PROCESSIONAL WAY, ELY CATHEDRAL, ELY, CAMBRIDGESHIRE

AN ARCHAEOLOGICAL EXCAVATION AND WATCHING BRIEF

PCA REPORT NO: R13373

SITE CODE: ECB5130

AUGUST 2018

PRE-CONSTRUCT ARCHAEOLOGY

Processional Way, Ely Cathedral, Cambridgeshire:

Archaeological Excavation Report

Local Planning Authority:	**N/A**
Central National Grid Reference:	**TL 5418 8024**
Site Code:	**ECB5130**
Planning Reference:	**17/00292/FUL**
Report No.	**R 13373**
Written and researched by:	**Laura Malric-Smith and Aileen Tierney** **Pre-Construct Archaeology Ltd**
Project Manager:	**Mark Hinman**
Commissioning Client:	**Ely Cathedral**
Contractor:	**Pre-Construct Archaeology Ltd** **The Granary** **Rectory Farm** **Brewery Road** **Pampisford** **Cambridgeshire** **CB22 3EN**
Tel:	**01223 845522**
E-mail:	**mhinman@pre-construct.com**
Website:	**www.pre-construct.com**

August 2018

CONTENTS

ABSTRACT

This report contains the results of the archaeological excavation and watching brief carried out by Pre-Construct Archaeology on land adjacent to the Processional Way at Ely Cathedral (centred on (NGR) TL 5418 8024) between March 7th and April 4th 2018 (excavation) and 12th April 2018 (watching brief). The work was commissioned by Ely Cathedral in response to a proposal to pave the grassed area between the Lady Chapel and the North Choir Aisle and consequent brief compiled by Dr. Roland Harris, Cathedral Archaeologist. The remit of the project was to excavate no lower than the formation level required for the installation of the paving and retaining walls of the processional way improvements scheme which means that the majority of the remains present on this site remain preserved 'in situ'.

The Saxon remains glimpsed in section during this project are likely to indicate the presence of pitting and occupation deposits of middle to later Saxon date at this location. The investigation also identified 2 sherds of Middle Saxon Ipswich Ware dated c. AD 720–850 2 sherds of Late Saxon Thetford-type ware (THET), pottery dated c. AD 840–1150, and 3 sherds of Shell-tempered St Neots-type ware (NEOTS), dated c. 875–1100 present as residual material within later medieval and post-medieval archaeological remains.

During the early medieval period the area was utilised as part of the lay cemetery. From around AD 1321 it was part of the sacrists yard adjacent to the site of the Lady Chapel and from c AD 1425 became the site of the Feretar's Checker. The later parts of the archaeological sequence have clearly undergone 17th – early 19th century levelling and following the subsequent construction of a Victorian drainage system further truncation took place.

The medieval remains consisted of four in-situ human burials confined to the outer edges of the site, belonging to the lay cemetery and thought to predate the construction of the Lady Chapel in 1321. The lack of soil cover over the burials is a clear indication of extensive truncation of later deposits. A large brick built foundation at the eastern edge of the site previously identified Dixon (2002) is thought to be surviving evidence for the 15th Century Feretar's Checker building. Multiple mortar rich layers of were found to be sealing and disturbing medieval burials and the Checker foundations. Although it was not possible to excavate most of these deposits they likely represent

evidence for activity associated with the demolition of the 14th Century Processional Way, activity associated with the sacrists yard which was expanded to facilitate construction of the Lady Chapel and the subsequent 15th Century construction and later 17th Century demolition of the Feretrar's Checker and Processional Way. The upper interface of these deposits had clearly been disturbed and at least partially reworked because of later drainage and landscaping works in this portion of the Cathedral grounds in the Victorian period.

The later remains comprised a 17th century, clunch lined soakaway and associated phases of a brick and tile drainage system extending across the site. The excavation also encountered modern truncations in the form of service pipes and a charnel pit inserted in 2000, which contained the reinterred human bones from the original Processional Way (2000) excavations.

This report describes the archaeological remains recorded during the fieldwork and their significance and includes specialist analysis of the finds and environmental assemblages recovered.

1 INTRODUCTION

1.1 An archaeological excavation was undertaken by Pre-Construct Archaeology Ltd (PCA) at the Processional Way Courtyard, Ely Cathedral, CB7 4NB (centred on Ordnance Survey National Grid Reference (NGR) TL 5418 8024) between March 7th and April 4th 2018 (Figure 1; Plate 1). The site is located on the Isle of Ely, approximately 23km northeast of Cambridge.

1.2 The archaeological work was commissioned by Ely Cathedral in response to the a proposal to replace the grassed area, or courtyard, between the choir (to the south), the Lady Chapel (to the north) and the Processional Way (to the west) with paving (planning ref 17/00292/FUL). The proposal, in both design and impact also required CFCE consent under the Cathedral Measure.

1.3 The excavation was carried out in accordance with a Written Scheme of Investigation (WSI) prepared by PCA (Hinman 2017) in response to a Brief for Archaeological Investigation written by Dr Roland Harris, Cathedral Archaeologist (Harris 2017).

1.4 The aim of the excavation was to 'preserve by record' any archaeological remains present in those areas of the site which would be affected by groundworks associated with the laying of paving.

1.5 This report describes the results of the excavation, places the site and the identified remains in their local landscape and archaeological context, and assesses their significance against relevant regional research agendas. The site archive will be deposited at the Cambridge Archaeological Stores.

2 GEOLOGY AND TOPOGRAPHY

2.1 The site is located in the north of the cathedral precinct, in the centre of the City of Ely, 23km northeast of Cambridge (Figure 1). The cathedral area lies on an area of high ground (c. 20–21m OD) with land falling away to the east towards Broad Street and the River Great Ouse, and south towards a valley in the Dean's Meadow. The ecclesiastical complex is bounded by Minster Place to the west and High Street to the north (Figure 2). The natural topography of the hilltop has been undoubtedly modified by construction and landscaping activity over many centuries. Before the large scale draining of the fens in the seventeenth century, Ely occupied an island accessible only by water or by causeway.

2.2 The River Great Ouse was originally located a mile east of Ely in the Anglo-Saxon period, and the diversion of its course past the foot of the isle is thought to have been associated with the building of the cathedral itself. The 'Common Gutter' stream is known to have flowed through Dean's Meadow valley, just to the south of the cathedral, in the fourteenth century, but has since dried up.

2.3 The geology of the site is Woburn Sands Formation Sandstone (hereafter referred to as ‘Greensand’), a sedimentary bedrock formed approximately 100 to 125 million years ago in an environment dominated by shallow seas in the Cretaceous Period (British Geological Survey 2014; Website 1). The geological deposits that underly Cambridgeshire predominantly date from the Cretaceous Period (140 to 65 million years ago). The geology is divided into a series of strata that outcrop in bands running north-east to south-west. The Isle of Ely is located on one of these bands, bounded in the north-west and south-east by Kimmeridge Clay Formation Mudstone; sedimentary bedrock formed approximately 152 to 157 million years ago in the Jurassic Period. During excavation the sedimentary bedrock was reached in two locations through probing where appropriate; at the east edge of the site at a level of 18.84m OD, and in the western half of the site at 18.97m OD.

2.4 The overlying deposits encountered during excavation comprised a dark humic

topsoil and turf (1000) and made ground deposits (1001) and (1002), reaching a depth of 20.24m OD in the northeast of the site, and 20.11m OD in the southwest. These deposits consisted of mixed dark humic silt and mid brown grey sandy silt, each containing modern plastic detritus and brick rubble. These deposits were removed using a mechanical excavator operating under archaeological supervision.

3 ARCHAEOLOGICAL BACKGROUND

3.1 Introduction

3.1.1 The archaeological and historical background has been summarised by Dr Roland Harris in the archaeological brief (2017), which is used here, as well as a search of information held in the Cambridgeshire Historic Environment Record (CHER) and information from Woolhouse and Boyer's report on excavations at the Almonry in 2013 (unpublished PCA report R11436).

3.1.2 The site lies on the Isle of Ely, which was occupied from the Neolithic period, with the earliest more specific evidence for occupation of the hilltop site of the cathedral coming from a pit, ditch and bank of Late Iron Age date, discovered at Walsingham House in 1991 (MCB16909). Below is summarised the archaeological and historical background specifically relevant to the proposed area of paving, between the Lady Chapel and the north aisle of the presbytery.

3.2 Romano-British period

3.2.1 A considerable number of sherds (128) of Roman pottery were discovered during the main Processional Way excavation (2000), immediately west of the proposed development, which is consistent with intensive use of the hill top in this period.

3.3 Anglo-Saxon to early medieval period (up to 1200 AD)

3.3.1 A small quantity of Early to Middle Saxon pottery (10 sherds) was found during the Processional Way excavation (2000), and there is wider evidence for occupation on the Isle of Ely in the Early Saxon period (e.g. three cemeteries). The pottery from the Processional Way site, however, may well date from the Middle Saxon period, for which there was more substantial evidence in the form of dark soil layers and a single large pit, finds from the latter suggested food preparation in the immediate vicinity. There is no certainty that the double monastery (i.e. for both men and women) founded by Aethelthryth (Latin: Etheldreda) at Ely c. 673 AD was on the hilltop site of the later cathedral, but, in the absence of any evidence to the contrary, this is the most likely location. Certainly, by the Late Saxon period the monastery (apparently destroyed by the

Viking 'heathen army' c. 870 AD but re-established in the late 10th century) was on the present hilltop location, although details of the exact location and plan have yet to be established. Late Saxon floor surfaces, a possible robbed-out wall and a ditch from the Processional Way excavation (2000) reveal the survival of evidence of occupation from this period immediately adjacent to the proposed development with the presence of a Late Saxon charnel pit also suggesting clearance of a cemetery in the vicinity.

3.4 High medieval period (1200 – 1400 AD)

3.4.1 With the construction of the Norman abbey church beginning shortly after Simeon's appointment as abbot in 1081-2, the location of the development site in relation to the monastery becomes clearer: it lay immediately north-east of the north aisle of the presbytery. Thirty-two in situ burials of 12th-century date, along with numerous disarticulated human bones, were found during the main Processional Way excavation (2000), immediately adjacent to the new courtyard area. The mix of adult male and females, and children suggests that the lay cemetery extended along the entirety of the north side of the Norman cathedral (Atkinson 1983).

3.4.2 The extension of the eastern arm by six bays in 1234-52, under Bishop Northwold, was followed by the Lady Chapel (begun 1321, interrupted by the fall of the Norman crossing tower in 1322 and the consequent focus on the building of the Octagon, and completed in the 1330s and 1340s). These buildings, linked by a passageway (whose foundations may have been reused from a 13th-century passage) and, to the west, a flying gallery or bridge, delimited the north, south and west sides of the site of the 2018 paving. The lay cemetery fell out of use in the enclosed space between the medieval passageway and the north transept, and possibly to the east too: certainly the two burials found to the east in 2000, during the excavation for the foundation of the railings, dated from before 1321 and before c.1230.

3.5 Late medieval period (1400 – 1550 AD)

3.5.1 The small-scale investigation for the railings also revealed two parallel substantial brick-built foundations, each c.1.0-1.2m wide and oriented east

west. The stratigraphic evidence was poor, but possibly could indicate a pre-1321 date, with Philip Dixon proposing that the foundations may derive from a bell tower removed for the construction of the Lady Chapel rather than the post-medieval bedesmen's accommodation in this area. Dixon's suggestion that the remains do not derive from the accommodation for bedesmen, or almsmen, is based on the substantial width of the foundations. However, this building had been built about 1425 as the Feretrar's Checker (or shrine chamber), leading off the fourth bay from the east of the presbytery, and substantial construction can be assumed: the Checker was of two stories, with a lead roof, and glazed and barred windows. Significantly, the construction of the Checker included 4,700 bricks called 'waltyl' (a term then meaning brick for walls rather than what we would nowadays mean by 'walltile'), from Wiggenhall in Norfolk: Atkinson suggests that this small quantity means that brick was used for the inner lining of the building only, but, equally, it could reflect use of brick for foundations. The Checker probably had two chambers on the upper story and had two privies.

3.6 Post-medieval period (1550 onwards)

3.6.1 In 1541 the Checker building was allotted to a former monk called Cotts, prior to its later use for almsmen and, then, demolition before 1649. The fourth bay of the presbytery has a blocked doorway that opened into the Checker, and the buttress between this bay and Bay 3 has an area of post-medieval repair above the lower weathering, presumably reflecting making good following removal of the Checker. This architectural evidence suggests that the Checker was not flanked by the buttresses of Bay 4, as suggested by Atkinson, although there is no clear evidence that it extended into Bay 3: if related to this building, the brick foundations suggest an east wall in Bay 3, but, of course, this might apply to the northern part of the building only (i.e. it may have had a L-shaped plan), which may have comprised the documented privies.

3.6.2 Removal of the Checker and, at a similar time, the passageway between the Lady Chapel and presbytery and, further west, the monks' flying gallery or bridge access to the Lady Chapel, was followed by levelling mainly with sand and gravel mixed with domestic refuse and some demolition material. A drainage channel constructed from brick and tile was introduced in the 17th

century, and burials disturbed by this were carefully reinterred. Addition of subsidiary buildings, including a vestry, to the south side of the Lady Chapel by the mid-18th century is evident from Bentham's 1768 plan. A vestibule was created against the westernmost bay of the chapel, in the late 16th or the 17th centuries, providing access to the Lady Chapel (from 1566 a parish church) via a former chapel at the north-east corner of the north transept. With this new access, a vestry was then built against the third bay from the west of the Lady Chapel, reusing part of the medieval passageway vestibule and the east-west part of the monks' bridged access above. These structures saw substantial modification during the second half of the 19th century, but were – and are – confined to the depth of the Lady Chapel buttresses, not extending into the area of the proposed paving. A late Victorian organ blower chamber was then added, occupying the much of the site of the medieval passageway between the presbytery and Lady Chapel.

3.6.3 The organ blower chamber was demolished in 2000, to allow construction of the Processional Way. This structure re-established the medieval passageway to the Lady Chapel (albeit without chambers above) and was accompanied by construction of railings to the east, creating the enclosed grassed area (with a path on the north and west sides) that is the subject of the 2018 paving.

4 METHODOLOGY

4.1 General

4.1.1 The excavation comprised a rectangular area measuring 12.3m x 7.4m bounded to the west by the Processional Way, to the north by a path adjacent to the south wall of the Lady Chapel, and to the south by the north wall of the north aisle of the presbytery. The excavation of a further area was monitored as part of the watching brief phase of this project (Figure 3, Plate 2).

4.1.2 The remit of the project was to excavate no lower than the formation level required for the installation of the paving and retaining walls of the processional way improvements scheme. The restricted depth of the archaeological excavations combined with earlier truncations of the subject area were significant factors in limiting the amount of stratigraphic data recovered from this site. The majority of the archaeological sequence in this area remains intact and preserved in situ beneath the newly installed paving.

4.2 Excavation Methodology

4.2.1 Ground reduction during the excavation was carried out using a mechanical excavator operating under close archaeological supervision; a 1.5 ton 360° tracked mechanical excavator was used to strip the excavation area (Plate 1). Topsoil and other overburden of low archaeological interest was removed in spits down to the level of the highest archaeological horizon (here at 20.28 m OD), after which all excavation was carried out by hand, or to the required formation level of 20.10m OD if this was encountered first. A lower level of 19.69m OD was required for the construction of a dwarf retaining wall along the north and west sides of the paved area.

4.2.2 Exposed surfaces were cleaned by trowel and hoe as appropriate and all further excavation was undertaken manually using hand tools.

4.3 Recording and Finds Recovery

4.3.1 The limits of excavations, heights above Ordnance Datum (m OD) and the locations of archaeological features and interventions were recorded using a dumpy level in conjunction with known heights provided by the proposed

architectural plans.

4.3.2 A 5m planning grid was established to locate hand drawn phase and single context plans of the site, to a scale of 1:20.

4.3.3 Deposits or the removal of deposits judged by the excavating archaeologist to constitute individual events were each assigned a unique record number (often referred to within British archaeology as ‘context numbers’) and recorded on individual pre-printed forms (Taylor and Brown 2009). Archaeological processes recognised by the deposition of material are signified in this report by round brackets (thus), while events constituting the removal of deposits are referred to here as ‘cuts’ and signified by square brackets [thus]. Where more than one slot was excavated through an individual feature, each intervention was assigned additional numbers for the cutting event and for the deposits it contained (these deposits within cut features being referred to here as ‘fills’). Multiple sections excavated across a single feature were later grouped together by unique ‘group numbers’ e.g. Ditch 1. Additionally, features of contemporary date and representing the same type of activity or land-use were assigned to interpretative groups e.g. 'Refuse Pits', 'Quarry Pits'). The record numbers assigned to cuts, deposits and groups are entirely arbitrary and in no way reflect the chronological order in which events took place. All features and deposits excavated during the evaluation and excavation are listed in Appendix 2. Artefacts recovered during excavation were assigned to the record number of the deposit from which they were retrieved.

4.3.4 Metal-detecting was carried out during the overburden stripping and throughout the excavation process. Archaeological features and spoil heaps were scanned by metal-detector periodically.

4.3.5 High-resolution digital photographs were taken of all relevant features and deposits and were used to keep a record of the excavation process. In addition, black and white film photographs were taken of significant features and wherever else was deemed appropriate by the supervisor.

4.4 Sampling Strategy

4.4.1 Discrete features were half-sectioned, photographed and recorded by a cross-section scaled drawing at an appropriate scale (either 1:10 or 1:20). Where large or significant finds assemblages were present, features were subsequently 100% excavated for finds recovery.

4.4.2 Linear features were investigated by means of regularly-spaced slots amounting to 25% of their lengths. Where stratigraphic relationships between features could not be discerned in plan, relationship slots were also excavated and these were recorded as part of the planning and noted on the relevant context sheets.

4.5 Environmental Sampling

4.5.1 A total of ten bulk samples (generally 20-40 litres in volume) were taken to extract and identify micro- and macro-botanical remains. The aim of this sampling was to investigate the past environment and economy of the site. An additional aim of the sampling was to recover small objects that are not readily recovered by hand-collection, such as metalworking debris and bones of fish and small animals. These samples were taken from sealed deposits.

5 QUANTIFICATION OF ARCHIVE

5.1 Paper Archive

Type	Excavation	Total
Context register sheets	6	6
Context sheets	101	101
Plan registers	2	2
Plans at 1:50	n/a	n/a
Plans at 1:20	40	40
Plans at 1:10	3	3
Plans at 1:5	n/a	n/a
Section register sheets	1	1
Sections at 1:10 & 1:20	9	9
Trench record sheets	n/a	n/a
Photo register sheets	10	10
Small finds register sheets	1	1
Environmental register sheets	1	1

5.2 Digital Archive

Type	Excavation	Total
Digital photos (tif)	342	342
Access database	1	1
Project AutoCAD files	1	1
CD ROM containgin digital archive	1	1

5.3 Physical Archive

Type	Excavation	Total
Saxon Pottery	7	7
Medieval Pottery	12	12
Post Medieval – Modern Pottery	68	68
Clay Tobacco Pipe	38	38
Ceramic building material (CBM)	122	122
Glass	34	34
Worked stone	7	7
Metal Work	31	31
Animal bone	199	199
Shell	15	15
Environmental bulk samples	9	9

6 ARCHAEOLOGICAL RESULTS

6.1 Overview (Figures 4-11)

6.1.1 Archaeology was encountered before the maximum depth required for construction was reached (Harris, 2017). The excavation revealed archaeological deposits across the site, identified at a depth of 20.25m OD in the northwest quadrant, 20.20m OD in the northeast quadrant, 20.26m OD in the southwest quadrant and 20.20m OD in the southeast quadrant. These deposits were excavated to a depth of 20.04m OD in the northwest quadrant, 19.97m OD in the northeast quadrant (19.74mOD in watching brief phase), 19.90m OD in the southwest quadrant and 20.08m OD in the southeast quadrant. This site comprised evidence of land usage since the 12th century changing from a medieval lay cemetery to the potential location of the Feretrar's Checker and later, following demolition, truncation and levelling, as an area characterised by a system of drains. The sandstone bedrock was reached in two locations; at the base of the 18th century soakaway at 19.05m OD and at the base of a potential medieval foundation at 19.15m OD.

6.1.2 Five main phases were identified, reflecting major changes over time in the character of activity in this part of the cathedral precinct. The earliest phase was represented by a small number of burials, distributed around the edges of the excavation area (Figure 5 & 6). These burials likely predate the construction of the Lady Chapel in AD 1321, as appears to have been the case with the burials found in the adjacent Processional Way excavation (2000). The next phase, in the late medieval period, saw the construction of a building, represented by a set of substantial masonry foundations exposed at the eastern edge of the site (Figure 7). These appeared to extend north from the North Choir Aisle and are most likely to be part of the Feretrar's Checker building, known to have been constructed in approximately this location in c. AD 1425, and subsequently used, after the Dissolution, as accommodation and then an almshouse. If it had not already ceased to be used as such when the Lady Chapel was built, construction of this building would presumably have ended the use of the area immediately to the west as a burial ground.

6.1.3 The fabric and form of brick samples from the foundations, as well as the ceramic building material from the overlying demolition layer (Figure 8), broadly match the documented date of construction of the Checker and its demolition in 1649. There was limited excavated archaeological evidence for further activity on site until later in the 18th century, when a substantial brick and tile drain was installed, with later additions, extending across the site from east to west. Associated with this drain were areas of construction surfaces formed of truncated and compacted demolition material (Figure 9).

6.1.4 Stages of 19th century levelling and backfilling were apparent, with modern truncation by services recorded at the southern, western and northern edges of excavation area. A charnel pit containing redeposited human bone from the Processional Way excavation (2000) was also recorded and removed, and the bones reinterred within the Cathedral grounds.

6.1.5 The results of the excavation are consistent with the archaeological sequence recorded by Cambridge Archaeological Unit in 2000 on the site of the current Processional Way, directly west of this site. However, due to the relatively shallow depth of the construction impacts from the current development, no deposits dating to earlier than the 'high' medieval period were exposed and there was no opportunity to investigate possible Anglo-Saxon horizons, as seen at the Processional Way excavations (2000). It is worth noting however that the recovery of 2 sherds of middle Saxon and 5 sherds of later Saxon Pottery from residual contexts provide some indication of activity on site at this time.

6.2 Phase 1: 'High' medieval (late 12th - early 14th century; Figures 5 & 6)

6.2.1 This phase was characterised by the use of this area as part of the medieval lay cemetery, which occupied a large area on the north side of the cathedral from at least the 12th century (Cessford and Dickens 2007). Four truncated in-situ graves were present. These burials were on a similar alignment to those found during the Processional Way excavation (2000) (Figure 4). Due to concerns that the human remains would be impacted by the planned works all were lifted during the excavation.

6.2.2 The relatively low number of burials, and their survival only around the edges of the excavation area, is likely to be due to subsequent damage caused by late medieval and post-medieval construction, particularly a system of drainage channels and a soakaway extending from east to west across the site, constructed in the 18th century. The original presence of additional burials here is evidenced by the redeposited partial skeletons and disarticulated human bones in two features and five layers. Further burials are likely to be present below the limit of excavation.

Cemetery Soils: (1032), (1030), (1005), (1071), (1053), (1038), (1070), (1069), (1065), (1098), (1099)

6.2.3 The earliest soil layers encountered were (1032), (1030), (1005), (1071), (1053), (1038), (1070), (1069), (1065), (1098) and (1099) (Figure 5; Plate 13). . Deposits (1098) and (1099) were identified in section below Drains [1093], [1095] and [1097] and are therefore not shown on plan. All these deposits were homogeneous, consisting of soft sandy silt, mid orange-brown/ grey in colour, with flecks of ceramic building material, chalk and oyster shell. The small fragments of CBM were small and undiagnostic. Due to the relatively small quantities of cultural material present, these soil layers are interpreted as medieval levelling or disturbed cemetery soils; they did not contain deliberate dumps of refuse or other material. These layers were excavated as far as the required formation level; at the close of the excavation (1069) and (1070) reached a depth of 19.97m OD in the north-east corner of the site, and (1030) reached a level at 20.04m OD in the south-west. All were truncated by later features, and so were only present at the outer margins of the site, not extending far into the centre where there was a greater density of later cut features. These layers may be considered broadly equivalent to each other; the multiple numbering simply reflecting the locations at which these deposits were visible between later, unexcavated deposits.

Graves: [1042], [1061], [1074], [1087]

6.2.4 Four in-situ burials were recorded truncating these layers, two oriented west-east (Graves [1042] and [1087]) and two oriented north-west-south-east (Graves [1061] and [1074]). All were located near the edges of the excavation

area. None of the skeletons were complete, all having been truncated or damaged by later features or modern services. The grave fills were all very similar to the surrounding cemetery soils, suggesting that the digging, interment of human remains, and backfilling of each grave happened in quick succession over a short period. A small medieval buckle and two small sherds (2g) of late Saxon-early medieval pottery (Thetford and St Neots Ware) were retrieved from Fill (1041) of Grave [1042]. The other grave fills ((1014), (1075) and (1089)) did not contain any finds. The surfaces of two graves ((1014) and (1041)) contained small fragments of Blisworth Limestone. This was a result of disturbance and not directly related to the graves.

6.2.5 In the south-west corner of the site, Grave [1042] was cut into Layer (1030) from a level of 20.04m OD (Figures 5 & 6; Plate 3). This shallow grave (depth: 0.06m) contained SK1043, an infant skeleton in an extended, supine position, with the head at the western end of the grave. The grave fill (1041) contained SF5, a small medieval copper alloy buckle fitting, found at a level of 19.98m OD next to the right shoulder of the skeleton (AD 1350-1450; see Beveridge, Section 7.4), in addition to two small sherds (2g) of late Saxon to early medieval Thetford ware and St. Neots ware pottery (c. AD 875-1100) (see Jarrett, Section 7.1). This grave had suffered truncation from Construction Cut [1034], most likely associated with the installation of the 18th-century drain (see below), resulting in the lower legs and feet being absent.

6.2.6 In the south-eastern quadrant of the site, Grave [1061] was cut into Layer (1065) from a level of 20.12m OD (Figures 5 & 6, Plate 4). This grave (depth: 0.13m deep) contained SK1066, a mature adult male in an extended supine position on a north-west-south-east orientation. Due to truncation from Modern Drain [1103], the lower right arm, right leg and lower left leg were absent.

6.2.7 Grave [1074], situated immediately east of Grave [1061], was also cut into Layer (1065) from a level of 20.00m OD (Figure 5 & 6, Plate 4). This grave (depth: 0.15m) contained SK1076, a young adult female in an extended, supine position on a northwest - southeast orientation. Due to the two instances of truncation, by Grave [1061] to the south-west and Modern Drain [1103] to the south, the

skull, right arm, right leg and lower left leg were absent.

6.2.8 In the north-eastern corner of site, Grave [1087] was cut into patches of Layers (1071) and (1069) from a level of 19.94m OD (Figures 5 & 6; Plate 6). This grave (depth: 0.18m) contained SK1088, a middle-mature adult female in an extended supine position, on a west-east orientation. This individual appeared to have suffered truncation from unknown sources later in the stratigraphic sequence, with the absence of the skull and a modern marquee peg damaging her right humerus. Feature [1090] truncated this grave to the north, while the potential Checker building foundations [1092] truncated the individual's lower legs.

6.2.9 Orientation and body attitude are consistent with medieval cemetery practices, suggesting a continuation of the lay cemetery identified at the adjacent site, and known to extend east-west along more-or-less the entire length of the Cathedral on its north side. Osteological demographical and pathological data support this theory (see Tierney, Section 7.7). It is unlikely that the artefacts recovered from Grave [1042] are in-situ finds and therefore do not assist with dating the burial(s). The small size of the two fragments of pottery (1g each) indicates that they are most likely residual, both due to their small, abraded nature, and the fact that deliberate burial of grave goods would be atypical of medieval burial practice. The presence of residual Anglo-Saxon pottery or other cultural material is unsurprising due to the close proximity of Anglo-Saxon occupation levels uncovered during the Processional Way excavation (2000). The belt buckle dates to the late medieval period, which is broadly in keeping with the likely date of the burials. However, it is also unlikely that this was in-situ in the grave. During the medieval period, bodies of the deceased tended to be buried in a shroud with associated shroud pins. Shroud pins of this type were found in c. 16th-century burials recorded during the monitoring of the Cross Green Swale works (Slater and Tierney, 2014). Individuals would not have been buried in their clothes and the placing of a belt over the shoulder seems highly unlikely at this period. The shallow nature of the grave highlights the truncation of the site during the installation of the drainage system in the 18th century and by Victorian levelling and ground reduction (see below).

6.2.10 At the Processional Way excavation (2000), a number of the burials were truncated by the construction of the Lady Chapel (Cessford and Dickens 2007). The burials could only be broadly dated to the medieval period on the basis of the archaeological evidence. It is understood however, that the lay cemetery at this location must have gone out of use by the 1320's when the sacrist's yard was expanded under Alan of Walsingham (sacrist 1321-41) to help facilitate the construction of the Lady Chapel (1321), the collapse of the central crossing tower (1322) and the subsequent construction of the Octagon. This allowed the cemetery-use of the area to be assigned a pre-AD 1321 date.

6.2.11 The majority of truncation at the Processional way was from rather later activity. Grave [1087] was truncated by a foundation potentially associated with the Checker building, suggesting a pre-AD 1425 date for that particular burial on stratigraphic grounds alone although a pre-AD 1321 date for all burials within the processional way site is assumed.

6.3 Phase 2: Late medieval (15th-16th century; Figure 7)

6.3.1 This phase saw a change in the use of this area of the Cathedral precinct from open space in the western part of the current site and a substantial building, potentially the documented Feretrar's Checker, occupying the eastern part of the site.

6.3.2 Evidence for the building consists of two separate foundations located at the eastern limit of excavation. Parts of both structures were found in Philip Dixon's 2000 excavation (Dixon, 2002) prior to the installation of the iron railings which bound the east side of the current site, but were at that point, with the limited exposure in narrow foundation trenches, interpreted as east-west walls. The 2018 excavation has ascertained that they are more likely to be foundation piers for a north-south-aligned wall extending towards the north presbytery aisle and incorporating one or more brick arches.

Foundation [1059]

6.3.3 Foundation [1059] (Figure 7, Elevation 1, Plates 7) appears to have been constructed by digging a hole down to the level of the hard natural greensand

bedrock (19.20m OD) and then building a structural pier by filling the hole with successive layers of yellowish sandy mortar, with occasional greensand and brick fragments included to provide additional strength. The resulting pier had dimensions of 1.4m long, 0.73m wide and 1.3m deep. At the top of the south side of the foundation, three partial courses of angled unfrogged red bricks set in mortar had the appearance of the beginning of an archway extending southwards from the pier. The bricks are of transitional late medieval/ early post-medieval manufacture (c. AD 1400-1600/1700); the mortar is in keeping with this date.

Foundation [1092]

6.3.4 Foundation [1092] (Figure 7, Elevation 2, Plates 9 & 10) appeared much less substantial than [1059], apparently only extending to a depth of 0.25m, though it was of similar construction, comprising yellow sandy mortar incorporating brick rubble and greensand fragments, with a single course of red bricks on top. The bricks and mortar were identical to those used in Foundation [1059]. As this foundation was only observed in the watching brief, its overall size and form are not well understood although there is some indication that its base was reached in the shallow slot monitored for the retaining wall (Plate 10; ground reduced to 19.69m OD only), the foundation could just as well have been flaring outwards towards its top, and continued downwards and slightly eastwards to the rear of the exposed elevation. There is also a slight hint of the beginning of an archway on the south side of the feature, though only apparent from the curvature of the mortar and rubble rather than there being angled brick courses, as in Foundation [1059]. Foundation [1092] cut the east end of Grave [1087].

6.3.5 The use of foundation arches has been noted in previous excavations on this site by Regan (2001, p.16). The eastern wall of what Regan considered to be part of the original Processional Way built in the 14th century had two foundation arches, the northern most spanning a space of 1.50m. The wall was constructed in the main from limestone (Barnack) and ragstone rubble, with some clunch, flint and reused worked fragments included in the build. The binding agent was a relatively compact yellow coarse sandy mortar.

6.3.6 One significant difference between the foundations observed in 2018 which were brick built and those seen by Regan which were made up from a range of reused stone elements.

6.3.7 Brick foundation arches of very similar design were used in a late-14th-/early-15th-century building, probably a merchant or bronze-smith's house, identified in excavations at Ber Street, Norwich (Woolhouse 2008). Their purpose there seems to have been to better distribute the weight of a substantial building constructed on disturbed ground rather than onto bedrock as at Ely.

6.3.8 Arch construction requires less building material than a trench built foundation. This is the most likely reason to employ this technique at Ely. Furthermore the perils of construction on the 'soft' cemetery soils at this location would have been well understood by the builders here with piers set on bedrock becoming a necessity for any building of substance.

6.3.9 The likely presence of an arch adjoining Foundation [1059] gives rise to a third interpretation that must be considered: that there was a latrine in this area. The Checker building is recorded as having had two latrines, probably serving the chambers in the upper storey. In this scenario, rather than the foundation having been cut through the deposits seen in the test pit, it was cut through deposits which had subsequently been completely removed by the digging of a latrine pit here, with the arch either forming a culvert through which effluent could run eastwards from the pit and exit underneath the building's east wall, or an opening between a chute constructed either within or outside the wall, and the latrine pit beneath its floor. In this case, the deposits seen in the test pit would abut the mortar and brick foundation rather than being cut by it, with their appearance and composition, which were not characteristically cess-like, and their sloping profile indicating that they were deliberately-dumped backfills of a pit predating the foundation. There is no archaeological evidence to support this interpretation and the relatively poor quality of materials and the construction technique used to for the foundations is not consistent with culvert design and can be discounted.

Identification as parts of the Feretrar's Checker

6.3.10 These foundations could relate to the documented Feretrar's Checker or shrine chamber (the feretrar was a monk charged with the care of the principal shrines at the Cathedral), which was constructed in the space between the Lady Chapel and the presbytery north aisle around AD 1425. Subsequently, after the Dissolution, it was used as accommodation and then almshouses, before being demolished sometime before AD 1649 (see Section 3.5, above).

6.3.11 The precise position of the Checker is not clear but the most likely location is marked in outline on Figure 3 (after Atkinson 1953). There is a blocked doorway in the wall of the 4th bay (from the east) of the presbytery (Plate 11), which would have given access, and there is an area of repair on the buttress between the third and fourth bays, presumably indicating some making good after the building was demolished. While this might indicate the position of the east wall of the Checker, it is equally possible that the building was 'L'-shaped and extended north and then eastwards into the area adjacent to Bay 3. To the west, the available space for the building would have been defined by the passage to the Lady Chapel; the architectural evidence does not support the view of Atkinson that the Checker building was flanked by the buttresses of Bay 4.

6.3.12 Two substantial parallel brick rubble and stone foundations, each 1-1.2m wide and appearing to be aligned east-west, were noted by Philip Dixon, the former Cathedral Archaeologist, during the watching brief on the digging of foundations for the dwarf wall and rail fence at the east side of the current excavation area (Fig. 5). These foundations survived to a level of approximately 20.20m OD (Harris 2017) and were described as resting on bedrock, 1.2m below datum (c. 19.00m OD). Dixon argued that there was some slight indication, at least in the case of the northern wall, that it predated the Lady Chapel (i.e. pre-1321), but the stratigraphic evidence was not clear-cut and the plans and elevations included in the report unfortunately lack levels and clear lines showing the relationships between different cuts and layers.

6.3.13 Foundations [1059] and [1092] exactly match the positions in plan of the two

east-west brick and stone walls recorded by Dixon. They were also encountered at a similar level (20.22m and 20.19m OD, respectively) and, in the case of [1059], it was also constructed on the greensand bedrock. The shallow depth of [1092] is slightly problematic as the wall recorded by Dixon of which it appears to be a continuation was also founded on bedrock, and survived to just under a metre high. However, as discussed above, Foundation [1092] was only seen in a watching brief and may well not have been fully exposed. On the basis of its location, level, and apparent contiguity with the northern wall in the 2000 trench, [1092] can probably be equated with it.

6.3.14 The overall ground plan of the building foundations is not absolutely clear. However, the form of Foundations [1059] and [1092], particularly the probable presence of an archway extending south from the former, suggest that they are more likely to be piers within a north-south-aligned wall rather than the west ends of parallel west to east walls. Of course, this does not necessarily preclude the presence of an adjoining set of east-west walls. Overall size of foundations - see plan.

6.3.15 Dixon argued that the wall foundations that he observed were too substantial to be those of the bedesmens' accommodation and he suggested instead that they might belong to a bell tower which was removed to make way for the construction of the Lady Chapel in the early 14th century (Dixon, 2002). However, this does not consider that the bedesmens' accommodation had originally been built as the Checker, and that this was indeed a substantial two-storey building, incorporating some 4700 bricks in its construction, probably either in its foundations or forming a dwarf wall for a timber-framed structure above.

6.3.16 In view of the limited level of investigation which was possible within the scope of the current construction design, it is not possible to definitively answer whether [1059] and [1092] were indeed foundations of the Checker. The size of [1059] would certainly be in keeping with a substantial two-storey structure, as would the use of one or more arches within the foundations to help distribute the weight of a building constructed on 'soft' cemetery soil that might well have

been prone to subsidence; the broad dating of the bricks and mortar poses no problems for an AD 1425 date of construction but the materials used in the construction do not lend themselves to tight dating. Although Foundation [1092] appeared much less substantial, it may well only have been partially exposed, and does make a neat north-south alignment with [1059] that would exactly match T.D. Atkinsons's suggested location for the Checker building (Atkinson 1953). The date of its constituent bricks and mortar, and its stratigraphic position cutting a presumed medieval (pre-1321) burial, would fit identification as part of the Checker.

Deposits surrounding [1059]: (1080), (1079), (1081), (1084)

6.3.17 The nature and date of the deposits surrounding Foundation [1059], which were excavated and recorded in section in the test pit which was dug to investigate the foundation, is unclear. Several interpretations are possible.

6.3.18 First, the profile of the deposits recorded in the north-facing section of the test pit indicates that they slope down to the west, away from the foundation. If they were simply the backfill of a larger construction-related cut around the foundation, then the opposite would be expected: that is, they would very likely slope down towards [1059], from west to east. Furthermore, as already outlined above, the method of construction used for the foundation involved digging a hole and then completely in-filling it with layers of mortar and ceramic building material, with the sides of the hole defining the size and shape of the pier. There is no place in such a method for a further, outlying, construction cut further away from the foundation, which would have meant that the foundation was built as a free-standing pier in the bottom of a large construction cut. This alternative method does not fit with the appearance of the foundation or make much sense as a construction technique given the considerable additional effort that it would require. Therefore, these deposits are not the backfill of a construction cut for Foundation [1059], a conclusion which is further reinforced by the fact that they were not particularly firm or compacted, as might be expected of consolidated material infilling around masonry foundations.

6.3.19 Instead, the sloping profile of the deposits has the appearance of a sequence

of tip lines filling an earlier pit or other large feature, the majority of which appears to lie to the west of Foundation [1059], which were cut through by the construction cut for the foundation. The deposits, in particular the lowest in the sequence (1080), were very different in appearance to the 'cemetery soils' containing the graves; (1080), with its frequent oyster and mussel shell inclusions and wood charcoal fragments, has the appearance of an occupation deposit, similar to the late Saxon levels at the Lady Chapel. Given the restricted area of investigation there is no stratigraphic relationship visible between these likely pit fills seen in section and the adjacent cemetery soils visible in plan. The overlying deposit (1079) contained a St Neots-type ware jar sherd (now broken in two; c. AD 860-1150; See Jarrett, Section 7.1). However, given the interpretation of these layers as the fills of a pit or other large feature, and the likelihood that that 'pit' was cut from at least the level of the surviving late medieval burials (or higher), the single late Saxon potsherd is likely to be residual. The presence of one or more earlier pits containing 'soft' fills in this area might explain the need for an arched foundation, to help better distribute the weight of a two-storey building and minimize subsidence.

6.4 Phase 3: Early post-medieval (late 16th century; Figure 8; Plate 13): Demolition Layers (1024), (1058), (1027), (1004), (1054), (1068)

6.4.1 This phase was characterised by the demolition of the Feretrar's Checker building, which was allotted to a former monk in AD 1541, then used as an almshouse, prior to being demolished sometime before AD 1649 (Harris 2017). The following layers were demolition deposits associated with the building: (1024), (1058), (1027), (1004), (1054), (1015) and (1068). The layers encountered at this stratigraphic level represent traces of the levelling of the foundations of the presumed Checker building and associated clearance of the area. A body sherd of late medieval/ transitional Colne Ware M (COLNM), dated *c*. AD 1450–1500 was the latest dateable pottery recovered from Layer (1027).

6.4.2 The small quantity of ceramic building material in the layers suggests either that most of the building material was salvaged for reuse, a possibility that finds some support in the use of substantial quantities of earlier brick and tile in the

construction of a system of drains on the site in the 17th- 19th centuries (6.5) (the roof was of lead (Harris 2017, 6)). This would accord with the documentary records for the construction of the building: the 4700 bricks recorded are insufficient for the Checker to have been wholly brick-built (Harris 2017, 6). Three sherds of residual Anglo-Saxon pottery were recovered from these deposits, one found close to a redeposited human skull in Deposit (1058). Five associated sherds of medieval pottery (c. AD 1450-1500) may derive from the period of use of the building.

6.5 Phase 4 & 5: Late post-medieval I & II (17th - 19th centuries; Figure 9)

6.5.1 Following the demolition of the Checker building and the adjacent Processional Way by the late 17th Century there was no archaeological evidence for activity on site until the 18th to early 19th century. This area was presumably used in some way, but, unlike the earlier Processional Way excavations (2000), there was no trace of deposits from the period between the c. mid-17th and late 18th centuries. In part, this is likely to be due to horizontal truncation, most likely from Victorian landscaping to improve the appearance of the Cathedral and immediate surrounding area, as well as the ground disturbance caused by the installation of a drainage system that saw much modification and replacement over this period.

6.5.2 Phases 4 and 5 are closely linked in that it is too difficult to separate them by date. Only limited excavation of deposits from these periods was possible and this had introduced some uncertainty in both relative chronology and dating. These phases will be discussed in conjunction with each other, appearing on the same figure due to their direct temporal relationship.

6.5.3 Phase 4 was characterised by the construction surfaces / trample created by the levelling of the material from the demolished Checker building and incorporated other material which had accumulated since then. Phase 5 is characterised by the construction of a drainage system extending across the site. This disturbance has resulted in the removal and redeposition of burials and the truncation of other features, obscuring many of the stratigraphic relationships. Again this disturbance and drainage is characteristic of similar

remains from Phases 9-10 of the Processional Way excavations (2000) and consideration of the results from 2000 and 2018 illustrates that repeat attempts at improving drainage were a key activity at this location.

6.5.4 The following are the levelling deposits, found across the excavation area: (1100), (1084), (1064), (1063), (1062), (1055), (1028), (1029), (1026), (1025), (1018), (1016), (1013), (1012), (1010) and (1009). These layers contained demolition-related material such as chalk and occasionally brick and tile fragments (2.942kg of ceramic building material), as well as rough stone rubble and oyster shell. The ceramic building material dating (Deposit (1027) AD 1400 - 1650; Deposit (1005) AD 1400 - 1800) broadly fits with it representing that of the demolished Checker building. These were largely a mid-grey brown or a mid to light orange/yellow brown colour but were commonly composed of a fine sand silt. Though animal bone was present (32 fragments; See Deighton, Section 7.6) there was relatively little pottery present (seven sherds; See Jarret, Section 7.1), suggesting that these layers preserve traces of the levelling activity relating to the demolition of the Checker building which have been truncated and disturbed, firstly by drain construction and later by Victorian landscaping. The pottery from these deposits dates to AD 1150 - 1500 and therefore likely represents residual sherds from earlier activity, now levelled.

6.5.5 Layers (1009), (1012), (1016), (1105), and (1036) were very firm deposits of compacted yellow sandy mortar, containing stone rubble and ceramic building material, some of which was glazed (AD 1450 - 1700), but little pottery. As well as levelling, these may well have together formed a construction surface associated with the drainage system (Figure 9). This potential construction surface was excavated to a depth of 20.00m OD in the east of the site, from a maximum height of 20.18m OD. The full depth of these deposits was not reached due to the desired level for construction being reached. This surface was adjoined to Drain [1008] = [1019] = [1021] via (1049). Deposit (1049) comprised a row of roughly shaped stones, each stone approximately 15cm x 15cm, packing the drain's northern outer edge and set slightly into the mortar.

6.5.6 The occurrence of disarticulated human remains within these deposits is to be

expected given the level of disturbance on site. While both human remains are associated with the immediate deposit they came out of, the degree of levelling makes it very difficult to ascertain the time period in which they were disturbed. Similar to the disarticulated human bone recovered from the Processional Way excavations (2000), a degree of respect is indicated by the re-interment of the human remains uncovered during the construction works.

6.5.7 Partial skeleton SK1077 was located immediately to the north of Grave [1074] (Plate 5). No grave cut was identified, and with only a small part of both legs remaining at a level of 20.13m OD, it is likely to have been disturbed by the later construction works which truncated the cemetery soils containing the other inhumations. These semi-articulated remains of a juvenile individual appear to have been redeposited within Layer (1063) during the subsequent construction and levelling. Another casualty of these building works was identified in the north-western corner of the site. Here a skull was identified at a level of 20.22m OD, with the frontal bone facing downward. There was no associated mandible, or indeed the remainder of this individual's body, suggesting it is most likely part of a medieval skeleton, an adult male of advancing age, disturbed and partially redeposited in Layer (1058) (Figure 8; See Tierney, Section 7.7).

6.5.8 The demolition of the Checker building appears to have provided a quantity of rubble and significantly brick (not seen in the construction of the earlier Processional Way), which was later re-used in the drainage system that extended east-west across the site along with the building material of the time (Figure 9 & 10, Plates 13-17). In addition to this, moulded stone probably derived from the demolition of the Processional Way in the 17th Century, was recovered from the main deposit in the soakaway. It is assumed this earlier material was selected and deliberately deposited to assist in the efficient functioning of the drainage system. The dating of this phase is based upon the building and drainage material and the methods used.

6.5.9 The initial construction and use of this drainage system comprised the east-west earlier drain sections [1008], [1019] and [1021] and later northeast-southwest drains [1093], [1095] and [1097], in association with Soakaway

[1033]. The most likely date for the initial construction of the soakaway is the late 17th Century with additions and modifications continuing into the Victorian period. Drains [1006] and [1007] also relate to this drainage system and were the latest additions to this system.

6.5.10 Drain sections [1008], [1021] and [1019] clearly represent part of the same linear drain fragmented as a result of modern truncation (Figure 9). Made of brick and tile, Drains [1019] and [1021] had vertical sides surviving to three brick courses high and 0.71m wide. The construction of this drain utilised earlier red bricks with sunken margins. These shallow and poorly made bricks likely date to AD 1650 - 1750 although the presence later materials within the drain fabric would indicate a construction date closer to AD 1800 (Hayward, pers. comm). Drain [1008] was more truncated than the other sections of this drain and was represented only by fragments of later post-medieval peg tile delineating the remnants of the base of the drain and a line of chalk, assumed to be construction packing material.

6.5.11 Drains [1097], [1095] and [1093] were northeast-southwest oriented drains with the construction of this section of drain utilising white bricks. These bricks are made from highly calcareous Kimmeridge (Upper Jurassic) Clays (Firman 1998, 10) that were very popular in the 18th and 19th century in East Anglia (Figure 9, Plate 12). They were not more than 0.18m wide, with only one row of bricks, and were no more than three courses high.

6.5.12 The firm silt clay fills ((1094), (1096) and (1098)) between the features indicate that these structures were drains or culverts, any covering of which has collapsed.

6.5.13 The firm silt clay fills, (1094), (1096) and (1098), containing brick and tile fragments (AD 1100 - 1400) between the features indicate that they were drains or culverts, any covering of which has collapsed or been partly demolished. Two sherds of post-medieval white slipped pottery (AD 1500-1600) were retrieved from Fill (1094), (See Jarret, Section 7.1). In the north east corner of the site, Grave [1087] was truncated by [1090] on its northern edge. As this cut was

recorded only during the excavation of the grave at a level of 19.75m OD it is difficult to determine the nature of this context other than it has truncated a medieval grave and is filled by the mid reddish-brown silt (1091)

6.5.14 The stratigraphic relationships between Drains [1093], [1095] and [1097] are not clear and probably represent repairs or replacements of parts of the same drainage channel over time. The unusually straight edge of Deposit (1105) indicates that it had been truncated by these drains and if this is the case these channels predate [1008] et al. (6.5.16 and Figure 11). The preservation of the small section of these three drains was made possible due to their location under a modern pipe, thus avoiding the levelling and horizontal truncation. Additionally, these drains and those located at the western end of site are both on the same level (20.02m OD). The likelihood is that these remains are dateable to the 18th Century and are undoubtedly related to drainage features recorded or referenced during the Processional Way (2000) excavations but no direct links could be made.

6.5.15 Direct relationships between [1033] and Drains [1008], [1019] and [1021] indicate that these structures are clearly contemporary. Drains [1008], [1021] and [1019] channelled water into a large clunch lined chamber [1033].

6.5.16 Soakaway [1033] measured 1.88m in length, 1.45m in width and 1.05m deep. The cut was lined with ashlar clunch blocks of varying size (approximately 20 x 30cm - 50 x 40cm) and sat on bedrock. It was dug down to the permeable bedrock at a level of 18.97 - 19.05m OD. Narrow white calcareous bricks are also used along the soakaway margin (Hayward, pers. comm). A very clean grey silt clay fill (1056) accumulated at the base of the cut.

6.5.17 The lining of the soakaway was very well made in contrast to the construction of the associated drains but based on the available stratigraphic evidence the drain and soakaway appear contemporary. The relationship between drain and soakaway is likely more complex than it appears. It is likely that the drainage system underwent a series of repairs and modifications. The longevity of use of the soakaway is best illustrated by the materials used in the infill which

indicate a late 17th century for construction and the surviving capping (1060) which is Victorian in date (6.5.23).

6.5.18 Whilst this chamber may have on occasion held water the most probable function of this feature was as a soakaway, facilitating collection of water from the drainage system that would have dissipated through the permeable bedrock on which it was set. It is worth noting that the geology of Ely, which is greensand capped with clay, can result in upwelling water from the bedrock of in periods of wet weather. This would reduce or negate the effectiveness of the soakaway at these times.

6.5.19 The main deposit in this soakaway comprised a 1.05m deep deposit of stone, brick and tile rubble (1031). This material appears to have been chosen for its ability to filter and dissipate the waste water from the drainage system. This deposit included clay tobacco pipe bowls and stems, glass, pottery, animal bone and brick/tile fragments. The pottery included sherds of Ely 'Babylon' ware (1500 - 1600), probable Essex originated finer black glazed drinking vessels (1580 - 1700) and three sherds of a non-local late medieval transitional ware (1500 - 1625) (See Jarrett, Section 7.1). The clay pipe assemblage was very interesting with the bowls fitting into a narrow date range of AD 1660 - 1680. It is likely that the main infilling of the soakaway did originally occur within the 17th century based on the dating of the majority of the clay pipe assemblage. This would accord well with the drainage works recorded in the Processional Way excavations (P.21, 2000) . A later pipe stem, dated to AD 1865 - 1883 was also recovered from that fill and is probably a good indicator for the date of truncation of the soakaway. It was stamped with the makers name and most likely originated from a workshop on Newmarket Road in Cambridge (See Jarret, Section 7.3).

6.5.20 Several large fragments of moulded stonework were also distributed throughout the soakaway fill. A number of these pieces were part of the ribs of the original Processional Way; the connecting passage from the Presbytery to the Lady Chapel in the 14th century (see Harris, Section 7.4). The Processional Way was demolished in the 17th Century which may account for the deposition of this

material in the soakaway.

6.5.21 It appears that ceramic building material from the demolished Feretrar's Checker was reused in the construction of the drainage system. This construction also included the re-use of pierced roof tiles (See Valcarcel, Section 7.2) to pave the base of the drains. The inclusion of these tiles, as with the stonework of the soakaway, assists in assigning the drainage system to this later period, rather than being contemporaneous with the building of the Checker in AD 1425.

6.5.22 East-west drain [1007] and northwest-southeast drain [1006], both surviving to only one course deep, are later additions, as evidenced by the construction methods and materials and the stratigraphic relationship with Soakaway [1033]. Drain [1006] comprised reused 16th - 17th century handmade bricks and white bricks (AD 1800 - 1900) in its construction, while Drain [1007] has re-used handmade shallow wide red brick with sunken margins and peg tiles (AD 1650 - 1750). Medieval grave [1042] to the west of this drain was truncated by [1034]; a small area of disturbance that can be associated with the drain construction and levelled with a CBM and rubble filled deposit (1029).

6.5.23 The paving (1060) which caps the southern half of the fill in Soakaway [1033] at a level of 19.99m OD (Plate 19) is directly related to this latter group of drains; the capping material used is Victorian White Pavers, a common material type in this period (Hayward, pers. comm). A section of paving to the south of Drain [1007], (1052), contained a peg tile stamped with a face akin to a 'greenman' motif (Plate 18) (See Valcarcel, Section 7.2). Parallels to this stamp style are unknown at this point with a broad medieval date allocated to this tile (Hayward, pers. comm).

6.5.24 Following the horizontal truncation of this site, the remaining drains, now without the associated capping, accumulated silty fills (1039), (1022) and (1023), which all contained animal bone, pottery, and a small amount of glass and clay tobacco pipe (See Finds, Section 7).

6.5.25 The drainage system uncovered as part of this excavation is undoubtedly

related to the drainage system uncovered by CAU during the Processional Way excavations (2000). Low level of detail in the main text and specialist appendix in the grey literature report however means that direct parallels cannot be reached at this point (Cessford and Dickens, 2007). Either the drains they encountered form part of an earlier system or the material they identified is re-used earlier material suggesting it is the same system uncovered here. It can be suggested that perhaps an earlier drainage system was in place across our site with 18th - 19th century alterations added to upgrade the system.

6.5.26 It would seem clear from the archaeological evidence that following the demolition of the Feretrars Checker drainage in this sheltered part of the Cathedral proved problematic over an extended period. In part this may be attributed to the fact that the area is overlooked by roofs and gutters on three sides. It is also likely that groundwater upwelling from the bedrock, particularly during winter months may have accumulated in this area. The installation of the new paving that now covers the 2018 excavations is the latest initiative to make this area more habitable.

6.6 Phase 6: Modern

Posthole [1073]

6.6.1 Posthole [1073] was in the south-east corner of the site, truncating layer (1065) (Plate 20). This contained the well-preserved remains of a timber post, taken as Sample <1001>, and a loose dark silt fill (1074). This posthole is assigned to this late phase because of the preservation of the timber and the fact that it appears to be unrelated to any other earlier features in the vicinity. No other postholes were present. Several similar postholes were excavated at the adjacent Processional Way excavation (2000) and were identified as evidence of wooden lean-to buildings or scaffolding for repair work (Cessford and Dickens 2007).

6.7 Modern overburden: Made Ground Layers (1002) and (1001); Topsoil (1000)

6.7.1 Layer (1002), a mid- to light brown sandy silt, was encountered overlying the whole site. It contained moderate amounts of ceramic building material, as well

as SF 1, a small bone spoon, complete apart from a slightly broken bowl, and SF 2, a complete iron door latch and hook (see Small Finds, Section 7.).

6.7.2 Overburden Layers (1001) and (1000), a dark silty loam and topsoil/ turf, respectively, covered the whole site to a depth of 0.10m. Both contained modern plastic refuse; a 19th-century penny was also present (SF 3).

Modern truncations: services and Charnel Pit [1050]

6.7.3 There were numerous truncations by modern services. A ceramic water pipe had been inserted in the eastern half of the excavation area, extending north-south and bisecting drain [1019]=[1020], which may be as old as 19th-century. Along the entire southern edge of the site was a 2.14m wide drainage pipe and dry riser trench that truncated the exposed archaeological levels. Further water pipes and electrical cables (no longer live) were encountered just inside the western edge of the site, oriented north-south, and also along the entire northern edge of site (0.42m wide).

6.7.4 A modern charnel pit ([1050], fill (1051)) was discovered and the contents exhumed (Plate 21). It was created following the CAU Processional Way excavation in AD 2000, in order to re-inter the human remains uncovered there. This rectangular pit was 1.20m long by 0.90m wide and 0.21m deep. It was inserted adjoining the north-south ceramic water pipe, further disturbing the 18th-century drain [1021]. The human remains had been reinterred and then the disturbed bricks from the drain were loosely laid back on top of the infilled pit, creating rubble pile (1020).

7 THE FINDS

7.1 Medieval and post-medieval pottery

Chris Jarrett

Introduction

7.1.1 A small assemblage of post-Roman pottery was recovered from the archaeological investigation, amounting to 87 sherds, representing 69 vessels and weighing 1.622kg, of which none is unstratified. Most of the assemblage dates to the post-medieval period (68 sherds; 51 vessels; 1.081kg), while smaller quantities are dated to the Anglo-Saxon (seven sherds; 6 vessels; 26g) and medieval (12 sherds; 12 vessels; 515g) periods. The pottery is in a fragmentary state and ranges from very small pieces (1g or less) to large sherds (up to 300g); it is all sherd material. None of the vessels are intact or have a complete profile, although approximately half of the vessels could be assigned to a vessel type from the evidence of diagnostic parts. The pottery shows no evidence for abrasion or lamination, while approximately 34% of the sherds appear to be residual. Therefore the material was, on the whole, deposited under secondary conditions, although tertiary sherds also occur. Pottery was found in fourteen contexts, in groups which are all small in size (less than 30 sherds), except for one deposit that contained a medium-sized group of pottery (30–100 sherds).

7.1.2 The fabrics were examined under x20 magnification and recorded using a system of mnemonic codes based on common name. As far as possible these comply with those laid out in the published type series for Cambridgeshire (Spoerry 2016), although identification of some sherds remains provisional at this stage. As a formal coding system does not exist for the majority of post-medieval pottery types recorded in Cambridgeshire, the system used by Museum of London Archaeology (MOLA 2014; Website 3) has been employed for those wares where appropriate.

7.1.3 The pottery was recorded and quantified for each context by fabric, vessel form and decoration using sherd count (with fresh breaks discounted), weight, and

estimated number of vessels (ENV). A Microsoft Access database recording these attributes can be found in the site archive. The pottery types encountered are listed below in Table 1. A summarised catalogue of the pottery by context, including date ranges and suggested spot dates, is represented in Table 2 and shown in the Distribution section.

The pottery types and their forms

7.1.4 Middle Saxon pottery is represented by two non-diagnostic sherds of wheel-finished Ipswich Ware (IPS), dated *c*. AD 720–850 and recorded as the fine sandy ware variant. The sherds are derived from closed forms, which are most likely to be jars or possibly spouted pitchers. The sherds were residual in Layer (1027). Late Saxon pottery is present as two very small sherds of wheel-thrown Thetford-type ware (THET), dated *c*. AD 840–1150, and found in fill (1041) of Grave [1042] and Layer (1058). Shell-tempered St Neots-type ware (NEOTS), dated *c*. 875–1100, was noted as body sherds from a sooted jar/ cooking pot in deposit Layer (1079), while a very small sherd of this ware also occurred in fill (1041) of Grave [1042].

7.1.5 Unless otherwise stated, the medieval pottery is mostly plain; distinctive late-12th- to 13th-century 'highly decorated' jugs are largely absent. Much of the medieval pottery is residual. This consists of medieval sandy greyware (MSW), dated AD 1150–1500 (Made Ground (1002)), while jug fragments with an external white slip and green glaze occur in Grimston ware (GRIM), dated AD 1200–1500 (Drain [1007] fill (1022)), Hedingham fineware (HEDI), dated AD 1150–1350 (Made Ground (1002)), and medieval Ely Ware (MEL), dated AD 1150–1350 (Made Ground (1002)). Another example has additional incised horizontal line decoration (Layer (1027)). A sherd of late medieval Ely Ware (LMEL), dated AD 1350–1500, was noted in Made Ground (1002).

7.1.6 A small number of medieval pottery sherds appear not to be residual. These consist of the base of a vessel (possibly a bowl or dish) made in East Anglian redware (EAR), dated *c*. AD 1200–1500 (Layer (1027)) and found with a sherd of a reduced, fine-fabric late medieval transitional ware (LMT), dated *c*. AD 1350–1600.

7.1.7 A late medieval form, probably of 15th-century date, is represented by a jar/ cooking pot with a collared rim, internal lid seating, and cordon on the upper external wall. The vessel is in a miscellaneous sandy whiteware fabric (MISC WW) and has an external green glaze that continues onto the inside of the rim (Drain [1021] fill (1039)). It is possible that this is a product from Nottinghamshire.

7.1.8 Two vessels, both probably jugs, almost certainly date to the late 15th or early 16th century and occur in similar fabrics that are not always easy to distinguish between (Spoerry 2016, 260). The first vessel has been assigned to the Bourne D (BOND) pottery 'type' and survives as a flat base and the lower half of the exterior wall. The latter shows evidence for decoration, which consists of incised angled line decoration banding columns of short horizontal incised lines; the vessel was then partially covered with a dull white slip (Made Ground (1094)). The second vessel is made in late medieval/ transitional Colne Ware M (COLNM), dated *c*. AD 1450–1500, and survives as a body sherd which is corrugated towards the shoulder. The vessel is decorated with external white slip in curving bands, which are clear-glazed, alongside finer painted brown curving lines (Layer (1027)).

7.1.9 The post-medieval component of the assemblage consists mostly of various types of red earthenwares. Ely gritty red earthenware (BELGRIT), dated *c*. AD 1500–1700, is fairly well represented in the assemblage (see Table 1), although the majority of the sherds are residual. Fragments of unglazed jugs, probably of 16th-century date, occur in made ground layers (1002) and (1094), while the former deposit also produced the rims of jugs/ pitchers that have a rounded external thickening and an internal bevel, as well as pouring lips. One of the examples survives with a vertical loop strap handle and has an external white slip coating, while the other vessel shows evidence of faint white slip circles. Both of the jugs show evidence for being coarsely clear-glazed on the exterior. The only other form recognised in BELGRIT is a jar (residual in Soakaway [1033] fill (1031)) which survives as an everted, narrow, flat-topped rim, with an external beaded edge and a rounded underside. A clear glaze is restricted to the inside of the rim.

7.1.10 Sherds of Ely 'Babylon' Ware (BABEL), dated *c*. AD 1500–1600, occur in the form of a jug rim with a corrugated neck and this has the appearance of Midlands purple ware (Pit [1050] fill (1051)), while the rim and base of a cylindrical mug were also found (Soakaway [1033] fill (1031)). Finer black-glazed fabrics, possibly from an Essex source (PMBL), dated *c.* AD 1580–1700, occur as sherds of probable drinking forms in Drain [1019] fill (1017) and Soakaway [1033] fill (1031). A body sherd from a Cistercian Ware (CSTN) cup is decorated with white slip, which survives as a circle from a possibly multiple-lobed design. White slip-decorated Cistercian Ware is mainly dated to the mid-16th century (Brears 1971, 19). Vessel shapes could not be assigned to the Ely Bichrome Ware (BEL BICR), dated *c*. AD 1550–1600+, which is defined as having an external green and an internal clear glaze. Sherds of this pottery type occurred in Drain [1019] fill (1017) and were residual in Soakaway [1033] fill (1031). One of the BEL BICR sherds from the latter context occurs in a fine orange sandy fabric and may represent a different source for this type of pottery.

7.1.11 A non-local pottery type, Brill late medieval transitional ware (BRILL LMT), dated *c*. AD 1500–1625, was present as sherds from the same vessel in Made Ground (1002), Drain [1019] fill (1017) and Soakaway [1033] fill (1031). The fragments are from a thin-walled jug or other drinking form, with a good-quality internal and external green glaze, and are probably of 16th-century date.

7.1.12 Glazed red earthenware (GRE), dated AD 1550–1700, is the most common pottery type in the assemblage (see Table 1), although it occurs in a fragmentary state and very few of the sherds could be assigned to a vessel type. Forms represented are the rims of bowls and dishes (found in Soakaway [1033] fill (1031], with a combed wavy line on the collared rim brim, and fill (1056) of the same feature), a candlestick, surviving only as the socket (Soakaway [1033] fill (1031)), a flared dish with a collared rim (Drain [1047] fill (1048)), jars (Made Ground (1002), with a collared rim and internal lid-seating), and a jug (Soakaway [1033] fill (1031)) with cordons at the top and base of the neck. The forms recorded in GRE appear to date mostly to the late 16th and 17th century.

7.1.13 There are two miscellaneous wares recorded and these consist of a small, thin-walled body sherd in a fine sandy dull orange fabric with a clear glaze (Pit [1050] fill (1051)), and a jar made in a miscellaneous green-glazed post-medieval ware (MISC GRGL) (Drain [1019] fill (1017)). The fabric is a white- firing sandy type with a grey core and the vessel has an internal olive glaze and an external mottled green glaze.

7.1.14 Two types of stoneware were recorded; both occur in the form of rounded jugs and were found in Soakaway [1033] fill (1031). The first type consists of the only import in the assemblage, recorded as three sherds (from different vessels) of Frechen Stoneware (FREC), dated AD 1550–1700. The second type consists of English stoneware (ENGS), dated *c.* AD 1700–1900, and the vessel is made in a white-firing fabric with an iron-wash on the external upper body. The vessel probably dates to the 18th century, although a later date is possible.

7.1.15 The latest pottery type in the assemblage consists of Refined white earthenware with transfer-printed decoration (TPW), dated AD 1780–1900. This pottery type survives as the wall sherd of a saucer and has a variant Willow-pattern design that dates from the mid-19th century and often occurs on vessels marked 'STONE CHINA'. The saucer occurred in Made Ground (1002) and was the latest ware noted in the deposit.

Distribution

7.1.16 A summary of the pottery from each context is shown in Table 2. The majority of the pottery (46% by sherd count) was recovered from post-medieval pits: Pit [1050] fill (1051) and Soakaway [1033] fill (1056). Other post-medieval features produced 14.9% (by sherd count) of the pottery: fills (1017), (1022) and (1039) of masonry Drains [1019], [1007] and [1021], respectively. The made ground layers also yielded a large quantity of pottery (33.3% of sherds); these consisted of one of medieval date (Layer (1079)), three dated to the post-medieval period ((1004), (1027) and (1094)), and one modern layer (Made Ground (1002)). A single inhumation (fill (1041), Grave [1042]) produced two very small sherds of late Saxon St Neots and Thetford-type ware, which possibly date the feature, although the pottery is most likely to be residual. Context 1048 was issued on

site but not used.

Discussion

7.1.17 Although the assemblage is relatively small, the pottery does provide evidence of both the date and nature of activity in the immediate vicinity of site. The assemblage is similar in composition to those recovered from other archaeological investigations in and around Ely Cathedral precinct (e.g. Sudds 2013; 2017). Of some interest is the high incidence of medieval and early post-medieval drinking forms (28.9% ENV) in the assemblage. By contrast, relatively few vessels are associated with cooking or kitchen use (8.7% ENV). This may relate to the location of the site in the monastery and cathedral complex. While the monks' accommodation and service buildings were located in the area to the south of the Cathedral's south transept (Fig. 3), the guest quarters of the monastery, the Outer Hostelry, were probably located in the now-grassed area directly east of the Cathedral. The occupation of the Checker building during the 15th and early 16th centuries, and its subsequent use as accommodation and then as an almshouse up to its demolition in the mid-17th, are another possible source for the high frequency of drinking forms.

Pottery type	FABRIC	Date range	SC	ENV	Wt (g)	Forms
Saxon						
Ipswich Ware	IPS	720–850	2	2	17	?Jar
St Neots-type ware	NEOT	875–1100	3	2	8	Jar, unidentified
Thetford-type ware	THET	840–1150	2	2	1	Unidentified
Medieval						
Bourne D Ware	BOND	1430–1650	1	1	300	Jug
Late medieval and transitional Colne Ware M	COLNM	1450–1550	1	1	42	Jug
East Anglian redware	EAR	1200–1500	1	1	15	?Bowl or dish
Grimston glazed ware	GRIM	1200–1500	1	1	55	Jug
Hedingham fineware	HEDI	1150–1350	1	1	13	Jug
Late medieval Ely Ware	LMEL	1350–1500	1	1	5	Unidentified

Late medieval transitional ware	LMT	1350–1600	1	1	25	Unidentified
Medieval Ely Ware	MEL	1150–1350	2	2	15	Jug
Miscellaneous medieval whiteware	MISC WW	900–1500	1	1	33	Cooking pot or jar with a bifid rim
Medieval sandy greyware	MSGW	1150–1500	1	1	5	Unidentified
Medieval sandy ware	MSW	1150–1500	1	1	7	unidentified
Post-medieval						
Ely 'Babylon' Ware	BABEL	1500–1600	5	3	66	Mug (cylindrical), jug
Ely Bichrome ware	BEL BICR	1550–1600+	4	4	36	Unidentified
Ely gritty red earthenware	BELGRIT	1500–1700	9	7	262	Jar, jugs
Brill late medieval transitional ware	BRILL LMT	1500–1625	6	1	16	?Jug/drinking form
Cistercian Ware	CSTN	1480–1600	1	1	7	Cup
English stoneware	ENGS	1670–1900	1	1	29	Jug (rounded)
Frechen stoneware	FREC	1550–1700	3	3	33	Jug (rounded)
Glazed red earthenware	GRE	1550–1800	33	25	606	Bowl or dish, candlestick,
Miscellaneous post-medieval ware	MISC	1480–1900	1	1	1	Unidentified
Miscellaneous green-glazed post-medieval ware	MISC GRGL	1480–1700	1	1	10	Jar
Essex-type post-medieval black-glazed ware	PMBL	1580–1700	3	3	12	?Drinking forms
Refined white earthenware with transfer-printed decoration	TPW	1780–1900	1	1	3	Saucer
Total			*87*	*69*	*1622*	

TTable 1The pottery types and the forms that occur in the wares

SC = sherd count; ENV = estimated number of vessels; Wt (g): weight in grams

Context	Type/description	Period	Assemblage size	Sc	Env	Wt (g)	Pottery types (and forms)	Context considered date
1002	Layer/made ground	Mod	S	18	15	227	BELGRIT(jug, unidentified), BRILL LMT(jug), CSTN (cup), GRE (jar, unidentified), HEDI (jug), LMEL (unidentified), MEL (jug), MSGW (unidentified), TPW (saucer)	19th century
1004	Layer/made ground	PM	S	1	1	7	MSW (unidentified)	AD 1150–1500
1017	Fill/drain [1019]	PM	S	11	7	117	BEL BICR (unidentified), BRILL LMT (jug), GRE (jar, medium rounded, unidentified), MISC GRGL (jar), PMBL (?drinking form)	*c*. AD 1580–1700
1022	Fill/drain [1007]	PM	S	1	1	55	GRIM (jug)	AD 1200–1500
1027	Layer/made ground	PM	S	6	6	110	COLNM (jug) EAR (unidentified), IPS (unidentified), LMT (unidentified), MEL (jug)	*c.* AD 1450–1500
1031	Fill/masonry structure [1033]	PM	S	30	22	424	BABEL (mug, cylindrical), BEL BICR (unidentified), BELGRIT (jar, jug, unidentified), BRILL LMT (jug), ENGS (jug, rounded), FREC (jug, rounded), GRE (bowl or dish, candlestick, jug, unidentified), PMBL (? drinking form)	18th century
1039	Fill/drain [1021]	PM	S	1	1	33	MISC WW (jar/cooking pot)	15th century
1041	Fill/inhumation [1042]	M	S	2	2	2	NEOT (unidentified), THET (unidentified)	AD 875–1100
1048	Drain Fill	-	S	2	2	80	GRE (dish, flared, unidentified).	17th century
1051	Fill/pit [1051]	Mod	S	7	5	58	BABEL (jug), GRE (unidentified), MISC	*c*. AD 1550–1650

							(unidentified)	
1056	Fill/ pit/well [1033]	PM	S	3	3	145	GRE (bowl or dish)	*c*. AD 1550–1700
1058	Layer/made ground	-	S	1	1	0	THET (unidentified)	AD 840–1150
1079	Layer/made ground	M	S	2	1	7	NEOT (jar)	AD 860–1150
1094	Layer/made ground	PM	S	2	2	357	BELGRIT(jug), BOND (jug)	*c*. AD 1500–1600
Total				*87*	*69*	*1622*		

Table 2 Summary catalogue of the pottery by context

M = medieval; PM = post-medieval; Mod = modern; SC = sherd count; ENV = estimated number of vessels; Wt (g) = weight in grams

7.2 Ceramic Building Material and Stone

Amparo Valcarcel

Introduction and methodology

7.2.1 The application of a 1kg mason's hammer and sharp chisel to each example ensured that a small fresh fabric surface was exposed. The fabric was examined at x20 magnification using a long-arm stereomicroscope or hand lens (Gowland x10). Matches were then made with the London fabric collection, as there was found to be a great similarity in fabrics. Fabrics unique to ELY were prefixed with 'ELY', thus 'ELY1' and were compared with the fabrics from the Ely Cathedral Fire-Engine Hardstanding Site (Hayward 2017).

7.2.2 The material recovered from the Processional Way excavation forms a medium-sized assemblage (138 fragments, 40.42kg) and is characterised by large groups of post-medieval peg tiles, floor tiles and bricks and a much smaller medieval component (10.86%). By form, there is a high proportion of roofing tiles (Table 3).

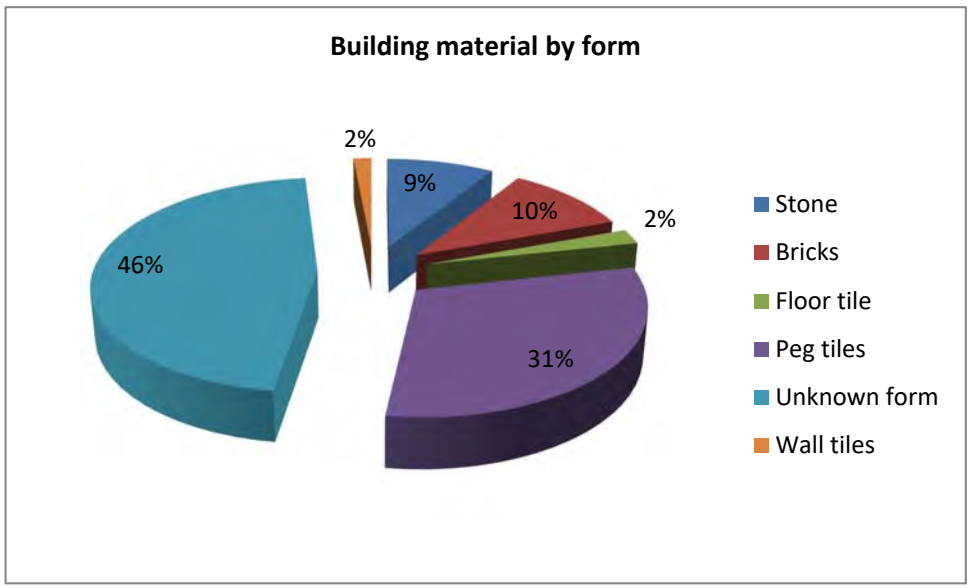


Table 3 Building material by form

Ceramic Building Material (122 examples, 33.19kg)

Medieval (15 examples, 3.26kg):

ELY1: sandy fabric with thick black organic core (21 examples, 2.56kg); peg tile.

ELY8: very coarse sandy fabric (2 examples, 0.154kg); floor tiles.

ELY10: sandy gritty fabric with quartz and red iron oxide (1 example, 0.026kg); floor tile.

7.2.3 Some examples of late medieval materials were collected. The small quantities of medieval tiles are made from a number of local fabric groupings (ELY1, ELY8 and ELY10). The assemblage is largely unremarkable, with three floor tiles and peg tiles suggesting an original association with medieval structures. All of the examples are in a fragmentary condition and some had been redeposited in later phases. Three glazed bevelled-edge floor tiles were recovered; these either have a dark green plain glaze or the glaze has worn away or been removed (e.g. Soakaway [1033] fill (1031)). Peg tiles are made of ELY1 fabric, with a distinctive dark black core from the local Kimmeridge Clay. This fabric was identified in large quantities at the adjacent Fire-Engine Hardstanding excavation (Hayward 2017).

Post-medieval (107 examples, 29.92kg):

ELY4: fine maroon red sandy fabric with chaff, including occasional mica (5 examples, 4.75kg); brick.

ELY5: yellow variegated purple fabric with chaff (9 examples, 5.59kg); brick and peg tile.

ELY17: Red-orange sandy fabric (5 examples, 15.03kg); brick.

ELY18: Yellow ‘biscuity’ fabric with large red ironshot and clinker inclusions (1 example, 0.101kg); peg tile.

ELY19: Very fine red sandy fabric with intermittent 0.2–0.5mm quartz fragments, occasional flecks of shell, coarse moulding sand or chaff at base (13 examples, 4.93kg); peg tiles.

7.2.4 Post-medieval bricks form a larger component of the post-medieval ceramic building material assemblage, in comparison to the medieval period, which is

represented by floor and peg tiles. Five fabrics are represented, although the vast majority are made of the same very fine red sandy fabric (ELY19). A small assemblage of transitional bricks were recovered, all of which are made from local clays. The earliest bricks are likely to have been manufactured *c.* AD 1400–1600, but it is possible that this fabric continued to be used until AD 1700. The presence of these bricks indicates a phase of construction sometime in the period AD 1400–1600/1700.

7.2.5 Peg tiles are quite numerous on the site, indicating new phases of rebuilding and repair to the roofing of buildings. Two examples of very unusual stamped peg tiles, with a depiction of a human face, may indicate material produced exclusively for the cathedral.

Wall tiles (2 examples, 9g)

7.2.6 Two small examples of modern peg tiles were collected from Made Ground (1002) and Pit [1050] fill (1051).

Undiagnostic forms and fabrics (62 examples, 36g)

7.2.7 A large number of undiagnostic fragments of ceramic building material were recovered from numerous contexts. The fragments are small, most of them less than 3cm across, and are therefore not securely identifiable or intrinsically dateable.

Mortar

Mortar type	Description	Contexts
T3	White hard lime mortar	(1002)
T2	White hard sandy mortar (1400–1800)	(1005), Unstratified
T1	Yellowish sandy mortar (1400–1700)	(1006), (1007), (1017), (1019), (1021), (1052), (1059)

Table 4 Mortar type by context

Stone

7.2.8 Two examples of thin, laminated, dark green-grey Collyweston slate were identified from Made Ground (1002) and Soakaway [1033] fill (1056). They may have been used as roofing stone or as coursing levels in a wall core. In the absence of any definable nail holes, it is not possible to conclusively determine

their function. Collyweston stone slate, a laminated sandy limestone, is a traditional roofing material sourced from the Middle Jurassic (Bajocian) deposits of Northamptonshire.

7.2.9 Fragments of Yorkstone and Blisworth Limestone are so small that it is impossible to date them or assign a specific function. However, the Yorkstone is likely to be post-medieval in date. Flint recovered from Made Ground (1018) is natural and unworked.

Fabric Code	Description	Geological type and source	Use at ECB5130
3115	Blue-green hard fissile slate	Cornish Slate – Devonian Cornwall	1 example 11g Used for levelling or roofing
3117	Hard, very fine dark siliceous sediment that breaks with a conchoidal fracture	Flint Upper Cretaceous but probably from surrounding chalky boulder clay	1 example 6g (1017) Natural flint
3120a	Granular shelly limestone with a soft, powdery matrix. Part of the more defined Great Oölite Series; also known as the Great Oolite Limestone.	Blisworth Limestone, stratum of limestone of the Bathonian stage Jurassic, north and south England.	8 examples 2.24kg. Small fragments, associated with fills of Graves [1061] and [1042]. Found in excavations elsewhere in the Cathedral precinct (Hayward 2018; Website 5)
3120b	A cross-bedded sandy limestone	Collyweston slate, Middle Jurassic (Bajocian), Northamptonshire, Lincolnshire and Rutland.	1 example 25g. Used probably as roofing (1056)

Table 5 Summary table of the character, source, quantity and probable function of the main stone types from the Processional Way excavation

Distribution by phase

7.2.10 Table 6 illustrates the distribution of the ceramic building material by chronological period of activity at the site. It can be seen that the majority of

the ceramic building material (by number of fragments) comes from the 12th to 15th Centuries (Phases 1-2). However, most of this material is in a highly fragmentary condition, so the (much smaller) weight is a more representative indication of its presence. By contrast, the 16th-17th Centuries (Phase 3-4) has the largest amount of building material by weight because of an increase in the use of bricks.

Table 6 Quantities of building material by phase

12th to 15th Centuries: Phase 1-2 (83 examples; 8.98kg)

7.2.11 Most of the material (73.49%) from Phase 6 consists of very small fragments made of unclassified fabrics and in unknown forms. Only 22 of the 83 examples are diagnostic. These are made of five different fabrics, and consist of peg tiles, one brick sample from Foundation (1059), and one light brown glazed floor tile from Layer (1005). The brick measures 236 x 125 x 46mm and is indicative of a late medieval/ early post-medieval date (*c*. AD 1450–1700).

7.2.12 All the stone collected from this phase is Blisworth Limestone and came from the fills of the inhumations (Phase 1). The fragments are tiny and abraded. Normally, this limestone was used as architectural stone in Eastern England, but the small size of the fragments prevents their purpose from being identified.

Phase 3-4 (late 16th–19th century) (27 examples, 29.11kg)

7.2.13 This phase demonstrates an increase in the use of brick after the late medieval/ transitional period, being the most common form of building material present in Phase 3-4 (44.44%), followed by peg tiles (37.03%) and two dark green-glazed floor tiles from Drain [1019] fill (1017) and Soakaway [1033] fill (1031). Bricks are poorly hand-made, wide and shallow, with sunken margins and uneven surfaces, suggesting a late-16th-century date. The increased number of bricks found in this phase relates directly to the presence of structures such as soakways and drains, as well as samples of brick collected from fills and layers. Stone is poorly represented in this phase, with an example of natural unworked flint and a possible Yorkstone paver or roofing fragment (chipped).

Phase 5 (Modern) (25 examples, 1.93kg)

7.2.14 Phase 8 is characterised by a near-complete absence of bricks and the introduction of a new form: modern wall tiles. Peg tiles are the most common form in this phase. Stone is represented by two roofing types: slate and the very micaceous Yorkstone. All of the material came from two different contexts: fill (1051) of Pit [1050] and especially from Made Ground (1002). The wall tiles are indicative of a late-19th- to mid-20th-century date.

Discussion

7.2.15 In summary, this is a much-abraded assemblage, representing different phases of construction and repair at the Cathedral through the years. The material came from standing structures and various demolition episodes. Together, the peg roof tile and bricks provide evidence for the presence of a late medieval/ early post-medieval building. Whilst samples were taken from the Checker foundation there are currently no suitable options for scientific dating that would reliably enhance the current, broad dating assigned to these bricks. There is little of intrinsic interest from the post-medieval period apart from the very rare stamped peg tiles, which require illustration; further comparative investigative work is recommended here too, which should involve trying to find parallel examples from the Cathedral.

7.3 Clay tobacco pipes

Chris Jarrett

Introduction

7.3.1 A small sized assemblage of tobacco pipes was recovered from the site. The bowls include very occasional fragmentary items, although most of the examples are intact and identifiable to type. Very few items appear to be intrusive or residual and the material appears to have been largely deposited rapidly after discard. Clay tobacco pipes occur in six contexts as only small groups (under 30 fragments).

7.3.2 All the clay tobacco pipes (38 fragments, of which four are unstratified) were entered into a database format and classified following Oswald's (1975) general typology, using the prefix OS, and Atkinson and Oswald's (1969) London typology using the prefix AO. The pipes are further recorded by decoration and quantified by fragment count. The degree of milling on 17th-century examples has been noted and recorded in quarters, besides the quality of their finish. The tobacco pipes are discussed by type and distribution.

The bowl types

7.3.3 The clay tobacco pipe assemblage consists of nine bowls, 26 stems and three mouth parts. The clay tobacco pipe bowl types fall into a very narrow date range: c. 1660 to 1680, although a stem is dated to the late 19th century according to the type of stamps recorded on the item. A few other stems appear to date to after c. 1730 according to the size of the bore. All of the bowls show evidence of use. Only one bowl fragments could not be confidently assigned to a precise type. The bowls are discussed by type.

1660-1680

OS6 (AO13):

OS6 (AO13): three bowls with a heel and an angled, rounded profile made in different moulds. These were all found in two fills associated with Cut [1033]. One bowl has a bulbous profile, an uneven bottered rim, which is also not milled and an average burnish (fill (1031)). A second bowl has a gently humped back and a rounded front and a quarter milling of the noticeably bottered rim, while the burnish is of a poor

quality (fill (1056)). The third bowl is a noticeably large variant with a rounded profile, a quarter milling the rim and a poor burnished finish (fill (1031)).

OS6 (AO13v): three bowls with a heel and an angled, gently rounded (barrel-shaped) variant profile. Two bowls have half milling of the rim and either an average or a good burnish, while the second example has three quarters milling of the rim and an average burnish. Both bowls were recorded in Fill (1031) of Cut [1033].

OS7 (AO18): one heeled bowl with an angled, gently rounded (barrel-shaped) variant profile and it has an average finish and a quarter milling of the rim, which has the appearance of a scored line. The bowl is in a fragmentary state and was recovered from deposit (1002).

OS18 (AO15): one spurred bowl with a rounded profile and an average burnish. The front of the bowl is missing, although there is evidence for a milled line on the back of the rim. The item was found in deposit (1002).

Undated bowl

The item is represented mostly by part of a heel and a stem and was most likely to have been of an OS6/AO13 type. It was found in Fill (1031).

The stems

The stems were broadly dated according to their thickness and more pertinently the size of the bore. One thin stem with a fine bore is of note and has stamped on its sides '[CL]EEVER' and ‘CAMBR[IDGE]’ and was found in deposit (1002). Despite a slightly different spelling of the family name, the item was probably made by John Cleaver, working mostly at premises on Newmarket Road, Cambridge, during the period 1865–1883 (Flood 1976, 39). The unstratified material consisted solely of stems.

The mouth parts

The three mouth parts all date to the 17th century and consist of tapering fragments, which are thin to medium-thick in thickness and have wide bores and these were all found in deposit (1003). Two examples have the ends cut straight and one of these items is part of a long stem, while the third example has a less accomplished finish and the end is cut at angle, although it has a slightly rounded finish.

Distribution

7.3.4 The distribution of the clay tobacco pipes is shown in Table 7, which records for each context (and cut) where the clay tobacco pipes were recovered from, the size of the assemblage, the number of fragments, the date range of the latest bowl type or part (Context ED/LD), the bowl types or part recovered and a spot date for the period of deposition.

Context	Cut	Assemblage size	No. of frags	Context ED	Context LD	Bowl types (makers), etc	Spot dates
1002		S	4	1580	1910	x1 OS7 (AO18), x1 OS18 (AO15), x2 stems; x1 stamped '[CL]EEVER' and 'CAMBR[IDGE]'	c. 1865–1883
1017	1021	S	4	1580	1910	Stems	17th century
1031	1033	S	23	1660	1680	x 5 OS6 (AO13) bowls, of which three are the variant shape, x1 unidentified bowl, x 14 stems (includes one intrusive later type), x3 mouthparts	1660–1680
1039	1019	S	1	1580	1910	Stem	1580–1910
1051	1051	S	1	1580	1910	Stem	17th century
1056	1033	S	1	1660	1680	x1 OS6 (AO13)	1660–1680

Table 7 Distribution of the clay tobacco pipes.

Significance and potential of the assemblage and recommendations

7.3.5 The clay tobacco pipes have some significance and indicate that for the period c. 1660–80 the heeled OS6/AO13 bowl shape was preferred by tobacco smokers on the study area. The 'Cleever' stamped stem has been found attached to the bowl and recorded in Cambridge (Flood 1976, 39). The clay tobacco pipes have the potential to help date the contexts they were found in.

7.4 Moulded Stonework

Roland Harris

Introduction

7.4.1 Seven pieces of moulded stone were recovered from the excavation, all from the rubble fill (context 1031) of the stone-faced soakaway [1033]: the rubble fill included brick and stone rubble, along with tile, pottery, glass and clay tobacco

pipe fragments, all confirming a post-medieval date for the deposition of the worked stone fragments.

7.4.2 The stones will all become part of the permanent collection at Ely Cathedral and, accordingly, have been given Ely Cathedral worked stone inventory numbers, here ranging from 1100-1106 (Appendix 3).

Description and Discussion

Ref. no. 1100 (Plate 22)

7.4.3 Barnack stone section of vault rib, measuring H238mm, W155mm and D80mm. The short length of the rib section (i.e. 80mm) is the result of damage: one face is crudely cut, or hacked back, and has remains of lime mortar attached from subsequent reuse. The opposing face has a mason's mark comprising a cross. The length of the fragment is insufficient to show measurable curvature. The stone has claw-chisel tooling, with that on the visible (moulded) faces aligned along the axis of the rib. The moulding profile has an axial roll and fillet separated from lateral rolls by fillets and hollows: the lateral rolls continue directly into the counter-curve of the hollows. The general form was developed in the 13th century (e.g. in the nave at Lincoln), although the particular combination of rolls, hollows and fillets in this example suggests an early 14th-century date: the form is, for example, very close to that used for the tierceron ribs of Bays 7-14 of the east walk of Norwich Cathedral (c.1316-19).

Ref. no. 1101 (Plate 23)

7.4.4 Clunch fragment measuring H170mm, W60mm and D160mm. The origin of this very fragmentary piece is difficult to identify: it appears to have a part-octagonal plan as if it comprises the springing of a tightly-radiused chamfered arch, but the non-vertical continuation of the stone below the astragal-like feature shows that this is not the case. The large flat rear of the piece appears primary, but, given the uncertainty over the nature of the stone, it may represent reuse. This face is more crudely chiselled than the other worked faces, which exhibit fine claw-chisel tooling. There is a small trace of red pigment. The piece of worked stone probably dates from the 14th century.

Ref. nos. 1102-6 (Plates 24-26)

7.4.5 Five clunch fragments all derived from vault ribs of the same profile. Two of the pieces (1105 and 1106) preserve the full moulding profile, while one (1106) also preserves the full depth of the plain sides of the rib, showing the overall dimensions to be W121mm and D148mm. None of the pieces preserves an end face (i.e. the faces that would have abutted) and all are fairly short lengths, measuring as follows: 1102 - 160mm; 1103 - 110mm; 1104 - 130mm; 1105 - 180mm; and 1106 - 120mm. The lengths are insufficient to allow measurement of curvature. There is a small trace of red pigment on piece 1105. All the pieces have fine claw-chisel tooling, mostly oriented across the mouldings. Piece 1103 has a set-out line along the centre of the wide axial fillet. The moulding comprises an axial roll and fillet separated from lateral ogee keels (essentially rolls with rounded fillets) and hollows. The form is similar to the larger profiles of the main ribs of Hotham's presbytery aisles (1320s), although there the fillets flanking the axial roll have squared shoulders and are not angled in the way they are on the excavated fragments. An exact match for the moulding of the vault rib fragments does survive at Ely, however, above the south face of the doorway into the Lady Chapel. Scarring of vaults on the wall to the south-west and around the doorway into the presbytery north aisle shows that this half-rib derives from a vault made of clunch that covered the passageway leading to the Lady Chapel. The exact match of the moulding profiles and the proximity of the finds to the site of the medieval passageway leave little doubt that stone fragments 1102-6 derive from its vault.

Discussion

7.4.6 The medieval predecessor of the modern Processional Way may have had 13th-century (therefore, pre-Lady Chapel) origins, as argued on the basis of the foundations by Craig Cessford and Alison Dickens (2007, 169-71), but, if so, the architectural evidence clearly shows that it was rebuilt at the time of the construction of the Lady Chapel, very probably as early as c.1321 (Dixon 2002, 71). The vault rib details and, especially, the doorway into the passageway from the presbytery north aisle leave little doubt that it was an integral part of the Lady Chapel scheme and, importantly, under the same master masons:

although there is no explicit documentary evidence, the architectural style suggests that it is highly probable that the new building was designed by William and John Ramsey (Binksi 2014, 187-217). The passageway continued in use until the Dissolution and, possibly, sometime afterwards: the southern entrance to the Lady Chapel had evidently been abandoned, and the adjoining passageway demolished, by the late 17th century, and a new entrance to the chapel (by then functioning as a parish church) created via the north-east corner of the north transept (Dixon 2002, 70).

7.5 Small finds, glass and metalwork

Ruth Beveridge

7.5.1 The assemblage recovered from the excavation is made up of sixty-five objects of metalwork and glass. They are listed by material and date in Table 8. Of this total, fifteen are iron nails which were recovered from modern or post-medieval features. The assemblage was collected from eleven contexts during the excavation, predominantly from made ground layers and the fills of pits of medieval and post-medieval date. One feature is of particular note, with the largest group of finds; thirty-one in total, being collected from fill 1031 of Soakaway 1033. The finds from this feature include six iron nails, two iron objects and fragments of glass window and bottle.

7.5.2 The finds have been recorded below. They have been examined with the aid of low powered magnification, but without the assistance of radiographs.

Material	Gold	Copper alloy	Iron	Lead	Glass	Ceramic
Period:						
Bronze Age						
Iron Age						
Roman						
Medieval	1	2	1	4	1	
Post Medieval		1	3	1	28	
Modern		1	1	1	5	
Uncertain Date			15			
Totals:	**1**	**4**	**20**	**6**	**34**	

Table 8 Object quantities by material and date

Condition

7.5.3 Overall the metalwork is in poor condition with corrosion and encrusted dirt masking detail on many of the objects. Radiography will assist with the identification of the metalwork. The surface of the glass is iridescent, and many of the pieces are flaking and unstable.

The assemblage

Medieval

7.5.4 Nine objects were recovered that have been given a medieval date and fall into two categories: structural and dress accessories. The glass and the lead cames are likely to have been associated with the nearby structures; the buckle (SF5), buckle pin and brooch pin are associated with the inhumations.

Glass

From fill 1031 of Soakaway [1033]. Small piece of painted glass; rectangular in plan and thin rectangle in section. It is brown in colour and laminated in section. The exterior surface is painted with two vertical red strokes. The condition of this fragment and the painting is comparable to fragments of window glass that were recovered from Bury St Edmunds, Tyson, 2017, 36. The thickness of the piece and its composition is typical of medieval 'forest glass' composition of 14th century.

Gold

From Layer 1080,<1009>. Small fragment of gold leaf used for gilding.

Copper alloy

SF5, find associated with SK1043, Grave [1042]. Complete cast single loop buckle with sheet metal plate. The buckle frame is D shaped with pin folded around a recessed strap bar. The sheet metal plate is folded over the strap bar and is made from a single strip of metal that is irregular in width; there is a slot for the pin. It is plain with remnants of tinning/silver on the plate and buckle. No evidence of rivets, though possibly masked by dirt. Dates between c. 1350 – 1450. Compare to examples from London, Egan and Pritchard, 2002, 94, fig. 59, no. 420 and Whitehead, 1996, 19, no.59.

From area of Grave [1061]. Hammered sheet pin, rectangular in cross section. It

tapers to a flattened point. Similar to pins used on annular brooches of 12th – 14th century date such as examples recovered in London, Egan and Pritchard, 2002, 251, fig. 162, no. 1315.

Iron

From fill 1014 of Grave [1061] <1003>. Small fragment of an elongate object that tapers along its length to a flattened tip. Possibly the end of a nail or brooch or buckle pin. Corroded.

Lead

Four strips of lead cames were retrieved that appear to be of medieval date. They have a distinct H-section and sub-lozenge shaped profile of the flanges, comparable to the examples from London illustrated in Egan, 2012, 52, fig. 33, no.49.

From Layer 1027. Strip of lead binding or cames, rectangular in plan and in cross section. There are slight lips along the longitudinal edges.

From fill 1031 of Soakaway [1033]. Cast strip of lead cames, twisted at one end. H-section.

From Layer 1080, <1009>. Two strips of window cames. The strips are twisted along the length; they appear to be H sectioned.

Post-medieval

7.5.5 The post-medieval assemblage is dominated by glass fragments, primarily slivers of window glass and pieces of wine bottles, one of which, recovered from Soakaway [1033], still retains a seal. Some fragments of the window glass may have been stained or painted, however the surface is often too unstable to determine with certainty. The grozing on the edges of glass from Drain [1021] and Soakaway [1033] suggests a date that predates the 16th century, when diamond cutters were introduced, Tyson, 2017, 36, but the fragments are thinner and the composition different to that of forest glass, suggesting a date after the 14th century. A single piece of milled lead window cames was retrieved, more suited for use with the thinner glass.

7.5.6 In addition to the glass, a single copper alloy dress accessory, SF4, was recovered from Drain [1019], and three functional iron objects including a chisel

and collar.

Glass

From made ground layer 1004. Piece of painted glass, sub-rectangular in plan, thin rectangle in section; natural green core with brown exterior surface that is flaking. Possible areas of red staining that is flaking away from the body.

From fill 1014 of Grave [1061] <1004>. Small sliver of opaque, colourless glass. Surfaces not weathered.

From fill 1017 of Drain [1021]. Three pieces of glass. Two pieces are friable, irregular shaped possibly painted, window glass. The surfaces are iridescent and laminating. One piece of glass is natural green with weathered brown exterior. Possibly has grozed edges. Sub-square in plan, thin rectangle in section.

From fill 1031 of Soakaway [1033]. Nine pieces of globular dark green, wine bottle (onion bottle). Seven are curved wall sherds; one is a section of the indented base; another is a wall section (measured) with the remains of an oval wine seal. The seal has a coat of arms with the initials ‘d M’ either side. The surface is weathered/decayed with flaking. Examples of wine bottles with seals were found in Norwich and date to the early 18th century, Margeson, 1993, 99, fig. 65

From fill 1031 of Grave [1033]. Eleven pieces of weathered soda glass, pale green in colour with exterior surfaces that are iridescent and laminating. Two pieces have an edge that is grozed.

From fill 1031 of Soakaway [1033]. Three co-joining pieces of painted glass, as a whole they are sub-square in plan, thin rectangle in section. Each piece has a grozed edge for where the window sat within the lead cames. The external surface is pitted and iridescent; also flaking due to weathering.

Copper alloy

SF4, fill 1017 of Drain [1019]. Two co-joining pieces of a rectangular, sheet metal plate for a folding clasp. The sheet is folded over centrally with a narrow tab to fit the clasp frame. The front plate is decorated along the longitudinal edges with incised cuts. The short end is wavy. It is attached to the strap by a central rivet (missing) and two rivets in the corner of the end opposing the fold. The plate is comparable to those used with folding clasps of c. 1350 - 1500 date, Whitehead, 1996, 41.

Iron

From made ground layer 1027. Length of bent wire, circular in cross section. Corroded.

From fill 1031 of Soakaway [1033]. Circular collar, slightly conical in shape; band masked by dirt and corrosion. Edges of the band worn. Collars such as this example are commonly found as they acted to reinforce sections of tool handles that would otherwise be vulnerable, Goodall, 1993, 141 and 142, fig.106, no.1000.

From fill 1031 of Soakaway [1033]. Whittle tang object with bolster separating the blade and tang. The blade is long and narrow, though incomplete. The tang tapers, it is rectangular in section. The object compares well to a chisel found in Norwich, Margeson, 1993, 180, fig. 130, no. 1386.

Lead

From made ground layer 1004. Possible strip of milled cames; the outer surfaces are curved; probably H section but now compressed. Reeding along the web. Milled cames became more widespread during the 16th century, Egan, 2012, 52.

Modern

7.5.7 A small assemblage of objects was recovered from the modern phased features and includes a decorative gate hook and a Victorian penny.

Glass

From made ground 1002. Five pieces of glass were recovered. Four pieces of clear glass; sub-rectangular or triangular in plan. Thin rectangle in section and one piece of natural green glass, sub-triangular in plan, thin rectangle in section.

From fill 1044 of Pit [1046]. Small sliver of opaque, colourless glass. Surfaces not weathered.

Copper alloy

SF3, made ground layer 1001. Worn Victorian one penny coin. Obverse: bust facing left, VICTORIA D:G BRITT:REG:ED. Reverse: Britannia seated right, with date 1872.

Iron

SF2, made ground layer 1002. Rectangular plate with cut out design around edges and central hoop perpendicular to the plate. It has two attachment holes located either

side of the hoop. Through the hoop is an iron arm that terminates in a hook. The arm is square in section with a central twisted section. It is comparable to decorative gate cabin hooks of modern date.

From made ground layer 1002. Possible fiddle key nail with cuboid head and tapering shank, rectangular in section that flattens towards the tip.

Lead

From fill 1051 of Pit [1050]. Triangular shaped piece of lead offcut folded into a conical form.

Uncertain date

Iron

Nails

7.5.8 Nails are usually difficult to date, having altered little over time, the fifteen recovered from the excavation are from post-medieval or later phased contexts. However, disturbance of some of the earlier features on site, and the nature of the deposition of objects, may mean that several of the nails are medieval in date.

7.5.9 The diameter of the heads suggest that the majority of nails were used for joined objects of furniture or boxes with only two having diameters above 20mm, more indicative of nails utilised for structural timbers.

From made ground layer 1002. Three nails: one has a circular, flat head and tapers to a point, circular in section. The other two nails have heads that are masked by corrosion and dirt; they have tapering shanks, square in section.

From made ground layer 1002. Two elongate objects with shanks rectangular in section. Possibly nails.

From made ground layer 1027. Three elongate objects with flat, sub-rectangular heads and tapering shanks, rectangular in cross section. Masked by dirt and corrosion. The complete nail has a curved shank.

From fill 1031 of Soakaway [1033]. Five elongate objects with flat, sub-square heads and tapering shanks, rectangular in section. Two of the nails are heavily encrusted

and corroded.

From fill 1031 of Soakaway [1033]. Elongate object with flat, sub-circular head and tapering shank, rectangular in section. Corroded.

From fill 1051 of Pit [1050]. Elongate object with flat, sub-circular head and tapering shank, possibly square in section. Corroded.

Recommendations for further work

7.5.10 The metalwork and glass assemblage reflects medieval and later activity on the site. The largest number of objects are of glass and iron, many of which are unstable. With this in mind, and considering the future of the archival storage of the assemblage, the following recommendations are made:

7.5.11 Selected iron and copper alloy objects should be x-rayed. This will facilitate accurate description and identification of the objects; assistance in the illustration of some specified artefacts as well as preserving a record of each item for the archive.

7.5.12 The following items should be stabilised by a professional conservator to assist with identification and long-term preservation: selected window glass identified in the catalogue from contexts 1004, 1017 and 1031. This may increase or decrease after examination by a glass specialist.

7.5.13 The glass should be examined by a specialist such as Dr Rachel Tyson.

7.5.14 A report on the small finds should form part of any future publications; it should consider the finds spatially and temporally on the site.

7.5.15 Two objects should be illustrated or photographed to preserve a record for the archive and as illustration for future publication: the glass seal from the bottle and the piece of medieval painted glass, both recovered from Soakaway [1033].

Statement of potential

7.5.16 The assemblage has limited potential to inform on the dating and interpretation of the site. The copper alloy objects are few, and whilst largely associated with the medieval inhumations may be intrusive following later disturbance of the

burials.

7.5.17 The pieces of glass are significant, demonstrating the wealth and importance of the religious buildings. Given the site location they have limited potential to add to the understanding of the nature of glazing utilised on the site.

7.5.18 Of the ironwork found on site, the largest proportion are nails that are likely associated with the timber aspect of structures either on the site or within the vicinity. The iron collar and chisel are functional objects that can inform on daily activities carried out either on or close to the site.

Discussion

7.5.19 The small finds assemblage reflects the use of the site during the medieval and post-medieval periods. The concentration of objects in Soakaway [1033] is of interest as it represents an accumulation of debris within the soakaway; it may be debris following the demolition of the Checkers building in 1649. It has been noted on sites in Norwich (Margeson, 1993, 170), that glass of religious origin was likely plundered during the 16th century following the dissolution of religious institutions, and re-used elsewhere in secular buildings. In Norwich, this earlier material was then disposed of in mid-17th century rubbish pits (ibid, 1993). It is likely that this occurred in Ely also, and can be seen with the glass assemblage, where there is a clear mix of earlier painted medieval glass deposited in the same rubbish pit/well as larger quantities of later window and bottle glass.

7.5.20 The copper alloy objects found associated with the inhumations are possibly later intrusive items, rather than being deposited with the bodies at time of burial. The date of the objects overall tends towards the later medieval or post-medieval period. Their presence in the burial contexts may be due to the later disturbance of the inhumations during the construction of the external drainage system in the 17th century.

7.6 Animal Bone

Karen Deighton

Introduction

7.6.1 Approximately 199 fragments of identifiable animal bone were collected by hand during the course of the excavation. A further 345 fragments were collected from wet sieved residues (mesh sizes 2mm and 10mm) from none environmental samples.

Method

7.6.2 Material was analysed using standard zooarchaeological methods (see references) and recorded onto an access database.

Preservation

7.6.3 Fragmentation was heavy with only 11.5 % of long bones complete, 22.1% at the fragment stage, 48.7% at the shaft stage, 0.5% epiphysis only and 15% almost complete. Heavy fragmentation is often characteristic of both medieval and post-medieval assemblages. The presence of evidence for chopping on 25% of the bones suggests that the fragmentation was, in part at least, due to heavy handed butchery techniques. Bone surface condition was moderate, yet did allow for the noting of evidence for butchery and canid gnawing. Canid gnaw marks were noted only on 22 bones.

The taxa present

Context	Cut	Feature	Cattle	Cattle size	Sh/gt	Sh/gt size	Pig	Rabbit	Chicken	Goose	Mallard	Indet bird	Total
1005		layer		1		1							2
1014		inhumation				1							1
1043	1042	inhumation						1					1
1065		layer			3	2	6		2		1		14
1075	1074	inhumation	1										1
1079		layer	2	3	4		4			1			14
1080		layer				4			2			2	8
1081		layer	1			1							2
1088	1087	inhumation				1			1				2
Total			**4**	**4**	**7**	***10***	**10**	**1**	**5**	1	**1**	**2**	**46**

Table 9 Taxa by context (Medieval phase 6.1)

Context	Feature	Cattle size	Sh/gt	Rabbit	Chicken	Mallard	Total
1094	layer		1			1	2
1098	layer	1	6	1	1		9
Total		**1**	**7**	**1**	**1**	**1**	**11**

Table 10 Taxa by context (medieval Phase 6.2)

Medieval (Tables 9 and 10)

7.6.4 The two sub-phases are considered together due to the small amount of material. Bone was principally from grave fills and made ground, rendering it difficult to suggest an origin for the assemblage. The hand collected bones are entirely from food taxa and, with the exception of rabbit, domesticates. The presence of pygmy shrew, small rodents and frog/toad in the samples could be due to their burrowing activities in the first two instances and their hibernation habits in the third.

7.6.5 The paucity of material makes in extremely difficult to discuss age at death and all that can be said is that for sheep, cattle and pigs both adult and juvenile animals were represented. Furthermore no particular body part utilisation pattern can be discerned. Sieved material came largely from layer (1080) and was mostly fish suggesting this was a considerable portion of the diet. Comparisons are cursory due to the small size of the assemblage, but the assemblage from Forhill (Alexander 2003) show a similar range of taxa, which are also dominated by the major domesticates. The assemblage from the nearby Almonry (Rielly 2017) also shows a similar greater abundance of sheep/goat in comparison to the other major domesticates.

Context	Feature	Cattle size	Sh/gt	Rabbit	Chicken	Mallard	Total
1094	layer		1			1	2
1098	layer	1	6	1	1		9
Total		**1**	**7**	**1**	**1**	**1**	**11**

Table 11 Taxa by context (Post medieval phase 7.1l)

Context	Feature	Cattle size	Indet bird	Total
1016	layer	2	1	3

Total		**2**	**1**	**3**

Table 12 Taxa by context (Post medieval phase 7.3)

Context	Cut	Feature	Cattle	Cattle size	Sh/gt	Sh/gt size	Pig	Chick	Chick size	Goose	Goose size	Indet bird	Total
1002		layer	11	1	33	1	6	4	4	2	3		65
1044	1046	pit				1						1	2
1045	1046	pit			1							1	2
1051	1050	Pit			1								1
Total			**11**	**1**	**35**	***2***	**6**	**4**	**4**	2	**3**		**70**

Table 13 Taxa by context (Modern)

Context	1044	1014	1014	1014	1014	1075	1042	1042	1080	Total
Sample	1000	1002	1003	1004	1005	1006	1007	1008	1009	
Date	PM	M	M	M	M	M	M	M	M	
Sheep Size	1	1	1			1			4	8
Chicken									2	2
Rabbit							1			1
Pygmy shrew		1								1
Small rodent			2			1			2	5
Small mammal		1	1							2
Frog/toad			3			2		2	3	10
Indet bird	1								2	3
Indet fish	9	3	1			5		2	200	220
Indeterminate	15	7	5	17	5	20	5		20	94
Total	26	13	12	17	5	29	6	4	233	345

Table 14 Taxa from sieved samples

Post medieval I (Tables 11 - 13)

7.6.6 The three sub phases are considered together due to the paucity of material. Bone was recovered largely from made ground, a drain fill and a small concentration was noted in Soakaway [1033]. The assemblage consisted of domesticates with the exception of crow and rabbit and of food taxa with the exception of crow and was apparently dominated by sheep/goat. The presence of crow could be related to its status as a scavenger at human settlements. The assemblage also included a bone handle fashioned from an ovicaprid metatarsal (SF 6) in context (1031).

7.6.7 The paucity of material makes in extremely difficult to discuss age at death, as with the medieval phase cattle are a mixture of adult and juvenile. Fusion data for pigs however suggest they were slaughtered as juveniles which is usual for

a species kept purely for meat. Data for sheep suggests the slaughter of young adults for the consumption of prime meat; again this is unsurprising for an assemblage associated with a high status site. Again comparisons are cursory due to the small size of the assemblage but a similar range of domesticates is once again seen at the Almonry (Rielly 2017) but now with more emphasis on cattle which is not seen at the current site.

Modern (Table 14)

7.6.8 Material was largely from made ground (layer (1002)) including a worked bone spoon (SF1). The assemblage comprises of domestic food taxa with sheep/goat as the predominant taxa.

Conclusion

7.6.9 Analysis has shown a small assemblage spread across several phases which is comparable to material from nearby sites.

7.7 Human Bone

Aileen Tierney

Introduction

7.7.1 Excavations resulted in the discovery of four partial in-situ skeletons and two further redeposited partial skeletons. Additional disarticulated human material was present across site. All graves were on a west - east orientation suggesting they are part of the larger lay cemetery. All graves were truncated and contained demolition material most likely from the demolition of the presumed Checker building, constructed in the later medieval period. Bone preservation was very good on site. As per the request of the Cathedral, all material is to be reburied.

Methodology

7.7.2 The remains were excavated in accordance with the CIfA guidelines (McKinley and Robert, 1993). A skeleton number was allocated to each inhumation and the grave cut and backfill were allocated individual context numbers. Environmental samples were taken during the excavation of this inhumation; taken from above the skeleton, around the skull and around the remainder of

the skeleton.

7.7.3 General methods used in the osteological evaluation of all human skeletal material are those of Buikstra and Ubelaker (1994). Sexual dimorphic traits were examined in an attempt to ascertain the sex of this individual (Buikstra and Ubelaker, 1994). Each element was identified macroscopically; identification of elements allowed for completeness of skeleton to be ascertained. Pathologies were identified and logged.

Results

7.7.4 Four partial skeletons from identified graves (Table 15), two redeposited semi-articulated human skeletal remains (Table 16) and eight human bone assemblages from other features or layers (Table 17) were analysed. The graves are discussed in numerical order, followed by the redeposited material and finally a brief discussion on the disturbed/disarticulated human bone found across the site.

SK 1043 Grave [1042]

7.7.5 This infant was placed in a supine position with both arms and legs assumed extended on an east - west orientation. The grave has been truncated with elements of the maxilla and lower leg missing (Plate 3; Figure 6). The level of disturbance is highlighted by the presence of human adult cranium and foot bones, as well as animal bone including a fragment of cow skull and some fish vertebrae. The bone preservation for this individual was very good with many of the more fragile bones surviving. A small buckle was placed by the right shoulder of this individual with two sherds of late Saxon - early medieval pottery (AD 875 - 1100) retrieved from the fill.

7.7.6 Dental eruption data and metrical data were consulted to carry out an age assessment of this individual resulting in the age category of infant; more precisely 12 - 18 months of age.

Disarticulated Human Bone in Grave [1042]

7.7.7 Four fragments of a young - middle adult were recovered during the excavation of Infant 1043. The four fragments refit thus identifying it is the same individual

and therefore likely representing a disturbed grave of an earlier date. A talus and fifth metatarsal were also recovered in addition to some weathered long bone fragments. The weathered fragments may have been on the surface for some time following the later medieval disturbance, while the better preserved cranium and foot bones seem to have been part of the backfill of Grave [1042] and therefore may represent a previous grave close by. The level of intercutting highlights how busy this part of the cemetery must have been and indeed its longevity.

SK1066 Grave [1061]

7.7.8 This adult male was placed in a supine extended position with arms and legs assumed extended on an east - west orientation. This grave has been truncated by Modern Drain [1103] to the south, resulting in the absence of half the right ulna and radius, the entire right leg, half the left femur and lower leg (Plate 4; Figure 6). Other than the modern drain truncation, this individual does not seem to have undergone significant disturbance with the majority of the smaller elements recovered. Despite this seemingly undisturbed nature, the presence of a deciduous molar in the thoracic sample highlights the intercutting nature of this cemetery.

7.7.9 All sexually dimorphic traits scored conclusively as male. High levels of additional bone growth on the majority of articular surfaces suggest manual labour and a long life (c. 35 - 50 years). Obliterated sutures on the cranium and a high level of dental attrition support this. This elevated level of wear is perhaps higher than usual for this age and therefore highlights the additional 'work' required by the other teeth due to the unerupted lower left canine and potentially the lower right canine too. During the cleaning of this skeleton it was noted that the upper right canine was growing horizontally towards the incisors, however the left maxilla was too fragmented to continue on this observation. In addition to this, the upper right third molar and the lower left third molars were absent although they may be present but as of yet unseen in the alveolar bone. Taking into account the advanced age of this individual, his stature has been estimated at 162 - 165cm (5'3" - 5'4").

7.7.10 A bony ridge on the glenoid fossa of the right scapula is suggestive of shoulder stress. Additionally, the spondylolysis of the fifth lumbar vertebra suggests the repetitive hyperextension of the lumbar vertebrae. The fifth lumber vertebra is the most common of the vertebrae to be affected by this and while it can be congenital, it can also be due to a repeated activity. In addition to this, the attachment for gluteus minimus displays significant bone regrowth. This bony action is most likely due to the anteversion of the pelvis which employs gluteus minimus as an accessory flexor muscle. Various levels of marginal lipping and one case of a Schmorl's node were also identified. These pathological changes can help reveal this individual's life and daily routine, suggesting a repetitive bending motion and associated arm movement such as sheep shearing.

SK1076 Grave [1074]

7.7.11 This young adult female was placed in a supine extended position with arms and legs assumed extended on an east - west orientation. This grave has been truncated by Grave [1061] and Modern Drain [1103] to the south, resulting in the absence of the skull, cervical vertebrae, the right arm and right leg (Plate 4; Figure 6). All sexually dimorphic traits scored conclusively as female supported by metrical data. Analysis of the pubic symphysis and auricular surface produced an age of 20 - 30 years of age.

7.7.12 This individual seems to have suffered a blow to her left hand resulting in Boutonniere's deformity. The blow would have damaged the tendon in the finger (interrupting the central slip of the extensor tendon) meaning that she would not have been able to fully straighten the finger in question. This incident appears to have happened a period of time before her death as the bone has had sufficient time to grow and fuse her proximal and intermediate phalanx together. Regardless of her dominant hand, this may not have prevented her from carrying out her daily tasks, although without the complete skeleton for reference, it is not certain. This individual's stature has been estimated at 148 - 157cm (4'10" - 5'1").

SK1088 Grave [1087]

7.7.13 This adult female was placed in supine extended position with arms and legs

assumed extended on an east west orientation. This grave has been truncated by Foundation [1092] and Modern Drain [1106] resulting in the absence of the left arm, left pelvis and partial left pelvis (Plate 6; Figure 6). Additional truncation from above appears to have occurred as evidenced by the absence of the skull and the upper cervical vertebrae and is potentially associated with the 'modern tent peg' which truncates the right humerus. Sexually dimorphic traits scored conclusively as female supported by metrical data. Analysis of the pubic symphysis and auricular surface produced an age of 30 - 40 years of age.

7.7.14 Inflammation on two of the rib tubercles and the corresponding transverse processes of the thoracic vertebrae suggest repeated movement. This would have caused this individual some level of pain, with an aching or burning which would have been worse in the morning and would have been aggravated by coughing and taking deep breaths. Two lumbar vertebrae displayed additional bone growth on the anterolateral surface of the body. This identifies a physical stress to the spine and documents the extrusion of the nucleus pulposus and lifting of the anterior longitudinal ligament. As a result, the osteophytes have formed in a horizontal direction to bridge this intervertebral space. These pathological changes indicate a life of repetitive manual labour or an episode of trauma. This individual's stature has been estimated at 155cm - 164cm (5'1" - 5'5").

Cut	SK	Fill	Orientation	Period	Burial type	Burial position	Preservation	Completeness	Age
1042	1043	1041	W - E	Medieval	Inhumation	Supine, extended	Good	>75%	12 - 18 months
1061	1066	1014	NW - SE	Medieval	Inhumation	Supine, extended	Good	50 - 75%	35 - 50 years
1074	1076	1075	NW - SE	Medieval	Inhumation	Supine, extended	Good	50 - 75%	20 - 30 years
1087	1088	1089	W - E	Medieval	Inhumation	Supine, extended	Good	>75%	30 - 40 years

Table 15 Summary of the in-situ burials

All skeletons in this table are medieval inhumations in a supine extended position

Pathologies	Additional finds		SK	Fill	Orientation	Period	Burial type	Burial position	Preservation	Completeness
N/A	Human and animal bone, pottery,		1067	1058	N/A	Medieval?	Disturbed burial	N/A	Good	<10%

	buckle.									
Spondylolysis, marginal lipping, Schmorl's nodes	Brooch pin, part of copper alloy annular brooch.		1077	1063	NW-SE	Medieval?	Disturbed burial	N/A	Good	25%

Table 16 Summary of disturbed burials

7.7.15 A green mark noted on the bone is evidence of a potential copper object placed in the grave with this individual or perhaps a clothing accessory or fixing.

SK1067 Layer 1058

7.7.16 This skull and potentially associated skeletal elements were located in Layer (1058) to the south of Soakaway 1033. The presence of a right-sided clavicle and two ribs suggest they are part of the same individual. A first metatarsal and a talus nearby are harder to directly link to this individual and may just represent further disturbance.

7.7.17 The skull and clavicle belong to an older male individual following examination of the temporal, mandible and frontal for sexually dimorphic traits. The age of this individual has been ascertained purely on the high level of dental wear. This individual had significant deposits of calculus on all the teeth present which prevented identification of any further pathological changes to the teeth.

SK1077 Layer 1063

7.7.18 The left femur and right and left tibiae and fibulae of this individual appeared to be articulated whilst following the same orientation as the graves discussed above. Upon excavation, it was identified that they represent the redeposition of a partial skeleton in Layer 1063 which is associated with construction and subsequent demotion of the presumed Checker building (Plate 5). This juvenile individual (<12 years of age) has been aged by epiphyseal fusion data.

Human bone from layers and features

7.7.19 Fragments of human bone were recovered from a number of layers which occur throughout the entire sequence of this site (Table 17). This distribution of disturbed human skeletal remains highlights the disturbance this site experienced from numerous sources on multiple occasions.

Fill	Preservation	Elements present	Age/Sex	Pathologies
1002	Good	Rib, femur head (L & R), fibula	Femur = older adult	Age related pathologies
1005	Good	Distal humerus, proximal ulna, rib fragments,	Humerus & ulna = older adult	Age related pathologies
1016	Good	Skull vault, rib fragments, femur shaft, MT1 1 and foot phalanx	Juvenile and older adult	
1027	Mixed preservation	Mandible with 5 teeth, partial temporal, scapula, humerus, vertebrae, rib fragments, fibula.	Adult male, older adult, young adult	Age related pathologies
1031		Femur, fibula.	Adult	
1045		Partial pelvis	Adult	
1065		Temporal, vertebrae, tibia, fibula (some may be part of SK1077)	Adult & juvenile	

Table 17 Summary of human remains from layers

Layer 1002

7.7.20 The bone from this layer represents more than one individual. Two fragments (left and right femur heads) seem to belong to the same individual as they have both been identified as older adult male elements. This layer is one of the latest rubble layers essentially sealing earlier periods. The presence of human bone at this level illustrates the disturbance this area has suffered.

Layer 1005

7.7.21 Only two fragments of human bone were recovered from this layer, which has been phased as being one of the cemetery soils contemporary with the cemetery. The ulna and humerus fragments exhibit the same level of aging and therefore may belong to the same individual.

Layer 1016

7.7.22 This layer is a potential construction surface during the creation of the drain, linking it to the demolition layer assigned to the Checker. The human remains from this section of site were scarce, with a partial adult cranium fragment, ribs, an adult metatarsal and juvenile femur shaft.

Layer 1027

7.7.23 This layer is assigned to the demolition phase of the Checker building and contained the largest assemblage of bone from any of the layers, which may simply be due to the size of the layer, extending further across site than any of the others. The bone from this layer varied greatly in terms of preservation with a mandible extremely weathered and likely to have been on the surface for a prolonged period of time or disturbed a number of times. Three fragments of a right humerus were refitted as well as two fragments of scapula, suggesting one individual. A single lumbar vertebra of a mature individual was also recovered from this layer. SK1067 was also recovered from this general area and therefore some of the bones from this layer may belong to that individual.

Deposit 1031

7.7.24 Fragments of shafts from an unsided femur and fibula were recovered from this deposit. This rubble deposit is thought to have filled up Soakaway 1033 when

the soakaway and the associated drains went out of use.

Pit 1045

7.7.25 This modern rectangular pit of unknown function contained one fragment of the ischium of an adult individual.

Layer 1065

7.7.26 Stratigraphy suggests that this layer comprises one of the cemetery soils. Due to the busy nature of the cemetery it is understandable to find unstratified bones in these layers. While a number of adult bones were retrieved form this layer, it is the presence of a distal tibial epiphysis which is interesting. This epiphysis matches the epiphyseal fusion rates for SK1077 and therefore may be a part of this disturbed skeleton.

Unstratified

7.7.27 Further fragments of human bone from all parts of the body were recovered a surface finds during the initial cleaning of the site. The presence of this human bone is to be expected.

Conclusions

7.7.28 Four inhumations were recovered from graves, two from layers and further human skeletal material from across the site. The layers are of different dates all of which post-date the cemetery and therefore are likely to represent truncated graves. There was one infant, one juvenile, two young-middle adults and two mature adults. Within the adult group, two males and two females were identified. Despite the obvious disturbance, the majority of the bones, including those of the infant, were very well preserved allowing for a full skeletal analysis to be carried out.

7.7.29 The presence of partial skeletons in truncated graves identifies the presence of the lay cemetery in this location. Partially articulated skeletons and human bone found in various layers across the site, highlights the busy nature of this cemetery but also indicates the disturbance which occurred during the later medieval period and on through the post-medieval period right up until the present.

7.7.30 The dimensions of the graves were of a sufficient size to bury the individual in question. This shows that care was given to the preparation of the grave and that graves were dug on a case by case basis. The orientation of the graves and the positioning of the body within the grave also show care and attention and regularity across site consistent with their beliefs. The only example of one grave truncating another on this site proves that this was a busy cemetery site.

7.7.31 Dental health was as expected for this period with all individuals displaying high levels of calculus and significant wear patterns on the majority teeth observed. Two skeletons showed potential evidence for a life of manual labour (SK1066 and SK1088) with both exhibiting signs of bone growth and remodelling due to repetitive actions. Alternatively, the additional bone growth on the vertebral bodies could have been as a result of an episode of physical trauma. SK1076 experienced physical trauma in the form of a blow to her hand which damaged the tendon in her finger; it is unsure whether this deformity would have affected her day to day life.

7.7.32 SK1066 exhibited a potential case of congenital delayed tooth eruption. Both lower canines and the upper right canine were fully formed but still in the alveolar bone with the maxillary canine horizontal. This abnormality can occur as a result of a period of deficiency or can be associated with genetics.

7.8 Shell

Kate Turner

Introduction

7.8.1 An assemblage of whole and fragmented marine shells was recovered during the excavation.

7.8.2 The aim of this rapid assessment was to:

Determine the degree of fragmentation and preservation of the oyster shell assemblage;

Quantify the number of oyster shells;

Record any other marine shells that were present in this assemblage.

Methodology

7.8.3 The shells from the site were collected via handpicking by on-site archaeologists during the excavation of the site. For assemblages of less than one-hundred shells, 100% of the material was collected. Shells were then transported off site and carefully hand cleaned using a soft toothbrush, to ensure that none of the external features were damaged or removed.

7.8.4 Preliminary recording of the Oyster shell involved separating left and right valves specimens, in order to determine the minimum number of individuals in the assemblage (MNI). Recording was carried out on any valves of a size suitable for measurement (this being defined as any specimen whereupon the umbo/ligament scar is present, alongside the internal adductor muscle scar and at least two thirds of the original shell, as per Winder 2011.

Results

Oyster shell

7.8.5 Whole or fragmented oysters were hand recovered from six contexts, dating from the medieval to modern periods. Context (1079), a medieval made-ground layer, yielded a single complete left and right valve, and a low concentration of fragments. Of the post-medieval contexts that were sampled, (1027) yielded the greatest abundance of material, containing six complete left or right valves and a moderate number of fragmented shells, giving a minimum number of individuals of five. Context (1031) produced two right and one left valves, and context (1017) one left and one right valve. The largest overall assemblage was taken from a modern made-ground layer, and contained nine complete left and right valves, and around fifteen fragments of shell.

7.8.6 All of the specimens identified were of the species Ostrea edulis, or Colchester native oyster; the number of measurable left and right valves and broken specimens in the sample set is shown in Table 18. None of the sampled contexts yielded an MNI of greater than ten, thus no further recording was carried out at this stage. A maximum number of individuals of fifteen was calculated for the entire assemblage.

Context Number	Feature Number	Bulk/Hand picked	Period	*Ostrea edulis* (LV)	*Ostrea edulis* (RV)	Fragments	Oyster MNI
1002		HP	Modern	5	4	15	5
1017	1019	HP	Post-medieval	1	1		1
1027		HP	Post-medieval	5	1	20	5
1031	1033	HP	Post-medieval	1	2		2
1051	1050	HP	Modern	1		1	1
1079		HP	Medieval	1	1	3	1
				14	**9**	**N/A**	**15**

Table 18 Quantification of Marine Shell

Absolute values. Key: RV = right valve. LV = left valve. MNI = maximum number of individuals.

Conclusions

7.8.7 The archaeological excavation carried out at Ely Processional Way produced only a small amount of oyster shell, which may have been transported to the site from the local coast. The presence of this material indicates that oyster could have been a dietary component for the occupants of the local area during the medieval to modern periods, though the sample set is too small to speculate as to the extent of this. Due to the limited size of this assemblage, no further recording is recommended, and the material can be discarded. A summary of the results should be included in any subsequent site publications.

7.9 Plant macrofossils and other remains

Kate Turner

Introduction

7.9.1 This report summarises the findings of the rapid assessment of the environmental remains found in nine bulk soil samples taken during the archaeological excavation of land at Ely Cathedral, Ely. These samples were taken from three inhumation burials, a pit and an archaeological layer, the context information for which is given in Table 19.

7.9.2 The aim of this assessment is to:

Give an overview of the contents of the assessed samples;

Determine the environmental potential of these samples;

Establish whether any further analysis is necessary.

Methodology

7.9.3 Nine environmental bulk samples, of between two and twenty-nine litres in volume, were processed using the flotation method; material was collected using a 300 µm mesh for the light fraction and a 1 mm mesh for the heavy residue. The heavy residue was then dried, sieved at 1, 2 and 4 mm and sorted to extract artefacts and ecofacts. The abundance of each category of material was recorded using a non-linear scale where '1' indicates occasional occurrence (1-10 items), '2' indicates occurrence is fairly frequent (11-30 items), '3' indicates presence is frequent (31-100 items) and '4' indicates an abundance of material (>100 items).

7.9.4 The light residue (>300 µm), once dried, was scanned under a low-power binocular microscope to quantify the level of environmental material, such as seeds, chaff, charred grains, molluscs and charcoal. Abundance was recorded as above. A note was also made of any other significant inclusions, for example roots and modern plant material.

Context No.	Enviro Sample No.	Cut	Skeleton Number	Context Type	Context category	Phase	Interpretation
1044	**1000**	1046		Pit	Fill	Modern	Pit, presumed exhumed grave
1014	**1002**	1061	1066	Inhumation	Fill	Medieval	Grave bulk for skull area
1014	**1003**	1061	1066	Inhumation	Fill	Medieval	Grave bulk for chest area
1014	**1004**	1061	1066	Inhumation	Fill	Medieval	Grave bulk for abdomen area
1014	**1005**	1061	1066	Inhumation	Fill	Medieval	Grave bulk for left hand area
1075	**1006**	1074	1076	Inhumation	Fill	Medieval	Grave bulk for torso- juvenile
1041	**1007**	1042	1043	Inhumation	Fill	Medieval	Grave bulk for torso of juvenile/neonate
1041	**1008**	1042	1043	Inhumation	Fill	Medieval	Grave bulk for skull
1080	**1009**			Refuse dump	Layer	Medieval	dark fill of probe near structure 1059/[1078]

Table 19 Context information for environmental samples

Results and discussion

7.9.5 For the purposes of this discussion the assessed samples will be grouped by period and feature. Cultural material collected from the heavy residues has

been catalogued and passed to the relevant specialists for further assessment. A full account of the sample contents is given in Tables 20 and 21.

Medieval

Feature [1042]

7.9.6 A total of two samples were taken from feature [1042], an inhumation burial containing juvenile/neonatal skeletal remains. One sample was taken from the area of the torso, and one from the area surrounding the skull.

7.9.7 Preservation of archaeobotanical material in these samples was generally poor; a moderate amount of wood charcoal was recovered from both areas; however, no pieces of identifiable size were reported (>4 mm in length/width). Weed seeds were scarce, being absent from sample <1007>, and present only in very low concentrations in sample <1008>. Specimens of fat-hen (Chenopodium album) and elder were recognised, along with a small number of indeterminate wheat grains (Triticum sp.) and several grains too heavily carbonised to be identified. Shell was also rare, with only a low frequency of fragmented oyster shell found in both samples, and a small amount of the terrestrial burrowing species Cecilioides acicula found in sample <1007>. Roots were present throughout.

Feature [1061]

7.9.8 Four environmental bulk samples were collected from feature [1061], the fill of an adult inhumation burial. Samples were taken from the areas around the skull, chest, abdomen and left hand.

7.9.9 Wood charcoal was reported in all of the assessed samples in moderate to high abundances, sample <1003> was however the only deposit to contain any sizeable pieces, producing less than five viable specimens. Weed seeds were found in the deposits from around the skull and chest area, though concentrations were low, less than ten seeds per sample. Species present included fat-hen, bramble and elder, the condition of which would suggest are modern contaminants. In addition, carbonised grains were identified in all of the sampled areas, with the exception of that around the left hand; this material was

too heavily carbonised to identify to species, suggesting it has been subject to prolonged or high-intensity combustion.

7.9.10 Snails were more common; with the exception of sample <1005>, small numbers of terrestrial specimens were recorded throughout. Species present included Trichia sp., Vallonia sp. and Cochlicopa lubrica. Sample <1004> additionally contained a minimal amount of fragmented oyster shell (Ostrea edulis).

7.9.11 Evidence of bioturbation, in the form of roots/tubers, leaf fragments and/or modern insect remains were recorded in all of the assessed samples.

Feature [1074]

7.9.12 One sample was taken from feature [1074], the fill of a juvenile inhumation burial, from the area around the torso. Preservation of environmental material was limited in this feature; a large amount of wood charcoal was observed; however this material was heavily fragmented, and less than ten sizeable pieces were identified. A single seed of orache (Atriplex sp.) was also found, along with a minimal amount of fragmented oyster shell.

Layer [1080]

7.9.13 A single environmental sample was taken from layer (1080), the dark fill of a sondage taken near structure [1059].

7.9.14 Preservation of environmental remains in this feature was generally poor, with the exception of wood charcoal, which was abundant, though less than ten viable specimens were observed. A low frequency of charred wheat was additionally found, as well as a single elder seed, and a moderate concentration of insect remains.

Summary

7.9.15 To summarise, the samples from features dating to the medieval period contained little of diagnostic value. The wood charcoal assemblage would suggest that small-scale fires were being carried out in the vicinity, however whether these are domestic or industrial in nature is unknown. This material

may have become incorporated when the burials were filled in, which may also account for the low density of cereals and burnt seeds that were recorded. The minimal concentration of wheat in samples <1008> and <1009> may be evidence of cultivation or consumption in the area, but the extent of this cannot be established, due to the limited material available. Fish bone, scales and/or small animal bone were present in all the flots, which may also be a sign of local dietary preference.

7.9.16 Signs of bioturbation, in the form of roots, insects and/or modern seeds, were present throughout.

Modern

Feature [1046]

7.9.17 One environmental bulk sample was collected from feature [1046], the fill of a modern pit presumed on site to be an exhumed grave (Table 19). Wood charcoal was abundant in this feature, with over one-hundred pieces being observed; degree of fragmentation was however high, and less than five sizeable pieces were recorded. As well as charcoal, the sampled deposit yielded a small amount of carbonised wheat, and other indeterminate grasses. Weed seeds were also recovered in moderate amounts and are likely to be a sign of modern contamination, based on the condition of the elder and rush seeds (Juncus sp.). In addition, other non-contemporary remains were found, including roots, leaf fragments and burrowing snails of the species Cecilioides acicula which, when found in archaeological deposits, are often seen as evidence of bioturbation.

Summary

7.9.18 The sample collected from deposits thought to date to the modern use of the site is relatively poor in archaeobotanical material. There is some evidence for small-scale combustion during this period, in the form of an abundance of wood charcoal, though the small size of the fragments indicates that this is only a partial waste assemblage of the wood that would be required for such undertakings. The low frequency of carbonised wheat grains reported may be an indication that wheat is being cultivated or consumed in the area, though the

density of material is too low to speculate on the extent of this, and the grains are too damaged for exact species to be established. As with the samples collected from the medieval period, fish bone, scales and/or small animal bone were present in the flot, suggesting that fish is likely to have been a component of local diet.

7.9.19 Modern contaminants such as seeds and burrowing snails were present, which indicates that post depositional disturbance of smaller remains is likely in this deposit.

Sample No.		**1000**	**1002**	**1003**	**1004**	**1005**	**1006**	**1007**	**1008**	**1009**
Context No.		**1044**	**1014**	**1014**	**1014**	**1014**	**1075**	**1041**	**1041**	**1080**
Feature No.		**1046**	**1061**	**1061**	**1061**	**1061**	**1074**	**1042**	**1042**	
Skeleton number			**1066**	**1066**	**1066**	**1066**	**1076**	**1043**	**1043**	
Volume of bulk (litres)		29	8	28	9	2	9	3	3	17
Method of Processing		**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**
HEAVY RESIDUE										
Charcoal										
Charcoal >4 mm							1			1
Charcoal 2-4 mm							1			2
Charcoal <2 mm										
Bone										
Animal bone		3	2	3	1	1	3	1	3	4
Human bone				3	1	1	1	3	3	
Building Material										
CBM				3	1		4			
Mortar					3	2		4		
Plaster		3	3	3					3	
Shell										
Oxychilus sp.	Terrestrial									1
Tri chia sp.	Terrestrial									1
Fragments		1			1					
Other Remains										
Gold										1
Iron				1						1
Glass		1			1					
Industrial waste							2			

Table 20 Assessment of environmental residues

Key: 1- Occasional, 2- fairly frequent, 3- frequent, 4- abundant

Sample No.	**1000**	**1002**	**1003**	**1004**	**1005**	**1006**	**1007**	**1008**	**1009**

Context No.		**1044**	**1014**	**1014**	**1014**	**1014**	**1075**	**1041**	**1041**	**1080**
Feature No.		**1046**	**1061**	**1061**	**1061**	**1061**	**1074**	**1042**	**1042**	
Skeleton number			**1066**	**1066**	**1066**	**1066**	**1076**	**1043**	**1043**	
Volume of bulk (litres)		29	8	28	9	2	9	3	3	17
Volume of flot (millilitres)		18	5	25	6	0.5	4	0.5	4	51
Method of processing		F	F	F	F	F	F	F	F	F
FLOT RESIDUE										
Charcoal										
Charcoal >4 mm		1		1						2
Charcoal 2 - 4 mm		2	2	2	1	1	1	1	1	4
Charcoal <2 mm		4	3	4	3	3	4	2	3	4
Frags. of ID size		<5	X	<5	X	X	X	X	X	<10
Seeds										
Atriplex sp.	Oraches						1			
Chenopodium album	Fat-hen	1		1					1	
Juncus sp.	Rushes	3								
Rubus sp.	Brambles			1						
Sambucus sp.	Elder	1	1	1					1	1
Burnt seeds										
Poaceae sp. (large)	Grasses	1								
Cereals										
Triticum sp.	Wheat	2							1	1
Broken/distorted (No ID)		1	1	1	1				1	1
Other plant macrofossils										
Leaf fragments		3	1							
Roots/tubers		1	2	2	1	1	1	1	1	
Modern aquatic weed		1								
Molluscs										
Cecilioides acicula	Terrestrial	3			1			1		
Cochlicopa lubrica	Terrestrial	1		1						
Discus rotundatus	Terrestrial	1								
Lauria cylindracea	Terrestrial	1								
Oxychilus sp.	Terrestrial	1								
Trichia sp.	Terrestrial	2	1	1						
Vallonia sp.	Terrestrial	2		1	1					
Broken shell	*Ostrea edulis*				1		2	1	1	
Snail eggs		2	1							
Juveniles (no ID)		4	1	2	1		1	1		
Bone										
Fish bone		1			1		1	1		4
Fish scales		2	1	3	1		3		3	4
Small animal bone		1	1	1	1			1	1	
Bone fragments						1	3	1	3	2
Other remains										
Insect remains		1		1						3
Insect eggs/worm cases		2		1						
Unknown fibres									2	
Clinker/burnt coal					1	1				

Vitreous material			1	2	1	1	3		1	
Coal				1			3	1	1	

Table 21 Assessment of environmental flots

Key: 1- Occasional, 2- fairly frequent, 3- frequent, 4- abundant

Conclusions and recommendations for further work

7.9.20 To summarise, environmental recovery in the nine bulk samples taken from Ely Cathedral was generally poor. The archaeobotanical assemblage is of limited size, and little diagnostic value, and evidence for bioturbation, in the form of modern seed, grasses, insect remains and/or roots is substantial. No further work is therefore recommended on this material, and it may be discarded.

7.9.21 A summary of these results should be included in any subsequent site publications.

8 CONCLUSIONS

8.1 The remit of the Processional Way improvements project was to excavate no lower than the formation level required for the installation of the paving and retaining walls of the Processional Way Courtyard.

8.2 The scope of the building works was relatively small, requiring a general base of construction depth of 20.10m OD, which ensured that most of the archaeological remains present on this site remain preserved 'in situ' to a depth of around 1m above bedrock. The area of investigation has been subject to significant landscaping in the Victorian period and earlier. This has effectively removed most evidence for activity in this area between the 15th to 18th century and limits our ability to date the upper interface of the remaining deposits with any degree of certainty. Despite these restrictions this project has added new data on this important part of the Cathedral.

8.3 The results of this work have built upon two key projects, both undertaken in 2000 in this immediate vicinity, 'Excavations South of the Lady Chapel, Ely Cathedral, Cambridgeshire', (Regan *et al,* unpublished 2001) and Philip Dixons 'Gateways to Heaven: the approaches to the Lady Chapel, Ely' (Dixon 2002).

8.4 The 2018 fieldwork identified five archaeological phases dating from the 'high' medieval period (12th - mid 14th century) to the 18th/19th century in addition to a small assemblage of residual Saxon material and some undated deposits of likely Saxon provenance. This is consistent with the findings of the excavations at the adjacent site in 2000, which also uncovered evidence for middle Saxon occupation,12th century burials and later drainage features.

8.5 The true significance of the Saxon remains glimpsed during this project remains unclear but nonetheless are noteworthy. These remans were visible in the section of a test pit dug to reveal the foundations to the Feretrar's Checker and probably represent evidence for pits and occupation layers. It appears that further evidence for middle to later Saxon occupation is present here and is now preserved beneath the paving of the Processional Way Courtyard.

The Lay Cemetery

8.6 During the early medieval period the area was utilised as part of the lay cemetery, from around AD 1321 it was part of the sacrists yard adjacent to the site of the Lady Chapel and from c AD 1425 became the site of the Feretar's Checker.

8.7 In the medieval phase the evidence is limited to burial activity, in the form of four in-situ burials; one infant one adult male and two adult females (See Tierney; Section 7).

8.8 Although this is a small sample (because of the limited depth of excavation of the site), the excavated skeletal remains provide further evidence for a mixed burial population, as with the 2000 phase of work (Regan 2001).

8.9 Rural activity in East Anglia intensifies up until the mid-14th century and Ely as an urban centre also grows in wealth and religious importance. Bishop Northwold's major renovations to the Cathedral in the 13th century are an example of this, and would have ensured the continuation of site's importance as a cemetery for the expanding lay population.

8.10 The 12th to 14th centuries saw economic and population growth in general and this is arguably reflected in the relative density of the burial population uncovered during the recent excavations and those in 2000. Although the area of undisturbed medieval contexts encountered was small, it was solely characterised by the presence of burials and the cemetery solid into which they were interred.

8.11 The burials could only be broadly dated to the medieval period on the basis of the available archaeological evidence. It is understood however, that the lay cemetery at this location must have gone out of use by the 1320's when the sacrist's yard was expanded under Alan of Walsingham (sacrist 1321-41) to help facilitate works associated with the construction of the Lady Chapel (1321), the collapse of the central crossing tower (1322) and the subsequent construction of the Octagon (Atkinson 1953). This allowed the cemetery-use of

the area to be assigned a pre-AD 1321 date.

The Feretrar's Checker

8.12 The construction of the Feretrar's Checker in the 15th century, marks the beginning of Phase 2 of the archaeological sequence. It is during this period that the site became almost entirely enclosed on four sides by the Processional Way to the west, the Lady Chapel to the north, the Presbytery to the south and finally the Checker building to the east.

8.13 The Feretrar's Checker or shrine chamber (the feretrar was a monk charged with the care of the principal shrines at the Cathedral), which was constructed in the space between the Lady Chapel and the presbytery north aisle around AD 1425. Subsequently, after the Dissolution, it was used as accommodation and then almshouses, before being demolished sometime before AD 1649 (see Section 3.5, above).

8.14 The precise position of the Checker is not clear but the most likely location is marked in outline on Figure 3 (after Atkinson 1953). There is a blocked doorway in the wall of the 4th bay (from the east) of the presbytery (Plate 11), which would have given access, and there is an area of repair on the buttress between the third and fourth bays, presumably indicating some making good after the building was demolished. While this might indicate the position of the east wall of the Checker, it is equally possible that the building was 'L'-shaped and extended north and then eastwards into the area adjacent to Bay 3. To the west, the available space for the building would have been defined by the passage to the Lady Chapel; the architectural evidence does not support the view of Atkinson that the Checker building was flanked by the buttresses of Bay 4.

8.15 The identification of this building through the foundations at the eastern edge of the site has been discussed in more detail above (Section 6.3). The 2018 excavations have resulted in a more refined knowledge of the potential location of the Checker.

8.16 Evidence for the building consists of two separate brick built foundations located

at the eastern limit of excavation. The bricks are of transitional late medieval/ early post-medieval manufacture (c. AD 1400-1600/1700); the mortar is in keeping with this date. Later truncation of the site has removed any stratigraphic evidence from the time and ground level from which the foundations were cut.

8.17 Parts of both structures were found in Philip Dixon's 2000 excavation (Dixon, 2002) prior to the installation of the iron railings which bound the east side of the current site (Fig. 5 & 7). At that time these remains were interpreted as narrow east west walls. This excavation has ascertained that they are more likely to be foundation piers for a north-south-aligned wall extending towards the north presbytery aisle and incorporating one or more brick arches

8.18 Dixon argued that the wall foundations that he observed were too substantial to be those of the bedesmens' accommodation and he suggested instead that they might belong to a bell tower which was removed to make way for the construction of the Lady Chapel in the early 14th century (Dixon, 2002). However, this does not consider that the bedesmens' accommodation had originally been built as the Checker, and that this was indeed a substantial two-storey building, incorporating some 4700 bricks in its construction, probably either in its foundations or forming a dwarf wall for a timber-framed structure above. This archaeological evidence for the use of brick within the foundations would accord with the documentary records for the construction of the building as the 4700 bricks recorded are insufficient for the Checker to have been wholly brick-built (Harris 2017, 6).

8.19 The broad dating of the bricks and mortar sampled during excavation poses no problems for an AD 1425 date of construction but the materials used in the construction do not lend themselves to tighter dating. Although Foundation [1092] appeared much less substantial, it may well only have been partially exposed, and does make a neat north-south alignment with [1059] that would exactly match T.D. Atkinsons's suggested location for the Checker building (Atkinson 1953). The date of its constituent bricks and mortar, and its stratigraphic position cutting a presumed medieval (pre-1321) burial, would also fit identification as part of the Checker.

8.20 The Checker is recorded as being used as accommodation for almsmen shortly after 1541 (Harris 2017) and was demolished, along with the 13th century Processional Way, at some point before 1649. The date of demolition is historically uncertain however it may be proposed that it took place fairly shortly after the Dissolution. That this was a time of upheaval for the religious community of Ely Cathedral is evidenced in the iconoclasm that took place in the Lady Chapel adjacent to the site prior to its being rededicated as the Holy Trinity Parish Church in 1566.

8.21 The re-use of the Checker as an alms house reflects the general reorientation of the Protestant church around providing charity for the poor, thereby providing a useful purpose for monastic buildings (Atherton 2003). However, the fate of many monastic buildings at this time was uncertain and the eventual demolition of the Checker and the Processional Way in the 17th century is consistent with this.

8.22 Of some interest is the high incidence of medieval and early post-medieval drinking forms (28.9% ENV) in the 2018 pottery assemblage. By contrast, relatively few vessels are associated with cooking or kitchen use. Jarrett (Section 7) suggests that this may relate to the location of the site in the monastery and cathedral complex. The occupation of the Checker building during the 15th and early 16th centuries, and its subsequent use as accommodation and then as an almshouse up to its demolition in the mid-17th, are considered as a possible reason for the high frequency of drinking forms.

8.23 Following the demolition of the Checker building, there was no archaeological evidence for activity on site until the late 17th century. This area was presumably used in some way, but, unlike the earlier Processional Way excavations (2000), it was not possible to fully excavate what are thought to be in situ deposits from the period between the c. mid-17th and late 18th centuries (Phase 3).

8.24 Phase 4 was characterised by the construction surfaces / trample created by the levelling of the material from the demolished Checker building and

incorporated other material which had accumulated since then.

8.25 It was possible to establish that significant horizontal truncation had occurred, most likely a result of Victorian landscaping intended to improve the appearance of the Cathedral and immediate surrounding area, as well as the ground disturbance caused by the installation of a drainage system.

The later 17th to the 19th centuries: Drainage and Landscaping

8.26 It is clear from the archaeological evidence that following the demolition of the Feretrars Checker drainage in this sheltered part of the Cathedral was to prove problematic over an extended period. In part this may be attributed to the fact that the area was still overlooked by roofs and gutters on three sides. It is also likely that groundwater upwelling from the bedrock during wet periods may have accumulated in this area. The demolition of the Checker building appears to have provided a quantity of rubble, significantly including brick (not seen in the construction of the earlier Processional Way), and moulded stone from the demolition of the Processional Way which was re-used in the construction of the drainage system.

8.27 The installation of the new courtyard paving that now covers the 2018 excavations is the latest initiative to make this area more habitable.

8.28 The later parts of the archaeological sequence had clearly been truncated although residual traces of 17th – early 19th century levelling were present (Phase 3, section 6.4), along with a drainage system after which further truncation and disturbance of underlying deposits took place in the Victorian Period.

8.29 Phase 5 is characterised by the construction of this drainage system extending across the site. This disturbance has resulted in the removal and redeposition of burials and the truncation of other features, obscuring many of the stratigraphic relationships. Again this is characteristic of similar remains from Phases 9-10 of the Processional Way excavations (2000) and consideration of the results from 2000 and 2018 illustrates that repeat attempts at improving

drainage were a key activity at this location

8.30 The demolition of the Checker building appears to have provided a quantity of rubble and significantly brick (not seen in the construction of the earlier Processional Way), which was later re-used in the drainage system that extended east-west across the site along with the building material of the time (Figure 9 & 10, Plates 13-17). In addition to this, moulded stone probably derived from the demolition of the Processional Way in the 17th Century, was recovered from the main deposit in the soakaway. It is assumed this earlier material was selected and deliberately deposited to assist in the efficient functioning of the drainage system. The clay pipe assemblage from the soakaway fit into a narrow date range of AD 1660 - 1680. It is likely that the main infilling of the soakaway did originally occur within the 17th century based on the dating of the majority of the clay pipe assemblage. This would accord well with the drainage works recorded in the Processional Way excavations (P.21, 2000)

8.31 A later pipe stem, dated to AD 1865 - 1883 was also recovered from the soakaway and is probably a good indicator for the date of truncation of this feature. It was stamped with the makers name and most likely originated from a workshop on Newmarket Road in Cambridge (See Jarret, Section 7.3).

8.32 The latest phases encountered are characterised by re-landscaping and drainage solutions whilst immediately to the west of the site preparation for the 19th century organ blower building is apparent and it is at this time that the site became the open space recognisable at the start of the 2018 excavations. There were numerous truncations by modern services and a charnel pit excavated to allow for the reburial of the human remains excavated by Regan in 2000.

8.33 The current project results are significant enough to warrant a note within the Proceedings of the Cambridge Antiquarian Society as they provide a useful addition to previous investigations of the adjacent site and an enhanced understanding of the immediate environs of the Cathedral's monastic buildings.

Further evidence of the potential location of the Checker building has built on previous work by Philip Dixon and has developed our understanding of this particular area.

9 ACKNOWLEDGEMENTS

9.1 Pre-Construct Archaeology Ltd would like to thank Ely Cathedral for commissioning the work. PCA are also grateful to Cathedral Archaeologist Dr. Roland Harris for providing advice and monitoring the work. Further thanks are extended to Vicki Roulinson, Clerk of Works at Ely Cathedral, for her help in a number of aspects of the project. The project was managed for PCA by Mark Hinman, supervised by Laura Malric-Smith with on-site osteological advice provided by Aileen Tierney. Thank you to the site team: Cleve Roberts and Rory Fisher for their hard work. Figures accompanying this report were prepared by Rosie Scales of PCA's CAD Department.

10 BIBLIOGRAPHY

10.1 Printed Sources

Alexander, M, 2003 A medieval and post-medieval street frontage: investigations at Forehill, Ely, Proc. Cambridge Antiq. Soc. 92, 135-82

Atherton, I. 2003 The Dean and Chapter 1541-1660. In Meadows, Peter; Ramsay, Nigel. A History of Ely Cathedral. Woodbridge: The Boydell Press, 169–192.

Atkinson, T D 1933 An Architectural History of the Benedictine Monastery of Saint Etheldreda at Ely. Cambridge: CUP

Atkinson, T D 1953 'Architectural Description of Cathedral and Precincts'. In R B Pugh (ed), The Victoria Historyof the County of Cambridge and the Isle of Ely. Volume 4. London: OUP, 50-82

Binford, L. 1981 Bones ancient man and modern myths. New York: Academy Press

Binksi, P. 2014 Gothic Wonder: Art Artifice and the Decorate Style 1290-1350, 187-217.

Brears, P. C. D. 1971.The English Country Pottery: Its history and techniques. Newton Abbot: David & Charles.

Brothwell, D and Higgs, E. (eds) 1969 Science in Archaeology 283-302 London: Thames and Hudson

Cappers, R.T., Bekker, R.M. and Jans, J.E., (2012). Digitale Zadenatlas van Nederland/Digital seed atlas of the Netherlands (Vol. 4). Barkhuis.

Cessford, C., with Dickens, A. 2007 ‘Ely Cathedral and environs: recent investigations’, Proceedings of the. Cambridge Antiquarian Society 96, 161-

74.

Dixon, P. 2002 'Gateways to Heaven: the approaches to the Lady Chapel, Ely', Proceedings of the Cambridge Antiquarian Society 91, 63-72.

Egan, G., 2012 The Medieval Household, daily living c. 1150 – c. 1450, medieval finds from excavations in London. London: Boydell Press.

Firman, R. (1998). Gault: a geologists cautionary tale of words as a barrier to understanding. British Brick Society Information 74: 4-13.

Goodall, I.H., 1993 Iron collars in S. Margeson, Norwich Households, Medieval and Post Medieval Finds from Norwich Survey Excavations 1971 – 78, 141-142.

Grant, A. 1982 The use of tooth wear as a guide to a guide to the age of domestic ungulates in Wilson, Grigson and Payne

Harris R. 2017. Ely Cathedral Processional Way Courtyard Paving. Brief for Archaeological Excavation and Watching Brief.

Hayward, K. 2017. 'Building materials' in M. Slater and T. Woolhouse, Land at Fire-Engine Hardstanding, Ely Cathedral, Cambridgeshire: An Archaeological Trial Trench Evaluation. Pre-Construct Archaeology report no.12805 (unpublished), 23–30

Hayward, K. 2018. 'Assessment of ceramic building material and stone recovered from Almonry Restaurant Extension, Ely Cathedral, Cambridgeshire (ELYA13), PCA unpublished report

Lawrence, M, J and Brown, R.W. 1973 Mammals of Britain their tracks, trails and signs London: Blandford Press

Margeson, S., 1993 Norwich Households, Medieval and Post Medieval Finds

from Norwich Survey Excavations 1971 - 78. EAA 58.

Medlycott, M. (ed.) 2011 Research and Archaeology Revisited: a revised framework for the East of England. East Anglian Archaeology Occasional Paper No. 24 (ALGAO East of England).

Payne, S. 1973 Kill-off patterns in sheep and goats: the mandibles from Asvan Kale Anatolian Studies 23 281-303

Regan, R. 2001 Excavations South of The Lady Chapel, Ely Cathedral, Cambridgeshire; Assessment Report (Unpublished report).

Rielly K The animal bone recovered from Ely Cathedral, The Almonry, Ely, Cambridgeshire (ELYA13) 2017 (unpub report)

Schmid, E 1972 Atlas of animal bones London: Elsevier press

Serjeantson, D. and Cohen, A. 1996 A manual for the identification of the Bird Bones from Archaeological Sites. London: Archetype Publications Ltd

Silver, I.1969 The ageing of domestic animals in D. Brothwell and E. Higgs (Eds)

Spoerry, P., 2016. 'The Production and Distribution of Medieval Pottery in Cambridgeshire'. Oxford Archaeology East. East Anglian Archaeology Report No.159.

Stace, C, 1991. New flora of the British Isles. Cambridge: Cambridge University Press

Sudds, B., 2013. 'The Pottery', in P. Boyer and T. Woolhouse, Archaeological Excavation on the site of the Almonry Restaurant, Ely Cathedral, Cambridgeshire. Pre-Construct Archaeology Ltd unpublished report no. R11436

Sudds, B., 2017. 'Post-Roman pottery', in M. Slater, Land at Fire Engine Hard Standing, Ely Cathedral, Cambridgeshire: An Archaeological Evaluation. Pre-Construct Archaeology Ltd unpublished report no. R12805

Tyson, R., 2017 The medieval window glass and glass bead in R. Brooks, Guildhall Feoffment Primary School, Bury St Edmunds, Suffolk, Archaeological assessment report, SACIC Report No. 2016/020.

Whitehead, R., 1996 Buckles 1250 - 1800. Greenlight Publishing.

Williamson, T. 2003 Shaping Medieval Landscapes. Settlement, society, environment (Macclesfield, Windgather Press).

Woolhouse, T. and Boyer, P 2013 Archaeological Excavation on the Site of the Proposed Almonry Restaurant Extension, Ely, Cambridgeshire (Unpublished report).

Woolhouse, T. and Dyson, A. 2008, 4-8 Ber St Norfolk Trial Trench Evaluation Archaeological Solutions (unpublished report 3217) 25-26, 32.

Worssam, B.C & Taylor, J.H. (1969). Geology of the country around Cambridge, Memoir of the Geological Survey of Great Britain, Sheet 188 (England and Wales).

10.2 Websites

1) Atkinson, T D. Hampson, E M. Long, E T. Meekings, C A F. Miller, E. Wells, H B. and Woodgate, G M 'City of Ely: Monastic buildings and palace', in *A History of the County of Cambridge and the Isle of Ely: Volume 4, City of Ely; Ely, N. and S. Witchford and Wisbech Hundreds*, ed. R B Pugh (London, 2002), pp. 77-82. *British History Online* http://www.british-history.ac.uk/vch/cambs/vol4/pp77-82. Accessed 11/05/18

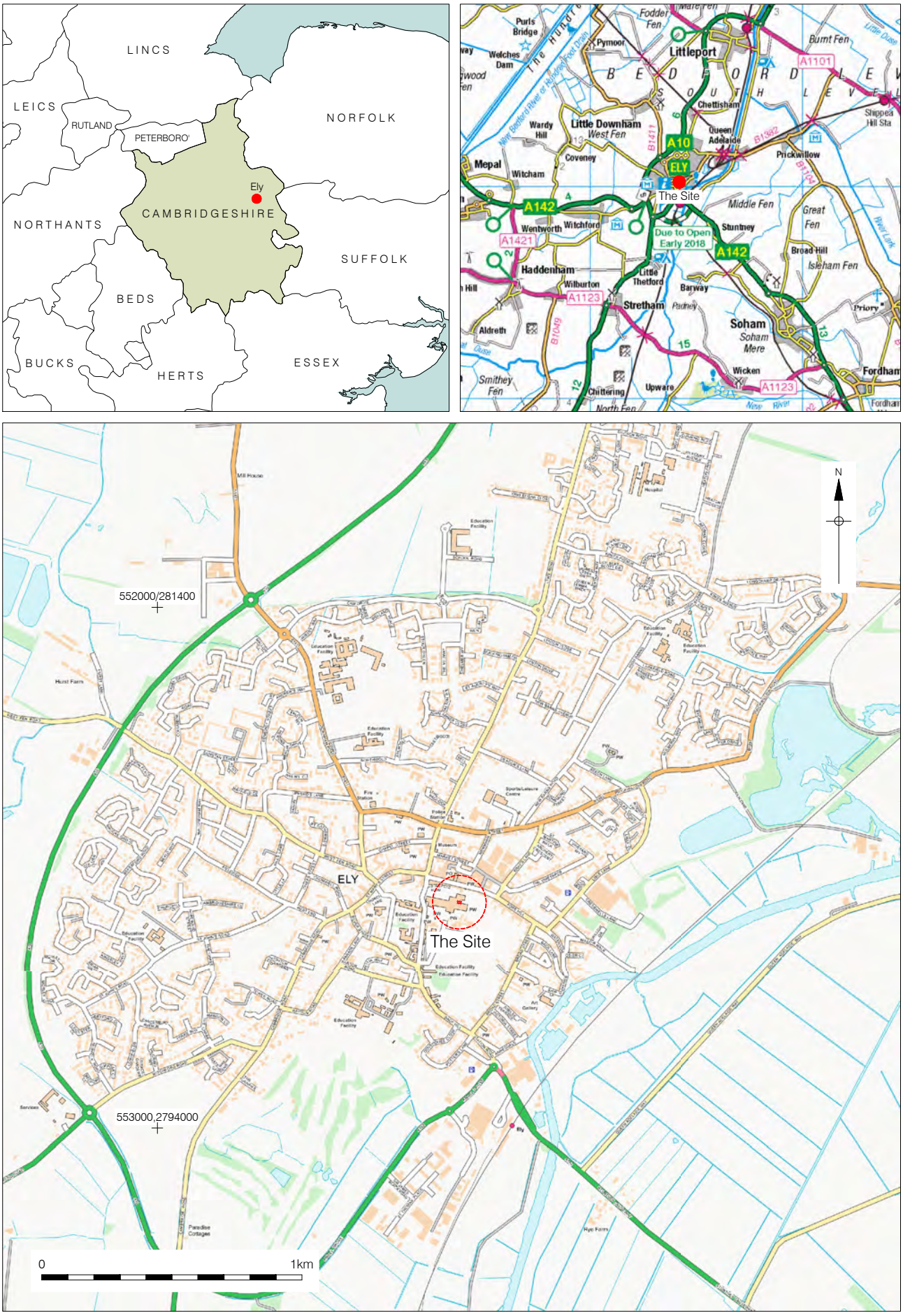
2) British Geological Survey 2014 Geology of Britain Viewer

http://mapapps.bgs.ac.uk/geologyofbritain/home.html?location=IP9%203DG. Accessed 10/05/18

3) Museum of London Archaeology, 2014. Medieval and post-medieval pottery codes, http://www.mola.org.uk/resources/medieval-and-post-medieval-pottery-codes.

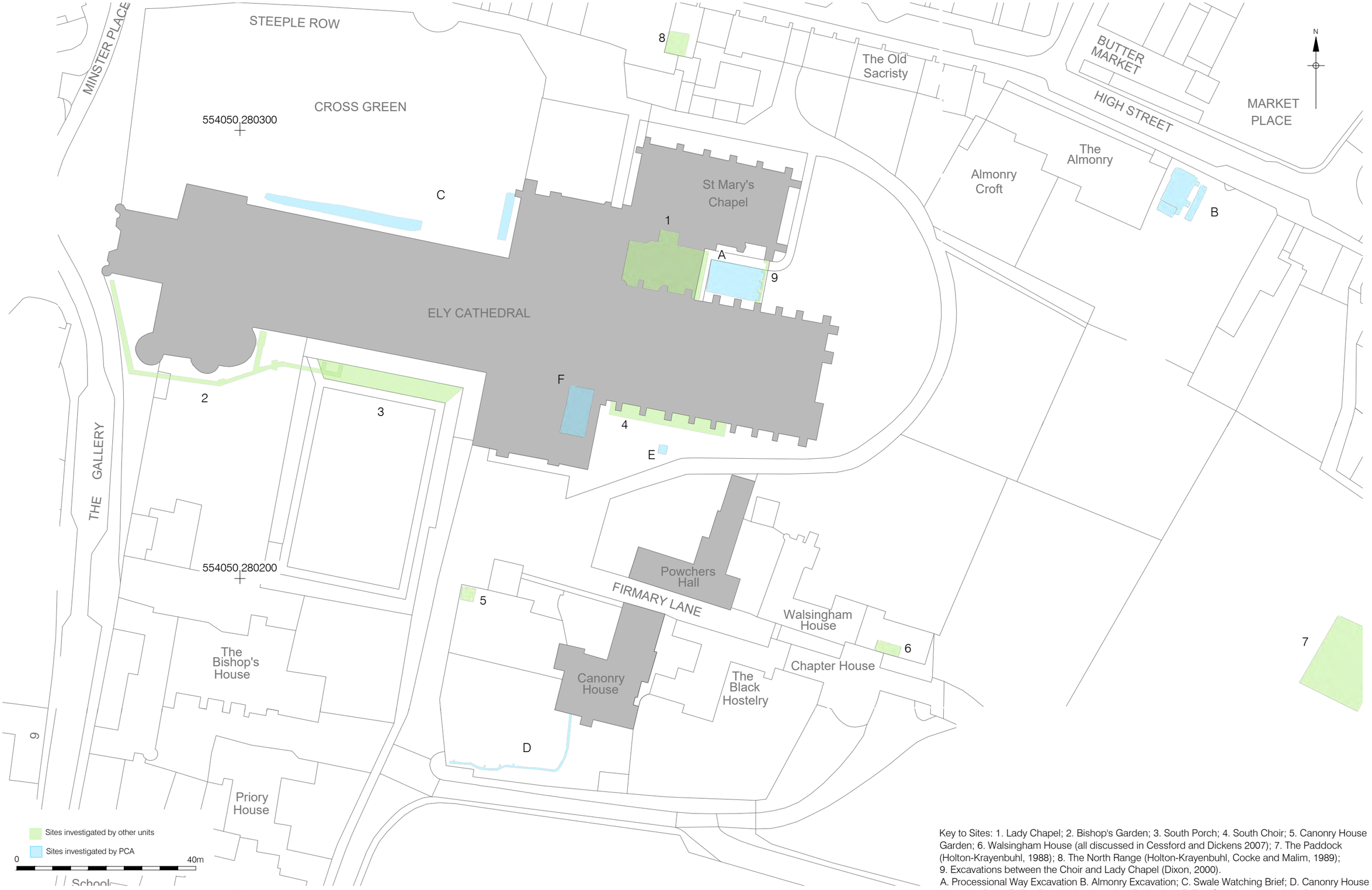
4) Winder, J. 2011 Oyster Shells from Archaeological Sites: A Brief Guide to Basic Processing Online at: http://oystersetcetera.files.wordpress.com/2011/03/oystershellmethodsmanualversion11.pdf

5) Hayward, K.M.J. 2018. 'Ceramic building materials', in E. Egberts, B. Sudds, K. Hayward, I. Riddler, C. Jarrett, R. Beveridge and K. Rielly, 'Ely Cathedral Almonry Supplemental Material: Specialist Finds Reports'. file:///C:/Users/twoolhouse/AppData/Local/Packages/Microsoft.MicrosoftEdge_8wekyb3d8bbwe/TempState/Downloads/raij_a_1470406_sm6569.pdf



23/08/18 RS

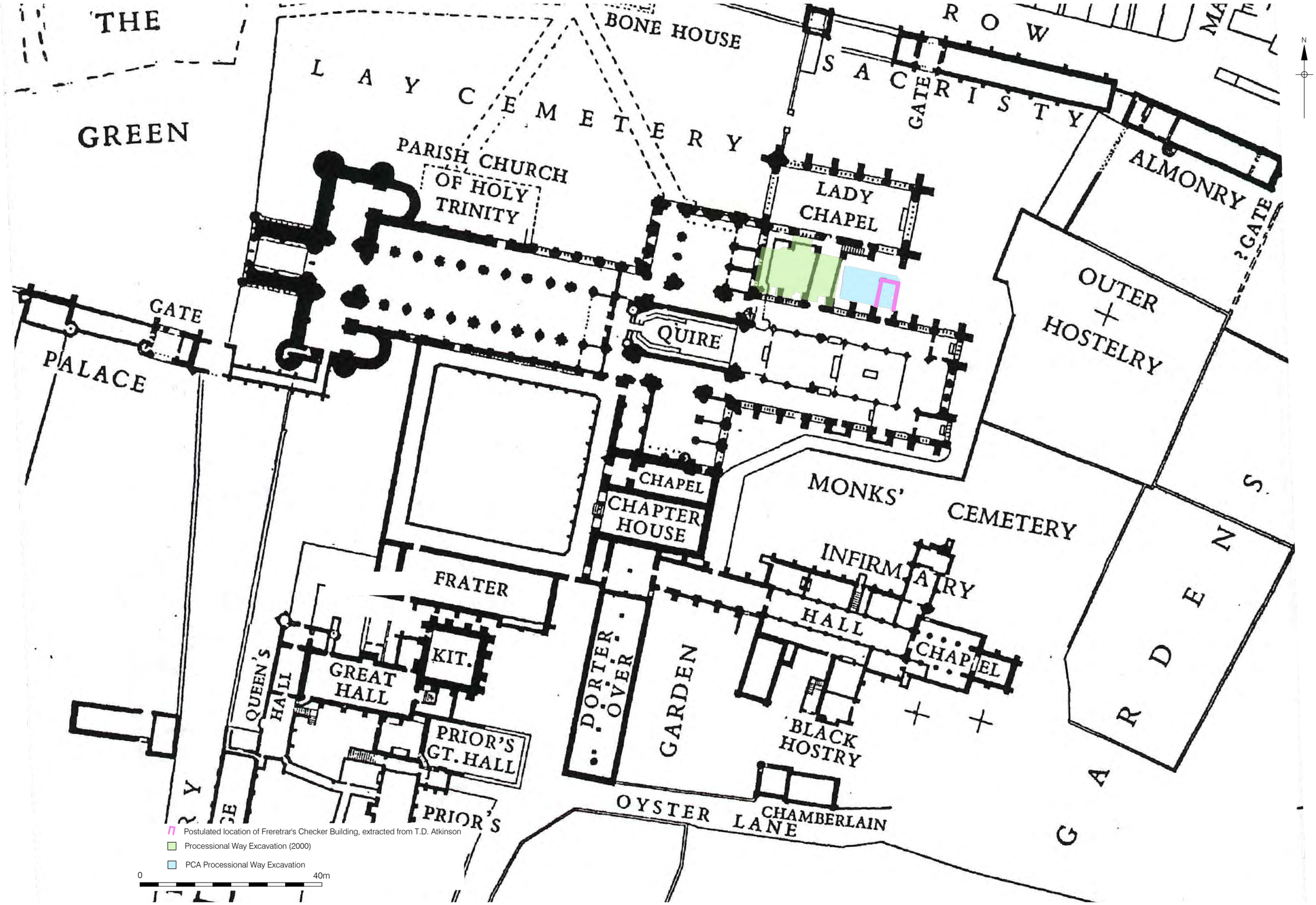
Figure 1
Site Location
1:2,000,000, 1:250,000 & 1:20,000 at A4



22/08/18 RS

Key to Sites: 1. Lady Chapel; 2. Bishop's Garden; 3. South Porch; 4. South Choir; 5. Canonry House Garden; 6. Walsingham House (all discussed in Cessford and Dickens 2007); 7. The Paddock (Holton-Krayenbuhl, 1988); 8. The North Range (Holton-Krayenbuhl, Cocke and Malim, 1989); 9. Excavations between the Choir and Lady Chapel (Dixon, 2000).
A. Processional Way Excavation B. Almonry Excavation; C. Swale Watching Brief; D. Canonry House Watching Brief; E. Fire Engine Hardstanding Evaluation; F. The Old Library Watching Brief

Figure 2
Detailed Site Location
1:800 at A3



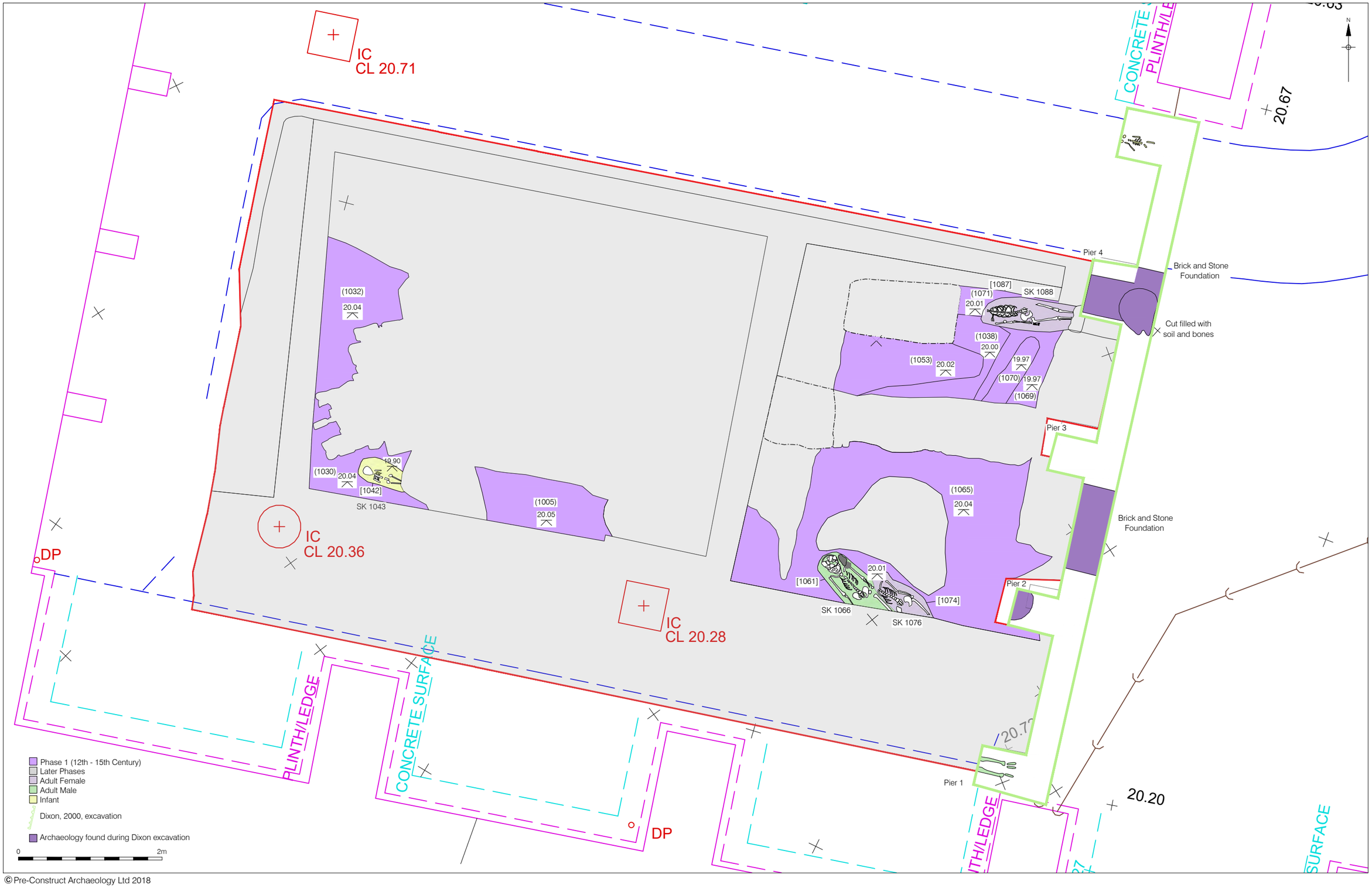
After T.D. Atkinson, VCH, taken from Maddison, 2000 (With additional map information to the east taken from Ordnance Survey 1903)

23/08/18 RS

Figure 3
Plan of Cathedral Precinct
1:800 at A3

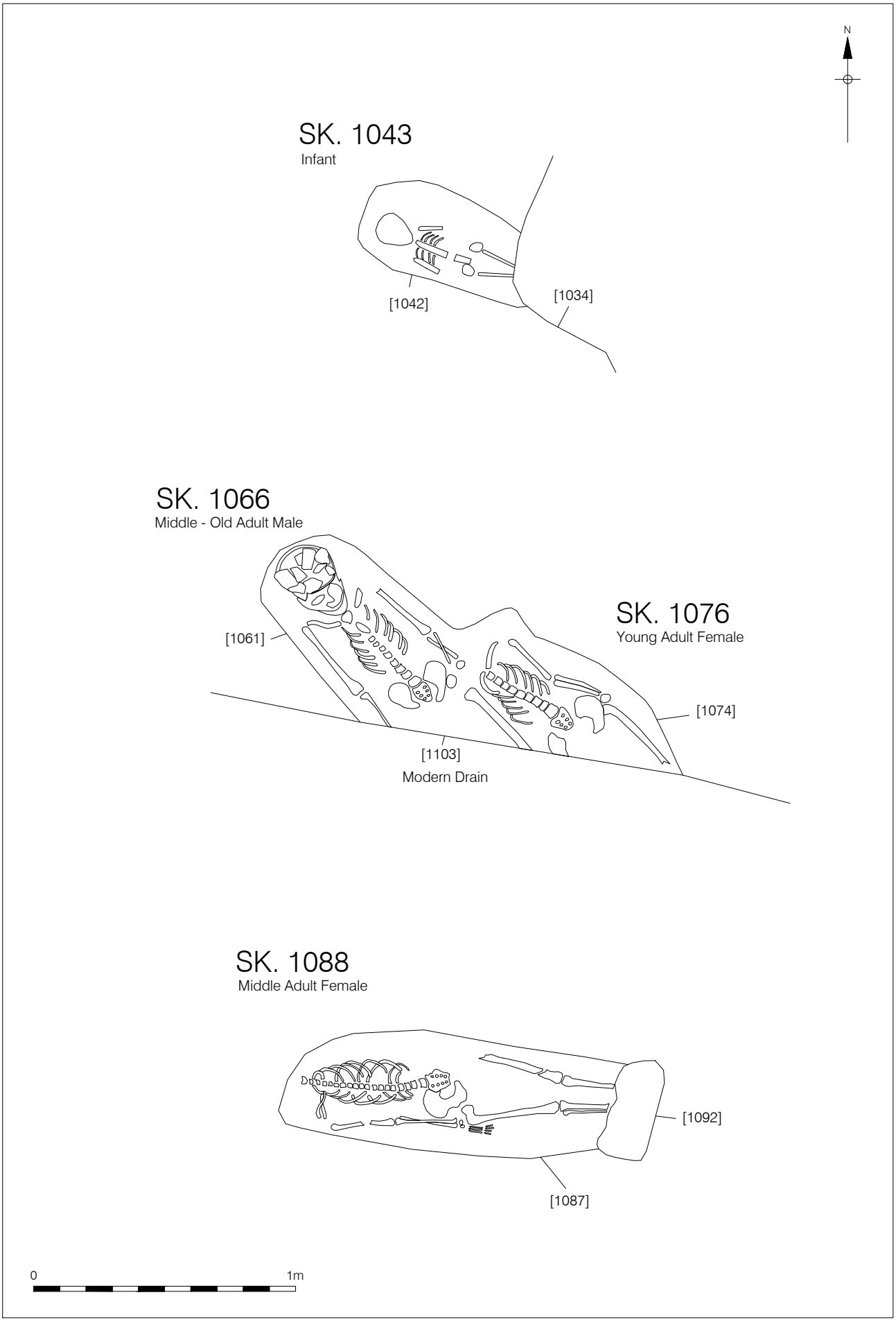
29/10/18 RS

Figure 4
Detailed Site Location
1:100 at A3



30/10/18 RS

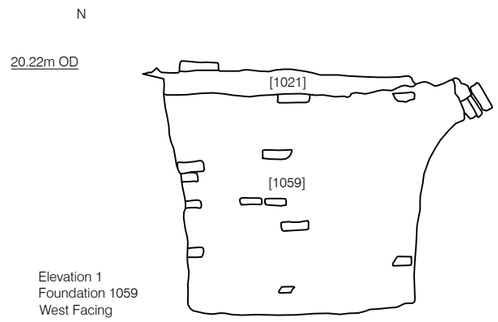
Figure 5
Phase 1 plan of site and Dixon, 2000, showing medieval burials and layers
1:50 at A3



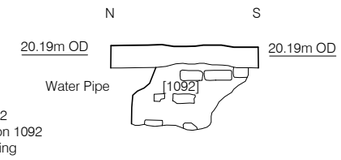
23/08/18 RS

Figure 6
Skeletons 1043, 1066, 1076, and 1088
1:20 at A4

23/08/18 RS

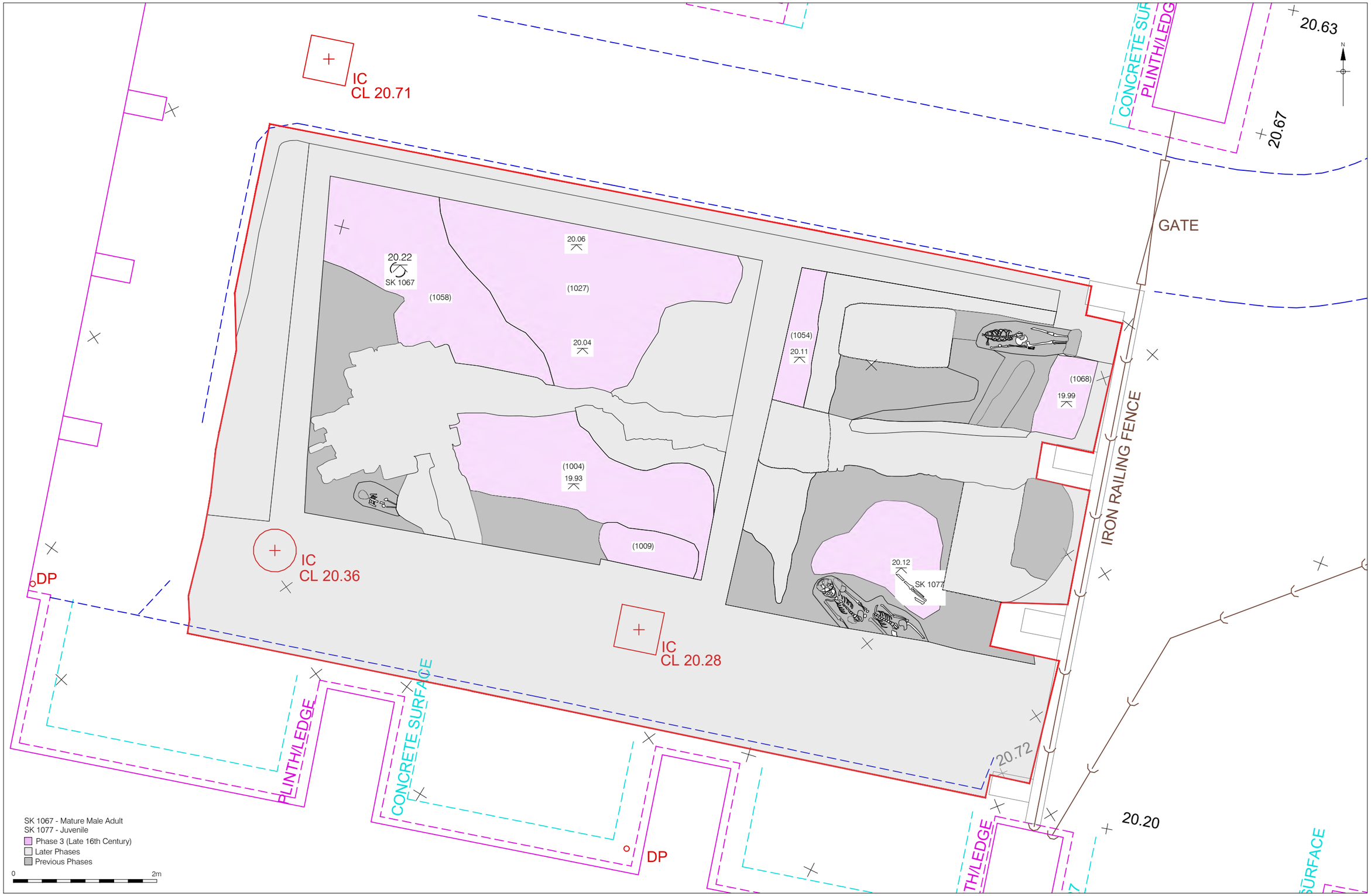


Elevation 1
Foundation 1059
West Facing



Elevation 2
Foundation 1092
West Facing

Figure 7
Phase 2 plan of site showing medieval Checker building foundations
Plan 1:50; Elevations 1:25 at A3



23/08/18 RS

Figure 8
Phase 3 plan of site showing post-medieval demolition of Checker Building
1:50 at A3

IC
CL 20.71

IC
CL 20.36

IC
CL 20.28

[1097] [1095] [1093]
(1098) 20.02 (1096) 19.90 (1094) 19.81
(1017)
20.01
[1082]
19.05
[1033]
S5
[1008]
(1083)
[1082]
[1019]
19.96
(1016)
(1036)
20.12
S2
20.14
(1049)
20.17
[1021]
(1029)
20.10
[1034]
(1012)
CONCRETE SURFACE
IRON RAILING FENCE
PLINTH/LEDGE
CONCRETE SURFACE
PLINTH/LEDGE
20.72
20.20
DP

Phase 4 (16th - 18th Century)
Phase 5 (18th - 19th Century)
Projection of drains
Later Phases
Previous Phases

0 2m

N

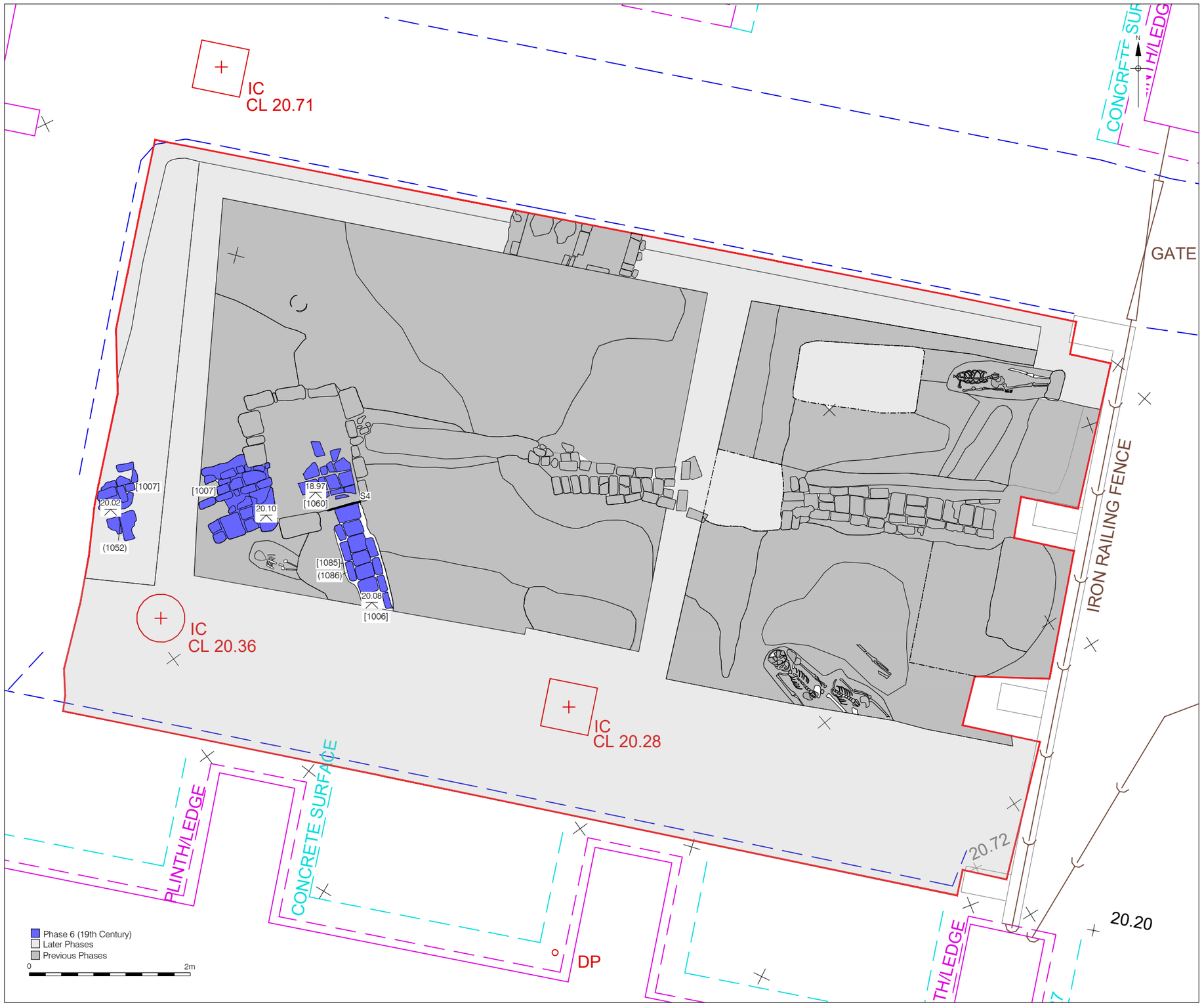
N S
20.17m OD 20.17m OD
(1038) (1039) [1021] (1065)
Section 2
West Facing Section

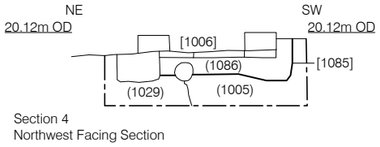
S N
20.03m OD 20.03m OD
[1008]
(1083)
[1082]
Section 5
East Facing Section

0 1m

29/10/18 RS

Figure 9
Phase 4 and 5 plan of site showing 17th Century Drain and section
Plan 1:50; Section 1:20 at A3



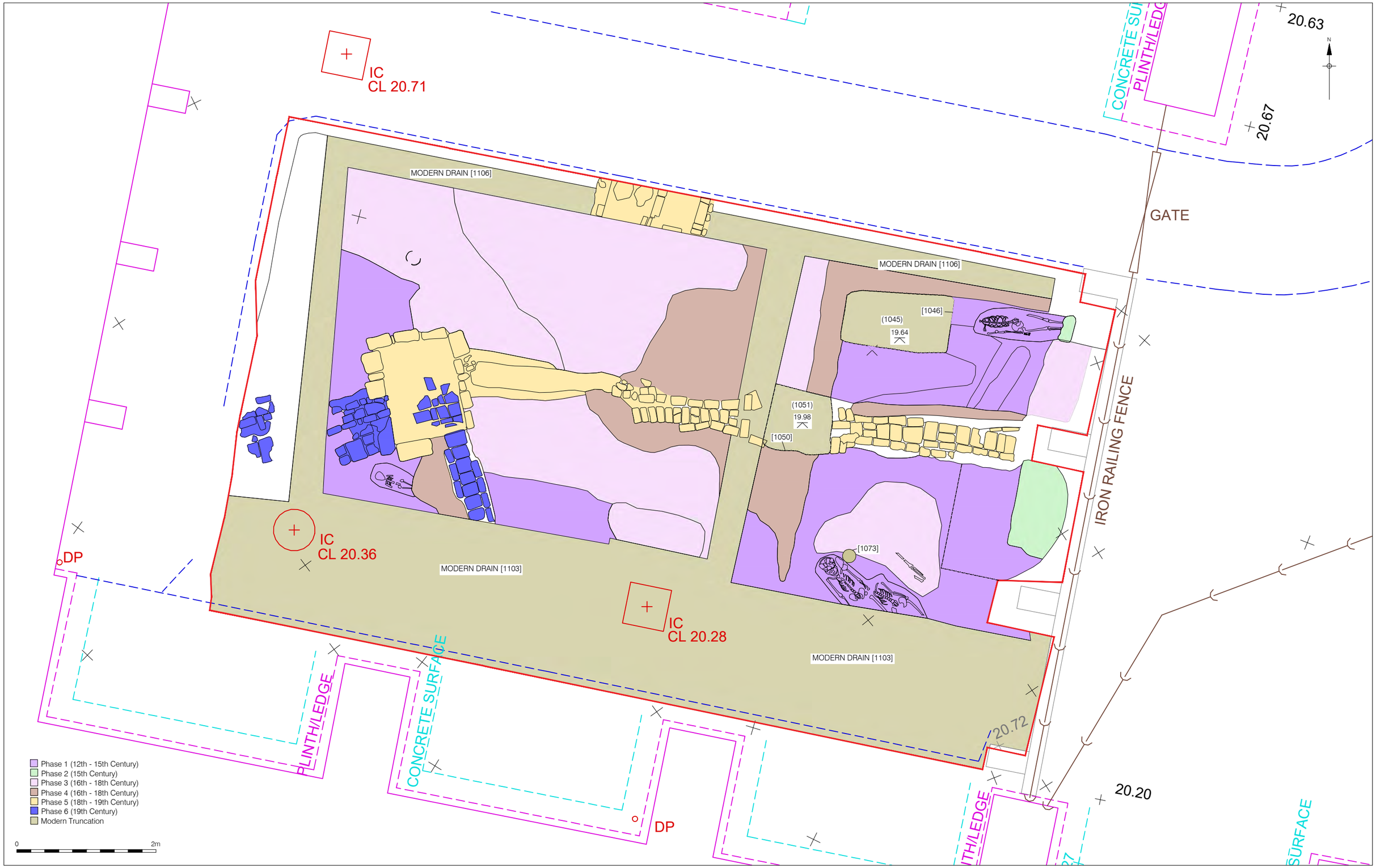


Section 4
Northwest Facing Section

0 1m

23/08/18 RS

Figure 10
Phase 6 plan of site showing reuse of 17th Century Drain and section
Plan 1:50; Section 1:20 at A3



23/08/18 RS

Figure 11
'Final plan' of site showing all features, including modern truncations
Plan 1:50 at A3

11 APPENDIX 1: PLATES

Plate 1: The removal of the non-archaeological over-burden in progress showing the slope from north to south, view southwest

Plate 2: Location of the site between the Lady Chapel and the Presbytery, view west

Plate 3: Grave [1042] with Sk.1043, view north

Plate 4: Graves [1061] and [1076] with Sk.1066 and Sk.1074, respectively, and Posthole [1073], view north

Plate 5: Sk.1077 immediately to the north of Grave [1076], view north

Plate 6: Grave [1087] with Sk.1088 and modern services to north, view south

Plate 7: West-facing elevation of Foundation [1059]

Plate 8: Foundation [1059] with modern wall and Drain [1021], view east

Plate 9: Foundation [1092] with modern services to north, view east

Plate 10: Foundation [1092] truncating Sk.1088, view east

Plate 11: Work progressing in the eastern half of site, showing blocked up doorway in the north wall of the Presbytery (centre left beneath window), view south.

Plate 12: From left to right; Drains [1097], [1095], [1093] in watching brief trench, view north

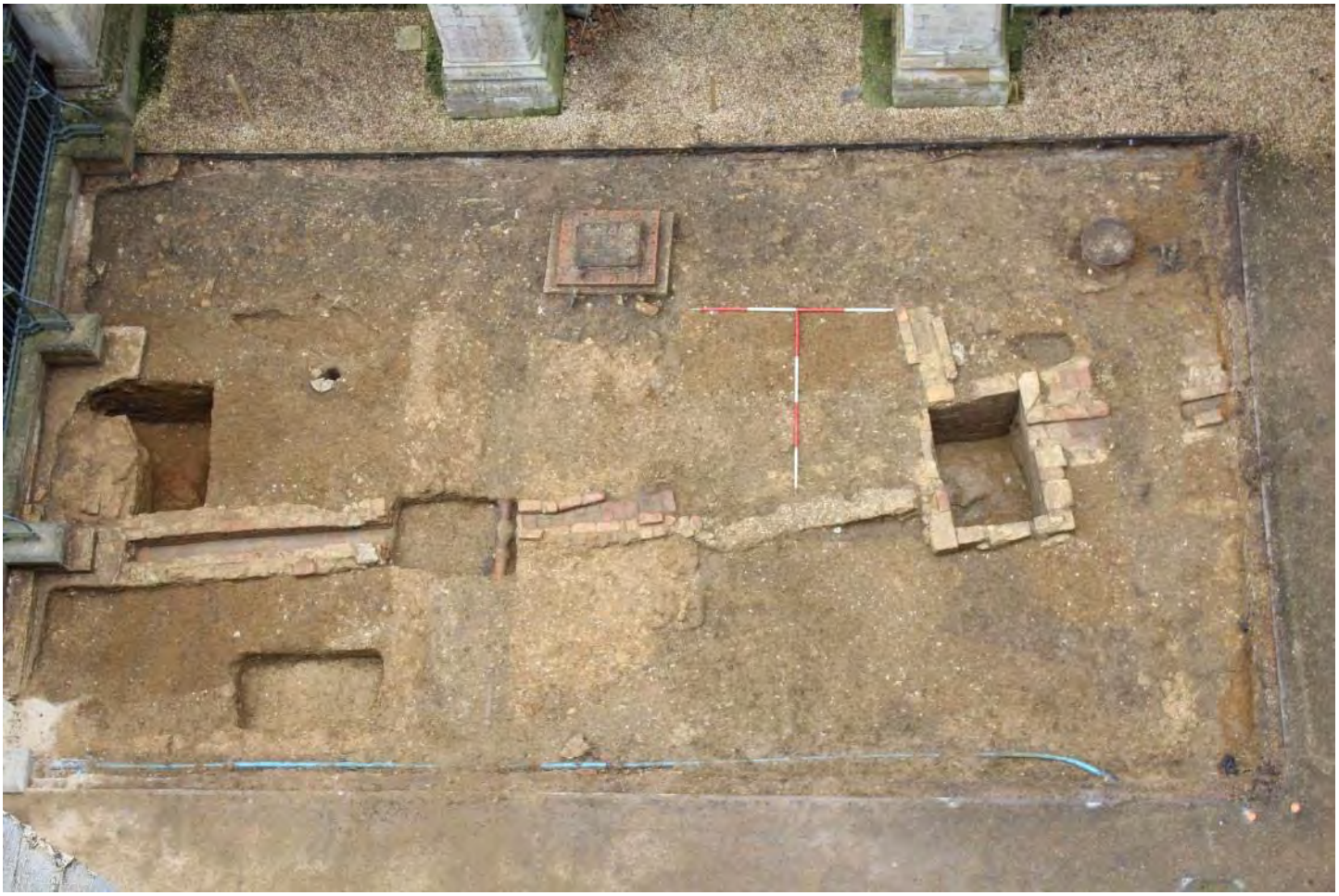


Plate 13: Overhead shot of the site showing the post-medieval drainage system, view south

Plate 14: Drain [1021] in foreground, Drain [1019] in background, view northwest

Plate 15: Drain [1021] in foreground, Drain [1019] in background, view northwest

Plate 16: Soakaway [1033], view northeast

Plate 17: Soakaway [1033] from above with Drain [1006] extending south and Drain [1007] extending west with tiled surface (1052) immediately above, later demolition infilling (1008) extending east, view south

Plate 18: Stamped tile in situ from surface (1052), view east

Plate 19: Tiled capping (1060) within soakaway [1033], view south

Plate 20: Posthole [1073] with post in situ, view south

Plate 21: Modern charnel pit [1050] during excavation, Drain [1021] extending to the top right corner of the frame

Plate 22: Worked stone ref. no. 1100 (all worked stone photographs courtesy of R. Harris)

Plate 23: Worked stone ref. no. 1101

Plate 24: Worked stone ref. no. 1102

Plate 25: Worked stone ref. no. 1103

Plate 26: Worked stone ref. no. 1104

Plate 27: Worked stone ref. no 1105

Plate 28: Worked stone ref. no. 1106

12 APPENDIX 2: CONTEXT INDEX

Context	Cut	Type	Category	Length (m)	Width (m)	Depth (m)	Description	Period
1000		Layer	Topsoil			0.05	Dark humic topsoil and turf	modern
1001		Layer	Made Ground			0.05	Dark silt loam	modern
1002		Layer	Made Ground				Mid light brown silt with sand, frequent CBM inclusions	modern
1003		Layer	Made Ground	2.3	0.88		Mixed mid yellow brown sand silt	post-medieval
1004		Layer	Made Ground	2.76	1.86	0.06	Mixed dark brown grey clay silt, frequent CBM inclusions	post-medieval
1005		Layer	Made Ground	1.44	0.96		Mid orange brown sandy silt	post-medieval
1007		Masonry	Structure	0.95	0.82	0.08	Brick and tile drain/culvert	post-medieval
1009		Layer	Made Ground	1.28	1.16	0.06	Light yellow brown sandy silt with mixed patches of yelllow sany mortar	post-medieval
1010		Layer	Made Ground	2.44	1.5	0.08	Mid grey brown sandy silt with moderate chalk inclusions	post-medieval
1011							VOID	
1012		Layer	Made Ground	1.86	0.72	0.07	Light yellow brown sandy silt	post-medieval
1013		Layer	Made Ground	0.6	0.52	0.02	Mid to dark grey brown sand silt	post-medieval

1015		Layer	Made Ground	0.72	0.64	0.05	Mid to light yellowbrown and grey sand silt with chalk	post-medieval
1016		Layer	Made Ground	2.46	0.93	0.08	Mid grey brown with mottled dark yellow sand silt	post-medieval
1018		Layer	Made Ground	0.37	0.44	0.14	Mid to dark grey brown silt with frequent large CBM fragments, frequent stone rubble	post-medieval
1019		Masonry	Structure	2.7	0.71	0.32	Brick and yellow sandy mortar	post-medieval
1020		Layer	Made Ground	1.25	0.88	0.18	Mid to dark grey brown sand silt and CBM	modern
1021		Masonry	Structure	2.7	0.71	0.32	Brick and tile with yellow sandy mortar	post-medieval
1024		Layer	Made Ground	1.15	1.02	0.08	Mottled mid grey brown and dark yellow sand silt	post-medieval
1025		Layer	Made Ground	1.36	0.5	0.05	Mid to dark brown grey clay silt	post-medieval
1026		Layer	Made Ground	1.08	0.72	0.06	Mid grey brown sand silt with occasional CBM fragments	post-medieval
1027		Layer	Made Ground	3.8	1.82	0.09	Mid brown grey clay silt with occasional to moderate CBM fragments	post-medieval
1028		Layer	Made Ground	0.62	0.48	0.08	Dark grey brown clay silt	modern
1030		Layer	Made Ground	0.94	0.88	0.13	Mid brown grey firm silt	medieval
1032		Layer	Made Ground	1.12	0.66	0.1	Mid grey brown clay silt with occasional gravel	post-medieval
1033		Masonry	Structure	1.88	1.45	1.18	Stone and brick soakway	post-

								medieval
1034		Cut	Construction cut	0.6	0	0	Unknown	post-medieval
1035		Layer	Made Ground	0.49	0.5	0.07	Mid yellow brown sandy silt	post-medieval
1036		Layer	Surface	3.05	2.03	0.09	Mid to light brown very firm yellow sandy mortar	post-medieval
1037		Layer	Made Ground	1.18	0.4	1.1	White and mid to light brown grey silt and chalk	post-medieval
1038		Layer	Made Ground	1.31	0.65	0.21	Mid orange brown sand silt	post-medieval
1040							VOID	
1042		Cut	Inhumation	0.61	0.35	0.13	(Shortened) linear in shape, vertical sides and near-flat base	medieval
1047		Masonry		0	0			
1048		Fill of 1047		0	0			
1049		Layer	Made Ground	2	0.16	0	Mid to light brown yellow firm sand mortar with mid sized stone rubble	post-medieval
1050		Cut	Pit	1.2	0.9	0.21	Rectangular in shape with vertical sides and flat base	modern
1052		Masonry	Surface	2.7	0.6	1.08	Tiled surface remnant, roughly rectangular in shape	post-medieval
1053		Layer	Made Ground	2.86	0.84	0.1	Mid to light grey brown silt with moderate chalky inclusions	medieval

1054		Layer	Made Ground	2.78	0.36	0.06	Mid grey brown soft, fine silt with moderate chalk fragments and occasional CBM fragments	post-medieval
1055		Layer	Made Ground	1.2	0.8	0.03	Mid to dark orange brown soft sand silt	post-medieval
1057				0	0		VOID	
1058		Layer	Made Ground	0	0		Dark grey brown sand silt, occasional chalk and mortar patches	
1062		Layer	Made Ground	1.9	0.74	0.05	Dark grey brown sand silt, occasional chalk and mortar patches	post-medieval
1063		Layer	Made Ground	0.62	0.5	0.07	Mid orange brown silt sand with occasional mortar and chalk flecks	post-medieval
1064		Layer	Made Ground	1.32	0.6	0.09	Mid grey brown silt sand with frequent mixed sandy mortar patches	post-medieval
1065		Layer	Made Ground	4.1	2.2	0.08	Mid orange brown fine silt with occasional small chalk, shell and CBM fragments	medieval
1067			Inhumation	0.25	0.28		Human skeleton, partial. Redeposited.	post-medieval
1068		Layer	Made Ground	1.18	0.74	0.05	Mid brown grey sand silt with moderate CBM fragments and occasional charcoal flecks	post-medieval
1069		Layer	Made Ground	1.2	0.7	0.21	Mid brown grey sand silt with occasional CBM, shell and chalk flecks.	medieval
1070		Layer	Made Ground	1.1	0.4	0.35	Mid to dark grey brown sand silt with occasional CBM, charcoal and shell flecks	medieval
1071		Layer	Made Ground	1.28	0.35	0.12	Mid to light grey brown sand silt with occasional CBM and	medieval

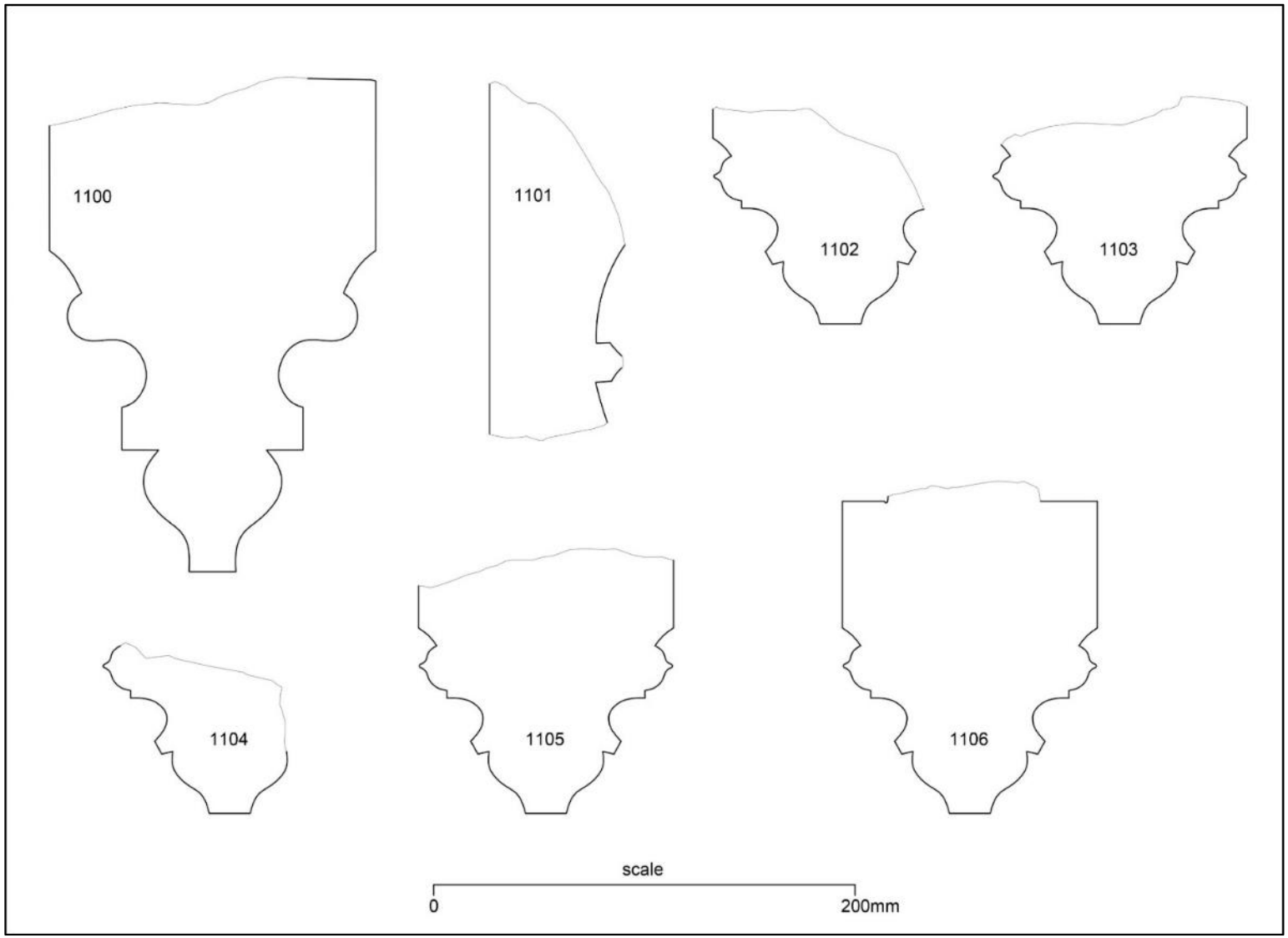
							chalk flecks	
1077			Inhumation	0.2	0.11	0.05	Human skeleton, partial. Redeposited. Extended, supine	post-medieval
1079		Layer	Made Ground	1.36	1.01	0.94	Dark brown grey sand silt with occasional shell fragments and small pebble stones	medieval
1080		Layer		1.32	1.36	1.15	Mid grey silt clay with moderate charcoal fragments, frequent shell fragments and moderate small angular stones	medieval
1081		Layer	Made Ground	1.32	1.36	1.22	Light brown grey sandy silt	medieval
1084		Layer	Made Ground	1.42	0.71	0.45	Mid brown grey firm sand silt, with frequent large CBM fragments	post-medieval
1092		Masonry	Foundation	0.34	0.29	0.16	Orange brick and yellow sandy mortar	post-medieval
1093		Masonry	Wall	0.43	0.24	0.2	Orange brick and yellow sandy mortar	post-medieval
1094		Layer	Made Ground	0.42	0.47	0.2	Mid brown grey firm silt clay	post-medieval
1095		Masonry	Wall	0.42	0.15	0.26	Orange brick and clunch stone rubble with yellow sandy mortar	post-medieval
1096		Layer	Made Ground	0.42	0.64	0.18	Mid grey brown soft silt	post-medieval
1097		Masonry	Wall	0.42	0.18	0.19	Orange brick and clunch stone rubble with yellow sandy mortar	post-medieval
1098		Layer	Made Ground	4.7	0.42	0.3	Mid grey brown soft silt	

1099		Layer	Made Ground	2.14	0.42	0.08	Mid grey brown soft silt	
1100		Layer	Made Ground	1.32	0.43	0.48	Mixed light yellow brown and mid orange brown sand silt	
1101		Layer	Made Ground	1.2	0.43	0.4	Mid to dark grey firm clay	
1023	1006	Fill	Drain	0.82	0.28	0.11	Mid to dark grey brown silt	post-medieval
1022	1007	Fill	Drain	0.95	0.28	0.12	Mid to dark grey brown silt	post-medieval
1017	1019	Fill	Drain	1	0.23	0.2	Mid to dark grey brown clay silt	post-medieval
1039	1021	Fill	Drain	2.6	0.48	0.46	Mid to dark grey brown silt	post-medieval
1031	1033	Fill	Pit/Well	1.44	0.92	1.05	Mid to dark grey brown clay silt, frequent large stone rubble (including some molded stonework fragments), frequent CBM, frequent marine shell fragments	post-medieval
1056	1033	Fill	Pit/Well	1.44	0.92	0.14	Mid grey clay, notably clean	post-medieval
1060	1033	Masonry	Surface	0.7	0.92	0.08	Remnant surface of light yellow tiles with brick and stone	post-medieval
1029	1034	Fill	Construction cut	0.92	0.78	0.01	Dark grey brown sand silt with frequent large CBM fragments and moderate small stone rubble fragments	post-medieval
1041	1042	Fill	Inhumation	0.61	0.35	0.13	Mid grey brown sand silt	medieval
1043	1042	Fill	Inhumation	0.58	0.32	0.13	Juvenile skeleton, extended	medieval
1044	1046	Fill	Pit	1.05	0.71	0.24	Mid to dark grey brown sand silt	post-medieval

1045	1046	Fill	Pit	1.05	0.71	0.2	Mid grey brown sand silt	post-medieval
1046	1046	Cut	Pit	1.05	0.71	0.44	Rectangular in shape with vertical sides and irregular base	post-medieval
1051	1050	Fill	Pit	1.2	0.9	0.21	Dark grey brown humic soil and silt, with modern plastic detritus	modern
1014	1061	Fill	Inhumation	1.02	0.55	0.13	Dark grey brown firm clay silt, occasional small CBM frags	medieval
1061	1061	Cut	Inhumation	1.02	0.55	0.13	Linear in plan with steep to vertical sides and a near flat base	medieval
1066	1061		Inhumation	1	1.36	0.13	Human skeleton, partial. Extended, supine	medieval
1072	1073	Fill	Posthole	0.17	0.15	0.32	Mid to dark grey brown sand silt with occasional gravel	post-medieval
1073	1073	Cut	Posthole	0.17	0.15	0.32	Circular in plan with vertical sides and a flat base	post-medieval
1074	1074	Cut	Inhumation	0.9	0.39	0.15	Linear in plan with steep to vertical sides and a flat base	medieval
1075	1074	Fill	Inhumation	0.9	0.39	0.15	Mid grey brown sand silt with moderate chalk and CBM flecks	medieval
1076	1074	Fill	Inhumation	0.8	0.39	0.14	Human skeleton, partial. Extended, supine	medieval
1059	1078	Masonry	Foundation	1.42	0.75	0.98	Structure comprising dark orange brick and yellow sandy mortar	post-medieval
1078	1078	Cut	Construction cut	0.75	1.42	0.95	Possible rectangular plan, where visible, vertical sides	post-medieval
1008	1082	Masonry	Structure	2.1	0.33	0.24	Chalk and sandy mortar	post-medieval

1082	1082	Cut	Construction cut	1.5	0.51	0.45	Linear in plan with steep sides and an uneven base	post-medieval
1083	1082	Fill	Structure	1.5	1.51	0.45	Mid to dark rich brown firm silt	post-medieval
1006	1085	Masonry	Structure	1.08	0.44	0.08	Brick and tile drain/ culvert	post-medieval
1085	1085	Cut	Construction cut	0.72	0.54	0.18	Linear in plan with vertical sides and flat base	post-medieval
1086	1085	Fill	Drain	0.72	0.54	0.18	Mid orange brown clay silt	post-medieval
1087	1087	Cut	Inhumation	1.1	0.3	0.18	Linear in plan with vertical sides and a flat base	medieval
1088	1087	Fill	Inhumation	0.95	0.3	0.18	Human skeleton, partial. Extended, supine	medieval
1089	1087	Fill	Inhumation	1.1	0.3	0.18	Mid grey brown sand silt with moderate CBM flecks and occasional charcoal and shell flecks	medieval
1090	1090	Cut	Unknown	0.75	0.06	0.05	Linear in plan (only one side exposed- recorded not investigated)	post-medieval
1091	1090	Fill	Unknown	0.75	0.06	0.05	Mid red brown silt sand with occasional fine gravel	post-medieval

13 APPENDIX 3: MOULDED STONEWORK PROFILES BY ROLAND HARRIS



14 APPENDIX 4: OASIS FORM

OASIS ID: preconst1-316907

Project details | Add or edit entries

Project name	Processional Way, Ely
Short description of the project	Excavation in advance of paving works on land between the Lady Chapel and the Presbytery at Ely Cathedral. The work uncovered four in situ burials, a large brick-built foundation, and a brick and tile drainage system. The results reflect the changing usage of the site from a medieval lay cemetery to land reserved for drainage and almost completely enclosed by the post-medieval 'Freretar's Checker' to the east. This was demolished soon after the Dissolution. A more substantial drainage system was installed in the 17th century but fell out of use by the 19th century.
Project dates	Start: 06-03-2018 End: 05-04-2018
Previous/future work	Yes / No
Any associated project reference codes	ECB5130 - Sitecode
Any associated project reference codes	17/00292/FUL - Planning Application No.
Type of project	Recording project
Current Land use	Other 4 - Churchyard
Monument type	BURIAL Medieval
Monument type	BURIAL Medieval
Monument type	BURIAL Medieval
Monument type	BURIAL Medieval
Monument type	FOUNDATION Medieval

Monument type	SOAKAWAY Post Medieval
Investigation type	'"Full excavation"',"'Watching Brief"'
Prompt	Planning condition

Project location	Add or edit entries
Site location	CAMBRIDGESHIRE EAST CAMBRIDGESHIRE ELY Processional Way, Ely Cathedral
Postcode	CB7 4DL
Study area	84 Square metres
Site coordinates	NGR - TL 5405 8031 LL - 52.398709 0.26445609 (decimal) LL - 52 23 55 N 000 15 52 E (degrees) Point
Lat/Long Datum	Unknown

Project creators	Add or edit entries
Name of Organisation	PCA
Project brief originator	Roland Harris
Project design originator	PCA Central
Project director/manager	Mark Hinman
Project supervisor	Laura Malric-Smith

Project archives	Add or edit entries
Physical Archive recipient	Ely Cathedral
Physical Archive ID	ECB5130
Physical Contents	"Animal Bones","Ceramics","Environmental","Glass","Human

	Bones","Metal","Worked stone/lithics"
Digital Archive recipient	Cambridgeshire County Council Archaeology Store
Digital Media available	"Database","Images raster / digital photography","Spreadsheets","Text"
Paper Archive recipient	Cambridgeshire County Council Archaeology Store
Paper Contents	"Animal Bones","Ceramics","Environmental","Glass","Human Bones","Metal","Worked stone/lithics"
Paper Media available	"Context sheet","Drawing","Matrices","Plan","Report","Section"

Project bibliography 1	Grey literature (unpublished document/ manuscript) Add or edit entries

Title	Processional Way, Ely Cathedral Ely Cambridgeshire: An Archaeological Excavation and Watching Brief
Author(s)/Editor(s)	Tierney, A
Author(s)/Editor(s)	Malric-Smith, L
Date	2018
Issuer or publisher	Pre-Construct Archaeology Ltd.
Place of issue or publication	Pampisford, UK

P C A

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

PCA DURHAM
UNIT 19A, TURSDALE BUSINESS PARK
TURSDALE
DURHAM DH6 5PG
t: 0191 377 1111
e: durham@pre-construct.com

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

PCA NEWARK
OFFICE 8, ROEWOOD COURTYARD
WINKBURN, NEWARK
NOTTINGHAMSHIRE NG22 8PG
t: 01636 370410
e: newark@pre-construct.com

PCA NORWICH
QUARRY WORKS, DEREHAM ROAD
HONINGHAM
NORWICH NR9 5AP
T: 01223 845522
e: cambridge@pre-construct.com

PCA WARWICK
UNIT 9, THE MILL, MILL LANE
LITTLE SHREWLEY, WARWICK
WARWICKSHIRE CV35 7HN
t: 01926 485490
e: warwick@pre-construct.com

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

REGISTERED ORGANISATION CIfA