

# Engineering Test Pits The Buttery and Kitchen University College High Street, Oxford



## Archaeological Evaluation Report



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## Engineering Test Pits, The Buttery and Kitchen University College, High Street, Oxford

NGR SP 5174 0620

### ARCHAEOLOGICAL EVALUATION

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### Summary

*In April 2007 Oxford Archaeology (OA) undertook the excavation of 2 engineering test pits at University College, High Street, Oxford. The work was commissioned by Dr Roland B Harris (on behalf of University College) and followed up a small field evaluation carried out by OA in 2006. The test pits were designed to establish the nature and depth of the footings of the range of buildings to the south of the main kitchen block, and to assess any engineering or archaeological implications of proposals to redevelop the Kitchen, Buttery and Hall. Although both the eastern and western walls displayed evidence of an offset footing constructed of roughly hewn limestone blocks, the test pits revealed a significant variance in the depth of the foundations, which appeared to reflect the stability of the ground through which the foundations had been constructed.*

*The test pit against the western wall revealed relatively shallow foundations built off a compacted gravel surface with later yard surfaces post-dating the construction of the footing. This test pit also revealed some evidence that the standing wall had been re-built over an earlier foundation. The foundation revealed within the test pit against the eastern wall was considerably deeper and had been constructed through the fills of a 17th century cess pit. Evidence for a possible construction horizon was recovered from both test pits and may equate to a deposit of similar composition which was observed during the previous evaluation phase.*

## 1 INTRODUCTION

### 1.1 Location and scope of work

- 1.1.1 University College proposes to redevelop the Kitchen, Buttery and Hall at University College, High Street, Oxford. This will comprise refurbishment of the Kitchen, expansion of the buttery, and associated remodelling of the access arrangements in the hall, Kitchen and buttery area.
- 1.1.2 Between 29th August-12th September 2006 Oxford Archaeology (OA) carried out a field evaluation in advance of an application to Oxford City Council (OCC) for planning consent. OCC has now granted planning permission (ref: 06/02179/FUL - dated 07.03.07) and the current evaluation phase pertains to two engineering test pits that are required to gain geotechnical information on the nature of the foundations to current structures within the development area.
- 1.1.3 The 2006 evaluation informed the design of the proposed development and the archaeological mitigation strategy (Roland Harris, Oct. 2006): this additional investigation had the potential to require further modification of the design and mitigation strategy.
- 1.1.4 University College is situated on High Street, Oxford, within a block formed by High Street to the North, Logic Lane to the East, Kybald Street to the South and Magpie

Lane to the West (Fig. 1). The test pits were located against the eastern and western walls of the standing building to the south of the main kitchen building (Fig. 2).

## 1.2 Geology and topography

1.2.1 The site is situated on the eastern side, and c 100m north, of the edge of a gravel promontory consisting of Quaternary River Gravels of the 2nd (Summertown-Radley) Terrace Deposits (British Geological Survey sheet 236). The promontory extends between the River Isis c 1 km to the west and the River Cherwell c 400m to the east. The gravels on this terrace are typically overlain by a 0.3m depth of red brown loessic loam. It is centred on NGR SP: 5174 0620.

1.2.2 Existing ground levels in the location of the trenches are recorded at 61.45 OD (ATP4) and 62.04 m OD (ATP3). Recent excavations at Post-Masters Hall, Merton College some 600 m to the south-west recorded natural gravel at c 59 m AOD (this was not overlain by loess and is assumed to have been truncated by an unknown amount).

## 1.3 Archaeological and historical background

1.3.1 A comprehensive archaeological background has been established in the Brief by Dr Roland B Harris (17th August 2006) - this is reproduced below.

### *Summary of the development of the site*

1.3.2 Oxford was an Anglo-Saxon burh founded as part of the system of 31 fortresses that the most recent analysis suggests were built between May 878 and August 879 as a crucial part of Alfred's successful military strategy to drive the Vikings from Mercia and London. If correct, this represents a revision of the conventional dating of the burh at Oxford to between 911 and 914-19, but is more consistent with the existence of a silver penny of King Alfred (871-99), with the mint-name Oxford (Ohsnaforda).

1.3.3 The location of a burh at Oxford was doubtless stimulated by the important mid Saxon crossing of the Thames in St Aldate's. The extent of the burh is not entirely certain, although it has long been accepted that the area between the later medieval Eastgate and Schools Street/Oriel Street (in which the proposed development lies) represents an extension, perhaps of the early 11th century. The evidence for this is largely topographic (the eastern part of the later medieval town wall is offset northwards by c 60m at this point). The case for a smaller burh has also relied on matching the length of the perimeter of the defences to the value of the hidage for Oxford (itself not entirely clear for this burh due to corrupted text) in the Burghal Hidage, despite the fact that a strict relationship between hides, manpower, and wall length demonstrably does not apply throughout the system of Alfredian fortresses. The importance of determining the extent of the Saxon burh can be over emphasised, however, since it is probable that it had suburbs from the outset (as seen, for example, at Lewes). Certainly, the archaeological evidence (such as the extent of Saxon metalled road surfaces, which includes Catte Street and the eastern part of the

High Street, and evidence of domestic occupation pre-dating the late 10th or early 11th-century foundation of St Peter in the East) for the so-called eastern extension does not differentiate this area from the more certainly identifiable Saxon burh to the west.

- 1.3.4 Indisputably, by the early to mid-11th century, the site lay within the town centre and to the south of the High Street, which led to the Eastgate and to a crossing of the Cherwell beyond (later Magdalen Bridge). Use of the area set well back from the High Street at this period is demonstrated by the discovery of 11th-century rubbish pits at Logic Lane, and 11th-century (or later) pits at Postmaster's Hall Yard, Merton Street. The excavations at Logic Lane also showed that Kybald Street was created c 1130, possibly along the line of an 11th-century boundary fence separating properties fronting the High Street from those fronting Merton Street (the latter appearing to predate Kybald Street). The excavators also conclude that Logic Lane (which dog-legs across Kybald Street) was built at the same time or later, but this assumes that the lengths north and south of Kybald Street are coeval.
- 1.3.5 Documentary evidence of the Kybald Street plots survives from the 13th century onwards, and records the location of the southern part of the proposed development within several properties. The easternmost property was in the possession of William Dossier c 1220, and in the rentals of 1317 and 1324 it was known as Hart Hall, an academic hall that appears to have ceased functioning shortly after 1349. Certainly, in 1353 it was leased to University College. To the west of this were several other small academic halls (probably from east to west, comprising White Hall, Rose Hall and Brend Hall), the exact location and extent of which is unclear: these too were absorbed by the expanding college. To the north of the Kybald Street properties, the proposed development overlies the rear of High Street plots that were combined to form the core of the University College site: Studley, Great University Hall and Ludlow Hall. The part of Kybald Street east of Logic Lane was closed in 1447, but that between Logic Lane and Magpie Lane remained open as late as 1578: it had been reduced to something like its present extent by 1675, doubtless due to the rebuilding and southwards expansion of the college in the 17th century (see below). At this date the development site comprised gardens to the south of the medieval quadrangle.
- 1.3.6 The rebuilding of University College in 1634-75 created most of the buildings that will be affected by the proposed development. During these works a more extensive quadrangle was created, with the south and west ranges built outside the footprint of the earlier quadrangle (which remained standing during the lengthy construction period, until 1668). A detailed structural history of the hall, kitchen, buttery and, to a lesser extent, the chapel will form part of the Archaeological Assessment (Roland Harris, in prep.), but the salient aspects of the history can be briefly summarised as follows:
- 1639-41: walls of south range completed (including hall undercroft), with chapel and buttery roofed and slated.

- 1656-7: hall roofed.
- 1660-6: internal fitting out of chapel.
- 1668-9: new library and kitchen wing added (library fitting out continued until 1675).
- 1776: hall interior remodelled, with plaster vault covering hammer-beam roof.
- 1802: classic frontispiece between hall and chapel destroyed, and ogee cresting of south range removed. Timber roof of chapel replaced by one of plaster.
- 1859-61: new (present) buttery built; new (present) library built; old buttery (at east end of hall) removed and converted to passageway (other aspects of access to kitchen etc. modified at this time too).
- 1862: plaster ceiling of chapel (of 1802) replaced by present timber roof; east wall of chapel rebuilt.
- 1904: hall plaster ceiling removed, timber roof restored, and hall extended westwards by two bays.
- 1959-67: extensive replacement of external stonework of kitchen, hall and chapel ranges, and minor internal alterations (including formation of Alington Room).

### ***Summary of 2006 Evaluation***

- 1.3.7 Two small archaeological test pits (Fig. 2) were excavated to the south of the buttery. Trench 1 measured 1.70 x 0.85m and Trench 2 measured 2.40 x 2.00m. The overburden within both trenches was removed under constant archaeological supervision by a [360°] mini-excavator fitted with a toothless bucket.
- 1.3.8 Trench 1 (ATP 1) was excavated to a depth of 1.6m (60.57m OD) to expose the foundations to the kitchen wall (as required for geotechnical purposes), and was cleaned and recorded.
- 1.3.9 Trench 2 (ATP 2) was located away from standing buildings, and was excavated to assess the archaeology. Trench 2 was shored and subject to further hand-excavation in an attempt to ascertain the depth and character of archaeological deposits. At a depth 3.45m (58.45m OD) hand excavation ceased because of a safety concerns and further sampling of archaeological deposits was achieved using a hand-auger to an additional 600mm (57.85m OD).]
- 1.3.10 The trial holes revealed that 17th-century and later garden soils survive to a depth of 1.30m from the present ground surface (60.59m OD). Loggan's 1675 view shows gardens in this area of the college, with a large tree south of the chapel and east of the kitchen/library range, and, from later maps (e.g. Taylor, 1750) and plans, this appears to have remained the function thereafter.

- 1.3.11 The layer immediately beneath the garden soils comprised fragments of Headington freestone (almost entirely made up of comminuted shells, sea urchins, corals and other marine organisms), which is the principal stone used for the 17th-century rebuilding of University College. Given that this layer (19) was located immediately below the lowest layers containing clay pipe (introduced in the early 17th century), and above a layer (23) that dates from the late 16th century or early 17th century (or later), it is likely that the crushed Headington freestone represents debris, perhaps even the masons' yard, relating to the 17th-century rebuilding of the college.
- 1.3.12 The earliest date of the clay-pipe in Trench 2 was a single bowl of c.1620-40 from the rubble-rich layer (18) immediately above the Headington freestone layer. Although the clay-pipes only provide dates from or after which the layers originated, this and other early bowls in higher layers (one bowl of c.1630-60 from layer (6); and three bowls of c.1640-60 from layer (7)) could suggest that the Headington freestone layer only related to the pre-Civil War phase of rebuilding, which included the adjacent chapel and hall. This is supported by the fact that the layer (18) directly over the Headington freestone layer was identified by the excavator as similar in composition and level to the layer (13) in Trench 1 that was cut by the foundation trench of the kitchen range (1668-9).
- 1.3.13 The 750mm-thick garden soil layer (23) below the Headington stone (i.e. to c.59.80m OD) is consistent with the known use of this part of the college grounds before the 17th-century rebuilding: the documented medieval garden was evidently south of the late 14th-century chapel, and gardens are shown occupying all of this area, as far south as Kybald Street, in Agas's view of 1578.
- 1.3.14 Below this, Trench 2 provided evidence of 13th-century occupation and, possibly, a structure (on the basis of the mortar rubble with limestone fragments of layer (36)). This is consistent with the recorded history of the site. The absence of evidence for the boundary of the High Street properties of Ludlow Hall and Great University Hall (or the preceding tenements) probably reflects the small scale of the evaluation trenches and the imprecision in the reconstruction of the boundary (given its removal in 1392). The absence of earlier deposits and features was probably due to the limited size and depth of the excavated sondage, although the augered deposits may relate to a feature of pre-13th-century date.
- 1.3.15 Possible natural gravel deposits were reached during augering in Trench 2 at c.57.25m OD. This level was considerably below that indicated by the geotechnical borehole investigations (c.58.50m OD (BH 1) – and c.58.70m OD (BH 2)), which are comparable with the level of natural gravel encountered during excavations at Postmasters Hall, Merton College (c.59.00m OD). This suggests that area investigated within Trench 2 lay within a 'cut' feature, such as a pit or ditch, that was at least 1.25-1.40m in depth but whose bounds are unknown.



*Previous archaeological investigations in the area*

1.3.16 A number of archaeological discoveries and excavations have occurred within and in the area of University College both in antiquity and in recent times:

- University College kitchens – excavations (presumably during building works) in 1892 produced finds comprising medieval pottery, including jugs.
- University College Radcliffe Quadrangle – subsidence in 1940 revealed a stone-built chamber under the north-east corner of the southern half of the lawn, probably an 18th-century sump pit.
- Logic Lane – excavations were undertaken on the east side of the lane in 1960 in advance of building by University College. The excavations revealed parts of what appear to be two ring ditches, possibly representing ploughed out Bronze Age barrows (an interpretation supported by the find of a sherd of a collared urn in one of the ditches). Mesolithic/Neolithic flints were found in residual contexts, as were several sherds of Romano-British pottery. The site produced several 11th-century rubbish pits, and a beam-slot and posthole (possibly of a boundary fence). Later medieval evidence comprised further pits, the surfaces of Kybald Street (set out *c* 1130) and four sections of 13th-century walling.
- University College new Common Room (south of 17th-century kitchen) – during construction of this building in 1969, a large stone-lined chamber with a brick vault (probably a cess pit) was discovered lying across the line of Kybald Street. Evidently this must post-date the 17th-century partial closure of this part of Kybald Street. Post-medieval pottery was found.
- 92-3 High Street – medieval rubbish pits (producing a substantial pottery group) exposed during construction of a new strong room for the bank in 1969.
- University College hall, kitchen and buttery – a brief assessment of the historic fabric was undertaken in 1998.
- Postmaster's Hall Yard, Merton College, Merton Street (north side) – excavations took place prior to building works in 2000-3, to the rear of 4a Merton Street (Merton stables – a stone townhouse of *c* 1200). This revealed 11th-century (or later) pits, an undercroft adjacent to 4a Merton Street (probably supporting a chamber rather than a hall), a second building to the north (on the Kybald Street frontage) and later medieval pits. These excavations lie *c* 65 m to the south-west of the proposed Test Pits.

## 2 EVALUATION AIMS

2.1.1 The archaeological works were carried out in order to evaluate archaeological deposits within the proposed development area at two locations where there was a need to gather further Geotechnical information on the nature of extant wall foundations (Fig. 2).

- 2.1.2 The general archaeological aims were to establish the presence/absence of any archaeological remains within the target area and to determine the extent, condition, nature, character, quality and date of any archaeological remains that may affect further need for mitigation during the construction process.
- 2.1.3 In addition the test pits sought to establish the ecofactual and environmental potential of any archaeological deposits and features and to make available the results of the investigation.
- 2.1.4 Specific aims were to:
- determine/confirm the character of any remains present, without compromising any deposit which may merit investigation under full area excavation (subject to the needs of the geotechnical investigations –see below);
  - ensure that deposits are removed (where appropriate and practicable) by proper controlled archaeological methods, prior to utilization of trenches for the purposes of geotechnical investigation;
  - ensure that archaeological data is recovered from geotechnical boreholes/pits;
  - determine or estimate the date range of any remains from artefacts or otherwise;
  - characterise (by minimally destructive techniques, though noting the needs of the geotechnical investigations – see above) any underlying archaeological strata down to undisturbed geology;
  - determine the potential of the deposits for significant palaeo-ecological information;
  - demonstrate the feasibility of discriminating between pits/quarries that may represent college use and any that may predate the college's presence on this site, including features relating to an important possibly pre-urban settlement phase indicated by Logic Lane investigations in 1960.

### 3 METHODOLOGY

#### 3.1 Scope of fieldwork

- 3.1.1 Two small Archaeological Test Pits were excavated against the exterior faces of the north-south aligned walls running south from the southern corners of the main kitchen building: their locations are shown on Fig 2.
- 3.1.2 ATP3 was located within the Master's garden and measured 1.5 m x 1.5 m. It was excavated against the eastern face of the eastern wall of the range of buildings extending south from the main kitchen building. The test pit was originally to be located to the south of the existing compost bins built against this wall. However, following consultation with Dr Roland Harris and Oliver Fyson (AKS Ward) it was

agreed to re-locate the test pit to the north of the compost bins to avoid a tree which was present in the proposed location.

- 3.1.3 ATP4 was located within the works yard and measured 1.5 m x 1.5 m. It was excavated against the western face of the western wall of the range of buildings extending south from the main kitchen building. The trench was re-located to the south of its original location in an attempt to avoid live services. However, following removal of the tarmac and underlying hardcore, a concrete encased service was revealed running parallel to, and approximately 0.35 m to the west of the wall. This was not evident on a comprehensive service plan provided by the college surveyor's office, although appeared to connect to a manhole for a foul water main to the south of the test pit location. Consequently, the service was treated as live and left in-situ and a limited excavation undertaken in the gap between the service and the standing wall.
- 3.1.4 Both Test Pits were hand excavated - in spits of 0.2m or less, to the first significant archaeological horizon. This horizon was hand cleaned and planned. Suitable areas and/or features were identified for excavation.
- 3.1.5 Sample excavation of the sequence was designed to achieve the geotechnical objectives of the test pits whilst allowing for the hand excavation and interpretation of the archaeological deposits. Within the areas identified, sample excavation proceeded in stratigraphic sequence and archaeological features and deposits were recorded using a 'single context' methodology.

## 3.2 **Finds**

- 3.2.1 Finds were recovered by hand during the course of the excavation and were bagged by context. Finds of special interest were given a unique small find number.

## 3.3 **Palaeo-environmental evidence**

- 3.3.1 There were no contexts suitable for Palaeo-environmental sampling.

## 3.4 **Presentation of results**

- 3.4.1 The various deposits and structures encountered during the evaluation are described below in Sections 4 and 5, (a context inventory can be found in Appendix 1). Each test pit is described objectively from the earliest to the latest remains. The descriptive text in Section 5 is followed by the finds reports (Section 6) - a discussion and interpretation of this evidence can be found in Section 7.

## 4 **RESULTS: GENERAL**

### 4.1 **Soils and ground conditions**

- 4.1.1 ATP3 was located on soft standings in an enclosed yard area and light conditions were predominately good throughout the day. During the excavation of the sondage

within ATP3, the confined space within the deep excavation rendered archaeological recording difficult due to poor light and confined working conditions.

4.1.2 ATP4 was located within the tarmaced works yard and was excavated to a maximum depth of 0.80 m below ground level (bgl). However, the interpretation of the deposits encountered was necessarily tentative given the confines of the limited excavation between the live service and the standing wall (see 3.1.3).

4.1.3 The ground conditions were dry and the water table was not reached.

#### 4.2 Distribution of archaeological deposits

4.2.1 In ATP3, archaeological deposits survived as cut and structural features of post-medieval date sealed below thick accumulations of post-medieval garden soils and related deposits.

4.2.2 In ATP4, archaeological deposits survived as a series of 'courtyard' surfaces and structural features of post-medieval date.

4.2.3 Whilst the results from the previous phase of evaluation suggest that deeply stratified soil horizons may survive below these deposits, these were not encountered during the test pitting as excavation was halted once the geotechnical objectives of each test pit had been achieved.

### 5 RESULTS: DESCRIPTIVE

#### 5.1 Description of deposits

##### ATP3 (Figs 3 and 4, Plates 1 and 2)

5.1.1 Test pit 3 was excavated to a maximum depth of 2.10 m bgl at 60.03 m OD. The earliest deposits encountered were almost certainly the fills of a pit (313), the dimensions of which were indeterminate as the edges of the feature were not encountered within the sondage excavated at the base of the test pit. The composition of the fills (see Appendix 1, deposits 301-304) were indicative of a cess pit, which the relatively diverse artefactual assemblage suggested had also been used for the disposal of domestic refuse. The dating of the pottery assemblage from these deposits suggests that it was in use until the early 17th century and presumably pre-dates the mid-late 17th-century rebuilding of the college. These deposits appeared to tip from the south-west, possibly suggesting that the western edge of the pit was just beyond the edge of the test pit (see below).

5.1.2 The top fill (305) comprised a c 0.12 m thick deposit of what site inspection suggested was crushed chalk with fragments of chalk/limestone throughout. This was tentatively interpreted as a rudimentary surface, similar in composition to that recorded during the earlier phase of evaluation (OA, 2006, deposit 19) which would imply crushed Headington freestone rather than chalk/limestone: unfortunately, no sample was retained for definitive petrographic analysis. As there was only a 0.13 m

variance between the top of deposit 305 and the previously identified deposit (60.73 m and 60.60 m OD respectively) it is possible that they form part of a contemporary surface, possibly the horizon for the construction of the main kitchen building in 1668/9. However, deposit 305 did not extend into the southern half of the test pit, although it is possible that a compacted gravel deposit (312) at the same depth represents a variation in the composition of the surface.

- 5.1.3 Alternatively, it is feasible that 305 represents the remnant of a larger surface which has sunk into the underlying cess pit as the fills have compacted, although the horizontal interface between 305 and the underlying fills gave little indication of the compaction of the latter, and the vertical interface between 305 and 312 - together with the consistency in thickness between these two deposits - would suggest that they represent the same phase of deposition and are part of a contemporary surface overlying the fills of an earlier pit.
- 5.1.4 Truncating the possible surface was a north-south aligned construction cut (306) for the stepped footing of the standing wall (300 - see below). This was clearly visible in plan (Figure 3: Plates 1 and 2) although was not discernible in the pit fills underlying 'surface' 305. It seems likely that the stepped footing has been trench built, with the lower courses being pushed into the soft material through which the construction trench has been cut (i.e. the pit fills described above). This accounts for the irregular nature of the eastern face of the stepped footing.
- 5.1.5 Within Test Pit 3, wall 300 measured 5.96 m from the existing capping to the base of the stepped footing. The top of the stepped footing was c 1.2 m below existing ground level (60.95 m OD) and the footing itself comprised roughly coursed limestone rubble approximately 0.80 m deep with an irregular eastern face (see 5.1.4) and bonded with lime mortar. Above the footing, the wall was well faced and apparently rendered with mortar. The fact that the soft pit fills appear to continue under the wall footing is curious in that it implies that the wall has been founded on soft material. However, if the western edge of the pit lies immediately to the west of the eastern face of the wall (see 5.1.1), it is feasible that the base and western extent of the stepped footing are founded on more stable deposits (possibly terrace gravel) through which the pit has been cut. This could not be established within the confines of the test pit without undermining the footing so must remain conjectural. It is possible that the depth of the footing in the location of the test pit may be localised in the area of the 'soft spot' created by the pit fills. However, it is perhaps significant that the offset section of the wall footing of the kitchen building to the north (OA, 2006, Trench 1, Context 15) was encountered at 61.10 m OD, which may imply some correlation between the foundations of these structures, although the cartographic evidence suggests that they are not contemporary (see Section 7).
- 5.1.6 The 'surface' deposits 305/312, fill (307) of the construction cut (306) and upper course of the stepped footing were all overlain by a fairly homogenous, humic garden soil (308). The fact that this overlay the upper course of the stepped footing implies that it was deposited after the construction of the wall. Whilst a 1 m thick series of

later garden soils overlay this deposit (see below), it seems likely that the top of deposit 308 represents the ground surface following the walls' construction, given the well faced and rendered character of the wall above the step, which implies that it would originally have been above ground.

- 5.1.7 The series of later garden soils overlying deposit 308 and butting the eastern face of the wall almost certainly represent imported garden soils reflecting the use of the area from the walls' construction to the present day.

**ATP 4** (Figs 5 and 6, Plate 3)

- 5.1.8 Test Pit 4 was excavated to a maximum depth of 0.85 m bgl at 60.22 m OD. As detailed above (see 3.1.3), the presence of live services restricted the area subject to sample excavation to a 0.35 m wide strip between the wall and a concrete encased service.
- 5.1.9 The earliest deposit encountered was the top of a possible mortar surface (411) observed in the base of a 0.40 m x 0.35 m sondage in the south east corner of the test pit. This was overlain by a probable levelling layer (410) for a later surface of compacted gravel (407). A course of cobbles had been driven in to surface 407 and formed the foundation for wall footing 414.
- 5.1.10 The footing was 0.70 m deep and comprised a single offset course of large limestone blocks overlain by 4 courses of roughly coursed limestone in a lime mortar bond. Overlying the upper course of this footing, approximately 0.04 m below ground level, was a band of gravel based ?mortar (415) which appeared to mark a change in build and was overlain by the above ground element of the standing wall (408). This comprised well coursed and faced limestone, with a course of slate ?damp proofing above the lowest course. The height of the wall from the base of the cobble foundation to the top of the existing capstones measured 3.25 m.
- 5.1.11 Abutting the offset course of footing 414, and overlying the cobble foundation and surface 407, was a 0.25 m thick levelling deposit (406) for a cobbled surface (405). The cobbled surface was overlain by a 0.05 m thick layer of orange brown sandy silt (404) which may have acted as a 'wearing course' for the cobbled surface. This was overlain by a 0.05 m lens of mortar which was in turn overlain by a compacted brown clayey silt deposit, 0.08 m thick (402). It seems likely that these deposits represent surfaces associated with the use of this area as a yard.
- 5.1.12 Deposits 402-406 were truncated by a linear cut running parallel to the wall, which seems likely to have been a construction trench. However, this was only discernible to the top of the offset course of footing 414. It therefore seems unlikely that this cut relates to the construction of the footing and is more likely to be associated with the rebuild of the above ground element of the wall (408).

## 6 FINDS

### 6.1 Pottery by John Cotter

#### *Introduction and methodology*

6.1.1 A total of 32 sherds of pottery weighing 305g were recovered from 6 contexts. These are mostly of post-medieval date but include a few residual medieval sherds. 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 (e.g. decoration etc.).

#### *Date and nature of the assemblage*

6.1.2 Overall the pottery assemblage is in a fragmentary condition, although the sherds themselves are fairly fresh. Ordinary domestic pottery types are represented. These are detailed in Table 3 (Appendix 2) and summarised here.

6.1.3 Ten sherds of pottery were recovered from the fills of a cess pit (contexts 301-304). These included single sherds each from at least four German Frechen stoneware jugs dating between c 1550-1700 at the widest, but most probably dating from the late 16th or early 17th century. Context (304) produced two fresh joining sherds from the rim of a Ligurian maiolica dish - a luxury imported tableware produced either in Genoa or Savona in north-west Italy and dating, in this instance, to c 1550-1625. This is covered in an attractive blue-grey tinted tin glaze with delicate floral designs derived from Chinese porcelain executed in a darker blue paint. This is only the third definite example of this ware identified from excavations in Oxford, the earlier two examples coming from pits to the rear of the Fleur-de-Luce Inn in St Aldates (Mellor 1997, 41, 76, fig. 46). These vessels together with a clay pipe bowl of c 1600-1640 (also from 304) suggest an early 17th-century deposition date for the fills of this cess pit. A few sherds of residual late 11th- to 14th-century wares were also recovered from these fills and from other contexts on the site.

6.1.4 Context (308), a garden soil probably associated with the use of the Master's Garden, produced sherds of pottery of similar date to the fills of the cess pit above (c 1550-1650). The other two garden soil layers (309 and 311) produced 18th- and 19th-century wares, including terracotta flowerpots, and a few residual earlier sherds.

#### *Recommendations*

6.1.5 The Ligurian maiolica dish sherd is of sufficient importance to be illustrated and recorded in more detail. A short note on this could be published in a regional archaeological journal or a more specialist ceramics journal. In view of the small size

and poor condition of the remainder of the assemblage, no further work is recommended.

## 6.2 **Clay-pipes** by *John Cotter*

### *Introduction and methodology*

- 6.2.1 The excavation produced a total of 16 fragments of clay pipe weighing 70g. These have been catalogued and recorded in Table 2 (Appendix 2). 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.

### *Date and nature of the assemblage*

- 6.2.2 The assemblage is generally in a fresh but mostly fragmentary condition with only slight wear visible on a few pieces. Parts of five pipe bowls plus stem fragments are present. One complete bowl from the cess pit (context 304, mentioned above) dates to c 1600-1640 and stem fragments also of 17th-century date were recovered from other contexts in the cess pit. The other four bowl fragments are from garden soil layers and comprise a mixture of 18th and probably early 19th-century bowl types most of which are probably residual to varying degrees. Apart from milling on the rim of the 17th-century example and a small rosette on the spur of one late 18th- or early 19th-century example, all the pipes are plain and unmarked.

### *Summary and recommendations*

- 6.2.3 In view of the small size and poor condition of the assemblage, no further work is recommended.

## 6.3 **Ceramic and other building materials** by *John Cotter*

### *Introduction and methodology*

- 6.3.1 A total of 18 pieces of assorted building materials weighing 4592g were recovered. This was examined and spot-dated during the present assessment stage in a similar way to the pottery (see elsewhere) and the data recorded in Table 1 (Appendix 2). 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.

### *Date and nature of the assemblage*

- 6.3.2 Most of the assemblage comprises ceramic building materials (CBM). These range from a few fairly small fragments of plain medieval (and one ?post-medieval) roofing tile and one or two smallish pieces of glazed medieval ridge tile. There are also a few very worn pieces of late medieval or early post-medieval glazed floor or quarry tiles. All these medieval roofing and flooring materials are likely to be residual in their



contexts. A complete brick of late 18th- or early 19th-century date and part of a similar brick and a Victorian drainpipe fragment were recovered from context (311). Three pieces of stone building materials weighing 1530g were also recovered. These include parts of two roughly hewn grey limestone roofing slates with evidence of neatly bored circular nail holes. Traditionally stone roofing slates of this type are said to come from the Stonesfield quarries in north-west Oxfordshire. Their use in Oxfordshire is documented from the late 12th up until the early 19th century. A small piece of worked stone in good quality white oolitic limestone (?Portland stone) was recovered from garden soil layer (308). This may be an off-cut from a paving stone or an architectural element.

### *Summary and recommendations*

- 6.3.3 In general the building materials from this site add little to the dating evidence provided by other types of material and should be regarded as of secondary importance to these. In view of the small size and poor condition of the assemblage, no further work is recommended.

### 6.4 **Metalwork** by Ian Scott

- 6.4.1 The metal from this site comprises three iron nails (contexts 302, 304, 309) and three copper alloy coins (Sf 300, context 309; Sf 301, context 308; Sf 303, context 304). The latter are corroded and encrusted and not readily identifiable.

### 6.5 **Glass** by Ian Scott

- 6.5.1 There are three fragments of vessel glass, and a single fragment of window glass. The window glass fragment is colourless but very heavily weathered and laminating (context 308). It is not datable. The vessel glass includes the base of a cylindrical bottle with a pronounced kick from context 304. The vessel appears to have been free blown. It is colourless and now heavily weathered, but stable. There is a pale green body sherd from a vessel, possibly cylindrical in shape. It was probably free blown, but is otherwise undiagnostic (context 309). The final fragment is small thick colourless sherd which is otherwise undiagnostic (context 311). The small glass assemblage is not closely datable.

### 6.6 **Animal bone** By Lena Strid

- 6.6.1 A total of 48 animal bones were recovered from this site and are summarised in Tables 4 and 5 (Appendix 2). Almost all bones were in a very good condition (see Lyman 1994:355 for definitions), the exception being five neonatal/juvenile bones, which have a more porous surface. Burned bones were absent, and only two bones displayed gnaw marks.
- 6.6.2 The predominance of cattle and sheep/goat in the assemblage is to be considered normal for a household refuse assemblage. The presence of dogs is evidenced by gnaw marks on two sheep/goat pelves.

- 6.6.3 Judging by the epiphyseal fusion, size and structure of the bones, the sheep/goat and bones derived from adult animals. All cattle bones, with the exception of the scapula, derived from neonatal/juvenile calves.
- 6.6.4 Butchering marks were found on 15 bones. Three vertebrae from large mammals and three from medium mammals had been split in the axial direction, suggesting suspension of the carcass during the butchering process. Chop marks deriving from disarticulation and portioning occurred on a large mammal rib and sheep/goat long bone and pelvis. Filleting cut marks were found on a large mammal vertebra, sheep/goat and pig long bones
- 6.6.5 Pathological conditions were found on a rib from a large mammal. The rib had been fractured, and some remodelling had occurred. However, the animal died before the healing process had been completed.

### 6.7 **Human bone** *By Dr Louise Lou (see Appendix 3)*

- 6.7.1 A single fragment of human skull was recovered during the excavation of engineering test pits at University College. The bone, that of an adult of undetermined sex, bore tool marks that are consistent with those caused by an attempted trepanation with a drill. There was nothing on the bone to suggest what had prompted the attempted trepanation. Two possibilities include medical research and pathology.

## 7 **DISCUSSION AND INTERPRETATION**

### 7.1 **Reliability of field investigation**

- 7.1.1 The finds recovered during the evaluation were from well-defined contexts. The dating they provided, was considered secure. The limitations of the test pits, particularly the restrictions imposed by the services in ATP4, made interpretation of the deposits encountered problematic.

### 7.2 **Overall interpretation**

#### *The Cartographic Sources (Figs 7-10)*

- 7.2.1 A comprehensive study of the cartographic sources has been undertaken for the archaeological assessment (Dr Roland Harris, Oct 2006). The following is a brief summary of the cartographic evidence consulted for this report and specifically pertaining to the structures investigated by the test pits.
- 7.2.2 The origin of the structure(s) investigated by the test pits is uncertain. The main kitchen building was constructed from ashlar and was certainly completed by 1669 (see 1.3.6). This is shown on Loggans' engraving of 1675 (Fig. 7).
- 7.2.3 Pevsners' plan of the college (Pevsner, 1974, p.209) implies that the structure(s) to the south of the ashlar kitchen building are part of the 17th century re-construction.

However, the walls are of much rougher construction and do not appear on Loggan's engraving (see below) and are therefore unlikely to be contemporary with the 1668-9 kitchen. The plan of the college produced in the *Victoria County History* (VCH, 1954, p. 81) shows this range of structures as 20th century, although of the cartographic sources consulted for this report, the earliest to show significant structures immediately to the south of the kitchen building is a plan by James King from 1848 (Fig. 9), the layout of which is similar to that shown in the VCH. King's plan shows this structure containing larders and a scullery, with a coal yard and privies to the south. The buildings are also shown on the 1st Edition OS 1:500 plan (surveyed 1874). The eastern wall of this range runs from the south east corner of the ashlar built kitchen building to the south wall of the Master's Garden, whereas the western wall is shown running south from the south west corner of the kitchen for approximately 12 m before turning to the south east to avoid the corner of a structure with numerous internal divisions (the privies) and then turning south-south-east, running parallel to the eastern wall of the privies and forming the western wall of the coal yard.

- 7.2.4 Whilst Loggan shows no structures adjoining the southern wall of the kitchen, there is a structure to the south fronting on to (and perpendicular to) the blocked off eastern extent of Kybald Street, which may correspond with the privies shown on the OS plan. Whilst this implies a significant longevity for this building, and there is some contradictory evidence from Taylor's map of 1750 (see below, Fig.8), it is feasible that the building shown by Loggan to the south of the kitchen and the privies are one and the same. If this is the case, it would seem that when the larders and coal yard have been added to the south of the ashlar kitchen building, the western wall of the yard has 'kinked' to the south east, respecting the north-east corner of the existing building. Loggan shows a low wall joining the south west corner of the kitchen building to the north east corner of the privies.
- 7.2.5 Additionally, the shape of the range of buildings to the south of the kitchen on the later OS mapping (2nd Edition 1900, 3rd Edition 1921) appears to show the structure proper defined by the larders and scullery shown on King's plan, with the southward extension of the western wall shown as a less substantial structure, probably defining the "yard" and "coal yard" shown on the same plan and reflected on the 1874 OS plan. This has implications for the interpretation of the structures and deposits encountered within the test pits and is discussed in further detail in below.
- 7.2.6 The new buttery is not shown on King's plan but does appear on the OS 1:500 plan. As the larders and scullery appear on both, it seems reasonable to suppose that the construction of the larders and scullery pre-dates the construction of the new buttery in 1860.
- 7.2.7 Taylor's map of 1750 does not appear to show any structures adjoining the southern end of the main kitchen building, although there is a range of buildings to the south west, the eastern end of which may correspond to the "privy building" as the ground plan of this range appears similar to that shown on the 1874 OS plan. The low wall

shown on Loggan's plan is no longer extant, although a boundary wall is shown running south from the south-east corner of the main kitchen building and may represent the first cartographic evidence for the wall later utilised as the eastern wall of the larders shown on the OS mapping.

- 7.2.8 If this is the case, it would imply that the construction of the larders and scullery between 1750 (Taylor) and 1848 (King) has utilised a boundary wall constructed at some point between 1675 (Loggan) and 1750 (Taylor). Whilst a correlation between the structure shown on Loggan and the "privy building" shown on later sources is extremely dubious, it would seem that the western wall of the scullery, yard and coal yard shown on King's plan does respect a previously existing building, possibly that shown on Taylor's map and still extant in 1874 (OS 1:500 plan).
- 7.2.9 The site of the building housing the privies and the coal yard is now occupied by the works department and surveyors office, presumably constructed during the alterations in 1959-67.

### ***The Archaeological Evidence***

- 7.2.10 The artefactual evidence from the pit fills excavated in Test Pit 3 suggests that it was in use until the early 17th century (see 6.1.3), and therefore pre-dates the reconstruction of the college in the mid-late 17th century, and more specifically the construction of the kitchen and library in 1668-9. Although Agas (1578) shows little or no development along the northern frontage of Kybald Street, it is possible that the pit is associated with the tenements fronting on to the street (Salter, 1960, Map SE IV, Plots 217-221) prior to the eastern end being blocked off and developed, as indicated on Loggan's plan of 1675. Alternatively, it may be associated with the earlier college buildings to the north, as University College held at least one of these tenements (219 - Brend Hall) by as early as 1390 (Salter, 1960, p. 255).
- 7.2.11 Whilst there is some discrepancy in the levels of the 'mortar' surfaces recorded in the test pits (305 and 411 at 60.73 m OD and 60.22 m OD respectively), the similarity in composition may imply some correlation between the two, together with the previously identified surface in Trench 2 of the earlier evaluation phase (Deposit 19 - 60.60 m OD). It is possible that this surface(s) represents a construction horizon or yard surface associated with the construction of the kitchen building in 1668-9.
- 7.2.12 The variance in the composition of the deposits overlying this surface, with garden soil (308) in Test Pit 3 and a compacted gravel surface (407) in Test Pit 4, seems to reflect a marked difference in usage, possibly following the construction of the wall in ATP3 which may be that shown on Taylor's map of 1750. If this is the case it would imply the use of the area to the east as a garden, with the area to the west (and south of the kitchen range) being utilised as a yard, and that the wall within ATP3 was originally constructed as a boundary wall between these two areas.
- 7.2.13 If deposit 308 represents an imported garden soil contemporary with the construction of wall 300 (see 5.1.6), then the artefactual evidence from this deposit would support

a late 17th - early 18th century date for the construction of this wall. However, as deposit 308 directly overlay 'surface' 305/312, this would imply that the surface was extant from the construction of the kitchen range in 1668 until the construction of wall 300, possibly implying that little time has elapsed between the completion of the kitchen range and the construction of the wall dividing the area to the south of the kitchen range into yard and garden. It is possible that this formal division of the area to the south of the kitchen range has occurred following the completion of the fitting out of the library in 1675.

- 7.2.14 If the wall shown on Taylor's map equates to that within ATP3, it would seem that at some point between 1750 and Kings' plan of 1848, the larders and scullery have been constructed against the western face of this wall, and the wall (414) enclosing the scullery, yard and coal yard built out from the south west corner of the kitchen building. The shallow footing for this wall probably reflects the fact that it is built off a compacted gravel surface (407), and that it is likely to have defined the western edge of the yard shown on Kings plan and was therefore less substantial than that encountered within ATP3.
- 7.2.15 There was some similarity between the level of the base of foundations 414 and 300 (60.30 m OD and 60.15 m OD respectively) which may imply some correlation between the two. Indeed, the level at the top of the offset courses of both foundations was also not dissimilar (60.60 m OD and 60.95 m OD respectively). Given this fact, and the circumspect interpretation of the cartographic sources, the suggestion that they are contemporary cannot be discounted.
- 7.2.16 The sequence of later surfaces in ATP4 (see 5.1.11) probably relates to the use of this area as a yard, as indicated on King's plan, although they have been truncated during the re-build of the wall (408), which also utilised the earlier footing (414) and presumably occurred during the works in the mid-20th century.
- 7.2.17 The remaining deposits in ATP3 suggest landscaping episodes throughout the 19th and 20th centuries.

### 7.3 Summary of results

- 7.3.1 The following summarises how the results of the test pits have addressed the specific aims outlined in 2.1.4 above:
- characterisation of all excavated deposits was considered reasonably secure, allowing for the confines of the test pits;
  - all deposits were removed stratigraphically to the depth required for the purposes of the geotechnical investigation;
  - archaeological data was recovered from both test pits;

- the requirements of the geotechnical investigation were achieved without impacting on any deposits pre-dating the 17th century. It is feasible that earlier features and/or deposits survive below the maximum impact of the test pits;
- the requirements of the geotechnical exercise were achieved without impacting on the underlying natural geology;
- with the possible exception of the cess pit fills in ATP3, no deposits were encountered which were considered to be of significant palaeo-ecological significance;
- only one negative feature pre-dating the reconstruction of the college in the mid-late 17th century was encountered, that in itself being early 17th century in origin. No features or deposits pre-dating the 17th century were revealed, although it is feasible that earlier features and/or deposits survive below the maximum impact of the test pits.

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## APPENDICES

## APPENDIX 1 ARCHAEOLOGICAL CONTEXT INVENTORY

| Context No                      | Type      | Length (m) | Thick. Depth (m) | Colour               | Composition                | Inclusions   | Comment  | Finds | Date |
|---------------------------------|-----------|------------|------------------|----------------------|----------------------------|--|--|-------|------|
| <b>ARCHAEOLOGICAL TEST PITS</b> |           |            |                  |                      |                            |  |  |       |      |
| 300                             | structure | 14.00      | 5.96             |                      |                            |  | north-south aligned wall and offset (stepped) footing  |       |      |
| 301                             | fill      | 0.70+      | 0.12+            | mid-dark grey        | silty clay                 | 5-10% charcoal, 10% gravel, 5% limestone fragments | lowest excavated fill of post-med. cess pit  |       |      |
| 302                             | fill      | 0.70+      | 0.15             | mid-dark grey        | clayey silt                | 10% charcoal, 5% gravel                            | fill of post-med cess pit  |       |      |
| 303                             | fill      | 0.70+      | 0.17             | mid orange brown     | sand and gravel (20%+ 80%) |  | re-deposited gravel in post med cess pit   |       |      |
| 304                             | fill      | 0.70+      | 0.17             | dark grey            | clayey silt                | 10% charcoal, 5-10% gravel                         | topmost 'cessy' fill of post-med cess pit  |       |      |
| 305                             | surface?  | 1.00+      | 0.16             | creamy white         | crushed freestone          | c 10% limestone fragments                          | compacted 'mortar' surface overlying upper fill of post-med cess pit. alternatively, dump of mortar capping cess pit fills |       |      |
| 306                             | cut       | 1.00+      | 0.20+            |                      |                            |  | upper part of construction trench for stepped footing of wall 300 - lower part not discernible within cess pit fills       |       |      |
| 307                             | fill      | 1.00       | 0.20             | mixed mid grey/brown | clayey silt                | concentrations of mortar throughout                | fill of upper part of construction trench for stepped footing of wall 300  |       |      |
| 308                             | deposit   | 1.50+      | 0.34             | mid brownish grey    | clay silt                  | 15% gravel, 2% limestone fragments, 1-2% charcoal  | garden soil, possibly contemporary with construction of wall 300   |       |      |



| Context No                       | Type     | Length (m) | Thick Depth (m) | Colour   | Composition   | Inclusions                | Comment  | Finds | Date |
|----------------------------------|----------|------------|-----------------|--|---|---------------------------|--|-------|------|
| 309                              | deposit  | 1.50+      | 0.22            | mid grey   | clayey silt   | 5% gravel                 | post med garden soil   |       |      |
| 310                              | deposit  | 1.50+      | 0.20            | mixed - predominantly mid grey with brown and orangey brown concentrations | mixed - predominantly silty clay with clayey concentrations |                           | ?19thC made ground/landscaping   |       |      |
| 311                              | deposit  | 1.50+      | 0.45            | mid-dark grey  | sandy silt  | 15% gravel, 1-2% charcoal | garden soil, current topsoil   |       |      |
| 312                              | fill     | 0.70+      | 0.20            | mid grey brown   | compacted silt and gravel (55%-45%)                         |                           | possibly a variation in surface 305  |       |      |
| 313                              | cut      |            |                 |  |   |                           | arbitrary cut number allocated to feature filled by deposits 301-304 and 312 |       |      |
| <b>ARCHAEOLOGICAL TEST PIT 4</b> |          |            |                 |  |   |                           |  |       |      |
| 400                              | surface  | 1.50+      | 0.12            |  |   |                           | tarmac   |       |      |
| 401                              | deposit  | 1.50+      | 0.32            |  |   |                           | hardcore for tarmac surface  |       |      |
| 402                              | deposit  | 1.50+      | 0.08            | mid brown  | stony silt  |                           | levelling deposit for hardcore   |       |      |
| 403                              | surface? | 0.80+      | 0.03            | light brownish white   | lime mortar   |                           | possible rudimentary mortar surface  |       |      |
| 404                              | deposit  | 0.80+      | 0.05            | orangey brown  | sandy silt  |                           | possible 'wearing' course overlying cobbled surface                          |       |      |
| 405                              | surface  | 0.80+      | 0.10            |  |   |                           | cobbled surface  |       |      |
| 406                              | deposit  | 0.80+      | 0.20            | greyish brown  | stony silt  |                           | levelling layer for cobbled surface  |       |      |
| 407                              | surface  | 0.80+      | 0.14            | orange brown   | gravel  |                           | compacted gravel surface   |       |      |

| Cut No | Type      | Length (m) | Thick. Depth (m) | Colour                  | Composition                             | Inclusions | Comment  | Finds | Date |
|--------|-----------|------------|------------------|-------------------------|---|------------|--|-------|------|
| 408    | structure | 8.00+      | 2.50             |                         |   |            | above ground / re-built element of wall                                    |       |      |
| 409    | cut       |            |                  |                         |   |            | service trench   |       |      |
| 410    | deposit   | 0.80+      | 0.10             | greyish black           | stony silt                              |            | probable levelling layer for gravel surface-407                            |       |      |
| 411    | surface?  | 0.40+      | not excavated    | light brownish white    | mortar / crushed headington freestone?? |            | possible surface   |       |      |
| 412    | cut       | 0.80+      | 0.30             |                         |   |            | construction trench for re-built wall 408                                  |       |      |
| 413    | fill      | 0.80+      | 0.30             | blackish brown          | stony silt                              |            | fill of construction trench 412  |       |      |
| 414    | structure | 0.80+      | 0.70             |                         |   |            | wall footing   |       |      |
| 415    | deposit   | 1.50+      | 0.05             | concreted gravel mortar | concreted gravel mortar                 |            | layer of mortar marking base of re-build 408 overlying earlier footing 414 |       |      |

## APPENDIX 2 TABLES

Table 1: Building materials

| Context      | Spot-date | Sherds    | Weight      | Comments  |
|--------------|-----------|-----------|-------------|---|
| 301          | 12-19C    | 1         | 690         | Stone roofing slate. Limestone, pale grey w fossil shell impressions. V crude. Max 25mm thick. 175+mm long. 130mm wide. Single neatly bored circular nailhole near top diam 8mm.  |
| 302          | 15-16C?   | 7         | 567         | 1x stone roofing slate frag (530g). Limestone, pale grey. V crude. Max 25mm thick. 130+mm long. 140+mm wide. Two neatly bored circular nailholes near top, diam 8mm only 35mm apart (centre-centre). 1x v worn corner frag floor tile or quarry tile, poss 15-16C Flemish-style in red sandy fabric with bevelled edges & splashes clear glaze on sides, max 26mm thick with upper surf completely worn off. 4x frags red roof tile incl crude corner frag prob med, others med or early post-med? 1x corner frag prob glazed med ridge tile max 20mm thick red sandy with broad grey core & reduc brownish glaze ext |
| 304          | 15-16C?   | 2         | 169         | 1x small chip poss Flemish-style floor tile with patchy clear glaze - poss underside? 1x 13-16C roof tile frag, red sandy with circular nailhole  |
| 308          | 16-18C?   | 3         | 435         | Dating v tentative - largely based on 1x small frag red roof tile in relatively fine prob early post-med fabric, though still fairly crudely produced. 1x worn prob med coarse sandy ?ridge tile frag max 19mm thick with greenish-brown glaze. 1x frag of architectural stone (310g) in good quality white oolitic limestone (similar Portland stone) - poss edge of a paving stone etc 40mm thick, max surviving length 105mm, width 70mm   |
| 309          | 16-18C?   | 1         | 35          | Uncertain ident. Poss a small frag of ?brick with trace of a corner/angle, or the underside of a quarry tile? Fine red-brown fabric, darkened greyish surfaces  |
| 311          | 19-E20C   | 4         | 2696        | 1x frag brown salt-glazed stoneware drainpipe (19-E20C). 2x ?L18/E19C red brick - 1 with complete dimensions: Length 228mm, Width 110mm, Thick 64mm, unfrogged, fairly regular with slightly creased edges, traces pale grey mortar. Other brick is a corner frag without measurable dimensions, similar date and with lump of dense modern-looking grey mortar adhering. 1x resid frag thick (18mm) unglazed med red roof or ridge tile  |
| <b>TOTAL</b> |           | <b>18</b> | <b>4592</b> |   |

Table 2: Clay pipe

| Context        | Spot-date | Stem      | Bowl     | Mouth    | Tot sherds | Tot Wt    | Comments  |
|----------------|-----------|-----------|----------|----------|------------|-----------|---|
| 301 17C        |           | 1         | 0        | 0        | 1          | 3         | Stem bore (SB) c3mm. Fresh  |
| 302 17C        |           | 1         | 0        | 0        | 1          | 3         | Stem bore (SB) c3mm. Fresh  |
| 304 c1600-1640 |           | 1         | 1        | 0        | 2          | 14        | Complete bowl with damaged milled rim & small circular heel as Oswald 1975 fig. 3.G.4. Both stems c3mm SB. The bowl slightly worn   |
| 308 17C        |           | 1         | 0        | 0        | 1          | 3         | Stem bore (SB) c3mm. Fresh  |
| 309 L18-E19C?  |           | 5         | 4        | 0        | 9          | 39        | 2x fragmentary bowls poss L18-E19C incl 1 with short spur with small rosettes on spur (stem bores 1.75mm). 2x fragmentary bowls c1730-1780 with fairly broad circular spurs/heels unmarked. SBs mostly 1.75-2mm. Fairly fresh |
| 311 L18-E19C?  |           | 1         | 0        | 0        | 1          | 4         | SB c1.75mm. Thick worn stem   |
| 406 17C        |           | 1         | 0        | 0        | 1          | 4         | Stem bore (SB) c3mm. Fresh thick stem   |
| <b>TOTAL</b>   |           | <b>11</b> | <b>5</b> | <b>0</b> | <b>16</b>  | <b>70</b> |   |

Table 3: Pottery

| Context      | Spot-date     | Sherds    | Weight     | Comments  |
|--------------|---------------|-----------|------------|---|
| 301          | c1550-1700    | 3         | 12         | 1x bs Frechen stoneware jug - poss 16-E17C rather than later? 1x Brill/Boarstall OXAM plain jug neck bs. 1x reduced thin-walled ?OXY or unident fine grey sandy   |
| 302          | c1550-1700    | 4         | 29         | 3x bss Frechen stoneware jugs from 3 separate vess - poss 16-E17C rather than later? 1 of latter poss from bellarmine neck. 1x bs prob med Surrey whiteware jug, lower wall, with pink quartz, ext mottled green glz & allover int decayed green glz (14-15C?)  |
| 304          | c1550-1625    | 3         | 37         | 2x joining sherds (21g) from dish rim in Ligurian maiolica with blue-grey berettino tin glaze allover, delicate blue floral (alla porcellana) decoration internal on broadly flanged rim and traces of Chinese-style arcaded frieze external (prob Genoa or Savona) PHOTO/ILLUSTRATE. 1x resid cspot rim OXY  |
| 308          | c1550-1650    | 6         | 67         | 2x Frechen stoneware incl rim from globe and cylinder form jug. 4x late med/early post-med Brill/Boarstall OXAM incl dish bs and bs with int/ext copper green glaze in Tudor Green or Border ware style, 1 unglz bs & 1 oval light orange handle frag   |
| 309          | c1780-1800/30 | 8         | 67         | 1x small bs thin-walled refined white earthenware - prob Pearlware (c1780-1830). 1x unglz red terracotta flowerpot. Bulk 18C incl 2x post-med Brill slipware. 1x REW. 1x Midlands mottled brown glazed ?tankard with handle and characteristic reeding. 1x bs Frechen stoneware. 1x complete base pad (diam 35mm) small Anglo-Netherlands drug jar c1575-1625 with blue horiz banding |
| 311          | c1840-1900    | 8         | 93         | 2x scraps Staffs-type white earthenware WHEW 'flow blue'. 1x transfer-printed Pearlware. 1x odd corrugated yellow art pottery WHEW with antimony yellow glaze. 2x red flowerpot incl rim. 1x glazed REW. 1x small bs L16-17C Westerwald stoneware jug with traces blue glaze and elaborate Renaissance roundel  |
| <b>TOTAL</b> |               | <b>32</b> | <b>305</b> |   |

**Table 4: Bone assemblage**

|              | Cattle | Sheep/goat | Pig | Medium mammal | Large mammal |
|--------------|--------|------------|-----|---------------|--------------|
| Skull        | 2      |            |     |               |              |
| Mandible     | 2      |            |     |               |              |
| Loose teeth  |        | 1          |     |               |              |
| Vertebra     |        |            |     | 3             | 8            |
| Rib          |        |            |     | 4             | 5            |
| Scapula      | 1      |            |     | 2             |              |
| Humerus      |        | 1          |     |               |              |
| Radius       |        | 1          |     |               |              |
| Metacarpal   | 1      |            |     |               |              |
| Pelvis       |        | 7          |     |               |              |
| Femur        |        | 1          | 1   |               |              |
| Tibia        |        | 1          |     |               |              |
| Long bone    |        |            |     | 7             |              |
| <b>TOTAL</b> | 6      | 12         | 1   | 16            | 13           |
| Weight (g)   | 169    | 104        | 43  | 43            | 265          |

**Table 5: Number of bones and weight per context.**

| Context | Species       | No. of bones (refitted) | Sum of weight (g) |
|---------|---------------|-------------------------|-------------------|
| 301     | Sheep/goat    | 1                       | 17                |
|         | Medium mammal | 1                       |                   |
| 302     | Cattle        | 2                       | 56                |
|         | Sheep/goat    | 1                       |                   |
|         | Medium mammal | 4                       |                   |
|         | Large mammal  | 2                       |                   |
| 304     | Cattle        | 2                       | 411               |
|         | Sheep/goat    | 7                       |                   |
|         | Pig           | 1                       |                   |
|         | Medium mammal | 10                      |                   |
|         | Large mammal  | 8                       |                   |
| 308     | Cattle        | 1                       | 64                |
|         | Sheep/goat    | 3                       |                   |
|         | Medium mammal | 1                       |                   |
|         | Large mammal  | 1                       |                   |
| 309     | Cattle        | 1                       | 76                |
|         | Large mammal  | 2                       |                   |

**APPENDIX 3 SPECIALIST REPORT ON A FRAGMENT OF MODIFIED HUMAN SKULL  
FROM UNIVERSITY COLLEGE, HIGH STREET, OXFORD**

*By Dr Louise Loe*

*A single fragment of human skull was recovered during the excavation of engineering test pits at University College. The bone, that of an adult of undetermined sex, bore tool marks that are consistent with those caused by an attempted trepanation with a drill. There was nothing on the bone to suggest what had prompted the attempted trepanation. Two possibilities include medical research and pathology.*

***Introduction***

A fragment of human skull (SF 302) was recovered during the excavation of engineering test pits at University College, High Street, Oxford. The fragment was found within imported garden soil (308) which formed the upper layers of test pit three. This soil probably represents the original ground surface that was associated with gardens lying within the vicinity of the 17th century kitchen range. Artefactual evidence indicates a late 17th or early 18th century date for the bone.

***Osteological analysis***

The 86mm by 63mm fragment comprised the posterior portion of the right parietal bone. The posterior margin of the fragment incorporated part of the lambdoid suture and the medial margin, part of the groove for the sagittal sinus. The anterior margin of the fragment had broken just posterior to the parietal eminence.

A small opening, known as a parietal foramen, was present. In life, this would have transmitted a small vein through the parietal bone to a sinus inside the cranial vault. Parietal foramina may be observed on one or both parietal bones and their presence or absence is largely influenced by inheritance (Mays 1998). They are of no pathological significance.

The bone was in a fair or good condition. There was slight, patchy surface erosion. In one small area, adjacent to the anatomical landmark known as *lambda*, the cortical bone had flaked off. Otherwise, surface erosion was superficial and had not affected the overall surface morphology of the bone.

No indicators were present that allowed the sex of the individual to be estimated. Complete fusion of the lambdoid suture however, suggested an age at death of approximately 35-45 years (Buikstra and Ubelaker 1994).

***Anthropogenic Modifications***

A series of modifications was present on the lateral aspect of the bone fragment, just anterior of the lambdoid suture. They include a circular groove that enclosed a central pit and a series of sharp, linear grooves or striations (Plate 6). All modifications were examined macroscopically with the aid of a 10x hand held lens.

The circular groove was approximately 1mm wide and enclosed an area that measured approximately 21mm in diameter. It had sharp margins, a 'u' shaped profile and a smooth texture. Although it had cut into the bone cortex, it had not fully penetrated it. It was more marked on one side (the postero-medial aspect) than the other (the antero-lateral aspect), the latter being fairly superficial. A pit occupied an approximately central position within the arc. This was deep, had sharp margins and did not penetrate through to the internal skull vault.

A dense patch of oblique striations was located adjacent to the circular groove, on the latero-anterior aspect of the skull fragment. These had 'v'-shaped profiles, were of uneven thicknesses and depths and had a polished appearance. They broadly observed the same direction and some partially criss-crossed one another.

#### *Interpretation of modifications*

All of the modifications bore characteristics that suggest they were created when the organic matrix of the bone was still in tact (Berryman and Haun 1996; Kanze and Grossschmidt 2005). None displayed macroscopic evidence for healing. In other-words, the bone was modified when it was still fresh, or around the time of death (*peri-mortem*). The circular groove and pit match the marks made by a drill, such as that which was employed in the 17th/18th centuries to perform a trepanation (Arnott *et al.* 2003). This procedure would have been long and slow, involving up to an hour of continuous drilling before the skull bone was perforated (Munzenrider *et al.* 2005). However, in this case, the trepanation was not completed because the bone has not been fully penetrated. This may have been because the intervention was abandoned, either because the individual died or because the surgery was performed elsewhere on the skull. Alternatively, the skull bone may represent a specimen that was used by medics to practice surgical procedures, including trepanation.

The striations are suggestive of scrape marks made with a sharp instrument such as blade. These may relate to the removal of scalp or reflecting the scalp back in preparation for the trepanation. Or they may relate to an autopsy that was performed following the operation to explore why it had gone wrong. An alternative explanation (although less likely) is that they represent abrasion against a sharp surface, perhaps as a result of slippage whilst handling the skull. It is unlikely that the striations represent cut marks because they lacked the steep sides and uniformity that define this type of modification (Loe and Cox 2005).

Trepanation refers to the surgical practice of removing a piece of bone from the skull so as 'to create a communication between the cranial cavity and the environment' (Aufderheide and Rodríguez-Martin 1998, 31). The procedure is of considerable antiquity and there are examples that date as far back as prehistory (Lisowski 1967). Today, trepanation is performed as a routine surgical procedure. In particular, it is employed to treat severe trauma and neoplastic disease (Andreas *et al.* 2003). Religious or mythical, as well as medical, motives are cited for examples that date from the historic period (Andreas *et al.* 2003), while therapy to release evil spirits, ritual acts to appease the gods, the post-mortem excision of a roundel of bone to serve as an amulet, and therapeutic motives, have been suggested for prehistoric examples (Chege *et al.* 1996).

Rarely is it possible to determine why a trepanation was performed in the past based on dry bone alone. The exception is when there is associated trauma of which several examples exist in the literature (see Roberts and McKinley 2003). In these cases the surgery was most probably performed to relieve pressure caused by intracranial haemorrhage (bleeding inside the skull). If the present example is considered to have been performed as a result of pathology, then there is no indication that trauma had prompted this surgical intervention. Neither is there any evidence on the skull fragment for any other form of pathology. This is not to say, however, that there was no associated trauma or pathology on the parts of the skull



that are missing. In life, the parietal bone surrounds the part of the brain that controls memory, touch, sense and muscular movement. Ancient trepanations may therefore have been performed in this area to cure conditions associated with paralysis, memory, understanding and sensory perception (Roberts and McKinley 2003, 67).

A recent synthesis (Roberts and McKinley 2003) of British trepanations indicates that the University College skull bone may be among extremely few archaeological examples of failed trepanation to have been discovered to date. Further documentary research is required to confirm this. At least one other non-British example is known and bears remarkable similarity to the University College example. This is a 17th human skull fragment from the former British colony in Jamestown, America (Munzenrider *et al.* 2005). This fragment, a piece of occipital bone, was found in a ditch that surrounded the original 1607 James Fort. In keeping with the University College fragment, this bone had the same circular modification which had not penetrated the bone. However, unlike the University College skull, this example bore evidence for a considerable blunt force trauma that had been delivered from behind and saw marks associated with autopsy.

### ***Significance and Further work***

The modifications that have been identified on the skull fragment from University College represent a failed trepanation. This is a highly significant find that provides a vivid insight into 17th/18th century medical practice in Oxford. It may be related to medical training that was performed on a corpse, either donated or acquired for medical research. Alternatively, it may represent the remains of an individual who underwent surgery to treat a pathological condition and who did not survive.

There is considerable scope for further work on this human bone fragment. This would include the following:

- 1) Radiocarbon dating to establish a more conclusive date.
- 2) Historical research into the procedure, the surgeons who were practising in and around Oxford at this time, medical training at the University and, in particular, connections between University College and the medical school.
- 3) Documentary research on comparative British examples to establish the uniqueness of the University College example.
- 4) Microscopic analysis to explore the timing of the intervention. The macroscopic analysis described in this report suggests that the modifications were created around the time of death. It is assumed that, if the procedure was performed to treat a pathological condition, the individual died during the operation. This would seem to be confirmed by the fact that there were no macroscopic signs of healing. However, this may not necessarily have been the case. Complete trepanation could quite feasibly have been undertaken on a different part of the skull. Further, microscopic signs of healing may be present and, if so, would indicate that the individual survived the procedure for a few days. Scanning electron microscopy would be required to explore this. This would also allow for a more detailed description and documentation of the modifications.

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**APPENDIX 4 SUMMARY OF SITE DETAILS**

**Site name:** Engineering Test Pits, The Buttery and Kitchen, University College, High Street, Oxford

**Site code:** OXUNCB07

**Grid Reference:** NGR SP 5174 0620

**Type of evaluation:** Engineering Test Pits

**Date and duration of project:** 17<sup>th</sup> April-20<sup>th</sup> April 2007

**Summary of results:** In April 2007 Oxford Archaeology (OA) undertook the excavation of 2 engineering test pits at University College, High Street, Oxford. The work was commissioned by Dr Roland B Harris (on behalf of University College) and followed up a small field evaluation carried out by OA in 2006. The test pits were designed to establish the nature and depth of the footings of the range of buildings to the south of the main kitchen block, and to assess any engineering or archaeological implications of proposals to redevelop the Kitchen, Buttery and Hall. Although both the eastern and western walls displayed evidence of an offset footing constructed of roughly hewn limestone blocks, the test pits revealed a significant variance in the depth of the foundations, which appeared to reflect the stability of the ground through which the foundations had been constructed.

The test pit against the western wall revealed relatively shallow foundations built off a compacted gravel surface with later yard surfaces post-dating the construction of the footing. This test pit also revealed some evidence that the standing wall had been re-built over an earlier foundation. The foundation revealed within the test pit against the eastern wall was considerably deeper and had been constructed through the fills of a ?17th century cess pit. Evidence for a possible construction horizon was recovered from both test pits and may equate to a deposit of similar composition which was observed during the previous evaluation phase.

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



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Figure 1: Site location

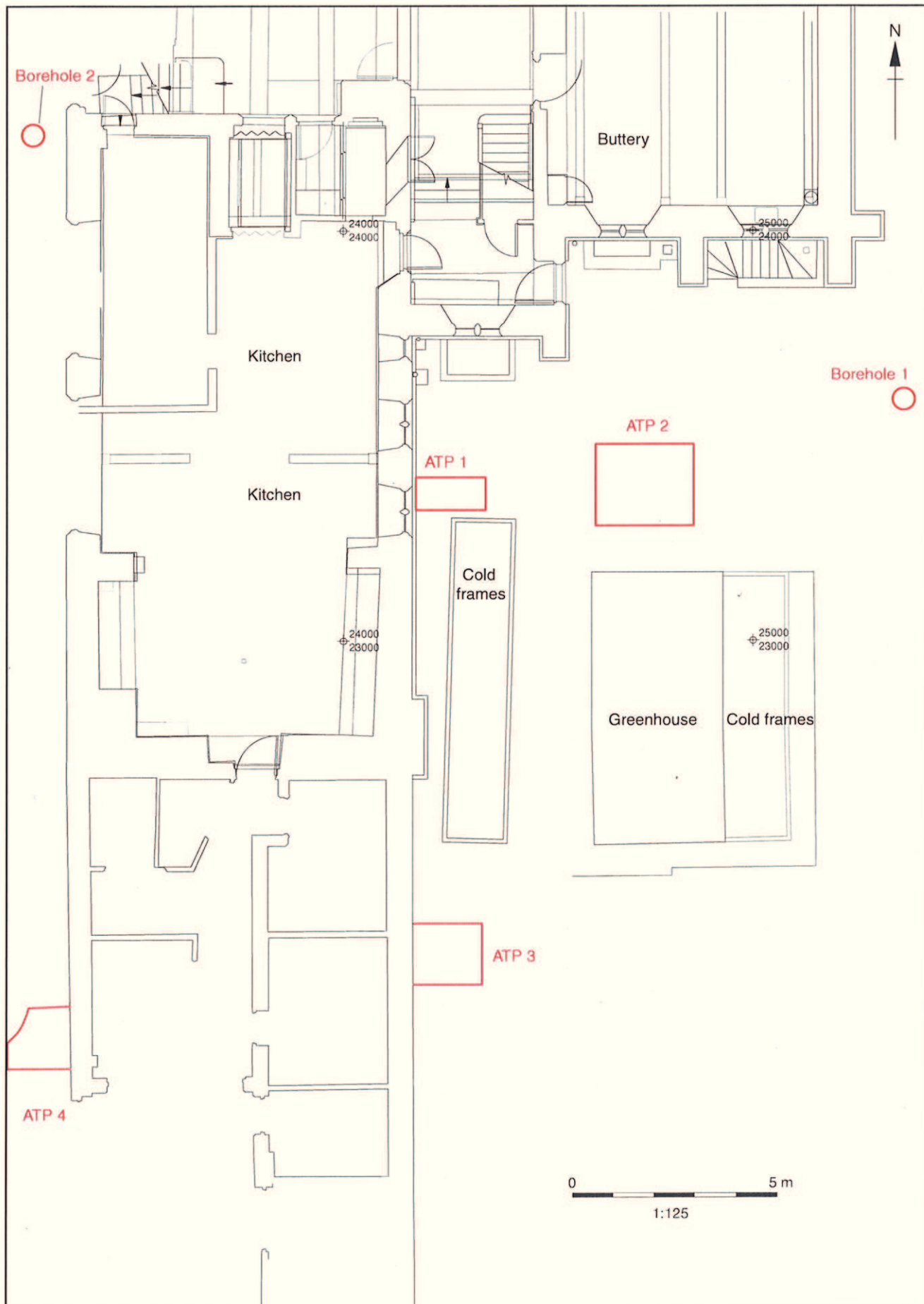


Figure 2: Location of Test pit 3 and 4 and previous evaluation trenches

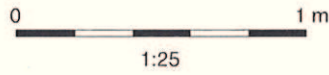
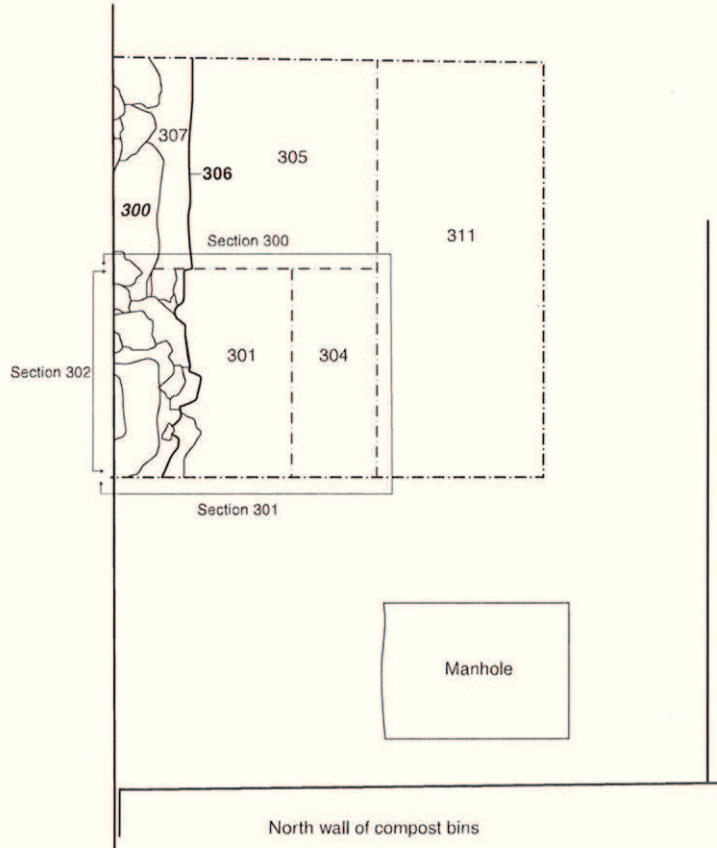


Figure 3: Plan of Test pit 3

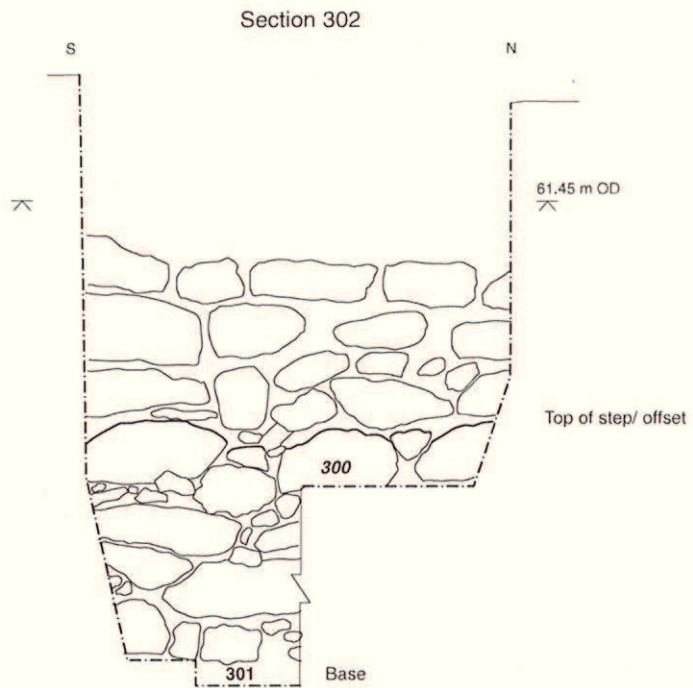
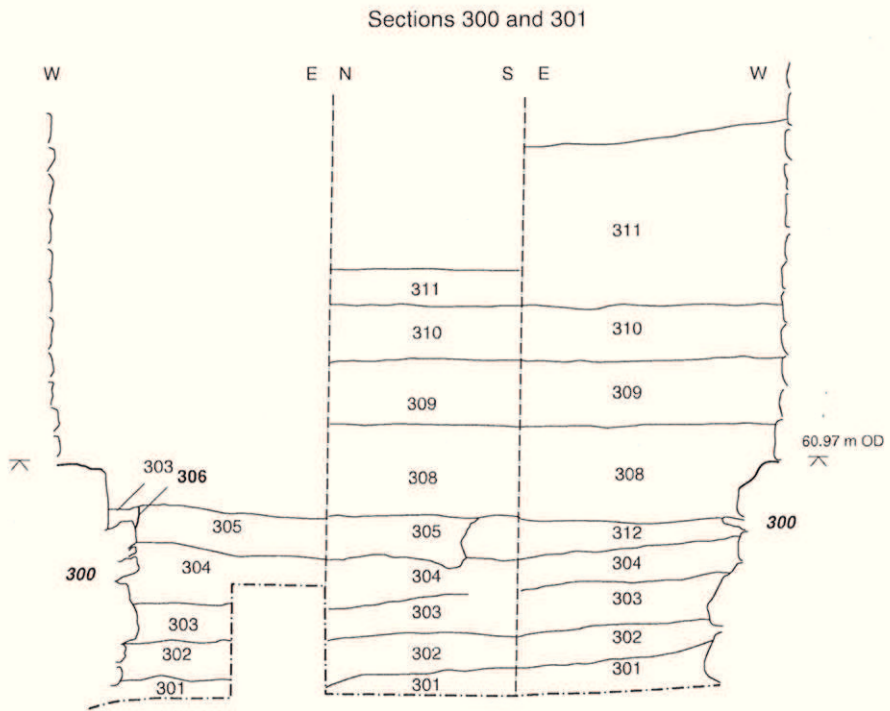


Figure 4: Test pit 3, Sections

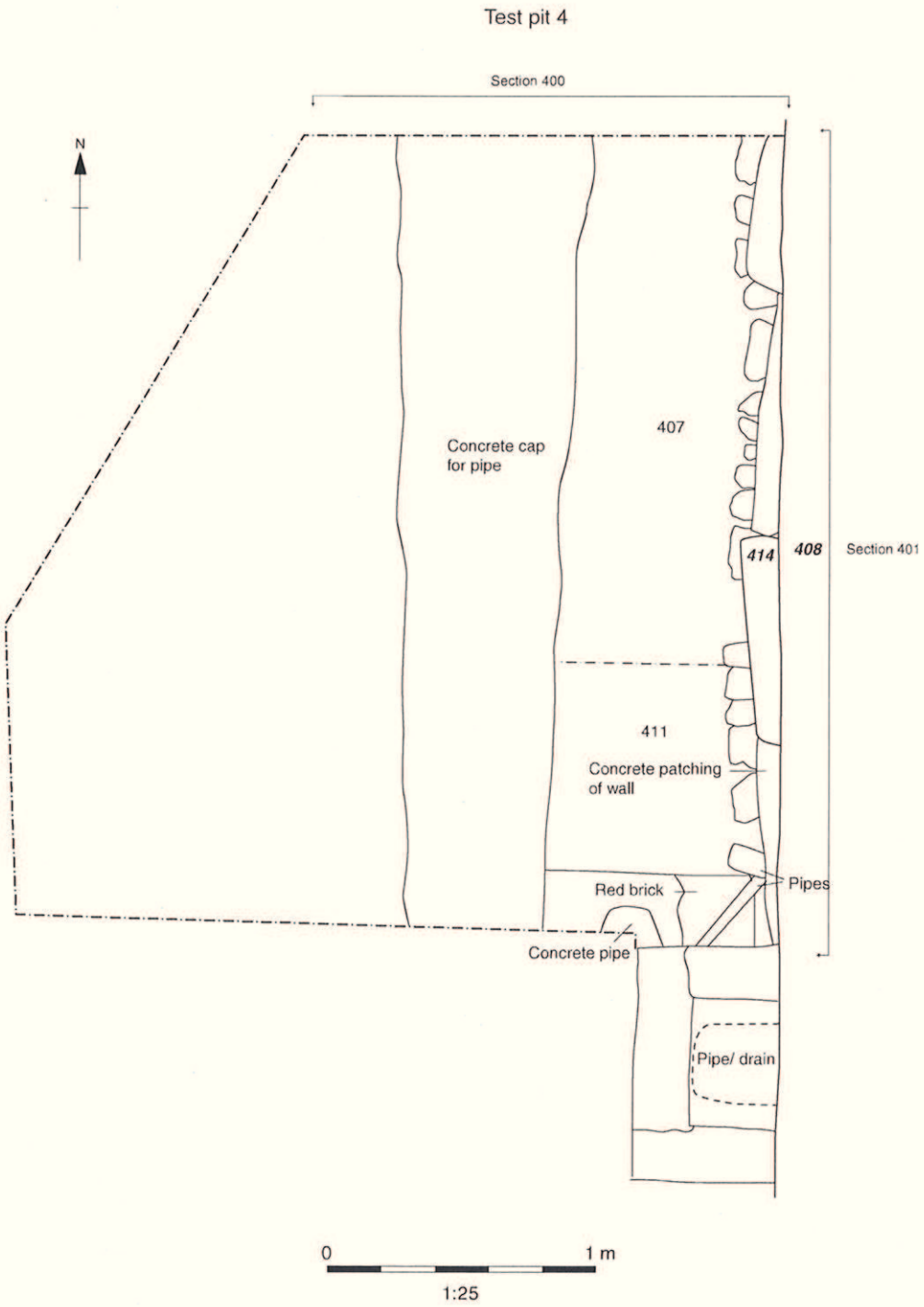
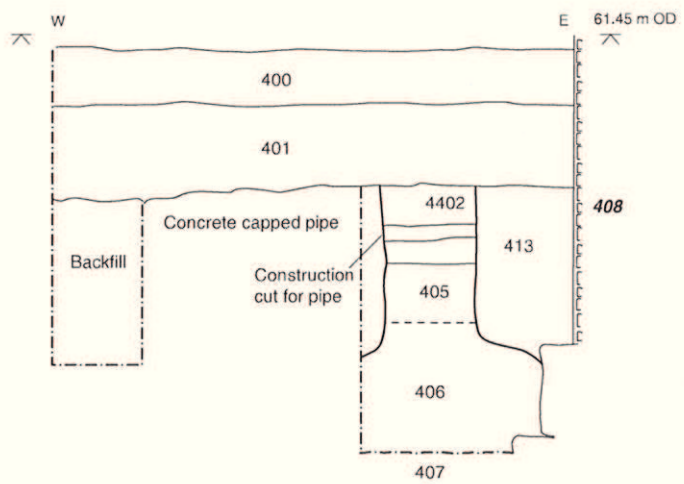


Figure 5: Test pit 4, plan

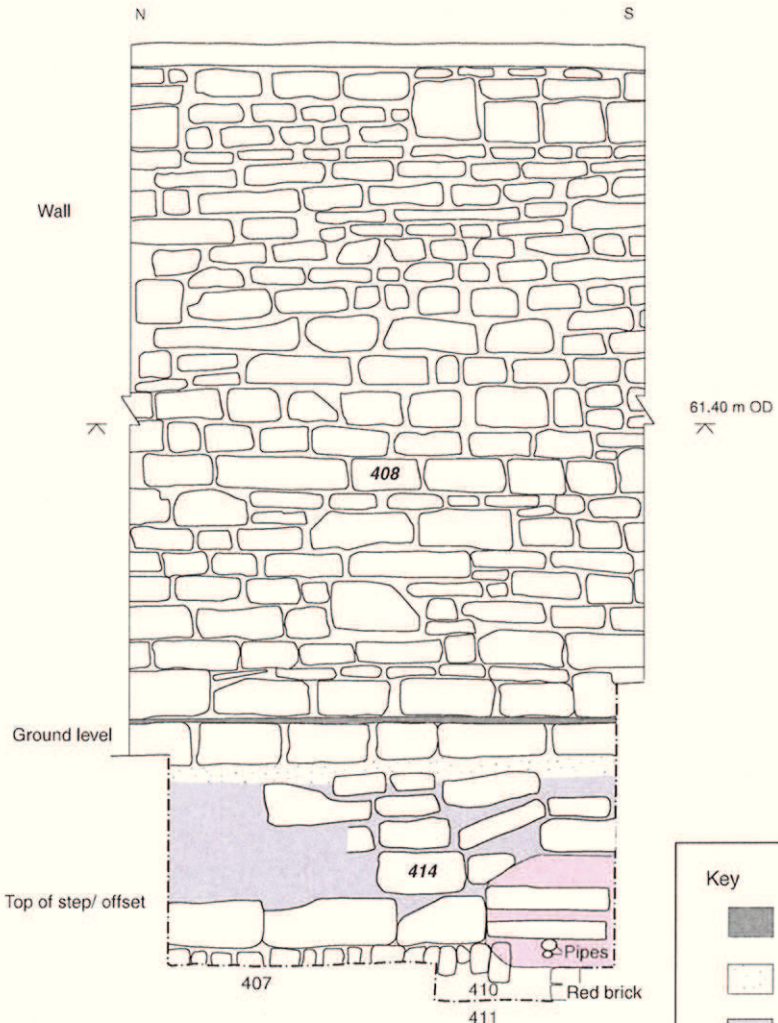




Section 400



Section 401



Key

- Slate
- Gravel and concrete
- Mortar
- Concrete



Figure 6: Test pit 4, Sections

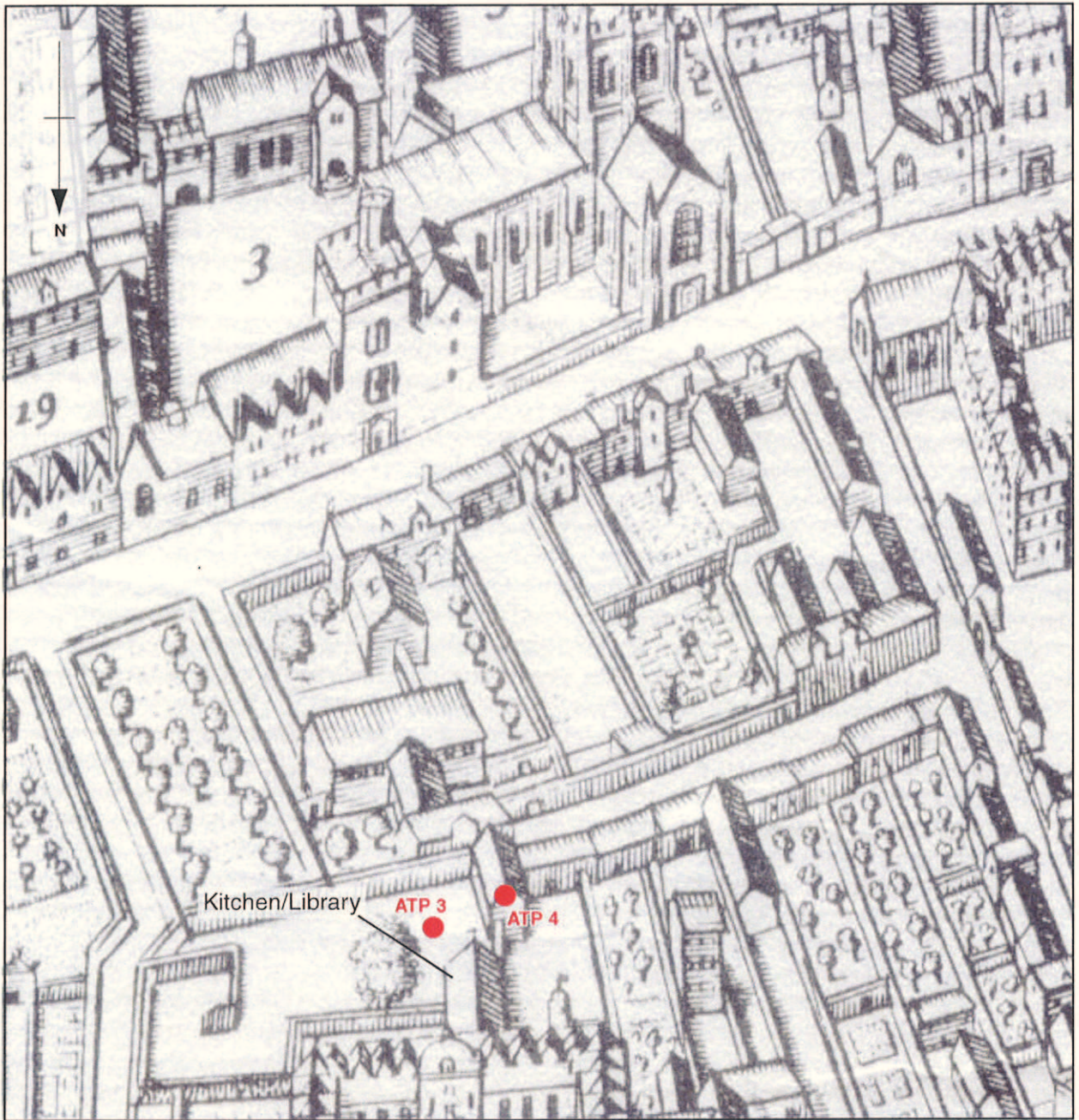


Figure 7: Loggan's Map of the City of Oxford (1675)



Figure 8: Taylor's Map of the City of Oxford (1750)

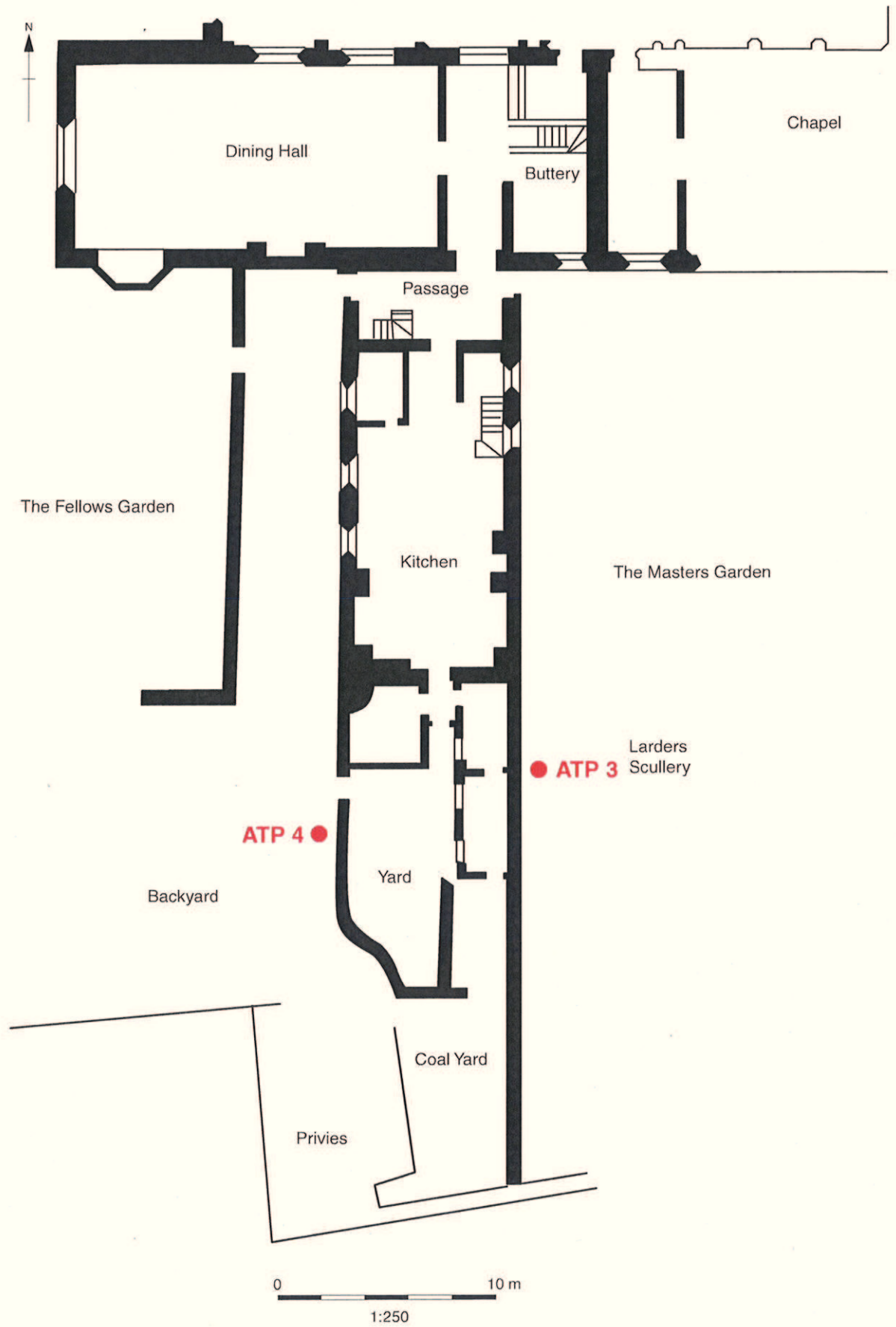


Figure 9: University college, taken from detail of 1848 plan by James King

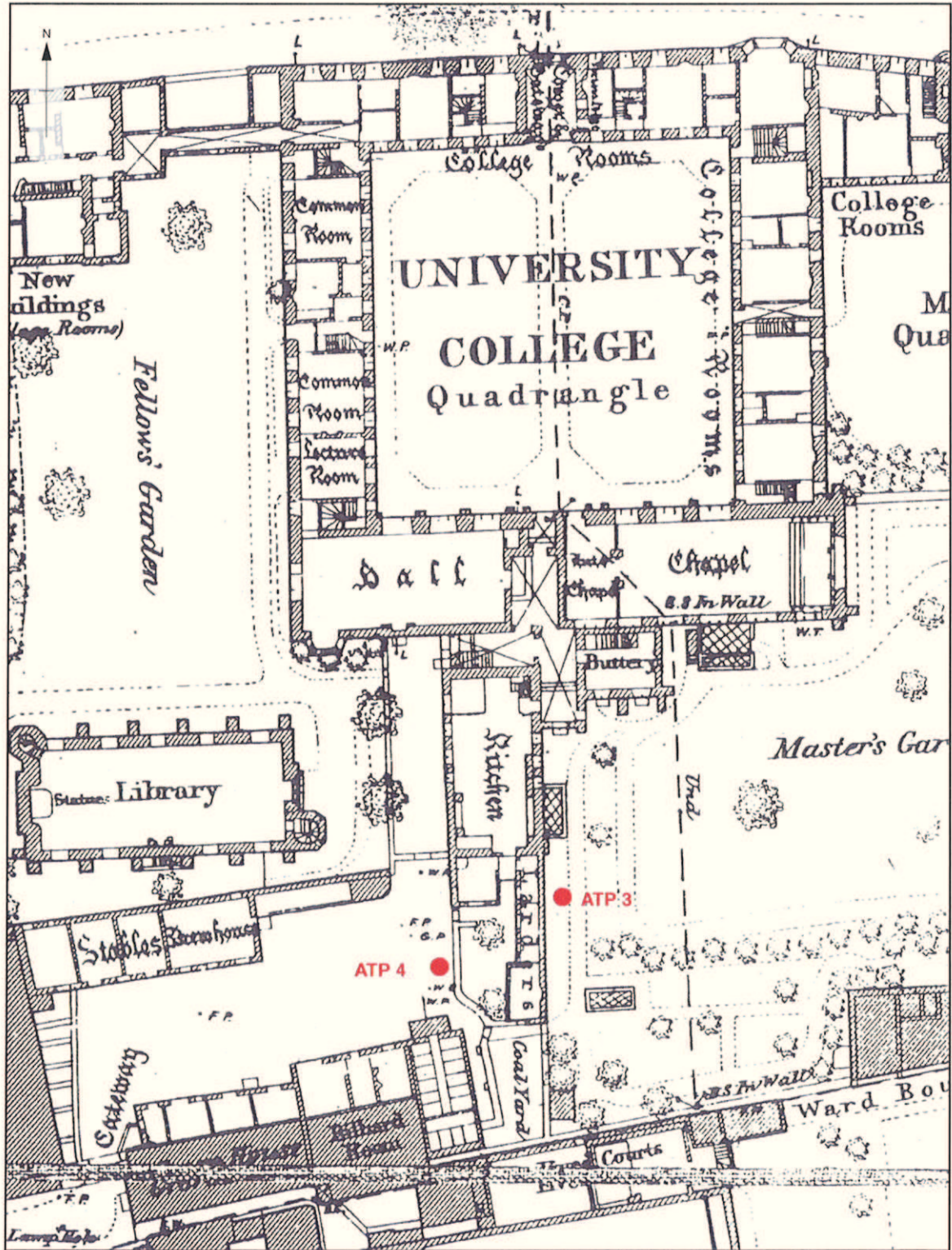


Figure 10: University College, extract from 1878 Ordnance Survey 1:500 plan



Plate 1: ATP3 - as excavated looking west



Plate 2: ATP3 - as excavated looking south



Plate 3: ATP4 - as excavated looking east



Plate 4: ATP3 General View



Plate 5 Trepanned skull fragment

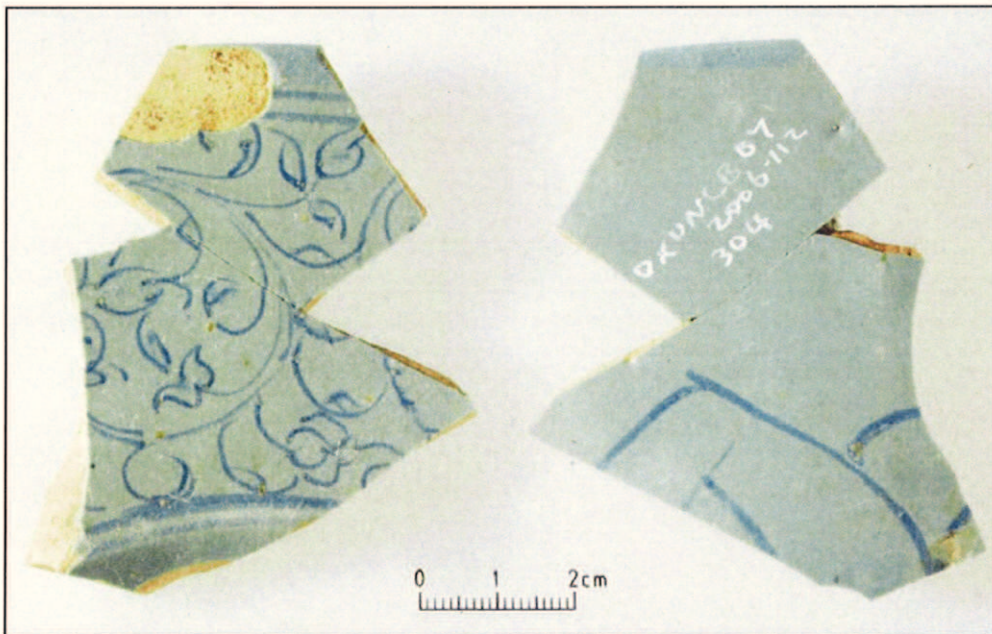


Plate 6 Ligurian maiolica dish sherd