Cup/tyg	Black glaze int & ext	C17th	Two handles		16
1059	Buff Sandy ware	1	9	1	BS	Hollow ware	Thick brown glaze ext	C15th – C16th	Buff fabric w/ common quartz & sparse black grit up to 0.7mm		
1059	Humberware	1	0.5	1	BS	Hollow ware	Green glaze & combed wavy lines ext	LC13th – C15th		6	
1059	Late Humberware	1	77	1	BS/spigot hole	Cistern	Patchy mottled yellow-brown glaze int	C14th – C15th			
1059	Late Medieval Sandy ware	1	2	1	BS	Hollow ware	Overfired glaze ext	LC14th – C15th		6	
1059	Midlands Purple type ware	1	3	1	BS	Hollow ware	Thin hard purple-brown glaze int & ext	LC15th – C16th	Hard, dense dark grey semi-vitrified fabric		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1059	Purple-glazed Humberware	1	2	1	BS	Hollow ware	Shiny purple glaze ext	LC15th – C16th	Fine reduced fabric w/ fine quartz grains		
1059	Redware type	1	0.5	1	BS	U/ID	Clear glaze on one surface	C16th – C17th	Fine orange fabric	6	
1061	Blackware	1	55	1	Handle	Jug/jar	Black glaze on upper surface, patchy on sides	C17th	Narrow strap handle w/ central ridge; hard dense red fabric		
1061	Blackware	1	45	1	BS & handle	Jug/jar	Black glaze int & ext	C17th	Hard dark red fabric; strap handle stump		
1061	Blackware	1	8	1	BS	Hollow ware	Rilled ext; black glaze int & ext	C17th	Hard, dense dark red fabric		
1063	Buff Gritty ware	1	3	1	BS	Hollow ware	Patchy yellow glaze ext	C12th – C13th	Buff fabric w/ common quartz up to 0.5mm, occ up to 1mm		
1063	Coal Measures Purple type ware	1	4	1	BS	Hollow ware	Green-brown mottled glaze ext	C15th – C16th		12	
1063	Humberware	1	33	1	BS	Hollow ware	U/Dec	C14th – C15th			
1063	Humberware	1	10	1	BS/handle scar	Hollow ware	Mottled green glaze ext	C14th – C15th			
1063	Humberware	1	19	1	Base	Jug/jar	U/Dec	LC13th – C15th			
1063	Humberware	1	2	1	BS	Hollow ware	Green glaze ext	LC13th – C15th	Reduced throughout		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1063	Humberware	1	3	1	BS	Hollow ware	U/Dec	LC13th – C15th	Oxidised throughout; slightly sandy		
1063	Humberware type	1	0.5	1	BS	Hollow ware	U/Dec	LC13th – C14th	Hard, fine oxidised fabric	12	
1063	Late Humberware	1	10	1	BS	Hollow ware	Mottled brown glaze ext	C15th – C16th			
1063	Late Humberware	1	19	1	BS	Dish/bowl	Mottled yellow-brown glaze int; spots ext	C15th – C16th			
1063	Late Humberware	1	1	1	BS	Hollow ware	Patchy brown glaze ext	C15th – C16th			
1063	Late Medieval Sandy ware	2	8	2	BS	Hollow ware	Mottled purple glaze ext	LC14th – C15th	A hard, dense oxidised fabric w/ abundant quartz	12	
1063	Late Medieval Sandy ware	1	0.5	1	BS	Hollow ware	Mottled brown glaze ext	LC14th – C15th		12	
1063	Midlands Purple type ware	1	16	1	Strap handle	Jug/cistern	Thick purple glaze on upper surface	LC15th – C17th	Hard, dense red fabric w/ common quartz up to 0.5mm, occ 1mm		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1063	Midlands Purple type ware	1	12	1	BS	Hollow ware	Thick purple-brown glaze ext	LC15th – C17th	Hard, dense red fabric w/ common quartz up to 0.5mm, occ larger; sparse round red grit up to 1mm		
1063	Midlands Purple type ware	1	5	1	BS	Hollow ware	U/Dec	MC15th – C17th	Hard, dense purple fabric	12	
1063	Redware type	1	2	1	BS	Hollow ware	Clear glaze ext	C17th	Harder than typical Redware		
1063	Surrey Whiteware type	1	1	1	BS	Cup/bowl	Dark green glaze int; mottled green glaze ext	LC15th – C16th	Fine white fabric; probably part of the joining sherds 1064&1068		
1064	Blackware	1	36	1	Footed base	Hollow ware	Black glaze int & ext	C17th	Curved parallel wire marks on underside		14
1064	Blackware	1	1	1	Rim	Hollow ware	Black glaze int & ext	C17th	Short vertical rim on a shouldered body		
1064	Blackware	1	2	1	BS	Hollow ware	Black glaze int & ext	C17th	Fine red fabric		
1064	Blackware	2	4	2	BS	Hollow ware	Black glaze int & ext	C17th	Fine dark orange fabric		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1064	Blackware type	1	21	1	Footed base	Hollow ware	Black glaze int & ext	C17th	Fine dark orange fabric		
1064	Cistercian ware	1	0.5	1	Rim	Cup/tyg	Black glaze int & ext	c.1450 – c.1600		13	
1064	Coarse Oxidised Sandy ware	1	76	1	Strap handle	Jug/cistern	Brown glaze w/ yellow mottling	Late Medieval	A hard dark orange fabric w/ abundant rounded quartz up to 0.5mm		
1064	Humberware	1	61	1	Strap handle	Jug/cistern	Patchy green to yellow-green glaze; grooves on top of handle	C14th – C15th	A sandy Humberware fabric		
1064	Late Humberware	1	25	1	Base	Bowl	Dark green glaze int; spots of glaze ext	C15th – EC16th			
1064	Late Humberware	1	11	1	BS / ?handle	Hollow ware	Clear glaze ext; deep impression, ?fingernail	C15th – EC16th	Bright orange sandy fabric w/ common sandy fabric w/ fine quartz & sparse large red grit		
1064	Late Medieval Sandy ware	5	3	5	BS	Hollow ware	Partial brown glaze ext; some unglazed	LC14th – C15th		13	

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1064	Oxidised Sandy ware	1	8	1	Rim?	Hollow ware	U/Dec	Late Medieval	Odd rim sherd; fine oxidised sandy fabric w/ fine quartz & white rock frags <0.2mm		
1064	Oxidised Sandy ware	1	2	1	BS	Hollow ware	Patch of glaze ext	Late Medieval	Fine orange fabric w/ common fine quartz up to 0.3mm		
1064	Oxidised Sandy ware	1	7	1	BS	Hollow ware	U/Dec	Late Medieval	Fine sandy fabric w/ common fine quartz up to 0.3mm		
1064	Purple Glazed Sandy ware	1	31	1	BS	Hollow ware	Thick purple-brown glaze ext; spots of glaze int	C15th – C16th	A hard, fine brown sandy fabric w/ moderate, poorly sorted quartz <0.5mm		
1064	Purple Glazed Sandy ware	1	26	1	BS	Hollow ware	Patchy purple glaze ext; mottled greenish glaze int	C15th – C16th	Probably a Late Humberware vessel		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1064	Stoneware	1	3	1	BS	Hollow ware	Mottled brown salt glaze ext; grey lead glaze int	C19th ?	Odd stoneware; resembles German stoneware but lead glazed internally		
1064	Surrey Whiteware type	1	1	1	Rim	Cup/bowl	Dark green glaze int & ext	LC15th – C16th	Fine white fabric		
1067	Cistercian / Blackware type	1	15	1	Footed base	Cup/tyg	Patchy brown glaze int & ext	MC15th – C17th	An orange sandy fabric w/ common fine quartz; possibly underfired Cistercian ware; cf cxt 1074		
1067	Coal Measures Purple ware	1	1	1	BS	Hollow ware	Purple glaze ext	C15th – C16th		14	
1067	Cistercian / Blackware	2	1	2	BS	Hollow ware	Black glaze int & ext	c.1450 – C17th	Impossible to distinguish Cistercian from Blackware at this size	14	
1067	Humberware type	1	3	1	BS	Hollow ware	Thin patchy brown glaze ext	C14th – C15th			
1067	Late Medieval Sandy ware	4	12	4	BS	Hollow ware	U/Dec	LC14th – C16th	Hard, dense, sandy fabrics; some variation between sherds	14	

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1067	Purple Glazed Sandy ware	1	9	1	BS & handle thumbing	Jug/cistern	Thick purple glaze ext	C15th – C16th	A hard purple-brown fabric w/ abundant fine quartz	14	
1068	Buff Sandy ware	1	19	1	BS	Hollow ware	Thin clear glaze ext w/ fine dark mottling	Late Medieval	Hard buff sandy fabric w/ common round quartz w/ red platey grit up to 0.5mm		
1068	Coal Measures Whiteware	1	2	1	BS	Hollow ware	Mottled brown glaze ext	LC13th – C14th	Contains quartz & black grit; cf South Yorkshire CM wares		
1068	Humberware	2	26	2	BS	Hollow ware	Patchy mottled green glaze ext	C14th – EC16th	Late Humberware; contact scar ext		
1068	Late Humberware type	1	5	1	Handle	Jug?	Small spots of dark glaze	C14th – C16th	Small D-shaped handle w/ common fine quartz <0.4mm		
1068	Late Humberware type	1	1	1	BS	Hollow ware	U/Dec	C14th – C16th	Small chip; fabric as handle		
1068	Midlands Purple ware	1	4	1	BS	Hollow ware	Mottled green-brown glaze int & ext	MC15th – C17th	Hard, dense, semi-vitrified fabric w/ common fine quartz		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1069	Humberware	1	22	1	Base	Hollow ware	Patchy mottled green-brown glaze ext	LC13th – C15th			
1069	Midlands Purple ware	1	8	1	BS	Hollow ware	Dark green-brown glaze int & ext	MC15th – C17th	Hard, dense, semi-vitrified fabric w/ abundant quartz <0.5mm		
1069	Midlands Purple ware	1	10	1	BS	Hollow ware	Traces of overfired glaze ext	MC15th – C17th	Hard, fine, dense semi-vitrified fabric w/ moderate quartz up to 0.5mm, occ larger		
1073	Buff Gritty ware	1	9	1	BS	Hollow ware	Thin, patchy pale green glaze ext	C12th – C13th	Buff body w/ a grey core; common quartz & sparse rock fags		
1073	Humberware	1	8	1	BS	Hollow ware	U/Dec	LC13th – C15th	Fine Humberware		
1073	Humberware	1	3	1	BS	Hollow ware	U/Dec	LC13th – C15th	Sandy Humberware; oxidised throughout		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1074	Cistercian/Blackware type	1	13	1	BS	Hollow ware	Clear brown glaze w/ dark mottling	MC15th – C17th	An orange sandy fabric w/ common fine quartz; possibly underfired Cistercian ware; cf cxt 1067		
1074	Coal Measures Whiteware	1	1	1	BS	Hollow ware	Mottled yellow/brown glaze ext	LC13th – EC15th		37	
1074	Coal Measures Whiteware	2	74	2	BS	Hollow ware	Patchy green glaze ext	LC13th – LC14th	Grey core w/ dull buff margins		
1074	Coal Measures Whiteware	1	16	1	Rim	Jug	Thin, patchy brown glaze ext & spots int	LC13th – LC14th	Plain rounded rim		
1074	Coal Measures Whiteware	1	2	1	BS	Hollow ware	U/Dec	C14th – C15th			
1074	Coal Measures Whiteware type	1	11	1	BS/handle stump	Jug/cistern	Brown glaze ext	LC13th – LC14th			
1074	Humberware	1	3	1	BS	Hollow ware	U/Dec	LC13th – C15th	Reduced w/ a thin red ext margin		
1074	Late Medieval Sandy ware	1	2	1	BS	Hollow ware	Dull misfired glaze int & et	LC14th – C15th	Hard, dense sandy fabric	37	
1074	Late Medieval Gritty ware	1	8	1	BS	Hollow ware	U/Dec	C14th – C15th	A hard buff to orange fabric w/ common quartz & sparse red grit up to 1mm		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1074	Late Medieval Gritty ware	1	10	1	BS	Hollow ware	Spots of clear glaze ext	C14th – C15th	Pale grey fabric w/ an orange ext margin; common quartz & red grit up to 1mm, mainly finer		
1074	Late Medieval Gritty ware	1	23	1	BS	Hollow ware	Yellow-brown mottled glaze ext; pitted & flaked	C14th – C15th	Pale buff fabric w/ common quartz grains		
1074	Late Medieval Gritty ware	1	2	1	BS	Hollow ware	Brown glaze int & ext	C14th – C15th	Yellow-buff fabric w/ quartz & round rock frags; Coal Measures ware?		
1074	Late Medieval Gritty ware	12	95	12	BS	Hollow ware	Patchy brown glaze ext; occ int	C14th – C15th	Hard, dense buff-orange fabric w/ common quartz & sparse red grit up to 0.5mm, occ 1mm		
1074	Midlands Purple type ware	1	20	1	BS	Hollow ware	Thick purple glaze int & ext	LC15th – C17th	Hard, dense semi-vitrified fabric w/ quartz up, to 0.5mm, occ larger		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1074	Surrey Whiteware type	2	43	1	Flat base	Hollow ware	Bright green glaze int & partially ext	LC15th – C16th	A fine white fabric; large diameter base; see also cxt 1075		
1075	Buff Gritty ware	1	9	1	BS	Hollow ware	Spots of very pale green glaze ext	LC12th – C13th	Pale grey core w/ buff int & ext margins; quartz w/ sparse red grit		
1075	Coal Measures Purple ware	1	1	1	BS	Hollow ware	Thick purple glaze ext	C15th – C16th		38	
1075	Coal Measures Whiteware type	2	40	1	BS	Hollow ware	Mottled brown glaze ext	LC13th – C14th	Hard buff to pale grey fabric w/ abundant quartz up to 0.6mm w/ platey red grit		
1075	Coal Measures Whiteware type	1	34	1	BS	Hollow ware	Thin patchy green to brown mottled glaze ext	LC13th – C14th	Buff to pale grey fabric w/ abundant quartz & black grit up to 0.5mm		
1075	Humberware	1	2	1	BS	Hollow ware	Dark green glaze ext	LC13th – C15th			
1075	Humberware	1	5	1	BS	Hollow ware	Spots of dark glaze ext	LC13th – C15th			

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1075	Humberware type	1	90	1	Strap handle	Jug	Patchy green glaze ext & on top of rim	LC13th – LC14th	Reduced fabric w/ a pale grey ext margin; common quartz up to 0.5mm, occ larger		
1075	Late Medieval Gritty ware	3	68	3	BS	Hollow ware	Patchy brown glaze ext	LC14th – C15th	Hard buff fabric w/ abundant quartz up to 0.5mm, occ up to 1mm		
1075	Midlands Purple type ware	1	12	1	BS	Hollow ware	Thick purple glaze ext & partially int	LC15th – C17th	Hard, dense purple fabric w/ common quartz up to 0.5mm		
1075	Midlands Purple type ware	1	11	1	BS	Hollow ware	Thick purple glaze ext; glaze fuming int	LC15th – C17th	Hard, dense reduced fabric w/ common quartz up to 1mm, sparse round rock frags 1mm+		
1075	Surrey Whiteware type	1	1	1	BS	Cup/bowl	Dark green glaze int; mottled green glaze ext	LC15th – C16th	Fine white fabric; probably part of the joining sherds 1064&1068		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1075	Surrey Whiteware type	1	4	1	Flat base	Hollow ware	Bright green glaze int & partially ext	LC15th – C16th	A fine white fabric; large diameter base; see also cxt 1074		
1076	Coal Measures Whiteware type	1	17	1	BS	Hollow ware	Thin red slip ext	LC13th – C14th	Buff int to pale orange ext; abundant sub-round quartz & sparse red grit up to 0.5mm, occ larger		
1076	Humberware	1	148	1	Base	Jug/jar	U/Dec	LC13th – C15th	Slightly unusual footed base; stacking scar on underside of base		
1076	Humberware	1	46	1	BS	Jug	Green glaze ext; small ring-stamps ext	LC13th – C15th	Reduced throughout; fine fabric		
1076	Humberware	1	35	1	Rim	Urinal?	Thin yellow-green glaze ext	LC13th – C15th	Small beaded rim		
1076	Humberware	1	4	1	BS	Hollow ware	U/Dec	LC13th – C15th	Odd sherd		
1076	Humberware type	1	16	1	BS	Drinking jug?	Groove ext	C14th – C15th			
1076	Late Humberware	1	25	1	Rod handle	Jug	Patchy green-brown glaze ext	C15th – EC16th	Orange sandy fabric		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1076	Late Medieval Sandy ware	1	115	1	BS & handle stump	Hollow ware	U/Dec (heavily flake & abraded int & ext surfaces)	Late Medieval	Handle stump & part of rim; form uncertain	39	
1076	Late Medieval Gritty ware	5	252	2	BS	Hollow ware	Thin, patchy green to brown glaze ext; rilled ext	C14th – C15th	Grey core w/ buff int & ext margins; common quartz up to 1mm		
1076	Midlands Purple type ware	1	2	1	BS	Hollow ware	Thick purple glaze ext	LC15th – C17th			
1079	Humberware	2	90	1	Base	Jug/jar	Patchy green glaze on sagging base; pinched feet	LC13th – C15th			
1079	Humberware	1	15	1	BS	Drinking jug	U/Dec	C14th – C15th			
1079	Humberware	1	1	1	BS	Hollow ware	U/Dec	C14th – C15th			
1079	Humberware	1	24	1	BS/handle	Drinking jug	U/Dec	C14th – C15th	Rod handle		
1079	Humberware	2	13	2	BS	Hollow ware	Streak of glaze on one sherd	LC13th – C15th	Reduced int surface		
1079	Humberware	1	1	1	Base?	Hollow ware	Thin patchy glaze on underside	LC13th – C15th		54	
1080	Humberware	1	7	1	BS	Hollow ware	Spots of glaze ext	LC13th – C15th	Dark grey w/ oxidised ext margin		
1080	Humberware	1	4	1	BS	Hollow ware	Mottled green glaze ext	LC13th – C15th			
1080	Humberware	1	3	1	BS	Hollow ware	Thin, yellow-green glaze ext	LC13th – C15th	Unusual glaze		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1084	Midlands Purple type ware	1	7	1	BS	Hollow ware	Thick purple glaze ext	LC15th – C17th	Hard, dense grey fabric w/ quartz & round rock frags up to 1mm, occ larger		
1085	Late Medieval Sandy ware	1	1	1	BS	Hollow ware	Thick brown glaze et	L14th – C15th	Oxidised fabric w/ common quartz & red grit	44	
1085	Raeren stoneware	1	2	1	Base?	Mug/jug	Thin brown salt glaze	LC15th – C17th		44	
1086	Humberware	1	8	1	BS	Hollow ware	U/Dec	LC13th – C15th			
1096	Humberware	3	25	3	BS	Hollow ware	Green glaze ext	LC13th – C15th			
1096	Humberware	3	13	3	BS	Hollow ware	U/Dec	LC13th – C15th			
1096	Humberware	1	7	1	Rim	Jug?	U/Dec	LC13th – C15th	Rounded collared rim		
1096	Yorkshire Gritty ware type	1	4	1	BS	Hollow ware	U/Dec	LC11th – C13th	Thicker than typical early YG ware		
1097	Humberware type	1	0.5	1	BS	Hollow ware	Green glaze ext	LC13th – C15th		57	
1097	Late Medieval Sandy ware	2	2	2	BS	Hollow ware	U/Dec	LC14th – C15th		57	
1098	Beverley type ware	1	7	1	BS	Hollow ware	Thin mottled green glaze ext; app & imp strip ext	C13th – EC14th	Sandy orange fabric		

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sample	SFN
1098	Humberware	5	89	1	BS	Jug?	Green glaze & combed wavy lines ext	LC13th – C15th	Fine fabric, reduced w/ dull orange int margin		
1098	Humberware	1	92	1	BS & rod handle	Jug	Green glaze ext; deep grooves on upper surface of handle	LC13th – C15th	Double handle thumbing (lower attachment)		
1098	Humberware	1	10	1	BS	Hollow ware	Green glaze ext	LC13th – C15th	Fine body		
1098	Late Medieval Sandy ware	1	1	1	BS	Hollow ware	U/Dec	C14th – C15th	Slightly sandier than Humberware	58	
1099	Humberware	1	24	1	Rim	Jar	Small spots of glaze ext & on inside of rim	C14th – C15th	Distinctive wedge-shaped rim		
1064&1068	Surrey Whiteware type	2	3	1	BS	Cup/bowl	Dark green glaze int; mottled green glaze ext	LC15th – C16th	Fine white fabric		15
U/S	Beverley type ware	1	15	1	BS	Hollow ware	Patchy clear (?splashed) glaze ext	LC12th – C13th			
U/S	Humberware	1	19	1	BS	Hollow ware	Thin patchy greenish glaze ext	LC13th – C15th			
	Total	918	11561	849							

Appendix C: Animal bone catalogue

Table 2: Summary of vertebrate remains

Feature	Phase	Date	Mammal	Bird	Fish	Amphibian	Total
Drawbridge Pit	3	14-15th centuries	238	31	49		318
		Late 15th - 16th centuries	1281	72	469		1822
		17th century	833	74	203	5	1115
	5	1649	50	1	1		52
Other	5	1649	3				3
	6	Deconstruction of the gatehouse (mid-17th to mid-19th centuries)	39	2			41
	7	Victorian remodelling (1880s)	323	10	3		336
	8	Modern	8				8
		Total	2775	190	725	5	3695

Table 3: Mollusc remians

Phase	Date (century)	Context	Marine				Terrestrial			Fossil	Total
			Oyster	Mussel	Cockle	Whelk	*Cornu aspersum*	*Cepaea* sp.	*Trochulus* sp.	Bivalve	
2	14th	1061	1								1
3	14-15th	1076	5	5							10
		1079	4	5							9
		1080	2	2							4
		1097	2								2

Phase	Date (century)	Context	Marine				Terrestrial			Fossil	Total
			Oyster	Mussel	Cockle	Whelk	*Cornu aspersum*	*Cepaea* sp.	*Trochulus* sp.	Bivalve	
	Late 15th-16th	1063	6								6
		1067	1		1						2
		1068	21								21
		1073	8	2							10
		1074	3	3							6
		1075	5	8		1					14
	17th	1050	5								5
		1055	23				8		2		33
		1056	1							1	2
		1058	4								4
		1064	6	1							7
6	Mid-17th to mid-19th	1038					1	1			2
		1042	3								3
		1051	2								2
7	19th	1009	39	15	8	1	11				74
		1047	1				2				3
8	Modern	1001			1						1
		Total	142	41	10	2	22	1	2	1	221

Table 4: Mammal remains from the drawbridge pit

Phase	Date	Equid	Cattle	Deer				Pig	Sheep/goat	Dog	Cat	Hare	Rabbit	Leporidae	Vole	Ungulate			Mammal						
				Red	Fallow	Red/fallow	Cervidae									Large	Small	Unsized	Large	Medium/large	Medium	Medium/small	Small	Micro	Total
3	14-15th centuries		6		1			8	5						1	3	4		47	89	72		1	1	238
	Late 15th - 16th centuries	1	27	1	6	3	1	13	36				1			13	21	3	288	700	158	1	8		1281
	17th century		39		1	1		5	29	1	2	2		1		24	14		199	338	164		13		833
5	1649		8	1					3								6		22	5	8				53
	Total	1	80	2	8	4	1	26	73	1	2	2	1	1	1	40	45	3	556	1132	402	1	22	1	2405

Table 5: Bird remains from the drawbridge pit

Phase	Date	Mute swan	Mute/whooper swan	Goose	Chicken	Chicken/pheasant /guinea fowl	Galliformes	Grey heron	Woodcock	Tern	Northern lapwing	Bird					Total
												Large	Medium/large	Medium	Medium/small	Small	
3	14-15th centuries	1	1	2	6		4	1						15		1	31
	Late 15th - 16th centuries			9	11	1	11	2	1		1	2	5	24	3	2	72
	17th century		1		14		4			1		1	18	32		3	74
5	1649			1													1
	Total	1	2	12	31	1	19	3	1	1	1	3	23	71	3	6	178

Table 6: Fish and amphibian remains from the drawbridge pit

Phase	Date	Collection method	Marine									Freshwater				Migratory	Fish	Frog/Toad	Total
			Atlantic herring	Atlantic cod	Haddock	Common ling	Cod order	Flatfish	Atlantic mackerel	Gurnard	Ray	European perch	Northern pike	cf. northern pike	Carp family	European eel			
Phase 3	14-15th centuries	HC													3				3
		>4mm											1	1	1		8		11
		4-2mm	7													2	26		35
	Late 15th-16th centuries	HC		6		1											3		10
		>4mm		12		3	6	5		2							91		119
		4-2mm	13	1			2	2	1		2				1	3	315		340
	17th century	HC		4			4										14	5	22
		>4mm	3	2	1			2							2		30		40
		4-2mm	7		1		5					2	1			3	122		141
Phase 5	1649	HC		1															1
Phase 7	Victorian	HC		1													2		3
		Total	30	27	2	4	17	9	1	2	2	2	2	1	7	8	611	5	730

Table 7: Minimum number of individuals (MNI) from the drawbridge pit

Phase	Date	Equid	Cattle	Deer	Pig	Sheep/goat	Swan	Goose	Chicken	Heron	Other bird	Marine fish	Freshwater fish	Migratory fish
3	14-15th centuries		2	1	2	2	1	1	1	1	1	1	3	1
	Late 15th - 16th centuries	1	2	2	1	3		1	3	1	2	10	1	1
	17th century		3	1	1	2	1		3		1	4	3	1
5	1649		2	1		1		1				1		
	Total	1	9	5	4	8	2	3	7	2	4	16	7	3

Appendix D: CBM catalogue

Table 8: CBM catalogue

Context	SF No	Fabric Code	Function	Confidence	NoSh	Wt	corner	Length	Width	Thickness	Mortaring	Soot	Reuse	Comments
1001		TZ01	Other		1	31	0	0	0	0				Ornamental garden furniture or roof furniture
1001		TZ11.8	B/T		1	5	0	0	0	0				
1001		TZ12.3	Brick		1	84	0	0	0	0				
1001		TZ12.3	Brick		1	78	0	0	0	0				
1001		TZ12.3	Brick		4	56	0	0	0	0				
1001		TZ21	B/T		1	7	0	0	0	0				
1009		T14	Imbrex		3	81	0	0	0	0				
1009		TZ12.3	B/T		1	13	0	0	0	0				
1009		TZ12.3	Brick		1	44	0	0	0	0		1		chimney lining? Vitrified surface
1009		TZ12.3	Brick		2	69	0	0	0	0				
1009		TZ12.3	Floor Tile		1	194	0	0	0	25	1		1	worn
1009		TZ12.3	Other		1	53	0	0	0	0				tapered edge
1009		TZ12.3	Tile		1	80	0	0	0	17				
1009		TZ12.3	Tile		1	176	0	0	0	18				
1009		TZ120	Floor Tile		1	341	4		104	15				brown floor tile with grooved under originally square tile
1009		TZ120	Floor Tile		1	267	8	104	65	18				brown floor tile with grooved under
1009		TZ120	Floor Tile		1	266	8	106	60	18				brown floor tile with grooved under

Context	SF No	Fabric Code	Function	Confidence	NoSh	Wt	corner	Length	Width	Thickness	Mortaring	Soot	Reuse	Comments
1009		TZ120	Floor Tile		5	385	0	0	0	15				brown floor tile with grooved under
1009		TZ120	floor tile		1	103	0	0	0	15	1			brown floor tile with grooved under
1009		TZ13	B/T		2	30	0	0	0	0				
1009		TZ13	Tile		1	127	0	0	0	17				
1009		TZ21	Brick		1	296	0	0	0	0		1		
1009		TZ21	Pan Tile		1	265	0	0	0	0				
1009		TZ21	Tile		1	45	0	0	0	21				
1009		TZ22	Brick		1	408	1	0	0	50	1			irregular rounded arrises
1009		TZ31	Brick		1	810	4	0	100	65	1			wiped surfaces rounded reg arrises
1009		TZ31	Brick		2	129	0	0	0	0	1			
1009		TZ31	Brick		4	43	0	0	0	0				
1009		TZ31	Brick		4	183	0	0	0	0				
1009		TZ31	Brick		1	60	0	0	0	0				
1009		TZ31	Brick		7	209	0	0	0	0				
1009		TZ31	Tile		4	221	0	0	0	15				
1009		TZ41.8	Brick		18	1082	3	0	0	0				smoothed surfaces modern
1034		TZ13	Brick		1	6	0	0	0	0				
1036		TZ01	Tile		1	30	0	0	0	14				
1038		TZ12.3	Ridge Tile	3	1	109	0	0	0	16	1			
1038		TZ13	Tile		1	77	0	0	0	0	1		1	
1039		TZ13	Brick		3	29	0	0	0	0				modern - smoothed surface
1042		TZ13	Pan Tile		2	726	0	0	0	0				

Context	SF No	Fabric Code	Function	Confidence	NoSh	Wt	corner	Length	Width	Thickness	Mortaring	Soot	Reuse	Comments
1045		TZ13	Tile		1	96	0	0	0	17	1	of		
1048		TZ13	Peg Tile		1	184	1	0	0	17				sunken margins
1050		TZ13	Tile		2	249	0	0	0	0	1			
1051		TZ13	Tile		5	275	0	0	0	16				
1051		TZ13	Tile		3	526	1	0	0	16	1			
1051		TZ13	Tile		1	38	0	0	0	16	1			small fingertip impression
1052		TZ13	Peg Tile		1	161	1	0	0	16	1			
1052		TZ13	Tile		5	471	0	0	0	16	1			
1052		TZ13	Tile		2	622	1	0	0	16	1			sunken margins shallow
1055		TZ13	Tile		1	53	0	0	0	15	12			
1055		TZ13	Tile		1	173	0	0	0	17				
1055		TZ22	Brick		1	183	2	0	0	48	1			irregular rounded arrises sanded base
1058		TZ13	Tile		1	34	0	0	0	16	1			
1058		TZ22	Brick		1	23	0	0	0	0				
1063		TZ13	Tile		1	9	0	0	0	0				
1063		TZ13	Tile		1	102	0	0	0	22				
1063		TZ22	Brick		1	145	0	0	0	50				wipe mark upper
1068		TZ22	Brick		1	2102	4	0	140	45				Len 250+ finger smoothing on top irregular rounded arrises straw marks on base
1068		TZ22	Brick		1	1098	4	0	138	45				
1068		TZ22	Brick		1	803	4	0	136	40				
1068		TZ22	Brick		4	167	0	0	0	0				

Context	SF No	Fabric Code	Function	Confidence	NoSh	Wt	corner	Length	Width	Thickness	Mortaring	Soot	Reuse	Comments
1073		TZ22	Brick		1	749	2	0	120	45				
1073		TZ22	Brick		1	653	2	0	0	43		1		
1074		TZ22	b/t		2	12	0	0	0	0				
1074		TZ22	Brick		1	504	0	0	0	50				wiped upper
1076	36	TZ12.3	Peg Tile		1	665	2	0	200	17				square peg hole drilled from top 1 central location 11x12mm
1098		TZ13	Tile		1	67	0	0	0	15				

Table 9: CBM by phase

Phase	No	Wt	Cnr
C14/15	2	732	2
C15/16	15	6344	16
C17	7	715	2
C18	23	3285	4
C19+	73	6045	28
N	*120*	*17121*	*52*

Table 10: Fabric proportion

Fabric Code	No%	Wt%	CNR%
T14	2.5%	0.5%	
TZ01	0.8%	0.2%	
TZ12.3	8.3%	8.2%	3.8%
TZ120	7.5%	8.0%	38.5%
TZ13	30.8%	23.7%	7.7%
TZ21	2.5%	3.5%	
TZ22	13.3%	40.0%	36.5%
TZ31	19.2%	9.7%	7.7%
TZ41.8	15.0%	6.3%	5.8%
N	*120*	*17121*	*52*

Table 11: Fabric occurrence by phase

Fabric/Phase	C14/15	C15/16	C17	C18	C19+
T14					3
TZ01					2
TZ11.8					1
TZ12.3	1			1	14
TZ120					9
TZ13	1	4	3	22	7
TZ21					4
TZ22		2	13		1
TZ31					23
TZ41.8					18
N	*2*	*6*	*16*	*23*	*82*

Table 12: CBM form quantities

Function	No%	Wt%	Cnr%
B/T	4.2%	0.3%	0.0%
Brick	49.2%	57.2%	50.0%
Floor Tile	8.3%	9.1%	38.5%
Imbrex	2.5%	0.5%	0.0%
Other	0.8%	0.3%	0.0%
Pan Tile	2.5%	5.8%	0.0%
Peg Tile	2.5%	5.9%	7.7%
Ridge Tile	0.8%	0.6%	0.0%
Tile	29.2%	20.3%	3.8%
N	*120*	*17121*	*52*

Appendix E: Small finds catalogue

Abbreviations: 'L' = Length; 'W' = Width; 'H' = Height; 'Th' = Thickness; 'D' = Diameter; 'mm' = millimetres; 'g' = grams

Note – In the text the small finds number and the catalogue number are referenced together when needed, if the artefact was not given a small find number on site only the catalogue number is referenced.

Coins & tokens

1 Clipped silver penny of Edward IV (r.1461–1470 and 1471–1483; North 1991, 94, no. 1652). Second reign, Type XXI, uncertain initial mark. Obv: illegible. Rev: illegible. Mint: York (Ecclesiastical under Archbishop Lawrence Booth). Die axis: uncertain. Date: 1476–1480. Diameter: 12.5mm. Weight: 1g. Context 1001; SF no. 28, Site Phase:.

2 Damaged silver penny. Obv: illegible. Rev: illegible. Mint: York (Ecclesiastical). Die axis: uncertain. Date: 1351–1489. Diameter: 16mm. Weight: ??. Context 1076, Sample no. :39, Sf no.: 37, Site Phase: 3.

3 Venus type jetton Mitchener 1988, 264–275). Obv: nonsensical fictitious legend. […]RO?[…VAOn[…]DEVVn?[…]. Rev: illegible. Place of Manufacture: Antwerp. Die axis: uncertain. Date: c.1490–c.1550. Diameter: 30mm. Weight: 4g. Context 1064; SF no.: 10; Site Phase: 3.

4 Nuremberg ship-penny jetton anonymous issue (Mitchener 1988, 365–376). Obv: VOLGVE : LA : GALLEE : DE : FRA[NCE] – let the French galley sail. Rev: [VIV]E : LE : BOn : ROV : DE : FRAnCE. Place of manufacture: Nuremberg. Die axis: 330-340 degrees. Date: c.1490–c. 1550. Diameter: 24mm, Weight: 2g. Context 1001; SF no. 27; Site Phase: 8.

Dress & accessories

5 U-shaped iron boot reinforcement with five circular nail holes, each containing a nail. The central area contains mineralised leather in the iron corrosion. X-ray has revealed this area also contains many very small iron nails, likely from the heel of the boot. Dimensions: L: 60mm, W: 61mm. Weight: 111.31g. Early post-medieval. Context: 1056; Site Phase: 3.

6 Copper-alloy shoe reinforcement plate fragment made from a thin curved bar forming a horseshoe shape. The bar has two intact perforations and a partial third, where it has broken away. Dimensions: L: 35.2mm, W: 31.7mm, Th: 4.2mm. Bar W: 9.4mm. Weight: 11.80g. c.1800-c.1900? Context: 1009; Site Phase: 7.

7 Fragment from a curved rectangular shoe buckle with drilled frame for separate spindle (now missing). The surface is decorated with facets. Dimensions: L: 36.6mm, W: 10.4mm, Th: 9.1mm. Weight: 5.61g. c.1720-c.1790. Context: 1001; SF no.: 25; Site Phase: 8.

Equipment, tools and implements

8 Fragments from an iron knife with whittle tang in wood handle in very poor condition. There are fragments of copper alloy adhering to the iron corrosion, probably from a hilt-guard. Weight: 105.9g. Medieval? Context: 1073; Site Phase: 3.

9 Copper-alloy hilt plate for iron whittle tang knife or other implement. Hexagonal cross-section. Remnants of blade and tang in slot. Dimensions: L: 10.5mm, W: 9.5mm, Th: 7.3mm. Weight: 12.7g. Late 12th/early 13th century+. Context: 1059; Site Phase: 3. Figure 15, 7.

10 Fluted antler/ivory handle from a knife or other tanged implement. The handle is neatly carved into ribs lengthways and ends with a neatly carved circular button at the butt-end. The iron tool only survives for about 17.0mm and is held in place by a silver(?) hilt-plate. Dimensions: L: 83.5mm, W: 13.5mm, Th: 11.5mm. Weight: 17.58g. 1600-1900 Context: 1009; Site Phase: 7.

11 Rectangular strip of iron with mineralised wood in the corrosion. At one end of the strip there is copper-alloy sheet adhering to side. There is also an 8mm diameter centrally placed hole at the end with the copper-alloy sheet. Possibly a scale tanged knife handle fragment with remains of end cap. Dimensions: L: 42mm, W: 21mm. Weight: 10.44g. Mid-14th century+?; Context: 1009; Site Phase: 7.

12 Parchment pricker or stylus made from turned bone. The shaft gently tapers and is decorated at the head end with two knobs separated by discs. The iron tip has broken away. Dimensions: L: 94.5mm, head D: 8.1mm. Weight: 4.79g. c.1200-c.1700. SF no.: 21, Context: 1076; Site Phase: 3. Figure 15, 8.

13 Iron key in two fragments: kidney shaped bow with part of the shaft, bit and part of shaft. In very poor condition. Dimensions: L (reconstructed): 163mm, D of shaft: 8mm, W at bit: 30mm. Weight: 135.96g. Late medieval–post-medieval. Context: 1064; Site Phase: 3.

14 Complete double ended iron axe head. Slight expansion around eye. Dimensions: L: 240mm, W at eye: 340mm max H at end of blade: 55mm. Weight: 2014.7g. Later medieval. Context: 1097; SF no.: 34; Site Phase: 3.

15 Long iron object that is heavily fragmented and corroded. It may have a tang at one end (possibly a tool?), but the thickness suggests it is unlikely to be a knife blade. Dimensions: L: 240mm, W: 20mm. Weight: 462g. Probably medieval. Context: 1074; Site Phase: 3.

16 Copper-alloy thimble, conical in shape with slightly domed crown, now flattened. The dimples are regularly placed and machine made. The rim style is obscured by corrosion and breakage. Dimensions: Base D: 23.8mm, crown D: 11.4mm, height: 21.6mm. Weight: 3.31g. 1700+. Context: 1009; Site Phase: 7.

Architectural

17 U-shaped timber staple with out-turned (clenched) ends. One of the legs has broken off. Dimensions: L: 98mm, W: 54mm. Weight: 423.7g. Medieval? Context: 1079; SF no.: 33; Site Phase: 3.

18 Fragment of heavily weathered window glass with thick weathered crust. Possibly colourless or pale translucent yellow in colour. Dimensions: Th: 2.3mm. Weight: 0.52g. Medieval? Context: 1063; Sample no.: 12; Site Phase: 3.

19 Small fragment of window glass. The surfaces are highly weathered, iridescent, and flaking. The original colour is unclear and may have been colourless or a semi-translucent white. Dimensions: L: 35.9mm, W: 28.3mm, Th: 1.5mm. Weight: 2.80g. Medieval? Context: 1064; SF no.: 9; Site Phase: 3.

20 Two small fragments of heavily corroded and flaking window glass. Thick weathered crust on surface. Possibly pale translucent blue in colour. Dimensions: Th: 1.5mm-1.8mm. Weight: 0.55g. Medieval? Context: 1059; Sample no.: 6; Site Phase: 3.

21 Short strip of H-profile window came. Gap approximately 2.4mm. Milled. Knight Type D. Dimensions: L: 49.5mm, W: 9.8mm, Th: 4.7mm. Weight: 6.74g. Late 15th-early 16th century. Context: 1009; Site Phase: 7.

22 Small fragment of slightly distorted H-profile window came. Milled. Knight Type D. Dimensions: L: 39.1mm, W: 9.5mm, Th: 4.4mm. Weight: 3.56g. Late 15th-early 16th century. Context: 1009; Site Phase: 7.

23 Window came with rounded profile. Milled. Knight Type F/G? Dimensions: L: 20.8mm, W: 9.1mm, Th: 3.9mm. Weight: 1.30g. 18th-19th century? Context: 1009; Site Phase: 7.

24 Window came with rounded profile. Milled. Knight Type F/G? Dimensions: L: 31.4mm, W: 9.1mm, Th: 6.9mm. Weight: 3.8g. 18th-19th century? Context: 1009; Site Phase: 7.

25 Window came with rounded profile. Milled. Knight Type F/G? Dimensions: L: 31.8mm, W: 10.3mm, Th: 3.3mm. Weight: 3.79g. 18th-19th century? Context: 1009; Site Phase: 7.

26 Window came with rounded profile. Milled. Knight Type F/G? Dimensions: L: 30.8mm, W: 33.2mm, Th: 3.3mm. Weight: 3.79g. 18th-19th century? Context: 1009; Site Phase: 7.

27 Window came with rounded profile. Milled. Knight Type F/G? Dimensions: L: 28.4mm, W: 10.6mm, Th: 12.4mm, came Th: 3.3mm. Weight: 4.13g. 18th-19th century? Context: 1009; Site Phase: 7.

28 Two possible fragments of window came, very distorted. Weight: 13.26g. Uncertain date. Context: 1009; Site Phase: 7.

29 Two possible fragments of window came, very distorted. Weight: 4.89g. Uncertain date. Context: 1009. Site Phase: 7.

30 Small fragment of finely carved sandstone with small portion of moulding detail. Dimensions: L: 57.0mm, W: 49.9mm, H: 34.0mm. Weight: 63.78g. Medieval? Context: 1079; Sample no.: 54; Site Phase: 3.

31 L-shaped lead strip with one rectangular perforation measuring about 5mm x 3mm. Dimensions: L: 77.8mm, W: 28.9mm, Th: 4.8mm. Weight: 42.62g. Medieval? Context: 1009; Site Phase: 7.

Firearms & artillery

32 Complete carved sandstone spherical cannon ball. Dimensions: D: 65.16mm. Weight: 317.3g. Late 15th-early 16th century. Context: 1074; SF no.: 29; Site Phase: 3. Figure 14, 5.

33 Incomplete carved sandstone cannon ball, missing approximately one third of the sphere. There are possible tool marks on the surface. Dimensions: D: 64.65mm, W: 50.85mm. Weight: 274.5g. Late 15th-early 16th century. Context: 1074; SF no.: 30; Site Phase: 3. Figure 14, 4.

34 Spherical iron shot. Dimensions: D: 26.3mm. Weight: 76.63g. Post-medieval? Context: 1009; SF no.: 19; Site Phase: 7.

35 Lead shot with impact damage from hitting a thick membrane, such as a wooden plank. Dimensions: L: 24.0mm, W: 21.2mm, Th: 8.7mm. Weight: 20.11g. Post-medieval. Context: 1009; Site Phase: 7.

36 Lead shot that has been flattened with striations on the outer convex surface due to high velocity impact damage. Dimensions: L: 33.1mm, W: 24.9mm, Th: 6.0mm. Weight: 14.77g. Post-medieval. Context: 1048; Site Phase: 5.

37 Lead shot that has been flattened with striations on the outer convex surface due to high velocity impact damage. Dimensions: L: 29.3mm, W: 25.0mm, Th: 7.2mm. Weight: 23.81g. Post-medieval. Context: 1048; Site Phase: 5.

38 Spherical lead ball shot with mould seam and sprue scar present. Surface of ball has ram-rod damage. Dimensions: D: 15.5mm. Weight: 22.07g. Post-medieval. Context: 1048; SF no.: 4; Site Phase: 5.

39 Spherical lead ball shot with ram-rod damage. No mould seam or casting sprue/scar. Dimensions: D: 17.1mm. Weight: 28.71g. Post-medieval. Context: 1009; SF no.: 20; Site Phase: 7.

40 Spherical lead ball shot with mould seam and sprue scar. Dimensions: D: 17.2mm. Weight: 29.07g. Post-medieval. Context: 1043; SF no.: 1; Site Phase: 5.

41 Lead shot now hemispherical and slightly distorted. Possibly part of a multi-ball load and indeterminate impact damage. Dimensions: D: 21.1mm, Th: 13.4mm. Weight: 32.63g. Post-medieval. Context: 1009; SF no.: 7; Site Phase: 7.

42 Near spherical lead shot with trace of mould seam and sprue scar. Dimensions: D: 10.6mm. Weight: 5.86g. Post-medieval. Context: 1041; SF no.: 5; Site Phase: 5.

43 Spherical lead shot with animal gnaw marks. Dimensions: D: 11.1mm. Weight: 7.62g. Post-medieval. Context: 1044; SF no.: 2; Site Phase: 5.

44 Spherical lead shot with mould seams. Dimensions: D: 17.3mm. Weight: 31.92g. Post-medieval. Context: 1048; SF no.: 3; Site Phase: 5.

45 Lead shot now plano-convex due to moderate velocity impact. Dimensions: D: 22.3mm, Th: 9.7. Weight: 23.40g. Post-medieval. Context: 1009; SF no.: 24; Site Phase: 7.

46 Spherical lead shot with mould seam, ram-rod damage, and possible set-up evidence. Dimensions: D: 17.3mm. Weight: 29.34g. Post-medieval. Context: 1009; SF no.: 23; Site Phase: 7.

47 Spherical lead shot with casting sprue scar and mould seam. Dimensions: D: 12.1mm. Weight: 10.77g. Post-medieval. Context: 1009; SF no.: 23; Site Phase: 7.

48 Lead shot, now hemispherical due to moderate velocity impact damage. Dimensions: D: 18.8mm, Th: 10.9mm. Weight: 24.25g. Post-medieval. Context: 1009; SF no.: 23; Site Phase: 7.

49 Possible fragment of lead shot that has distorted due to high impact damage. Dimensions: L: 27.0mm, W: 16.9mm, Th: 3.8mm. Weight: 6.39g. Uncertain date. Context: 1009; Site Phase: 7.

50 Small hemispherical lead shot with small fragment of iron on flat side. Possibly from an iron-stemmed dumb-bell shot or wired shot. Dimensions: D: 10.4mm, W: 7.0mm (not including iron). Weight: 5.07g. Post-medieval. Context: 1009; Site Phase: 7.

Other copper alloy

51 Bone mouthpiece for a pipe with a copper-alloy sheet attachment ferrule. The bone section is plain with a button mouthpiece end. The ferrule is decorated with a V-band decoration around the circumference. Dimensions: D: 8.0mm at ferrule end, D: 5.6mm, D: 7.2 at terminal, L: 41.5mm, bore D: 5/64ths inch. Weight: 2.18g. 1800-1900. Context: 1051; Site Phase: 6.

52 Rectangular copper-alloy sheet with decoration on one face composed of five parallel lines forming three decorated registers. The two outer registers are decorated with rocker-arm zig-zag lines. The middle register has a motif that consists of short pairs of parallel lines separated by a diagonal line appearing as: II/II/II. No obvious method of attachment but could be a belt fitting or decorative mount. Dimensions: L: 20.2mm, W: 19.6mm, Th: 0.8mm. Weight: 2.58g. Uncertain date. Context: 1001; SF no.: 26; Site Phase: 8. Figure 15, 1.

53 Rectangular copper-alloy block with half cylinder cut away, possible axle housing. Inner diameter of cylinder cut-away approximately 50mm. Dimensions: L: 104.32mm, W: 40.42mm, H: 57.65mm. Weight: 873.4g. Medieval? Context: 1079; SF no.: 32; Site Phase: 3. Figure 15, 10.

54 Circular copper-alloy tack head missing most of shank. Dimensions: D: 6.5-8.0mm, Th: 3.3mm. Weight: 0.45g. Uncertain date. Context: 1047; SF no.: 6; Site Phase: 7.

55 Fragment of copper-alloy sheet, possibly plated with white metal. Dimensions: L: 28.0mm, W: 25.3mm, Th: 0.6mm. Weight: 1.50g. Uncertain date. Context: 1042; Site Phase: 6.

56 Fragment of copper-alloy sheet. Dimensions: L: 31.1mm, W: 11.5mm, Th: 1.1mm. Weight: 1.53g. Uncertain date. Context: 1009; Site Phase: 7.

57 Slightly tapered strip of copper alloy with two cut ends. Dimensions: L: 50.0mm, W: 3.3mm-2.2mm, Th: 1.6mm-0.8mm. Weight: 1.04g. Uncertain date. Context: 1098; SF no.: 35; Site Phase: 3. Figure 15, 9.

58 Three fragments from a copper-alloy sheet backed pendant or tag with a white enamel fill on the front. It is plano-covex in cross-section and was probably oval in shape, but the lower section has broken away. The white enamel has a letter or symbol in black paint or black enamel, now illegible. Dimensions: L: 24.4mm, W: 18.6mm, Th: 2.2mm. Weight: 2.07g. Post-medieval. Context: 1009; Site Phase: 7.

Other iron

59 Eleven fragments of iron strip, many with a central hole and rivet or nail. Each strip is about 18-20mm wide and there is mineralised wood in the corrosion. Weight: 1112.3g. Uncertain date. Context: 1064; SF no.: 8; Site Phase: 3.

60 Large tapering possibly conical iron object. Dimensions: L: 410mm, max W: 57mm, max Th: 57mm. Weight: 3190g. Uncertain date. Context: 1094; SF no.: 31; Site Phase: 3.

61 Small conical iron ferrule from a socketed object. Dimensions: L: 54mm, W: 19mm. Weight: 21.59g. Uncertain date. Context: 1059; Site Phase: 3.

62 Possible iron fiddle-key type horseshoe nail. Dimensions: L: 15mm, W: 8mm. Weight: 9.1g. Medieval. Context: 1074; Site Phase: 3.

Other lead

63 Coiled rectangular cross-section lead strip with twisted end. Dimensions: L: 34.5mm, W: 25.1mm, Th: 7.9mm. The strip measures 6.9mm x 2.2mm. Weight: 33.55g. Uncertain date. Context: 1009; Site Phase: 7.

64 Roughly oval shaped lead sheet with two ends folded over to meet in the middle. Dimensions: L: 34.8mm, W: 31.1mm, Th: 2.2mm. Weight: 15.2g. Uncertain date. Context: 1050; Site Phase: 3.

65 Large fragment of rough lead sheet. Dimensions: L: 102.6mm, W: 102.3mm, Th: 9.8mm. Weight: 289.0g. Uncertain date. Context: 1009; Site Phase: 7.

66 Large lead sheet now folded over. Dimensions: L: 101.5mm, W: 62.9mm, Th: 22.7mm, sheet Th: 2.4-3.1mm. Weight: 175.90g. Uncertain date. Context: 1009; Site Phase: 7.

67 Fragment of lead sheet with one cut straight edge. Dimensions: L: 16.5mm, W: 13.5mm, Th: 1.0mm. Weight: 147g. Uncertain date. Context: 1009; Site Phase: 7.

68 Lead sheet fragment. Dimensions: L: 22.7mm, W: 19.0mm, Th: 4.8mm. Weight: 10.42g. Uncertain date. Context: 1009; Site Phase: 7.

69 Five fragments of lead blobs and dribbles. Weight: 107.14g. Uncertain date. Context: 1009; Site Phase: 7.

Other stone & ceramic

70 Complete circular magnesian limestone disc. Roughly chipped around the circumference. One face has been smoothed and the other left rough. Dimensions: D: 80-84mm, Th: 23mm. Weight: 234g. Unknown date. Context: 1009; Site Phase: 7.

71 Complete circular Magnesian limestone disc. One smooth face and one rough face, which has some shallow grooves on it, possibly from sharpening. Dimensions: D: 71-76mm, Th: 21mm. Weight: 187g. Unknown date. Context: 1069; 5; Site Phase: 3.

72 Complete oval Coal Measures sandstone disc. One smooth face and one rough face. Dimensions: D: 61-70mm, Th: 10mm. Weight: 140g. Unknown date. Context: 1069; SF no.: 22; Site Phase: 3. Figure 14, 3.

73 Complete circular Coal Measures sandstone disc. Smoothed circumference and both faces. The disc has a very neat finish compared to the others and is much smaller. Faint cross on one surface. Dimensions: D: 36mm, Th: 22mm. Weight: 43g. Unknown date. Context: 1064; SF no.: 17; Site Phase: 3. Figure 14, 1.

74 Complete circular Coal Measures sandstone disc with smoothed sides. Dimensions: D: 45-46mm, Th: 17.5mm. Weight: 59g. Unknown date. Context: 1064; SF no.: 18; Site Phase: 3. Figure 14, 2.

75 Complete circular Coal Measures sandstone disc. Smoothed sides and one possibly burnt face. Dimensions: D: 47-50mm, Th: 15mm. Weight: 55g. Unknown date. Context: 1064; SF no.: 18; Site Phase: 3.

76 Complete oval Magnesian limestone disc. One face is smooth but not flat. The other face has laminated along the natural bedding planes. Dimensions: D: 67-74mm, Th: 15mm. Weight: 86g. Unknown date. Context: 1064; SF no.: 18; Site Phase: 3.

77 Completed circular disc made from a piece of tile cut down into an approximately circular shape and the edges lightly smoothed. Dimensions: D: 57-58mm, Th: 16mm. Weight: 71g. Uncertain date. Context: 1084; Site Phase: 3.

Table 13: Summary of finds

Category/Phase	Phase 3	Phase 5	Phase 6	Phase 7	Phase 8	Total
Coins/jetton	2	-	-	-	2	4
Dress	1	-	-	1	1	3
Equipment, tools and implements						
Key	2	-	-	-	-	2
Knives	2	-	-	2	-	4
Tools	3	-	-	1	-	4
Architectural	7	-	-	12	-	19
Nails	44	-	-	25	-	69
Firearm & artillery	2	7	-	10	-	19
Miscellaneous	61	-	3	49	2	115
Total	124	7	3	100	5	239

Table 14: Summary of nail fragments and nail heads by context and period

Period	Context	Fragment count	Nail head count
14th to 15th century			
	1076	11	3
	1079	2	1
	1080	8	3
	1098	2	2
	Sub-total	23	9
Late 15th to 16th century			
	1063	3	1
	1068	2	2
	1073	1	0
	1074	1	0
	1075	6	1
	1085	1	0
	Sub-total	14	4
17th century			
	1059	3	2
	1050	1	1
	1055	2	2
	Sub-total	6	5
19th century+			
	1009	23	14
	1034	1	0
	Sub-total	24	14
	Grand Total	67	32

Table 15: Summary of lead shot by phase and diameter with firearm from 1630 Council for War document specifications for bore size

Firearm (1630)	Diameter (mm)	Phase		Total
		5: Demolition (1649)	7: Victorian remodelling (1880s)	
Carbine & Pistol	10.6-11.0	1	-	1
	11.1-11.5	1	-	1
	11.6-12.0	-	-	-
	12.1-12.5	-	1	1
	12.6-13.0	-	-	-
	13.1-13.5	-	-	-
	13.6-14.0	-	-	-
	14.1-14.5	-	-	-
	14.6-15.0	-	-	-
Caliver	15.1-15.5	1	-	1
	15.6-16.0	-	-	-
	16.0-16.5	-	-	-
	16.6-17.0	-	-	-
Musket	17.1-17.5	2	2	4
	17.6-18.0	-	-	-
Unknown		2	6	8
Total		7	9	16

Table 16: HH-XRF raw analyses of the axle-mount in the as-received condition including Fe, (weight %, n.d. – Not Detected)

XRF File Number	Location	Ti	Mn	Fe	Ni	Cu	Zn	As	Sn	Sb	Pb	Total
569	Top Left	0.9	0.2	17.4	0.2	25.0	0.3	n.d.	1.2	0.4	54.3	100.0
570	Top Right	0.5	0.2	6.9	0.3	49.2	0.5	4.4	1.9	0.7	35.5	100.0
571	Centre Axle	0.3	n.d.	17.7	0.2	48.5	0.4	3.3	1.0	0.4	28.1	100.0
572	Front Left	0.3	0.1	7.1	0.3	62.8	0.5	3.2	1.1	0.4	24.1	100.0
573	Front Right	0.5	0.2	7.8	0.3	51.1	0.5	4.2	1.3	0.5	33.6	100.0
574	Base Right	0.2	0.1	3.4	0.4	75.5	0.6	2.7	1.0	0.4	15.7	100.0
575	Base Left	n.d.	0.3	6.4	0.3	53.1	0.4	4.8	1.1	0.4	33.2	100.0
576	Back Left	0.4	0.1	3.4	0.4	66.6	0.5	3.7	1.4	0.6	22.8	100.0

XRF File Number	Location	Ti	Mn	Fe	Ni	Cu	Zn	As	Sn	Sb	Pb	Total
577	Back Right	n.d.	0.2	4.8	0.3	66.3	0.5	3.4	1.8	0.7	22.0	100.0
578	LH side	0.2	0.1	3.1	0.4	75.9	0.5	2.5	1.3	0.5	15.4	100.0
579	RH side	n.d.	0.1	5.4	0.3	75.8	0.6	2.7	1.4	0.5	13.1	100.0

Table 17: Normalised data for the non-ferrous elements from the analyses of the axle-mount in the as-received condition, (weight %, N.D. – Not Detected)

XRF File Number	Location	Ni	Cu	Zn	As	Sn	Sb	Pb	Total
569	Top Left	0.3	30.6	0.4	n.d.	1.5	0.5	66.7	100.0
570	Top Right	0.3	53.2	0.5	4.8	2.0	0.7	38.4	100.0
571	Centre Axle	0.3	59.2	0.4	4.1	1.2	0.5	34.3	100.0
572	Front Left	0.4	67.9	0.5	3.5	1.2	0.5	26.0	100.0
573	Front Right	0.3	55.9	0.6	4.6	1.5	0.5	36.7	100.0
574	Base Right	0.4	78.5	0.6	2.8	1.0	0.4	16.3	100.0
575	Base Left	0.3	56.9	0.5	5.1	1.2	0.5	35.6	100.0
576	Back Left	0.4	69.3	0.5	3.9	1.5	0.6	23.8	100.0
577	Back Right	0.4	69.8	0.6	3.6	1.9	0.7	23.1	100.0
578	LH side	0.4	78.6	0.5	2.6	1.4	0.6	15.9	100.0
579	RH side	0.4	80.2	0.6	2.8	1.5	0.6	13.9	100.0

Table 18: Analyses of the cleaned area, including the iron value (weight %.)

XRF File Number	Location	Fe	Ni	Cu	Zn	As	Sn	Sb	Pb	Total
580	Base Polish 1	6.4	0.4	80.4	0.8	1.8	0.8	0.3	9.2	100.0
582	Base Polish 2	2.9	0.3	83.2	0.6	1.6	0.9	0.4	10.1	100.0
581	Side Polish 1	0.9	0.4	80.9	0.7	2.1	1.0	0.4	13.6	100.0

Table 19: Normalised copper alloy analyses of the cleaned areas, (weight %)

XRF File Number	Location	Cu	Zn	As	Sn	Sb	Pb	Total
580	Base Polish 1	86.2	0.8	2.0	0.8	0.3	9.9	100
582	Base Polish 2	85.9	0.6	1.7	0.9	0.4	10.4	100
581	Side Polish 1	81.9	0.7	2.2	1.0	0.4	13.8	100
	Mean	84.7	0.7	1.9	0.9	0.4	11.4	

Table 20: Comparison of the as-received composition with the data derived from the polished surfaces (weight %)

	Cu	Zn	As	Sn	Sb	Pb
As-Received	66.9	0.5	3.8	1.4	0.6	26.8
Polished	84.7	0.7	1.9	0.9	0.4	11.4

Appendix F: Environmental catalogue

Table 21: Plant remains and wood charcoal assessment

Period	Late 14th C	Late 14th C	Late 14th C	Late 14th C	Late 14th C	Late 14th C	15th – 16th C	15th – 16th C	15th – 16th C
Context	1098	1097	1080	1079	1076	1075	1085	1074	1063
Feature	101	101	101	101	101	101	101	101	101
Sample	58	57	41	54	39	38	44	37	12
Context type	Layer within pit	Layer within pit	Layer within pit	Layer within pit	Layer within pit	Layer within pit	Layer within pit	Layer within pit	Layer within pit
Sample size (l)	50	40	40	40	40	40	40	40	40
Rootlets (ml)	10	0.4	2	10	3	3	5	20	40
Flot size excluding roots (ml)	10	30	3	10	17	50	30	20	60
Other plant material									
Ficus carica (fig)				1 (uc)					
Urtica dioica (nettle)								1 (uc)	
Vicia/Lathyrus spp. (vetch/vetchling)	1								
Epilobium sp. (willowherb)						1 (uc)	1 (uc)		
Malva sp. (mallow)						1 (uc)			
Brassica nigra (black mustard)			1 (uc)	41 (uc)	62 (uc)	13 (uc)		6 (uc)	3 (uc)
Polygonum aviculare agg. (knotgrass)								1 (uc)	
Hyoscyamus niger (henbane)			1 (uc)	1 (uc)		1 (uc)	2 (uc)	2 (uc)	

Period	Late 14th C	Late 14th C	Late 14th C	Late 14th C	Late 14th C	Late 14th C	15th – 16th C	15th – 16th C	15th – 16th C
Context	1098	1097	1080	1079	1076	1075	1085	1074	1063
Feature	101	101	101	101	101	101	101	101	101
Solanum nigrum (black nightshade)					1 (uc)				
Carduus/Cirsium spp. (thistles)					1 (uc)		1 (uc)		
Taraxacum sp. (dandelion)					1 (uc)		1 (uc)	2 (uc)	
Sambucus nigra (elder)			1 (uc)	12 (uc)	12 (uc)	20 (uc)	30 (uc)	42 (uc)	20 (uc)
Carex spp. (sedges)			1 (uc)			3 (uc)		3 (uc)	
<2mm Poaceae (small seeded grasses)							1		
Wood charcoal									
>4mm^3 round wood charcoal fragments						1			
> 4mm^3 wood charcoal fragments	19	15	2	11		12	4	3	16
2-4mm^3 wood charcoal fragments	58	18	8	17	2	23	12	15	52
<2mm^3 charcoal fragments	++++	+++	++	++	+	+++	+++	++++	+++++
Charcoal notes	Ring porous (cf. *Quercus* sp.)	Ring porous (cf. *Quercus* sp.) some diffuse porous	Ring porous (cf. *Quercus* sp.)	Ring porous (cf. *Quercus* sp.) some diffuse porous	Ring porous and diffuse porous	Ring porous and diffuse porous	Ring porous and diffuse porous	Ring porous and diffuse porous	Ring porous and diffuse porous

Period	17th C	17th C	17th C	17th C	17th C	17th C	17th C	17th C
Context	1068	1067	1064	1059	1058	1050	1056	1055
Feature	101	101	101	101	101	101	101	101
Sample	22	14	13	6	5	4	3	2
Context type	Layer within pit	Clay deposit in pit	Layer within pit	Layer within pit	Layer within pit	Layer within pit	Lens of coal within pit	Layer within pit
Sample size (l)	40	40	40	40	50	40	10	40
Rootlets (ml)	10	20	40	40	20	50	0	5
Flot size excluding roots (ml)	100	60	100	60	80	150	40	30
Cereal grain								
Hordeum sp. (barley) hulled							1	
Avena sp. (Oat)					1			
Legumes								
Large seeded legume								1
Other plant material								
Rubus fruticosus agg. (bramble)		1 (uc)						
Hyoscyamus niger (henbane)	1 (uc)	3 (uc)		1 (uc)				
Sambucus nigra (elder)	15 (uc)	39 (uc)	23 (uc)	50 (uc)	7 (uc)	22 (uc)		
Carex sp. (sedges)		1 (uc)						
<2mm Poaceae (small seeded grasses)				2				

Period	17th C	17th C	17th C	17th C	17th C	17th C	17th C	17th C
Context	1068	1067	1064	1059	1058	1050	1056	1055
Feature	101	101	101	101	101	101	101	101
Sample	22	14	13	6	5	4	3	2
Parenchyma fragment (undifferentiated plant storage tissue)						1		
Wood charcoal								
>4mm^3 round wood charcoal fragments					1			
>4mm^3 wood charcoal fragments	22	6	3	9	17	7	3	6
2-4mm^3 wood charcoal fragments	70	40	45	48	50	45	16	23
<2mm^3 charcoal fragments	+++++	+++++	+++++	+++++	+++++	+++++	++++	++++
Charcoal assemblage composition	Ring porous and diffuse porous	Ring porous and diffuse porous	Ring porous and diffuse porous	Ring porous and diffuse porous	Ring porous and diffuse porous	Ring porous (some cf. *Quercus* sp.) some diffuse porous	Mostly cf. *Quercus* sp.	Mostly cf. *Quercus* sp.

Abundance key, - = < 10 items, + = > 10 items, ++ = > 50 items, +++ = > 100 items, ++++ = > 250 items, +++++ = > 500 items (uc = uncharred)

Table 22: Wood charcoal identification

	Period	Late 14th century	15th-16th century	17th century
	Context	1098	1063	1068
	Feature	101	101	101
	Sample	58	12	22
	Feature type	Layer within pit	Layer within pit	Layer within pit
	Sample size (l)	50	40	40
	Intrusive roots (ml)	10	40	10
	Flot size excluding roots (ml)	10	60	100
Taxon (number of fragments)	Common name			
Prunus cf. *spinosa*	blackthorn		4	
Prunus cf. *avium/padus*	bird/wild cherry			
Pomoideae	hawthorn/apple/pear/rowan/service/ whitebeam		2	
Quercus sp.	oak	69	45	79
Ulmus sp.	elm			2
Betula sp.	birch		1	
Alnus sp.	alder		11	
Corylus avellana L.	hazel			11
Populus/Salix spp.	poplar/willow		5	2
Fraxinus excelsior	ash		1	1
Ilex aquifolium L.	holly		1	
Indeterminate		8		
Total		77	70	95
Dendrological features (number of fragments)				
	Strong ring curvature		1 (oak)	6 (oak, elm, hazel
	Intermediate ring curvature		1 (alder)	4 (oak, hazel)
	Weak ring curvature	13 (oak)	8 (oak)	25 (oak)
	Narrow rings	7 (oak)	4 (oak)	19 (oak)
	Tyloses	61 (oak)	32 (oak)	49 (oak)
	Pith		1 (oak)	
	Fungal hyphae	2 (oak)		1 (oak)
	Vitrification	33	13	15

Table 23: Hand collected charcoal assessment

Period	Late 14th C	17th C	17th C	?	17th C	17th C
Context number	1076	1050	1058	1062	1064	1064
Feature number	101	101	101	?	101	101
Feature type	Layer within pit	Layer within pit	Layer within pit	?	Layer within pit	Layer within pit
Wood charcoal						
>4mm³ wood charcoal fragments		3	1	24	10	9
2-4mm³ charcoal fragments						
Charcoal notes	cf. *Quercus* sp., strong curvature,18 rings, bark and pith	cf. Betulaceae strong curvature, 9 rings, bark and pith	cf. Betulaceae strong curvature, 9 rings, bark and pith	cf. *Quercus* sp. strong curvature, 15 rings, bark and pith	cf. *Quercus* sp., strong curvature 22 rings, bark and pith	cf. *Quercus* sp., strong curvature, 24 rings, bark and pith
Other						
Vitrified charcoal / coal			3			4
>4mm³ cinders						2

Period	18th C	18th C	19th C	19th C	19th C	19th C	19th C
Context number	1037	1038	1009	1009	1009	1009	1047
Feature number	101	101	101	101	101	101	101
Feature type	Layer within pit	Layer within pit	Layer within pit	Layer within pit	Layer within pit	Layer within pit	Layer within pit
Wood charcoal							
>4mm³ wood charcoal fragments		1		1			1
2-4mm³ charcoal fragments							
Charcoal notes		cf. *Quercus* sp.		Diffuse porous			cf. *Quercus*

Period	18th C	18th C	19th C	19th C	19th C	19th C	19th C
Context number	1037	1038	1009	1009	1009	1009	1047
Feature number	101	101	101	101	101	101	101
		strong curvature					sp. weak curvature
Other							
>4mm^3 vitrified charcoal / coal		5	6		12	3	
>4mm^3 cinders	3	2		1	3	6	

Appendix G: Production waste catalogue

Table 24: Production waste catalogue

Context	Quantity	Weight (g)	Notes
1001	4	115	Slag
1001	4	5	Clinker. Associated with burnt potsherds
1009	3	24	Clinker
1009	6	5	Clinker
1009	1	4	Glass slag
1009	10	88	1 x ferrous, clinker
1009	88	1128	
1009	37	854	
1009	1	18	Clinker
1009	2	59	1 possible mortar, 1 ferrous slag
1009	3	36	Embedded ceramic in two pieces
1009	2	7	Slag
1009	5	7	Glass slag
1009	9	55	Pottery encrusted with slag
1009	1	59	Pottery encrusted with slag
1009	2	2	Glass slag
1009	1	13	Glass slag
1009	28	169	
1009	21	3775	
1009	2	27	Burnt waste
1034	1	0	Slag
1034	8	45	
Total	**239**	**6495**	

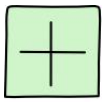
Appendix H: Social impact methodology

Table 25: Social impact methodology

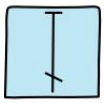
	Activities	Outputs	Outcomes	Standards of Evidence
	the processes and tasks undertaken by the organisation	*a quantifiable unit of 'product' or 'service' measurable once completed*	*observable change for heritage, individuals or communities*	*data collection and confidence rating demonstrating the positive difference made by an intervention*
For archaeology and heritage	1. Stakeholder consultation with national and local heritage bodies, societies and local authorities 2. Archaeological investigation of nationally significant site 3. Accessible archaeological archive	✓ Scheduled Monument Consent ✓ Archaeological Project Design ✓ Archaeological Assessment Report with recommendations ✓ Archaeological Archive	Through our work, heritage will be: ➲ identified, interpreted and better explained ➲ better managed and in an improved condition	Level 3 – Analytical report, synthesising specialist reports with previous regional, national and international work to determine significance, importance and potential of the site.
For people	4. Half-day familiy friendly DigCamp sessions 5. CIfA endorsed half-day Finds Lab workshops 6. CIfA endorsed half-day excavation skills training 7. Heritage skills workshops	✓ Excavation and finds room skills training for 81 YAC members ✓ 163 DigCamp participants (children under 12 and their parents) ✓ Excavation and finds room skills training for 132 participants ✓ 20 Participants in photogrammetry and creative skills workshops	By taking part in our work: ➲ a wider range of people will be involved in archaeology and heritage ➲ people will have greater wellbeing ➲ people will have learnt about the archaeology and heritage of Pontefract Castle, leading to changes in ideas and actions ➲ people will have more skills in excavation and finds processing, giving greater confidence to get involved	Level 3 – Field school training programme quality assured and endorsed by CIfA. Level 2 – Project evaluation report including survey data for users of DigLab and project participants to determine changes for individuals as a consequence of taking part, and highlighting scalability, implementation and ability to meet national needs.

	Activities	Outputs	Outcomes	Standards of Evidence
For communities and society	8. Education programme for primary schools 9. Daily site tours during archaeological investigation 10. Published web content and native social posts 11. Traditional broadcast and print media	✓ 372 school pupils from six local schools benefit from tailored education content ✓ Daily site tours reach new and more diverse audiences (438 people) ✓ Visitor numbers of Pontefract Castle increase by 138% to 14,810 ✓ 500,000 combined impression across Facebook & Twitter ✓ 7,000 unique microsite views ✓ Coverage by BBC Look North, BBC Radio Leeds, Wakefield Express, Pontefract and Castleford Express	As a consequence of our work: ➲ more and a wider range of people will be involved in heritage ➲ people have learned about archaeology and heritage, leading to change in ideas and actions ➲ the local area will be a better place to live, work or visit	Level 2 – Collection of evaluation survey data for participating schools, visitors to the archaeological site, temporary exhibitions and Trimontium Museum, to quantify audience demographics and determine any changes which took place as a consequence of the visit

Appendix I: Mason's marks

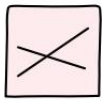


1. Right-angled cross-form; six from east wall and one each from north, south and west walls of drawbridge pit.

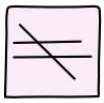


2. I-form, mitred at one end and angled differencing line; two from east wall of drawbridge pit.

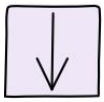
3. Incomplete hourglass form; three from west wall and one from east wall of drawbridge pit.



4. Acute X-form; two each from east and west walls of drawbridge pit.



5. Slashed equals sign; four from west wall and one from east wall of drawbridge pit.

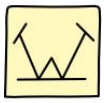


6. Simple three-line arrow form; four from east and two from west walls of drawbridge pit.

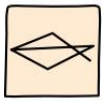
7. Three-armed triskele, conjoined at centre to form a small equilateral triangle; two from west and one from east walls of drawbridge pit.

8. W-form with line extending from apex; two each from east and west walls of drawbridge pit.

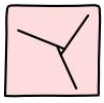
9. Diamond cross form; three each from east and west walls of drawbridge pit, and two from external gatehouse wall.



10. Mitred W-form with baseline; one each from north and east walls of drawbridge pit.

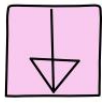


11. Flat diamond bisected by horizontal; three from west wall of drawbridge pit



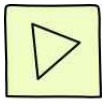
12. Three-armed triskele, conjoined at centre to form a small equilateral triangle; one each from north and west walls of drawbridge pit.

13. Angled banner form with three parallel lines; one from north wall of drawbridge pit



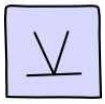
14. Small equilateral triangle bisected by extended line to give arrow form; one from south wall of drawbridge pit

15. Z/N-form; one from external gatehouse wall

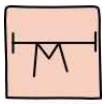


16. Equilateral triangle; four from east wall of drawbridge pit.

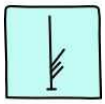
17. P-form with incomplete counter; one from east wall of drawbridge pit.



18. V-form with baseline; one from east wall of drawbridge pit.

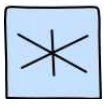


19. W-form with mitred baseline; one from west wall of drawbridge pit.



20. Angled banner-form with three parallel lines at mitred end; two from west wall and one east wall of drawbridge pit.

21. Reverse Y-form; one each from west and south walls of drawbridge pit.



22. Three-line asterisk; one from south wall of drawbridge pit.