Archaeological Evaluation and Photographic Building Survey at Norwich School

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Archaeological Evaluation and Photographic Building Survey at Norwich School

Report

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Summary

Oxford Archaeology East were commissioned to undertake archaeological evaluation trenching and a photographic survey at Norwich School. Two trenches were located in the grounds of the school and the former Bishops Palace. The photographic survey concentrated on a section of the Cathedral precinct wall where re-opening of a blocked gateway is proposed.

Trench one revealed a layer of loose flint rubble sealing a homogenous buried soil. A driveway and associated sub strata was found within Trench two sealing a post medieval pit which truncated a medieval buried soil.

The Cathedral precinct wall, whilst certainly medieval in origin, displays numerous phases of repair and rebuilding mostly relating to the 18th and 19th centuries.

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The project was managed for Oxford Archaeology by Aileen Connor. The fieldwork was directed by James Fairbairn supported by Emily Abrehart who also carried out survey and digitizing. Thank you to the teams of OA staff that cleaned and packaged the finds under the management of Natasha Dodwell. Environmental work was carried out under the supervision of Rachel Fosberry and the archive was prepared by Kat Hamilton.

1 INTRODUCTION

1.1 Scope of work

1.1.1 Oxford Archaeology (OA) was commissioned by Norwich School to undertake a trial trench evaluation and a photographic building survey at the site of the Norwich School.

1.1.2 As set out in the Written Scheme of Investigation (Lanpro Services NSR001/0765/03) Norwich School is seeking full planning permission for the demolition of the refectory building and associated structures and the redevelopment of the site for new dining and teaching facilities. This will include re-opening of a blocked gateway through the Grade II* listed wall of Norwich Cathedral precinct to provide access.

1.1.3 Lanpro Services consulted with Norfolk County Council Environment Services (NCCES) and Historic England as part of the pre-application process. Following the completion of a desk-based assessment and geophysical survey of the site (Lanpro 2017; Sumo 2017), the NCCES recommended that evaluation should be undertaken to inform a programme of further archaeological mitigation excavation on the site.

1.1.4 Lanpro Services commissioned Oxford Archaeology East on behalf of their clients (Norwich Scool) to undertake evaluation as recommended by NCCES and to the specification laid out by Lanpro in the Written Scheme of Investigation.

1.1.5 The following document sets out the results of that evaluation.

1.2 Location, topography and geology

1.2.1 The site comprises a broadly triangular area on the eastern side of the Norwich School grounds, covering approximately 0.3ha, to the south-east of Palace Street in the centre of Norwich (centred at TG 2344 0900; see Figure 1). To the immediate south of the site is the Bishop's Palace, beyond which is Norwich Cathedral. The site is currently occupied by the late 20th century school refectory building on its north-western side with an area of lawn at its centre, to the south of which is an access road leading to a car park that forms the site's eastern side.

1.2.2 The site lies on relatively level ground at approximately 6.7m above Ordnance Datum (OD).

1.2.3 The bedrock geology within the study site consists of chalk of the Lewes Nodular Chalk Formation overlain by superficial river terrace deposits of sand and gravel (BGS 2017).

1.3 Archaeological and historical background *(Fig 3)*

1.3.1 The archaeological and historical background below is drawn from sources collated for the production of an archaeological desk-based assessment of the site (Lanpro 2017).

Designated and non-designated heritage assets

1.3.2 The study site contains one designated heritage asset, the Grade II* Listed Precinct Wall (NHLE 1051331). The Norfolk HER holds seven records of heritage assets or

archaeological investigations within the study site. These include a general record covering the Cathedral precinct (MNF 377) and a record of the Grade II* Listed Precinct Wall (MNF 26039). The remaining five records all relate to archaeological investigations undertaken within the study site, four of which identified remains of an early medieval date (MNF 44; 50315; 59987; 68196) as well as evidence of prehistoric activity (MNF 59987), and one of which relates to an archaeological watching brief during which no archaeological remains were identified (MNF 64202).

Prehistoric Period (c. 9500 BC – c. AD 43)

1.3.3 The earliest evidence for activity within the study site was discovered during an archaeological evaluation undertaken near the north-eastern end of the present school refectory in 2010 (MNF 59987). This revealed a number of worked flints redeposited in later features dating from the late prehistoric period, possibly the Bronze Age.

1.3.4 In early 2000 trial trenching was undertaken on the former Bussey's Garage site, on the north-western side of Palace Street opposite the study site (MNF 26442). This revealed evidence of Late Neolithic to Bronze Age occupation immediately behind the street frontage, including a buried soil horizon containing 122 worked flints, comprising unmodified flakes, small spalls and two small blades. A group of four post holes was also revealed, one containing struck flint and another a fragment of a Bronze Age biconical urn, which may represent a building. A possible hearth may also be contemporary with this structure.

1.3.5 The excavated evidence of prehistoric material from within the study site, as well as the discovery of numerous Neolithic and Bronze Age finds at the Bussey's Garage site to the northwest, suggests that there may have been a concentration of settlement or activity in this area during the prehistoric period. Therefore, it is considered that there is low to moderate potential for the survival of prehistoric remains and/or finds within the study site.

Roman Period (c. AD 43 – c. AD 410)

1.3.6 There is no evidence for Roman activity within the study site, and limited evidence from the centre of Norwich as a whole with the main Roman period urban centre for the region being *Venta Icenorum*, around 5km to the south of the city (Campbell 1975, 2).

1.3.7 The Norfolk HER records the discovery of Roman brick around the site of the Cathedral in 1972 (MNF 226) and it has been suggested that the line of the Bawburgh to Bishop Bridge Roman road ran towards the area of the Cathedral, around 80m to the south-east of the study site (MNF 5244).

1.3.8 The limited evidence for Roman period remains within the study site and search area, as well as the scarce evidence for activity during this period in the centre of Norwich, suggests that there is negligible potential for the survival of Roman remains within the site.

Early Medieval Period (c. AD 410 – c. AD 1066)

1.3.9 Archaeological excavation undertaken in recent years within the study site and the vicinity have shown that there was settlement in this area of the city by the Middle to Late Saxon periods. Records documenting the cost involved in purchasing land for the cathedral also provide evidence for the extensive use of this land prior to its construction in the late 11th century (Ayers 1996).

1.3.10 Within the study site, the earliest excavation was carried out close to the southern corner of the present refectory building by the Norfolk Research Committee in 1956 (MNF 44), which uncovered Middle and Late Saxon pottery as well as a Late Saxon copper alloy buckle. Excavations undertaken to the immediate south-west of the study site also identified evidence of Late Saxon occupation in the form of numerous refuse pits (MNF 45).

1.3.11 In 2006 an excavation was undertaken at the northern end of the present refectory building. from which a Middle Saxon broach was recovered, together with sherds of unstratified Late Saxon pottery (MNF50315; NAU 2007).

1.3.12 The evaluation excavation undertaken to the north-east of the refectory in 2010 (MNF 59987) produced a large quantity of Middle Saxon pottery together with evidence for possible metal working. A possible sunken-feature building was also identified, the fill of which contained two fragments of juvenile bone. It appeared from the results of the excavation that domestic occupation continued in this area up until, and possibly beyond, the foundation of the cathedral in the late 11th century (NAU 2010).

1.3.13 Small-scale excavations at the southern end of the refectory in 2010 and 2013 (MNF 68196), during the construction of a sub-station, also identified a probable Late Saxon pit (NPS 2013), just to the north of the area of the area of the 1956 excavations (MNF 44). Beyond the study site, four refuse pits were uncovered about 25m to the north-east in 1952, and excavations undertaken by Norwich Castle Museum showed these to be of a Late Saxon date, and included Late Saxon human remains (MNF 42). In 1958 eight Late Saxon refuse pits, containing two sherds of handmade Early Saxon pottery and quantities of Late Saxon wares were excavated during the construction of a new Bishop's house approximately 40m to the north-east of the study site (MNF 46). Excavations undertaken close to the Bishop Palace around 25m to the south of the study site in 1960 identified at least seven Late Saxon burials, pre-dating the Norman footings of the Palace (MNF 441). To the north-east of this, evidence for Late Saxon buildings have been revealed along Bishopgate (MNF 154).

1.3.14 In 1979 an excavation undertaken adjacent to the River Wensum, to the west of Whitefriars, about 70m to the north of the study site, recovered archaeological deposits from the 10th to 11th centuries (MNF 421). This included a shelving beach of gravel with stakes and one post, covered by layers of shell and dung and successive levels of brushwood matting, although the area appears to have been abandoned from the late 11th century. Finds from the site included an 11th century bone comb, leather shoes, part of a jerkin, leather offcuts and pottery (Ayers and Murphy 1983). A riverfront site to the north-east of this was excavated in 1981 and also revealed

evidence for Middle to Late Saxon occupation including remains of buildings, possibly warehouses, as well as three Late Saxon burials and the remains of the foreshore revetment (MNF 450).

1.3.15 To the north-east of the study site, on the north-east side of Palace Street at the Bussey's Garage site, an evaluation trench excavated in 1996 revealed evidence of Middle to Late Saxon occupation (MNF 26442). This included two slots and a post-hole of a Late Saxon date, containing animal bone and Middle and Late Saxon pottery, which were sealed by layers containing further residual Middle and Late Saxon pottery, including a sherd of 9th century Baldorf-type amphora from Germany (NAU 1996). The evidence for the Middle and Late Saxon period remains within the study site, and from adjacent sites, suggests that there is high potential for the survival of archaeological remains dating to these periods within the study site.

Late Medieval Period (c.1066 to c.1540)

1.3.16 The construction of Norwich Cathedral in the late 11th century would have transformed the character of this part of the city. In about 1095 the seat of the East Anglian see was moved to Norwich from Thetford, and Bishop Herbert de Losinga began to build a new Cathedral and Priory in the area, with the monastic buildings concentrated to the south of the Cathedral (Campbell 1975). There is, however, some debate over the northward extent of the Cathedral precinct in the late 11th and early 12th centuries (e.g. Gilchrist 2005).

1.3.17 In 1318 the precinct was expanded by Bishop Salmon with the northern boundary established along the southern side of Palace Street, forming the north-western edge of the study site, and the precinct wall first built (MNF 26039; NHLE 1051331). From this time, the study site may have fallen within the grounds of the Bishop's Palace, (Gilchrist 2005), although there is no evidence that buildings associated with the palace were constructed within the study site.

1.3.18 In 2006 the excavations at the northern end of the present refectory building (MNF 50315) revealed the toppled remains of a substantial flint and mortar wall, comparable in size to the precinct wall to the north. Although its alignment was difficult to ascertain from the stone spread, it may have run towards the south from the dog-leg in the alignment of the extant precinct wall, creating a boundary between the Bishop's Palace and lay areas to the west. This boundary also appears to be shown on Clere's map of Norwich of 1696 and the presence of pantile coping with the wall suggests that it was still standing in at least the 17th century (NAU 2007).

1.3.19 The results of the trial trench excavation to the immediate north-east of the refectory in 2010 (MNF 59987) indicated that domestic occupation continued up to and beyond the 11th century in this part of the study site, with the latest pottery from the excavation dating to the 14th century. This 14th century date broadly coincides with the date for Bishop Salmon's enlargement of the precinct in 1318, suggesting that domestic occupation ended at this time (NAU 2010).

1.3.20 It is probable that part of the northern building range of Bishop Salmon's palace, which extended south-westwards from Bishops Gate (NHLE 1051328) fell within the north-

east corner of the study site. This has previously been identified as forming the palace's brew house (e.g. Campbell 1975). Clere's map of 1696 shows a building in this area, suggesting that this part of the palace continued to stand into at least the late 17th century but it was demolished before the early 19th century.

1.3.21 The evidence for later medieval period remains within the study site suggest that there is low to moderate potential for the survival of archaeological remains dating up to the 14th century on the site across much of the site. As the site may have been open ground from around 1318, when it was integrated into the Cathedral Precinct, any medieval remains of a later date are unlikely to be domestic in character but could relate to boundaries or garden features. However, it is probable that the northern range of the Bishop's Palace extended into the north-eastern corner of the site, and there is moderate to high potential for remains of this building to survive within the site.

Post-Medieval and Modern Periods (c.1540 to c.1950)

1.3.22 There is no archaeological evidence that the study site was built upon during the post-medieval period, and in line with the lack of post-medieval evidence for domestic activity (NAU 2010), it appears that the northern part of the precinct in which the site is situated remained largely open ground throughout this period.

1.3.23 Clere's map of Norwich of 1696 shows the site divided into two areas by a north-south wall, presumably that identified in the 2006 excavations (MNF 50315). A building is shown on the northern side of the eastern half of the site, bounded by this wall to the west and the precinct wall to the north. On the north-eastern side of the study site, a building range is depicted extending south-westwards into the eastern edge of the site, presumably representing the northern range of the medieval Bishop's Palace, and the possible brew house. This appears to turn extend southwards where it joins the study site, forming a L-shaped plan.

1.3.24 The 1830 map of the city by Millard and Manning depicts the study site as open ground, with the earlier possibly medieval structures demolished, replaced with stands of trees and a path curving across the site's southern edge linking the Bishop's Palace with St Martin's Plain to the north. The 1848 Jarrold map of the area also shows the site as open ground, although this map was produced to show the city's road layout and buildings and does not depict more detailed features.

1.3.25 By the 1880s the Ordnance Survey 25-inch map shows the study site laid out as a garden, with deciduous tree planting around its western and northern sides. A network of curving pathways is shown across the site focused on a carriageway which lead to the Bishop's Palace from the north and then joined a circular turning area in front of the palace itself.

1.3.26 There appears to have been little major change to the arrangement of the study site through the first half of the 20th century. Further tree planting extended the wooded boundary around the site's western and northern sides, however, but by the 1950s the northernmost garden paths seems to have no longer been maintained. The present

layout of the area was established in 1961 with the construction of the existing refectory.

2 EVALUATION AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The project aims and objectives were as follows:

i. To determine the location, extent, date, character, function, condition and significance of any archaeological remains within the development site.
ii. To excavate and record identified archaeological features and deposits to a level appropriate to their extent and significance.
iii. To assess the potential for survival of environmental evidence.
iv. To inform a strategy to avoid or mitigate impacts of the proposed development on surviving archaeological remains.
v. To undertake sufficient post-excavation assessment to confidently interpret identified archaeological features.
vi. To report the results of the evaluation and place them in their local and regional context
vii. To compile and deposit a site archive with the Norfolk Museums Service

2.2 Methodology

Archaeological evaluation

2.2.1 Two trenches (one measuring 8 x 2.5m, and the other measuring 9 x 2m) were excavated across the evaluation area.

2.2.2 Trenches features and spoil heaps were metal detected by an experienced metal detectorist using a Tesoro Lazer metal detector fitted with new batteries.

2.2.3 Machine excavation was carried out under constant archaeological supervision with a 3 tonne excavator using a 2m wide toothless ditching bucket.

2.2.4 The survey was carried out with a Leica TS10 total station.

2.2.5 All archaeological features and deposits were recorded using OA East's pro-forma sheets. Trench locations, features and sections were recorded at appropriate scales. Digital SLR (Nikon D3300) and black and white film photographs were taken of all features and deposits.

2.2.6 A total of 80L of material was retained for environmental processing. This was done at Oxford Archaeology East dedicated premises at Bourn under the supervision of Rachel Fosberry.

Photographic survey

2.2.7 A detailed digital photographic survey was undertaken of both sides (internal and external) of a section of Norwich Cathedral precinct wall to include a blocked gateway (proposed for re-opening to provide access to the proposed development) and extending for a minimum of 10m either side of the blocked gateway.

2.2.8 This was undertaken in line with the guidance for photographic survey provided in Historic England's publication Understanding Historic Buildings (2016).

2.2.9 Photographs were taken a high quality digital Sony APS camera. Photos were taken in both raw and jpeg format.

2.2.10 A register of the location, direction and subject of each shot was produced to accompany the photographic record.

3 RESULTS

3.1 Introduction and presentation of results

3.1.1 The results of the evaluation are presented below; a stratigraphic description of the evaluation trenches are presented in Sections 3.3-3.5 followed by a description of the Cathedral precinct wall in Section 3.6. The full details of the trenches with dimensions and depths of all deposits form the content of Appendix A. Finds data and spot dates are tabulated in Appendix B.

3.1.2 Context numbers reflect the trench numbers unless otherwise stated e.g. pit 102 is a feature within Trench **1**, while layer 202 is a deposit within Trench **2**.

3.1.3 The wall is described in segments; Elevations 1-8, with numbers assigned to described features.

3.2 General soils and ground conditions

3.2.1 The soil sequence between the trenches was fairly uniform towards the lower limits of the trenches. The natural geology of chalk was overlain by a sand and gravel. A similar silty subsoil was seen in both trenches, which in turn was overlain by flint rubble in Trench **1** and modern gravel in Trench **2**.

3.2.2 Ground conditions throughout the evaluation were generally good, and the trenches remained dry throughout. Due to the depths of the trenches, lower deposits were not accessible except by machine excavation.

3.3 General distribution of archaeological deposits

3.3.1 Archaeological features were present in both Trenches **1** and **2**. Due to the depth of deposits the archaeological sequence is best represented in section (Fig. 13 Section 1 and Section 2). Trench two revealed a cut feature at its base (possibly a ditch) that was filled by and sealed by a buried soil of possible agricultural origin (also observed in Trench 1). Further pitting was observed in Trench 2 above which was a layer of flint and other building rubble, a similar layer was noted in Trench 1. The upper section of the sequence in both trenches revealed remnants of what appeared to be a path/drive possibly associated with the Bishops Palace and depicted on the 1st Edition Ordnance Survey. A modern service trench was noted in Trench 2 and a large pit where a tree had stood in recent times in Trench 1.

3.4 Trench 1 *(Figs 1 ,2, 12 and 13)*

3.4.1 Trench **1** was located in grass (Fig. 2) on an east to west orientation. It measured 8m x 2.5m and was dug to a maximum depth of 1.95m.

Layers 106 and 107 *(Fig. 13)*

3.4.2 The lower recorded deposits in Trench **1** (layers 106 and 107) were probably both the same deposit of agricultural or garden type soil that most likely would have been present throughout the evaluation area. The different numbers equate to the soil dug within two deeper trial-pits at each end of the trench (Plate 1).

3.4.3 This agricultural soil consisted of dark brown to grey sandy silt that contained occasional small stones and a few pieces of tile. This soil may well relate to either a well-tended and well sorted agricultural layer or to soils that may have been present within the Bishops garden. A few fragments of human bone from layer 106 imply that some of the soil may have derived from a graveyard. Sealing this layer were deposits of rubble and soils that show the area to be heavily disturbed.

Layer 113 *(Fig. 13)*

3.4.4 Layer **113** was located at the western end of the trench. It had a length of 1.72m and a depth of 0.22m. This layer consisted of a compacted chalky soil that contained occasional small stones but no finds. This layer is likely to relate to a sealing layer located above the garden/agricultural soil level.

Layer 112 *(Fig. 13)*

3.4.5 This material also seems to be a redeposited layer of material sealing the garden like layers 106 and 107. It consisted of a compacted silty sandy chalk that had a width of 2.70m and a maximum depth of 0.50m. No finds were present. The eastern side of the deposit was sealed by a layer of soil (109).

Tree-throw 111 *(Fig. 13 and plates 3 and 4)*

3.4.6 A large pit, a probable tree-throw, that had a width of 3.6m and a visible depth of 0.60m occupied most of the eastern half of the trench. The pit truncated layer 112, its sides were steep but the base of the pit was not reached.

3.4.7 Fill 109 lay against the western edge of pit **111**. It consisted of a moderately loose mid to light grey sandy silt which was 0.32m thick and 0.60m deep. This material contained small stones but no finds. A similar deposit (108) was present on the eastern side of the pit.

3.4.8 The bulk of the pit was filled with a mix of flint rubble, building stone and some crushed ceramic building material (110). A piece of a decorative moulding constructed from Caen stone was found within the backfill.

3.4.9 The limited size of the evaluation trench did not reveal whether the backfill of the pit related to a building or wall that could have been located close to the trench or just a spread of material that had been brought into the area. It is known that a tree existed on the spot from at least the mid-19th century (Plate 1) and did not fall until 2004. No roots were found on the spot during the evaluation and it is possibly that the pit may relate to the removal of the tree stump and roots.

Layer 105 *(Fig. 13)*

3.4.10 A layer of loose rubble mixed with silty soil sealed pit **111**. This layer had a length of 6.4m and a depth of 0.50m. The rubble contained flints, pieces of ceramic building material and a piece of broken ceramic roof tile.

Layer 104 *(Fig. 13 and Plate 4)*

3.4.11 Layer 104 consisted of a compacted silty chalk and stone. It had a width of 1.2m and a maximum depth of 0.2m. It contained small to medium sized stones. Although no gravel or metaling was noted, the material was compacted and likely to have been deliberately placed, perhaps to form a base for a surface.

This deposit corresponds to a driveway shown on historic plans and maps (Plate 1) and describing a turning circle for carriages and other vehicles. A similar deposit was noted in Trench **2** that is likely to be part of the same feature.

Layer 103 *(Fig. 13)*

3.4.12 Layer 103 sealed layers 104 and 105, it consisted of mid grey silty sandy soil that had a length of 8m and a maximum depth of 0.22m. The layer is thought to be a modern soil layer, possibly imported to provide a base for a grassed area.

Layer 102 *(Fig. 13)*

3.4.13 As with layer 101, layer 102 was probably an imported soil to provide a base for turf. It covered the whole area of the trench and had a maximum depth of 0.40m.

Layer 101 *(Fig. 13)*

3.4.14 The trench area was sealed by a modern layer of turf. This had a maximum depth of 0.20m

3.5 Trench 2 *(Figs 1 ,2, 12 and Fig. 13)*

3.5.1 Trench two was located to the east of Trench 1 on an area that was at the time of evaluation being used as access to the janitor's huts and print room.

3.5.2 The trench was orientated north to south. It measured 9m x 2m and was excavated to a maximum depth of 3m (Plate 5). Due to restricted spoiling areas, the depth of the deposits and a modern service crossing the trench, a trial-pit was excavated at the northern end of the pit in order to try and locate a possible wall identified in the geophysical survey (Plate 6).

3.5.3 The trial-pit was dug to a depth of 2.90m, although no wall was found, garden soils similar to those seen in Trench **1** were recorded at a similar depth.

3.5.4 At the base of the trial-pit natural geology (sand) was reached. This sand sloped northwards. It was not possible to say whether this was the edge of a ditch or pit or undulations of the natural geology. Overlying it were a series of horizontal layers described below.

Layer 210 *(Figs 12 and 13)*

3.5.5 Layer 210 was the deepest deposit recorded in Trench 2 and was located within the confines of the trial-pit dug at the northern end of the trench. It consisted of a dark grey sandy silt which filled a possible pit or ditch, alternatively this possible feature could be an undulation in the natural geology at this point.

3.5.6 The layer contained occasional small stones, flint and pieces of ceramic building material. Finds of pottery, shell, bone and tile were also recovered from this layer. The pottery has been dated to the late Saxon period (Appendix B).

3.5.7 Within the upper levels of layer 210 a group of flints were noted. (Plate 10). It is possible that these flints may have been the those identified as a wall during the geophysical survey. Although extremely loose, they may have lost their bonding and so may represent the remnant of a flint wall.

Layer 212 *(Fig. 13)*

3.5.8 Layer 212 overlay 210 and may have been deliberately deposited. This material consisted of a grey brown chalky marl that had a depth of 0.10m, it was compacted and contained occasional small stones and gravel but was devoid of finds. This layer was in turn sealed by 211.

Layer 211 *(Fig. 13)*

3.5.9 A brown sandy silt layer (0.30m thick) was recorded above layer 212. This compacted material contained only occasional small stones and pieces of broken or fractured flints. It was sealed by layer 209.

Layer 209 *(Fig. 13)*

3.5.10 Layer 209 consisted of a compacted mid-grey sandy silt that had a thickness of 0.20m, it contained occasional small stones and pieces of ceramic building material but no finds. This layer sat directly below the modern surfaces relating to phases of the driveway that still form access to buildings associated with the school.

Layer 204 *(Fig. 13)*

3.5.11 This layer is attributed to an earlier phase of the driveway that can be seen on OS maps and in photographs (Plate 7). It consisted of a grey white chalky marl that contained gravel and occasional pieces of ceramic building material. This very compacted layer had a thickness of 0.14m.

3.5.12 This in turn was sealed by another layer (203) also thought to be re-surfacing/re-arrangement of the driveway.

Layer 203 *(Fig 13)*

3.5.13 Layer 203 consisted of light brown sandy grit with frequent small angular stones. The very compacted material had a thickness of 0.14m. The appearance of the layer was very similar to a modern substrate often found beneath road surfaces (Plate 7).

Layer 202 *(Fig. 13)*

3.5.14 Layer 202 sealed the driveway layer 203 and consisted of a mid grey silty sand which had a depth of 0.22m. This moderately compacted layer existed over the whole 9m of the evaluation trench. The layer contained no finds other than degraded modern plastic sheeting (Plate 6).

Layer 201 *(Fig. 13)*

3.5.15 Layer 202 and the rest of Trench **2** was overlain by a modern driveway comprised of 0.10m thick grey gavel within which was inserted plastic sheeting.

3.5.16 The southern end of Trench **2** contained a pit **207** and a modern service trench **205**.

Layer 209 *(Fig. 13)*

3.5.17 Soil layer (209) which had the same characteristics as layer 210 recorded at the northern end of Trench 2 and it is likely that layers 209 and 210 are the same deposit.

Pit 207 *(Fig. 13)*

3.5.18 This feature was located at 0.6m from the southern end of the evaluation trench and truncated layer 210. Only the southern side of the feature could be seen (Plate 7).

3.5.19 The pit had a depth of 0.80m and a discernible width of 0.90m. The sides were steep and the base flat. The feature contained a single fill (208) which consisted of a loose brownish grey sandy silt. Finds recovered included, pottery, glass, broken tile and animal bone (Appendix B). These finds date the pit to the Late medieval or early post medieval periods.

Layer 214 *(Fig. 13)*

3.5.20 The pit was overlain by a post-medieval layer of silty sand that contained frequent stones and pieces of ceramic building material. This very loose layer had the characteristics of heavily disturbed ground. It had a maximum depth of 0.40m. This was in turn truncated by a modern service trench **205**.

Service trench 205 *(Fig. 13)*

3.5.21 A steep sided service trench was seen to truncate layer 214 (Plate 9). It was orientated north-west to south-east. It contained a slat glazed ceramic pipe normally utilised for waste water. This was backfilled with brownish grey sandy silt (206) that contained frequent amounts of stone and ceramic building material.

3.5.22 This service trench was sealed by layers 202 and 201. Both modern layers relating to the existing driveway.

Auger Survey *(Fig. 13)*

3.5.23 Due to the limited area and the depth of trench it was decided to take an auger reading at each end of trenches 1 and 2. These were taken primarily to determine the depth at which natural geology was in countered. Depths are measured from modern ground level.

Trench 1

3.5.24 Natural geology was encountered at 3.10m at the western end of the trench and at 2.50m at the eastern end.

Trench 2

3.5.25 Natural geology was encountered at a depth of 3m at the northern end of the trench and 2.7m at the southern end.

3.6 Cathedral Precinct Wall

3.6.1 The area of recorded precinct wall stretched from the rotund opposite Bedding lane, heading north-eastwards for 36m stopping before the Bishops Great Gate (Fig. 2). The wall is Grade II* listed (NHLE 1051331) and is constructed from flint, brick, stone and capped with pantiles forming a coping.

3.6.2 The external height of the wall varies from 4.5m at the south-eastern end to 3.6m at the north-western end. This difference in height is due to the variation in ground formation levels along the length of the wall. Internally the wall has an average height of 2m. The impression that the wall has less height internally is due to the build-up of ground within the garden area of the former Bishops Palace.

3.6.3 The precinct wall is said to date to the 13th century but has undergone many episodes of rebuilding and repairs. Many of these visible today date from the 18th and 19th centuries. The materials used in these repairs are mainly brick, flint and re-used stone with some pieces showing signs of tooling. The wall has been re-pointed on numerous occasions and the materials used to do this are mostly lime and more recently cement.

3.6.4 The repointing and repair have not been carried out sympathetically. The flint in the original wall would have been well-sorted and constructed to a high standard. Areas of replaced flint have used varying sizes of flints that have been less tightly packed. Demolition material and bricks have also been clearly utilised when flint has not been available.

3.6.5 The wall is capped with four courses of pantile sitting on two to three courses of red brick.

3.6.6 Due to the many areas of obvious repair and rebuild only a broad phasing for the walls construction has been attempted for this evaluation. The earliest and possibly untouched sections of wall probably lie below ground level and would only be seen during any reduction of the existing ground levels.

3.6.7 Each face of the wall is described below, beginning with the external elevation. The external elevation is described in segments (Elevations 1 to 7). The internal elevation was difficult to access and so a shorter length is described (Elevation 8).

Elevation 1 *(Fig. 14)*

3.6.8 Elevation **1** was located to the north-western end of the recorded length of wall. The section of wall measured 7.5m and had a height of 4m. It was capped with ceramic pantiles.

3.6.9 Four vertical red brick strengthening piers had been inserted into this section of the wall (Features 1,2,3 and 6). Features 2 and 3 would have been most likely inserted at the same time, each pier measured 2.62m high and they were approximately 3m apart. Both features comprised 34 courses of a single stretcher width laid as a course

of stretchers alternating with two headers. The bricks used measured 23cm x 6xm x 10cm each and would likely date to the 19th century.

3.6.10 The other two piers (Features 1 and 6) were constructed from a slightly smaller brick (21cm x 6cm x 10cm) and likely date to the 18th century. As with Features 2 and 3, Features 1 and 6 were one stretcher wide, but alternating with a single header (in the manner of a corner bond). Feature 1 was built up from the ground for approximately 30 courses, although the lower courses are somewhat worn and missing in places. Feature 6 comprised 13 courses beginning approximately half way up the wall, it then continued intermittently interspersed with blocks of flint before meeting the top of the wall. Features 1, 2 and 3 all terminate at the same height.

3.6.11 Within this section an iron cross wall-tie was noted. This was located at 2.68m above ground level. It was constructed with two band of iron forming a cross. The bands were 0.50m in length. Another of identical design was located 2.5 metres to the west (Elevation 2; Feature 8). These ties would have been used to pull the wall in to another structure which suggests a building had been set into the wall at some time, although no evidence of any building remains.

3.6.12 A brick lacing course was also recorded on Elevation **1** (Feature 7). This was located at 1.72m above ground level and consisted of a single course of headers laid to a length of 1.50m. This sat on top of a reused building stone that had been used as repair material.

Elevation 2 *(Fig. 15)*

3.6.13 Elevation **2** measured 7.6m in length and had a height of 5m. It was capped with two courses of red brick and pantiles.

The only noticeable feature located within this section of the wall is Feature 8, an iron cross beam wall tie that has been previously described. The wall in common with all other sections was made up of repair and rebuild. The materials contained pieces of re-use worked stone but somewhat less brick than seen in other parts of the wall.

Elevation 3 *(Fig. 16)*

3.6.14 This section of the wall had a length of 8.12m and a height of 4.2m. It was capped with two courses of red brick and pantiles.

3.6.15 Rudimentary repair had been carried out to a section to the east of the elevation. This area of repair had utilised large amounts of re-used building stone but hardly any red brick. To the west of this the repairs had mainly used flint with the addition of brick. The repairs were crudely done and little attention had been given to relaying the flint and brick in any visible course.

Elevation 4 *(Fig. 17)*

3.6.16 Elevation **4** measured 7.64m in length and had a height to the pantiles of 4.12m and as in common with the previously described sections of wall this has undergone various phases of repair and rebuild and once again the most common repair material

has been flint with the occasional building stone inserted to the upper 1.5m of the wall.

3.6.17 An aperture, most probably a single doorway (Feature 9) has been inserted at the western end of this section. This has a height of 3.4m and a width of 3.10m although the central access is only 2.4m high and 1.10m wide suggesting that this was only ever used for foot traffic accessing the garden of the Bishops Palace.

3.6.18 This feature is of rudimentary construction, using limestone blocks and red brick. The limestone blocks vary in size and shape with one large block showing tool marks. This variation of materials and sizes provides evidence that the materials used in the construction were not originally manufactured for this feature.

3.6.19 Bricks have been used to bolster the stone blocks and also to repair the existing structure. The dimensions of the bricks suggest 18th and 19th century phases of repair.

Elevation 5 *(Fig. 18)*

3.6.20 Elevation **5** measured 6.94m in length and had a height of 4.6m to the pantiles.

3.6.21 This section of wall showed large areas of repair mainly using flint as the repair material. Areas had also been re-pointed using a pale concrete mortar.

3.6.22 A brick pier had been inserted into the wall (Feature 10). The bricks used suggest that this was done in the 18th or 19th century. The pier had a height of 2m and a width of 0.30m.

3.6.23 To the west of this pier the wall had been repaired in the upper half using flint interlaced with brick. This reflected the design of the wall below. This is one of the few examples of a repair trying to match an earlier phase of building. This flint interlaced with brick repair continued in to Elevation 6.

Elevation 6 *(Fig. 19)*

3.6.24 Elevation **6** measured 6m in length and had a height of 4.2m to the pantiles. A corresponding pier (Feature 11) to that described in Elevation 5 was noted. A further 19th Century brick pier (Feature 12) sprang from the top of the wall for a length of 2.25m. This was constructed by using a stretcher overlying a header. A continuation of flint and brick courses was also noted.

Elevation 7 *(Fig. 20)*

3.6.25 Elevation **7** measured 6.3m in length and had a height of 4.6m. The wall continued to a half tower abutting Palace Street. This section of wall has been heavily repaired and at a height of 2.2m four small metal spurs were noted protruding from the stone work which suggests there is a suggestion that a small window or shutter may have once existed here (Feature 13).

Internal

3.6.26 Recording the wall internally was hampered by the presence of wooden buildings and trees located close to the wall and impeding access, particularly for photography. These were still in use at the time of recording and were located less than 2m from the

wall. Trees were also growing next to the wall and the western end of the wall was partially covered in Ivy.

Elevation 8 *(Fig. 21)*

3.6.27 Elevation **8** had a length of 6.7m and a height of 2m to the pan tile coping. The height of the wall internally was less due to the build-up of ground within the Bishops garden. This was also seen within the evaluation trenches located just to the south.

3.6.28 Internally the wall differed little from the external view. A large amount of repair and rebuild had occurred and noticeably a lacing course had been inserted towards the base of the wall (Feature 14). Buff coloured bricks (Feature15) with a recessed "D" have also been inserted into the wall (Plate 14), this marks the point at which drainage from the Bishops Palace exits the garden. This can be seen on a plan of services dated 1859 (Fig. 7).

3.6.29 Notably, the blocked gateway visible on the external face of the wall (Feature 9) is not clearly visible internally. However, large squared limestone blocks (Feature 16) correspond with the location of the blocked gateway and may indicate blocking of the opening on the internal face (Fig. 21). The lack of obvious features that might be associated with a formal opening may indicate that the wall has been made thicker (thus obscuring the gateway). The wall is certainly thicker along this stretch than elsewhere as can be seen from the 1859 plan showing services and utilities (Fig. 7)

3.7 Finds summary

3.7.1 The ceramic finds from the evaluation dating to the late Saxon and early medieval periods suggest occupation on the site before the construction of the Cathedral or Bishops Palace. Other ceramic finds along with glass, stone, slag, clay pipe and glass dating from the medieval and post-medieval periods are likely to have originated from those people living and working at the Cathedral or Palace.

3.7.2 The small amount of Human skeletal remains found in Trench **1** are likely to originate from the known burial ground just to the north or the churchyard of St Martin's to the north-east.

3.7.3 Environmental processing found barley grains from samples. This cereal was in common use as cattle feed and for human consumption. Bones from cattle, sheep/goat, pig, bird, amphibian, fish and oyster shell all point to a typically domestic assemblage.

4 DISCUSSION

4.1 Reliability of field investigation

4.1.1 The evaluation trenches were located within the proposed development area. The presence of services and depths of deposits required trial-pits to be dug and auger depths taken, however archaeological features and buried soil horizons were easily identifiable.

4.1.2 External photography of the wall was hindered by the overhanging trees but it was possible to photograph the required length of the precinct wall and to construct photogrammetric reconstructions of the required elevations.

4.1.3 Internally the wall proved more difficult to record. Buildings were located less than 2m from the wall (Plate 13). The area of the intended entrance way was however recorded and photogrammetric elevations were reconstructed.

4.2 Evaluation objectives and results

4.2.1 The evaluation demonstrated that there are archaeological remains within the study area. The underlying buried soils are likely to relate to occupation before the building of either the Cathedral or the Bishops Palace.

4.2.2 Demolition material recovered from Trench **1** hint at the possibility of a structure may exist close to the evaluation trench.

4.2.3 The photographic survey of the wall suggests that the greater majority of the wall has been rebuilt or repaired.

4.3 Interpretation

Trenches

4.3.1 The earliest feature seen within the evaluation is a buried soil layer that produced pottery dating to the late Saxon period (Layers 106 and 210) This material was recovered at depths over 1.5m This suggests occupation of the area before the construction of the Cathedral and the Bishops Palace and that subsequently there has been a large build-up of soil.

4.3.2 Later deposits produced finds that related to the discarding of rubbish by those occupying or working within the Cathedral, Bishops Palace or associated grounds.

4.3.3 Layers of building material, possibly from demolition, were recorded in Trench **1**. It is known (photographic and mapped evidence) that a tree existed on this spot until early this century. This tree can be seen on historic maps (Figs 1 and 8). The tree was reported to be very large when it fell and no roots were recovered during excavation and so it is probable that the pit (111) relates to the removal of the roots.

4.3.4 It is unlikely however that the large amounts of demolition material found within the pit were brought from far and a possibility exists that the material is from a wall or building close to the evaluation trench. It is known that there were internal walls

within the Bishops garden and that a range of buildings that were once part of the Bishops Palace existed just to the east of the evaluation trenches.

4.3.5 The upper layers of both trenches consisted of post-medieval overburden. This directly relates to the difference of ground levels internally and externally to the precinct wall.

4.3.6 Features 10, 203 and 204 are likely to be the remnants of a carriageway that circled a lawn in front of the Bishops Palace. This Carriageway can be seen on a utilities and service map of 1859 (Fig. 7) but not the Milling and Manning map of 1830 (Fig. 5) and so the remains found are likely to date between 1830 and 1859.

Cathedral Precinct Wall

4.3.7 The photographic survey of the wall showed that a great deal of repair and rebuilding have been undertaken since the wall's construction in the 13th Century. Both externally and internally brick piers have been added to strengthen the structure. These are thought to have been added in the 18th and 19th century. The piers may also hint at wholesale rebuilding on parts of the wall. Replacing large amounts of flint within an existing wall is often difficult to do but can be achieved by first building brick piers between which the flint can be added.

4.3.8 The wall would have originally been largely constructed from well-sorted flints that would have been uniformly laid. The wall in its present state does not show areas that resemble the early structure. Re-used building stone, brick and flint have been added to repair large areas and the repointing also varies greatly. Only one section of wall shows signs of a repair phase that has been systematically carried out (Elevations 19 and 20). Here the upper part of the wall has red brick interlaced between flint. This has been undertaken to match a rebuilding or repair directly below.

4.3.9 A blocked entrance was also noted externally. This would have accessed the Bishops Garden. It is only wide enough for foot traffic and could have been used by those working within the grounds. It has been blocked by a flint infill. The stonework surrounding the entrance has been randomly constructed and repaired using bricks and stone. Some of the bricks date to the 19th century and constitute repair.

4.3.10 Although there is no obviously corresponding blocked door on the internal face a large amount of limestone is visible at this point (Feature 16). It is possible the gateway may have been built over rather than blocked and the gateway is encased within the wall. Further evidence for this can be seen in the service plan of 1859 (Figs 7 and 21). Which shows the wall to be much broader here than to the east or west.

4.3.11 Towards the west end of the wall a semi-circular structure exists reminiscent of a half tower. (Elevation 7) this is seen on The Milling and Manning map of 1830 (Fig. 5) but it is shown cartographically as a more pronounced structure than can be seen today. It could be that the map is not very accurate, the structure has been rebuilt, or the wall has been thickened.

4.3.12 This feature along with the greater extent of the wall may have more of its original fabric existing below ground level.

4.3.13 Internally the wall showed much of the same repair and rebuilding as the exterior. A small marker stone was noted towards the base of the wall (Plate 13). This marker indicates the point at which a foul water pipe enters the Bishops Palace garden. This stone dates to 1859 and can be seen on the service map of that date (Fig.7).

4.4 Trench Descriptions and Context Inventory

Trench 1						
General description					**Orientation**	E-W
Trench 1 contained a buried soil overlain by demolition material within a large tree throw					**Length (m)**	8m
					Width (m)	2.5
					Avg. depth (m)	1.5
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
101	Layer	8	0.0.2	Turf		-
102	Layer	8	0.4	Subsoil	Clay pipe, pottery	
103	Layer	8	0.22	Subsoil	-	-
104	Layer	1.2	0.2	Carriageway	-	-
105	Layer	6.4	0.5	backfill		
106	Layer	1.65	0.5	Buried soil	HSR, animal bone	
107	Layer	1.72	0.22	A chalky	Slag, flint	
108	Fill	0.55	0.45	Soil in pit		
109	Fill	0.32	0.6	Soil in pit		
110	Fill	3.6	0.6	Rubble in pit	CBM, Stone	
111	Cut	3.6	0.6	Large pit		
112	Layer	2.7	0.5	Redeposited soil		
113	Layer	1.72	0.22	Redeposited soil		

Trench 2						
General description					**Orientation**	E-W
Trench devoid of archaeology. Consists of topsoil and subsoil overlying natural geology of silty sand.					**Length (m)**	30
					Width (m)	2
					Avg. depth (m)	0.30
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
201	Layerr	9	0.2	Gravel drive		-
202	Layer	9	0.22	Subsoil	-	-
203	Layer	4.38	0.14	Gravel	-	-
204	Layer	4	014	Gravel	-	-
205	Cut	1	0.6	Service trench		Modern
206	Layer	1	0.6	Service trench		Modern
207	Cut	1	0.8	Pit		
208	Fill	1	0.8	Fill of pit	Bone, glass pottery, clay pipe	Post-medieval
209	Layer	3.2	0.2	Buried soil		
210	Layer	2.5		Buried soil	Pottery, CBM, Stone	
211	Layer	2.5	0.3	Post med soil		
212	Layer	2.5	0.1	Sealing layer		
214	Layer	2	0.4	Post med soil		

APPENDIX A FINDS REPORTS

A.1 Pottery

By Sue Anderson

Introduction

A.1.1 The assemblage comprises 32 sherds (658g) of pottery, recovered from five contexts. Table A1.1 provides a quantification by fabric. A summary catalogue by context is included in Appendix 1.

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Thetford-type ware	THET	10th-11th c.	15	249	0.13	15
Thetford Ware (Grimston)	THETG	10th-11th c.	1	9		1
Early medieval ware	EMW	11th-12th c.	5	19		5
Early medieval ware shelly	EMWS	11th-12th c.	1	7		1
Yarmouth-type ware	YAR	11th-12th c.	1	8		1
Grimston-type ware	GRIM	L.12th-14th c.	1	2		1
Late medieval and transitional	LMT	15th-16th c.	1	5		1
Glazed red earthenware	GRE	16th-18th c.	7	359	0.25	3
Totals			32	658	0.38	28

Table A1.1. Pottery quantities by fabric

Methodology

A.1.2 Quantification was carried out using sherd count, weight and estimated vessel equivalent (eve). The minimum number of vessels (MNV) within each context was also recorded. All fabric codes were assigned from the author's post-Roman fabric series, and fabrics were identified using a x20 microscope and, where possible, reference sherds. Thetford-type ware fabrics are based on Dallas (1984), and Late Saxon forms on Anderson (2004). Medieval and later wares were identified following Jennings (1981). Methods follow MPRG recommendations (MPRG 2001) and form terminology follows MPRG classifications (1998). The results were input directly onto an MS Access database, which forms the archive catalogue.

Summary of assemblage by period

Late Saxon (L.9th-11th c.)

A.1.3 Sixteen sherds of Late Saxon pottery were recovered from three contexts. The majority was Thetford-type ware in fine and medium sandy fully reduced fabrics, made locally or in Thetford. Two rims were present in the assemblage, a type 5 (angular wedge) rim, and a type 2 (rounded flaring) rim, both from a medium 'AB' jars. There was a large handmade body sherd from a large storage vessel, and a fragment of applied thumbed strip from another large vessel.

A.1.4 One fine sandy body sherd with bright orange surfaces has been recorded as Grimston Thetford-type ware as the fabric is comparable with Thetford-type wares from

production and consumption sites in NW Norfolk (possibly Bircham rather than Grimston in this case), but there is a possibility that the fragment was part of an imported vessel of Late Saxon date.

Medieval (M.11th–14th c.)

A.1.5 Five sherds of handmade sandy early medieval ware vessels were recovered from two contexts. There was also a body sherd of Yarmouth-type ware and a fragment of an early medieval shelly ware.

A.1.6 One small body sherd of Grimston glazed ware was recovered.

Late Medieval and early post-medieval (M.14-18th c.)

A.1.7 Seven sherds of three GRE vessels were collected from context 208. These comprised a large fragment of the wall of a flaring-sided orange-glazed bowl, a small orange-glazed body sherd, and five sherds of a large wide-mouthed jar with a square-beaded rim and reddish brown glaze.

Provenance

Trench	Feature	Context	Type	Fabric	Spotdate
1	-	102	layer	THET	10th c.+
	-	106	layer	THET THETG	11th c.?
	-	107	layer	EMW GRIM LMT	L.14th-M.16th c.
2	207	208	pit	GRE	16th-18th c.
	-	210	layer	THET EMW YAR EMWS	11th-12th c.

Table A1.2. Pottery distribution by context

A.1.8 The largest single group was from layer 210 (18 sherds), and this deep layer appears to be of Late Saxon to early medieval date. The lowest layers in Trench 1 (106 and 107) may be as late as the late medieval period, and although 106 contained only Late Saxon wares, there was later CBM in this context (see below).

Discussion

A.1.9 A high proportion of the assemblage is of Late Saxon and early medieval date and presumably represents activity on the site before the construction of the Bishop's Palace. Later wares, particularly the pit containing GRE vessels, probably relate to the inhabitants of the palace and represent disposal of household waste.

A.2 Ceramic Building Material

By Sue Anderson

Introduction

A.2.1 Twenty-seven pieces of CBM (4813g) were collected from five contexts.

A.2.2 The assemblage was quantified (count and weight) by fabric and form. Fabrics were identified on the basis of macroscopic appearance and main inclusions. The width, length and thickness of bricks and floor tiles were measured, but roof tile thicknesses were only measured when another dimension was available. Form terminology

follows Drury (1993). The results were input directly into an MS Access database, which forms the archive catalogue.

A.2.3 Table A1.3 provides a summary of the quantities by type and form.

fabric	code	RTM	RTP	EB	LB	FFT	FFT?	Total
estuarine clays	est			4				4
fine sandy	fs	1	1				1	3
fs with clay pellets	fscp				1			1
fs with flint	fsf				1			1
fs with ferrous oxide	fsfe		3			1		4
fs with grog	fsg		2					2
fsg with ferrous oxide	fsgfe		1					1
medium sandy with grog	msg		1					1
Total frag count		1	8	4	2	1	1	27
Total weight		114	1636	1877	1164	20	2	4813

Table A1.3. CBM quantities by fabric and form

A.2.4 Plain roof tiles were recovered from layers 106 and 210, and pit fill 208. Most were in fine sandy fabrics with a variety of local inclusions, some with added grog. One fragment with a reduced core was probably of medieval date (RTM) and was covered with a thick layer of mortar containing coarse sand/quartz aggregates. Eight fragments were late medieval or post-medieval tiles (RTP) and were fully oxidised. Two fragments were recovered from pit fill 208, one complete in length and the other in width. The former was 255mm long and 14mm thick, and the latter 165mm wide and 13mm thick. Most of the post-medieval roof tiles had at least traces of mortar on one or more surfaces, and the complete width fragment had a thick layer of fine? plaster on the underside, perhaps suggesting that the structure it covered had been open to the rafters.

A.2.5 Fragments of estuarine clay brick (EB) of probable later 13th to 15th-century date were recovered from layer 210. Three fragments were from a single brick and this measured 130mm wide and 60mm thick; it had a sanded base and falls within Drury's A group of potentially slightly earlier forms. The other fragment measured 109mm wide and 55-60mm thick and had straw impressions on the base, suggesting a slightly later date (Drury's B category). However, post-medieval roof tiles were also recovered from this context, so the bricks were probably residual or represent the demolition of an earlier structure in this period.

A.2.6 Two samples of 'later bricks' (LB) were recovered from pit fill 110. One was an orange brick, 110mm wide and 50mm thick, and the other was red and measured 49mm thick. Both had patchy mortar on one or more surfaces. These bricks may be of 'Tudor' date (L.15th/16th c.?).

A.2.7 Two small fragments from layer 107 comprised a piece of brown-glazed Flemish floor tile (FFT) and a small chip with a sanded base, possibly another floor tile. This type of tile is of 14th/15th-century date.

Pottery Summary

Context	Fabric	Form	Rim	No	Wt/g	Spot date	Fabric date range
102	THET	Medium AB jar	5	1	10	10th c	10th-11th c.
106	THET			1	6		10th-11th c.
106	THETG			1	9		10th-11th c.
107	EMW			2	3		11th-12th c.
107	GRIM			1	2		L.12th-14th c.
107	LMT			1	5		15th-16th c.
208	GRE	Bowl		1	104		16th-18th c.
208	GRE			1	7		16th-18th c.
208	GRE	Jar?	Square bead	5	248		16th-18th c.
210	THET			1	48		10th-11th c.
210	THET			1	40		10th-11th c.
210	THET	Large storage vessel		1	64		10th-11th c.
210	THET			1	4		10th-11th c.
210	THET			4	35		10th-11th c.
210	THET			1	22		10th-11th c.
210	YAR			1	8		11th-12th c.
210	THET			3	17		10th-11th c.
210	THET	Medium AB jar	2?	1	3	11th c	10th-11th c.
210	EMW			2	13		11th-12th c.
210	EMW			1	3		11th-12th c.
210	EMWS			1	7		11th-12th c.

A.3 Flint

By Lawrence Billington

A.3.1 A Total of 11 worked flints were recovered, all from a bulk sample of deposit 107 (sample 5). This small assemblage is made up mostly of small chips and flake fragments, in moderately fresh condition and made of a dark grey flint. Much of this material is likely to be derived from the dressing flint cobbles/nodules used as building material during the medieval, post-medieval or modern period, and two pieces – a chip and an irregular piece of waste bear pieces of lime mortar on their surfaces. This said, some of the other pieces may be prehistoric, especially in the case of secondary blade-like flake which seems likely to be Neolithic or Early Bronze Age date.

A.4 Worked Stone

By Vicki Roulinson

A.4.1 A small single piece of worked Caen stone was recovered from Pit **111**. This has a length of 12.5cm, a diameter of 6.5cm and weighs 1.025kg. It is possibly a modified piece of pilaster, its small in scale suggests it is likely to be a decoration or decorative moulding. Given the proximity of the Cathedral, this is its most likely place of origin,

probably a detail from a screen, tomb monument or vault rib that has possibly been reshaped. A faint mark possibly a mason's mark can be seen on one face.

A.5 Glass

By Carole Fletcher

Introduction

A.5.1 A small assemblage of 18th century glass (0.108kg) was recovered by the excavator from Trench 2. The glass was scanned and recorded by form, colour, count and weight, and dated where possible.

Assemblage

A.5.2 Trench 2, pit **207**, produced six fragments of glass from two vessels. Two small shards might be from a cased bottle commonly called a cased gin, also known as taper gins, a common style used from the 17th through to the early 20th centuries. The body is square in cross section and, in all cases, tapers from a wide shoulder to a narrower cross-section at the base (https://www.antiquebottles-glass.com/case-gin-bottles/). The four remaining shards are from an early 18th century wine bottle, possibly a straight-sided onion or an English 'mallet' type, *c*.1710-1735.

Discussion

A.5.3 The presence of relatively large shards from an 18th century wine bottle within the deposit that also produced a small amount of clay tobacco pipe, animal bone and architectural stone work, suggests this pit was backfilled in the early to mid-18th century. The excavator indicates that the 1830 map of the city by Millard and Manning shows the site as open ground, with the earlier, possibly medieval, structures demolished.

Retention, dispersal or display

A.5.4 Should further work be undertaken, additional glass vessels may be recovered. If no further work is undertaken, this statement acts as a full record and the glass may be deselected prior to archive deposition, and possibly used for educational purposes.

Glass Catalogue

Trench	Context	Cut	Form and Colour	MNV	No. of Shards	Weight (kg)	Glass Date
2	208	**207**	Utility bottle. English wine bottle, in natural green glass, some cloudiness and pitting, the glass is somewhat degraded. It is uncertain if the sherds are all from the same vessel, however, it seems likely that they are. Large fragments from the body of the bottle, a rounded sherd and a more flattened sherd, are possibly from a straight-sided onion or an English 'mallet'. The short, slightly twisted neck with applied string rim (rounded, flattened top and bottom), set below the everted lip, appearing as if constricting the neck (constricted bore (Jones and Sullivan 1989 89 fig 56)). Surviving height of neck to lip 60mm, bore 16mm, external diameter 25mm	1	4	0.106	18th century *c*.1710-1735

Trench	Context	Cut	Form and Colour	MNV	No. of Shards	Weight (kg)	Glass Date
			Two joining fragments of dark olive green (black glass) with smooth surface, curved as if for a corner or shoulder, possibly fragments from a case bottle. The glass is cloudy, opaque and a recent break shows the glass to be degrading. The condition of the glass suggests a relatively early date, most likely similar to that of the other bottle glass recovered from the context		2	0.002	Not closely datable
Total				**1**	**6**	**0.108**	

Table A5.1: Glass

A.6 Clay Tobacco Pipe

By Carole Fletcher

Introduction and Methodology

A.6.1 During the evaluation, five fragments of white ball clay tobacco pipe, weighing 0.019kg, were recovered. Simplified recording only has been undertaken, with material type, basic description and weight recorded. Terminology used in this report is taken from Oswald's simplified general typology (Oswald 1975, 37–41), and Hind and Crummy (Hind and Crummy 1988, 47-66).

Assemblage and Discussion

A.6.2 Subsoil context 102, in Trench 1, produced a single length of clay tobacco pipe stem. Further stems were recovered from pit **207** in Trench 2. None of the fragments are closely datable and all appear to come from separate pipes.

A.6.3 The fragments of clay tobacco pipe recovered represent what were, most likely, casually discarded pipes. The fragments do little other than to indicate the consumption of tobacco on, or near, the site and although in themselves are not closely datable, those from pit **207** were recovered alongside fragments from a wine bottle *c.*1710-1735; the stems may therefore be 18th century.

Retention, dispersal or display

A.6.4 The assemblage is fragmentary. Should further work be undertaken, additional clay tobacco pipe may be recovered. If no further work is undertaken, this statement acts as a full record, the clay tobacco pipe may be deselected prior to archival deposition.

Clay Tobacco Pipe Catalogue

Trench	Context	Cut	Form	No. of pipe stem fragments	Description	Weight (kg)	Date
1	102		Stem fragment	1	45mm long, curved length of stem. Oval at one end, the other end is slightly sub-circular, diameter 7.7mm. A wide centrally-placed bore, mould seams trimmed, however, there is a slight bulge on one surface	0.003	Not closely datable
2	208	**207**	Stem fragment	1	71mm long, tapering towards mouthpiece, slightly oval (7.8mm diameter tapering to 6.3mm) trimmed mould line on one edge, more obvious line on the other. Moderate bore, somewhat off-centre	0.004	Not closely datable

Trench	Context	Cut	Form	No. of pipe stem fragments	Description	Weight (kg)	Date
			Stem fragment	1	Short length of stem, 46mm long, roughly circular stem diameter 9.5mm, moderate off-centre bore, trimmed seams can still be seen	0.005	
			Stem fragment	1	Short length of stem, 39mm, roughly circular, diameter 9.5mm, moderate off-centre bore, trimmed seams can still be seen	0.004	
			Stem fragment	1	Short length of stem, 35mm, sub-circular, being flattened on one side, small to moderate relatively centrally-placed bore	0.003	
Total				**5**		**0.019**	

Table A6.1: Clay Tobacco Pipe

A.7 Fuel and fuel by-products

By Carole Fletcher

Introduction and Methodology

A.7.1 A total of 0.001kg of coal and 0.012kg of clinker was recovered from sample 5, taken from layer 107 in Trench 1. Simplified recording only has been undertaken, with material type, basic description and weight recorded in the text.

Assemblage and Discussion

A.7.2 Sample 5, context 107, produced five small angular fragments (0.001kg) of unburnt coal, which was recovered alongside 30 small irregular fragments and two larger fragments (0.012kg) of clinker (vitrified coal ash (English Heritage 2015 60 fig 54). The material was recovered with slag fragments. The coal and clinker most likely relate to the metalworking slag. The coal was possibly used for ironworking and the spherical scale was recovered from the same sample. There is no archaeological evidence that the study site was built upon during the post-medieval period, and the lack of evidence for post-medieval domestic activity (NAU 2010), suggests that the material either relates to earlier activity or soil may have been brought into the area from other locations.

Retention, dispersal or display

A.7.3 The assemblage is fragmentary and its significance is uncertain. Should further work be undertaken, additional material may be recovered. If no further work is undertaken, this statement acts as a full record and the coal fragments may be deselected prior to archive deposition.

APPENDIX B ENVIRONMENTAL REPORTS

B.1 Environmental Remains

By Rachel Fosberry

Introduction

B.1.1 Two bulk samples were taken from within the evaluated area at Norwich School, Norfolk in order to assess the quality of preservation of plant remains and their potential to provide useful data as part of further archaeological investigations. Samples were taken from a medieval garden soil encountered within both Trenches 1 and 2.

Methodology

B.1.2 The total volume of each of the samples was processed by tank flotation using modified Siraff-type equipment for the recovery of preserved plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve.

B.1.3 The dried flots were scanned using a binocular microscope at magnifications up to x 60 and an abbreviated list of the recorded remains are presented in Table B1.1. Identification of plant remains is with reference to the Digital Seed Atlas of the Netherlands (Cappers et al. 2006) and the authors' own reference collection. Nomenclature is according to Zohary and Hopf (2000) for cereals and Stace (1997) for other plants. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

Quantification

B.1.4 For the purpose of this initial assessment, items such as seeds and cereal grains have been scanned and recorded qualitatively according to the following categories:

= 1-5, ## = 6-25, ### = 26-100, #### = 100+ specimens

B.1.5 Items that cannot be easily quantified such as charcoal and molluscs have been scored for abundance

+ = rare, ++ = moderate, +++ = abundant

Results

B.1.6 Preservation of plant remains is poor to moderate; the flots of both samples are predominantly comprised of charcoal, most of which has been subject to high-temperature or repeated burning. Occasional charred barley (*Hordeum vulgare*) grains are present in both samples. Other remains include pottery, animal bone, fish bone,

oyster shell, iron nails, slag, hammerscale, fired clay and ceramic building material and burnt flint. A few pieces of worked flint are likely to be residual.

Sample No.	Context No.	Feature No.	Feature Type	Area/trench No.	Volume processed (L)	Flot Volume (ml)	Cereals	Charcoal	Pottery	Fish bone	Large mammal bones
5	107	11	Layer	1	36	50	#	+++	#	0	##
6	210	36	Layer	2	35	550	##	+++++	##	#	##

Table B1.1: Environmental samples from ENF145411

Discussion

B.1.7 The two samples are thought to represent garden soils, based on their colour and composition, that have been incorporated into the two ditches as backfill. The origin of the contents of garden soils is extremely difficult to identify as such soils would be enriched through the addition of imported topsoil and the incorporation of midden material and hearth ash as fertiliser. The remains of cultivated plants are unlikely to be preserved unless the soils were waterlogged or a considerable cess component (such as manure/night soil) had been added and had created the correct environment for mineralisation.

B.1.8 The two ditch samples both contain charred barley grains. Barley was most commonly used as animal feed and also for brewing and human consumption. The grains recovered do not show evidence of germination and are a hulled variety suggesting that they possibly derive from burnt stable waste. The inclusion of oyster shell, fish bones and animal bone are suggestive of the use of midden material as fertiliser.

B.1.9 The recovery of charred grain and charcoal indicates that there is potential for the preservation of plant remains at this site. If further excavation is planned for this area, it is recommended that environmental sampling is carried out in accordance with Historic England guidelines (2011).

B.2 Mollusca

By Carole Fletcher

Introduction

B.2.1 A total of 0.016kg of shells were collected by hand during the evaluation. The shells recovered are all edible examples of oyster *Ostrea edulis*, from estuarine and shallow coastal waters. The shell is moderately well preserved and does not appear to have been deliberately broken or crushed.

Methodology

B.2.2 The shells were weighed and recorded by species, with complete or near-complete right and left valves noted where identification can be made, using Winder (2011) as a guide. The minimum number of individuals (MNI) was not established, due to the small size of the assemblage.

Assemblage and Discussion

B.2.3 The shells were recovered from layer 201 in Trench 2, where they probably became incorporated into the layer as general rubbish deposition. A single shell appears to show evidence of shucking, the small 'V' or 'U' -shaped hole on the outer edge of the shell caused by a knife during the opening or 'shucking' of the oyster, prior to its consumption.

B.2.4 This is too small an assemblage to draw any but the broadest conclusions, in that shellfish were reaching the site from the coastal regions, indicating trade with the wider area. The shells represent general discarded food waste and, although not closely datable in themselves, the shells may be dated by their association with pottery or other material also recovered from the layer.

Retention, dispersal and display

B.2.5 The assemblage indicates that, should further work take place, shell would be found, with the likelihood of recovery of further near-complete shells. However, the evaluation suggests there will be only moderate to low levels of shell deposition. The catalogue acts as a full record and the shell may be dispersed or deselected prior to archive deposition.

Mollusca Catalogue

Trench	Context	Species	Common Name	Habitat	No. Shells or Fragments	No. left valve	No. right valve	Description/Comment	Weight (kg)
2	210	*Ostrea edulis*	Oyster	Estuarine and shallow coastal water	2	1		Incomplete small left valve with damage to edges and having split, with the outer layers around the *umbo* being missing. A possible shucking mark on the ventral margin or this may be post-depositional damage	0.005
		Ostrea edulis	Oyster	Estuarine and shallow coastal water	2		2	Incomplete small right valve with damage to edges, especially the ventral margin; the shell is powdery and flaking. A partial right valve broken from below *umbo* to ventral edge, powdery and in poor condition	0.011
Total					**4**	**1**	**2**		**0.016**

Table B.2.1: Mollusca

B.3 Animal Bone

By Zoë Uí Choileáin

Introduction

B.3.1 A small assemblage of animal bone was excavated at Norwich Cathedral School, primarily from layers overlaying the site as opposed to within features. A total weight of 404g or 113 recordable fragments were recovered, of which 68 fragments were identifiable to taxon. All other recordable fragments were categorised as either large or medium mammal. Specimens were recorded using a modified version of that devised by Albarella and Davis (1996). The condition of the bone was assessed following the method laid out by McKinley (2004) and age was estimated based on ephiphyseal fusion (Silver 1970). References to Schmid (1972) and Hillson (1992) were made where necessary.

Results

B.3.2 A total of six taxons are present in this assemblage; cattle, sheep/goat, pig, bird, amphibian and fish. All bone is extremely fragmentary and surface condition on average represents a grade 1-2 (Mckinley, 2004, 16 figure 6). Due to the fragmentary nature of the bone no pathology can be observed.

Taxon	NISP	NISP%	MNI	MNI%
Sheep/goat	3	4.41	2	25
Bird	3	4.41	1	12.5

Taxon	NISP	NISP%	MNI	MNI%
Amphibian	4	5.89	1	12.5
Cattle	2	2.94	1	12.5
Fish	45	66.18	1	12.5
Pig	11	16.18	2	25
Totals	68	100	8	100

Table B3.1: Number of identifiable specimens (NSIP) and Minimum number of individuals

B.3.3 A single example of rodent gnawing can be seen on the distal shaft of a sheep humerus (context 22). There is small evidence of butchery; Chop marks can be observed on the anterior surface below the crest on both a sheep and pig tibia (Contexts 107 and 208). Small cut marks are present encircling the upper shaft of a pig humerus from context 106. In total only three indeterminate fragments of burnt bone are recordable (contexts 107 and 208). There are both fused and unfused long bones within the material implying that both adult and sub-adult individuals are represented.

Conclusions and potential

B.3.4 This is a very small and fairly typical domestic assemblage. There is little research potential to be derived from such a small collection. The few fragments of bird and fish bone could be further identified to taxon. It is recommended however that no further work is required unless further excavations are to take place.

B.3.5 This is a very small and fairly typical domestic assemblage. There is little research potential to be derived from such a small collection. The few fragments of bird and fish bone could be further identified to taxon. It is recommended however that no further work is required unless further excavations are to take place.

Taxon	NISP	Weight (g)
sheep goat	3	51
Bird	3	2
amphibian	4	2
cattle	2	65
fish	45	4
Pig	11	173
Large mammal	2	42
medium mammal	18	63
small mammal	25	2
Totals	**113**	**404**

B.4 Human Skeletal Remains

By Zoë Uí Choileáin

B.4.1 Five fragments of refitting adult parietal bone were recorded from context 106 which is a medieval buried soil. The bone was depleted of collagen but surface condition was good (Grade 1 Brickley and McKinley 2004 p16 fig 16). The site is situated between

Norwich Cathedral and an old church, now housing the Norwich Historic Churches Trust. There is a known burial ground nearby and several small churches in the vicinity retained burial rites after being engulfed by the Cathedral. Loose human remains within proximity to these areas are therefore not entirely unexpected. All human remains should be retained as per BABAO and IFA guidelines (Brickley and McKinley, 2004) however no further analysis is necessary.

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APPENDIX D OASIS REPORT FORM

Project Details

OASIS Number	oxfordar3-346840
Project Name	Norwich School, Norwich

Start of Fieldwork	22-09-2018	End of Fieldwork	30-09-2018
Previous Work	Not known	Future Work	Not known

Project Reference Codes

Site Code	XNFNCS18	Planning App. No.	NSR001/0765/03
HER Number	ENF145410/ENF145411	Related Numbers	

Prompt	NPPF
Development Type	Large/medium scale extensions to existing structures
Place in Planning Process	Not known/Not recorded

Techniques used (tick all that apply)

☐	Aerial Photography – interpretation	☐	Grab-sampling	☐	Remote Operated Vehicle Survey
☐	Aerial Photography - new	☐	Gravity-core	☐	Sample Trenches
☐	Annotated Sketch	☐	Laser Scanning	☒	Survey/Recording of Fabric/Structure
☒	Augering	☒	Measured Survey	☒	Targeted Trenches
☐	Dendrochonological Survey	☒	Metal Detectors	☐	Test Pits
☒	Documentary Search	☐	Phosphate Survey	☐	Topographic Survey
☐	Environmental Sampling	☒	Photogrammetric Survey	☐	Vibro-core
☐	Fieldwalking	☐	Photographic Survey	☐	Visual Inspection (Initial Site Visit)
☒	Geophysical Survey	☒	Rectified Photography		

Monument	Period		Object	Period
Pit	Medieval (1066 to 1540)		Pottery	Medieval (1066 to 1540)
Pit	Post Medieval (1540 to 1901)		Worked Stone	Medieval (1066 to 1540)
Ditch	Post Medieval (1540 to 1901)		Tile	Post Medieval (1540 to 1901)

Insert more lines as appropriate.

Project Location

County	Norfolk
District	Norwich
Parish	Norwich
HER office	NCCES
Size of Study Area	60sqm
National Grid Ref	TG 2344 0900

Address (including Postcode)

71a The Close,
Norwich
NR1 4DD

Project Originators

Organisation	Oxford Archaeology East
Project Brief Originator	Norfolk County Council Environment Service
Project Design Originator	Lanpro Services
Project Manager	Aileen Connor
Project Supervisor	James Fairbairn

Project Archives

	Location	ID
Physical Archive (Finds)	Norwich Castle Museum	NWHCM 2019.166
Digital Archive	Norwich Castle Museum	NWHCM 2019.166
Paper Archive	Norwich Castle Museum	NWHCM 2019.166

Physical Contents	Present?	Digital files associated with Finds	Paperwork associated with Finds
Animal Bones	☒	☒	☒
Ceramics	☒	☐	☐
Environmental	☒	☒	☒
Glass	☐	☐	☐
Human Remains	☒	☐	☒
Industrial	☐	☐	☐
Leather	☐	☐	☐
Metal	☐	☐	☐
Stratigraphic		☐	☐
Survey		☐	☐
Textiles	☐	☐	☐
Wood	☐	☐	☐
Worked Bone	☐	☐	☐
Worked Stone/Lithic	☒	☒	☒
None	☐	☐	☐
Other	☐	☐	☐

Digital Media	
Database	☒
GIS	☐
Geophysics	☐
Images (Digital photos)	☒
Illustrations (Figures/Plates)	☒
Moving Image	☐
Spreadsheets	☐
Survey	☒
Text	☐
Virtual Reality	☐

Paper Media	
Aerial Photos	☐
Context Sheets	☒
Correspondence	☐
Diary	☐
Drawing	☐
Manuscript	☐
Map	☐
Matrices	☐
Microfiche	☐
Miscellaneous	☐
Research/Notes	☐
Photos (negatives/prints/slides)	☐
Plans	☒
Report	☒
Sections	☒
Survey	☒

Further Comments

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Figure 1: Site location showing archaeological trenches (black) in development area (red)

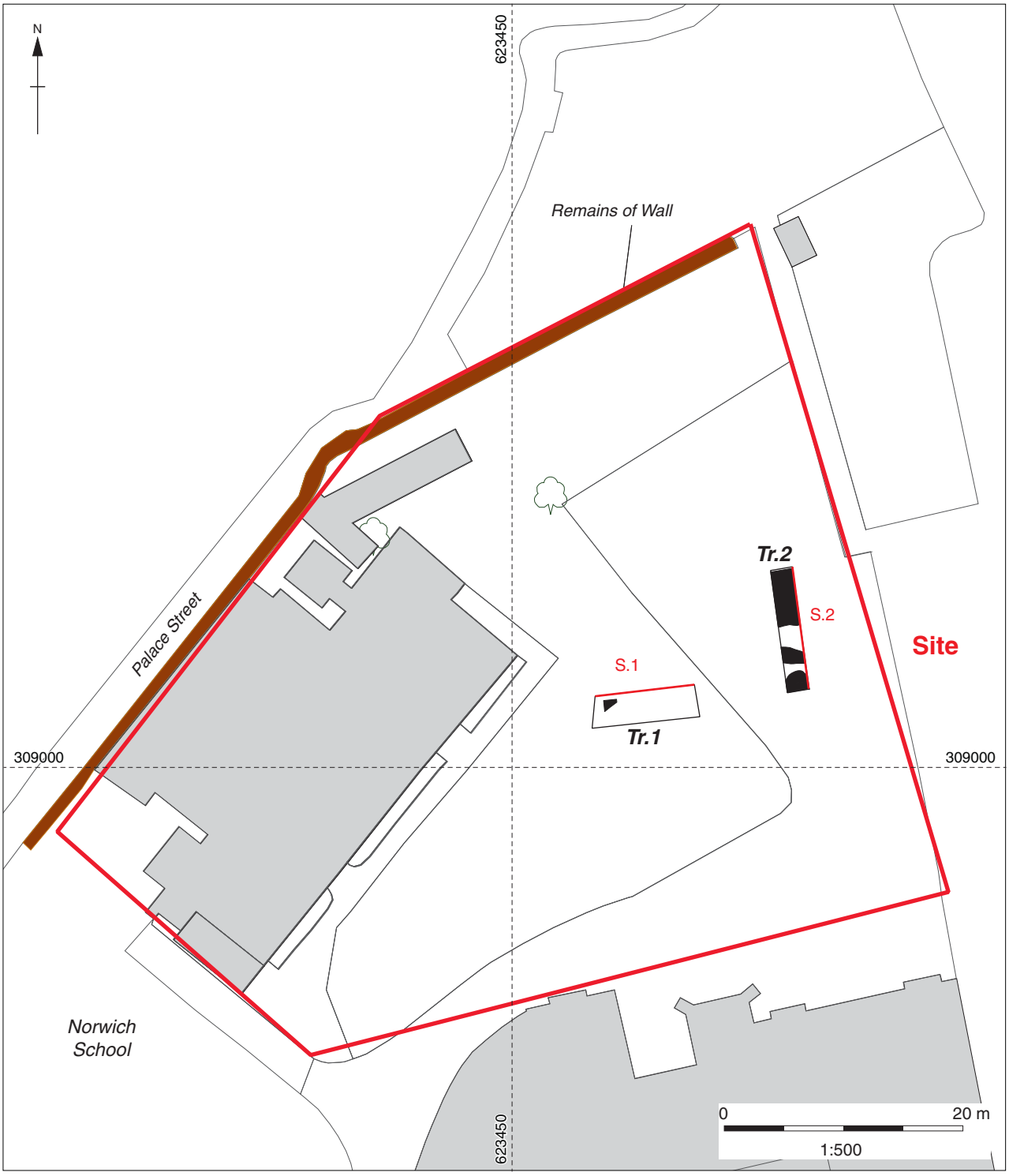

Figure 2: Location of wall and trenches 1 and 2 (data supplied by the client)

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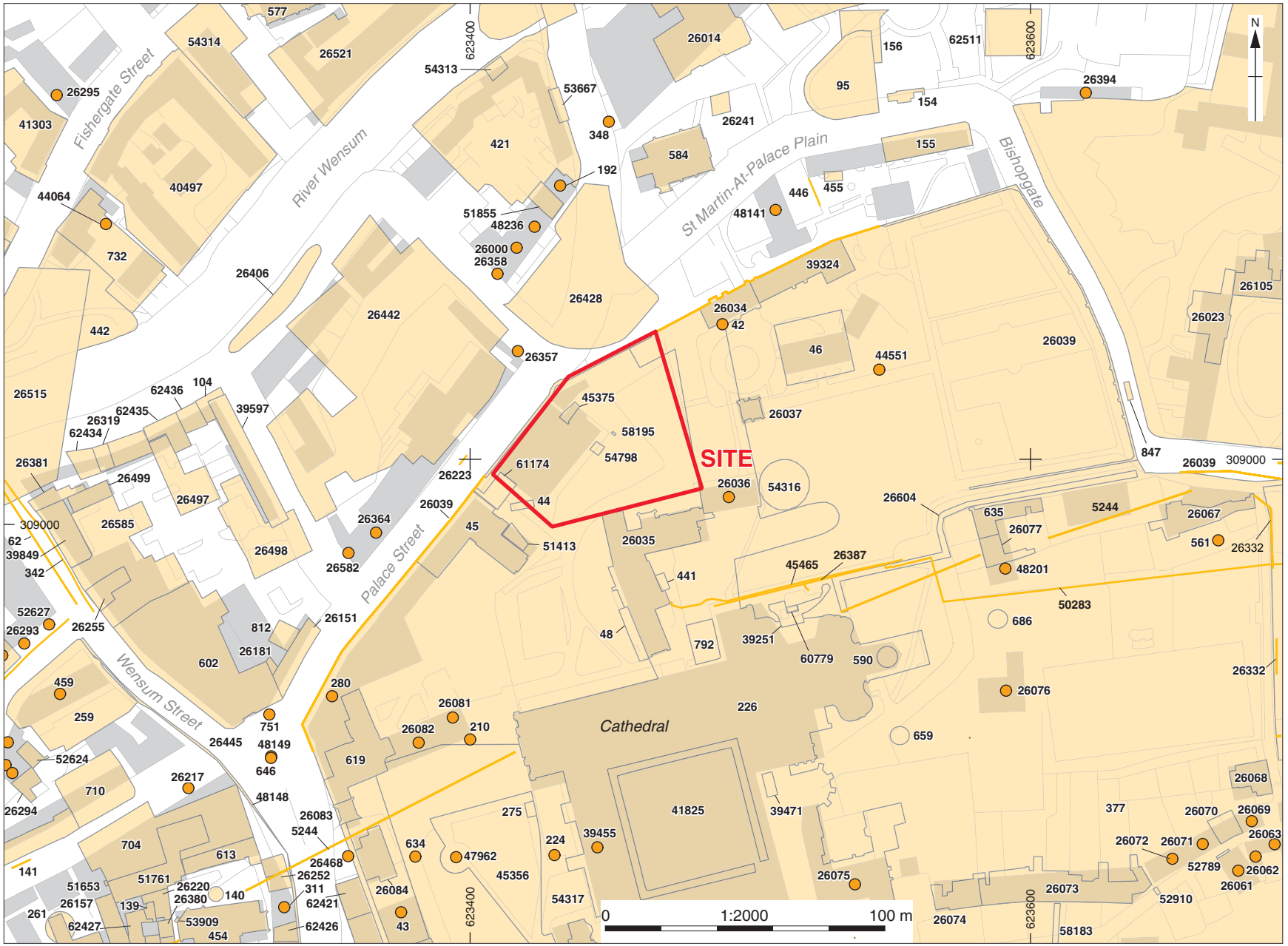

Figure 3: HER data

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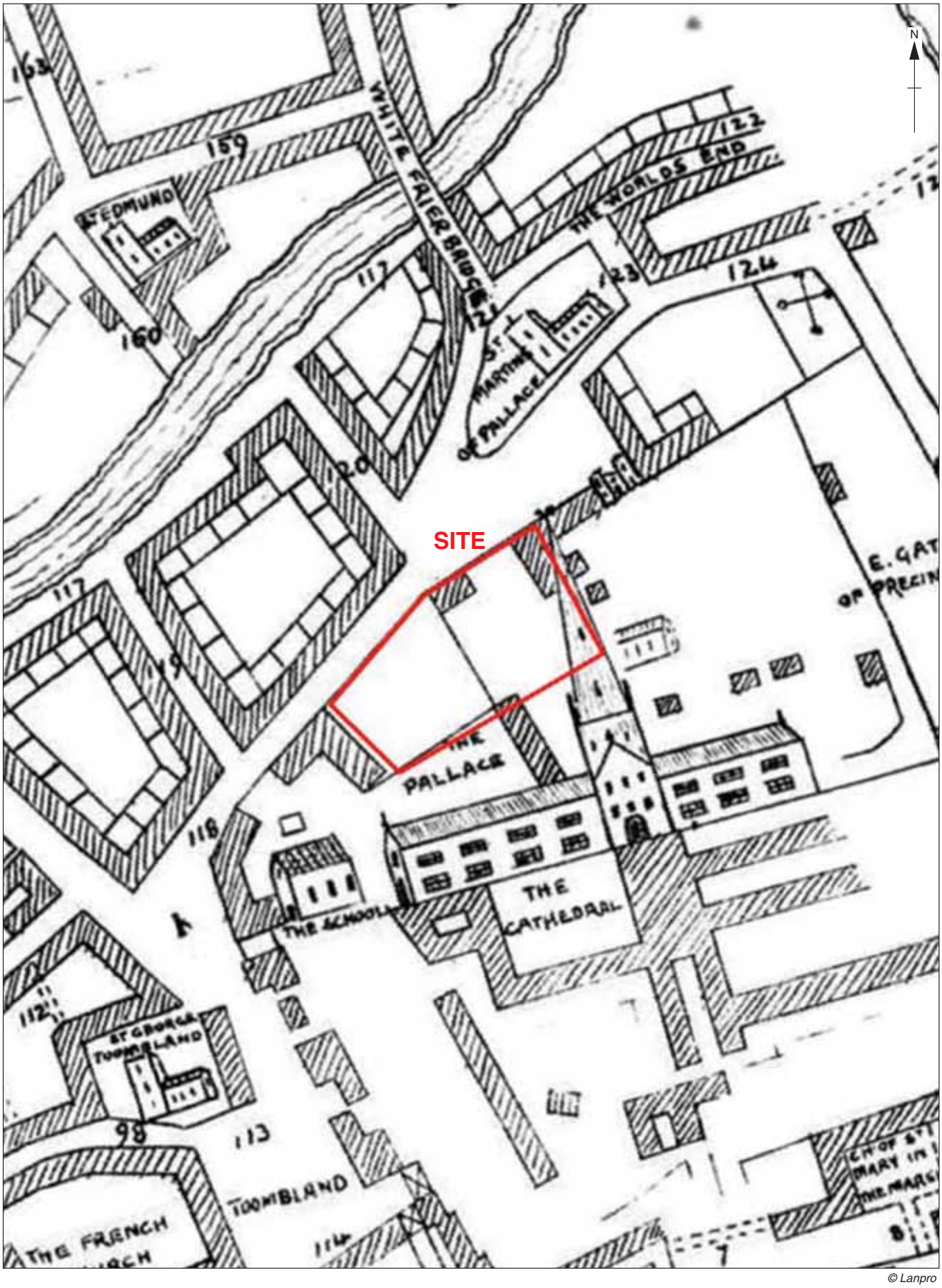

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Figure 4: Extract from Clere's map of 1696

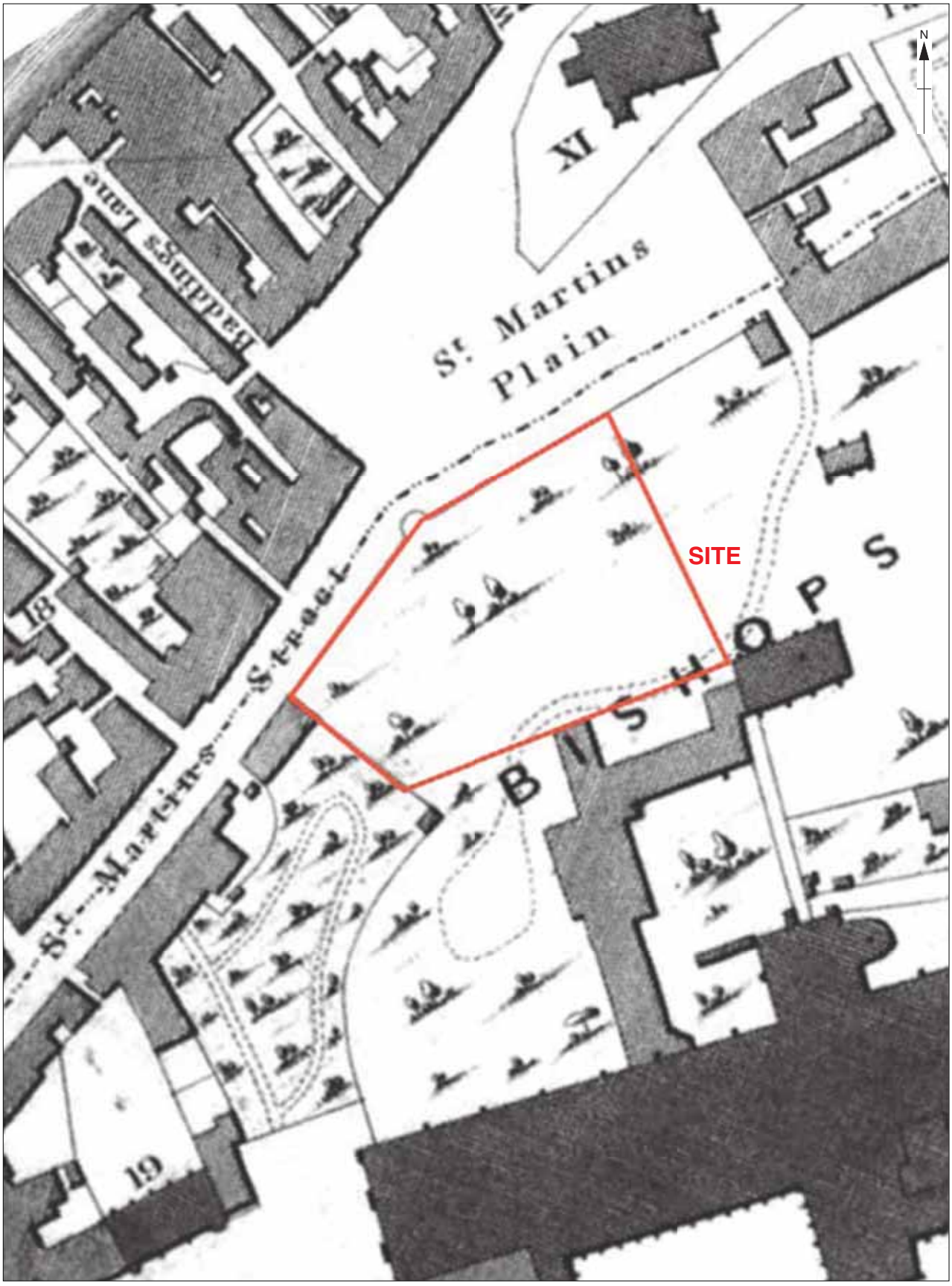

Figure 5: Extract from the Millard and Manning map of 1830

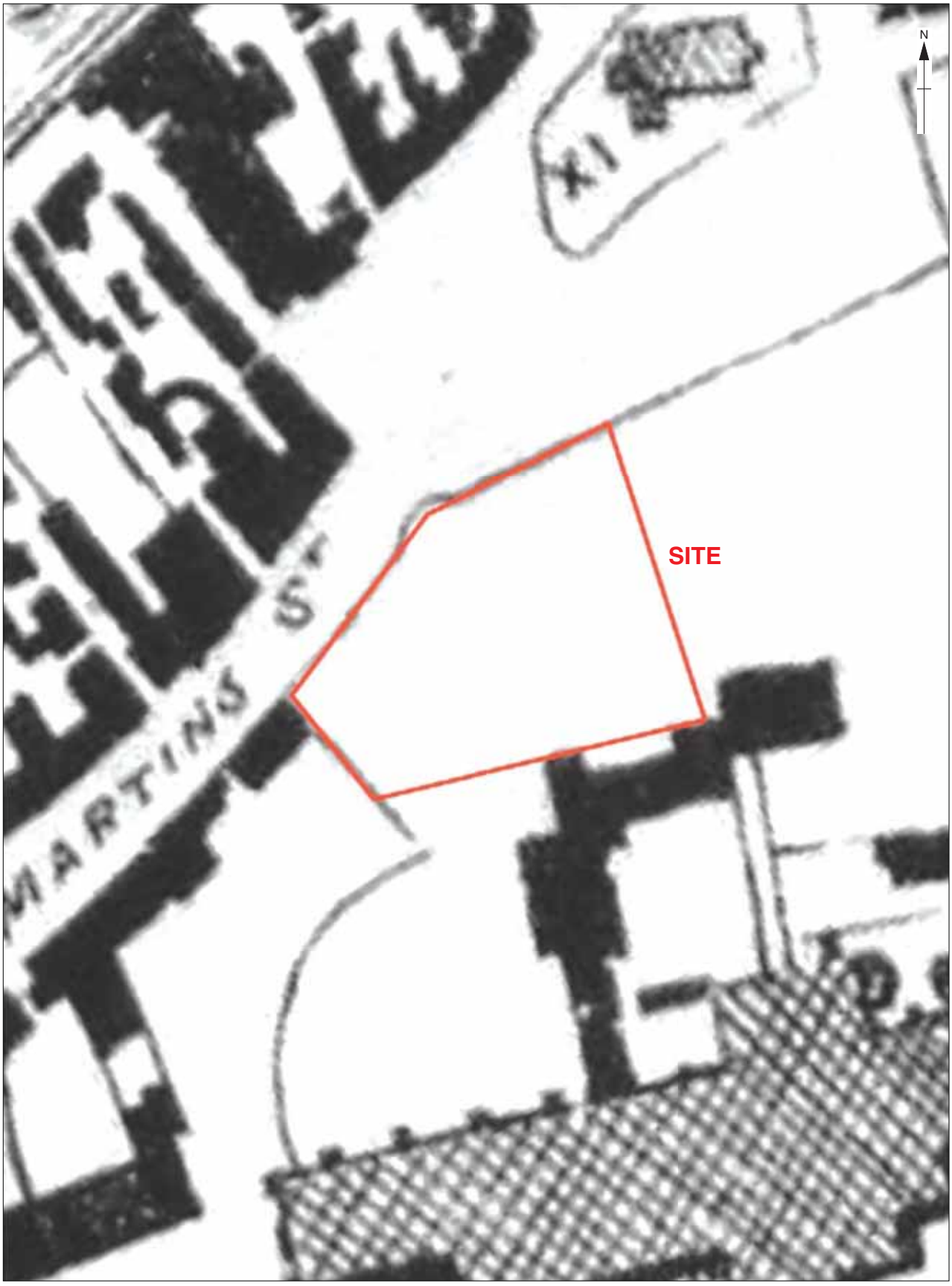

Figure 6: Extract from the Jarrold map of 1848

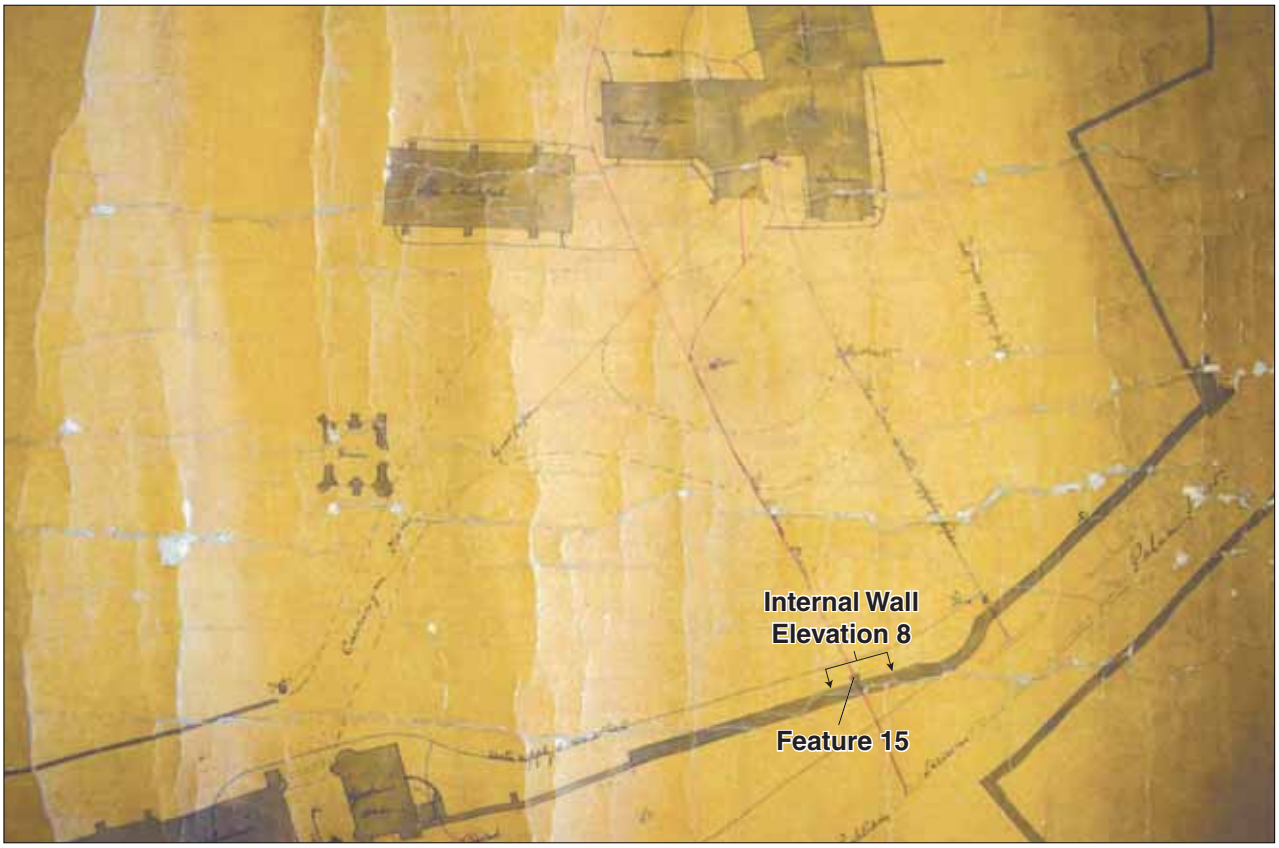

Figure 7: Plan of services to and from the Bishops Palace and utilities dated 1859

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Figure 8: Extract from the 1st edition OS map of 1886

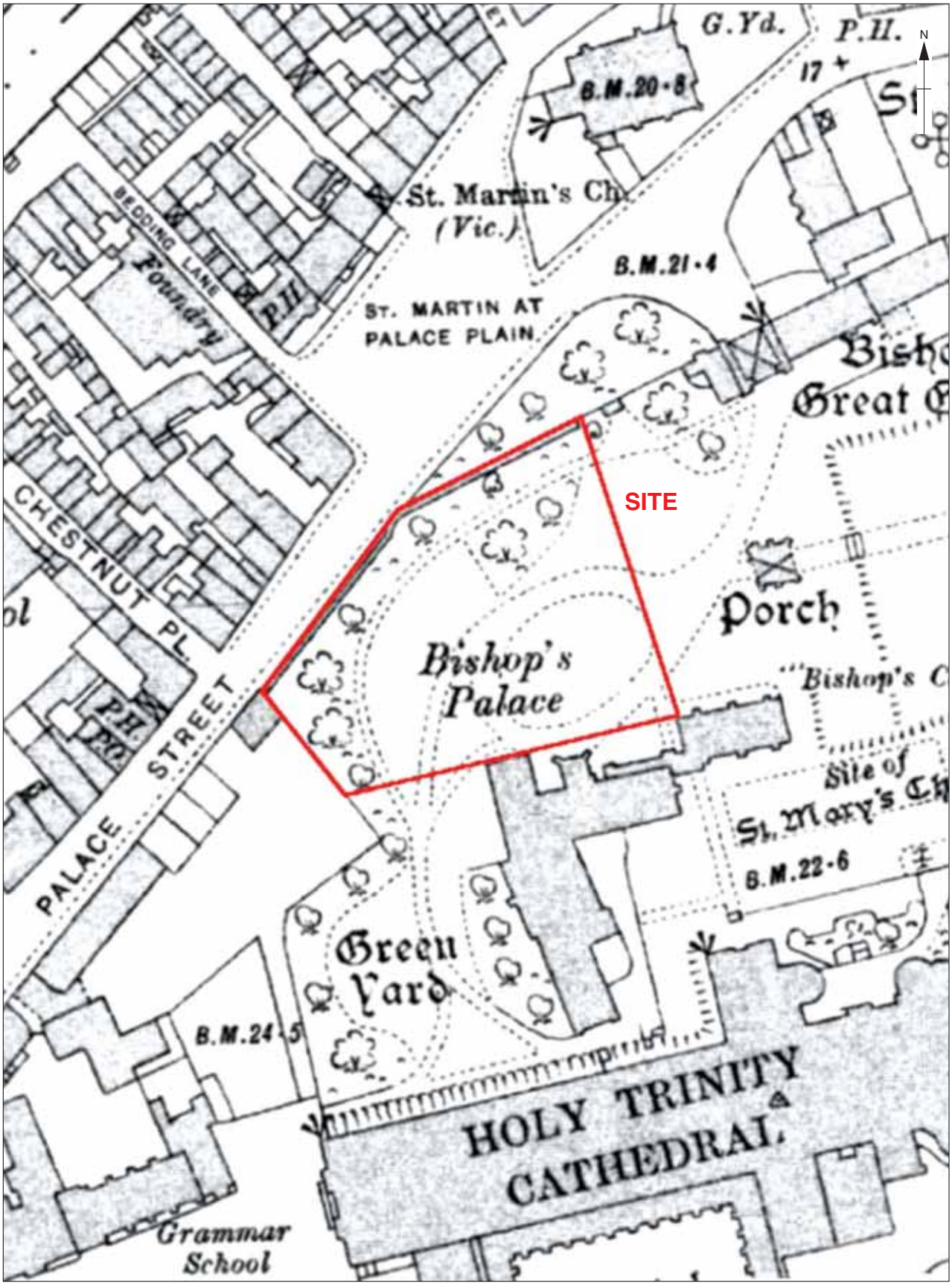

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Figure 9: Extract from the 2nd edition OS map of 1914

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Figure 10: Extract from the 3rd edition OS map of 1938

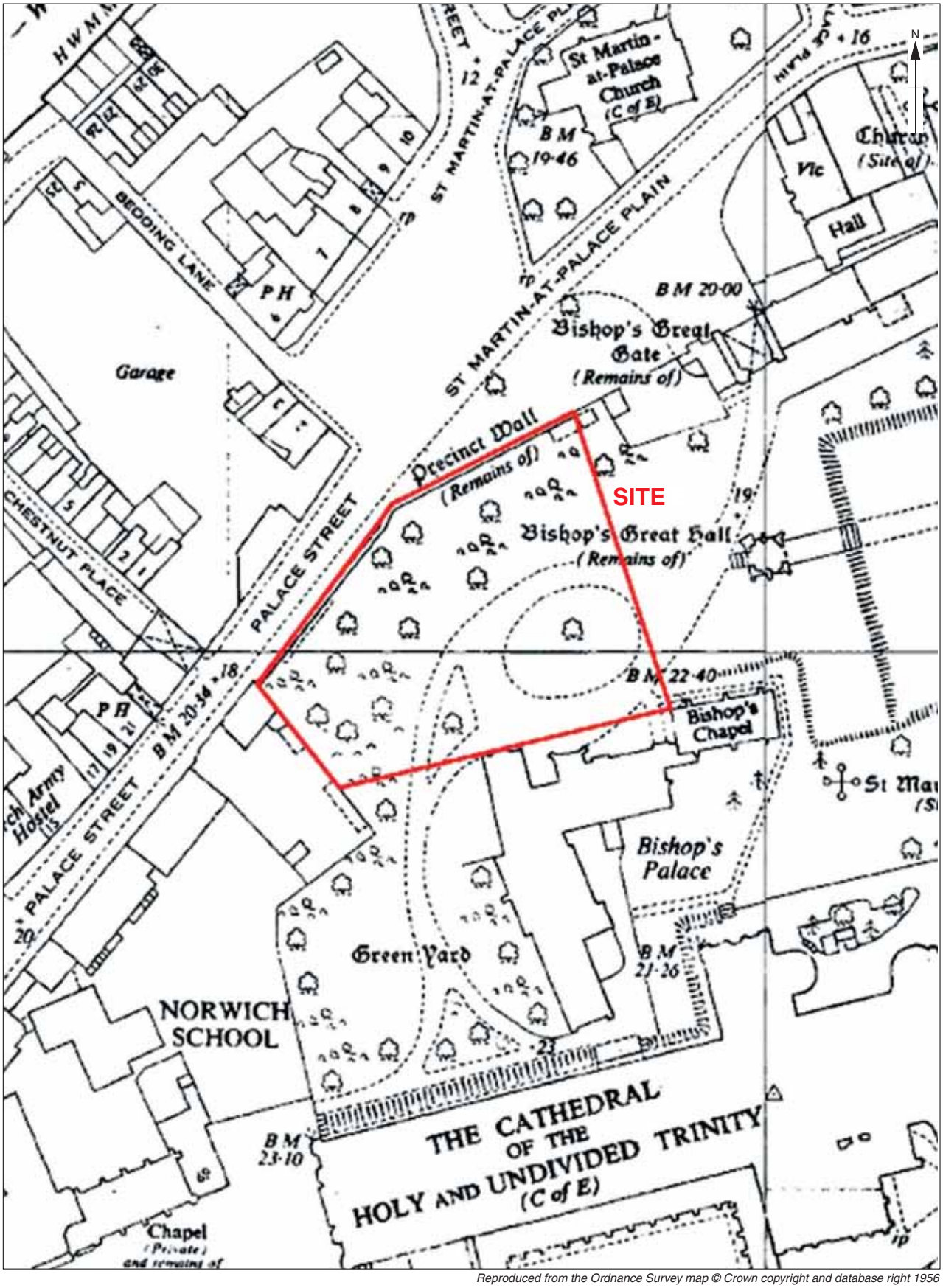

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Figure 11: Extract from the OS map of 1956

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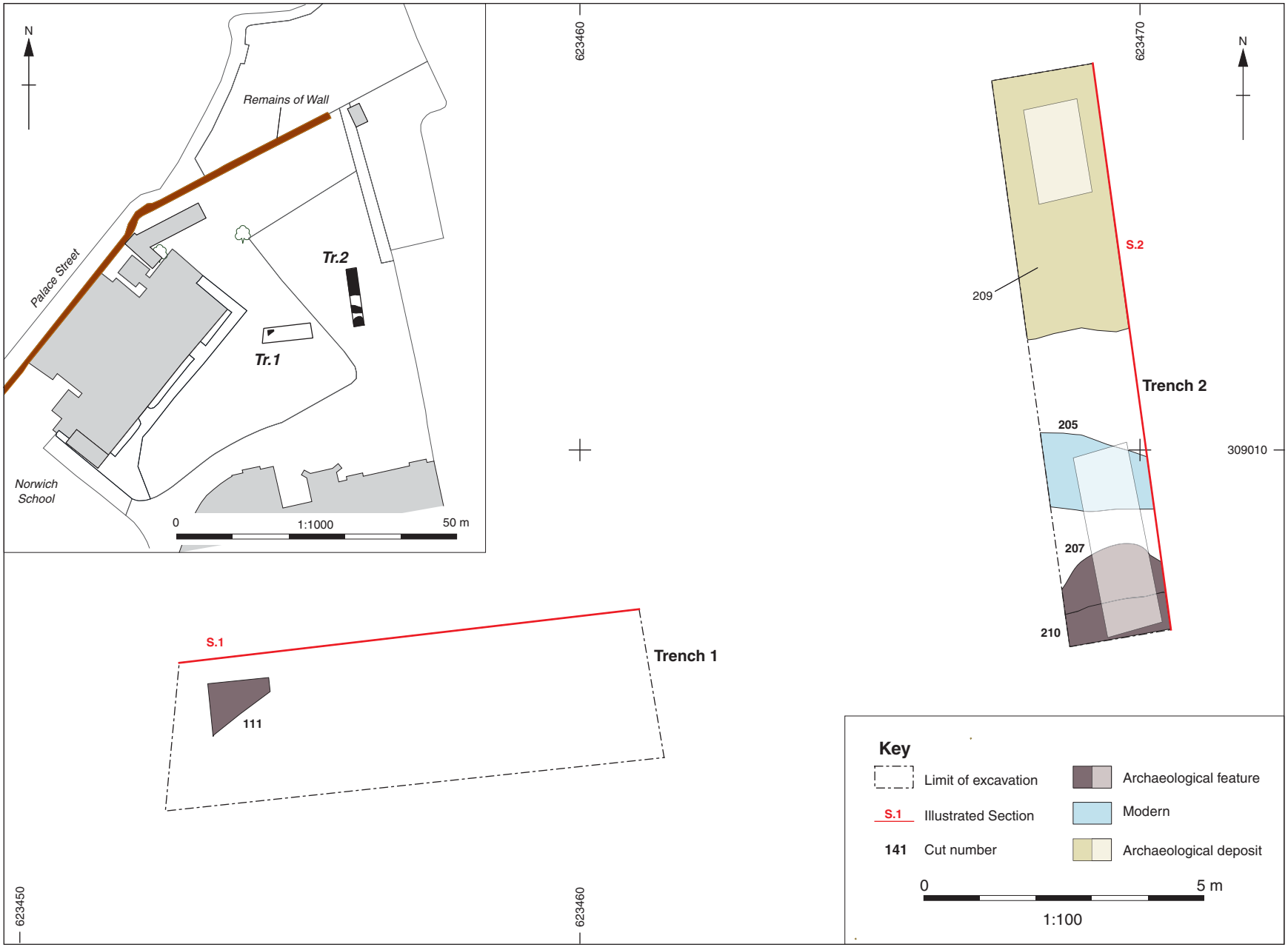

Figure 12: Trench plan

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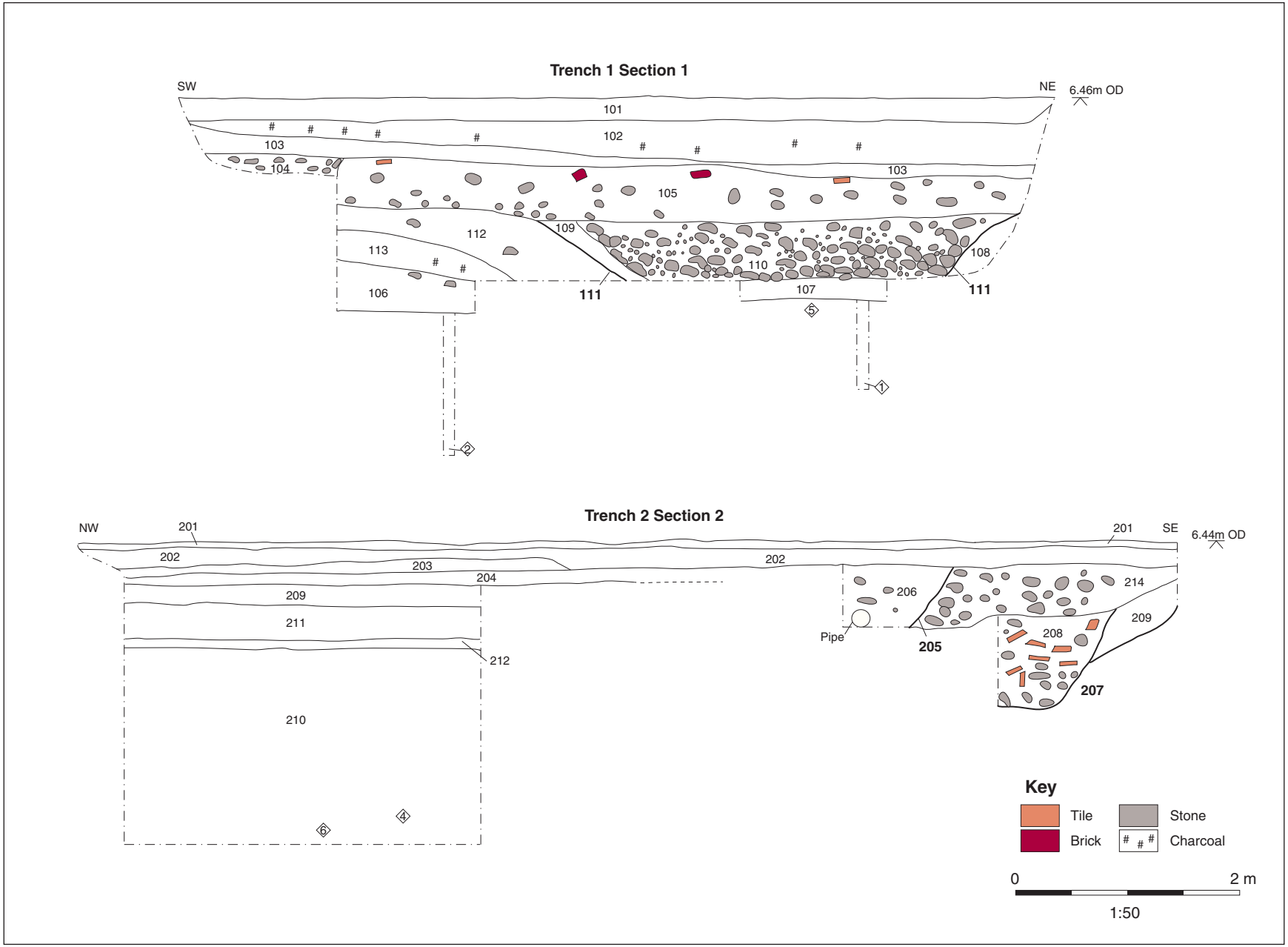


Figure 13: Sections

Figure 14: Wall Elevation 1

Figure 15: Wall Elevation 2

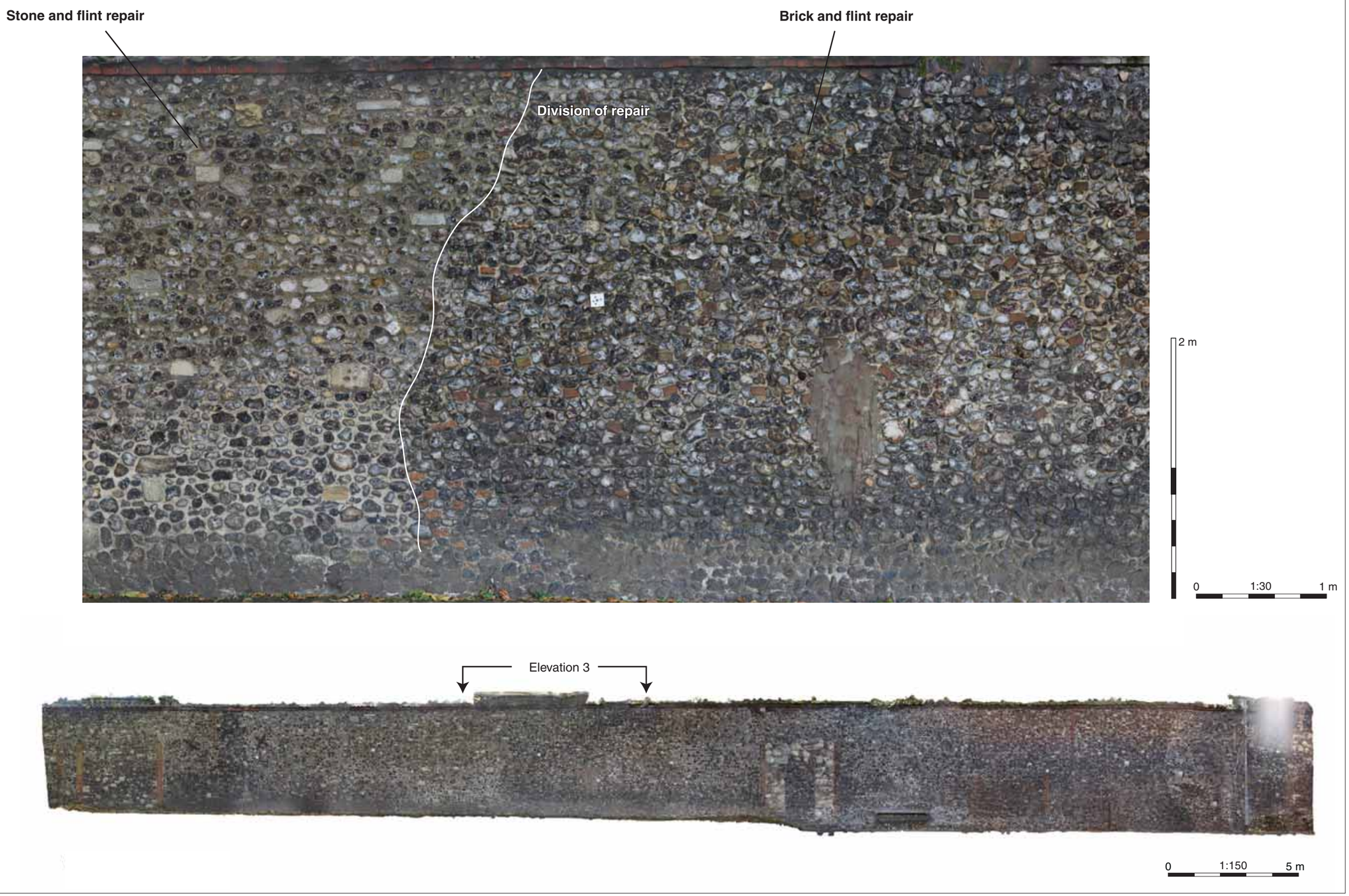
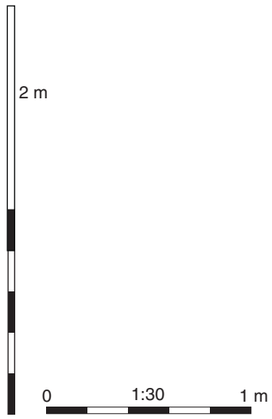


Figure 16: Norwich Cathedral Wall Elevation 3



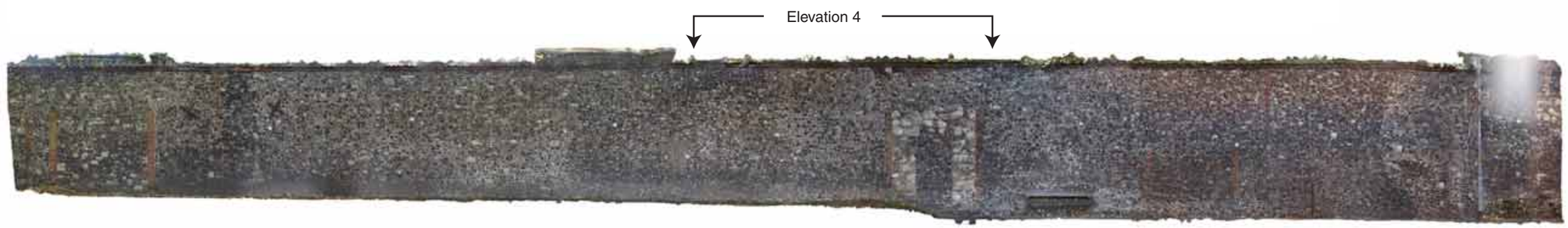


Figure 17: Wall Elevation 4

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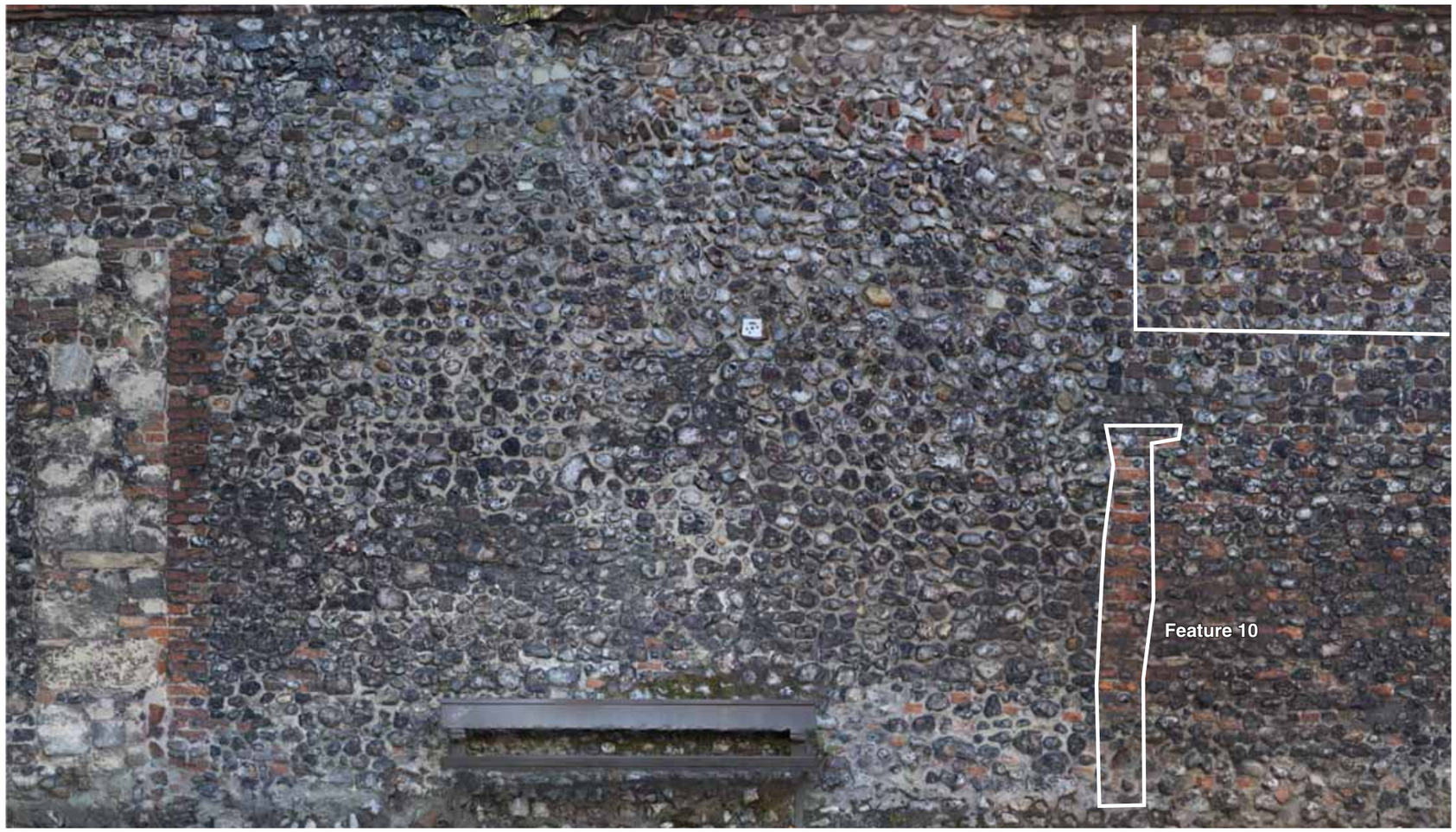

Good care taken
to match existing wall

2 m

0 1:30 1 m

0 1:150 5 m

Figure 18: Wall Elevation 5

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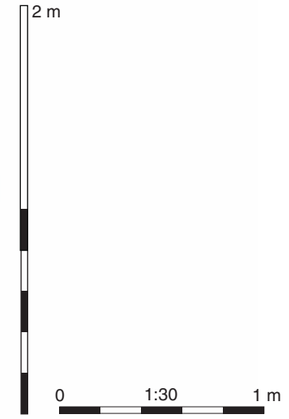
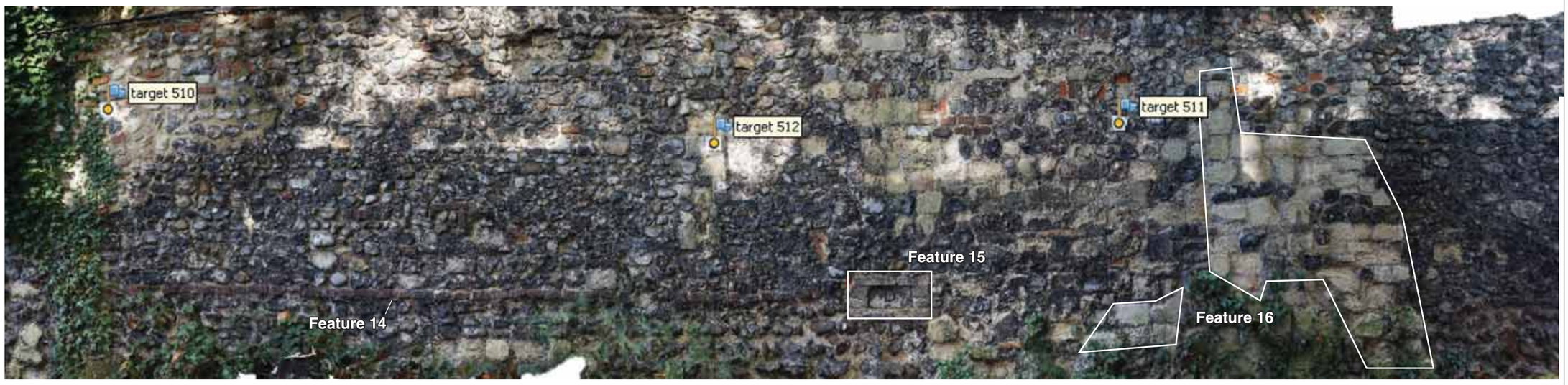


Figure 19: Wall Elevation 6

Figure 20: Wall Elevation 7



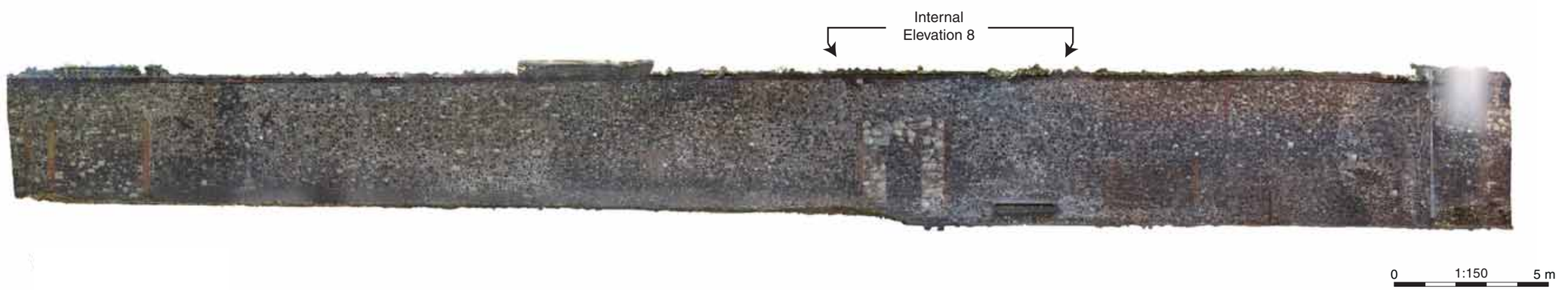


Figure 21: Interior Wall Elevation 8

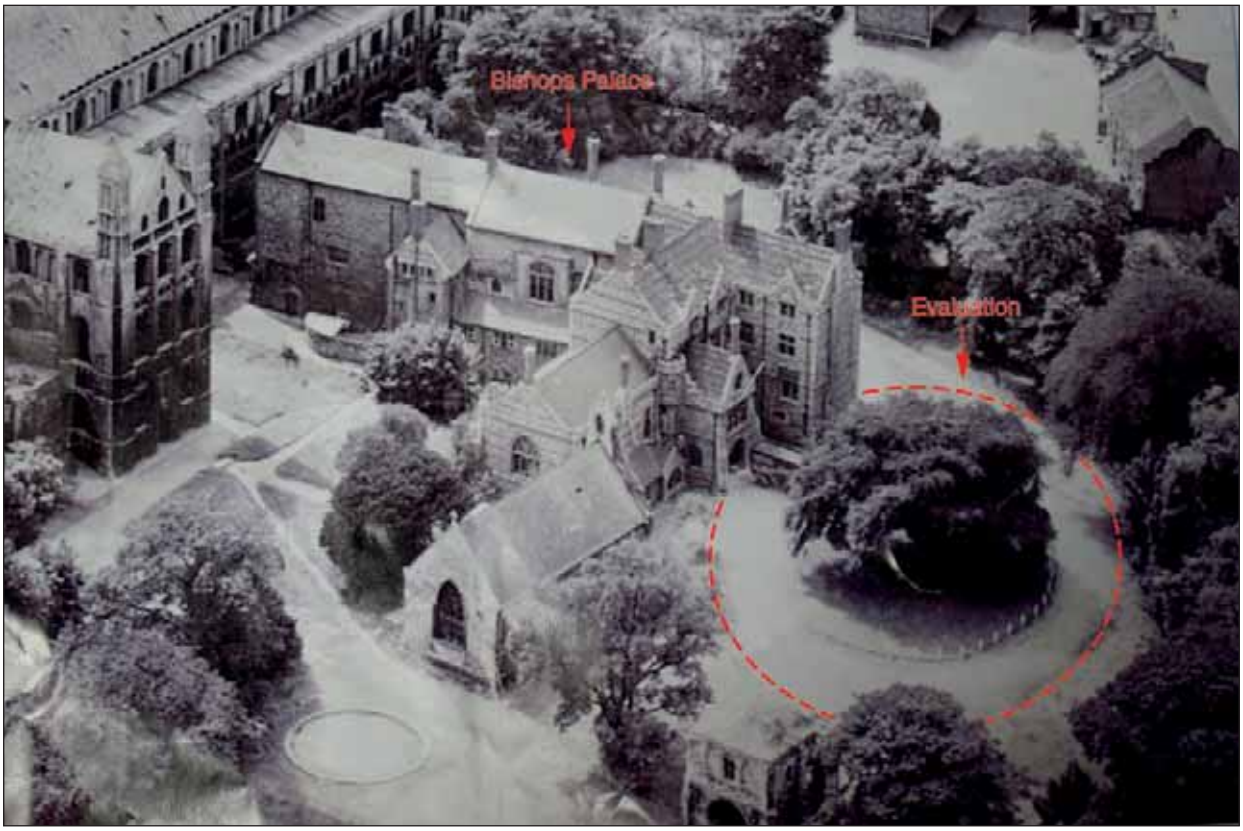


Plate 1: Aerial photo showing now fallen tree in Trench 1

Plate 2: Trench 1 viewed from the south-east.

Plate 3: Trench 1 viewed from north-west.

Plate 4: Pit **111,** viewed from the west.

Plate 5: Layer 104 viewed from the south-east.

Plate 6: Trench 2 viewed from the south.

Plate 7: Trench 2 viewed from the north.

Plate 8: Layers 203 and 204 viewed from the west.

Plate 9: Modern service trench

Plate 10: Layers 202-210

Plate 11: Pit **207** viewed from the west.

Plate 12: Machine dug sondage viewed from the north.

Plate 13: Plate of wall and building

Plate 14: Photograph of Brick Drainage 1859

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