OAKFORD ARCHAEOLOGY

Archaeological borehole survey on the Cathedral Green and St Andrew's and St Catherine's Chapel, Exeter Cathedral, Exeter, Devon

on behalf of
The Dean and Chapter of Exeter Cathedral

Report No. 17-09

Project No. 1409

May 2017

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Summary

In April 2017 Oakford Archaeology monitored the installation of four borehole piezometers on Exeter Cathedral Green and a fifth in St Catherine's Chapel within the Cathedral (SX 9211 9258). Two (boreholes 1–2) were located in the former cemetery on the north side of the nave, and two (boreholes 3–4) further to the east in the area formerly occupied by the Treasurer's House. The exercise allowed the recording of the full depth of archaeological deposits in parts of the Cathedral Close where only shallow excavations have been undertaken in the past, providing valuable information towards the modelling of deposits in the Close. Deposits are 1.7–1.8m deep in the area of the Treasurer's House and St Catherine's Chapel, 1.55m deep towards the northern side of the cemetery and 2.1m deep in the part of the cemetery closest to the cathedral.

In Boreholes 1 and 2, probable early Roman deposits were recorded below medieval/early modern charnel soils, covered in turn by 19th-century landscaping and modern topsoil. Early Roman layers were also encountered in Boreholes 3 and 4; the sequence was especially well-preserved in Borehole 4. Remains of a later wall foundation were also exposed in Borehole 3, below demolition and later landscaping deposits. They probably represent a wall of the medieval Treasurer's House, which stood on the site until its demolition in the early 19th century. No firm interpretation is offered for the undated and apparently uniform deposit recorded in Borehole 5 below the late 13th-century floor of St Catherine's chapel.

Finds included Roman pottery, fragments of Roman tile (three of them derived from a building heated by a hypocaust, probably indicating the presence of a late Roman town house with at least one heated room) and a medieval floor-tile.

1. INTRODUCTION

This report has been prepared for The Dean and Chapter of Exeter Cathedral and sets out the results of archaeological monitoring and recording by Oakford Archaeology (OA) during a geotechnical borehole survey undertaken by Tor Drilling Ltd in April 2017 on the Cathedral Green and St Catherine's Chapel, Exeter Cathedral, Exeter, Devon (SX 9211 9258).

1.1 **Background**

Borehole piezometers are being installed on the north side of Exeter Cathedral to monitor the long-standing ingress of moisture which is the likely cause of decay to monuments, including medieval ones, on the inner face of the north choir aisle and attached chapels. Attempts have been made to tackle this problem since at least the early 19th century, when the external ground level was lowered considerably in the adjacent area of Cathedral Green. Following a survey which identified faulty drainage outside the west front of the cathedral and along the north side of the cathedral, the drains were renewed in both areas in 2014–16. The installation of monitoring equipment below ground in 2017, both within and outside the cathedral, is designed to see whether deeper-seated problems remain.

Since the project would clearly encounter archaeological deposits and require Scheduled Monument Consent, the work was undertaken in accordance with a project design prepared by John Allan, the Consultant Archaeologist to the Dean and Chapter (2017), submitted to and approved by Historic England prior to commencement on site (Appendix 1).

1.2 **The site**

The site is owned by the Dean and Chapter of Exeter Cathedral. From a line 1m north of the cathedral, it falls within Scheduled Monument Devon 909 (Roman City, partly below Cathedral Green), and within the statutory Exeter Area of Archaeological Importance (Fig. 5). Permission to excavate was granted by the Exeter Cathedral Fabric Advisory Committee (FAC) and the Cathedrals Fabric Commission for England (CFCE), as well as Scheduled Monument Consent granted by the Secretary of State, as advised by Historic England.

1.3 **Geological background**

The site lies at a height of between 38m and 40m AOD, on a spur overlooking the River Exe from the north-east. The underlying geology comprises both solid and drift deposits including Permian marls of the Whipton Formation, and basalt of the Exeter Traps series, which occurs within Permian sandstones of the Knowle Formation. Both marl and basalt are locally weathered and patchily overlain by soliflucted and terrace deposits. The terrace deposits increase in depth and extent towards the south and east.

2. AIMS

The principal aims of the watching brief were to monitor the drilling of boreholes on the site; to examine the borehole cores to determine the state of preservation, type and quantity of any significant archaeological and palaeo-environmental remains uncovered; to ensure that if any environmental evidence was preserved, that a sufficient sample be retained to allow for further analysis and to retrieve any potential dating evidence to establish, describe and if possible interpret the deposit sequence. The objectives of the archaeological work were to identify and record archaeological deposits and to report on the results of the work.

3. METHODOLOGY

Five boreholes were excavated using a mini-tracked percussive auger rig. Each borehole and descended to a depth of 5m, well below the archaeological deposits. Within St Catherine's chapel, a portion of the floor was lifted by the cathedral works department prior to drilling. The sampling resulted in the retrieval a series of individual 1m long and 100mm diameter core samples contained within a clear plastic liner. These were split on site, and logged by the engineer and the archaeologist with the aim of identifying deposits that could be assessed for environmental remains and their potential for geoarchaeological analysis. However, no suitable deposits for further analysis were identified.

The standard Oakford Archaeology recording system was employed. Stratigraphic information was recorded on *pro-forma* context record sheets, and individual recording forms, plans and sections for each trench were drawn at a scale of 1:10, 1:20 or 1:50 as appropriate and a detailed digital photographic record was made. Registers were maintained for photographs, drawings and context sheets on *pro forma* sheets.

4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

The historical and archaeological background are summarised in Allan 2012, where an extensive bibliography of earlier finds is presented; they are therefore described only very summarily here.

The projected positions of timber buildings of the legionary fortress (AD 50–75) are presumed to underlie the sites of all five boreholes (Fig. 2). In the area of Boreholes 3–5 they were succeeded by a street flanked by stone buildings belonging to the later Roman town (AD 200–400) (Fig. 3). Parts of one or more substantial late Roman town houses, with an apsidal hypocaust and tessellated floor, were encountered nearby in 1936 (Morris 1936) and in 2010–11 (Young 2011). Nothing is known of later Roman developments in the area of Boreholes 1 and 2.

In the Middle Ages, the part of the Green north of the nave in which Boreholes 1 and 2 were drilled formed part of the cathedral cemetery, which continued in use throughout the 16th and early 17th century until it was closed in 1637. Boreholes 3 and 4 lay within the enclosure of the Treasurer's House, which was cleared in stages between *c.* 1803 and 1820 to create an extended Cathedral Green. The part to the north of St Catherine's chapel was occupied by the court of the Treasurer's House (Fig. 4), which was cleared in stages between *c.* 1803 and 1820, when it became part of an extended Cathedral Green.

5. RESULTS

5.1 **Introduction**

Five or six cores were removed in one-metre sections from each borehole. The condition of the cores was variable, although some stratigraphic horizons were observed in all the cores retrieved. A full description of the soil sequences is included in Appendix 3.

5.2 **Boreholes 1 and 2: the graveyard**

Boreholes 1 and 2 were sited within the former graveyard. In **Borehole 1** the top of natural subsoil was observed at a depth of 2.1m (38.07m AOD). This was overlain by a 0.17m-thick deposit of light reddish-brown sandy clay (106) containing rare charcoal flecks, probably of

early Roman date and possibly representing the post-military dump seen elsewhere in the fortress (*c.* AD 75), or the subsequent accumulation of layers associated with the timber buildings of the early Roman town (AD 80–200). This layer was in turn overlain by a succession of mid to dark reddish-brown sandy loam charnel soils (101–105) containing rare human bone fragments, white lime mortar flecks, volcanic trap fragments, cbm flecks, 1.83m thick in total. Human bone was found in the lowest deposit (105), which was between 1.6m and 1.93m deep. Four fragments of Roman tile, a single sherd of a Dressel 20 amphora of the late 1st–3rd century and one late 13th/14th-century floor-tile fragment were recovered from the charnel soil. In view of the fragments of human bone and medieval tile, this material is interpreted as charnel soil from the medieval and early modern cemetery. It was overlain in turn by a 0.1m thick layer of dark brown clay loam (100) representing modern topsoil.

In **Borehole 2** the natural subsoil was encountered 1.55m below the surface at 37.35m AOD. It was overlain by a 0.35m thick layer of light to mid-reddish-brown sandy clay (203) which contained no inclusions and is interpreted as an early Roman deposit, either of the military period or of the early Roman town. This in turn was overlain by two mid to dark brown sandy loam deposits (201–202), 1.1m thick, which contained sparse fragments of human bone, cbm, animal bone and white lime mortar flecks. Eleven fragments of Roman tile, including 2 *pila* (hypocaust) fragments, and a single sherd of wheel-thrown greyware dating to the late 1st–early 3rd century were present in these two contexts. They are interpreted as medieval charnel soils and were overlain by a 0.1m thick layer of dark brown clay loam (200) representing modern topsoil.

5.3 **The site of the Treasurer's House**

Boreholes 3 and 4 were located within the site of the Treasurer's House and in the courtyard of that house immediately to the north of St Andrew and St Catherine's chapel.

In **Borehole 3** the top of natural subsoil was observed at a depth of 1.7m (38.02m AOD). It was overlain by a 0.1m thick dark brown sandy clay (305) with rare charcoal flecks, white lime mortar and gravel, interpreted as an early Roman deposit, either from the fortress or from timber buildings in the early Roman town. It was overlain by volcanic trap rubble (304), 0.55m thick, and interpreted as part of a building foundation. This was in turn overlain by a 0.35m thick deposit (303) consisting of volcanic trap and pale pink sandstone fragments, bonded with yellowish-grey lime mortar and interpreted as the remains of a wall. This was covered by a 0.4m thick layer of dark greyish-brown sandy loam (302) containing sparse gravel, white lime mortar flecks, oyster shell fragments and slate fragments. Layer (302) is interpreted as a post-demolition abandonment deposit. Overlying this was deposit was a mid-reddish-brown silty loam deposit (301) containing a few tile and slate fragments and representing 19th-century landscaping. A single sherd of 18th-century South Somerset ridge tile was recovered from this layer. This deposit was in turn sealed by a 0.1m thick layer of dark brown clay loam (300) representing modern topsoil.

In **Borehole 4,** immediately north of the chapel of St Andrew and St Catherine, natural subsoil (407) was encountered at a depth of 1.8m (37.11m AOD). The earliest archaeological deposit in the sequence was a very light reddish-brown silty clay layer *c*. 0.1m thick (406); this is interpreted as a possible floor of early Roman date – perhaps of the military period (AD 50–75). It was overlain by a 0.3m thick layer of mid-reddish-brown clay loam (404) with rare oyster shell fragments, charcoal flecks, gravel, volcanic trap and pale pink sandstone fragments which probably represents a secondary Roman occupation horizon of the late 1st or 2nd century. This was overlain in turn by successive layers of clay loam (403-

405) containing a few oyster shell fragments, charcoal flecks, gravel, volcanic trap and pale pink sandstone fragments, and interpreted as further Roman occupation horizons. Overlying this material was a further probable Roman occupation horizon (402) 0.3m thick and consisting of a dark brown sandy loam deposit with rare inclusions of gravel, and white lime mortar flecks. Oyster shell fragments, slate fragments, a single samian sherd of Drag. 39 dating to the late 1st–early 2nd century were recovered from this. The presence of slate fragments indicates a date of the late 2nd century or later, since slates come into circulation in the city at this time. At a depth of 0.6m there is a complete change in the character of the deposits: the overlying mid-reddish-brown silty loam (401) representing 19th-century landscaping. A single fragment of thin combed Roman box tile was recovered from this context. This layer was in turn overlain by a 0.1m thick layer of dark brown clay loam (400) representing modern topsoil.

5.4 **St Catherine's chapel**

Borehole 5 was sited within the southern (St Catherine's) half of the chapel of St Andrew and St Catherine, immediately in front of the entrance from the north choir aisle. Removal of the modern (1960s) Beer stone slabs of the floor revealed the presence of a columbarium lined with breeze-blocks, created below the floor in the 1960s for the interment of ashes. This had removed all deposits to a depth of 0.43m, i.e. well below the late 13th-century floor level. Below that depth, examination of the cored sample revealed an undifferentiated deposit of mid-reddish-brown silty clay with rare white lime mortar, charcoal flecks, volcanic trap fragments, Salcombe fragments, and slate flecks. No human bone was recovered. It is possible that this was a single feature such as a robbed Roman wall or even a grave, but no certain interpretation could be offered from the small sample examined. The top of natural subsoil was observed at a depth of 1.83m (36.8m AOD).

6. THE FINDS

by John Allan

The finds are listed in Appendix 2. Five sherds of Roman pottery were found. Single sherds of Dressel 20 amphora and wheel-thrown greyware of the late 1st–3rd century were recovered from the charnel soil in Boreholes 1 and 2, and a sherd of Drag. 39 samian of the late 1st–early 2nd century and two sherds of black-burnished ware (BB1) from deposit 402. A total of 16 Roman tile fragments were also recovered from Boreholes 1, 2 and 4. These included one flange from a *tegula* and one fragment of thin combed box tile.

A single fragment of medieval floor-tile of the late 13th–14th century was recovered from the charnel soil (104) in Borehole 1 and a fragment of 18th-century South Somerset ridge tile from the 19th-century landscaping (301) in Borehole 3.

7. DISCUSSION

7.1 **Quality of results**

Understanding of the deposits encountered is hampered by the limited size of the boreholes, the fact that soils were examined after they had been removed from their original context and by the limited amount of dating evidence. Nevertheless, general interpretation, based on an understanding of the broad sequence seen elsewhere in Cathedral Close (especially in the nearby tree-pits recorded in Young 2011), can be offered.

7.2 **Pre-Roman**
The pre-Roman ground surface has been seen elsewhere below the fortress; it is typically a thin exhumic greenish-grey clay soil *c.* 20–80mm deep. If present, it was not distinguishable in the borehole samples.

7.3 **Roman**
Samples elsewhere in the Close have shown that there was a rapid accumulation of archaeological deposits in the late 1st and 2nd centuries AD, when the timber buildings of the fortress and early Roman town were repeatedly replaced, causing the accumulation of thin floors, occupation surfaces, construction levels and dumps, often to a depth of 1m or more. Typically, several phases of timber buildings can be distinguished when these deposits are carefully excavated. All four cores in the Close encountered probable remains of such a sequence, but the fine detail visible in hand excavation could not be seen in the borehole samples. Later Roman (3rd- or 4th-century) deposits may also be represented in Boreholes 3 and 4.

7.4 **Medieval and post-medieval activity**
As expected, the sequences of soils in Boreholes 1 and 2 revealed charnel soils; in Borehole 1 some of the deposit was certainly datable to the period after the late 13th/early 14th century, since a tile of that date was recovered from (104).

The remains of a probable wall foundation in Borehole 3 and the overlying demolition deposit are likely to represent a wall in one of the rooms of the Treasurer's House and its subsequent demolition in the early 19th century.

8. PROJECT ARCHIVE

A summary of the archaeological investigations has been submitted to the on-line archaeological database OASIS (oakforda1-284633). Since this report presents the full results of the investigation, no separate project archive will be deposited.

ACKNOWLEDGMENTS

This work was commissioned by the Dean and Chapter of Exeter Cathedral and monitored on their behalf by John Allan, the Consultant Archaeologist to the Dean and Chapter. It was administered for Dean and Chapter by the clerk of works Chris Sampson and Camilla Finlay (Acanthus Clews), and monitored for Historic England by Daniel Ratcliffe. Thanks are due to Aaron, Paul and Jon (Tor Drilling Ltd). Fieldwork was carried out by Marc Steinmetzer and William Smith.

BIBLIOGRAPHY

Allan, J.P. 2012 2012b *Archaeological Assessment and Report for Exeter Cathedral and its Precinct*, report to the Dean & Chapter.

Morris, P. 1936 'Report of the Exeter Excavations Committee', *Proc. Devon Archaeol. Explor. Soc*. **2.4**, 224–40.

Young, G. 2011 'Archaeological recording of works for the vision for Exeter Cathedral Close, Area 1, 2010–11', *Exeter Archaeology Report* **11.61**.

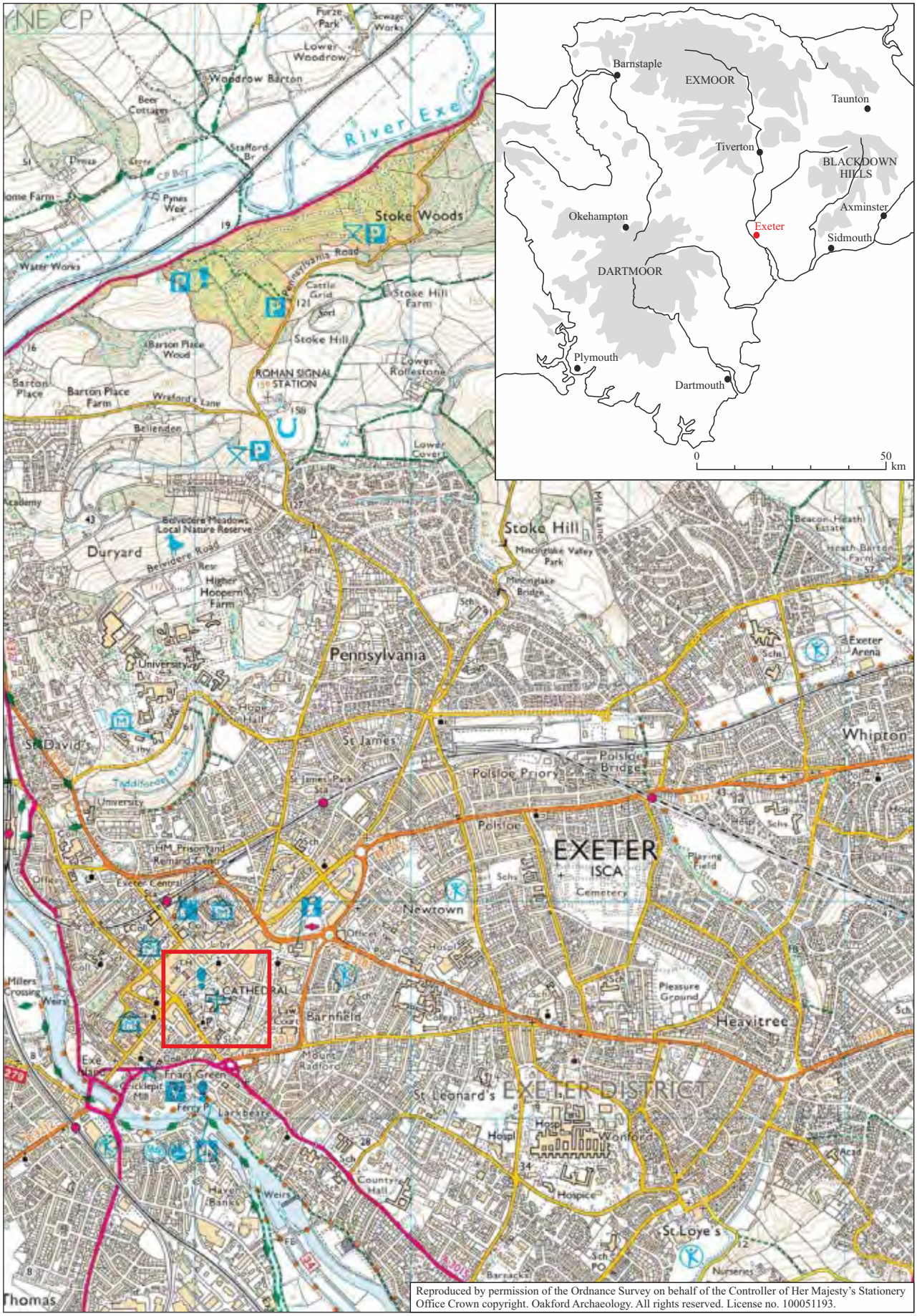


Fig. 1 Location of site.

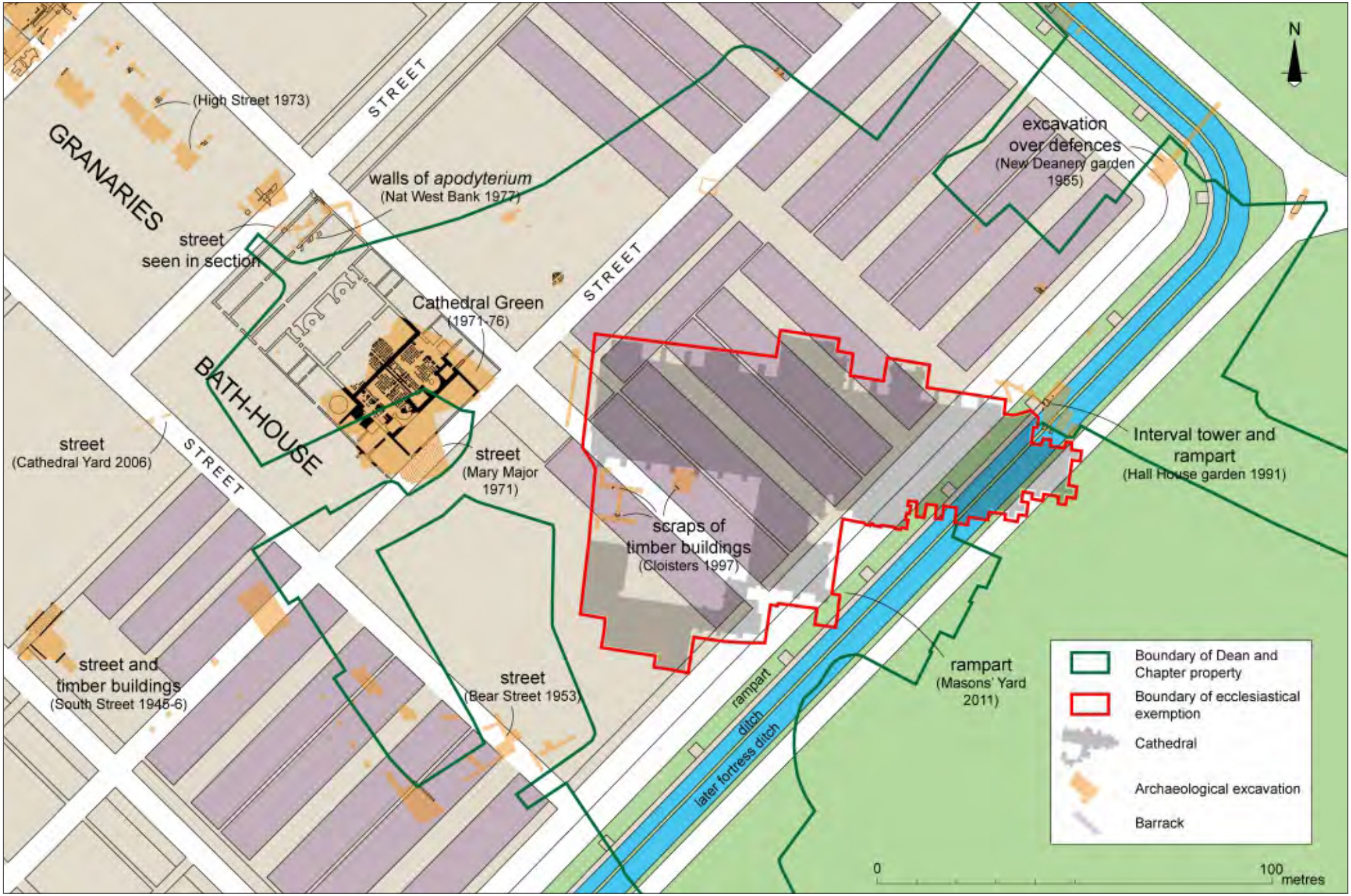


Fig. 2 Roman military period (© Exeter Archaeology).

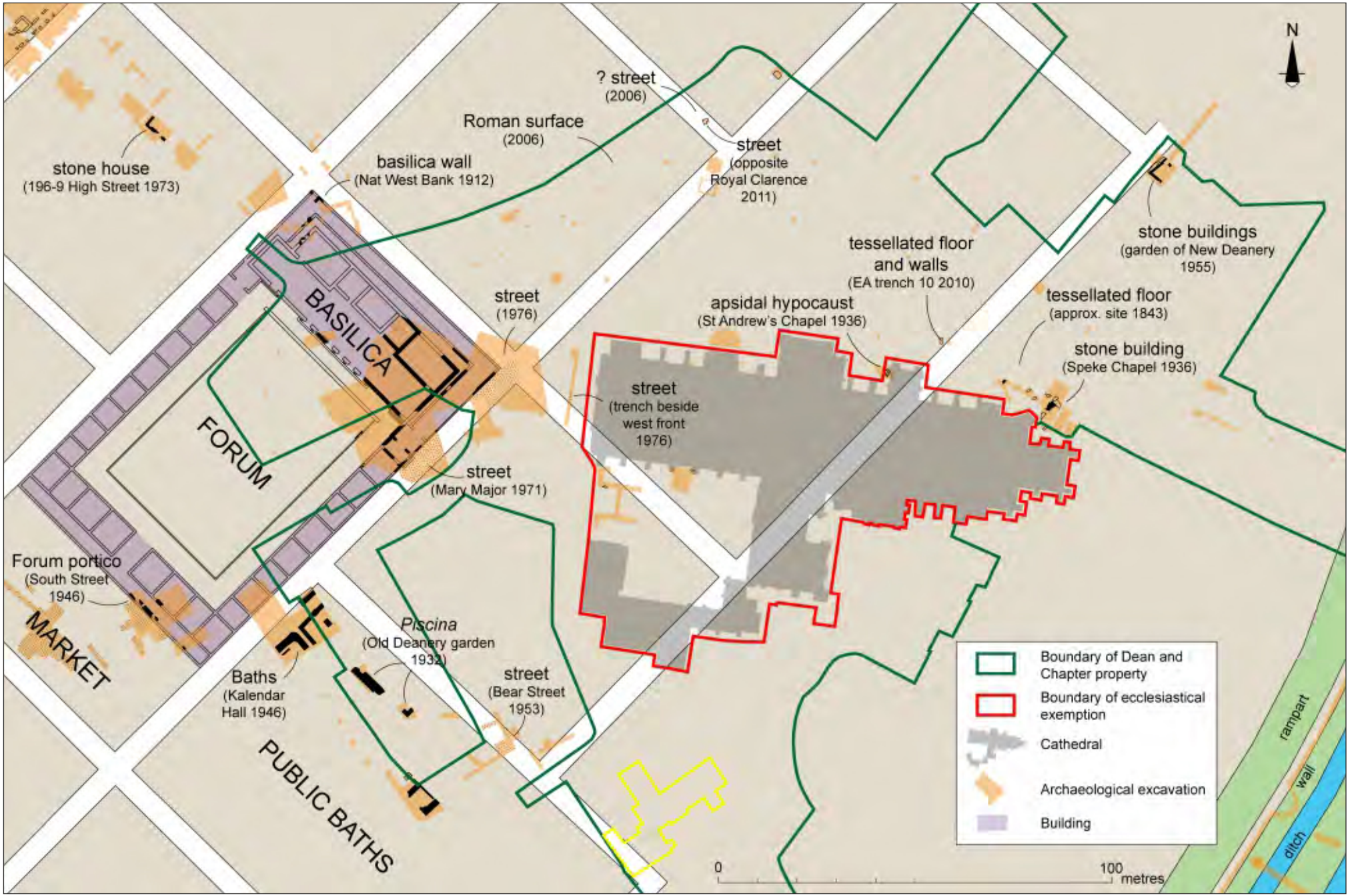


Fig. 3 Late Roman civil period (© Exeter Archaeology).

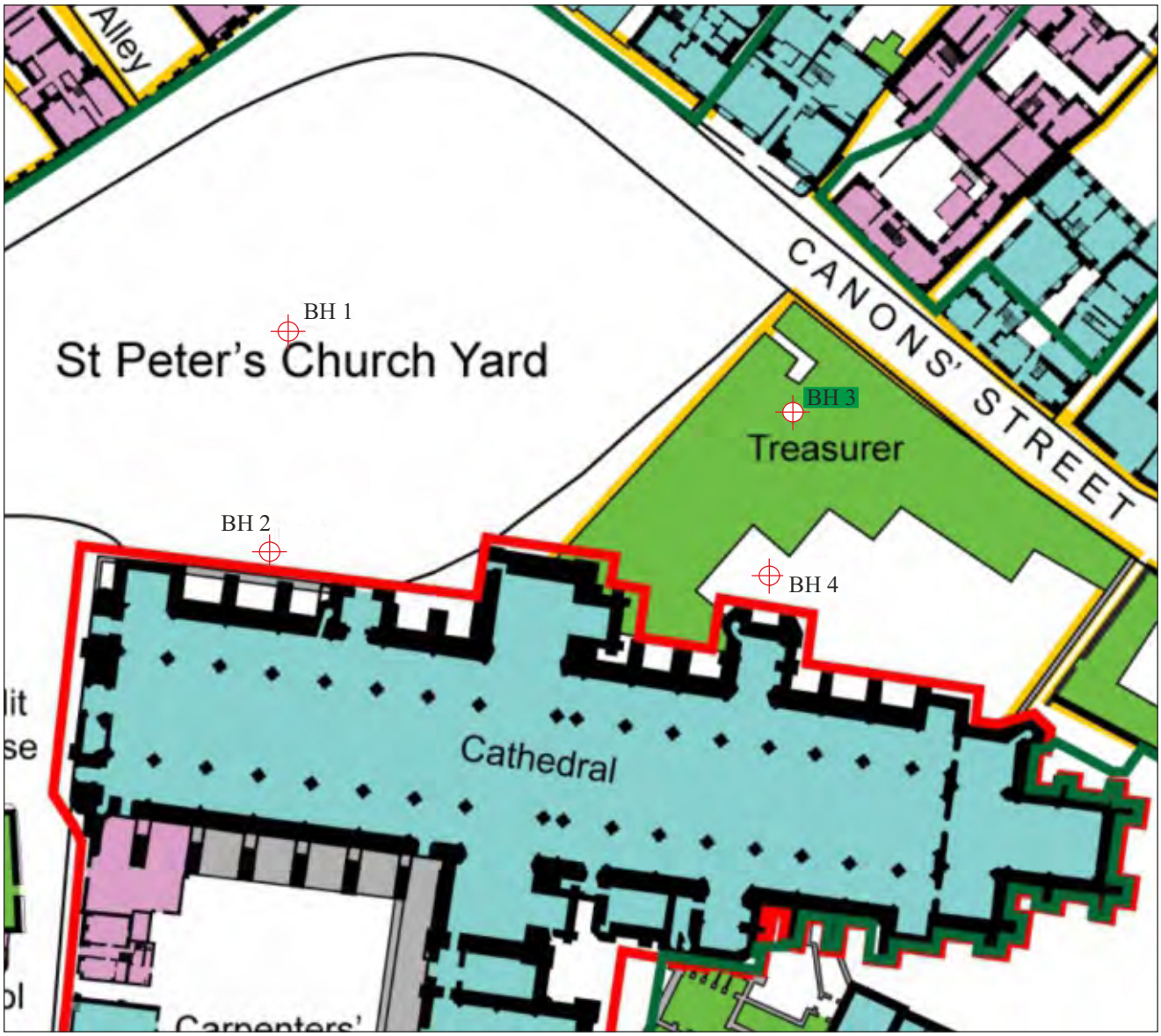


Fig. 4 Location of Boreholes (1-4) in relation to the known layout of the Close in the mid-18th century (© Exeter Archaeology).

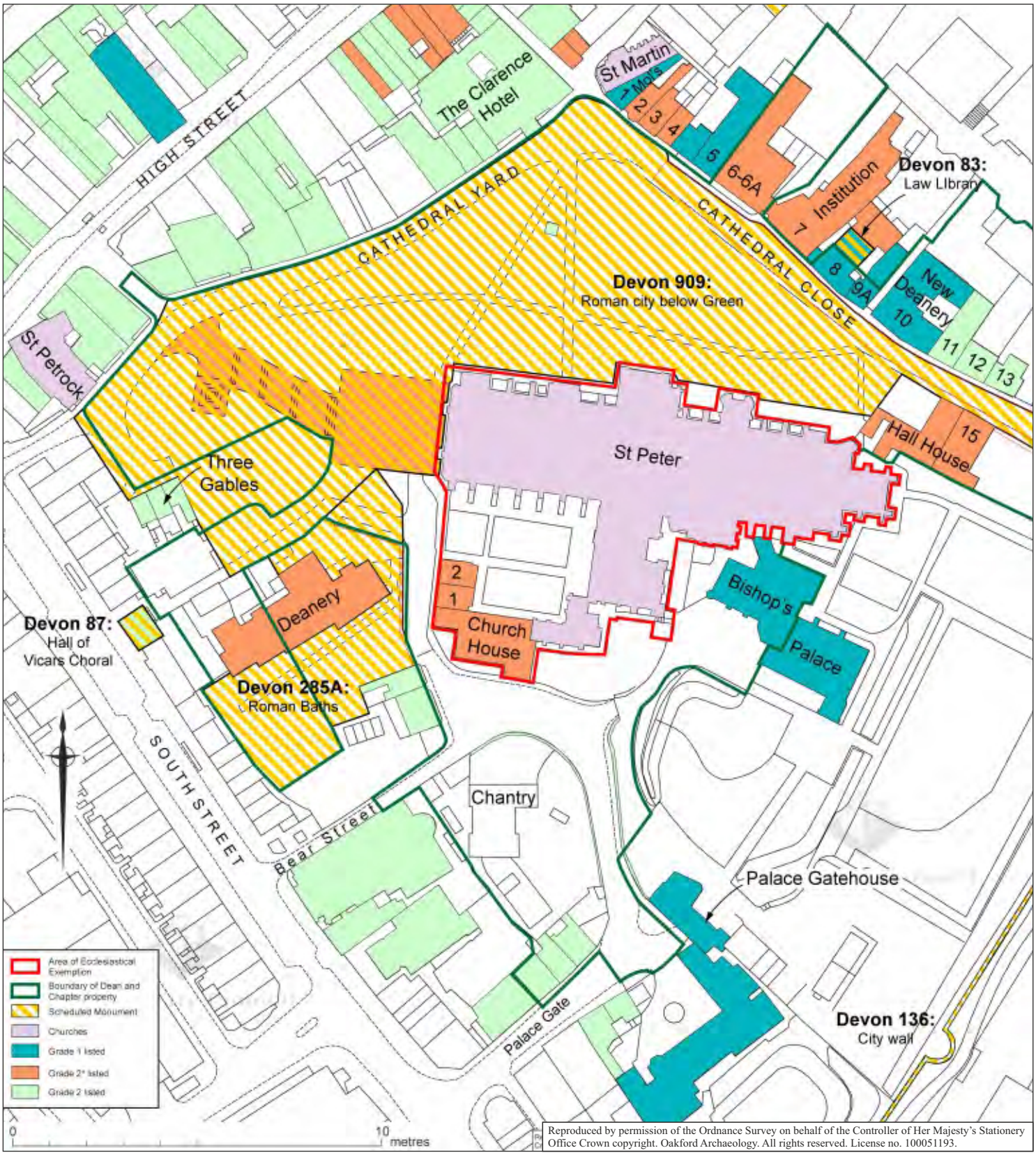


Fig. 5 Areas of statutory protection (© Exeter Archaeology).

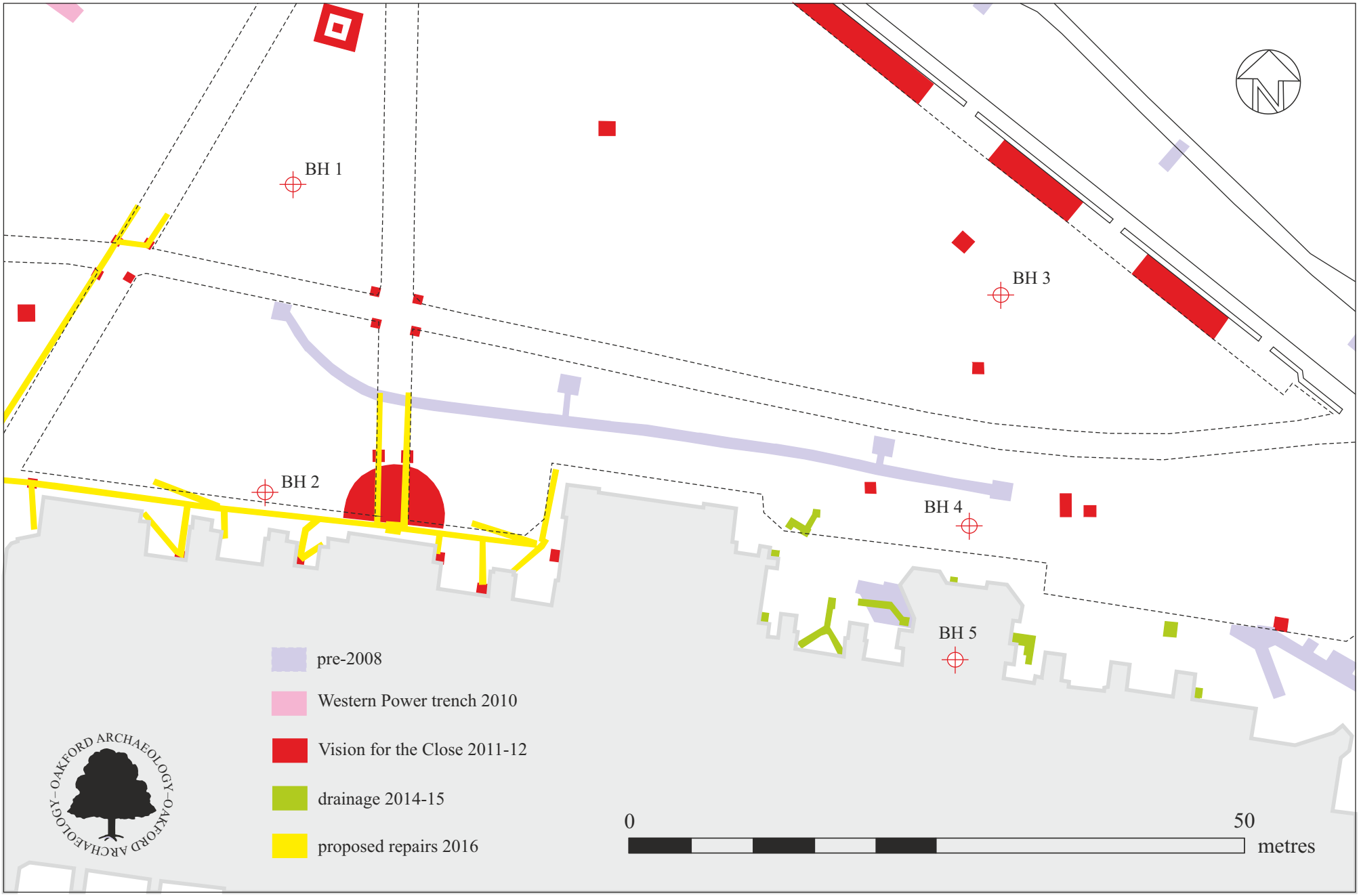


Fig. 6 Plan showing location of boreholes (1-5) and previous archaeological interventions.

Pl. 1 General view of tracked percussive auger rig excavating Borehole 1. Looking southeast.

Pl. 2 Borehole 1 showing deposit sequence between 38.87-37.87mAOD (left to right). 1m scale.

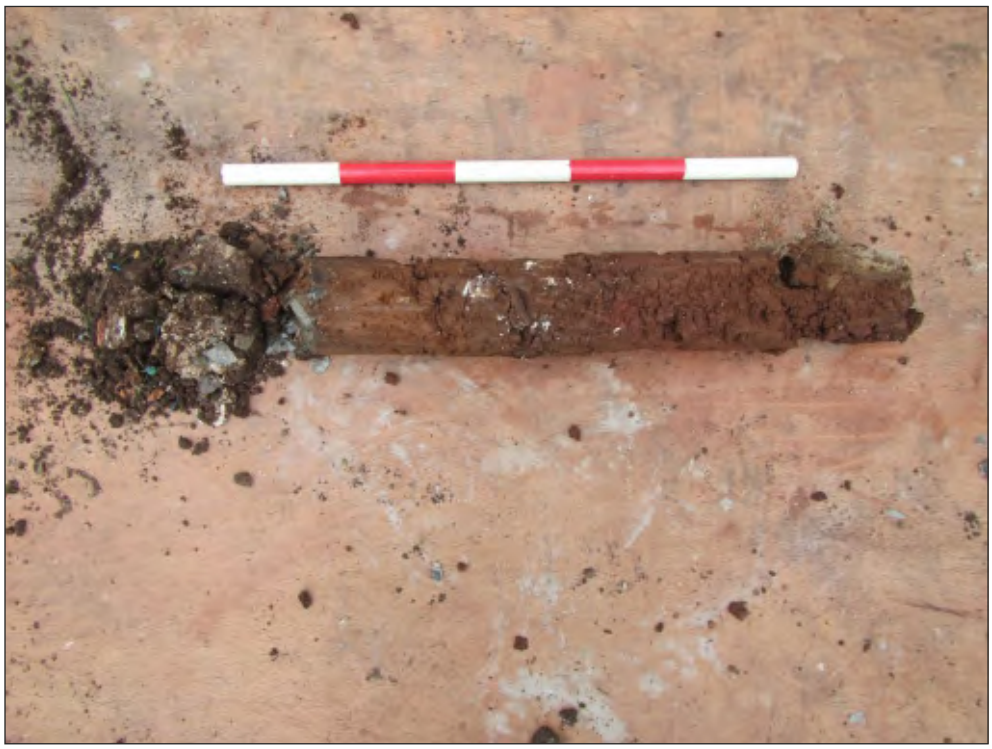
Pl. 3 General view of tracked percussive auger rig excavating Borehole 2. Looking southeast.

Pl. 4 Borehole 2 showing deposit sequence between 37.70-36.70mAOD (left to right). 1m scale.

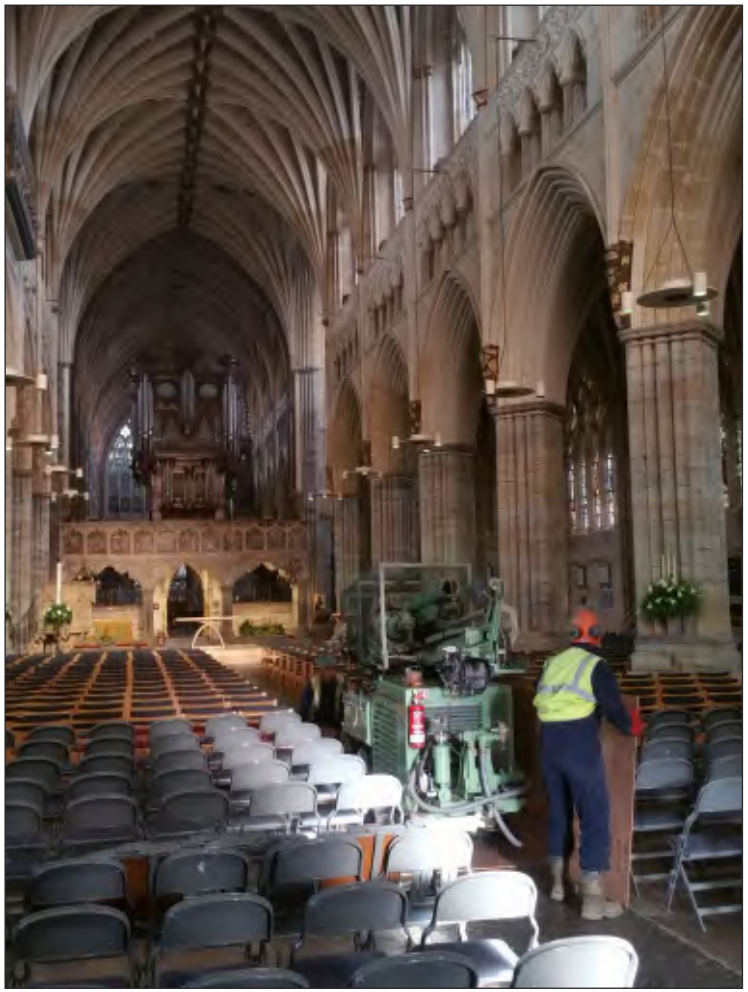
Pl. 5 General view of tracked percussive auger rig excavating Borehole 3. Looking southwest.

Pl. 6 Borehole 3 showing deposit sequence between 39.12- 38.62mAOD (top) and 38.62 - 37.62mAOD (bottom). 1m scale.

Pl. 7 General view of tracked percussive auger rig excavating Borehole 4. Looking southwest.



Pl. 8 Borehole 4 showing deposit sequence between 38.31-37.71mAOD (left to right). 1m scale.



Pl. 9 General view of tracked percussive auger rig tracking through nave of Exeter Cathedral. Looking southeast.

Pl. 10 General view of percussive auger rig excavating Borehole 5. 1m scale. Looking northeast.

Appendix 1:

Written Scheme of Investigation for Archaeological works

1. BACKGROUND

1.1 The N side of the choir of Exeter Cathedral shows long-standing evidence of ingress of moisture, and this is the probable explanation for decay to monuments (including medieval ones) on the inner face of the N choir aisle and attached chapels. Attempts have been made to tackle this problem since at least the early 19th century, when the external ground level was lowered considerably in the adjacent area of Cathedral Green to reduce problems of damp.

1.2 Following a survey which identified faulty drainage of the E limb of the cathedral in 2014, the drains carrying water from this part of the cathedral were renewed in 2015. The scheme should have improved significantly the drainage of the area, although it is possible that lower-level movements of moisture still pose problems.

1.3 No monitoring is currently in place in this part of Cathedral Green. This problem has been the subject of consultation between our Cathedral Architect Camilla Finlay, the Cathedral Fabric Commission for England, Tobit Curteis (external adviser on environment al monitoring) and John Mann (Structural Engineer). They are in general agreement that long-term monitoring is now needed to record and address this problem.

2. THE PROPOSED SCHEME

2.1 The proposed scheme is outlined in the attached document by John Mann. It recommends the excavation of four boreholes in the Green, as well as further boreholes within the cathedral. Each would be 120mm in diameter and would go through the entire archaeological sequence to -4m.

2.2 The position of the proposed boreholes are shown in John Mann's attached plan. They have been chosen in consultation with the Cathedral Archaeologist and avoid known archaeological features. They have also been sited to avoid the historic cemetery of Cathedral Close.

2.3 The method of digging the holes consists of manual excavation of a hole 150 200mm in diameter to a depth of 0.5m followed by 'dynamic sampling' (hammer-driven driving of a tube into the soil, with removal of its central core at intervals). Below archaeological deposits, the method is changed to rotary excavation with water flushing.

3. ARCHAEOLOGICAL SIGNIFICANCE OF THE SITE AND STATUTORY PROTECTION

3.1 This is an area of the highest archaeological importance. It is known that timber buildings of the legionary fortress (AD 50–75) underlie the site, succeeded by a street flanked by stone buildings of the Roman town (AD 80–400). Parts of one or more substantial late Roman town houses, with an apsidal hypocaust and tessellated floor, were encountered nearby in 1936 (Morris, P. 1936 'Report of the Exeter Excavations Committee', *Proc. Devon Archaeol. Explor. Soc*. **2.4**, 224–40) and in 2010–11 (Young, G. 2011 'Archaeological recording of works for the vision for Exeter Cathedral Close, Area 1, 2010–11 *Exeter Archaeol. Rep. 11.61).*

In the Middle Ages the site was occupied by the court of the Treasurer's House; the medieval did not extend into this area. The house and its attendant buildings were cleared in stages between *c.* 1803 and 1820, when it became part of an extended Cathedral Green.

3.2. The site is owned by the Dean and Chapter of Exeter Cathedral. From a line 1m north of the cathedral, it falls within Scheduled Monument Devon 909 (Roman City, part below Cathedral Green), and within the statutory Exeter Area of Archaeological Importance. Permission to excavate requires approval from the Exeter Cathedral FAC and the CFCE, as well as prior Scheduled Monument Consent granted by the Secretary of State (advised by Historic England).

3.3. When the area was sampled in 2010–11, the following general conclusions were drawn about the stratification:
(i). The top *c.* 300–600mm consists of disturbed early 19C deposits.
(i) The top of Roman is about 0.9–1.0m below the grass.
(i). The bottom of the sequence is more than 1.8m below the present ground level.

4. METHOD OF ARCHAEOLOGICAL RECORDING

4.1 *Preparatory work.* Prior to the start of works, the contractor will examine the Archaeological Assessment of Exeter Cathedral Close (Allan 2012), the Exeter Archaeology report on excavations of 2010–11 (details above) and the excavation account of 1936 (para 2.1 above).

4.2 *Site work.* An archaeologist will be present continuously throughout the time when the boreholes are dug. He/she will examine and record all the cores removed from the boreholes.

4.2.1. The following standard recording system will be employed:

- standardised single context record sheets; survey drawings, plans and sections at scales 1:10,1:20, 1:50 as appropriate;
- colour digital photography;
- survey and location of finds, deposits or archaeological features
- labelling and bagging of finds on site from all excavated levels. Post-1750 finds will be discarded on site.

4.2.2. Should environmental deposits be encountered, sampled will be retained and their value will be considered with advice from Allen Environmental Archaeology or Hayley McParland, the Historic England Regional Science Advisor. If they require processing, the task would be undertaken by GeoFlo, following HE Guidelines for Environmental Archaeology (HE CfA Guidelines 2002/1), and outside specialists would be organised to undertake further assessment and analysis. If material deemed suitable for C14 dating were encountered, samples would be taken and submitted for dating.

4.2.3. Should human remains be encountered, they would be retained for analysis and reported upon in accordance with Institute of Field Archaeologist Technical Paper No. 13 (McKinley and Roberts 1993). The procedure would if required be conducted in compliance with the relevant Ministry of Justice Licence. Subject to confirmation by the Dean and Chapter, the Cathedral Archaeologist recommends that any human bone with research value should be deposited at Exeter University alongside the other human bone from the Close cemetery.

4.2.4. Initial cleaning, conservation, packaging and any stabilisation or longer-term conservation measures will be undertaken in accordance with relevant professional guidance (including *Conservation guidelines No 1 (*UKIC, 2001); *First Aid for Finds (*UKIC & RESCUE, 1997) and on advice provided by A Hopper-Bishop, Specialist Services Officer, RAM Museum, Exeter.

4.2.5. Should artefacts be exposed that fall within the scope of the Treasure Act 1996, then these will be removed to a safe place and reported to the local coroner according to the procedures relating to the Act. Where removal cannot be effected on the same working day as the discovery, suitable security measures will be taken to protect the finds from theft.

4.2.6. The project will be organised so that specialist consultants who might be required to conserve artefacts or report on other aspects of the investigations can be called upon (see below). The client will be fully briefed and consulted if there is a requirement to submit material for specialist research.

4.2.7. Health and Safety requirements will be observed at all times by archaeological staff working on site, particularly when machinery is operating nearby. Personal protective equipment (safety boots, helmets and high visibility vests) will be worn by staff when plant is operating on site. A risk assessment will be prepared prior to work commencing.

5. REPORTING AND ARCHIVING

5.1. The level of reporting appropriate to the findings will be agreed between the Cathedral Archaeologist, PPMH and Historic England. At a minimum this will entail an entry in the City Historic Environment Record (HER);

5.2. If more substantial findings are made, a report with plans, sections and illustrations will be prepared.

5.3. Upon completion of reporting, a pdf version of the report will be distributed to the Client, the Cathedral Archaeologist the PPMH and HE.

5.4. Upon completion of the project, an orderly site archive will be prepared with reference to *The Management of Archaeological Projects* (Historic England, 1991 2nd edition) This will be deposited with Exeter Cathedral (ref. number pending) within six months of the completion of excavation. The cathedral currently wishes to retain objects recovered in situations such as this; they will be deposited in the Cathedral Archive.

5.5. A .pdf copy of the updated summary report will be submitted, together with the site details, to the national OASIS (Online AccesS to the Index of Archaeological investigationS) database within three months of the completion of site work. A copy of the report will also be deposited with the site archive.

5.7. Should particularly significant remains, finds and/or deposits be encountered, meriting wider publication, a short report will be placed in the *Proceedings of the Devon Archaeological Society* within 18 months of the completion of site work. Requirements for any such publication – including any further analysis that may be necessary – would be agreed the Cathedral Archaeologist, the PPMH and HE, in consultation with the Client.

6. COPYRIGHT

6.1 The excavator and the Dean & Chapter shall jointly retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988.

7. PROJECT ORGANISATION

7.1 Prior notice will be given (by email) to HE and the PPMH 28 days before works begin.

7.2 The project will be undertaken and managed by the Cathedral Archaeologist, in accordance with the Code of Conduct and relevant standards and guidance of the Institute for Archaeologists (*Standards and Guidance for an Archaeological Watching Brief,* 1994, revised 2008), plus *Standards and Guidance for Archaeological Excavation* 1994, revised 2008).

Health & Safety

7.2 All monitoring works within this scheme will be carried out in accordance with current *Safe Working Practices (The Health and Safety at Work Act 1974*).

ADDITIONAL INFORMATION

Specialist contributors and advisors
The expertise of the following specialists can be called upon if required:

Bone artefact analysis: Ian Riddler;

Dating techniques: University of Waikato Radiocarbon Laboratory, NZ;
Charcoal identification: Dana Challinor;
Clay tobacco pipes: David Higgins (Liverpool);
Diatom analysis: Nigel Cameron (UCL);
Environmental data: Hayley McParland (Historic England), Allen Environmental (AEA);
Faunal remains: Charlotte Coles (Exeter);
Finds conservation - Exeter RAM Museum Conservation Service (Alison Hopper-Bishop);
Human remains: Mandy Kingdom (Exeter), Charlotte Coles;
Medieval and post-medieval finds: John Allan;
Metallurgy: Gill Juleff (Exeter University);
Numismatics: Norman Shiel (Exeter);
Petrology/geology: Roger Taylor (Exeter),
Plant remains: Julie Jones (Bristol);
Prehistoric lithics & ceramics: Henrietta Quinnell (Exeter);
Radiocarbon dating: East Kilbride Laboratory
Roman finds: Paul Bidwell & associates (Arbeia Roman Fort, South Shields);
Others: Wessex Archaeology Specialist Services Team, AC Archaeology.

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Appendix 2:

Finds Quantification

Context	borehole	Spot date	Quantity	weight	Notes
101	1	n/a	3	10g	3 fragments of Roman tile.
104	1	n/a	1	7g	1 poss. fragment of medieval floor-tile 13th-14th century.
105	1	n/a	3	18g	1 sherd Dressel 20 Amphora late 1st-3rd century; 1 fragment of Roman tile; 1 fragment of Fe slag.
201	2	n/a	5	25g	4 fragments of Roman tile including one flange from a tegula; 1 sherd of wheelthrown greyware late 1st-early 3rd century.
202	2	n/a	7	105g	7 fragments of Roman tile including 2 pilae tile fragments.
301	3	n/a	2	16g	1 sherd South Somerset ridgetile 18th century; 1 flint crushed prob. Medieval or later building material.
401	4	n/a	1	7g	1 fragment of thin combed Roman box tile.
402	4	n/a	3	21g	1 sherd of Dragendorff 39 Samian with part of ovolo moulding late 1st - early 2nd century; 2 sherds of Black burnished ware including one dish with internal burnished line and exterior cross hatching.

Appendix 3:

Borehole descriptions

Core 1

Context	*Depth*	*Description*
100	0-0.1m	Topsoil
101	0.1-0.9m	Dark brown sandy loam cbm frags (1%), slate flecks (1%), human bone (2-3%) – disturbed charnel soil, 18th/19th-century?
102	0.9-1.1m	Mid reddish-brown sandy loam slate flecks (1%), cbm frags (1%), white lime mortar flecks (1%), human bone (2-3%) – charnel soil
103	1.1-1.2m	Mid reddish-brown sandy loam slate flecks (1%), cbm frags (1%), white lime mortar flecks (1%) – charnel soil
104	1.2-1.6m	Dark brown sandy loam slate flecks (1%), cbm frags (1%), white lime mortar flecks (1%), volcanic trap fragments (1%), human bone (2-3%) – charnel soil
105	1.6-1.93m	Very dark brown sandy loam slate flecks (1%), cbm frags (1%), white lime mortar flecks (1%), volcanic trap fragments (1%), human bone (2-3%) – charnel soil
106	1.93-2.1m	Light reddish-brown sandy clay gravel (1%), charcoal flecks (1%) –early Roman deposit?
107	2.1m+	Light reddish-brown sandy clay – Natural subsoil

Total depth 5m – top of core 40.17mAOD.

Core 2

Context	*Depth*	*Description*
200	0-0.1m	Topsoil
201	0.1-0.6m	Dark brown sandy loam white lime mortar flecks (1%), volcanic trap fragments (1%), gravels (1-2%), cbm fragments (1%), animal bone (1%), human bone (1%) – disturbed charnel soil, perhaps 18/19th-century
202	0.6-1.2m	Mid to dark reddish-brown sandy loam white lime mortar (1%), cbm fragments (1%), gravel (1%)
203	1.2-1.55m	Light to mid-reddish-brown sandy loam – probable early Roman deposit
204	1.55m+	Light reddish-brown sandy clay – Natural subsoil

Total depth 5.2m – top of core 38.90mAOD.

Core 3

Context	*Depth*	*Description*
300	0-0.1m	Topsoil
301	0.1-0.3m	Mid reddish-brown silty loam cbm fragments (1%), slate fragments (1%) – 19th-century landscaping
302	0.3-0.7m	Dark greyish brown sandy loam gravel (1%), white lime mortar flecks (1-2%), oyster shell fragments (1%), slate fragments (1%) – probable early 19th-century demolition deposit
303	0.7-1.05m	Volcanic trap fragments, pale pink sandstone fragments, yellowish grey lime mortar – wall, medieval?
304	1.05-1.6m	Volcanic trap fragments – wall
305	1.6-1.7m	Dark brown sandy clay gravel (1-2%), charcoal flecks (1%), white lime mortar (1%) – Roman occupation deposit?
306	1.7m+	Light reddish-brown sandy clay gravel (2-3%) – Natural subsoil

Total depth 5m – top of core 39.72mAOD.

Core 4

Context	*Depth*	*Description*
400	0-0.1m	Topsoil
401	0.1-0.6m	Mid reddish-brown silty loam cbm fragments (1%), slate fragments (1%) – 19th-century landscaping
402	0.6-0.9m	Dark brown sandy loam gravel (1%), white lime mortar flecks (1-2%), oyster shell fragments (1%), slate fragments (1%) – Roman occupation deposit?
403	0.9-1.12m	Mid reddish-brown clay loam volcanic trap fragments (5%), gravel (2-3%) – Roman occupation deposit?
404	1.12-1.4m	Mid brown clay loam oyster shell fragments (5%), gravel (1%) – Roman occupation deposit?
405	1.4-1.7m	Mid reddish-brown clay loam oyster shell fragments (1%), charcoal flecks (1%), gravel (1-2%), volcanic trap fragments (1%), pale pink sandstone fragments (1%) – early Roman occupation deposits
406	1.7-1.8m	Very light reddish-brown silty clay – buried soil/early Roman occupation?
407	1.8m+	Light reddish-brown sandy clay gravel (2-3%) – Natural subsoil

Total depth 5m – top of core 38.91mAOD.

Core 5

Context	*Depth*	*Description*
500	0-0.43m	Floor and sub-base
501	0.43-1.83m	Mid reddish-brown silty clay white lime mortar (1%), charcoal flecks (1%), volcanic trap fragments (1%), Salcombe fragments (1%), slate flecks (1%) – interpretation uncertain
502	1.83m+	Mid red silty clay – natural subsoil

Total depth 5m – top of core 38.68mAOD.