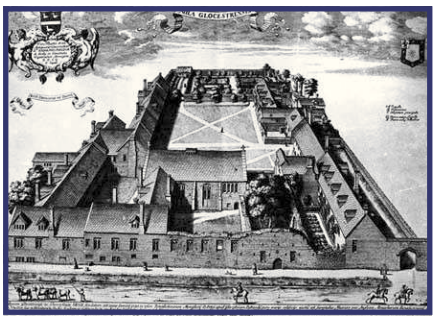
Archaeological Evaluation

Worcester College Lecture Theatre and Kitchen Project

Worcester Street Oxford



Archaeological Evaluation and Watching Brief Report

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Worcester College,

Lecture Theatre and Kitchen Project,

Worcester Street, Oxford

Archaeological Watching Brief

and Evaluation Report

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and illustrated by Conan Parsons

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Summary

In January 2012, Oxford Archaeology undertook a a field evaluation at Worcester College, Oxford (SP 509 064). The evaluation followed on from a watching brief which was maintained during the excavation of geotechnical test pits in December 2011 and January 2012.

The works revealed at least two distinct phases of negative features truncating the natural terrace gravels. The earliest of these was not securely dated, but significantly the composition of the fills was similar to those from prehistoric and earlier medieval features excavated elsewhere in the city.

The later phase of features appeared to comprise 15th-16th century (perhaps focussed around the immediate post-Dissolution period) pits of indeterminate function. The fills of these features were overlain by a series of probable garden soils/ or abandonement accumulation reflecting disuse or a market garden character for this area of the site, as depicted on a number of cartographic sources.

In addition, to these features, a number of structural remains were also revealed. One of these was an east-west aligned wall which may correspond to a garden wall depicted on a 17th century engraving of the city, and be of medieval origin - the relationship between this structure and the garden soils mentioned above was unclear. The remaining structures are likely to correlate to outbuildings in the Kitchen courtyard which are shown on the 19th century OS 1st edition map.

1 INTRODUCTION

1.1 Location and scope of work

1.1.1 Worcester College propose to redevelop their campus site on Worcester Street, Oxford, centred on NGR SP 50940 06452 (Fig. 1). The development would see a new lecture theatre, and new kitchens constructed in the area between the boundary wall along Worcester Street and the retained college structures (incl. The Nuffield Building, the existing kitchens and the south range of Pump Quad), and the College Gardens. This area is currently occupied with modern structures (to be demolished), and a large open yard area; taken together these will be refered to as Kitchen Quad. An additional structure will be added to the NE corner of Pump Quad, and here the more recent structure will also be removed. The college structures to be retained and demolished and the footprint of the new build structures, together 'the Site', is shown on Figure 2.

1.1.2 Due to the high potential for archaeological remains at the site, which had been highlighted in the Desk-Based Assessment (DBA) produced by Oxford Archaeology for Rick Mather Architects/Worcester College in July 2011 (OA, 2011) a programme of investigative works was proposed in a Brief issued by David Radford, City Archaeologist for Oxford City Council (OCC, 2011).

1.1.3 Oxford Archaeology (OA), were commissioned by Rick Mather Architects on behalf of Worcester College to undertake an Archaeological Watching Brief on the geotechnical works, and a bespoke Archaeological Trench Evaluation exercise to examine the archaeological potential of the site.

1.1.4 OA produced a Written Scheme of Investigation (WSI) detailing how the archaeological requirements of that brief would be met (OA, 2011). Subsequently the Geotechnical Test Pits and Archaeological Trenches were undertaken within accessible areas of the Site and this document presents the results of that work.

1.2 Geology and topography

1.2.1 Worcester College is located on the gentle SW facing slopes of the gravel spur formed by the valleys of the River Thames whose main channel lies *c* 600 metres to the west (Castle Mill Stream bounds the College site on the western side – *c.* 250 m to the west), and the River Cherwell which lies *c.* 1.2km to the east.

1.2.2 The underlying geology consists of first terrace Flood Plain Gravels of the Quaternary Era which in turn overlie deposits of Oxford Beds Clay of the Jurassic Era (Geological Survey of Great Britain (England and Wales), Sheet 236).

1.2.3 The Site is located entirely within, and on the eastern side of the Colleges' campus on Worcester Street, Oxford. It is bounded to the east by the boundary wall along Worcester Street and to the north by the college Main Quad and Hall and to the west and south by the college grounds.

1.2.4 The current levels of the Site lie bewteen 59.40-59.80 m OD, which fall from east to west and from north to south. The boundary wall between Worcester Street and Kitchen Quad however acts as a retaining wall with a *c.* 1.8 m drop in level from Worcester Street to Kitchen Quad. The level of Kitchen Quad is broadly carried through to Pump Quad and this compares well to the eastern end of the medieval southern range to the Main Quad which then drops away gently westwards towards the Castle Mill Stream. The eastern and northern sides of the Main Quad were constructed in the 18th century and are also *c* 1.8 m higher than the medieval southern range of the Main Quad, and

therefore the Pump and Kitchen Quads. This suggests that the 18th century college buildings were constructed on embanked ground, to allow this primary phase of Worcester College buildings to register with Worcester and Beaumont Street, the former of which is probably therefore also on made ground (perhaps of some antiquity).

1.3 Historical and Archaeological background

1.3.1 The following is an augmented summary of the historical and archaeological background to the site presented in the DBA (OA, 2011), the DBA should be read in conjunction with this report.

Prehistoric

1.3.2 The Site sits on dry ground at the edge of the Thames floodplain, a landscape which would have been rich in easilly accessible resources. Features containing worked flint have also been found near to the site.

1.3.3 Extensive archaeological investigations in the city have shown that the natural gravel spur was used in the Neolithic and Bronze Age for ritual and burial purposes, the nearest of which were found at the Sackler Library, and St Michael St. c. 200m to the east of the Site.

1.3.4 Isolated finds of Iron Age date occur on many excavations in and around the city. Settlement (which perhaps extended into the Roman period is noted to the north of the city, in University Parks and Science Area. It would seem that exploitation of the increasingly seasonally inundated Thames floodplain becomes important, and a later Iron Age settlement is noted at Whitehouse Rd.

Roman

1.3.5 Quantities of Roman finds (often residual in later features) have been recovered from many sites in the city, including those near to the Site, and clearly indicate a limited Roman presence of isolated, agrarian orientated, occupation - perhaps associated with a postualed north-south road running along the gravel spur (on the line of modern day Banbury Rd).

Saxon

1.3.6 A picture of early Saxon occupation focussing around the earlier pre-historic monuments is now emerging for north Oxford. But this is likely to have been one of a number of dispersed and small scale settlements in the area – and tother settlements are noted further south in Littlemore for example.

1.3.7 Mid-Saxon evidence shows St Frideswides Minster associated with burials was located at the end of the gravel spur around the formalised Thames river crossing. The crossing and the floodplain it trversed also became a focus of activity. On drier ground, but also towards the southern end of the spur a concentration of residual finds from excavations at the Ashmolean and Sackler Library have hinted at an as yet unfound settlement in the vicinity from this period.

1.3.8 The Site itself was located *c* 120 metres to the north-west of the Late Saxon *burh* founded by Alfred at around the start of the10th century.

Medieval

Gloucester College and the Carmelite/White Friars

1.3.9 The Site is extramural to, and *c* 250 m to the north-west of the former medieval walled City of Oxford and *c* 250 m to the north of the site of Oxford Castle (first built 1071). The north gate from the city led out to St Giles which ran northwards along the top of the gravel spur, parallel and to the west of this was the line of another routeway (now Walton St), which lies immediately to the east of the Site, between these routes and c 100 m east of the Site lay the Kings Houses/Palace of Beaumont.

1.3.10 In 1265 Sir Nicholas de Meules granted a house on the west side of Walton Street to the Carmelite or White Friars, and this is the first evidence for development within the Worcester College precinct. The Carmelites were granted further lands by Osney Abbey to enlarge their grounds as far as the River Thames, where they had a landing stage near Hythe Bridge. In 1315 the friars acquired, from King Edward II, the palace of Beaumont and extended their holdings from here it into part of Gloucester Green with the main approach through Friar's Entry.

1.3.11 To the north of the Carmelite site on the west side of Walton St Gloucester College was founded in 1283 for the Benedictine monks of the province of Canterbury. In 1321 the Benedictine Order purchased the site of the former Carmelite house on the west side of Walton St.

1.3.12 The gateway to Gloucester College still stands on Walton Street, immediately to the north of the current Worcester College entrance. The oldest extant buildings in Worcester College are the ranges of the *Camerae* or chambers of Gloucester College which form the south range of the Main Quad and date from the 15th century.

Post Medieval

Gloucester Hall

1.3.13 Following the dissolution of the monasteries in 1542 Gloucester College was sold to Sir Thomas Whyte, the founder of St. John's College, who used it as a storage annexe for his own college, and renamed it Gloucester Hall.

1.3.14 During the Civil War Gloucester Hall was used as a barracks and then occupied by squatters. Many of the buildings then fell into disrepair until 1662 when Benjamin Woodroffe, the principal of Gloucester Hall commissioned many of them to be restored, including the former royal Beaumont Palace.

1.3.15 Gloucester Hall was sketched by Loggan in 1675, and this view shows the main buildings of the former college intact, apart from one former chapel and the cloister which appear to be ruinous. Buildings on the east and south side of Pump Quad and the south range of Gloucester Hall forming the quads western side are shown along with a small section at the northern end of Kitchen Quad.

Worcester College

1.3.16 Worcester College was founded in 1714. The central portion of the former Gloucester Hall buildings (including the ruinous elements on Loggans view) were demolished and rebuilt following designs commissioned from Sir Nicholas Hawksmoor in 1717. The North range, the Library, Hall and Chapel were completed over the period between 1720 and 1786. The college also purchased gardens and meadows to the south in 1741 and to the north and west in 1744-5.

1.3.17 A lake was dug in front of the Provost's House in the early 19th century. Beaumont Street was opened in 1820's, linking the Hawksmoor designed college frontage to the city centre (Poore, D and Wilkinson, D, P, Fig. 12). The college buildings were expanded and developed throughout the mid-19th century. In 1824-5 the old buildings on the quadrangle were heightened to create additional space for student residences with the kitchen converted into more rooms and a new kitchen constructed in the 1840s.

2 Watching Brief and Evaluation Aims and Methodology

2.1 Aims

General aims

2.1.1 The general aims of the Watching Brief and Evaluation were:

- To establish the presence/absence of archaeological remains within the site area (within the depth of impact of the proposed work);
- To determine the extent, condition, nature, character, quality and date of any archaeological remains present;
- To establish the significance of the archaeological remains;
- To establish the ecofactual and environmental potential of archaeological deposits and features;
- To assess the nature and extent of any existing disturbance on the site and comment on the potential for archaeological deposits to survive across the site of the proposed works;
- To make available the results of the investigation.

2.2 Methodology

Watching Brief

2.2.1 An intermittent watching brief was undertaken during the hand excavation of a series of geo-technical Test Pits (TP's) by a separate groundworks sub-contractor. Four of the twelve proposed Test Pits were not excavated (TP's 3 and 7 co-incided with the Root Protection Area around a Catalpa tree in the garden to the west of the Nuffield building, and TP's 2 and 12 were omitted due to concerns over live services running under Pump Quad). The location of the excavated TP's is shown on Figure 2.

Trial Trenching Methodology

2.2.2 Three 5 m x 1.6 m Archaeological Trenches (Nos. 1 – 3) were excavated within the Kitchen Quad and a single 1.5m^2 trench (No. 4) was excavated within Pump Quad (Figure 2).

2.2.3 Trenches 1 – 3 were excavated using a 1.5 tonne mini-mechanical excavator fitted with a toothless bucket, in level spits no greater than 0.10 m in depth. This work was controlled by an experienced archaeologist to reveal the first significant archaeological horizon.

2.2.4 The significant archaeological horizon was then hand cleaned and all subsequent excavation was completed by hand. Trench 4 was entirely hand excavated

3 RESULTS

3.1 Introduction and presentation of results

3.1.1 The archaeological sequences are described by Test Pit and then by Evaluation Trench in numerical order. A full context inventory to accompany these desriptions can be found in Appendix A.

3.1.2 Finds reports are presented in Section 4. A discussion and interpretation of this evidence can be found in Section 5.

3.2 Description of archaeological deposits

The Geotechnical Test Pits (locations on Fig. 2)

Test Pit 1

3.2.1 Test Pit 1 initially comprised a pit measuring *c* 0.80 by 0.80 m which was subsequently extended southward as far as the Nuffield Building, and northwards in order to assess the potential damage to the roots of the Catalpa tree. The trench in total was in excess of 10 m in length, and on average extended out *c* 0.5 m from the west face of the garden/kitchen wall to the west of the existing kitchen.

3.2.2 Natural gravel was not encountered. The lowest layer was a deposit of sub-angular limestones in a light brown clay matrix (5), this was overlain by a 0.22m thick light yellowish brown clay silt (4) which contained gravel, limestone fragments, oyster shell and animal bone. This deposit and the subsequent deposits were encountered throughout the length of the test pit. In turn deposit (4) was overlain by a former garden soils (3) and (2) measuring 0.34 m thick, which were cut by the construction trench for the concrete foundation of the garden/kitchen wall. The sequence was sealed by the current topsoil (1).

Test Pit 4

3.2.3 Test Pit 4 was excavated against the western face of the boundary wall to the south of the 20th century toilet block, and to the east of the Nuffield Building, and measured 0.60 m x 0.25 m x 0.5 m (deep).

3.2.4 The footing of the boundary wall was offset by *c* 0.1 m directly below existing ground level (b.g.l). The base of the footing was observed at 0.35 m b.g.l and directly overlay what appeared to be natural gravel at 58.81 m OD.

Test Pit 5

3.2.5 Test Pit 5 was located in the corner formed by the boundary wall and the southern wall of the 20th century toilet block to the east of the Nuffield Building. The test pit measured 0.65 m x 0.3 m x 1.6 m (deep).

3.2.6 The base of the footing of the boundary wall was at 0.5m b.g.l (no offset was apparent at this location) and sat directly upon natural gravel at 58.61 m OD. The gravel was cut by the extreme eastern end of the construction trench for the south wall of the toilet block, which butted up against the boundary wall. The foundation for the toilet block wall stepped out c 0.2m at 1.4 m b.g.l, and extended to an unobserved depth.

Test Pit 6

3.2.7 Test Pit 6 was excavated in the Kitchen Quad, adjacent to shed in south-east corner. The test pit measured 0.55 m x 0.20 m x *c* 0.4 m (deep).

3.2.8 The footing of the boundary wall was offset by *c* 0.10 m, but its base was not seen as a second stone footing with some brick/tile fragments in the fabric was butting up against its western face. This footing was around 0.4m deep and on the same alignment as the boundary wall.

Test Pit 8

3.2.9 Test Pit 8 was also excavated in the Kitchen Quad, at the junction of the boundary wall and the existing coal shed. The test pit measured 0.5 m x 0.2–0.3 m x 0.4 m (max depth).

3.2.10 The footing of the boundary wall was observed at c 0.2m b.gl. and overlay what appeared to be brick underpinning. This is possibly contemporary with the construction of the coal shed, which sits on brick footings and butts up against the stone element of the boundary wall.

Test Pit 9

3.2.11 Test Pit 9 was also located in the Kitchen Quad, and was excavated against the east wall of north-south range of buildings in the north-western corner of the courtyard. The test pit measured 0.42 m x 0.40 m x 1.25 m (deep).

3.2.12 The footing of the wall was offset by 0.03m at 0.25 m b.g.l, then again by 0.07 m at 0.45 m b.g.l, and again by a further 0.05 m at 0.78 m b.g.l. All these structural elements were abutted by a homogeneous mid brownish grey silty clay, suggesting this deposit is the backfill to a construction trench whose cut lies to the east beyongd the limits of the trench.

Test Pit 10

3.2.13 Test Pit 10 was located within the Kitchen Quad, to investigate the 'kink' in the boundary wall. The test pit measured 0.7 m x 0.35 m x 0.45 m (deep).

3.2.14 To the north of the 'kink' the boundary wall had a rounded southern end of the appeared to abutt the northern end of the southern section to the south of the 'kink'.

Test Pit 11

3.2.15 TP 11 was excavated against the south wall of the structures at the northern end of Kitchen Quad, and measured 0.5 m x 0.25 m x 1.10 m (deep).

3.2.16 The below ground element of the stone wall had a slight batter before its foundation stepped out by 0.15 m at a depth of 0.8 m b.g.l and extended down a further 0.30 m. These structures appeared to be abutted by a homogeneous mid-brownish grey silty-clay (with higher concentrations of re-deposited gravel towards the base of the deposit). No construction trench was observed within the test pit.

The Evaluation Trenches (locations on Fig. 2)

Trench 1 (Fig. 3)

3.2.17 Trench 1 was excavated in the southern part of The Kitchen Quad. It was aligned north-south and measured 5m x 1.5m.

3.2.18 Natural gravel (109) was only encountered at 57.45 m OD within a hand augered borehole in the NE corner of the trench. This was overlain by a 1m thick silty clay deposit (102) which, together with the 0.46 m thick layer (101). Although the function of the feature was not apparent within the confines of the trench, and no dating evidence was recovered it seems certain that these deposits were filling a negative feature (perhaps of medieval date), given that natural gravel was encountered some 1.47 m higher in Trench 3 (see below), and 1.36m and 1.16 m higher in Test Pits 4 and 5 respectively (see above) (Fig. 7).

3.2.19 These deposits had been truncated by 3 limestone linear structures, probably wall footings/foundations (104, 105 and 106). Structure 104 was on a NE-SW alignment, structure 105 was aligned ENE-WSW, and structure 106 ran perpendicular to the latter (aligned NNW-SSE). Structures 104 and 105 may have been contemporary, although no definitive relationship was established within the confines of the trench. Structure 106 appeared to have been constructed up against the northern face of structure 105.

3.2.20 A ceramic service pipe ran parallel to the east face of structure 106 and went through the lower exposed courses of stucture 105. The roughness of the edges of the hole through which the pipe passed suggested that the footing of the wall had been partly demolished by the pipe trench, rather than constructed around it. As the upper courses of the footing had been left in-situ, this would suggest that the wall (and perhaps the building above) was still standing when the pipe was installed.

3.2.21 The remaining deposits were associated with the modern concrete slab of the courtyard surface, and the interface between these and the underlying archaeological deposits was at 58.95m OD (0.50 m below the top of the concrete slab), although the structural remains did survive above this horizon (the top of structure 106 being at 59.22m OD).

Trench 2 (Fig. 4)

3.2.22 Trench 2 was also located in Kitchen Quad approximately 5 m to the north of Trench 1 and on a similar north-south alignment, it also measured 5 m x 1.5 m.

3.2.23 Natural gravel (208) was encountered at 58.11m OD.

3.2.24 The earliest deposit comprised a fairly homogeneous humic silty clay fill (205) which filled 210 (a possible pit) and yielded pottery dating to 1450-1600, this was overlain by (204). Deposit (206) was similar to fill (205) but this did not yield any dating evidence and may or may not fill the same feature.

3.2.25 Both 205 and 206 were sealed by (203), a possible garden soil that produced residual medieval pottery and a single sherd of intrusive 18/19th century pottery, and probably dated to the late 16th century. Deposit (203) did not extend as far as wall (207) and appeared to respect its southern face, therefore 203 may be later than structure 207.

3.2.26 An east-west aligned stone structure (207) was present at the northern end of the trench, although the northern face was not revealed within the trench, its southern face was partially revealed. No construction cut for the structure/foundation/wall was visible, the rough nature of its' exposed southern face suggested that it may have been trench built. If so, then the wall was later than undated deposit 206, and earlier than deposit 203 (see above).

3.2.27 Possible garden soil (203) and the truncated remains of structure (207) were overlain by (209) at *c* 58.87 m OD (0.75m below the top of the courtyard paving), which in turn

was overlain by bedding deposits (202) and (201) for the existing flagstone surface (200).

Trench 3 (Fig. 5)

3.2.28 Trench 3 was aligned east-west in the northern part of Kitchen Quad, parallel and to the south of the rear of the southern range of the Pump Quad. The trench measured 5m x 1.5m.

3.2.29 Natural gravel was encountered at 58.92 m OD. This was cut by two heavily truncated features (300 and 304) which may have been the base of pits. The remaining fills of these features were composed of re-deposited sand and gravel in a reddish brown clay silt matrix (301 and 305 respectively).

3.2.30 Two other features within the trench (302 and 306) also contained fills which were predominantly composed of a reddish brown clay silt (303 and 307 respectively). Feature 302 measured 1.2m+ x 0.46m+ x 0.70m deep. The full extent of the feature was not revealed within the confines of the trench, and it is feasible that it represented the northern edge of either a sub-circular or curvilinear feature/ditch. The shape in plan of feature 306 was even less clear and measured 1.4m+ x 0.26m+ x 0.38m deep.

3.2.31 No relationship could be definitively established between these features as they had all been truncated by a large pit (308) which measured at least 3.8m from east to west and in excess of 1m wide from north to south. Fills of this pit yielded residual medieval pottery, and later ceramics which dated it to 1550-1625+. The function of this feature was unclear, although the homogeneous nature of the fills (309-313 and 317) possibly indicate that it was subject to rapid backfilling.

3.2.32 The fills of these features were overlain by two deposits (314, 315) which may equate to the possible 18th-19th century garden soil (202) in Trench 2. These were in turn overlain by bedding layers (316) below the flagstone paving. The interface between the possible garden soils and the natural gravel and fills of the features described above was at approximately 58.92 m OD (c 0.72 m below the top of the courtyard paving).

Trench 4 (Fig. 6)

3.2.33 Trench 4 was located in the Pump Quad and measured 1.5 m by 1.5 m.

3.2.34 Natural gravel was encountered within a hand augered borehole at 58.01m OD. This was overlain by deposit (405), probably filling a feature (407) whose extent was not seen in plan and dated to 1475-1550.

3.2.35 This was overlain by a very compacted layer of re-deposited gravel (404) which may have represented a surface. There was an indication of a camber to this deposit, suggesting a NE-SW alignment and it is feasible that it represented a path. This was overlain by a silty deposit (403) which produced finds dating from 18/19th centuries, and may equate to the garden soils seen in Trenches 2 and 3 in the Kitchen Quad. Indeed, the interface between the top of the possible pit fills and the possible garden soil is at a similar elevation (59.05m OD) to the equivalent interface in the Kitchen Quad (58.97m OD).

3.2.36 The remaining deposits (402 and 401) relate to various re-surfacing episodes in Pump Quad and - together with deposit 403 - were cut by numerous services.

4 FINDS SUMMARY

(see Appendix C for tables)

4.1 Pottery by John Cotter

Introduction and methodology

4.1.1 A total of 73 sherds of pottery weighing 964g. were recovered from 12 contexts. These represent a range of medieval and post-medieval pottery fabrics. All the pottery was examined and spot-dated during the present assessment stage. For each context the total pottery sherd count and weight were recorded on an Excel spreadsheet, followed by the context spot-date which is the date-bracket during which the latest pottery types in the context are estimated to have been produced or were in general circulation. Comments on the presence of datable types were also recorded, usually with mention of vessel form (jugs, bowls etc.) and any other attributes worthy of note (eg. decoration etc.) - see Appendix C: Table C1.

Date and nature of the assemblage

4.1.2 Overall the pottery assemblage is in a fragmentary condition, although some sherds are quite large and fresh. The earliest sherds (11th-early 13th century) are mostly quite worn. Ordinary domestic pottery types are represented. These are detailed in Appendix C: Table C1 and summarised here. Fabric codes referred to for the medieval wares are those of the Oxfordshire type series (Mellor 1994).

4.1.3 The range of medieval and post-medieval wares here is typical of sites along the main thoroughfares of central Oxford - even though the College lies some distance outside of the city walls. The earliest pottery fabric here comprises a couple of cooking pot rims and a few smallish body sherds of Cotswold-type ware (OXAC). This is dated from c 900 but mainly occurs in Oxford c 1050-1225. The sherds here however are fairly worn and are mostly residual in later contexts.

4.1.4 A few small sherds of Medieval Oxford ware (OXY, c 1075-1300) also occur but again are mostly residual.

4.1.5 A few body sherds of early Brill/Boarstall ware jugs (OXAW) date to the period c 1200-1350 and are probably not significantly residual (Ctxs. 311 and 1002).

4.1.6 Aside from these there is very little in the way of high medieval wares (c 1250-1400) apart from a sherd or two of Brill/Boarstall ware (OXAM) and a few probably residual sherds of green-glazed Surrey whitewares (OXBG) and a single glazed sherd of Minety ware from Wiltshire (OXBB).

4.1.7 There is quite a strong presence of wares dating to the later 15th and 16th centuries (perhaps mainly the latter) including late-looking examples of Brill/Boarstall ware jugs and a large piece of rim from a late 16th-century chafing dish (Ctx 310) as well as a few smallish sherds from imported German drinking vessels in Raeren and Frechen stonewares. Context (203) contained parts of two fragmentary but fresh late Brill/Boarstall ware jugs probably dating to the 16th century, although this context also contained a small sherd of Creamware dating to c 1770-1830 (probably intrusive?). A few sherds of 18th-century pottery were present in Context (403) but nothing later than the Creamware sherd was noted in the rest of the assemblage.

Summary

4.1.8 The assemblage contains a range of common 11th- to 18th-century pottery types, mostly of fairly local or regional origin, but the 16th century is the period best represented. There is however nothing particularly remarkable here and the condition of the assemblage is fairly poor over-all.

4.2 Clay tobacco pipes by John Cotter

4.2.1 The excavation produced a small collection of 15 pieces of clay pipe weighing 81g. from two contexts (402 and 403). These have been catalogued and recorded on an Excel spreadsheet. The catalogue records, per context, the spot-date, the quantity of stem, bowl and mouth fragments, the overall sherd count, weight, and comments on condition and any makers' marks or decoration present (Appendix C Table C2).

4.2.2 The assemblage is fragmentary and unimpressive and mostly comprises stem fragments. Only two pieces of pipe bowl are present. Both contexts are dated by the pipes to the late 17th or early 18th century. Context (403) produced most of the pieces including the two bowl fragments, one of which had a broad circular heel. The other bowl was represented only by a trace of the bowl attached to a stem fragment. One other piece of stem bore a circle of Dutch-style milled or rouletted decoration around the stem. Otherwise all the pieces are plain and unmarked.

4.3 Ceramic building material (CBM) by John Cotter

4.3.1 A total of 48 pieces of CBM weighing 4662g. were recovered. These came from eight contexts. This was examined and spot-dated during the present assessment stage in a similar way to the pottery and the data recorded on an Excel spreadsheet (see Appendix C Table C3). As usual, the dating of broken fragments of ceramic or other building materials is an imprecise art and spot-dates derived from them are necessarily broad and should therefore be regarded with caution.

4.3.2 The assemblage, which is mostly very fragmentary and worn, is described in some detail in Appendix C Table C3 and summarised only briefly here as there is little of much note.

4.3.3 Most of the assemblage here - apart from the bricks and the drain pipe - are of medieval date (c 1200-1550). As usual in Oxford, fragments of plain flat roofing tile (peg tile) predominate, some with circular nail holes and some with patches of brown glaze. A surprisingly high number of medieval ridge tile fragments (at least 11) were recovered and these occurred in almost every context, though were residual in some of these. These are mostly very fragmentary and worn. Most ridge tile fragments are in a distinctive fairly smooth orange-pink fabric (Fabric VIIB) with traces of clear or greenish glaze including an unusually thick edge fragment (23 mm. thick). This fabric is normally dated to the 13th-14th centuries in Oxford.

4.3.4 Two small very worn and almost certainly residual pieces of decorated medieval floor tile were recovered (Ctxs. 203 and 1002). One had traces of inlaid white slip decoration and the other was plain but covered with a white slip and had deep stabbing or keying on the underside. Both are examples of the 'Stabbed Wessex' type of floor tiles dated c 1280-1330. This type is commonly found in Oxford.

4.3.5 A few large pieces of 'Tudor' (probably 16th-century) red brick were also present and a few pieces of brick perhaps as late as the 19th century (Ctx 403). The same context also produced three large pieces of a brown salt-glazed stoneware drain pipe, probably

of 19th-century date, and a small slab-like piece of yellowish mortar (weight 18g.) perhaps of similar date.

4.4 Metal finds by Ian Scott

4.4.1 There are 8 metal finds, comprising 5 iron, 2 copper alloy, and 1 lead find. The objects were recovered from 4 contexts.

4.4.2 The finds include a copper alloy drape ring (context 403), and 3 small fragments of a copper alloy pin (context 317), which are probably post medieval, and part of a late medieval or early post medieval horseshoe (context 203). There is a length of lead rod bent and pointed at one end (context 402), which is not closely datable, and an iron collar or pipe junction with a thread cut on the outer surface at one end, 2 nails and a length of wire (all context 403). The collar is modern, and the handmade nails are not closely datable.

4.5 Animal Bone by Lena Strid

Introduction

4.5.1 The animal bone assemblage from Worcester College, Oxford, comprised 142 re-fitted fragments from four phases, ranging from the late Medieval period to the 20th century. The entire assemblage was hand-collected, and is thus biased against small taxa.

Methodology

4.5.2 The bones were identified using a comparative skeletal reference collection, in addition to osteological identification manuals. The fish bones were identified by Rebecca Nicholson. All animal remains were counted and weighed, and where possible identified to species, element, side and zone (Serjeantson 1996). Sheep and goat were identified to species where possible, using Boessneck et al. (1964) and Prummel and Frisch (1986). They were otherwise classified as 'sheep/goat'. An attempt to distinguish pheasant from domestic fowl on ulna was carried out Tomek and Bocheński (2009), nevertheless, no bones could be identifies as pheasant. Ribs and vertebrae, with the exception of atlas and axis, were classified by size: 'large mammal' representing cattle, horse and deer; 'medium mammal' representing sheep/goat, pig and large dog.

4.5.3 The condition of the bone was graded on a 6-point system (0-5). Grade 0 equating to very well preserved bone, and grade 5 indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable. For ageing, Habermehl's (1975) data on epiphyseal fusion was used. Measurements were taken according to von den Driesch (1976), using digital callipers with an accuracy of 0.01 mm.

The assemblage

4.5.4 The assemblage is very small and is therefore less suited for a through analysis of college diet or processing of animal carcasses. Nevertheless, the observed predominance of domestic livestock is typical for medieval and post-medieval non-high status assemblages. Other animals which were represented in small numbers include rabbit, red deer and domestic fowl. The presence of dog at the college is implicit in the gnawed bones which occured in small numbers all phases except the post-medieval one.

4.5.5 The bones were in a good to fair condition, suggesting a rapid disposal of organic waste. Only one bone, a sheep/goat humerus in the late medieval/post-medieval assemblage, showed evidence of burning.

4.5.6 Due to the small size of the assemblage, data for ageing are scant. Judging by epiphyseal fusion most cattle and sheep/goat were slaughtered as adults or sub-adults, while pig were mainly skeletally immature. A single juvenile cattle metacarpal, recovered from the post-medieval phase, suggest that veal was included in the diet. The presence of skeletally mature cattle and sheep/goat and skeletally immature pigs is a common pattern in Oxford (Poole 2009, 109; Wilson 1994; Wilson and Bramwell 1980, microfiche 2 E10) and suggests a cattle and sheep/goat husbandry focussed on secondary products such as wool, dairy and the use of cattle as beasts of burden. Since pigs don't yield any secondary products they were slaughtered young for meat. College assemblages generally have a higher frequency of younger animals, indicating a preference for prime meat, although the available assemblages are few in number and the data must be interpreted with caution (Strid 2010, 207).

4.5.7 The majority of the elements came from meat rich parts of the carcass. The presence of two cattle metapodials in the late medieval/postmedieval assemblage suggest that entire shanks were bought, or that the bones were deliberately bought for stock making or as gnaw bones for dogs. Several bones, primarily in the larger late medieval/postmedieval assemblage, displayed butchery marks, the majority of these deriving from disarticulation or portioning of the carcass and from filleting.

4.5.8 The few measureable bones of cattle and sheep/goat were within the same size range as contemporary bones from other Oxford sites.

5 Discussion and Interpretation

Natural topography

5.1.1 The untruncated natural banded gravel and sand horizon was only definitely encountered in Trench 3 at a height of 58.92m OD, which compares favourably with observations further south in TP 4 of 58.81 m OD and TP 5 of 58.61 m OD.

5.1.2 These heights are significantly higher than those in Trenches 1, 2, and 4 where natural gravel could not be physically reached by excavation (without the need to shore the trenches) and therefore was reached by hand augering, and recorded levels of 57.45 m OD, 58.11 m OD and 58.01 m OD respectively. It is considered probable that these readings are due to the presence of negative archaeological features (such as pits), which have truncated the natural gravel horizon.

Possible pre-medieval activity

5.1.3 The composition of the fills of the earliest features in Trench 3 (300, 302, 304, 306) was not dissimilar to that of the glacial loessic subsoil known to overlie the second gravel terrace upon which Oxford sits. The fact that these types of fills are likely to primarily derive from the loess may imply that that this deposit was still relatively widespread at the time the fills were deposited, and that consequently they pre-date any significant truncation of the subsoil.

5.1.4 A significant number of features with similar fills have been excavated in the city, and have proved to be of relatively early date. These include two barrow ditches excavated on the site of the Sackler Library (OAU, 2001, p.15-17), which together with those recently excavated at the Radcliffe Infirmary site and the Neolithic Henge off St Giles

(see above), have re-enforced the view that the area between The University Parks and the Thames was once part of a prehistoric funerary landscape. Given the relative proximity of these sites to Worcester College (150m, 500m and 800m respectively), it is feasible that the features in Trench 3 are associated with this phase of activity.

5.1.5 Alternatively, features with similar fills have also been noted on a number of sites across the city from features dated to the Late Saxon or early Medieval periods (e.g. Norton and Dodd *in prep*, Teague and Ford *in prep*).

Medieval

5.1.6 From the late 13th/early 14th century the Site covers the properties of Gloucester College (to the north) and the Carmelite Friars (to the south), but little is known either historically or archaeologically of the use of the site prior to their documented occupants. The east-west boundary between the two properties appears to run to the rear of a narrow east-west running area that lies to the rear of the extant southern range of the Main Quad, and the extant southern range of the Pump Quad(Munby and Dodd, Fig. 1). It may also include the southwards projecting small rear yard area of Pump Quad and the kitchen on the yards eastern side. If the Gloucester College property included the latter then the boundary matches the change in alignment, or 'kink', in the current boundary wall along Worcester Street (location of TP 10).

5.1.7 Although no definitive date can be attributed to the earliest features in Trench 3, the fact that they are cut by a 16th century (post-Dissolution) pit (308) would imply that they are likely to date at least to the medieval period. A single sherd of 13th-15th century pottery was recovered from the top of the fill of feature (302), but was not securely stratified within it.

5.1.8 This sherd together with other residual medieval pottery from later contexts suggest that there is some indirect archaeological evidence for 13th - 15th century activity at the site.

5.1.9 It can also be argued that the east-west aligned wall (207) in Trench 2 was potentially earlier than deposit (203), which would suggest that its construction potentially pre-dates the late 16th century. The walls' eastward projection points directly at the 'kink' in the extant boundary wall between Worcester College and Worcester St (location of TP 10), and its westwards projection meets the corner of the structure first clearly shown and labled as “Kitchen” on the 1st Edition Ordnance Survey map (Fig. 5). Loggan's general view of 1673 shows an east-west aligned wall running from the south-east corner of a structure in a similar position to the later “kitchen” to the boundary wall . Therefore wall/structure 207 would appear to be represented on Loggan, and potentially is the wall that demarcates the property boundary between Gloucester College and the Carmelite lands to the south. It may therefore be of medieval origin, and indicate that the 'kink' in the boundary wall marks the historic boundary between the two ownerships. However, it should be noted that the “kitchen” building and wall are not shown on the Agas map of 1578.

Post-medieval

5.1.10 The fills of pits 308, 210 and 407[?] along with deposit 102 from Trench 1 share similar homogenous characteristics and a lack of finds. This does not suggest the dumping of domestic refuse from nearby habitation, but perhaps rapid backfilling with relatively sterile material excavated from elsewhere.

5.1.11 Pits (407) and (210) date to 1475 -1550+ and 1450 -1700+ respectively; pit (308) dates to at least the later 16th century. From 1539 (Dissolution) the site was probably abandoned until 1560 when it was used (possibly only partially) as Gloucester Hall an annexe by St John's College. It would not be inconceivable that these features represent pits excavated for gravel extraction within the former Carmelite and Gloucester College sites that were only partially used, or at times disused.

5.1.12 If deposit 206 also fills pit 210 and is therefore potentially post-Dissolution then it may concur with the cartographic sources and suggest that the Kichen and wall were constructed between 1578 and 1675 as an addition to Gloucester Hall.

Victorian and later

5.1.13 The structural remains in Trench 1 almost certainly relate to buildings shown on a number of 19th century cartographic sources. Structure (104) probably represents the western wall of a toilet block shown on the OS 1st edition and a subsequent drainage plan from 1888. The alignment of the remaining walls would seem to correlate with a possible auxilliary block against a boundary wall between the Kitchen Yard and Five's Court shown initially on the OS 1st edition.

5.1.14 The alignment of the structures at the south end of the Kitchen Quad appear to remain until the re-configuration of the Kitchen Range and the construction of the Nuffield Building in the mid 20th century.

APPENDIX A. TEST PIT DESCRIPTIONS AND CONTEXT INVENTORY

Trench 1					
General description				**Orientation**	N-S
Possible late medieval pit cutting natural gravel and in turn cut by series of ?19thC structural remains and later 19thC drainage				**Length**	5m
				Width	1.5m
Contexts					
context no	**type**	**Width (m)**	**Depth (m)**	**comment**	**description**
100	Deposit		0.4	Modern made ground/levelling deposit	
101	Deposit		0.45	Possible pit fill/garden soil	Friable, brown grey silty clay
102	?Fill		1	Possible pit fill	Friable grey/brown silty clay occasional gravel inclusions
103	Deposit			Possible 19th century fill	Mixed
104	Structure			NNE-SSW wall	
105	Structure			NE-SW wall	
106	Structure			NW-SE wall	
107	Cut			Cut of 19thC drain	
108	Fill			Fill of 19thC drainage trench	

Trench 2					
General description				**Orientation**	N-S
Possible 15th-16thC pit cut by ?17thC garden wall overlain by post-med garden soil,				**Length**	5m
				Width	1.5m
Contexts					
context no	**type**	**Width (m)**	**Depth (m)**	**comment**	**description**
200	Surface		0.08	Courtyard surface	Flagstones
201	Deposit		0.32	Bedding layer for 200	Mixed silt and gravel
202	Deposit		0.1	Bedding layer for 200	Compact white gravel
203	Deposit		0.76	Possible garden soil	Friable mid grey brown silty clay
204	Fill		0.04	Fill of possible pit 210	Lens of fairly firm dark yellowish brown sandy silt with 10% gravel
205	Fill		0.42	Fill of possible pit 210	Firm very dark brown silt
206	Fill		0.44	Possible Fill of possible pit 210	Firm dark greyish brown silt with 10-20% small stones and gravel
207	Structure			East-west aligned wall footing	
208	Layer			Natural gravel	
209	Fill		0.5	Fill of possible late med pit 210	Firm very dark greyish brown silt with 5-10% small gravel
210	Cut			Possible late med pit	

Trench 3					
General description				**Orientation**	E-W
Possible early med/prehistoric features cut by 15th-16thC pit(s)				**Length**	5m
				Width	1.5m
Contexts					
context no	**type**	**Width (m)**	**Depth (m)**	**comment**	**description**
300	Cut	0.45		Base of possible pit, heavily truncated by Pit 308	
301	Fill		0.25	Fill of base of possible pit 300	re-deposited sand and gravel in a reddish brown clay silt matrix
302	Cut	0.5 plus		Possible prehistoric feature	
303	Fill		0.6	Fill of possible prehistoric feature 302	Mid reddish brown clay silt
304	Cut	0.28 plus		Base of possible pit, heavily truncated by Pit 308	
305	Fill		0.21	Fill of base of possible pit 304	re-deposited sand and gravel in a reddish brown clay silt matrix
306	Cut	0.3 plus		Possible prehistoric feature	
307	Fill		0.34	Fill of possible prehistoric feature 306	Mid reddish brown clay silt
308	Cut	2.6 plus		Late med pit	
309	Fill		0.2	Fill of late med pit	Predominantly re-deposited gravel eroded from pit edges
310	Fill		0.1	Fill of late med pit	Same as 309
311	Fill		0.22	Fill of late med pit	Mid grey brown clay silt with 5-10% gravel fragments
312	Fill		0.22	Fill of late med pit	Same as 311
313	Fill		0.64	Fill of late med pit	Mid brownish grey silty clay with 3-5% gravel fragments
314	Deposit		0.21	?garden soil (possibly re-worked pit fill?)	Mid grey brown clay silt
315	Deposit		0.24	?garden soil/buried topsoil	Mid-dark grey brownish grey clay silt
316	Deposit		0.15	Levelling deposit for courtyard surface	Re-deposited gravel
317	Layer			Natural gravel	

Trench 4					
General description				**Orientation**	n/a
Possible 15th-15th century pit cutting natural gravel overlain by possible path and 19th century ?garden soil				**Length**	1.5m
				Width	1.5m
Contexts					
context no	**type**	**Width (m)**	**Depth (m)**	**comment**	**description**
400	Surface			Courtyard surface	Compacted gravel
401	Deposit			Levelling deposit	Sandy gravel
402	Deposit			Made ground	Sandy silt
403	Deposit			?Garden soil	Mid brownish grey clay silt
404	?Surface			?Surface/path	Compacted gravel
405	Fill			?Pit fill	Dark greyish brown clayey silt with 5% gravel
406	Layer			Natural gravel	
407	Cut			?Pit cut	

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APPENDIX C. FINDS TABLES

Table C1: Pottery spot dates

Context	Spot-date	No.	Weight	Comments
203	c1770-1830	34	386	1x ?INTRUSIVE Creamware dish rim, smallish sherd. Pot mainly = 2x fresh late med Brill orange-buff jugs - prob c1450-1550? Incl rim & joining strap handle & flat base. 3x green-glazed med Surrey whiteware (2 vess) incl bs from 13/14C jug with trace rouletted red strip. 4x residual OXAC. 2x OXY. 1x thick Minety bodysherd (bs) with ext glaze
205	c1450-1600	3	48	Poss 1 vess? Joining bss green-glazed jug & strap handle in late Brill (or Nettlebed?) with v large tabular inclusions of red iron oxide
303	c1200-1500?	1	4	Bs poss OXAG/Newbury C? Brown sandy ware with allover ext white slip under thin decayed glaze
310	c1550-1625	3	87	Large fresh rim frag late med/early post-med buff Brill chafing dish with Dutch-style folded/pinched upright terminal on rim & holes pieces through wall below, clear glaze. 2x small worn bss late Brill
311	c1200-1350?	2	8	Small bs prob OXAW glazed jug. Bs glazed OXY
312	c1525-1600?	4	44	Bs early-looking Frechen globe & cylinder jug neck w cordon. Large bs ?late-ish Brill jug with vertical red paint stripe. OXAC, OXY
313	c1225-1400	1	3	Bs Brill jug w red stripe
317	c1475-1550+	5	19	1x bs Raeren stoneware. 3x late Brill orange-buff incl jug rim. Bs OXY
402	c1550-1750	2	38	Bs Frechen stoneware. Pad base from ?Cheam jug
403	c1700-1800	5	112	Rim from large post-med Brill slipware dish w allover int white slip under clear glaze - might have had marbled dec in centre? PMR. OXAP. Black-glz tyg
405	c1475-1550	10	161	Bs Raeren stoneware mug. Late Brill near-stoneware jug handle w diagonal slashes. Resid OXY, OXAC incl cpot rims. 1x med Surrey whiteware sag base
1002	c1200-1350?	3	54	2x slightly worn jug bss prob OXAW incl 1 with speckled green glz and the other with clear pale green/yellow glz. 1x small worn bs OXAC
TOTAL		73	964	

Table C2: Clay Pipe

Context	Spot-date	Stem	Bowl	Mouth	Tot sherds	Tot Wt	Comments
402	L17/E18C?	2	0	0	2	9	Fairly fresh. Stem bores (SB) c2.5mm
403	L17/E18C?	11	2	0	13	72	Fairly fresh chunky stems. Stem bores (SB) c2-3mm. Max 75mm long. Some prob join. 1 with circle of Dutch-style milling around stem. 2x stems with frags of heel/bowl incl 1 broad circ heel L17/E18C
TOTAL		13	2	0	15	81	

Table C3: Ceramic Building Material

Context	Spot-date	No.	Weight	Comments
203	L15-16C?	7	387	1x worn corner frag red Tudor brick c55mm thick. 3x med peg tile frags (1 brown glazed) mostly worn. 2 joining worn frags from a ridge tile in pink Oxford Fabric VIIB with traces glaze and poss small perforation bored through. 1x worn scrap (20g) Stabbed Wessex-type medieval decorated floor tile (c1280-1330) with traces white slip inlay
312	13-16C	3	145	1x worn frag med orange sandy roof tile with decayed glazed patches. 1x worn thick edge frag orange sandy ridge tile. 1x worn frag ?ridge tile in thick grey-brown fabric tempered with v coarse rounded quartz with quartz gritting underside - poss from Abingdon area? Ext surface covered with decayed white ?glaze or whitewash?
313	13-14C?	5	209	4x worn similar orange-pink Fabric VIIB tile frags incl 1 with traces of a pair of nailholes, 2 poss from same tile. 1x v thick 19mm ridge tile frag in VIIB - similar but thicker to that in (203)
317	13-16C	1	34	Edge frag orange sandy ridge tile 18mm thick with patch of clear glz on top
402	13-16C	6	291	Poss 13-14C? Med pegtile frags, fairly worn incl 1 with circular nailhole & 1 with brown glaze. 1x unusually thick (23mm) ridge tile edge in pink VIIB fabric with traces glaze
403	c1820-1950	15	3137	3x large fresh frags brown salt-glazed stoneware drainpipe - prob Victorian? C8 frags brick incl red Tudor brick end 45mm thick x 102mm wide, 2x prob L18/19C red brick frags 65mm thick. Few residual frags med tile incl VIIB ridge tile frag
405	13-16C	10	404	Poss 13-14C? 5x worn med red pegtile frags incl 1 with circular nailhole. 4x ridge tile edge frags in hybrid orange-pink VIIB/IIIB fabric incl corner frag with patches green glaze. All fairly worn.
1002	c1280-1350	1	55	Small worn frag plain Stabbed Wessex-type floor tile but with plain white slip allover upper surface under decayed clear glaze. 23mm thick. The underside has several v deep and quite wide (c7mm) stab marks
TOTAL		48	4662	

Appendix D. Summary of Site Details

Site name: Worcester College, Lecture Theatre and Kitchen Project, Worcester Street, Oxford

Site code: OXWORC11

Grid reference: SP 509 064

Type: Evaluation

Date and duration: January 30th - February 3th 2012

Area of site: 883m^2

Summary of results: In January 2012, Oxford Archaeology undertook a a field evaluation at Worcester College, Oxford (SP 509 064). The evaluation followed on from a watching brief which was maintained during the excavation of geotechnical test pits.

The works revealed at least two distinct phases of negative features truncating the natural terrace gravels. The earliest of these was not securely dated, but the composition of the fills was not dissimilar to prehistoric and early medieval features excavated elsewhere in the city. The later phase of features appeared to comprise 15th-16th century pits of indeterminate function. The fills of these features were overlain by a series of possible garden soils reflecting the agrarian use of this area of site, as depicted on a number of cartographic sources.

In addition to these features, a number of structural remains were also revealed. One of these was an east-west aligned wall which may correspond to a garden wall depicted on a 17th century engraving of the city - the relationship between this structure and the garden soils mentioned above was unclear. The remaining structures are likely to correlate to outbuildings in the Kitchen courtyard which are shown on the OS 1st edition map.

Location of archive: The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with Oxfordshire Museum Service in due course, under the following accession number: OXCMS : 2012.33.

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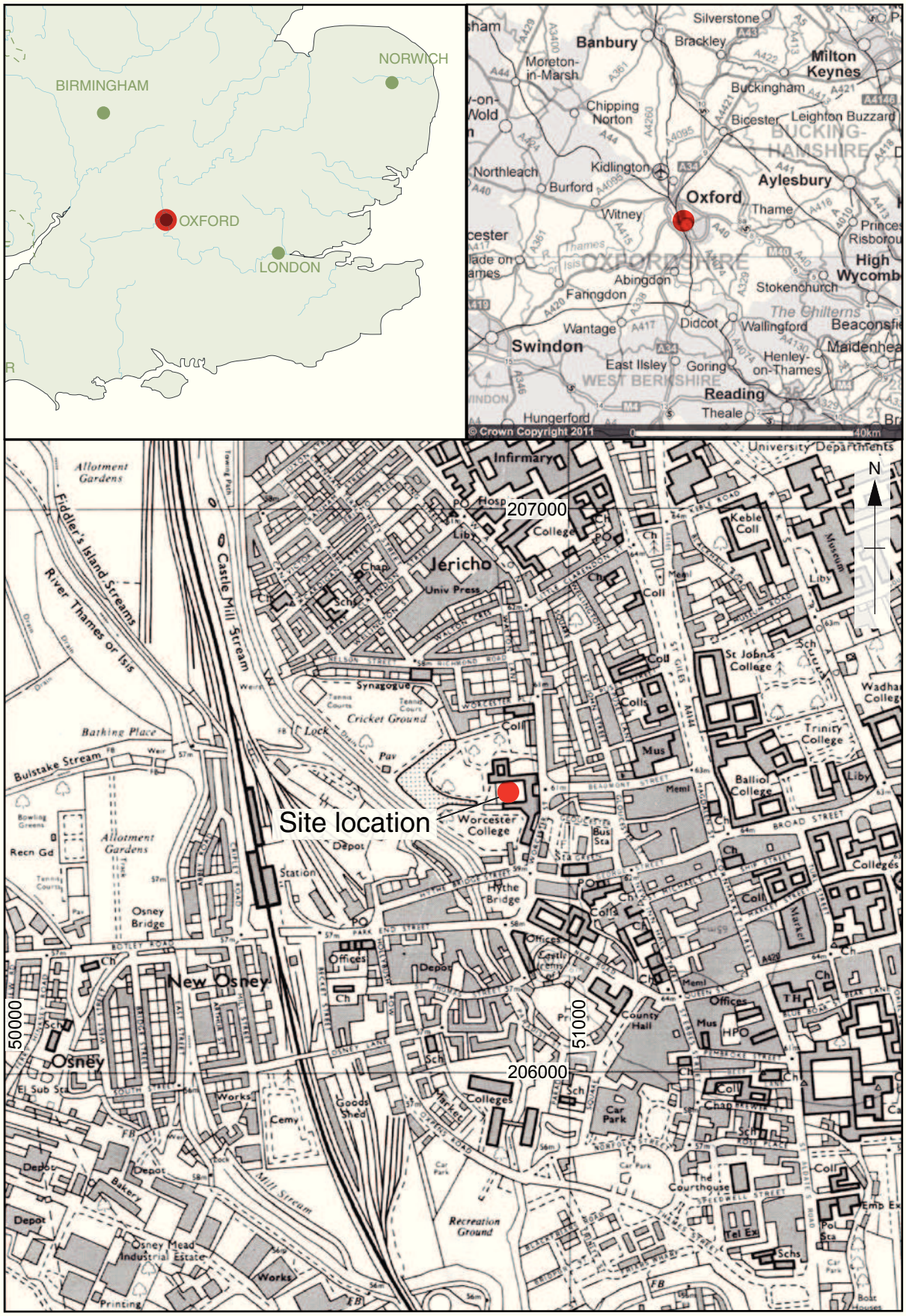

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Figure 1: Site location

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Figure 2: Trench and Test Pit locations showing archaeological structures and features and principal components of the proposed scheme

Figure 3 : Trench 1 plan

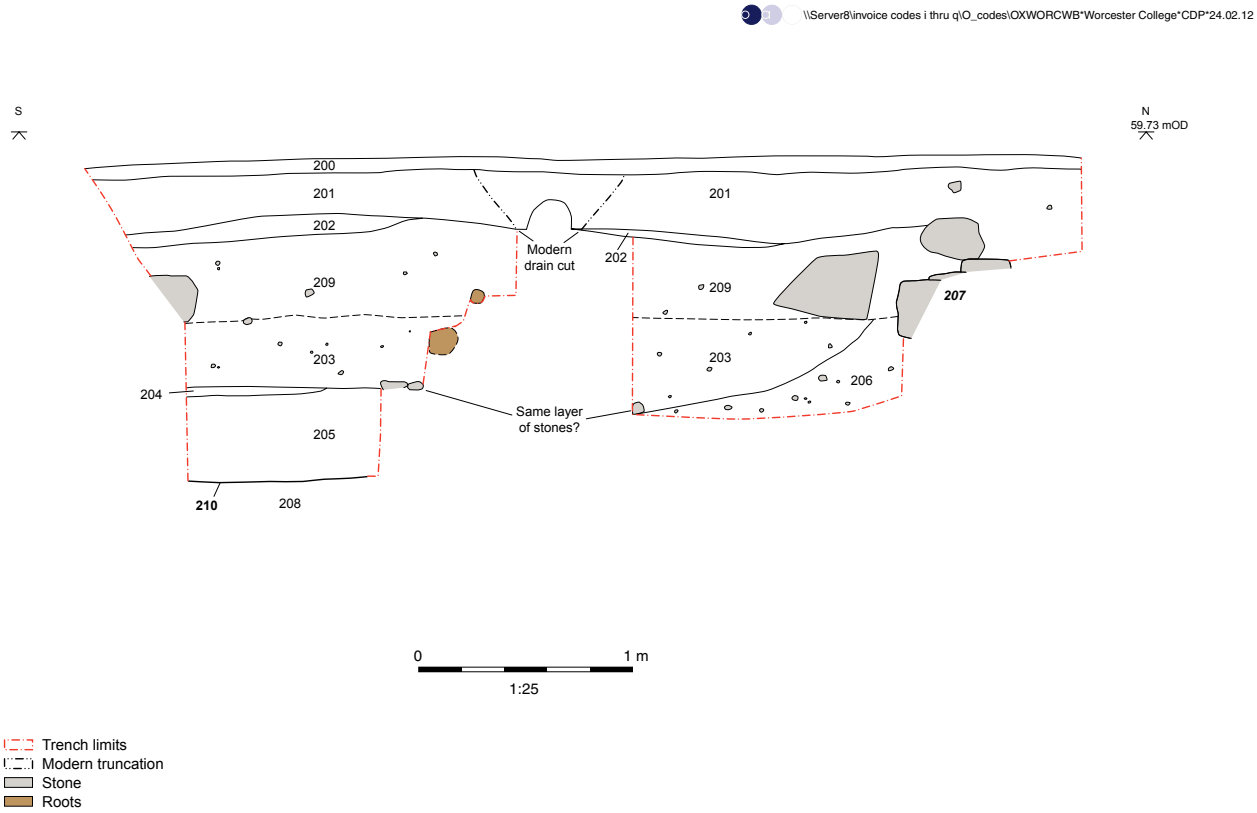

Figure 4 : Trench 2 - Section 200

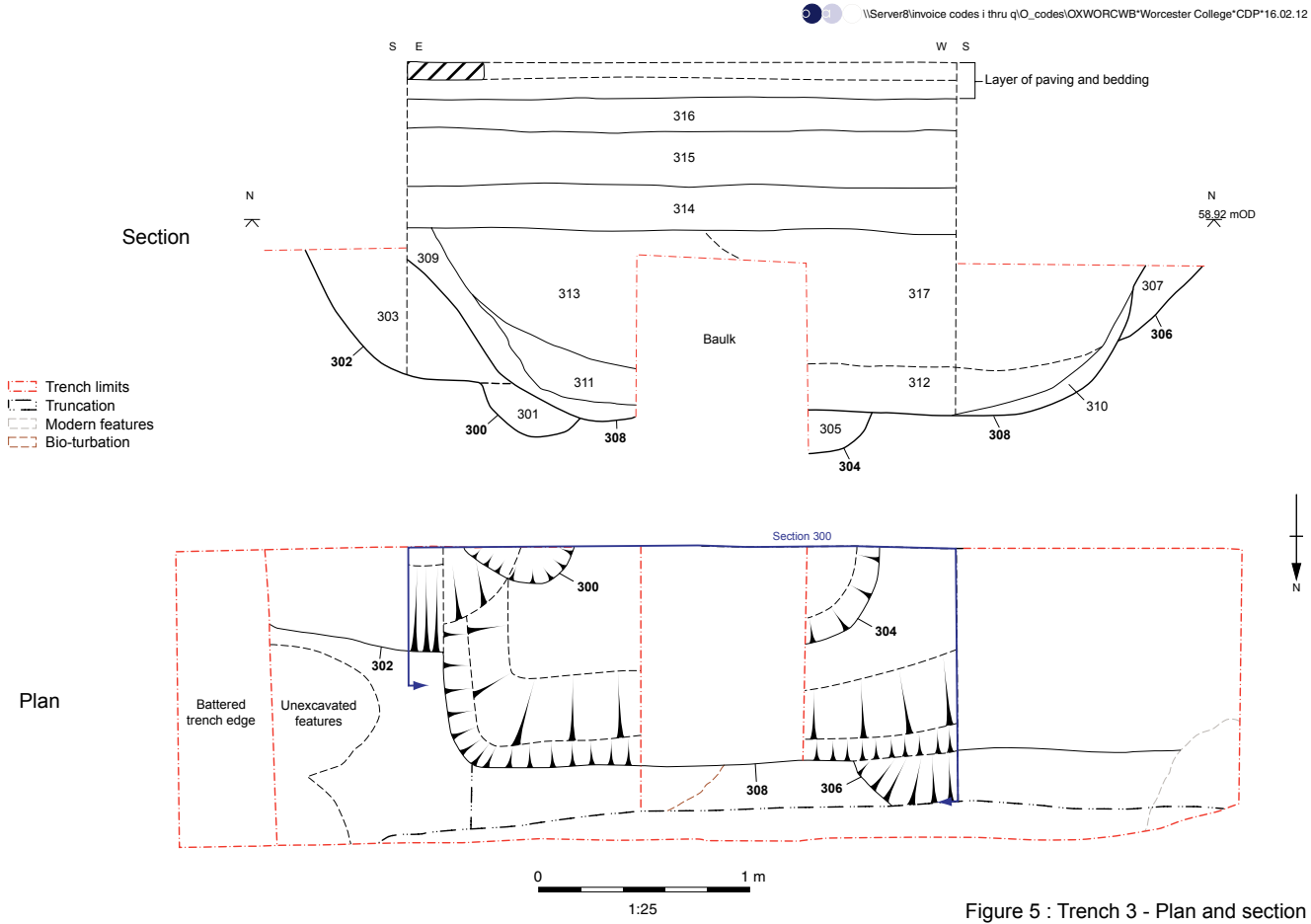

Figure 5 : Trench 3 - Plan and section

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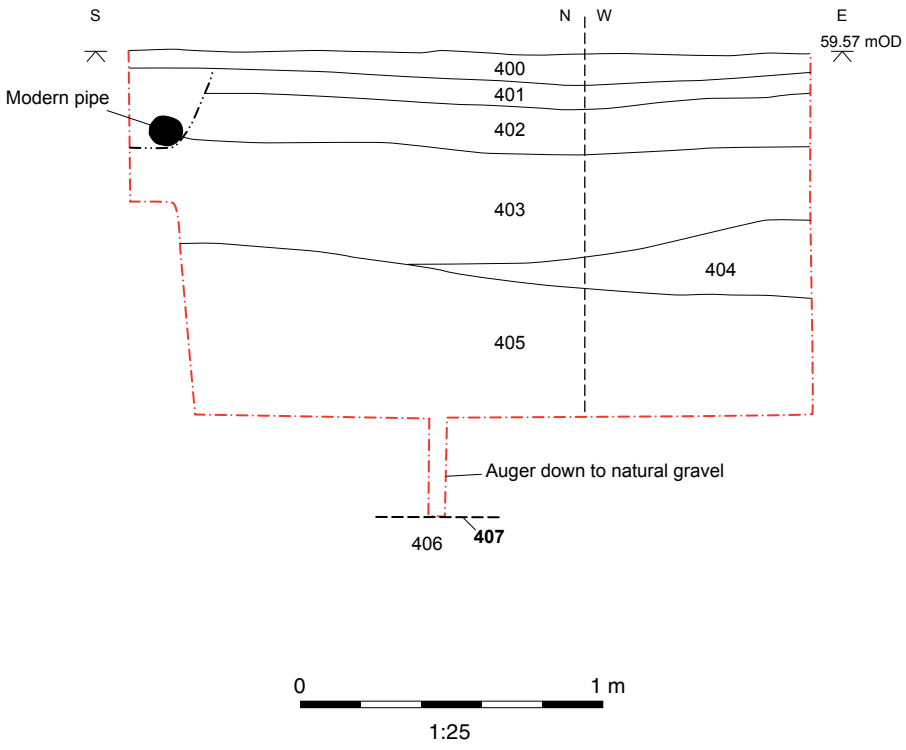

Figure 6: Trench 4 - Section 400

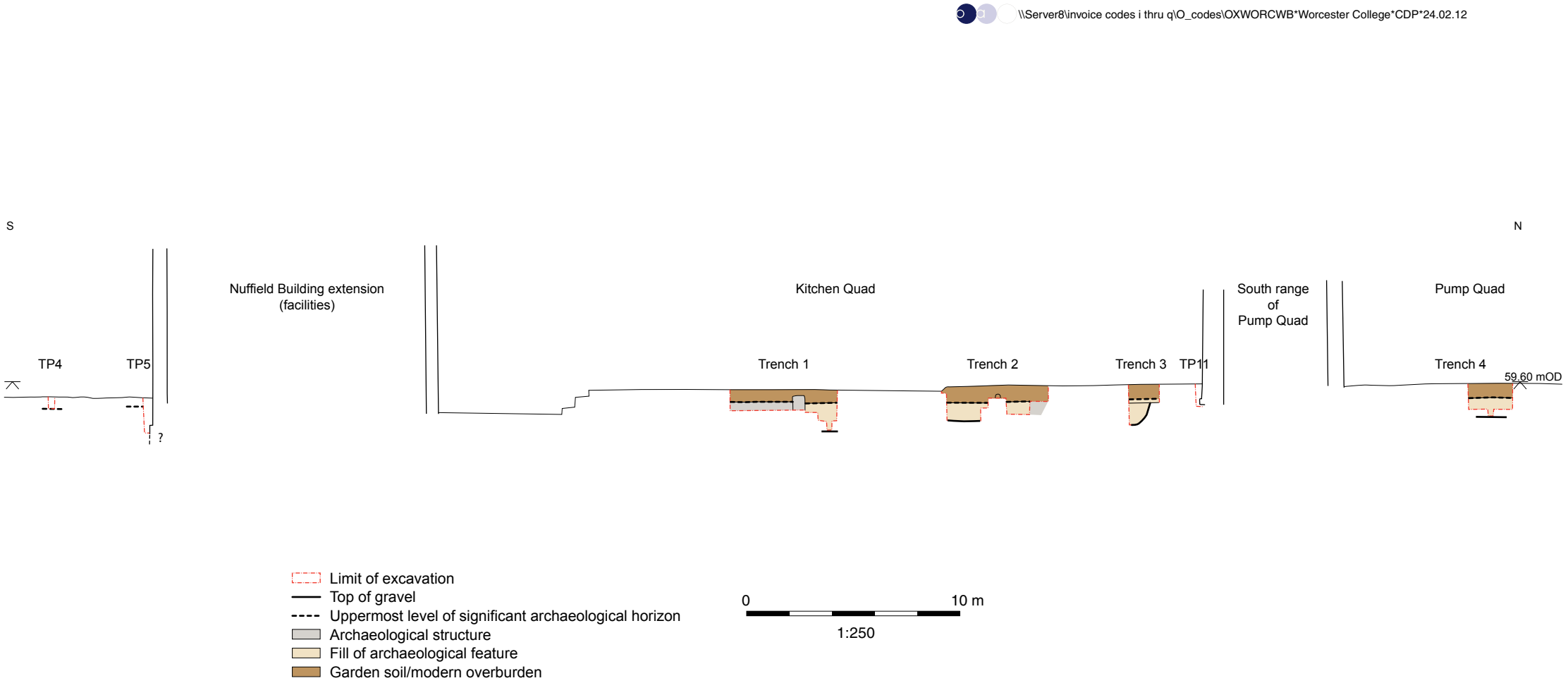

Figure 7 : Schematic profile - Showing levels of natural geology and significant archaeology across the Site

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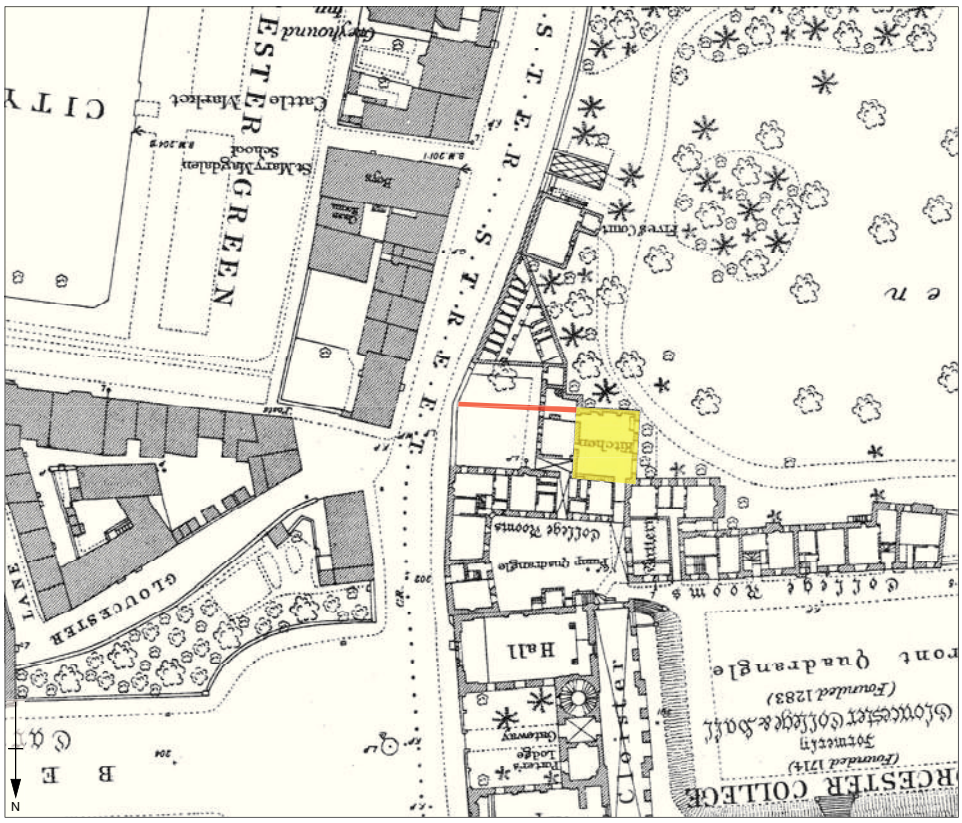

Kitchen
Wall

Figure 8: Extracts from 1st edition Ordnance Survey (1880) top and Loggan (1673) showing wall from Trench 2

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