
THE BISHOP'S PALACE, BANGOR
ARCHAEOLOGICAL EXCAVATION
2003 AND 2004

GAT Project No. G1785

Report No. 619



Footings of former palace outbuildings during excavation

Prepared for Ainsley Gommon Architects
On behalf of North Wales Police

By G.H. Smith

November 2005



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

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1. SUMMARY

Archaeological excavations in advance of the construction of the new town police station at Bangor adjacent to the Town Hall, the former Palace (Fig. 1), recorded the remains of a number of outbuildings of the former Palace. These comprised a scullery, yard, stable and coach-house all dating from the late 18th to early 19th century which were all still standing until demolished in 1996 (Fig. 2). The foundations of the outbuildings included some re-used building stones of medieval style, probably deriving from reconstruction work on the cathedral. Part of the palace gardens were also uncovered and it was shown that most of the area of the development was also part of the palace garden, prior to the construction of the outbuildings. This garden existed from at least the early 17th century and part of a garden boundary wall was uncovered as well as an earlier boundary consisting of a large ditch, which was open in the first half of the 16th century. Some even earlier evidence was found, in the form of two smaller drainage ditches associated with organic peaty deposits and spreads of rubbish material including wood and butchered animal bone at the west side of the site. A few pieces of pottery of the mid-13th to early 14th century suggest that these rubbish deposits belong with a phase of occupation that pre-dated the late 15th to early 16th century construction of the earliest part of the surviving palace buildings. This adds to the evidence from excavations in 1996 at the south-west part of the site when a substantial stone river revetment was found as well as associated peaty layers and pottery of 13th to 14th century date (Johnstone 1999 & 2000). These all provide evidence of considerable activity and probably occupation on this site before the 15th century and that there may therefore have been an earlier Bishop's Palace close by, perhaps under the existing buildings. The present excavations also demonstrated that there exists a considerable build-up of soils, including rubbish layers with well-preserved waterlogged material in the area to the west of the development are, providing a resource for future study.

2. INTRODUCTION

There have now been four excavations on the present site, two in 1996, one in 2003 and another in 2004. The first two were carried out in advance of a proposed development of a new law court on the south-east part of the site by Gwynedd Council. The work comprised trial trenching by machine followed by larger scale excavation of part of the area (Johnstone 1996). The present work was carried out by Gwynedd Archaeological Trust (GAT) for the North Wales Police Authority in advance of construction of a new town police station. The need for the work arose out of the planning process and the recommendations made by Gwynedd Archaeological Planning Service, which provided a brief for the work and monitored its progress. GAT produced a project design (GAT 2003) and subsequently a historical and documentary study was carried out and trial trenches were excavated in December 2003 to assess the whole of the development area (Smith 2004a). Based on the results from this assessment, larger scale excavations were carried out in 2004 to record the whole of the area that would be directly affected by the construction of the proposed new police station. An assessment report and post excavation research design were produced, providing a preliminary interpretation and summary of the results, including artefacts (Smith 2004b). A watching brief was also carried out in December 2004 to January 2005 during excavation of foundation trenches for the new building (Smith 2005), and the results incorporated into the present report. The assessment report recommended that more detailed study of the findings was warranted and the present report provides a full description and interpretation of the excavations together with specialist reports on the artefacts. A summary version of the report will later be published in the national journal *Archaeology in Wales*, to provide suitable academic distribution.

A documentary study and historical assessment were carried out for the original assessment report and are repeated here with some amendments as no additional background evidence has yet been found. The archaeological work does provide some new evidence for interpretation in combination with the documentary evidence and this is incorporated in the later discussion.

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Archive

Excavated material belongs to the landowner, the North Wales Police Authority, which has kindly donated it for deposition in the Gwynedd Museum, Bangor. The archive includes all artefacts, written records, drawings, photographs and digital records from the 1996, 2003 and 2004 excavations. Copies of the reports and digital records will also be available at the Gwynedd Historic Environment Record, Gwynedd Archaeological Trust, Garth Road, Bangor, LL57 2RT.

3. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Bangor as a settlement has its origins in the ecclesiastical community founded around the middle of the 6th century AD by Deiniol, reputed to be a descendant of the royal family of Rheged, the ancient British kingdom around the Solway Firth (Roberts 1994, 20). The site had no previous historic significance because it was not a strategic location for communication or defence. The community established in the 6th century occupied a small, enclosed valley with a stream, the Afon Adda, and this land was reputedly a gift of Maelgwn, the ruler of Gwynedd. The earliest settlement would have been monastic and there is a note in the Irish Annals of the sack of the monastery in AD 634. This original settlement would have been focussed on a chapel within an enclosure, from which the town takes its name – Bangor, derived from a word for the top rail of a wattle fence (Longley 1995, 52), and other settlements have derived their name similarly at Bangor-on-Dee, Cheshire and Bangor, Co. Down, Northern Ireland. White (1984) and Longley (1994), have argued that this early enclosure (Fig. 3) may have been the same as the oval area that was still the focus of the town as recorded by Speed in his map of the town in 1610. However, it is recorded that Edward I erected some town defences in 1283-4 and these may have had some effect on the subsequent development of the town plan (*Annales Cambriae*, 108). Nonetheless, excavations in this same area, north of the High Street and east of the cathedral between 1981-9 (Longley 1995) identified several early boundaries, the earliest a curvilinear ‘slot’ dated to between the 6th to 8th centuries AD (*ibid* 56) just east of the cathedral. Numerous early graves were also recorded further east, some of which predated a rectilinear boundary ditch dated to the mid 10th century (*ibid* 65).

There is good evidence then that this area was a centre of ecclesiastical activity prior to the establishment of the present cathedral in the early 12th century by Bishop David, who was consecrated in 1120 (Carr 1994, 28). The present stone-built cathedral was begun under David and there are some 12th century features surviving within the present building (Raleigh-Radford 1949). However, some pre-12th century buildings are recorded as having survived until at least the late 13th century before falling into decay (Soulsby 1983, 76). It had previously been thought that the early monastic community was located on the north side of the Afon Adda, on the terrace at the foot of the slopes below the main university building (Fig. 1), where buildings and burials had been found in 1924 (Hughes 1924). Excavations were carried out prior to the construction of the university students’ union building and on the hillside close to the 1924 discoveries (Alcock 1964) and prior to the construction of the theatre (White 1971) but no proven medieval remains, or other burials were found. It has been suggested therefore that the principal monastic community must have been on the other side of the Adda Valley in the vicinity of the present cathedral and that the remains found in 1924 were those of a subsidiary parish church, Llanfair Garth Brenan included within the Bangor *taxatio* of 1291 (*Taxatio Ecclesiastica Pope Nicholai*, see discussion in RCHMW 1960, 12, f.n. 6). The position identifies it as probably the same as a church mentioned in a survey of 1721 which states – ‘Besides the Cathedral-Church, which is dedicated to St. *Daniel*, here was formerly a Parish-Church of St. *Mary*, which stood on the Back-side of the Bishop’s Palace, about 400 Yards distant from the Cathedral; the Ground on which it stood, together with the Church-yard, belongs to the *Vicars Choral*, who let it out, and receive the Rent of it, which is 6s. 8d. *per Ann.* ... When St. *Mary*’s Church was demolish’d there is no Tradition, and the very foundations of it and the old Castle, said to have been heretofore in or near this Town, are so perish’d that they can’t be trac’d out with any Certainty... There have been often human Bones dug up on the Scite of St. *Mary*’s Church and Church-yard.’ (Willis 1721, 46).

There were other ecclesiastical buildings in the valley, including another chapel, Capel Gorfyw, a friary and several houses for the clergy such as the dean, canons, vicars choral etc. Browne Willis (1721, 42) notes that several other dignitaries including the Archdeacons of Bangor, Anglesey and Merioneth probably also had houses here as ‘...they still have some small parcels of land here’ on which rents were still then being paid. Chapel Gorfyw was close to the east end of the cathedral and the houses of the clergy were clustered around near to the cathedral, where the High Street is now.

The friary was of the Dominican order and was established about 1250. Its original site is unknown but was close to the mouth of the Afon Adda, an area now buried by development and extension of the sea-front. Its

main site was later established in Hirael, further inland, and its buildings there were to become a school by private bequest after the dissolution in 1538.

The secular settlement of Bangor was subsidiary to the ecclesiastical, both in terms of function and importance, and probably had its origins in the employment deriving from the services required by the ecclesiastical community. The houses of the city in fact developed on the fringes of the ecclesiastical community because the majority of the land around the cathedral belonged to one or other of the diocesan incumbents. Never the less, there were 53 burgesses or tenants named in a survey of the Bishop's lands in Bangor of 1306, of which only eleven were clerics (Carr 1994, 29).

Bangor was not a centre of secular authority, although a motte was built in the late 11th century on the ridge just north of the present town, possibly on Castle Hill above Garth (Soulsby 1983, 76). Even so the town suffered during many hostilities, probably because of the varying loyalties of the bishop. It flourished under the Welsh princes but was burned by King John in 1211. It was later damaged during Edward's campaign, possibly by the Welsh because the bishop had supported the English. It was attacked by Glyndwr in 1402 and 'the cathedral had been partly destroyed and probably the houses of the cathedral clergy had been laid waste' (Pryce 1923). The cathedral was supposed to have remained in ruins for nearly 90 years until the end of the fifteenth century, when restoration was begun under Bishop Thomas Skevington who also extended and improved the palace and will be discussed below.

The first map of Bangor is that of John Speed of 1610 (Fig. 4), which shows the cathedral, the palace, the city along a single street focussed on the market cross and the Afon Adda with a single mill at Glanrafon and three bridges. Speed shows the Bishop's Palace as an L-shaped building of which one range is clearly the main hall, the other lower additional wing. Engravings of 1740 and 1776 show the city much the same as in 1610 and the population of Bangor in 1801 was still only 1,770 but it rose rapidly during the 19th century, reaching 4,571 in 1831 and 9,564 in 1851. However, as shown on a map of 1834 (John Wood) most of the development took place away from the original centre in the vicinity of the cathedral because the land there still belonged to the church. Gradually, however, land was sold off or speculative properties built in the central area of Bangor.

It was not until the end of the 19th century that the large areas of church land to the north were sold, allowing the development of various municipal buildings. The Bishop's Palace and its extensive grounds of 16 acres were sold in 1900 by Bishop Watkin Herbert Williams to Col. Henry Platt and a group of local businessmen. They subsequently sold the buildings and part of the grounds to Bangor City Council and another part of the grounds to the University College of North Wales (Roberts 1994, 38). The Town Hall, the former Bishop's Palace, was opened in 1904, the free library in 1907, the post office in 1909 and the museum in 1910 (Ellis Jones 1973). These involved major changes in the layout of the town with the construction of two new roads through the gardens close to the Bishop's Palace, Ffordd Gwynedd, to the east and Ffordd Deiniol to the north. The area of the present study however, was not affected because the new road here, Ffordd Gwynedd, was laid out to respect the main existing building, a coach-house, which was retained, initially as a fire station, ambulance station and mortuary, later as a council works depot (*ibid*).

4. DOCUMENTARY ASSESSMENT

In looking at the potential for archaeological remains in the area being assessed there are two points to consider. First, were there any buildings or features of significance on this site before the late 15th century, the recorded date for the construction of the first part of the surviving Bishop's Palace within what is now the Town Hall? Secondly were there any other buildings or features contemporary with the use of the Bishop's Palace between the late 15th century and its 19th century abandonment of which evidence might be found?

The Bishop's Palace, which has been re-used as the present town hall, consists of two main parts, a western wing and an eastern wing. The western wing was the earliest and consisted originally of a simple single storey hall with an attached wing at the south-west to provide private rooms. The hall (later converted into two storeys) is of simple medieval type, of timbered construction. It is supposed to have been built by Henry Deane, bishop from 1496 to 1500, who was also Chancellor of Ireland and although Bangor was not his main residence was an energetic improver, rebuilding part of the cathedral and recovering lost church lands (Pryce 1923). This agrees with the assessment of the building by the Royal Commission, which identified the roof trusses as of c. AD 1500 in style (RCAHMW 1960, 10). The original hall was extended to the east, of similar construction to the west, although later much rebuilt in brick, and an inscription once existed over the porch door recording its construction by Thomas Skevington, bishop from 1508 until his death in 1533 (Willis 1721, 41). Skevington

was also an absentee bishop as he was, in addition, the abbot of Beaulieu, Hampshire, where he resided. However, he organised the rebuilding of much of the cathedral, including the nave and tower.

The buildings of bishops Deane and Skevington form the core of the palace although it was much altered extended and improved over the centuries. The eastern wing is of timber construction under the later brick cladding but may not have been built by Skevington because it was not shown on Speed's map of 1610 (Fig. 4). By the mid-seventeenth century the palace was recorded as 'much decayed' in a survey but was altered and improved by Bishop John Evans (bishop from 1702-1715) and others. Browne Willis in 1721 recorded that ... 'The Bishop's House... is in good repair. The Entrance to it is through an Arch which belongs to the stables, over which are granaries about 30 yards in length... Behind the House are Gardens and Orchards, which lie in good order' (*ibid*).

It is of greatest relevance to consider the early bishops of Bangor and whether they had residences here and if so whether these might have been in the area of the surviving palace buildings. The Diocese of Bangor in the sense that we know it today was established in the early 12th century with Bishop David, consecrated in 1120 (Carr 1994, 28), who may have begun work on the cathedral. The church grew in power and wealth under the Welsh rulers, demonstrated by the burial in the cathedral of Gruffydd ap Cynan, Owain Gwynedd and Cadwaladr (*ibid*). The bishops of this time would have had the land and the money to construct residences of some status, perhaps even to rival those of the rulers. Giraldus Cambrensis records that Archbishop Baldwin of Canterbury visited Bangor in 1188 and was 'decently entertained' by Bishop Gwion (Gir. Camb. Itin. Camb. II, vi) and Clarke suggests that this means that the bishop probably had a substantial residence. At this time it would have been little more than a large hall, perhaps with attached private rooms and service buildings, similar to the thirteenth century royal court found at Rhosyr, Newborough, Anglesey (Johnstone 1999). Like that, however, it would have been set within a walled enclosure or precinct and this would have made it easier to identify. However, there is no evidence as to where such building or precinct might have been. The houses of all the other clergy were on the south side of the river Adda, close to the cathedral but the bishop may have required something more impressive and monumental and there was simply not the space for such a structure close to the cathedral because of the sloping ground around. A separate enclosure opposite the cathedral and across the Adda would seem the obvious choice. On the other hand, the bishop also had a house at Gogarth on the Great Orme, believed to have been built at the end of the 13th century (RCAHMW 1956, 112-3) and he may have resided there, thus requiring only occasional lodging or entertaining rooms at Bangor.

All twelve bishops between 1417 and 1541 were English and absentees 'The Diocese of Bangor had not merely been neglected by its bishops... it had been virtually abandoned (Hook, *Lives of the Bishops*, quoted in Pryce 1923, x). Arthur Bulkeley, consecrated 1541 was the first bishop to reside in his parish since the 14th century (Browne Willis, 103). If there was an early Bishop's palace then it is most likely to have belonged to the period before Glyndwr and probably before Edward's campaign. The palace at Gogarth may have represented just a move away from a pre-existing site at Bangor.

The bishop was in effect a powerful lord, holding land widely and receiving tithes as well as receiving dues from the market and fair at Bangor as on most other activities, such as baking and brewing. He would have held courts much as did the rulers and had a prison and a right to try and execute transgressors if necessary. A suitable building to match the royal courts would seem to have been needed and a predecessor on or near the site of the surviving place buildings seems likely. A survey of the bishop's lands in 1306 records just a *messuage* (a dwelling house, possibly the bishop's palace, but clearly not especially grand) and garden at Bangor with an annual value of 20 pence as well as about 60 acres of arable land, 4 acres of hay-meadow, pasture, a watermill and two fish weirs (Carr 1994, 29). The royal Welsh courts were the target of demolition after Edward's campaign and the same may have been the case with the ecclesiastical properties so survival of remains may have been slight. Only archaeological evidence can therefore hope to show whether there was any earlier building here.

The area of the immediate enquiry formerly held a stable block belonging to the Bishop's Palace, mentioned by Browne Willis in 1721 and surveyed by the Royal Commission before demolition in 1996. These do not appear on Speed's map of 1610 (Fig. 4) but can be seen on drawings of the mid 18th century (Figs 6-7) and in more detail on Wood's map of 1834 (Fig. 8), the Tithe map of 1841 (Fig. 9) and the OS 1:2500 map of 1890 (Fig. 10). The stable block consisted of two parallel ranges, a northern and a southern, separated by yards. The northern was an extension from the south-east wing of the palace and is likely therefore be the earliest and its size, on the earlier maps, before truncation in the early 20th century, matches the '30 yards length' of Browne Willis' description. Thus, the Royal Commission's comment that the stables may belong to the work of Bishop Majendie (1809-30) is not entirely correct although the southern range, consisting of three coach houses and adjoining L-shaped cottage may be of his time.

The stables connected to more outbuildings and yards or paddocks to the east, leading into a small road that once led towards Garth on the north side of the Afon Adda, across the hill slope, the original start of Love Lane. There was also a connection to the road via a track from the front of the palace and around its north side. It is shown on the John Wood map of 1834, on which is also shown a new 'Proposed Road' to the east, taking the same line but leading directly from Tan y Fynwent to Love lane and to a new lower road to Garth. The old road seems to have been the Bishop's private road, replaced by a larger, more direct road when the settlement of Bangor expanded. By the time of the Tithe Survey of 1841 the old road was no more, its position indicated only by one field boundary. However, all the land on the north side was bishop's land and in the Tithe Schedule recorded as 'The Bishop's Park', including the main block at the north side of the palace and a narrow strip all along the north side of the Afon Adda to the ferry at Garth. This is of interest for this strip was not the route of the road, unless there were an earlier route. It may have been a way of ensuring access to the sea at least in symbolic terms. The Adda was once tidal at least as far as Dean Street, and there was once a 'lake' or pool (Brochlllyn) below Glynne Street, close to the Friary (Price Davies 1939). Price Davies also reported that 'during the last half century a ship in a gale was driven up as far as the electricity works (i.e. at Dean Street) and a photo taken'.

The stable block was originally more extensive as can be seen when the maps of 1834, 1841 and 1890 are compared to that of 1914 (Figs 8-11). The buildings extended further east and further south. They included a yard with a mock castellated enclosure wall on the south-west, seen on the drawing of 1776 (Fig. 7), which probably identifies it as of the same build as the castellated walled yard that existed on the north-east side until recent times and recorded on photographs of the stables prior to demolition. These further stable buildings were truncated at the east when the new road, Ffordd Gwynedd was built about the time of the opening of the town hall in 1904. The yard at the south was also truncated to provide a new access road to the town hall. At the time of the 1890 map and the 1914 map the line of the culverted Adda is shown following approximately its original (open) route, as shown on Wood's map of 1834 (Fig. 8). The Adda was then to the south of this southern yard and some way away from the area of the present proposed development. This is relevant to the re-assessment of the evidence from the 1996 excavations, discussed below.

Prior to these changes Bishop Watkin Williams (1899-1925) was unhappy with the palace, selling the land and moved to a new house Glyngarth on the Menai Straits possibly partly because of the state of the Adda (Clarke 1969, 93). However, although the Adda is certainly shown as open most of the way past the palace on John Wood's map it appears to have already been culverted and buried along the line of the Bishop's Walk (where it still is) as far as the east end of the stables by the time of the 1841 Tithe map. This is probably why Price Davies (1939) does not mention this part of the river whereas he says that in 1906 the Adda was culverted into the carriageway (along Sackville Road) and in 1936 was straightened and culverted from Ffordd Gwynedd to the police station. The latter appears to refer also to the stretch from Bishop's Walk, across the south-east end of the current development area, where it was located during excavation and on across Ffordd Gwynedd. The early culverting was started because by the mid 19th century the great increase in the population of Bangor, the lack of a sewage system and the presence of smithies, slaughter houses and dye works in the Sackville Road area had turned the river into an open sewer, made worse by its tendency to flood (the name Adda is thought to be derived from the name *Tarannon* derived from the Celtic *Trisantona* meaning 'the trespasser', i.e. the river that overflows its banks (Roberts, c. 1990).

Excavation in 1996 within the same area after demolition of the former palace outbuildings located a substantial stone structure alongside what was then the River Adda (Fig. 12), and interpreted as possibly a bridge abutment or river-edge revetment (1996 and 2000). Although there were no datable artefacts this structure was of shell-mortar construction, suggesting a medieval date. However, close to the structure were found three large oak timber piles, driven into the subsoil, one of which was shown by dendrochronology to have been cut down in the late summer or winter of AD 1120/1121.

5. RESULTS OF THE EXCAVATION

Introduction

The areas excavated in 1996 and 2003-4 are shown in Fig. 13, with an outline of the main features discovered in relation to those discovered in 1996. The 1996 excavation comprised two narrow trial trenches and one open area at the south-west. Trenches 1-5, excavated in 2003 were also narrow trial trenches laid out to sample the main range of proposed new buildings. In 2004 three larger trenches (6, 7 and 8) were excavated to investigate

the whole accessible area of the proposed new buildings. The work identified six main phases of activity, which were numbered 1-6, summarised here and are described by phase rather than by trench or structure.

Phase 1. Features stratigraphically earlier than those of Phase 2 and predating the construction of the earliest part of the palace outbuildings sometime in the 18th century and also predating the construction of the east wing of the palace c. 1630, and encompassing the earliest proven evidence from the site, of the early 12th century AD, from the excavations carried out in 1996.

Phase 2. Features sealed by the soil layers of phase 3 and belonging to either construction of the earliest part of the palace outbuildings or to the construction of the east wing of the Bishop's Palace c. 1630 or to repair or rebuilding of the east wing in the 17th or early 18th century.

Phase 3. Soil layers predating the construction of the palace outbuildings and features associated with those layers.

Phase 4. The foundations of the palace outbuildings, their associated floors and other soil levels contemporary with the outbuildings.

Phase 5. 20th century features belonging to re-use of the palace outbuildings subsequent to its acquisition by the Town Council in 1900 and associated service trenches such as drains and electricity.

Phase 6. Recent features belonging to the landscaping of the area subsequent to the demolition of the palace outbuildings/council depot in 1996.

Phase 1

Phase 1a This consisted of a thick layer found only at the westernmost edge of the site in Trench 6, where a small area was exposed to greater depth than elsewhere by re-excavation of a 1996 trial hole. The deposits here could not be exposed more widely because at this point the base of the archaeological deposits continued below a deep layer of made-ground at almost 2m beneath the floors of the adjoining east wing of the palace/town hall. This earliest recognised deposit consisted of a layer of pure blue-grey clay lumps (C156) over a layer of silty loam (C167). The latter could be seen to contain some butchered animal bone fragments, including a bone from a domestic cat (See below) and wood fragments but no datable artefacts (Fig. 18). Layer C156 was probably a dumped layer but C167, because of its depth and homogeneity was probably a naturally-deposited layer but containing rubbish from human activity. Both layers were cut by a ditch or channel 162 to the east, and sealed by the basal layer of the ditch or channel, which continued beyond the edge of the ditch/channel to the west, defined as phase 1b.

Phase 1b comprised a ditch or channel 162. This was about 3m wide and 1m deep of a shallow profile with gently sloping sides (Figs 18 and 19). The profile suggests it could have been either a man-made ditch that had eroded over a long period or have been an entirely natural channel. After the ditch had become almost completely filled it was sealed by deposits denoted as Phase 1c. The ditch was located in only in this one place where a 1m wide cutting was excavated across Trench 6 to investigate a later stone-built culvert 116 (Fig. 15) so its general course across the area has not been determined. The culvert lay on the east side of the ditch and may have been built to replace it and so ditch 162 may also have been on the same approximately north-south line.

The fill of the ditch showed three periods. The uppermost layer, C169, was of black peaty material suggesting a period of possible abandonment or at least stability. It contained no datable artefacts. It is possible that this layer had accumulated more widely across the area but had been destroyed by later activity. There was then a thick layer, C160, of mixed material suggesting rapid back-filling or accumulation including lumps of pure clay and fragments of building stone. The lowest layer, C161 was another black layer of peaty material showing that it had lain open and stable for some while. This layer was waterlogged and contained very well-preserved organic material, including animal bones, fragments of wood, twigs and a complete small sawn plank or off-cut of oak timber but no datable artefacts. There was also a piece of ashlar masonry. This seems likely to belong with layer C160, above, from which it had subsided into the peaty layer. Layer C161 continued beyond the edge of the ditch to the west where it could be seen to have been part of a more continuous ground cover (Fig. 18). It may have originally continued to the east also, but the natural subsoil surface rose slightly in that direction and any equivalent horizon would have been destroyed by later cultivation activity. Assessment of a sample of the preserved plant material from layer 161 showed a mixed plant assemblage indicative of both wet and semi-open, nutrient-rich environments. Invertebrate remains showed that the deposit accumulated in wet conditions,

understandable if it was ditch, but in addition that there was some herbivore dung in the vicinity and, significantly, that some material derived from within buildings (Biological remains, App. X) below).

The masonry fragment came from a pre-existing building because it had mortar still attached. It was a sharp angled moulding from the edge of a door, arch or window. Unfortunately there is no good artefactual dating evidence for the layers in ditch 162 but they certainly predated the east wing of the palace. The style of the architectural fragment suggests it may derive from the Norman cathedral of Bishop David (1120-1139), which was mostly rebuilt during the 13th and 14th centuries, when much stonework must have been replaced or re-used (RCAHMW 1860, 1). However, the fragment is of soft, shell-rich limestone unlike any material used in the cathedral. There is a possibility that the layer from which it came may therefore relate to the demolition of a pre-existing building prior to the construction of the earliest of the surviving palace buildings in the late 15th century. It can be suggested that this was a period of building after a long period of inactivity, during which the area was wet, overgrown meadow, allowing the peat to develop. A clayey layer was then dumped in the ditch and this also continued to the west (C154) so may have been deliberately deposited to raise and consolidate the ground surface around new buildings. Another peaty layer then developed, perhaps more locally in the ditch, but showing that the ditch was in an area that was poorly drained and not cultivated.

Structure A found in 1996 seemed to have been a substantial stone-built revetment for the edge of the River Adda. From layers within the structure that had seemingly built up after its construction, two pieces of pottery believed to date to between late 13th to the 14th century. Another sherd found in peaty silts behind it was found a piece of pottery of mid 13th to early 14th century date. This peaty layer is likely to be the same as one of those discovered in 2004 in ditch 162. The stone revetment seems to have been built to replace an earlier timber pile revetment. These timbers were dated by dendrochronology to a felling date of late summer to winter of AD 1120-21. If the line of ditch 162 is extrapolated to the south it would have entered the river just to the east of the revetment found in 1996, which had a return wall indicating that it terminated at that point and so perhaps marked the edge of a building plot at that time. There is a good case then that ditch 162 belonged with a phase of building activity between 1120 and the late 15th century. The area here must originally have been a wet valley-bottom, prone to flooding and most of the Adda valley was in fact avoided by settlement until the middle of the 19th century apart from a mill at Glanrafon, the Bishop's Palace and the Friary, to the east. The core of the ecclesiastical buildings was on the slopes to the south, above the flood-plain and the bishop could not have considered building in the valley without taking measures to compensate for the wet ground and guard against flooding. It is remarkable that the felling date of the timbers of the river-edge piling coincides with the start of the incumbency of Bishop David in 1120 and there must be a strong possibility that they belonged with a phase of new building activity on the north side of the Adda, presumably a house for the Bishop. We have no evidence as to what this building would have been like although it must at least have been a hall. If it was of stone, no other fragments of the same stone as that found in ditch 162 have yet been found.

Phase 1c. At the north-west side of trench 6 a cutting was made through the post-medieval garden soil layers, exposing a layer, C138, interpreted as a trampled yard surface representing a period of activity denoted as Phase 1c. This overlay a peaty layer equivalent to layer 169 in the top of ditch 162 (Fig. 18). Layer 138 only survived in this small area, close to the east wall of the east wing of the place, where it had been preserved beneath a build-up of made ground, which clearly was below the floor level of the east wing. A soil level, C144, that lay over C138 and ascribed to Phase 2, produced a single sherd of pottery of mid-13th to early 14th century date (Medieval and Post-medieval pottery, below).

Another feature ascribed to Phase 1 was a small ditch or gully 303, first recorded in 2003 in the southern part of the site, aligned north-west to south-east. The part excavated in 2003 contained no finds but the feature was identified as one of the earliest features on the site because it was sealed by the building of the coach-house and belonged with the lowest level of buried soil beneath that building and close to edge of the River Adda. The gully was re-located and further excavated in 2004 in Trench 8 (Fig. 17). This produced a number of butchered animal bones including cattle and horse. A probable continuation of the same ditch was also found in Trench 6 (gully 142, Figs 15 and 18) and this produced some cattle teeth. Gullies 142 and 304 seem likely to be parts of the same feature because of the similarity of their dimensions, profile and fills. They do not closely align in plan but need not have followed a straight line. The nature of the fill is similar to that of the surface 138 and they may be contemporary. This would be logical because the gully would have been a drain, perhaps taking the place of ditch 162 that had become disused and infilled. The alignment of gully 142/303 suggests it originated at the east end of the north range of the palace, predating the construction of the east range. Its alignment is also at odds with and therefore probably pre-dating the boundary represented by another ditch 205, at the east side of the site, believed to date to the early 16th century (Phase 2, below).

Other features that may belong with phase 1 were two narrow parallel small ditches, 12 and 20, found during the site assessment in 2003 in trench 1 (Fig. 16), but not excavated further in 2004 because that area was to be preserved under a car park. Part of ditch 12 was excavated, showing it to be vee-shaped and round-bottomed in profile, 0.80m wide and 0.25m deep (Fig. 21). Its fill was a mid to dark grey clay-silt with occasional charcoal fragments. There were no finds from the ditch but it was cut by a large pit, 11, which was itself not dated but identified as belonging to a period of building activity, perhaps related to the 15th-16th century palace construction (see Phase 2, below). Similar parallel pairs of ditches to 12 and 20 are usually found to demarcate field boundaries but are usually further apart with a hedge bank between, derived from excavation of the ditches. The close proximity of 12 and 20 suggests that there was no hedge bank between them. Their alignment is at odds with the plan of the palace buildings and later boundaries in a similar way to the alignment of gully 142/304 and so there is a possibility that they belong to the same phase of activity. The fill of 12 is quite different to that of 142/303 lacking the waterlogging and animal bones but that could be because it lies on better drained land higher up the slope.

Phase 2

This phase comprises features associated with either the main period of palace construction under Thomas Skevington between 1509-33 or to the construction of the east range between late 16th to early 17th century (RCAHMW 1960, 10) to produce the layout seen in Dineley's drawing of 1684 (Fig. 5). This includes the two large clay quarry or mortar-puddling pits found in Trench 1 in 2003. The original ground levels were made up considerably to allow the floors of the east wing to be laid at the same level as the central palace wing, which lay slightly further upslope. These make-up layers were recorded at the west side of Trench 6. Speed's drawing of the palace of 1610 is not necessarily strictly representative but does not show the east range so it may have been built later. The plan shows the surrounding boundaries and indicates a formal garden to the north with possibly an orchard to the west (Fig. 4). However, the formal garden pattern was just a convention rather than a representation, seen also on his plan of Beaumaris of the same date. Speed's Bangor plan shows a road at the east of the palace grounds that can be identified in the pattern of boundaries seen on John Wood's map of 1834, although by then built over by the development of the coach-house and other outbuildings (Fig. 8) and Speed shows fairly clearly that there was some garden area to the east of the palace. Soil levels sealed beneath the floors of the palace outbuildings excavated in 2004 must include remnants from this period but reworked as garden soils over at least two centuries so these soil layers have been assigned to Phase 3.

In Trenches 7 and 8 a ditch, 24/205, was found which was first located in 2003, then identified as a possible early garden boundary. This proved to be a much larger feature than believed in 2003. It was up to 2m deep and 3-4m wide. Its course was traced further south in Trenches 7 and 8 but was not fully excavated there. The ditch clearly functioned as more than just a boundary and shows that considerable effort had been put into providing drainage for the area of the palace close to the River Adda, which was prone to flooding. The ditch can probably be identified with the east boundary shown on Speed's map (Fig. 4). One complete section was excavated in Trench 7 (Fig. 22a) where, in one of the lowest deposits, were found two pieces of different imported German stone ware tankards or jugs of mid 16th century date (e.g. Fig. 34, no. 6). This indicates that the ditch belonged to the 15th-16th century main phase of palace construction. The lowest level in the ditch was below the water table, creating suitable conditions for organic preservation and a complete and well-preserved circular carved wooden jug or tankard lid was found (Fig. 34, no. 7) and fragments branches. The ditch was considerable feature, much larger than a normal field boundary. It was probably designed to protect the whole area of the new palace buildings and gardens from flooding, extending the palace boundary eastwards from that represented by ditch 162 and can be identified with the east boundary of the palace gardens as shown on Speed's map. On that map a road can also be seen to have existed on the east side of the boundary leading from a bridge across the Adda. This road later became a private track from the palace through the Bishops' Park to the quay at Garth, also part of the Bishop's land. The ditch had been infilled in this area by the time of Wood's map of 1834 although traces of it probably still existed along the field boundary and road further to the north (Fig. 8). The 'Bishop's Road' was later replaced by a new road further to the east and the palace outbuildings were extended across the line of the old road.

The course of ditch 205 could be traced continuing north-south across the whole of the development area (Fig. 17) although the only nearly complete section was that cut in Trench 7. This showed that the ditch was originally steep-sided, c. 2.5m wide and 2.2m deep, but weathered to about 4m wide. The ditch seems to have gradually silted in over a long period to a point where it was largely infilled. The silts were mainly of dark loam with some scatters of charcoal fragments and stones. One clay-rich intermediate fill layer indicates deliberate backfilling from some nearby excavation. At that point a wall, 204, had been built at one edge of the ditch, belonging to Phase 3 (see Phase 3 below).

Ditch 205 must have entered the Afon Adda not far beyond the south edge of the excavation area, where the subsoil levels were beginning to dip towards the river (Fig. 1,4 Section bb-bbb). Here the palace coach-house had been built on deep footings to compensate for the slope. The southern east-west wall of coach-house was built over the line of the ditch, which must have still been visible as a dip in the ground and additional layers of slate slabs had been laid but there had still been a small amount of subsidence into the top of the ditch (Fig. 30).

If ditch 205 lay along the eastern boundary of the palace grounds it is unclear as to whether it demarcated the boundary or whether there was also an actual enclosing bank, fence or hedge. There was no evidence of a wall or a fence-line and there seems to have been no bank as the ditch had weathered to quite a wide profile with no indication of bank material eroding into the ditch from the west side (Fig. 22a). Clearly the excavation of ditch 205 must have created huge amounts of clay and stone, sufficient to build a massive bank if required. The most likely interpretation is that it was used to raise the ground levels in the area where the new palace was built in the late 15th to early 16th century.

Two other features may belong with phase 2. These were the two large clay quarry or mortar puddling pits 4 and 11, discovered in 2003 in trench 1 (Figs 16 and 21). Their fill was characterised by mortar and many shell fragments. The shell was used in production of the mortar.

A number of other pits, possible postholes and a curving linear feature were also found in trench 7 (Figs 16 and 25). These were mainly filled with dark loam and were interpreted as planting activity within the garden except for two larger pits, nos. 213 and 215. These had a stiff clay-rich fill and were interpreted as clay quarry pits belonging to a phase of construction although there was no dating evidence as to which phase this might be. The 15th-16th century west and central ranges of the palace and the 16th-17th century east wing were all of half-timbered construction and would have required large amounts of clay for the wattle and daub infill and plasterwork and 4, 11, 213 and 215 may belong to either of those phases of construction.

Phase 3

Before the construction of the coach-house and other outbuildings there was a garden here, the well-mixed soil (Fig. 18, 126) of which was found beneath the stone-slab floor of the scullery and beneath the cobbles of the courtyard to the east and south (Fig. 14, sec. bb). This soil was relatively friable and stone-free loam compared to the clayey stony soil of the possible yard surface found at the west edge of trench 6 and in gullies 142 and 303.

Cut into this soil layer was a large rectangular-sectioned slate slab floored and roofed culvert, 116 (Fig. 18). Alongside it and parallel to it at the east had been a wide stone wall of 1m width, of mortared construction. Only a few footings and the foundation trench of this wall survived (Figs 26 and 27) because it had been demolished when an extension to the palace was built across its line in the late 18th or early 19th century (phase 4). The function of the wall is unclear. It was wider than that of the eastern boundary wall 204 built along the line of ditch 205 and was closely associated with the culvert. A continuation of the same culvert and possibly the same adjoining wall had also been found further to the south during the 1996 excavations (Figs 12 and 13). The culvert at that point had emptied into the side of the Afon Adda. The culvert lay directly alongside ditch 162 described in Phase 2 and its construction had cut into the fill of the ditch. Ditch 162 was only discovered when the edge of the culvert cut could not be found. Ditch 162 was almost entirely filled in by the time the culvert was constructed but because its fill was so peaty and waterlogged a good deal of rubble had to be placed into the side of the ditch to stabilise it before the west wall of the culvert could be built (Fig. 18). Although ditch 162 was more or less defunct when the culvert was built, the close juxtaposition of the two seems significant. Possibly both were performing the same function, perhaps draining a spring at the east side of or north of the palace.

The culvert was still in good condition but silted up with fairly clean gritty silts, not humic as might be expected of a sewer. If it did serve as a sewer it must have been designed to flushed from a natural spring source. It is uncertain when it was built but it is pertinent that it was designed to flow into the Adda when the river still flowed past the south edge of the site. The river itself was culverted and moved further to the south, probably before 1776, when Sandby's engraving (Fig. 7) appears to show outbuildings over its original course but after 1610 when Speed's map shows the Adda as an entirely open river (Fig. 4). The culvert was clearly not part of the late 15th to early 16th century palace construction and a sewer culvert of similar size and construction, but with mortared side-walls has been recorded from a 19th century context at Beaumaris Gaol, constructed in 1829 (Smith 2004). The timber-framed palace was recorded as being 'of timber construction, one storey high and much-decayed' in 1647 (RCAHMW 1960, 10) but was altered and improved on a large scale by Bishop John

Evans (1702-15) and others in the 18th century (Clarke 1969, 91) and Browne Willis records it as being in good repair in 1721. It was in this period that the timber walls were clad in stone or brick, the second storey added and the culvert was probably part of those improvements.

At the east side of trench 7, at the point where ditch 205 of phase 2 had become almost infilled a wall, 204 was built at the eastern edge of the ditch by digging a foundation trench through the upper silts (Fig. 22a). The wall had a lime mortar and was the same wall-line that formed the eastern boundary of the palace garden up till its acquisition by Bangor Council in 1900. The garden ground level continued to the west side of the wall and the wall at footings level was not faced. On the outside however, the wall was faced because it was fronted by a shallow ditch that would have increased its working height as an obstacle. This was exposed best in trench 8 where the wall had been built over by the wall of the yard (Fig. 22b and 29). The eastern slope of this wall-ditch was covered with compact fine gravel, which may have derived from the nearby road. In trench 7 a rough drystone revetment wall lay east-west across the wall-ditch. This was of uncertain function but may indicate that there had been an entrance to the garden through the wall and across the ditch close by, near the north-east corner of trench 7.

Discrete dating evidence from this phase is lacking but the former garden soil 126, sealed beneath the floor of the later scullery outbuilding produced six pieces of pottery, three probably of 13th to 14th century date and three of the 14th to 15th century. Some of the upper layers in ditch 205 also relate to this phase, producing one piece of pottery of 14th century date and one of the 16th to 17th century date. There were some other rubbish deposits comprising a few hand-made timber and wall nails and brick and plain tile fragments. There were also some food debris remains comprising oyster and clam shells, and bones of cattle, sheep/goat, pig, horse, chicken, hare and rabbit as well as unidentifiable butchery fragments.

Phase 4

Trenches 6 and 8 extended over the remains of two of the palace outbuildings that were demolished in 1996. The outbuildings extended further to the east, as shown on 19th century maps, prior to being demolished by Bangor Council as part of its development of the area after 1900 (Fig. 11). The buildings as a whole are usually referred to as the stables but the actual stables were probably further to the east, beyond the yard, further separated from the domestic buildings. The two buildings here were first a southern range, which was a free-standing two storey coach-house 18m by 8m, with three bays, each with a wide double door opening to the south and an upper floor probably a hay-loft. The other building, the northern range, was a single storey extension to the east wing of the palace, with a connecting door. The presence of two iron cooking ranges recorded by the RCAHMW indicates that this was a scullery and kitchen. It was brick-built and was open to the roof with trusses connected by cast iron brackets, suggesting a date between 1800 and 1850. The space between the angle of the coach-house and the scullery was a cobbled yard. At its north edge there had once been another small building recorded by the RCAHMW, built against the yard wall and demolished c. 1900 (Fig. 31). It had been 8.5m by 3m internally with two narrow bays 2m wide at the east end, which could have been animal stalls but if so would have been for horses. There had also been a single storey cottage of L-plan at the south-west corner of the site, in the area investigated in 1996 (Johnstone 1996) but outside the area where the present investigation was required. This was presumably a staff-house. At the north side of the yard was a wall that formed the perimeter of the gardens there, probably the Bishop's garden mentioned by Browne Willis in 1721 – 'Behind the House are Gardens and Orchards, which lie in good order'. This wall (205) was contemporary with the north wall of the courtyard but appeared to have formed an eastern boundary to the gardens in Phase 3, before the construction of the coach-house and scullery (see Phase 3, below). Traces of the wall footings were left below the cobbled yard north of the coach-house and beneath the coach-house itself (Figs 17 and 30).

The Royal Commission commented that the stables might be the work of Bishop Majendie (in office 1809-30). However, a stable block of similar size belonging to the Bishop's Palace is mentioned in 1721 – 'The Bishops House... is in good repair. The Entrance to it is through an arch which belongs to the stables, over which are granaries about 30 yards in length.' (Willis 1721, 41). This arch could be the same as that which still stood in 1996 (Fig. 2). It was certainly not that in use at the time of Wood's map, when the entrance to the driveway was via the stone arch with the inscription 'HB 1812' (for *Henricus Bangoriensis* – Bishop Majendie's monogram), which now forms the entrance to the Bible Garden. However, there is a possibility that Willis' description could refer to the east wing of the Palace itself, because the sketch of it by Dineley of 1684 seems to show a flight of external stone-built steps leading up to an upper floor (Fig. 5). Several outbuildings are shown on engravings of 1740 and 1776 (Figs 6 and 7). However, both of these views are from the west and most of the outbuildings are single storey and south of the palace, not east of it, so none can be the coach-house. Both engravings show a

range of buildings lying east-west immediately south of the palace. The 1776 engraving shows that this range connected with an extension at the south end of the east wing and formed one side of a yard or close, the west side of which is formed by a castellated wall, similar to that at the east side of the eastern yard, surviving in 1996. Further to the west is a possible small gatehouse, which seems to appear also on the 1740 engraving. The whole southern range of buildings and castellated enclosure wall had been removed by the time of the earliest map of the area, of 1834, by John Wood (Fig. 8) testifying to major redevelopment and change in the landscape around the time of Bishop Majendie. On the 1834 map the formal division of the area had been replaced by open parkland, more in keeping with the current garden landscape fashion, with a curving carriage driveway approaching the door of the palace from the east, i.e. from the area of the stables and coach-house, which are all shown. The road from the stables probably crossed the river by the same bridge that had been shown on Speed's map of 1610. Wood's map also shows a circular feature surrounded by trees to the north-west of the palace. This was probably a pond mentioned by Hyde Hall c. 1809-1811 – 'To the west of the house a spring collected into a basin, though perfectly salubrious in other respects, it has been described to me as being almost immediately destructive of any fish put into it.' (Hyde Hall 1809-1811, 164). This was marked as a well on the first edition 1:2500 Ordnance Survey map of 1889 (Fig. 10) and was even shown to survive after the construction of Deiniol Road on the Ordnance Survey map of 1914 (Fig. 11). However, its position is now within the forecourt of the university Student Union building.

The brick walls of the coach-house were built on deep stone footings, as demonstrated in 2003, because the whole area had been raised up above the natural gentle slope down towards the river (Fig. 14). At the east end of Trench 8 the coach-house was built over the line of the earlier ditch, 205, belonging to Phase 2. This was largely silted in or was back-filled by this time. The top of the ditch fill was overlaid with several layers of large flat slate slabs over which the wall footings of the coach-house were built. Nevertheless a certain amount of subsidence had taken place (Fig. 30).

The brick walls of the scullery block exposed in Trench 6 were also set upon stone footings. These had been built up to a considerable height in order to raise the floor levels up to those of the adjoining palace east wing, which had been set upon a great depth of made-ground. The scullery footings included some blocks with dressed faces and so these and perhaps all were re-used masonry. Two had rolled mouldings and were rebates for doors, windows or arches. One was part of a small trilobate or quatrefoil headed window or arch (Fig. 32). Three architectural fragments were also collected from unstratified material during the 1996 excavations after the demolition of the outbuildings but were not described there so are included here. They comprise two mouldings and one spandrel of a small, probably round-headed double window, which was probably glazed, with an internal shutter. All these fragments are likely to have come from the extensive renovations and alterations to the cathedral carried out in the early to mid 18th century (RCAHMW 1960, 3) with the possible exception of the window spandrel, which was of an awkward shape for re-use and showed no sign of damage or mortar from re-use. This could have been discarded from a demolished building close to where it was found.

Drainage from the south side of the scullery, before the insertion of modern sewers in Phase 5a, was by means of the culvert, 116 (Fig. 13), belonging to Phase 3, which was already in existence when the scullery was built. The walls were carefully built on large slabs that bridged the culvert (Fig. 26). Drainage from the scullery into the culvert was by means of an inclined slate slab. When this culvert was abandoned at the time it was transferred to the City Council c. 1900 a quantity of crockery tableware was dumped into the drain and this was still *in situ* in the remains of the demolished building. New piped sewers were then built to the north and south of the scullery with smaller drainage pipes from the scullery leading into the main sewers.

There was a good deal of pottery associated with this phase, probably material discarded when the palace was sold, mainly kitchen and tableware crockery. This included many pieces of plain creamware plates, most with scalloped edges, a tea-cup, blue and white printed plates, milk jug, ladle and sauce-boat. There were also pieces of plain Buckley or Staffordshire kitchen crocks. There was one oyster shell and several fragments of bones of cattle and sheep/goat. Specialist study was only given to selected fragments of residual earlier pottery and two pieces of decorated floor tile (Medieval and Post-medieval pottery, below). These comprised part of a French imported jug of the mid 13th century and a fragment of decorated green-glazed ware from Chester or North Wales of 13th-14th century date. One of the floor tile fragments could be identified as a known 16th century type, paralleled in the cathedral and probably belonging to the extensive work carried out by Bishop Skevington. The isolation and small size of the fragments suggests they may have arrived on site as debris during later construction and renovation of the cathedral, but there is a chance that Bishop Skevington used some of the same tiles in his renovations of the palace.

Phase 5

Phase 5a

This phase comprises demolition layers and features created soon after the acquisition of the Bishop's Palace by the Council in 1900. A number of outbuildings at the east side of the palace were demolished to make way for the construction of Ffordd Gwynedd and nearby buildings. The former palace buildings were opened by Bangor Council as a town hall in 1904, closely followed by the library and post office. There was also a small museum in the library containing some private collections. The remaining outbuildings were left as a group around a yard. The wall, 205, that had formed the east boundary of the gardens at the north and east side of the palace was demolished leaving the gardens open to the then new road as at present. A system of sewers was laid at this time in conjunction with the culverting of the Afon Adda. Two were laid across the site. One served the east wing of the former palace itself and the north side of the northern outbuilding, running just outside it, cutting through the demolition rubble of the former perimeter wall. Another sewer served the two outbuildings, running from just south of the northern outbuilding and beneath the cobbled courtyard, which seems to have been re-laid over it. Two brick-built inspection chambers belonging to these sewers were exposed at the east edge of the site during cutting of foundation trenches for the new police station in 2005 (Fig. 13). Another feature seen then was a brick-arched tank or chamber. A mass of crockery had been dumped in the backfill of its construction trench, c. 1900. This was similar to material recovered from the scullery, including cream-ware plates and coarser kitchen ware and was probably rubbish cleared from the palace after its acquisition by the council and disposed of nearby.

Phase 5b

This, the latest phase of activity, comprised features created during the use of the former palace outbuildings by the Council, first as a fire station and mortuary and most recently as a works depot. Most of these were identified during the 2003 excavations – such as resurfacing of the cobbled yard and construction of a concrete foundation in which was set a strong circular iron fitting, which may have supported a piece of machinery such as a hydraulic ramp. At its east side a drain-pipe led off towards the brick-arched tank described above. Alongside the concrete was a later pit probably from an abandoned attempt to remove the concrete. Just after the First World War a large concrete foundation plinth was built over the line of the former perimeter wall to provide a foundation for a 'Churchill'-type army tank as a war monument. This was eventually removed in 1937.

Other disused 20th century features included two electricity cables in steel conduits, a copper water pipe, telephone cables in clay-pipe conduits and the butt of a telegraph pole just north of the scullery in Trench 6. At the extreme south edge of the site the excavations just intruded into the edge of the cut for a modern main sewer, possibly also the edge of the cut for the modern Afon Adda culvert as shown on recent surveys.

6. ARTEFACTUAL EVIDENCE

6.1 ARCHITECTURAL FRAGMENTS (Fig. 33)

6.1.1 Re-used in footings of scullery range, Trench 6 (Context 112).

RF 1. Part of the trefoil-heading of a small unglazed internal window, arch or arcade. It is almost complete but damaged during re-use. The piece is carved on both sides but had a front face, which has additional decoration and this has traces of paint and the original plaster setting (Fig. 32). This indicates that the piece was an internal feature and the lack of moulding on the rear suggests that it was part of a niche or blind wall arcade.

RF 6. Plain ogee moulding with a groove on the edge. Probably a window rebate with glazing groove.

RF 7. Plain bead moulding on a decorative rebate or cornice.

6.1.2 From peaty layer at base of fill of ditch/channel 162 Trench 6, Context 161.

RF 8. Square-edge moulding on a decorated structural piece, either rebate or arcade, almost certainly an internal feature because the stone is very soft but the cut angles are well-preserved. The style suggests a Norman rather than Early English date.

6.1.3 Unstratified finds from 1996 excavation (1996 Context 80).

Pieces collected from the machined spoil that were not described in the 1996 excavation report so have been added to the 2004 record. The first two are plain, broken pieces that are likely be re-used pieces deriving from the footings of the 19th (?) century cottage partly excavated in 1996. The other is a more complex piece that is still complete and shows no signs of having been re-used in a second structure, so it could derive from a different context and not have been re-used, i.e. it could be a discarded remnant of an earlier building.

RF 19. Plain square-edged moulding possibly a string course.

RF 20. Plain ogee moulding on a straight slab, possibly a window or door rebate.

RF 21. Spandrel of a small, probably round-headed double window with a tapering chamfer on the front and a flat rear with a recess, possibly for a shutter. There are shallow square sockets in each joining face for iron locating pegs and there are slots down the centre of each arch, for glazing.

6.2 PETROLOGY of BUILDING STONES

by Dr D. A. Jenkins, Llys Geraint, St Anns, Bethesda, Gwynedd.

The petrology of seven building stones was examined by hand lens and acid testing with the following results

- RF1** Pale grey medium (grains *ca.* 1mm) quartz sandstone with rare jasper (?). Grains show weak orientation, but the rock is uniform massive with only a weak bedding. Non-calcareous.
i.e. **Orthoquartzite** (probably basal Carboniferous, *e.g.* NE Anglesey?)
- RF6** Pale grey coarse (angular grains, 2-10mm) quartzose sandstone with rare pinkish quartz grains. Grains show weak orientation, but rock massive with no obvious bedding. Porous but well cemented. Non-calcareous
i.e. **Orthoquartzite** (probably basal Carboniferous *e.g.* NE Anglesey?)
- RF7** Pale buff coarse (angular grains, *ca.* 5mm) quartzose sandstone with rare pinkish quartz grains. Grains show weak orientation, and there is a moderate bedding. Porous but well cemented. Non-calcareous
i.e. **Orthoquartzite** (probably basal Carboniferous *e.g.* NE Anglesey?)
- RF8** Strongly calcareous and porous rock of relatively low density. Pale tubular structures (*ca.* 5mm diameter – root casts?) and occasional shell fragments.
i.e. Probably a **calcareous tufa** of recent (**Holocene**) age but unknown source (in a limestone area)

Unstratified samples from G1383 (1996)

- RF19** Pale buff medium (rounded grains 1-2mm) quartzose sandstone with occasional grains up to 5mm. Shows weak bedding, porous but well cemented with white interstitial powdery material. Pale brown stained surface. Non calcareous.
i.e. **Orthoquartzite** (probably basal Carboniferous *e.g.* NE Anglesey?)

- RF 20** Pale buff medium (rounded grains 1-2mm) quartzose sandstone with occasional grains up to 5mm. Shows weak bedding, porous but well cemented with white interstitial powdery material. Fresh rock non-calcareous. Pale brown stained surface mostly obscured with mortar, soil etc.
i.e. Orthoquartzite (probably basal Carboniferous e.g. NE Anglesey?)
- RF 21** Grey medium-fine (sub-rounded grains 1-2mm) quartzose sandstone. Shows weak bedding, well-cemented and moderate porosity. Surface mostly obscured by mortar, etc. but fresh rock a slightly greenish grey colour.
i.e. Quartz sandstone (with a chloritic cement – probably Carboniferous, source unknown)

Summary

Three rock types are represented in the sample. Five of the rocks are distinctive quartz sandstones comparable to the Basal Carboniferous orthoquartzite quarried in NE Anglesey, present on the Menai Strait shore and commonly used as a building stone. A sixth sandstone differs in colour and porosity and is possibly from a Lower Palaeozoic source (Ordovician?) source. The seventh rock differs more obviously in being a softer, lower density, calcareous travertine (post-glacial in age): such materials have been recorded at springs in limestone areas in Flintshire and were probably present on Anglesey.

6.3 WOOD OBJECTS

The preserved wood all came from early contexts (phases 1 and 2). Context 141 was exposed in only a small area at the west edge of Trench 6, sealed beneath a layer of peaty soil, predating the east wing of the palace and possibly contemporary with or predating ditch channel 162 and equivalent to layer 154 or 167 (Fig. 18). These pieces could be the residue from wattle building activity or, equally, be from the collapse or demolition of such a timber structure. This phase of activity may be identified by radiocarbon dating. The small plank in Ditch 162 was complete and well-preserved and so seems more likely to be an off-cut during one phase of construction than a piece of demolition debris. This phase may be dated by radiocarbon dating of the peat in which the plank lay. The pot-lid and branch fragments came from the lower layer in ditch 205, the date of which has been adequately fixed by the presence of pieces of two imported German jugs or tankards of the early to mid 16th century AD (Edwards below). The pot-lid (Fig. 34, 1) could well be a lid for a similar jug or tankard.

Table 1 Wood objects: Summary

<i>Phase</i>	<i>Context</i>	<i>Sample no.</i>	<i>Rec. Find no.</i>	<i>Quantity</i>	<i>Description</i>	<i>Location</i>
1	141	12	-	1	Chip or tip of stake	From blue-grey clay beneath a peat layer equivalent to one of two similar layers in ditch 162 in Trench 6. Possibly associated with construction of the 15 th -16 th century buildings
1	141	13	-	1	Frag of larger timber	ditto
1	141	14	-	1	Small branch frag	ditto
1	141	15	-	9	Small branch frag and frags of larger timbers	ditto
1	161	-	9	1	Small complete plank	From peat layer in base of ditch 162, Trench 6
2	289	10	-	5	Small branch frags	From lowest fill of ditch 205, Trench 7. Probably associated with the 15 th -16 th century buildings

2	289	-	5	1	Carved wood pot-lid	From lowest fill of ditch 205, Trench 7. Probably associated with the 15 th -16 th century buildings
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Table 2 Wood objects species identification

By Dr Pat Denne, European Plant Science Laboratory, Bangor

<i>Context</i>	<i>Sample number</i>	<i>Description and species identified</i>
141	12	Chip or tip of stake: oak
141	13	Frag. of larger timber: extremely decayed, possibly willow
141	14	Small branch frag: very decayed, probably holly
141	15	Small branch and larger timber frags: all very decayed, probably alder
161	-	Small complete plank: oak, quarter sawn board, narrow growth rings (averaging under 1mm wide)
289	10	Small branch fragments: all ash
289	-	Wood pot-lid: oak

Samples 13, 14, 15 above were seriously decayed, so details of pitting on the cell walls were absent, which makes identification less certain. They were all diffuse porous species, and the identification of those three samples was based on general microscopic cell pattern, rather than on details of perforation plates or pitting.

6.4 POTTERY SUMMARY

Pottery from the earlier phases, 1-3 and selected pieces of earlier pottery, residual in later contexts was submitted for specialist study, see Edwards, below. The remainder, from later contexts was quantified and identified at a basic level and summarised in the following table, which also incorporates the identifications made by Julie Edwards. The characteristics of the pottery assemblage are referred to in the discussion of the archaeological phases, above.

Table 3 Pottery summary

<i>Phase</i>	<i>Context</i>	<i>Qty</i>	<i>Fabric</i>	<i>Description</i>	<i>Comment</i>
2	144	1	Red/grey earthenware	Thumb impressed base	Mid 13-early14 C
2	235	1	Red/grey earthenware	Neck of jar or jug (?)	Mid 13-early14 C
2	245	2	Red hard earthenware	Black glaze	Cistercian ware cup. Prob. 16 C
2	266	1	Light grey stoneware	Light brown salt glaze. Body frag	Rhenish ware mug or jug. Late 15- early 16 C
2	266	1	Light grey stoneware	Mottled brown salt glaze. Base of mug or jug	Cologne/Frechen ware. Mid 16 C
3	126	3	Pink/white	From jug with rouletting on shoulder	Ewloe ware. 14 - 15 C
3	126	1	Red/grey earthenware	Jug poss. same as from 144	Mid 13-early14 C
3	126	2	Red sandy hard earthenware	Jug (?) frags with clear glaze	Possibly Cheshire ware
3	209	1	Red	Golden brown int and ext glaze	Possibly Cheshire ware, 16-17 C
3	243	1	Pink/white earthenware	Body sherd	Possibly Ewloe ware, 14 C
4	112	1	Buff	Jug rim frag.	Saintonge ware, mid 13 C
4	115	1	Pink	Body. Thin yellow ext glaze	Saintonge (?)
4	115	1	Red	Thin body. Yellow-brown outer	16th C (?)

4	120	1	Red	Body frag. Int and ext black glaze	Buckley ware
4	121	0	Red/grey	Reduced green glaze with incised or stamped design	Mid 13 – early 14 C
4	123	1	White	Creamware teacup frag	
4	123	5	White	Blue and white china sauceboat frag	
4	123	1	White	Plain body. Tableware	
4	123	1	White	Body frag. Brown and white striped ext	
4	123	1	White	Body frag. Brown stripes on buff background	
4	123	27	White	Plain creamware plates. Several with scalloped or polygonal rims	
4	123	2	White	Creamware rim of small dish, hand-painted with fine olive green lines	
4	123	2	White	Plain creamware side-plate with scalloped edge	
4	123	1	White	Plain creamware plate with scalloped edge	
4	123	17	White	Blue and white china frags incl. plate with scalloped edge, milk jug and small ladle	
4	123	1	White	Rim of scalloped edge plate with green floral print int and ext	
4	172	8	White	Blue and white transfer printed tableware plates	
4	172	1	White	Plate/bowl frag	
4	201	1	Hard, dark grey	Body frag with patchy yellow-green glaze	Possible ridge tile
4	271	1	Red	Unglazed crock wall frag	Buckley ware
4	271	1	White	Body frag. Swirls of white on brown glaze tableware	
4	271	1	Orange-buff	Body frag. Red-brown wash int and ext	Kitchen ware
4	314	1	White	Thin body frag. Blue and white china transfer print int and ext under glaze	
4	315	2	Orange	Body frag with thick black glaze internal	Buckley ware
4	315	1	Buff	Body frag with mid-brown internal glaze	Buckley ware
5	222	1	Red	Unglazed crock base frag	Buckley ware
5	222	1	White	Body frag. Blue and white china bowl	
5	404	4	White	Creamware bowl/tureen frags	
5	404	3	Brown earthenware	Bowl frags with dark brown glazed int and only upper part glazed ext	
5	404	3	Brown earthenware	Frag of 2 large crocks	Buckley ware
5	404	1	White	Blue and white print wavy edge bowl. Not china	
6	157	1	White	Preserve pot frag	
6	157	14	White	Blue and white transfer printed tableware	
6	157	1	White	Teacup frag hand-painted in	

				yellow and green	
6	202	6	Orange	Rim, base and body frags	Garden ware
6	202	1	Red	Body frag with black int and ext glaze	Buckley ware
6	202	1	Red	Body. Black ext glaze	Buckley ware
6	202	1	Grey stoneware	Olive ext, grey int	German tankard
6	202	3	White	Preserve jar frags	
6	202	3	White	Body frag. Creamy yellow with white spots. Tableware	
6	202	1	White	Body frag with green decoration. Plate	
6	202	1	White	Body frag with yellow and brown stripes. Tableware	
6	202	1	White earthenware	Body frag. Blue and white transfer print. Bowl	18 C
6	202	9	White	Blue and white china. Teacup, bowl and sauceboat	
7	113	1	Orange-Buffer	Body unglazed	Garden ware
7	113	1	Stoneware	Body. Dimpled brown ext glaze	17/18 C
7	113	1	Hard earthenware	Body. Buff-yellow int and ext glaze	
7	113	1	White	Thin rim. Moulded ext deco with partial green glaze	
7	113	1	White	Body. Re-burnt plain creamware with vitrified material adhering to the inside	19 C
7	113	2	Red	Rim and body frags with black glaze	Buckley ware
7	113	2	Hard earthenware	Mid-brown int and ext glaze	Drain pipe/sanitary ware
7	113	6	Grey	Preserve pot frags	
7	113	11	White	Plain cream and blue and white tableware frags	
7	113	1	Light blue	Bowl or vase frag. Vitrified ware	
7	113	1	White	Cream ware frag with hand-painted red and green stripes	
7	113	1	Mid-brown	Coarse int and ext dark brown glaze	17/18 C tankard or jug
7	113	5	Grey	Preserve jar frags	
7	113	1	Grey	Olive brown glaze on neck. Flagon	
7	113	1	White	Creamware plate/meat dish with classical print in brown	
7	113	3	White	Blue and white china frags	
7	113	2	White	Creamware handles	
7	113	4	White	Yellowish creamware	
7	113	1	White	Salt-glazed thin creamware. Teacup (?)	18 C
7	113	2	Red	Brown/back glaze	Buckley ware
7	113	1	Red-brown	Handle frag with dark brown glaze. Tea-pot (?)	
7	113	1	Red	Bowl frag with dark brown int and ext glaze	
7	113	1	White	Rectangular obj. with 2 pierced holes. Early elec. fitting?	
7	113	2	White	Plain creamware frags	
7	113	1	White	Creamware, blue and white deco	
7	113	1	Grey stoneware	Mid-brown int and ext glaze	Drainpipe/sanitary ware
7	113	1	red earthenware	Base frag. Int olive brown glaze	

7	113	1	Red	Olive brown int and ext glaze. Lid	
7	113	1	Grey stoneware	Mid brown strap handle	Large flagon/jar
7	113	19	White	Large pieces of creamware plates, some joining, with polygonal, scalloped and wavy edges	1 stamp 'Staffordshire Ironstone', 1 'Burslem'
7	113	1	White	Blue and white printed china plate	
7	402	2	Red	Rims of two large slip-trail decorated bowls	18 th C Staffordshire or Welsh

6.5 MEDIEVAL AND POST-MEDIEVAL POTTERY AND FLOOR TILES (Fig. 34, 2-8)

By J. E. C. Edwards, Chester Archaeology

Methodology

Eighteen sherds of pottery and three fragments of ceramic building material were sent for identification and recording. The sherds were recorded according to the MPRG minimum standards (MPRG 2001).

Condition

The pottery consists only of fragments there are no complete vessels nor can any substantial parts of vessels be reconstructed. Levels of abrasion vary from sherd to sherd; those with hard-wearing fabrics e.g. stonewares survive in very good condition.

Phase 2

Six fragments from contexts [144], [235], [245] and [266] were recorded.

[144] - base from a red/grey ware jug (Fig. 34, 2). There is thumbing around the perimeter of the base and the lower part of the body shows evidence of knife-trimming, where the surface has been shaved or smoothed with a blade of some description. A fragment which appears to be from the same vessel as this was found in [126].

This type of pottery, made from iron-rich clays fired to either a red or reduced grey colour, is comparable to types found in North Wales and Chester dating (on evidence from Dyserth and Degannwy castles) from the mid-thirteenth century. It is the most common type of pottery in use in Chester from the mid-thirteenth to early fourteenth century. Kiln sites producing such wares have been found in Cheshire and at Rhuddlan (see Davey 1977).

[235] - fragment from a red/grey ware vessel possibly from the neck of a jug or handled jar.

[245] - two sherds from a Cistercian-type ware cup. The vessel has a lustrous purplish black glaze and a red fabric. It is similar in form and fabric to Cistercian-types excavated in Chester e.g. excavations in 2001 at 25 Bridge Street Row, Chester (Edwards in prep) and elsewhere in north-west England e.g. Norton Priory (Greene & Noake 1977), Timperley Old Hall near Manchester (unpublished). Whilst Yorkshire Cistercian-types do appear in the region there are a significant number of Cistercian-types that differ in size and form from the Yorkshire series and it has been suggested that there may have been a production source in the Cheshire/Merseyside region (Greene and Noake 1977, 58). At Norton Priory and at 25 Bridge Street Row these vessels are in deposits dated to the sixteenth century although precisely which part of the century is unclear.

[266] - base of a Cologne/Frechen stoneware rounded mug or jug (Fig. 34, 6). The fragment has a pale grey fabric with dark grey margins and a brown mottled salt glaze. The perimeter of the base is untidily finished and fragments of clay adhere to its surface. Kiln scars appear under the base, which also has the characteristic cheese-wire impression left by a double-stranded wire used to detach the finished vessel from the wheel. It is difficult to precisely identify the provenance because so little of the vessel survives. An additional problem is that during the middle of the sixteenth century Cologne potters were leaving the city for Frechen. Similar types of vessel were therefore being produced contemporaneously in the two places and are almost impossible to tell apart (Hurst *et al* 1986 208; Gaimster 1997 193 and 209). It is likely to be made in the middle decades of the sixteenth century.

[266] - fragment of salt-glazed Rhenish stoneware. The sherd is a small plain body sherd with a smooth light brown glaze and a pale grey almost white fabric. The fragment has no identifiable features but it is most probably from a Raeren stoneware mug or drinking jug, the better-known name for this form. Raeren drinking jugs were exported from the Rhineland in large quantities. Hurst comments that so many were exported to Britain that 'it is found on every site of the first half of the 16th century – from royal palace to peasant house' (Hurst *et al* 1986, 196). They are dated from the late 15th – mid-16th century but are most common in the first half of the sixteenth century. The colour of the fabric is paler than is usual for Raeren wares. An alternative identification might be that the piece is Cologne stoneware, which was sometimes made in white stoneware with a light brown glaze. This type of Cologne stoneware is however quite rare (Hurst *et al* 2008); its dating corresponds to the Raeren types.

Discussion of phase 2

Whilst the pottery from this phase is on the whole mixed in date it is possible that the Rhenish stonewares and Cistercian-type ware were in contemporary use. Their presence may relate to the sixteenth-century occupation of the Palace or alternatively occupation of a similar date in the vicinity. Rhenish stonewares are less numerous in Chester and North Wales than in eastern and southern Britain. The reason for this may be geographical; Rhenish stonewares were imported into Britain via the Netherlands through London or the south coast. They were then re-distributed by sea or over land. Unlike Hurst's assertion quoted above their distribution in Chester and North Wales appears to be related to urban and so called 'high status' sites however this may be a bias in excavation rather than a reflection of who had access to the wares. The appearance of Rhenish stonewares in Bangor is unusual but chiefly because so little medieval and early post-medieval pottery has been excavated in the city and good assemblages of late medieval/early post-medieval pottery in the North Wales/Chester region are not common. The association with an urban high status ecclesiastical site would not be remarkable elsewhere in Britain.

The presence of these two wares suggests that the pattern of late medieval/early post-medieval pottery usage in Bangor is similar to the general trend in Britain although perhaps on a smaller scale.

Phase 3

Eight fragments of pottery and three of ceramic building material were recorded from contexts [126], [209], [216], [243].

[126] - six fragments of pottery were found in this context. Three of these are in pink/white firing fabrics. Two sherds appear to be from the same vessel, possibly a jug, which has parallel lines of roulette decoration around the shoulder. The third is too small to identify as to form.

These wares made from pink to off-white firing Coal Measure clays are comparable in fabric to a dump of kiln waste found near Ewloe, Flintshire (Harrison and Davey 1977) thought on stylistic grounds to have been produced in the fourteenth and fifteenth centuries. Such wares are common in Chester from the fourteenth century and a hoard of coins dated to c.1361 was found in the city in 1901 (Rutter 1977).

A fragment of a red/grey ware appears to be from the same jug as in Phase 2 [144].

The remaining two sherds are from the same medieval vessel, probably a jug. They are made from a hard, fine, sandy red-firing ware. A glossy clear lead glaze gives the exterior a golden brown appearance. The remains of dark reddish brown stripe are present on the exterior, this has been formed by applying a line of iron-rich slip before glazing. The vessel has been finely thrown. It has not been possible to identify this sherd as to a precise ware type. It has similarities to the Cheshire red/grey firing wares but in comparison it is quite finely thrown and higher fired.

[209] – post-medieval brown glazed ware made from a red fabric with a good golden brown glaze on interior and exterior. It is difficult to be precise about the date of this sherd. Similar wares are certainly in use in Chester in the 17th century but recent excavations in Bridge Street Row, Chester (CHE/25BS01) suggest that they appear in the sixteenth century.

[216] - fragment of building material initially identified as pottery. The fragment appears to be from a post-medieval ridge tile.

[243] - fragment of fourteenth/fifteenth century pink/white ware, the fabric is softer than is normal for those types comparable to pottery found amongst a dump of kiln waste near Ewloe, Flintshire (Harrison and Davey 1977). This may be due to a lower firing and perhaps an alternative production source although surface finish is similar.

Two fragments accompanying this sherd are abraded fragments of ceramic building material. No surface details remain by which to identify them to form and the fabric are not diagnostic of any particular type.

Phase 4

Contexts [112], [121] and [247] produced two sherds of pottery and two pieces of medieval floor tile.

Pottery

[112] - rim sherd from a Saintonge ware jug, a small amount of glaze survives on the edge of the sherd which suggests that it is from a mottled glazed vessel and therefore dates from c.1250 (Fig. 34, 2).

Saintonge wares are the most common type of pottery imported from the Continent to Britain in the medieval period. Their presence has been related to the trade in Gascon wines (for a summary of the ware and its production centres in south-west France see Brown 2002, 26). The Port of Chester was a point of entry for such wines, which were then re-distributed along the north Wales coast. Saintonge wares are found at several of the North Wales castle sites and the excavations at Dyserth Castle provide important evidence for the earliest date of Saintonge mottled wares in Britain (Pearce *et al* 1985, 19). The presence of this ware at a high status ecclesiastical site in Bangor is thus perhaps to be expected.

[121] - fragment from a red/grey ware vessel with a reduced green glaze and incised and possibly stamped decoration (Fig. 34, 5).

Floor tile

[112] - a small fragment (21 mm thick) with an impressed-line design and a white slip under a clear glaze (Fig. 34, 7). The slip and glaze has been partly worn away. Not enough of the design survives by which it can be confidently identified.

[247] - fragment (39 mm thick) from a large square floor tile with a counter relief design (Fig. 34, 8). The pattern appears to be the same as Lewis's group 48 (Lewis 1999, 86; fig 711, 192), which was found in the chancel of Bangor Cathedral and dated by him to the early sixteenth century. A tile fragment with a similar pattern has also been found in Chester (Rutter 1990, 270 figure 176), numbered 116 in the Chester City stamp series and 178 in the Cheshire series. Three slightly different versions of the design have been found in Cheshire (including number 178) but only fragmentary examples of each have survived (pers. comm. E. Brotherton-Ratcliffe, Cheshire Floor Tile Census). A version has also been found at Rushen Abbey on the Isle of Man (Helen Skillan pers. comm.). John Lewis also quotes an example in Christ Church Cathedral, Dublin (Lewis 1999, 86). It is interesting that the example illustrated from Bangor Cathedral has an additional line cutting across the design parallel to one of the sides; the example from the Bishop's Palace has a similar feature. The line may have been caused by a crack in the wooden stamp used to impress the design; the suggestion is that the two tiles were made using the same stamp but without comparing the tiles it is difficult to definitely identify them as the same. It is possible that this fragment may have originated in the Cathedral, alternatively both the Palace and the Cathedral may have had similar floors installed at the same time made by the same tile-maker.

Lewis suggests a date in the early sixteenth century for the tile from Bangor Cathedral based on stylistic grounds (Lewis 1999, 11). No dates have been published for the occurrences of these tiles elsewhere however similar sized tiles with other counter-relief designs appear in the deposits associated with steps inside the west door of Chester Cathedral. The western entrance to the Cathedral is thought to have been re-modelled in the late fifteenth or early sixteenth century.

6.6 OTHER FINDS

6.6.1 Window Glass

There were no significant finds of window glass, which all came from later contexts and of 18th-19th century type.

Table 4 Window Glass summary

<i>Phase</i>	<i>Context</i>	<i>Site subdiv</i>	<i>Quantity</i>	<i>Comment</i>
4	123	6	1	1.5mm thick
4	271	7	6	1.5mm thick
4	314	8	6	2mm thick
6	157	6	1	1.5mm thick
6	157	6	1	2mm thick
7	113	6	1	1.5mm thick

6.6.2 Bottle Glass

There were few finds of bottle glass, all from later contexts. These were mainly wine bottles of 18th and 19th century type and there were also fragments of two decorative bowls. The finds suggest the deposition of small numbers of wine bottles and therefore perhaps quite modest consumption.

Table 5 Bottle Glass summary

<i>Phase</i>	<i>Context</i>	<i>Site subdiv</i>	<i>Quantity</i>	<i>Comment</i>
3	123	6	1	Wine bottle neck, vertical-sided. Blown. Grey-green, Late 18 th – early 19 th C?
3	123	6	1	Wine bottle base frag., vertical-sided. Blown-moulded. Grey-green, Mid - late 19 th C
3	125	6	1	Wine bottle base frag., vertical-sided. Blown. Grey-green, Late 18 th – mid 19 th C?
3	209	7	2	Mineral bottle frags Pale green. 19 th C?
3	209	7	1	Milk bottle frag. Clear. 20 th C
4	271	7	6	Wine bottle frags, vertical-sided. Blown. Opaque dark grey-green, Late 18 th – mid 19 th C?
5	222	7	1	Flat-sided vessel frag. Clear, blown. 19 th C?
5	404	WB	1	Wine bottle base frag., vertical-sided. Blown. Grey-green, Late 18 th – mid 19 th C?
7	113	6	1	Semi-spherical vessel frag., decorated with lines. Blue glass.
7	113	6	1	Wine bottle base frag., vertical-sided. Blown. Grey-green, Late 18 th – mid 19 th C?
7	113	6	1	Mineral bottle base frag. Pale green. 19 th C?
7	113	6	1	Decorated moulded bowl base frag. Translucent blue. 19 th C
7	113	6	1	Rectangular condiment bottle base frag. Pale green. 19 th C
7	113	6	9	Wine bottle frags. Machine-moulded. Green. 19 th C
7	113	6	1	Wine bottle neck. Blown. Brown. Early 19 th C
7	113	6	1	Wine bottle neck. Blown. Green. Late 18 th C
7	113	6	1	Wine bottle frag. Machine-moulded. Green. 20 th C
7	113	6	1	Bottle base frag. Blown. Clear. 19 th C?
7	113	6	1	Base? frag of rectangular faceted bottle. 19 th C

6.6.3 Copper Alloy Objects

Phase 3

Context 125, Unidentifiable fragment, 27 x 18 x 8mm.

Context 146, Unidentifiable fragment, 34 x 26 x 17mm.

Phase 6

Context 157, RF 10 Plain round wire ring, wire 2.3mm dia. Ring internal dia. 19mm.

6.6.4 Lead Objects

Phase 4

Context 123, RF 11, Musket ball, 18mm dia..

6.6.5 Iron objects

There were a few timber and wall nails from earlier phases, indicative of the many phases of construction and renovation that took place. The absence of shoe-nails or horse-shoe nails may be partly a recovery bias, because of their small size but may also indicate that the status of the buildings with little on-site rubbish disposal. The lack of horse-shoe nails and horse-shoes may indicate that none of these buildings were used as stables.

Table 6 Iron objects summary

<i>Phase</i>	<i>Context</i>	<i>Sitesubdiv</i>	<i>Quantity</i>	<i>Description</i>
2	17	2	1	Timber nail. Probably hand-made
2	137	2	1	Small timber nail fragment
2	205	2	3	Small hand-made, possibly floor-board nails.
3	125	3	2	Parts of a very large, hand-made timber or wall-nail
3	126	3	2	Heads of two timber nails. Probably hand-made
3	126	3	1	Large timber or wall-nail. Probably hand-made
3	136	3	2	Heads of 2 small square-headed timber nails
3	146	3	4	Parts of two possibly hand-made timber nails
3	240	3	1	Probable head of a very large timber or masonry nail, probably hand-made
4	115	4	1	Timber nail. Probably hand-made
4	123	4	20	Several strips, one rounded bar and one broken blade-like piece and one small circular pin or rivet head. Possibly discarded table cutlery.
4	271	4	2	Part of large hand-made masonry nail and fragment of a thick strip, possibly masonry clamp
4	314	4	1	Shank of small timber nail. Hand-made
6	157	6	1	Small hand-made timber nail
6	202	6	1	Wall and base frag from a vessel, vitrified material on the outer surface. Carpenter's glue-pot?
6	207	6	1	Wire portion, c. 3.5mm dia., 120mm long with sharp bend. Possibly a drop-handle
7	113	7	1	Long, round-section timber nail. Recent.
7	113	7	4	Long, round-section timber nails. Recent.
7	113	7	3	Wall and base frag from a vessel, vitrified material on the outer surface. Carpenter's glue-pot?
7	113	7	1	Perforated strip. Shoe-iron?

6.6.6 Clay tobacco pipes

These few pieces were all from late phases and do not add to knowledge about the occupants of the palace.

Phase 6

Context 157, thin stem fragment, 6mm dia.

Context 202, 1 thick stem fragment 8mm dia.

Context 202, 1 bowl fragment with harp decoration above name 'Erin'. 19th century.

Phase 7 (Unstratified layers)

Context 113, 2 possibly joining thick stem fragments, 8mm dia.

6.6.7 Floor tile

For decorated tile see Edwards, 6.5, above.

Phase 7 (Unstratified layers)

Context 113, Thick, plain unglazed clay tile fragment, 25mm thick, in yellow-buff heavily gritted fabric, probably machine-made.

Context 113, Stone quarry tile, 100mm square. Both square and rectangular stone quarry tiles and slabs were used in floors of the palace outbuildings, as described before their demolition (RCHMW 1996).

6.6.8 Brick

Phase 3

Context 125, a fragment of a hand-made brick with poorly mixed fabric including one pebble 12mm long.

6.6.9 Mortar

Phase 4

Context 204, white lime mortar tempered with sand of quartz and dark schist? Grains and occasional pieces of cockle (?) shell.

Phase 6

Context 157, Buff-grey mortar. Smooth and very finely gritted with silt (?) and crushed shell.

Context 202, White lime mortar tempered with quite large chips and pieces of grey stone leaving many voids.

Context 202, Ditto with cockle shell.

6.6.10 Burnt clay

Table 7 Burnt clay summary

<i>Phase</i>	<i>Context</i>	<i>Description</i>
2	205	1 small fragment of soft, reddish-orange fabric. Possibly from a hand-made brick.
2	213	Buff-pink soft-fired clay with angular rock fragments and charcoal. Possibly an accidentally fired piece.
3	117	Small fragment with red outer and grey inner. Possibly a brick fragment.
3	125	Mid-grey hard fabric, very finely gritted with crushed limestone fragments. Possibly cement mortar not clay.
3	126	Fragment of a two-tone, part oxidised, part reduced fabric. Possibly accidentally fired or even a burnt piece of sandstone.
3	203	1 fragment of orange, soft fabric. Possibly a brick fragment.
3	203	1 fragment of smooth red hard-fired fabric and a flat outer surface. Probably a machine-made floor tile.
3	216	1 small fragment with red outer and grey inner. Possibly a brick fragment.
3	229	Small fragment of daub-like, smooth soft fabric with occasional small quartz grains. One flat face. Possibly from a hand-made brick.
4	201	Small fragment with buff oxidised outer surface and black inner. The outer surface has a manufactured surface, angular with grooved lines. Possibly a part of a chimney or flue-tile

6.6.11 Marine Shell

There were very few shells from contexts excavated in 2004, probably indicating deposition of rubbish off-site as shellfish would be likely to have been a common foodstuff. A mass of poorly-preserved small shells were found in 2003 in pit 4 but these were almost certainly collected as empty shells for mortar-making, not the residue from food.

Table 8 Marine shell summary

<i>Phase</i>	<i>Context</i>	<i>Quantity</i>	<i>Description</i>
3	117	1	Clam
3	127	2	Oyster
4	115	1	Oyster
6	202	3	Oyster
7	113	1	Cockle
7	113	3	Oyster

6.6.12 Animal bone

The animal bone from the earlier phases, 1-3 was submitted for specialist identification and analysis (Appendix 1). The following table provides a summary identification and count of the remainder, mainly from unstratified or recent contexts, such as garden soils and the characteristics of the assemblage are referred to in the discussion of the archaeological phases.

Table 9 Animal bone summary

<i>Phase</i>	<i>Context</i>	<i>Quantity</i>	<i>Description</i>
1	143	39	See specialist report
1	153	1	See specialist report
1	160	2	See specialist report
1	161	1	See specialist report
1	167	1	See specialist report
1	304	56	See specialist report
2	5	1	See specialist report
2	18	2	See specialist report
2	144	1	See specialist report
2	205	3	See specialist report
2	244	5	See specialist report
2	266	2	See specialist report
2	266	4	See specialist report
2	289	1	See specialist report
3	117	4	See specialist report
3	125	10	See specialist report
3	125	51	See specialist report
3	125	23	See specialist report
3	126	2	See specialist report
3	126	9	See specialist report
3	136	6	See specialist report
3	146	46	See specialist report
3	203	39	See specialist report
3	210	6	See specialist report

3	243	3 1 sheep long bone, 2 poultry bones
3	256	1 Cow? Long bone frag
4	115	4 1 sheep clavicle, 2 frags sheep scapula, 1 frag sheep pelvis
4	120	2 1 dog lower mandible frag, 1 cattle (?) skull (?) frag
4	123	8 1 sheep long bone, 1 sheep rib frag, 1 mature sheep molar, 3
4	247	2 1 cattle long bone frag, 1 dog (?) long bone
4	271	1 Sheep long bone frag
4	314	2 1 sheep (?) long bone frag, 1 pig hoof
4	315	2 1 cattle long bone, sawn off at both ends, 1 cattle scapula (?)
6	157	2 Mature cattle molars
6	157	60 5 poultry bones, 5 sheep long bones, 3 sheep molars, 1 sheep
6	202	1 Sheep long bone
7	113	6 3 cow long bone frags, 3 sheep long bone frags
7	113	12 1 cattle vertebra frag, 3 poultry bone frags, 4 sheep long bone
7	113	10 2 cattle long bone frags, 1 cattle toe-bone, 1 sheep long bone
7	113	7 4 cattle long bone frags, 1 cattle rib frag, 1 cattle scapula frag,

7. DISCUSSION

The discovery within the development area in 1996 of timbers of the early 12th century AD suggests that there were structures, perhaps a house for Bishop David, on the north side of the Afon Adda. The excavations in 1996 and 2004 also produced some pottery as early as the middle of the 13th century. There is fairly good evidence then that there was sufficient activity in this area before the accepted date of late 15th-early 16th century for the construction of the known palace buildings to suggest that there were buildings here before that date. There is, however, no pottery from the 12th century but pottery of that period in this area is so far absent and rare even for the 13th century, all of it being imported from some distance. The most extensive medieval evidence for the area is that from Cae Lllys, Rhosyr, Anglesey, a court of the princes of Gwynedd (Johnstone 1999). The establishment there may have been in the 12th century but there was no artefactual evidence from the earliest phase. There was, however, good coin and pottery evidence from the main phase, second phase of occupation in the 13th century. The town of Llanfaes, near Beaumaris, Anglesey, quite close to Bangor, was a prominent trading centre from at least the later 12th century but at present we only have coin finds to show this, with no evidence of the character and layout of the town itself.

Clarke (1969, 91) suggests that there was already a substantial bishop's residence at Bangor in the 13th century because Gerald of Wales refers to a visit to Bangor of Archbishop Baldwin in 1188 who was 'decently entertained' by Bishop Gwion. Such a building could well have been destroyed during the time of King John, because there is a record that the town of Bangor was burnt in 1211. If there was a bishop's palace at Bangor in the 12th century it was probably a similar structure to the original hall at Cae Lllys, Rhosyr mentioned above. This was a timber hall about 15m by 9m internally on stone rubble footings (Fig. 35, 1). The superstructure of such a hall would be entirely destroyed by burning and the remaining footings might be too poor to merit rebuilding on the same site at a later period. Similarly, at Lamphey, South Wales, there was a Welsh, pre-Norman bishop's palace, but no remains survive and it was probably of timber. The earliest surviving hall of the 13th century was stone-built on the first floor above an undercroft, and c. 15m by 6.5m internally (Turner 1997). St Davids cathedral and Bishop's Palace, Pembrokeshire, had early medieval origins, like Bangor, and was a Welsh establishment until 1188 when it became a Norman, later English see (Evans 1991). There the earliest identified building, which could have been the hall of the first bishop's palace, possibly of the 12th century, was a ground floor hall laid out perpendicular to and adjoining the river.

Clarke suggests that after the likely destruction at Bangor in 1211 the bishop had moved his residence to a new, stone-built palace at Gogarth on the Great Orme (RCAHMW 1956, 112-3), although an earlier establishment there is possible (Davidson, forthcoming). However the continuing presence of a building for the use of the bishop for lodging and entertainment is still possible. At Rhosyr, there was no evidence of destruction by burning and additional buildings in stone were added during the 13th century. In Bangor there were certainly major new works on the cathedral during the 13th and 14th centuries and it is recorded that Edward I built some town defences in 1283-4 (RCAHMW 1960, 1).

The substantial stone river revetment found close to the Bishop's Palace in 1996 (Fig. 12, structure A) suggests that there may have been a building there during that period. The situation, close to or even around a stream is also typical for many monastic complexes and there are parallels at other bishop's palaces. At Lamphey, Pembrokeshire, a subsidiary palace of the Bishop of St Davids, the buildings were set within a close all on the bank of a small stream. The overall lay-out of the ecclesiastical buildings at Bangor is even more closely paralleled by that at St Davids, Pembrokeshire, where the cathedral and bishop's palace lie on either side of a small river, with other ecclesiastical houses and buildings, all set within a semi-defensive walled enclosure. There seems to have been a mill at one side of the complex as there was at Bangor and this would have been a valuable asset of the estate.

The cathedral and town of Bangor are recorded as having been badly damaged in 1402 during Owain Glyndwr's campaign - 'the cathedral had been partly destroyed and probably the houses of the cathedral clergy had been laid waste' (Pryce 1923, ix). This could well have also meant the destruction of an early bishop's palace. The palace at Gogarth is thought to have been burnt down by Glyndwr and never re-occupied (RCAHMW 1956, 113) as also happened at the Bishop's Palace at Llandaff, Cardiff, where the hall was stone-built and semi-fortified (Johns 1972). Pryce also points out that at Bangor all twelve bishops between 1417 and 1541 were English and almost entirely absentees and quotes Hook (1860, Vol. 5, 509) - 'The Diocese of Bangor had not merely been neglected by its bishops... it had been virtually abandoned'.

Traditionally the cathedral is recorded as lying in ruins for nearly 90 years after Glyndwr and only began to recover towards the end of the 15th century under Bishop Henry Deane who himself was absent but energetic and perhaps wealthy and influential, through his main position as Chancellor of Ireland. With Deane begins the history of the standing buildings of the present town hall and former Bishop's Palace. The earliest part, believed to be Deane's work, is a hall of c. 14.5m by 7m internally with a solar c. 8.5m by 5m attached and interestingly these match very closely the dimensions of the stone-built hall and annexe at Gogarth (Fig. 35). The standing remains at Bangor require more research, beyond that carried out by the Royal Commission in 1949 (RCAHMW 1960, 9-10). A detailed record of the structure is needed, with some intervention, particularly to record the hidden wall timbers, panelling and roof structure. This should include dendrochronological dating of the timbers.

The whole area of the present development was not excavated in 2004 because areas at the north-west and south-west were to be car-parks, requiring no deep interference. The south-western area still contains the structures discovered in 1996 along with some further stratified deposits, still *in situ*. These could be valuable for future study since the deposits were not subject to specialist analysis and dating in 1996. The area at the north-west contains continuations of several known features including the pits and ditches found in trench 1 in 2003 and of the culvert 116, gully 142 and ditch 162 found in trench 6 in 2004. The relationships between these features and between them and the palace are relevant to understanding them fully.

The excavation work has shown that the east range of the palace was built on a deep layer of made-ground and that this covered a considerable depth of well-preserved rubbish-rich deposits, which were exposed at the edge of the present site. There is therefore considerable potential for further work anywhere around the east range. The report on the assessment of the biological remains (below) concluded - 'Further, more detailed work on this material has the potential to provide data on the local environment. The site in general shows considerable potential for further waterlogged deposits containing substantial assemblages of well-preserved plant and invertebrate remains.'

The excavation work has also shown fairly securely that there was sufficient activity in this area before the accepted date of late 15th-early 16th century for the construction of the known palace buildings to suggest that there were buildings here before that date. *In situ* physical evidence of such buildings has yet to be found although Structure A, recorded in 1996, could be part of possibly 13th century work. The earliest part of the present palace may have been built over the remains of such earlier buildings but because medieval buildings tend to have been added to in sequence rather than re-built, such remains may exist south of the present town hall buildings. There is a possibility that geophysical or ground-probing radar survey could identify such buildings. Most obvious would be to trace to the west the extent of the riverside revetment found in 1996 as this could belong to a latrine block adjoining an early building such as a hall.

The documentary work has shown that there were other buildings to the south of the Bishop's Palace that were demolished probably in the 18th century. The foundations of these might be located by geophysical survey or directly by observation of any new service trenches. Similarly the formal lay-out of the palace close and gardens in the 17th century might be identified (Fig. 5).

The documentary and archaeological work has increased the knowledge about the early history of Bangor, in particular of the Bishop's Palace. It has provided a good record of all activity within the development area prior to its destruction and demonstrated that the area further to the west, south of the former palace buildings has high potential for the presence of well-preserved remains from earlier periods of palace occupation, some probably predating the construction of the present standing buildings. Significantly, the build-up of made-ground and the presence of waterlogging in the valley-floor location means that there are both stratified finds and well-preserved organic remains of both bone, wood and macrobotanical remains giving unusually high potential for the study of chronology and diet.

8. DOCUMENTARY SOURCES

Published sources

- Alcock, L. 1964. Excavations at Bangor, *Archaeol. in Wales* 4., 12.
- Brown, D.H. 2002. *Pottery in Medieval Southampton c.1066-1510*. CBA Research Report 133. York
- Carr, A.D. 1994. Medieval Bangor. In White ed. 1994, 27-35.
- Clarke, M.L. 1969. *Bangor Cathedral*, Cardiff.
- Davey, P.J. ed 1977. *Medieval pottery from excavations in the North West*. University of Liverpool. Liverpool.
- Davidson, A.F. forthcoming. *Excavations at the Bishop's Palace, Gogarth, 2004-5*, Archaeology in Wales.
- Edwards, J.E.C. in preparation. Post-Roman pottery from 25 Bridge St, Chester.
- Ellis-Jones, P. 1970. The city of Bangor and its environs at the time of the Tithe Survey, 1840, *Trans. Caern. Hist. Soc.* XXXI, 64-77.
- Ellis-Jones, P. 1973. *Bangor, a study in urban morphology and social change, 1800-1971*, PhD Thesis, Univ. of Wales, Bangor.
- Evans, J.W. 1991. *St Davids Bishop's Palace*, Cadw, Cardiff.
- Gaimster, D.R.M. ed. 1997. *German Stoneware 1200-1900*, Archaeology and Cultural History. British Museum: London.
- Greene, J.P. & Noake, B. 1977. Norton Priory. In: Davey 1977, 54 - 59.
- Harrison, H.M. & Davey, P.J. 1977. Ewloe. In: Davey 1977, 92 - 99.
- Hook, W.F. 1860. *The Lives of the Archbishops of Canterbury*, London.
- Hughes, H.H. 1924. An ancient burial ground at Bangor, *Arch. Camb.* LXXIX, 395-6 and (1925) LXXX, 432-6.
- Hurst, J.G., Neal, D.S. & van Beuningen, H.J.E. 1986. *Pottery produced and traded in north-west Europe 1350-1650*. Rotterdam Papers VI. Rotterdam.
- Hyde Hall, E. 1809-1811. *A Description of Caernarvonshire (1809-1811)*, ed. E.G. Jones, 1952, Caernarvonshire Historical Soc. Rec. Series No. 2.
- Johns, C.N. 1972. *The Old Bishop's Palace, Llandaff*.
- Johnstone, N.M. 1999. Cae Lllys, Rhosyr: A Court of the Princes of Gwynedd, *Studia Celtica* XXXIII, 251-95.
- Johnstone, N.M. 2000. Excavations at the Bishop's Palace, Bangor, *Arch. in Wales* 40, 51-7.
- Lewis, J.M. 1999. *The medieval tiles of Wales, census of medieval tiles in Britain*. National Museums and Galleries of Wales: Cardiff.
- Longley, D.M. 1994. Bangor Fawr yn Arfon. In White 1994, 13-18.
- Longley, D. M. 1995. Excavations at Bangor, Gwynedd, 1981-89, *Arch. Camb.* CXLIV, 52-70.
- MPRG 2001. *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics*. Medieval Pottery Research Group Occasional Paper 2.
- Pearce, J.E., Vince, A.G. and Jenner, M.A. 1985. *A dated type-series of London Medieval Pottery part 2 London-type ware*. London and Middlesex Archaeological Society special paper no 6.
- Pryce, A.I. 1923. *The Diocese of Bangor in the Sixteenth Century, being a digest of the Registers of the Bishops, AD 1512-1646*.
- Ralegh-Radford, C.A. 1949. Bangor Cathedral in the Twelfth and Thirteenth Century: Recent Discoveries, *Arch. Camb.*, C, 256-61.
- RCAHMW 1956, *Caernarvonshire Inventory, Vol. 1*.
- Roberts, T. 1994. The Bishops of Bangor: The Penrhyn Estate and the development of the city from the 18th to the 19th centuries. In White 1994, 36-40.
- Rutter, J.A. 1990. Appendix 1: Floor tile catalogue. In: Ward 1990. 229-279.
- Rutter, J.A. 1977. Upper Northgate Street hoard pot. In: Davey 1977. 22-23.
- Soulsby, I. 1983. *The Towns of Medieval Wales*, Phillimore, Sussex.
- Turner, R. 1997. *Lamphey Bishop's Palace*, Cadw, Cardiff.

Ward, S.W.1990. *Excavations at Chester, the lesser medieval religious houses, sites investigated 1964-1983*. Grosvenor Museum archaeological and survey reports no.6. Chester City Council.
 Welsh Office 1978. *List of Buildings of Special Architectural or Historic Interest: Bangor*.
 White, R. 1971. Rescue Excavations at the New Theatre site, Bangor, *Trans. Caern. Hist. Soc.* XXXII, 246-7.
 White, S. I. ed. 1994. *Bangor - From a Cell to a City*, The Friends of Bangor Museum and Art Gallery.
 Willis, B. 1721. *A Survey of the Cathedral Church of Bangor*, London.

Unpublished documents and illustrations

GAT 1999. *Bangor City Links: Memorial Square*, GAT Report no. 315.
 GAT 1999. *Archaeological Assessment at the Crosville Bus Depot, Beach Rd., Bangor*, GAT Report no. 37.
 GAT 1996. *Castle Hotel – Bangor, archaeological recording and monitoring of demolition*, GAT Report no. 188.
 GAT 2003. *Plot adjacent to town hall, Bangor, Gwynedd. Project design for archaeological evaluation*.
 Johnstone, N.M.1996. *Excavations at the Bishop's Palace, Bangor, 1996*, GAT Rep. No. 370.
 Johnstone, N.M.1996. *Excavations at the Bishop's Palace, Bangor, 1996, archive in Gwynedd HER*.
 Lewis, J. 1740. *Bangor town viewed from the south-west* (etching).
 Page, N. 2003. *Bangor town centre redevelopment. Archaeological desk-based assessment*, Cambria Archaeology, Report No. 2003/126.
 Price Davies 1939. *On the River Adda*, UWB Archives Gen. Coll. Ms. 21078, 33.
 RCHMW 1996. *Description of the former Bishop's Palace, Bangor*, RCHMW, Aberystwyth.
 Roberts, T. c. 1990. *The History of the River Adda*, unpub. lecture paper.
 Sandby, P. 1776. *Bangor in the County of Caernarfon, viewed from the north-west* (etching) Gwynedd County Archives, Caernarfon.
 Smith, G.H. 1999. *Archaeological investigation and recording at the Late Medieval house of Llys Euryn, Rhos-on-Sea, 1998*, GAT Report No. 334.
 Tharme, D.E. 1995. *Afon Adda*, unpub. paper, Gwynedd HER.
 White, R. 1984. *Bangor Excavations*, interim news sheet, GAT.

Cartographic sources

Bangor parish map 1834. (OS map).
 Captain Edward Johnson's map of Bangor 1854.
 Gwynedd County Council 1977. Survey of outbuildings at Town Hall, Bangor, Dwg. No. 07 01 2 1.
 Ordnance Survey 1890-91, 1st edition 1:10560 series.
 Ordnance Survey First Ed. 25 inch to 1 mile 1890.
 Ordnance Survey Second Ed. 25 inches to 1 mile 1914.
 Penrhyn Estate map, Bangor and Bethesda.
 RCAHMW 1996. Plan of Bangor Bishop's Palace Stable Block, Royal Commission on Ancient and Historic monuments, Wales, Aberystwyth.
 Speed, J. 1610. Atlas of Wales, County map of Caernarfonshire – inset town map of Bangor.
 Tithe Apportionment map, 1841. Gwynedd Archives, Caernarfon.
 Vaynol Papers 1777. Town of Bangor. Ms 4056 1691-2. Gwynedd Archives.
 Wood, J. 1834. Map of Bangor 1834.

APPENDIX 1

Assessment of biological remains from excavations at Bishop's Palace, Bangor, Gwynedd, Wales

By Örne Akeret, Enid Allison, Juliet Mant, Stewart Gardner and Deborah Jaques

Summary

One sediment sample and a single box of hand-collected vertebrate remains were recovered from excavations undertaken at the site of the new police station adjacent to the Bishop's Palace, Bangor, Gwynedd, Wales. Although dating evidence was sparse, features of possible 16th century to early modern date were encountered.

Plant and invertebrate remains recovered from the sediment sample were in an excellent state of preservation. The former indicated a predominantly open or semi-open environment which included bushes and/or hedgerows, with hints of somewhat wetter conditions. The abundant remains of aquatic invertebrates strengthened the evidence for the latter, as they suggest that the deposit accumulated in wet conditions. Additionally, other invertebrates identified provided evidence for the disposal of some material from within buildings, and for the presence of herbivore dung in the vicinity.

The small vertebrate assemblage included the remains of cattle, sheep/goat and pig, with hare, rabbit and birds also present. Both butchery and domestic refuse were indicated but the assemblage was rather too small to be of much interpretative value. There was also some evidence for residual or reworked bone, and, in the case of the material from the cultivation deposits (Phase 3), these remains may have derived from elsewhere and been deposited for the improvement of the soil.

KEYWORDS: BISHOP'S PALACE; BANGOR; GWYNEDD; WALES; ASSESSMENT; MEDIEVAL; POST-MEDIEVAL; EARLY MODERN; PLANT REMAINS; INVERTEBRATE REMAINS; VERTEBRATE REMAINS

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Introduction

An archaeological excavation was carried out by Gwynedd Archaeological Trust, at the site of the proposed new police station adjacent to the Bishop's Palace, Bangor, Gwynedd, Wales between 10th May and 4th June 2004.

Evaluation excavations in 2003 had previously identified six phases of activity, the earliest (Phase 1) believed to be of pre-Tudor date. The current excavations (2004) revealed additional features and layers which probably dated to between the 12th and 15th centuries, confirming occupation on the site prior to the 16th century. Some material of post-medieval date was recovered, together with evidence for the later use of this area of the site as a garden.

One bulk sediment sample ('GBA'/'BS' *sensu* Dobney *et al.* 1992) and a small amount of hand-collected bone were submitted to Palaeoecology Research Services Limited (PRS), County Durham, for an assessment of their bioarchaeological potential.

Phasing from the evaluation excavation in 2003 is still applicable to the 2004 excavations, although the latter allowed some refinements (particularly of Phase 1) to be made. The material examined in this report was recovered from deposits from the following phases:

Phase 1 – features believed to be of pre-Tudor date

Phase 2 – features dating to the early 16th century or of late 16th-early 17th century date

Phase 3 – soil layers predating the construction of the stable block and associated features

Methods

Sediment samples

The sediment sample was inspected in the laboratory and its lithology was recorded using a standard *pro forma*. A sub-sample was taken for processing, broadly following the techniques of Kenward *et al.* (1980; 1986), for the recovery of plant and invertebrate macrofossils. Before processing the sub-sample was soaked in water for 24 hours or more and its volume measured in a waterlogged state.

The flot resulting from processing was examined for plant and invertebrate macrofossils. The residue was examined for larger plant macrofossils and other biological and artefactual remains.

Plant and invertebrate remains in the processed sub-sample fractions (residue and flot) were recorded briefly by 'scanning' using a low-power microscope, identifiable taxa and other components being listed on paper. Nomenclature for plant taxa follows Stace (1997).

Hand-collected vertebrate remains

For the hand-collected vertebrate remains, data were entered directly into a series of tables using a purpose-built input system and *Paradox* software. Records were made of the state of preservation, colour of the fragments and appearance of broken surfaces ('angularity'). Additionally, semi-quantitative information was recorded for each context concerning fragment size, dog gnawing, burning, butchery and fresh breaks. Skeletal elements were recorded using the diagnostic zones method described by Dobney and Rielly (1988).

Fragments were identified to species or species group using the PRS modern comparative reference collection. Fragments which could not be identified to species were described as the 'unidentified' fraction. Within this fraction fragments were grouped into three categories: large mammal (assumed to be cattle, horse or large cervid), medium-sized mammal (assumed to be caprovid, pig or small cervid), and totally unidentifiable.

Where applicable, measurements were taken according to von den Driesch (1976). Caprovid tooth wear stages were recorded using those outlined by Payne (1973; 1987), while those for cattle and pig followed the scheme set out by Grant (1982).

Mammal bones were described as 'juvenile' if the epiphyses were unfused and the associated shaft fragment appeared spongy and porous. They were recorded as 'neonatal' if they were also of small size.

Results

Archaeological information, provided by the excavator, is given in square brackets. A brief summary of the processing method and an estimate of the remaining volume of unprocessed sediment follows (in round brackets) after the sample number.

Sediment sample

Context 161 [organic layer containing rubbish-type material; Phase 1]

Sample 11/T (3.3 kg/4.7 litres sieved to 300 microns with paraffin flotation; no unprocessed sediment remains)

Moist to wet, dark brown to dark grey-brown, brittle to layered in places, very humic silt. Small stones (2 to 6 mm), fragments of wood (?), twigs and 'straw' were present, whilst fine herbaceous detritus was common within the sample.

The plant remains recovered were extremely well-preserved and, for the most part, uncharred. The sample contained fragments of charcoal and waterlogged wood, together with seeds and fruits. The following taxa were identified: corncockle (*Agrostemma githago* L.), water-plantain (*Alisma*), cow parsley (*Anthriscus sylvestris* (L.) Hoffm.), carrot family (Apiaceae), burdock (*Arctium*), cabbage family (Brassicaceae), mosses (Bryophyta), various species of grass family (Poaceae div. sp.), rose/bramble (*Rosa/Rubus* - prickles), blackberry (*Rubus fruticosus* L. agg.), broad-leaved dock (*Rumex obtusifolius* L.), elder (*Sambucus nigra* L.) and common nettle (*Urtica dioica* L.).

Many invertebrate remains were recovered from this sample. Ostracods (Crustacea: Ostracoda) were extremely abundant indicating aquatic deposition, whilst ephippia (resting eggs) of water fleas (Cladocera: *Daphnia*) were present but in much smaller numbers. Beetle remains were in an excellent condition with a high proportion of sclerites being complete. Fragments of insect larvae and mites (Acari) were abundant, fly puparia were common and remains of adult flies and earwigs were also present.

The beetle and bug assemblage contained a substantial component of aquatic forms. These included, among others, *Colymbetes fuscus* (Linnaeus), several *Helophorus* species, *Ochthebius* sp., *Hydrobius fuscipes* (Linnaeus), *Limnebius* sp., a donaciine leaf beetle, and water boatmen (Corixidae). Plant feeding taxa were well-represented by several species of weevil (Curculionidae), *Apion* sp., a halticine leaf beetle, *Gastrophysa viridula* (Degeer) found on docks (*Rumex*), *Prasocuris phellandrii* (Linnaeus) found on umbellifers standing in or beside water, and froghoppers (*Auchenorhyncha* spp.).

The presence of herbivore dung in the vicinity is indicated by a dor beetle (*Geotrupes*), and *Aphodius* sp., although some species of *Aphodius* can be found on other foul material. Spider beetles (Ptinidae) and *Mycetaea hirta* (Marsham), were also present and suggest that some material from within buildings was incorporated into the deposit.

Hand-collected vertebrate remains (Table 1)

In total, a single box (approximately 20 litres) of vertebrate remains, amounting to 298 fragments was submitted to PRS for analysis. This assemblage represented 20 deposits but only five of these produced more than 10 fragments. Nine of the fragments were measurable and two were mandibles with teeth *in situ*, of use for providing biometrical and age-at-death data.

Preservation of the vertebrate remains was fair to good, although a rather high degree of fragmentation was recorded for the material from many of the deposits. This was the result of extensive fresh breakage. Dog gnawing, burning and butchery were all limited.

Phase 1

In total, 85 fragments of bone were recovered from six deposits dating to this phase. Most of the fragments were small, unidentifiable pieces of bone (primarily recovered from Context 304). Identified remains included those of cattle, predominantly isolated teeth (from Context 143) and maxilla fragments (from Context 304). Remains of other identified species were far less numerous. Pig and sheep/goat were each represented by a single fragment, whilst two horse bones were recovered from Contexts 160 and 304. In addition, Context 167 produced a single cat tibia from an adult individual.

[Context 138 is mentioned in the archaeological report as producing an assemblage of butchered animal bone but this material was not seen by JM/DJ]

Phase 2

Only a small assemblage of bone, amounting to just 18 fragments, was recovered from the seven deposits (mostly ditch and pit fills) assigned to this phase. The bones included cattle, sheep/goat, pig and dog remains. Two pig canines were recovered from Context 266; these represented a male animal.

Phase 3

Phase 3 deposits produced the largest accumulations of bone, although most fragments came from Context 125. The seven bone-bearing deposits were mostly cultivation/garden soils and a possible demolition layer - all revealed in Trench 6 and predating the 19th century scullery. The vertebrate assemblage amounted to 195 fragments, of which only 31 could be identified. These included the remains of cattle, sheep/goat, pig, horse and chicken. Wild species were represented by single fragments of hare and rabbit. The 'unidentified' component, i.e. those bones that could only be assigned to broad categories (see Methods), mainly consisted of large mammal shaft fragments.

The remains from the cultivation soils were less well preserved than those from the deposits of earlier phases and the colour of the bones was also somewhat variable. This suggests that some of the remains may be residual or reworked.

Table 1. Hand-collected vertebrate remains from excavations at Bishop's Palace, Bangor, Gwynedd, Wales.

Species		Phase 1	Phase 2	Phase 3	Total
<i>Oryctolagus cuniculus</i> (L.)	rabbit	-	-	1	1
<i>Lepus</i> sp.	hare	-	-	1	1
<i>Canis</i> f. domestic	dog	-	1	-	1
<i>Felis</i> f. domestic	cat	1	-	-	1
<i>Equus</i> f. domestic	horse	2	-	3	5
<i>Sus</i> f. domestic	pig	1	3	4	8
<i>Bos</i> f. domestic	cow	15	5	14	34
Caprovid	sheep/goat	1	3	7	11
<i>Gallus</i> f. domestic	chicken	-	-	1	1
<i>Sub-total</i>		20	12	31	63
large mammal		51	3	66	120
medium mammal		-	3	41	44
bird		-	-	4	4
unidentified		14	-	53	67
<i>Sub-total</i>		65	6	164	235
Total		85	18	195	298

Discussion and statement of potential

Sediment sample

Ancient plant remains recovered from the sample were extremely well-preserved. Some of the species identified indicated an open or semi-open and nutrient rich environment, these included burdock (*Arctium*), broad-leaved dock (*Rumex obtusifolius* L.) and common nettle (*Urtica dioica* L.). Single bushes or hedgerows occurred in this landscape as shown by the presence of rose/bramble (*Rosa/Rubus*), blackberry (*Rubus fruticosus* L. agg.) and elder (*Sambucus nigra* L.), whilst remains of water-plantain (*Alisma*) suggested areas that were wetter. Given that no remains of crops were identified, it seems unlikely that food plants were processed or stored in close proximity to the sampling site.

A substantial assemblage of well-preserved beetles, bugs and other invertebrates, particularly ostracods, was recovered from the sample. The flot contained abundant remains of aquatic invertebrates indicating that the deposit accumulated in wet conditions, whilst other invertebrates identified provided evidence for the dumping of some material from within buildings, and for the presence of herbivore dung in the vicinity.

Further, more detailed work on this material has the potential to provide data on the local environment. The site in general shows considerable potential for further waterlogged deposits containing substantial assemblages of well-preserved plant and invertebrate remains.

Hand-collected vertebrate remains

A small assemblage of vertebrate remains was recovered from the site of former outbuildings of the Bishop's Palace, Bangor (Table 1). Not surprisingly, the remains were dominated by the major domestic mammals, in particular cattle. Many of the cattle fragments represented primary butchery waste, i.e. skeletal elements typically disposed of during initial carcass preparation such as maxillae, isolated teeth and distal limb elements. Both pig and sheep/goat remains were too few for interpretation, although these remains and those of birds, rabbit and hare are more indicative of domestic household refuse.

The area of excavation did not encounter any extensive midden type deposits and this is reflected in the small size of the vertebrate assemblage. The Phase 1 gully fills clearly indicate that these features were used for the disposal of vertebrate remains, but the bones were somewhat fragmented and of rather battered appearance and may include residual or reworked material. This might also be the case for the remains recovered from the cultivation soils which may derive from midden spreading activities for the improvement of the soils.

Recommendations

Further analysis of the plant and invertebrate assemblages is recommended to provide detailed information on the environment in which the deposit formed. An appendix to this report provides a detailed record of the vertebrate assemblage, including age-at-death and biometrical data, and no further work on the current assemblage is warranted.

Any further archaeological works at the site or in the vicinity should include a systematic sampling strategy aimed at the recovery of material from waterlogged deposits, and provision for subsequent assessment and analysis of plant and insect remains from selected deposits. The possibility of recovering further vertebrate remains, that may increase the sample size and interpretative value of the assemblage, should also be considered.

Retention and disposal

All of the current material should be retained for the present.

Archive

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records pertaining to the work described here.

Acknowledgements

The authors are grateful to George Smith of Gwynedd Archaeological Trust for providing the material and the archaeological information.

References

- Dobney, K. and Rielly, K. (1988). A method for recording archaeological animal bones: the use of diagnostic zones. *Circaea*, 5(2): 79-96.
- Dobney, K., Hall, A. R., Kenward, H. K. and Milles, A. (1992). A working classification of sample types for environmental archaeology. *Circaea, the Journal of the Association for Environmental Archaeology* 9 (for 1991), 24-6.
- Grant, A. (1982). *The use of tooth wear as a guide to the age of domestic ungulates*, pp. 91-108 in Wilson, B., Grigson, C. and Payne, S. (eds.), *Ageing and sexing animal bones from archaeological sites. British Archaeological Reports, British Series 109*. Oxford.
- Kenward, H. K., Engleman, C., Robertson, A. and Large, F. (1986). Rapid scanning of urban archaeological deposits for insect remains. *Circaea* 3, 163-172.
- Kenward, H. K., Hall, A. R. and Jones, A. K. G. (1980). A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits. *Science and Archaeology* 22, 3-15.
- Payne, S. (1973). Kill-off patterns in sheep and goats: the mandibles from Asvan Kale. *Anatolian Studies* 23, 281-303.
- Payne, S. (1987). Reference codes for the wear state in the mandibular cheek teeth of sheep and goats. *Journal of Archaeological Science* 14, 609-14.
- Stace, C. (1997). *New flora of the British Isles: 2nd Edition*. Cambridge: Cambridge University Press.
- von den Driesch, A. (1976). A guide to the measurement of animal bones from archaeological sites. *Peabody Museum Bulletin* 1. Cambridge Mass.: Harvard University.

APPENDIX 2

**Detailed records of vertebrate remains from excavations at the
Bishop's Palace, Bangor, Gwynedd, Wales.**

APPENDIX 2

Detailed records of vertebrate remains from excavations at the Bishop's Palace, Bangor, Gwynedd, Wales.

List of contexts from which vertebrate remains were examined and their preservation records.

Key: frag<5 cm = proportion of fragments less than 5 cm in maximum dimension; frags 5-20 cm = proportion of fragments between 5 and 20 cm in maximum dimension; frags>20 cm = proportion of fragments greater than 20 cm in maximum dimension; dg = dog gnawing; bt = burnt; butch = butchery; fb = fresh breaks. All are recorded as the proportion of fragments that fit the criterion. For preservation, angularity and colour - >90% of the fragments have to be in a category otherwise they are recorded as 'variable'.

context	context type	preservation	angularity	colour	frags<5 cm	frags 5-20 cm	frags >20 cm	dg	bt	butch	fb
5	Fill of pit	fair	spiky	beige	none	>50%	none	none	none	10-20%	10-20%
18	Fill of pit	good	spiky	beige	none	>50%	none	none	none	none	10-20%
117	Layer	good	spiky	brown	20-50%	>50%	none	none	none	none	10-20%
125	Layer	fair	spiky	variable	0-10%	>50%	none	0-10%	none	0-10%	10-20%
126	Layer	good	spiky	dark brown	10-20%	>50%	none	none	none	0-10%	10-20%
136	Layer	fair	spiky	beige	20-50%	20-50%	none	none	none	none	10-20%
143	Layer	fair	battered	brown	20-50%	20-50%	none	0-10%	0-10%	none	20-50%
144	Layer interface	good	spiky	brown	none	>50%	none	none	none	none	none
146	Fill of culvert	good	spiky	variable	10-20%	>50%	none	none	none	0-10%	10-20%
153	Layer	good	spiky	brown	none	>50%	none	none	none	10-20%	10-20%
160	Layer	good	spiky	dark brown	none	>50%	none	none	none	none	10-20%
161	Layer	good	spiky	brown	none	>50%	none	none	none	none	none
167	Layer	good	spiky	dark brown	none	>50%	none	none	none	none	none
203	Layer	good	spiky	brown	20-50%	20-50%	none	none	none	none	10-20%
205	Ditch cut	good	spiky	brown	none	>50%	none	none	none	none	0-10%
210	Fill of pit	good	spiky	brown	>50%	none	none	none	>50%	none	none
244	Fill of ditch	good	spiky	dark brown	10-20%	>50%	none	none	none	none	0-10%
266	Fill of ditch	good	spiky	brown	none	>50%	none	none	0-10%	none	0-10%
289	Fill of ditch	good	spiky	brown	none	>50%	none	none	none	10-20%	none
304	Fill of gully	fair	battered	beige	20-50%	20-50%	none	none	none	0-10%	10-20%

Identified skeletal elements by context.

Key: r = right; l = left; prox fusion = proximal fusion; pf = proximal fused; pu = proximal unfused; df = distal fused; du = distal unfused; j = juvenile; a = adult. Zones follow Dobney and Rielly 1988.

context	species	element	fragments	side	zones 50%	zones >50%	prox fusion	distal fusion	notes
5	cattle	metacarpal	1	r	15	26	pf		
18	sheep/goat	radius	1	r		678	j		
18	cattle	femur	1	l		78			
125	sheep/goat	M1/M2	1						upper molar
125	sheep/goat	radius	1	l	5	12	pf		
125	rabbit	femur	1	l	1	2345	pf		
125	pig	pelvis	1	r	511	12346	a		
125	cattle	femur	1	l	9	10		df	
125	cattle	femur	1	l	57	2368	pu		
125	cattle	femur	1	l		23678			
125	cattle	metatarsal	1	l	78	1256	pf		
125	cattle	astragalus	1	r		1234	a		
125	cattle	astragalus	1	l		1234	a		very battered appearance
125	cattle	mandible	1	l		6			
125	cattle	mandible	1	l	136				
125	cattle	isolated teeth	1						lower second premolar
125	cattle	M1/M2	1						lower molar
125	cattle	mandible	1	r	2	1			P3-M1
125	cattle	calcaneum	1	l		12345	pf		
125	horse	metatarsal	1	r		1256	pf		
125	cattle	isolated teeth	1						
126	cattle	astragalus	1	r		1234	a		
126	sheep/goat	M3	1						
126	pig	canine	1						male individual
126	pig	mandible	1	r		1			P2-M2 present
143	pig	radius	1	l	267	15	pf		
143	sheep/goat	M3	1						broken lower third molar
143	cattle	isolated teeth	2						lower molars
143	cattle	isolated teeth	3						upper molars
143	cattle	isolated teeth	2						tooth fragments
144	pig	incisors	1						

context	species	element	fragments	side	zones 50%	zones >50%	prox fusion	distal fusion	notes
146	pig	metacarpal 3	1	l		12	pf	du	
146	sheep/goat	humerus	1	r	910	345678		df	
146	sheep/goat	radius	1	l	8	2567	pf		
146	sheep/goat	ulna	1	l	C	DE			
146	sheep/goat	M3	1						
146	chicken	femur	1	l	1	23		df	
146	hare	femur	1	l	6	45			
153	cattle	metacarpal	1	r		1256	pf		
160	horse	radius	1	r		34910		df	
160	cattle	scapula	1	l	145	23	a		
167	cat	tibia	1	l		123456	pf	df	
203	horse	femur	1	r	5	4	pf		
203	horse	femur	1	r	9	10		df	
205	dog	ulna	1	l	F	ABCDE	pf		
205	sheep/goat	radius	1	r	67	125	pf		
244	cattle	phalanx 3	2	l		12	a		
266	pig	canine	2						male maxillary canines
266	sheep/goat	scapula	1	r	45	123	a		
289	cattle	tibia	1	r		2610		df	
304	cattle	maxilla	1	l					including P4 & M1
304	cattle	maxilla	1	r					including P3-M1
304	cattle	maxilla	4	l					
304	horse	tibia	1	l	10	56		df	rather battered appearance

‘Unidentified’ category records.

Key: fb = fresh breakage; dg = dog gnawing; bt = burnt

context	category	element type	keywords	fragments	notes
117	large mammal	rib		1	
117	medium mammal	shaft	fb	4	
125	large mammal	rib		1	
125	large mammal	skull		1	
125	large mammal	pelvis	fb	1	
125	medium mammal	pelvis		2	
125	large mammal	scapula		2	
125	large mammal	vertebrae	fb	2	
125	medium mammal	radius	fb	3	
125	medium mammal	tibia	fb	4	
125	medium mammal	rib	fb	7	
125	large mammal	shaft	dg,fb	9	one fragment chopped
125	unidentified	unidentified	fb	35	
126	large mammal	cervical vertebrae		1	
126	medium mammal	mandible		1	
126	large mammal	pelvis		1	chopped through ilium
126	medium mammal	shaft		3	one calcined fragment
136	unidentified	unidentified		6	
143	large mammal	metapodial		1	very battered appearance
143	large mammal	shaft		2	very battered appearance
143	large mammal	humerus	dg,fb	5	
143	unidentified	unidentified		14	one calcined fragment, some very battered in appearance
146	medium mammal	shaft		1	
146	unidentified bird	tibia		1	
146	unidentified bird	femur	dg	1	
146	large mammal	humerus	fb	1	
146	large mammal	vertebrae	fb	1	
146	large mammal	mandible		2	
146	unidentified bird	shaft		2	
146	medium mammal	skull		2	

context	category	element type	keywords	fragments	notes
146	medium mammal	tibia	fb	2	one fragment chopped
146	large mammal	rib	fb	4	
146	medium mammal	rib		5	
146	unidentified	unidentified		12	
161	large mammal	rib		1	
203	large mammal	isolated upper teeth		1	
203	large mammal	vertebrae	fb	5	
203	large mammal	shaft	fb	33	several pieces probably from the same bone
205	large mammal	humerus		1	
210	medium mammal	rib	bt	1	calcined
210	medium mammal	shaft	bt	6	calcined
244	large mammal	rib		1	
244	medium mammal	rib		1	
244	large mammal	shaft	fb	1	
266	medium mammal	pelvis		1	
266	medium mammal	shaft	bt	1	calcined
304	large mammal	unidentified		42	many small fragments (quite dirty/battered). Some knife marks on shaft

Measurements (after von den Dreisch 1976).

context	species	element	C	C+D	DS	GL
125	cattle	calcaneum	26.28	47.62	43.16	133.43
context	species	element	BT	HT	HTC	
146	sheep/goat	humerus	29.11	13.45	14.67	
context	species	element	Bp	Dp		
153	cattle	metacarpal	51.11	29.97		
context	species	element	Bp	Dp		
125	cattle	metatarsal	41.57	37.89		
125	horse	metatarsal	41.92	38.95		
context	species	element	Bp	BFp	Bd	BFd
160	horse	radius			66.22	60.19
125	sheep/goat	radius	31.1	29.17		
205	sheep/goat	radius	28	26.35		
context	species	element	Bd	Dd		
289	cattle	tibia	50.43	36.09		

Mandible and isolated teeth records (tooth wear after Payne 1973; 1987 for sheep/goat and Grant 1982 for cattle and pig).

context	species	element	P4	M1	M2
125	cattle	mandible	g	p	
126	pig	mandible	c	f	e
context	species	element	wear		
146	sheep/goat	M3	6G		
125	cattle	M1/M2	L		
126	sheep/goat	M3	4A		

APPENDIX 3

CATALOGUE OF ARCHIVE CONTENTS

CONTEXT RECORDS: 2003

Trenches 1-5	79
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2004

Trench 6	73
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Trench 7	90
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Trench 8	36
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ARTEFACT RECORDS: Pottery record sheets

PHOTOGRAPHS: Colour negatives and prints 7 films
Digital copies of colour neg. films 3
Colour transparencies 7 films

DIGITAL RECORDS: Text files
Project context and finds database

DRAWINGS:	58
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SAMPLES:	Environmental	10
	Mortar	1

ARTEFACTS:	Animal bone	446
	Burnt clay obj.	15
	Brick	4
	Copper alloy	3
	Clay pipe	4
	Iron	54
	Floor tile	4
	Bottle glass	25
	Window glass	10
	Lead	1
	Mortar	4
	Pottery	227
	Shell	18
	Slag	10
	Stone	70
	Wood	14

Of these a small number were also recorded individually as special Recorded Finds of particular value. Three unstratified and previously unlisted and undescribed finds from the 1996 excavations were also given new numbers:

RECORDED FINDS:	Pottery	7
	Architect. frag.	7
	Wood object	2
	Decor. tile	2
	Stone tile	1
	Cu. Alloy ring	1
	Lead musket ball	1

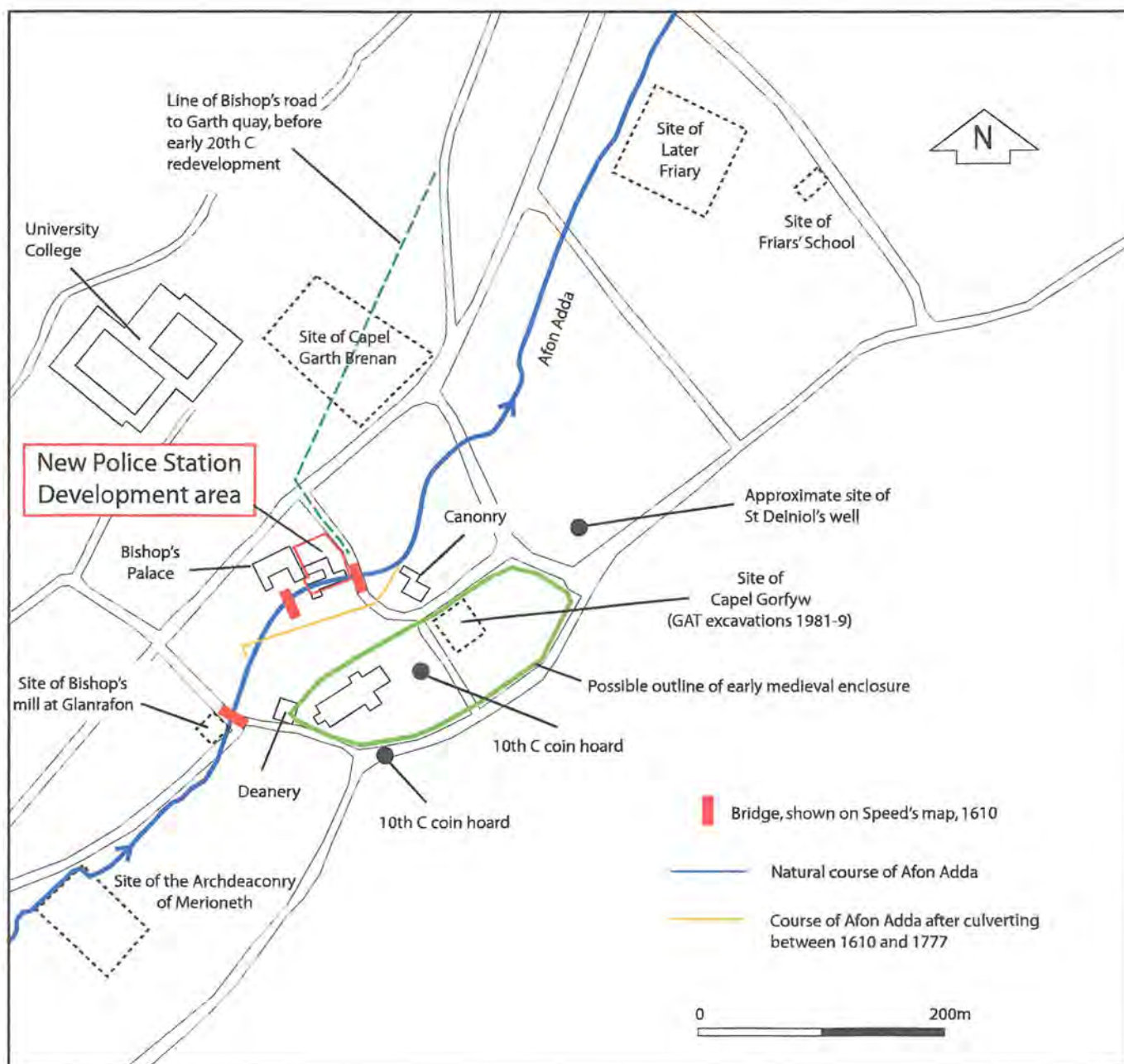


Fig. 1 Location of the new police station development area in relation to the Bishop's Palace and other related historical features and finds in Bangor



Fig. 2. The 18th and 19th century outbuildings of the palace before demolition in 1996

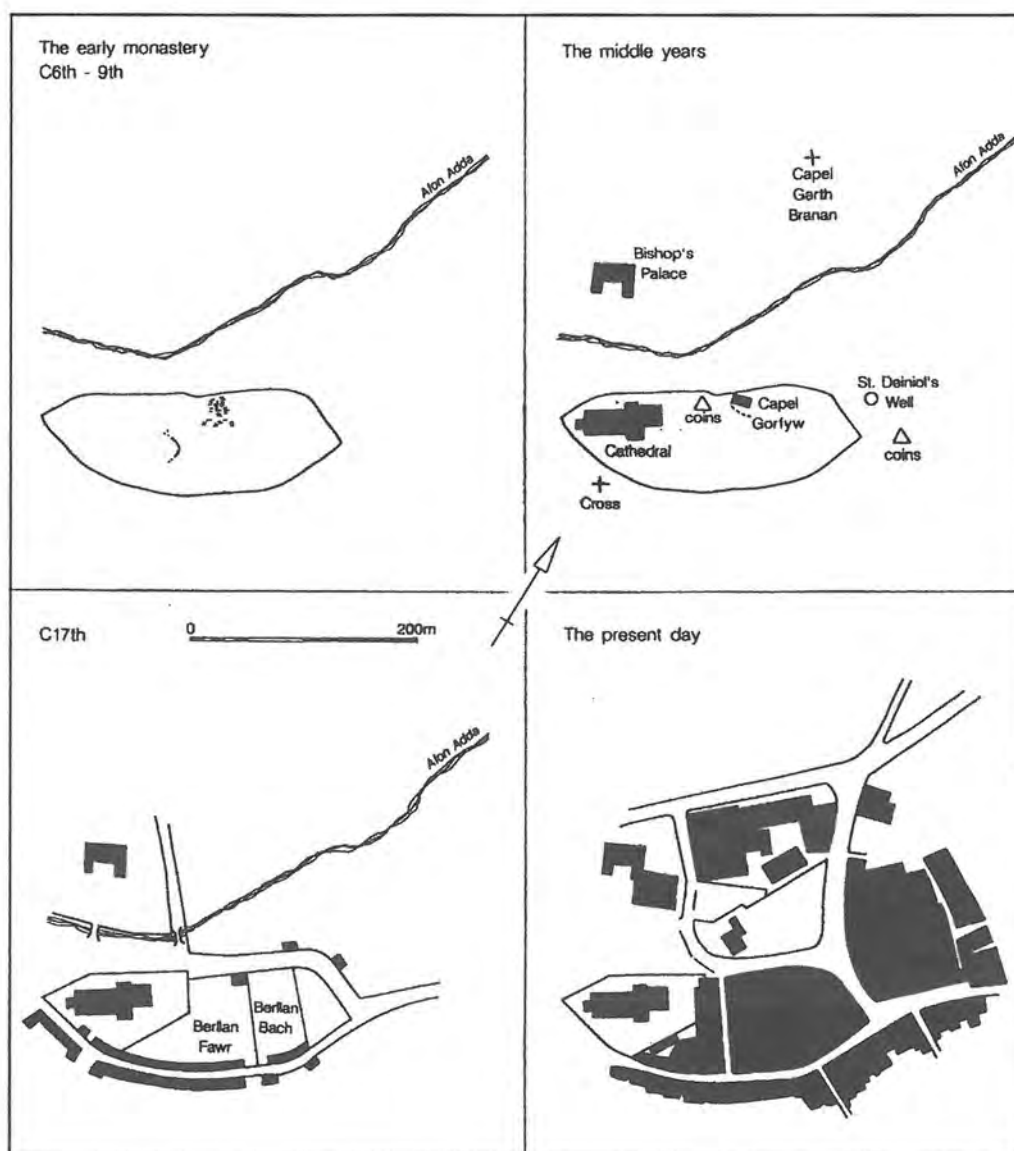


Fig. 3. The historical development of Bangor from its earliest ecclesiastical foundation (From Longley 1994)

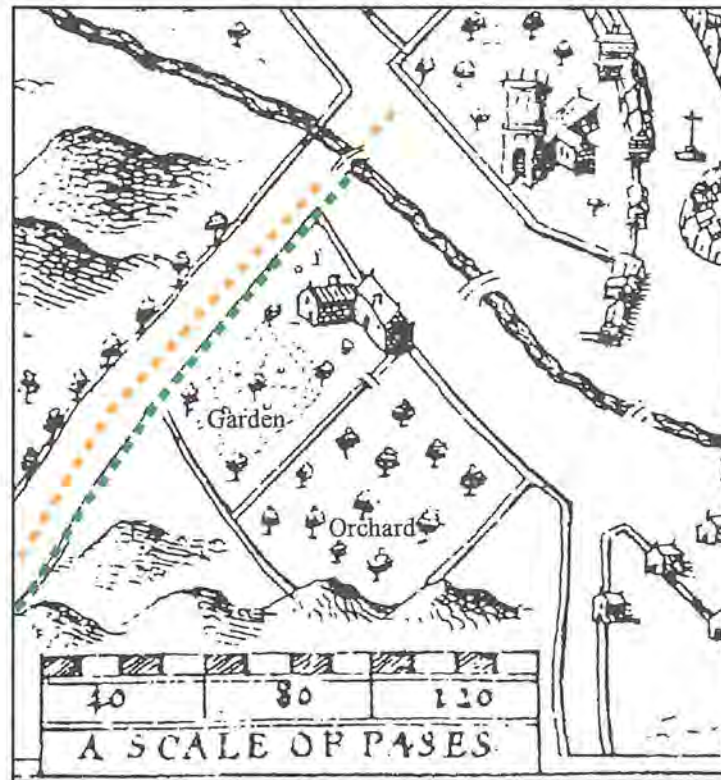


Fig. 4. The Bishop's Palace, Bangor: The palace on Speed's map of Bangor, 1610, showing the road at the east of the palace (orange), the ditch (green), the garden and orchard

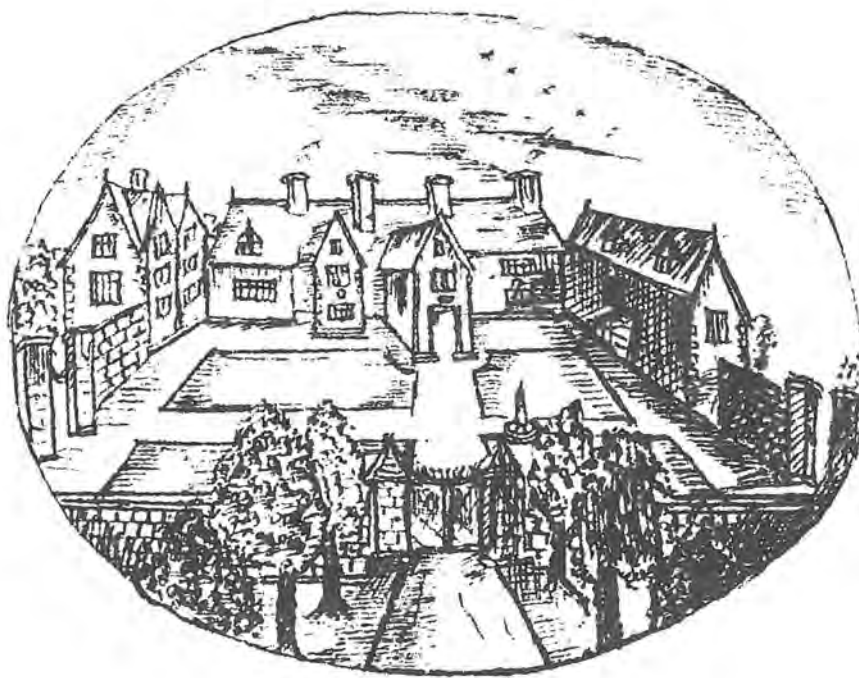


Fig. 5. Thomas Dineley's drawing of the Bishop's Palace in 1684, from the south



Fig. 6. Bishop's Palace, Bangor: View from the south-west by J. Lewis 1740, showing the outbuildings.

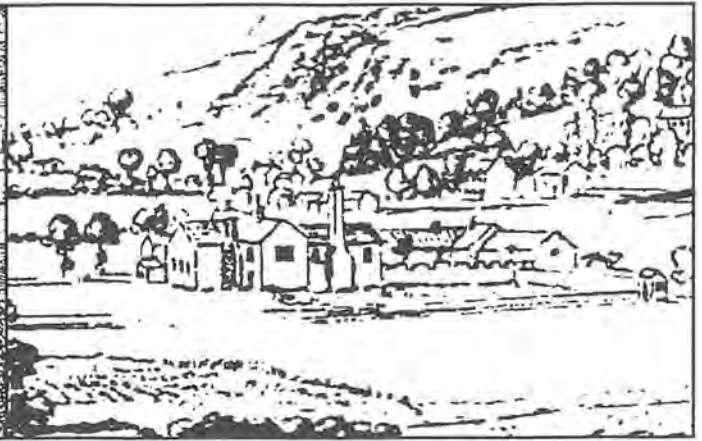


Fig. 7. Bishop's Palace, Bangor: View from the north-west by P. Sandby 1776, showing the outbuildings and enclosing wall.

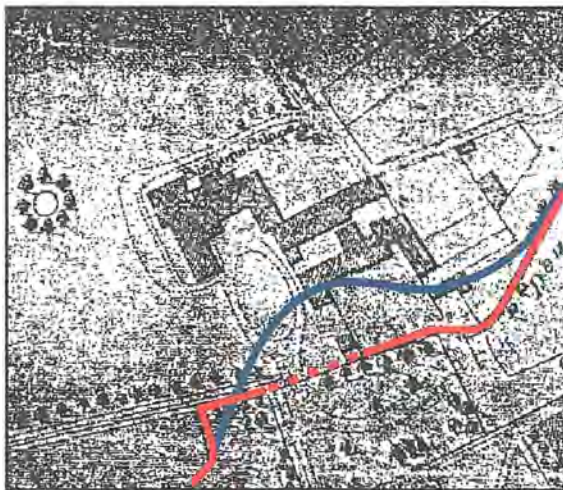


Fig. 8. Bishop's Palace, Bangor, 1834, J. Wood

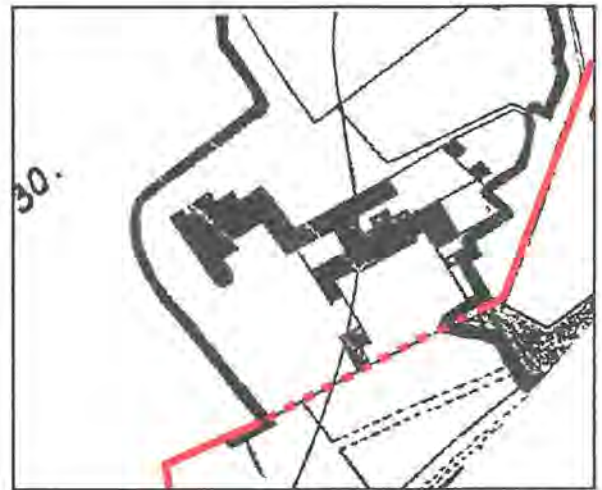


Fig. 9. Bishop's Palace, Bangor, Tithe Map, 1841



Fig. 10. Bishop's Palace, Bangor, Ordnance Survey 1:2500, 1890

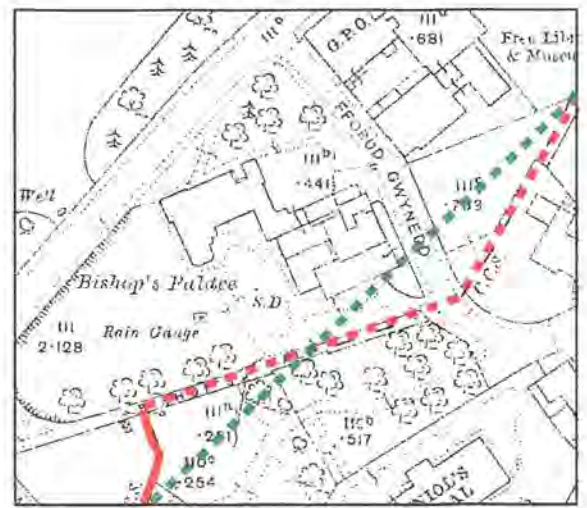


Fig. 11. Bishop's Palace, Bangor, Ordnance Survey 1:2500, 1914

Figs 8-11 Bishop's Palace, Bangor: Historical development of the buildings as shown on maps, with the line of the Afon Adda shown in red solid line - open channel, red broken line - probable culvert, blue solid line - suggested natural course of the river prior to 17th/18th century canalisation, green broken line - culvert extended and realigned 1936.

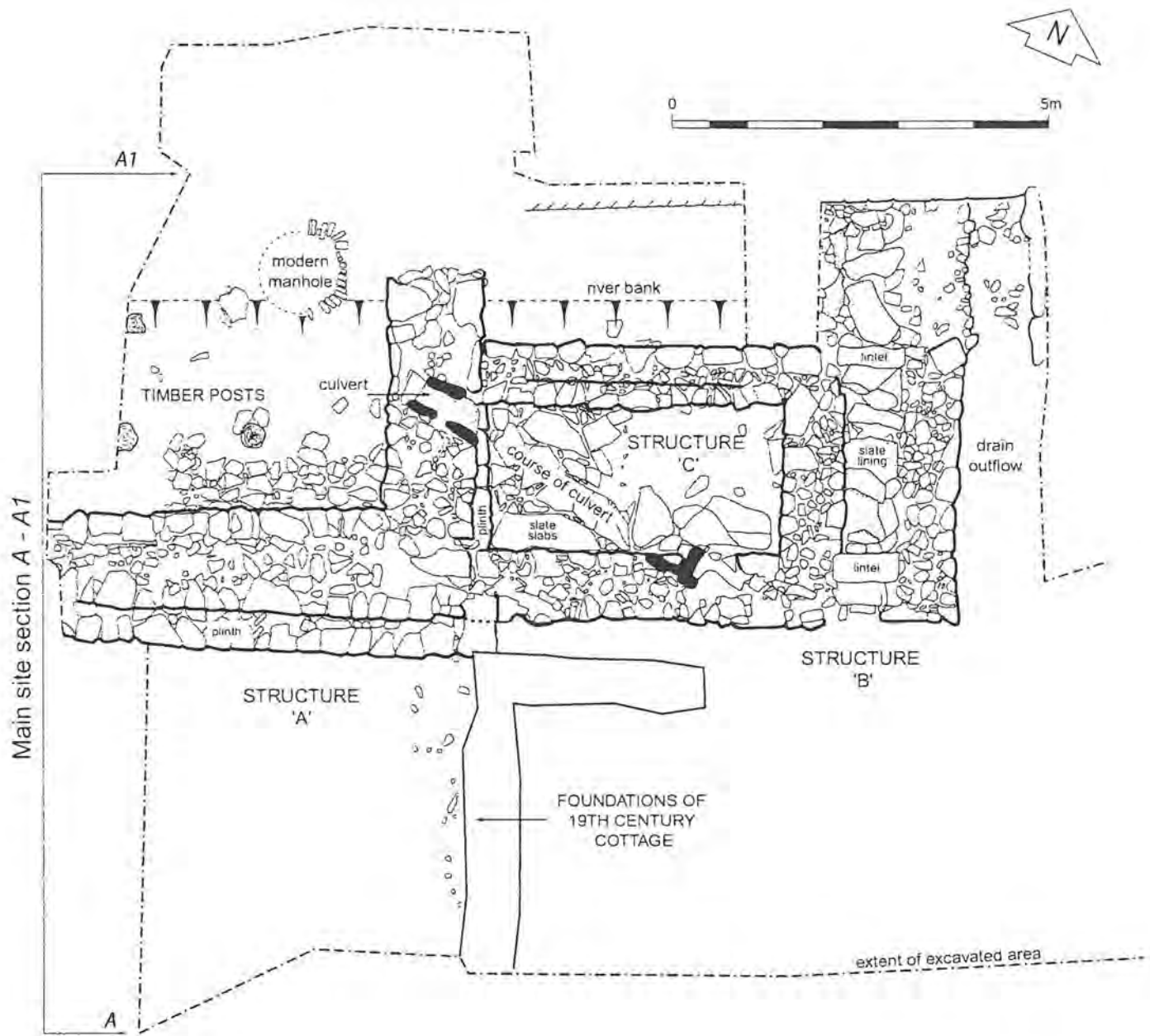


Fig. 12a. Plan of structures in the south-west part of the development area excavated in 1996 (Johnstone 1996)

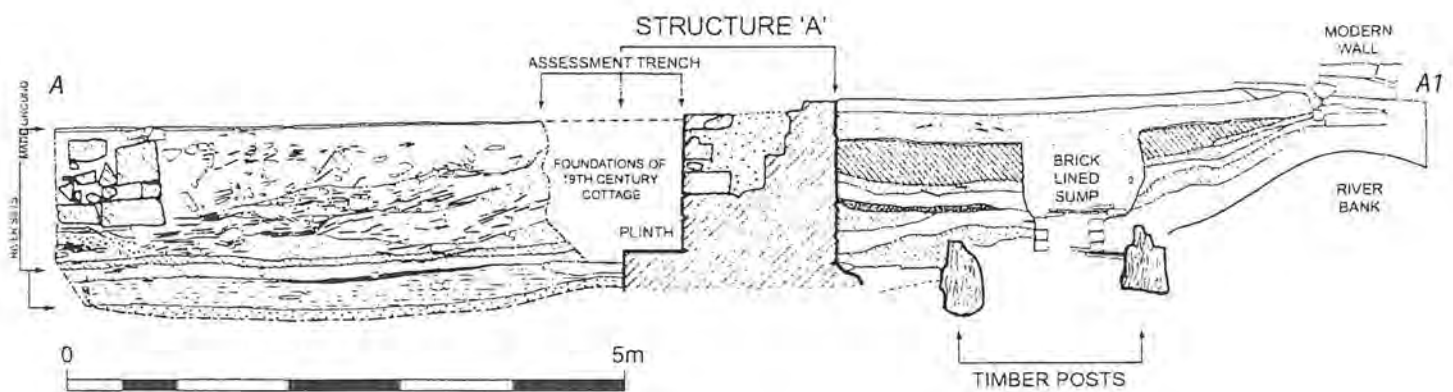


Fig. 12b. North-South section of structures excavated in 1996 (Johnstone 1996)

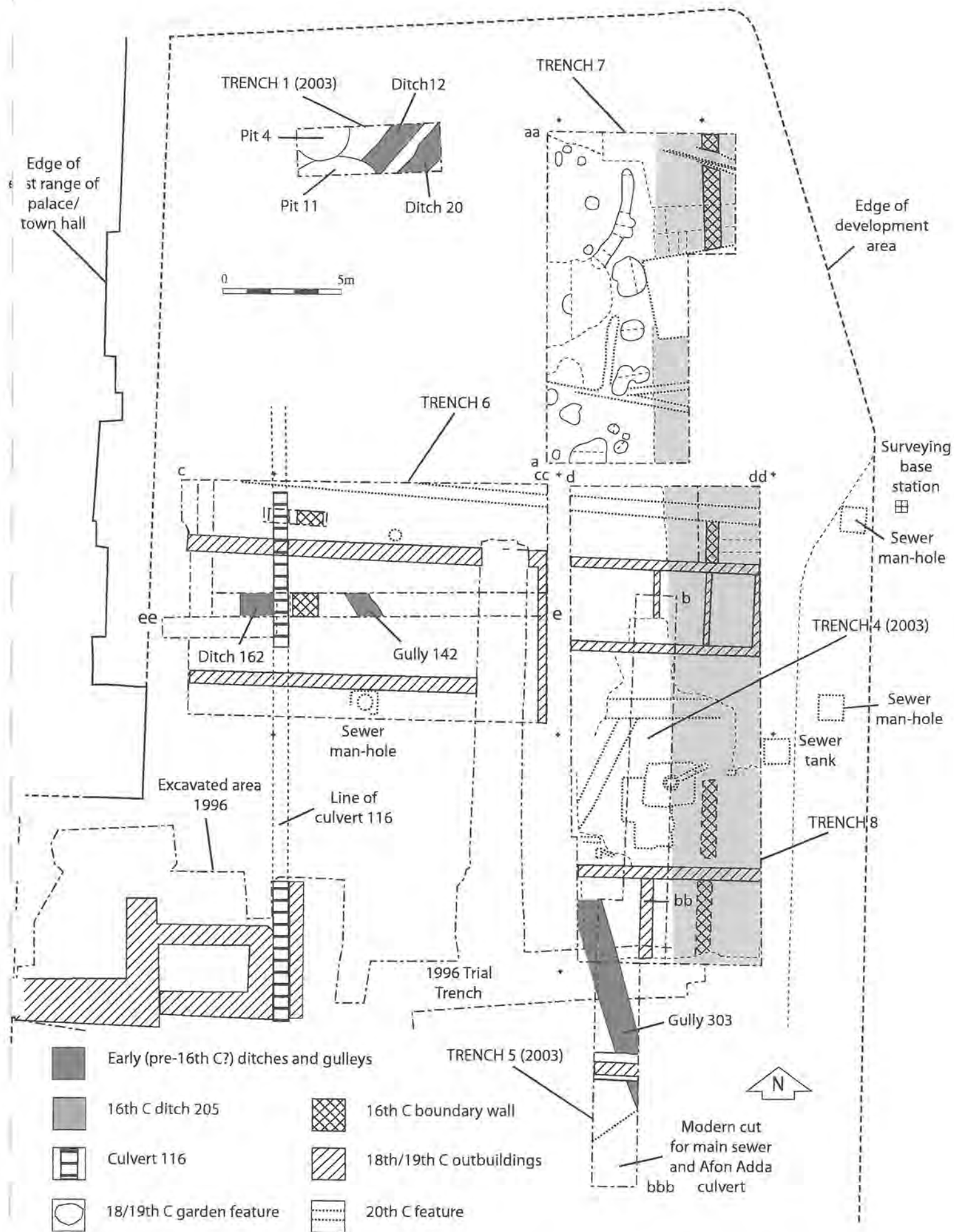


Fig. 13. General site plan showing the location of the 1996, 2003 and 2004 excavations and of general site profiles

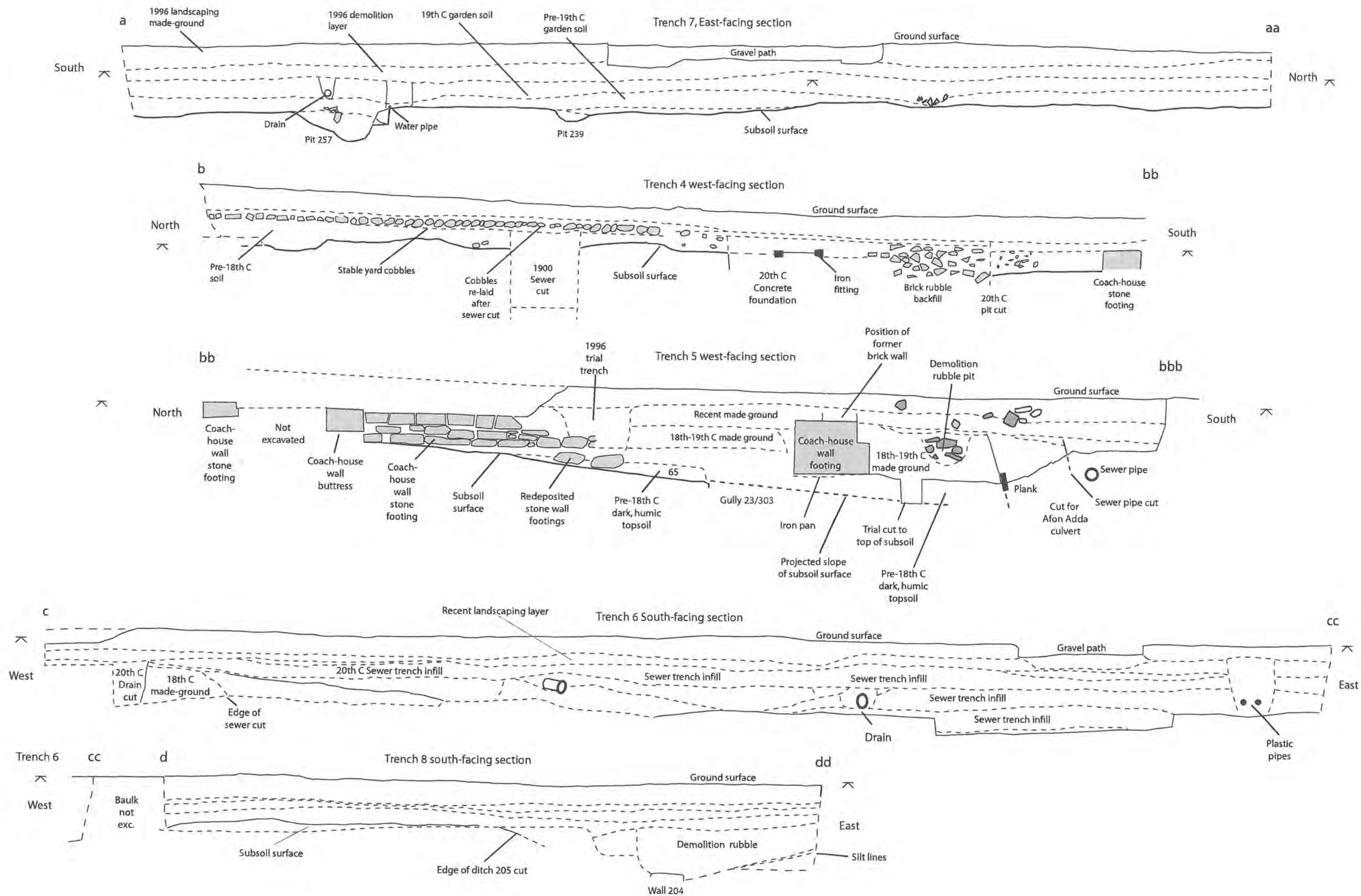


Fig. 14. General site profiles

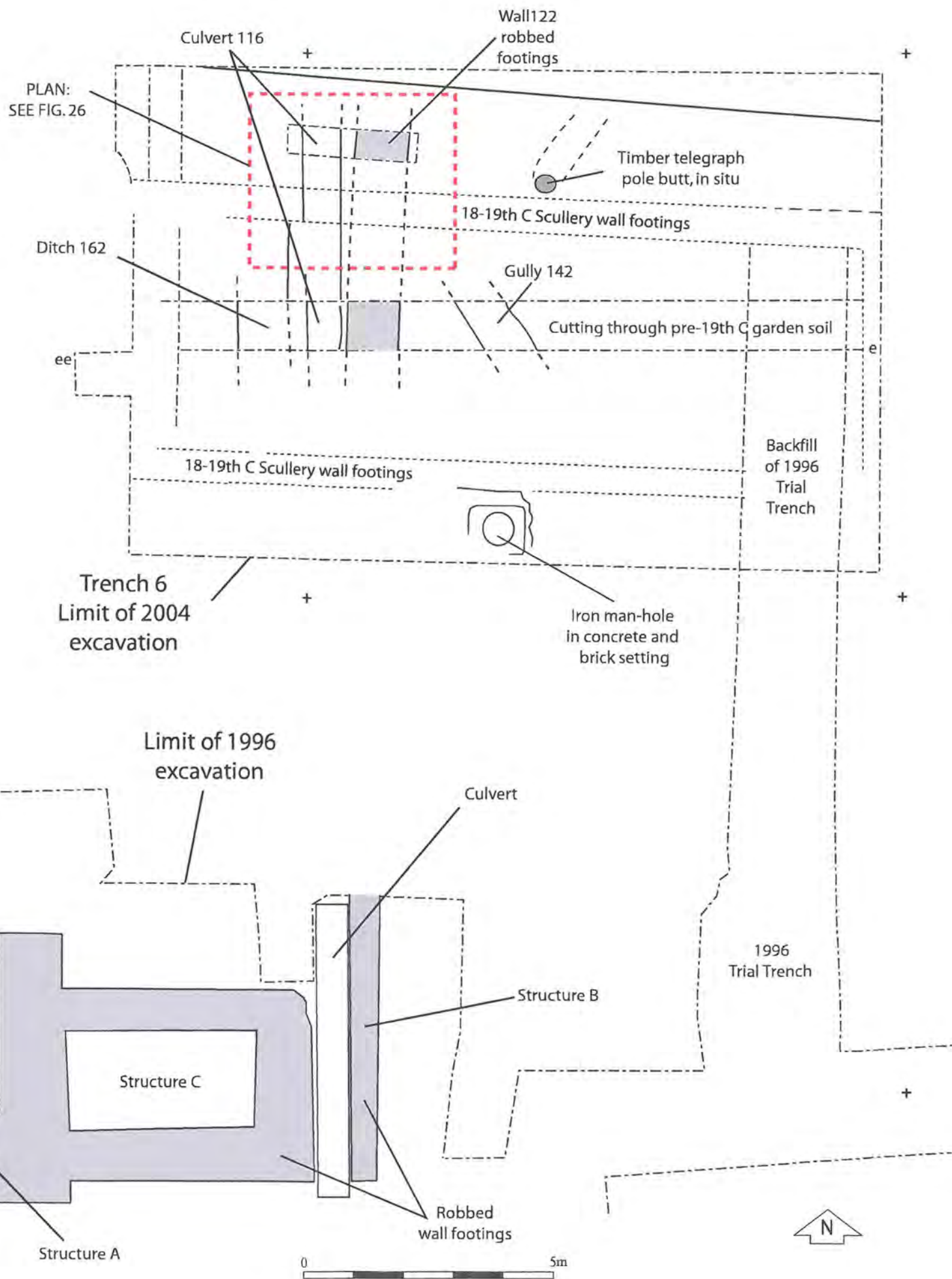


Fig. 15. Trench 6 plan of excavated features 2004 in relation to those excavated in 1996

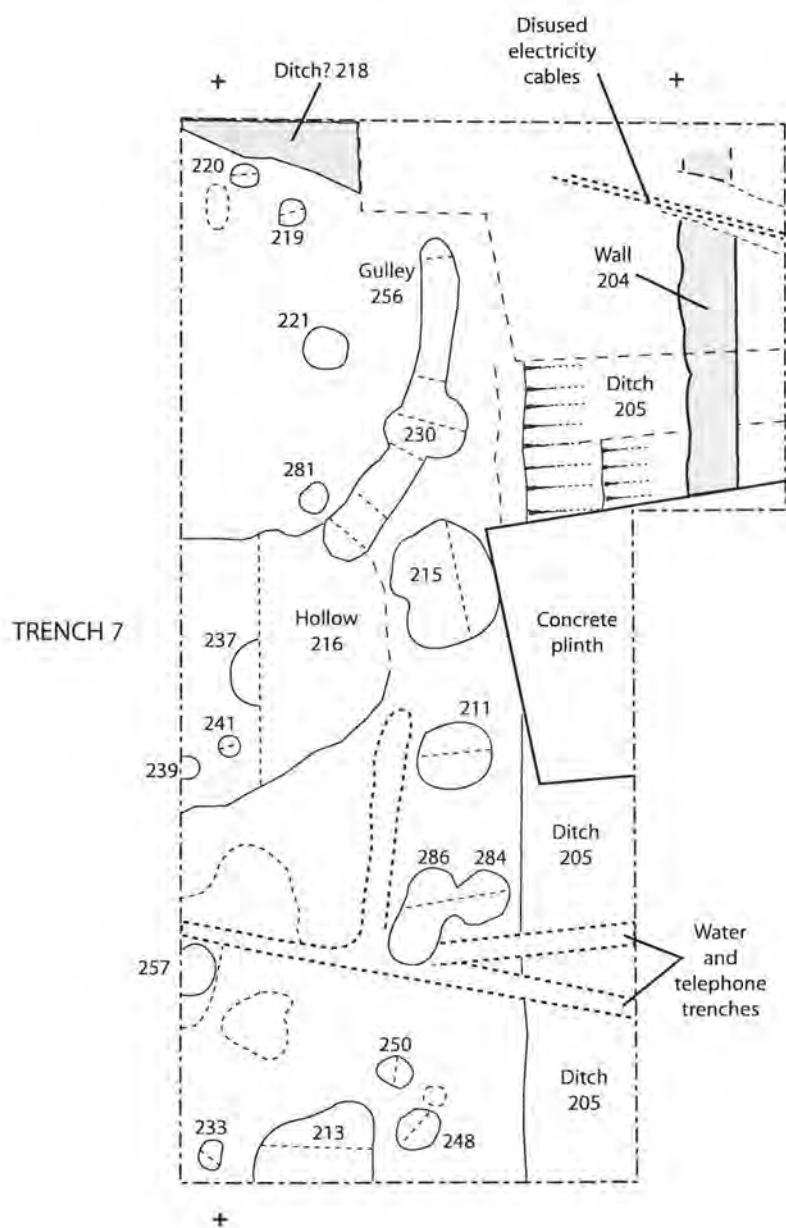
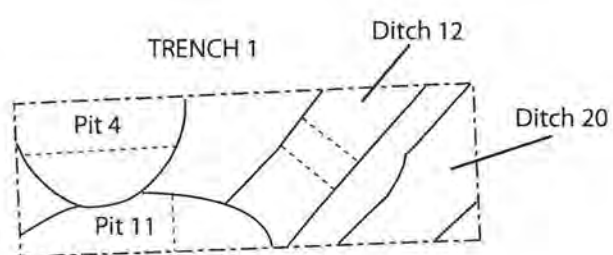


Fig. 16. Trenches 1 and 7: Plan of excavated features 2003 and 2004

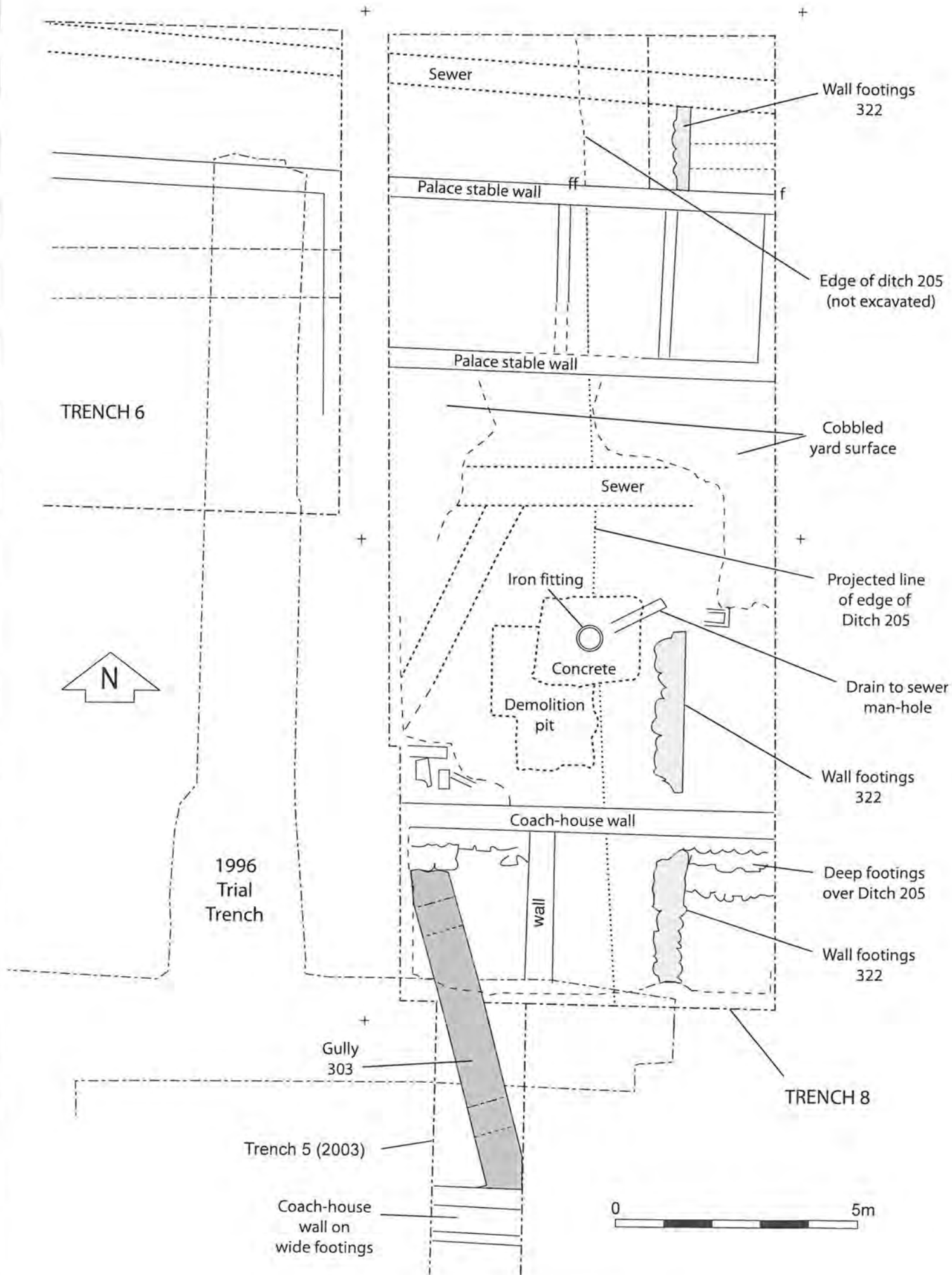


Fig. 17. Trench 8: Plan of excavated features 2003 and 2004

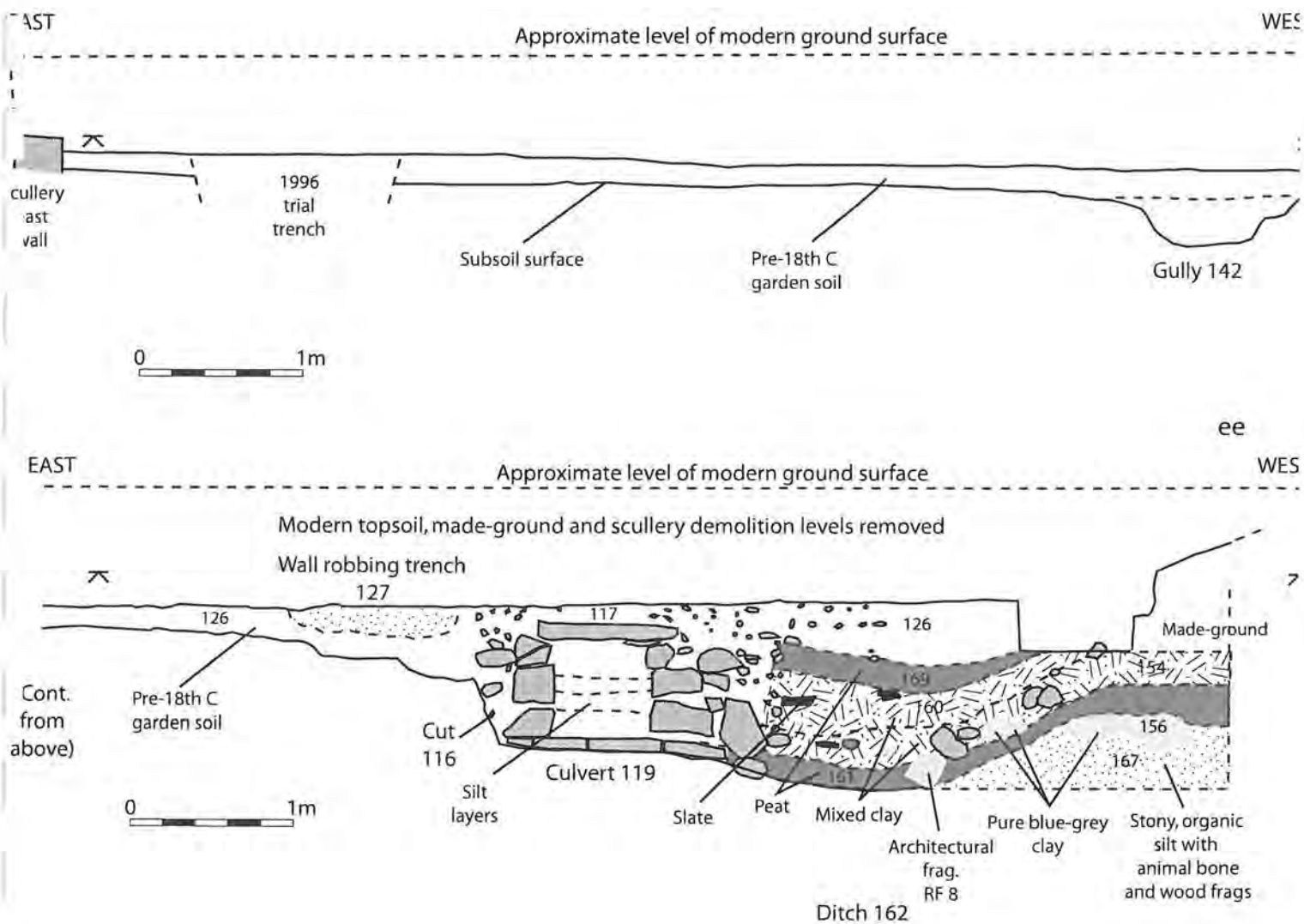


Fig. 18. Section across Trench 6 showing early Gully 142, Wall robbing trench 128, Culvert 119 and Ditch 162



Fig. 19. Ditch 162, showing clay and peat layers. From the south. Scale with 20cm divisions



Fig. 20. Gully 303 below coach-house footings. From the east.
Vertical scale with 20cm divisions. Horizontal scale with 50cm divisions

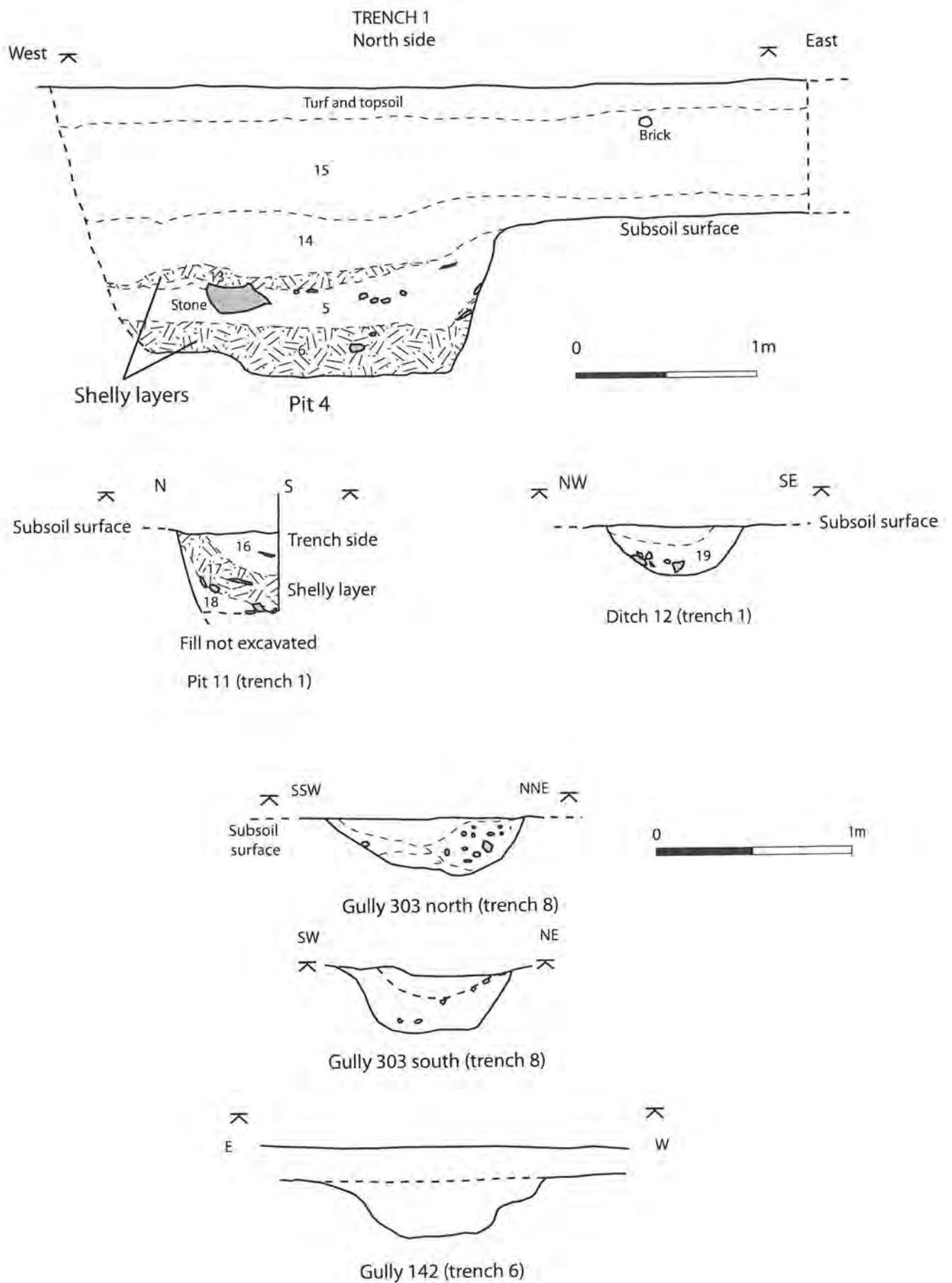


Fig. 21. Pits and ditches, sections, trenches 1, 6 and 8

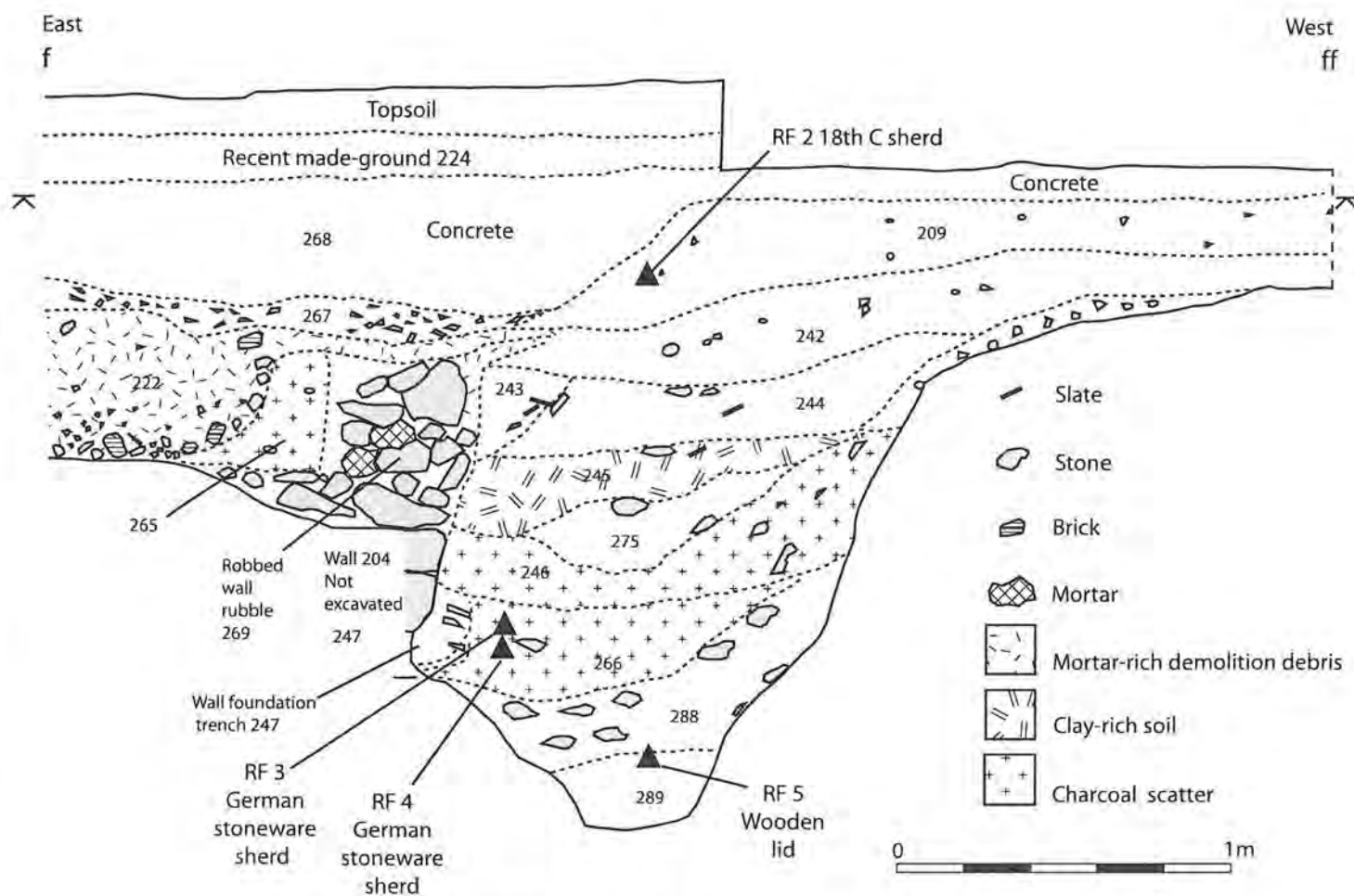


Fig. 22a. Wall 204 and Ditch 205. North-facing section in Trench 7

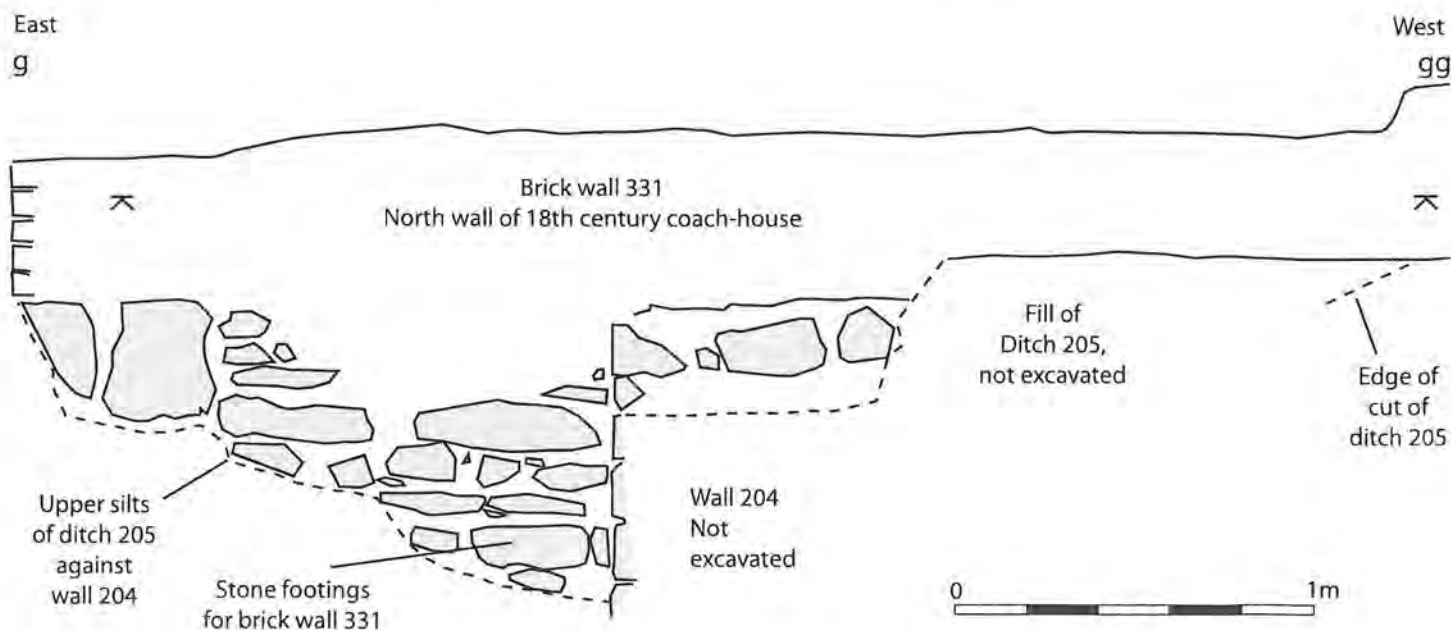


Fig. 22b. Wall 204 and Ditch 205. North-facing section in Trench 8 showing junction of walls 204 and 331



Fig. 23. Ditch 205 and Wall 204. General view, trench 7, from the north.
Horizontal scale with 50cm divisions, vertical scale with 20cm divisions



Fig. 24. Ditch 205 and Wall 204. Detailed view of section, trench 7, from the north-east.
Horizontal scale with 20cm divisions, vertical scale with 50cm divisions

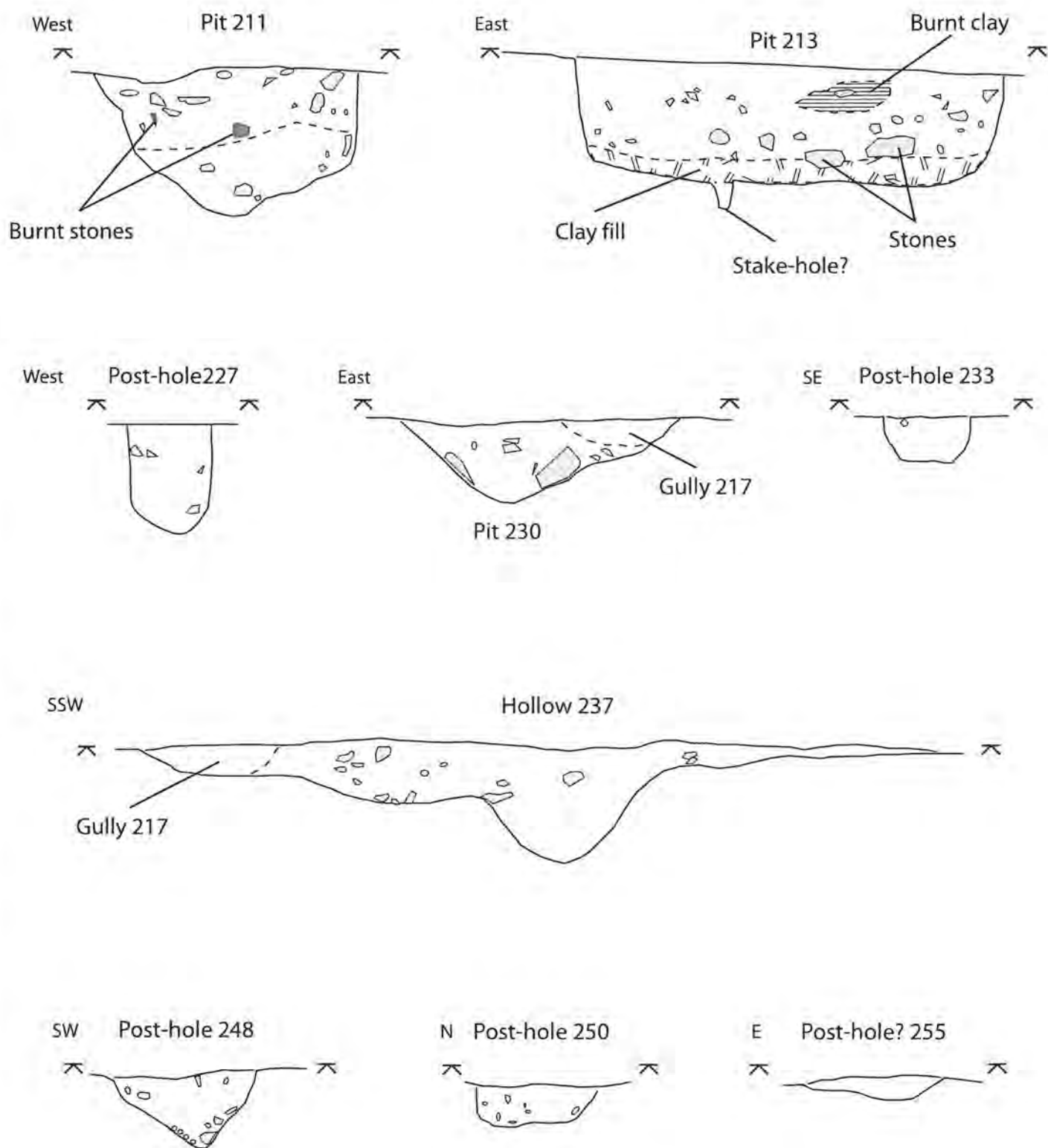


Fig. 25. Trench 7: Sections of pits, post-holes, hollow and gully (See plan, fig. 16)

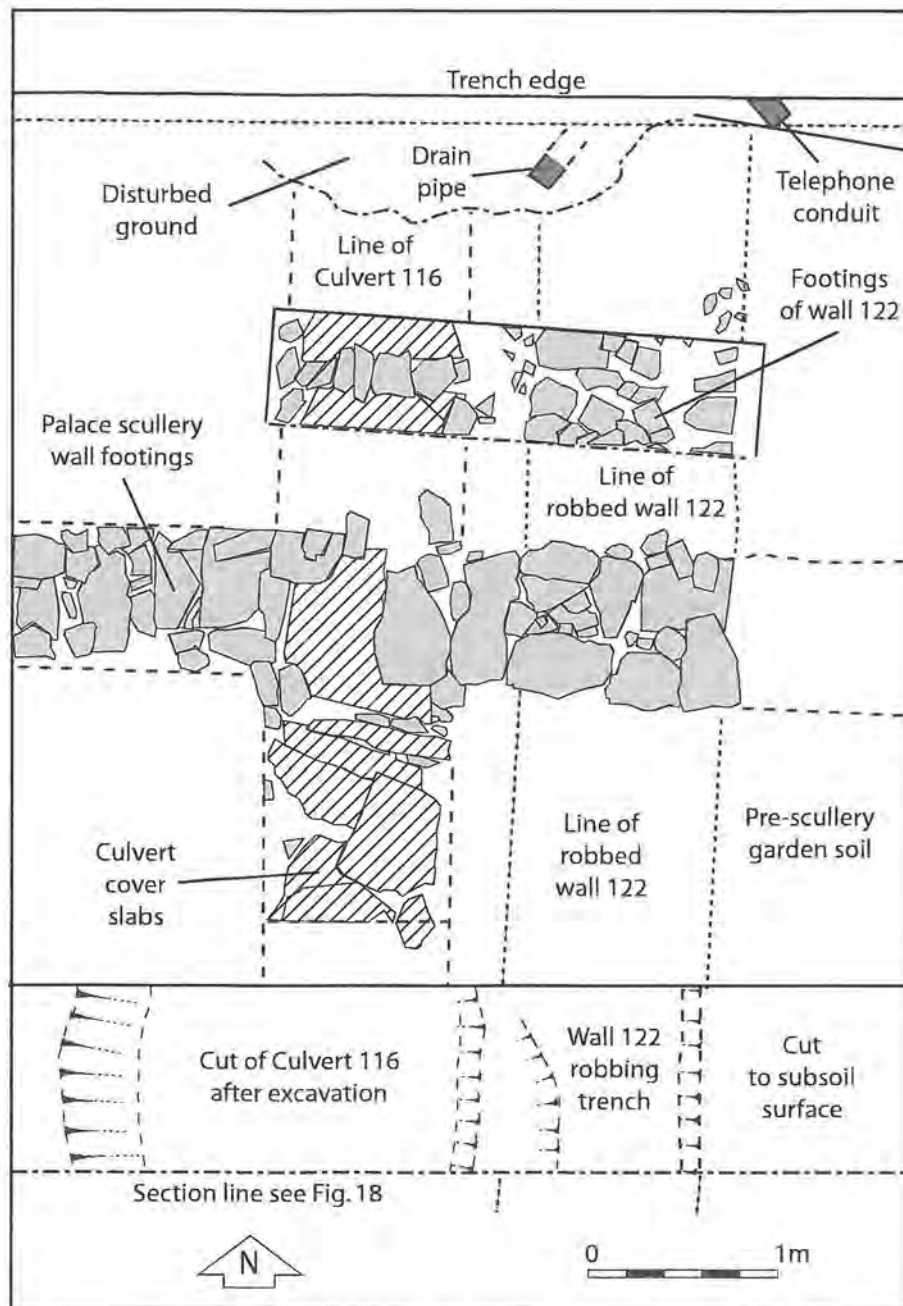


Fig. 26. Plan showing the relationship of Culvert 116 and Wall 122 to the palace scullery wall, trench 6



Fig. 27. Trench 6. Culvert 116 and wall 122, from the south. Scale with 20cm divisions



Fig. 28. Trench 6. Culvert 116 in section, from the north. Scale with 20cm divisions



Fig. 29. Trench 8. Wall 204 below yard wall, showing the external wall ditch, from the north.
Horizontal scale with 50cm divisions. Vertical scale with 20cm divisions



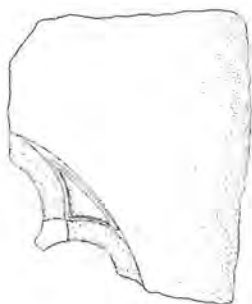
Fig. 30. Trench 8. Wall 204 below the north wall of the coach-house and subsidence
into the top of ditch 205, from the south.
Horizontal scale with 50cm divisions, vertical scale with 20cm divisions



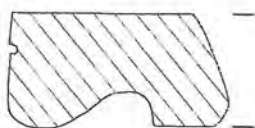
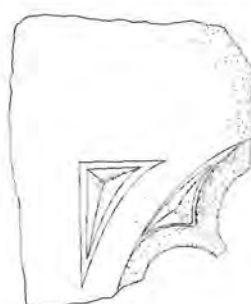
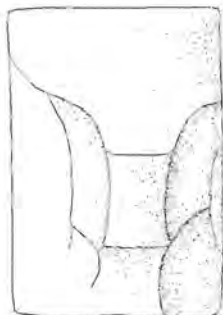
Fig. 31. Trench 8. Cobbled yard and brick floor and wall footings of demolished stable building, from the north. Scales with 50cm divisions



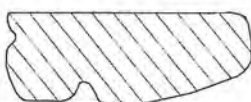
Fig. 32. Window fragment RF 1 from trench 6 showing traces of paint and plaster. Scale with 1cm divisions



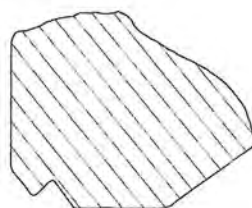
RF 1.



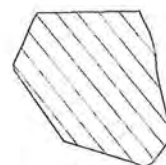
RF 6.



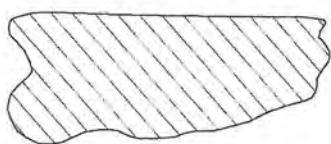
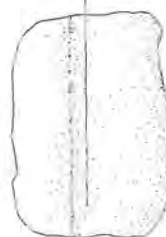
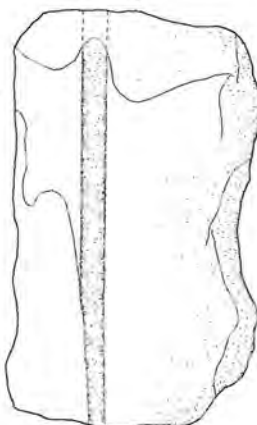
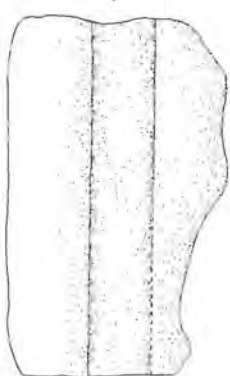
RF 7.



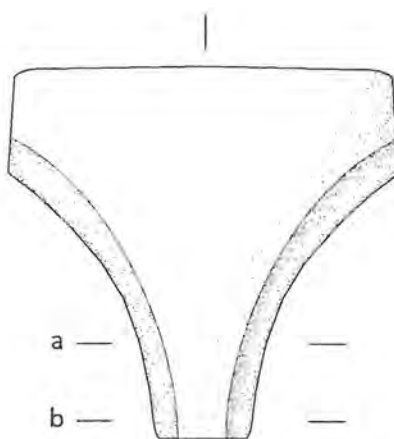
RF 8.



RF 19.



RF 20.



RF 21.

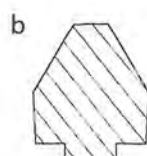
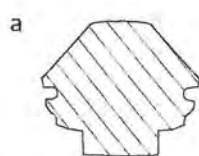
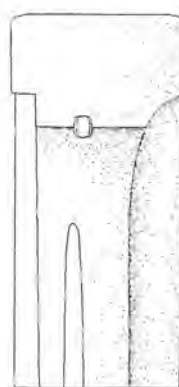


Fig. 33. Architectural fragments. Scale 1:8

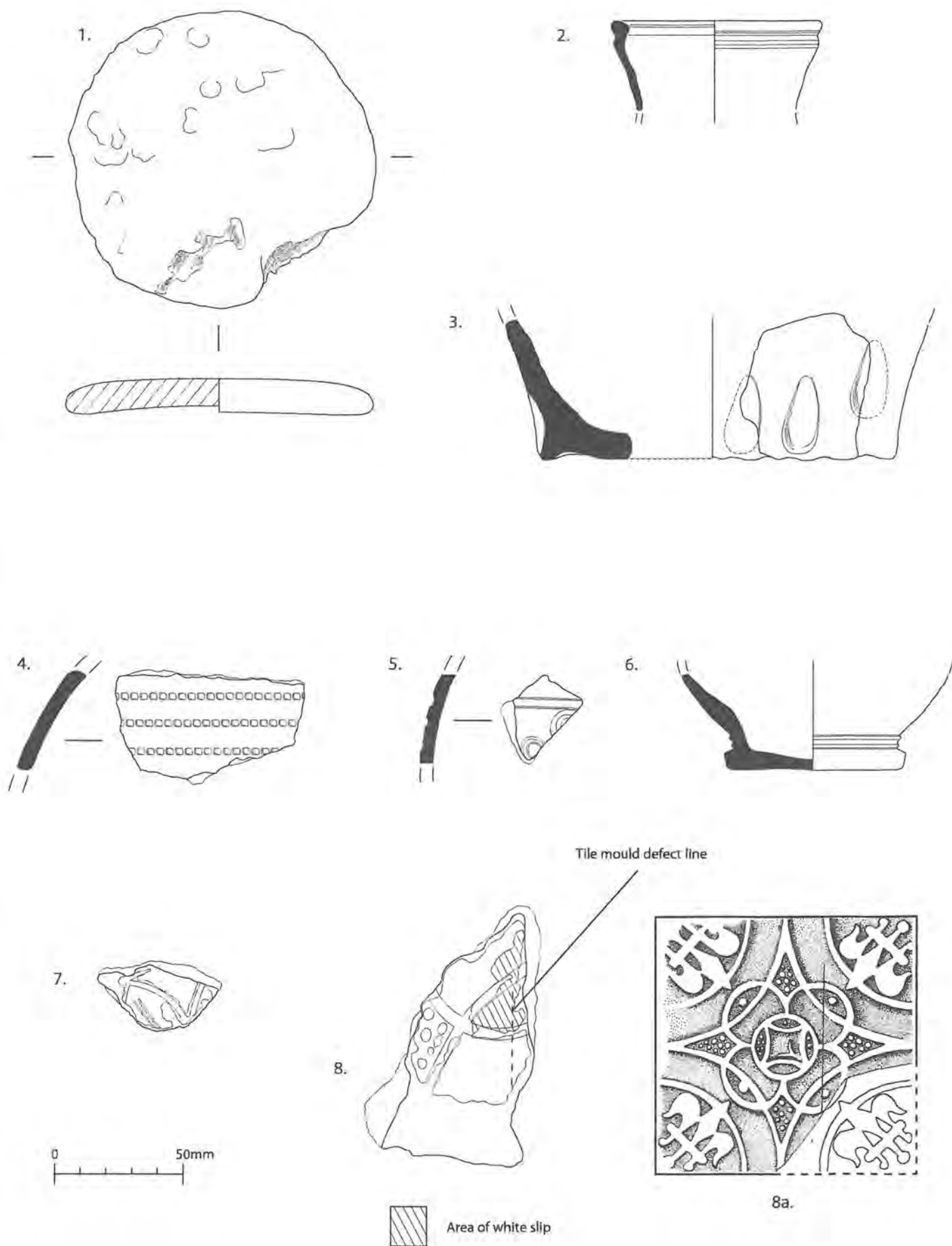


Fig. 34. 1. Wooden pot-lid, RF 5. 2-6, Pottery. 7-8, Decorated floor tile. Scale 1:2. (8a Scale 1:4, after Lewis 1999, 192)

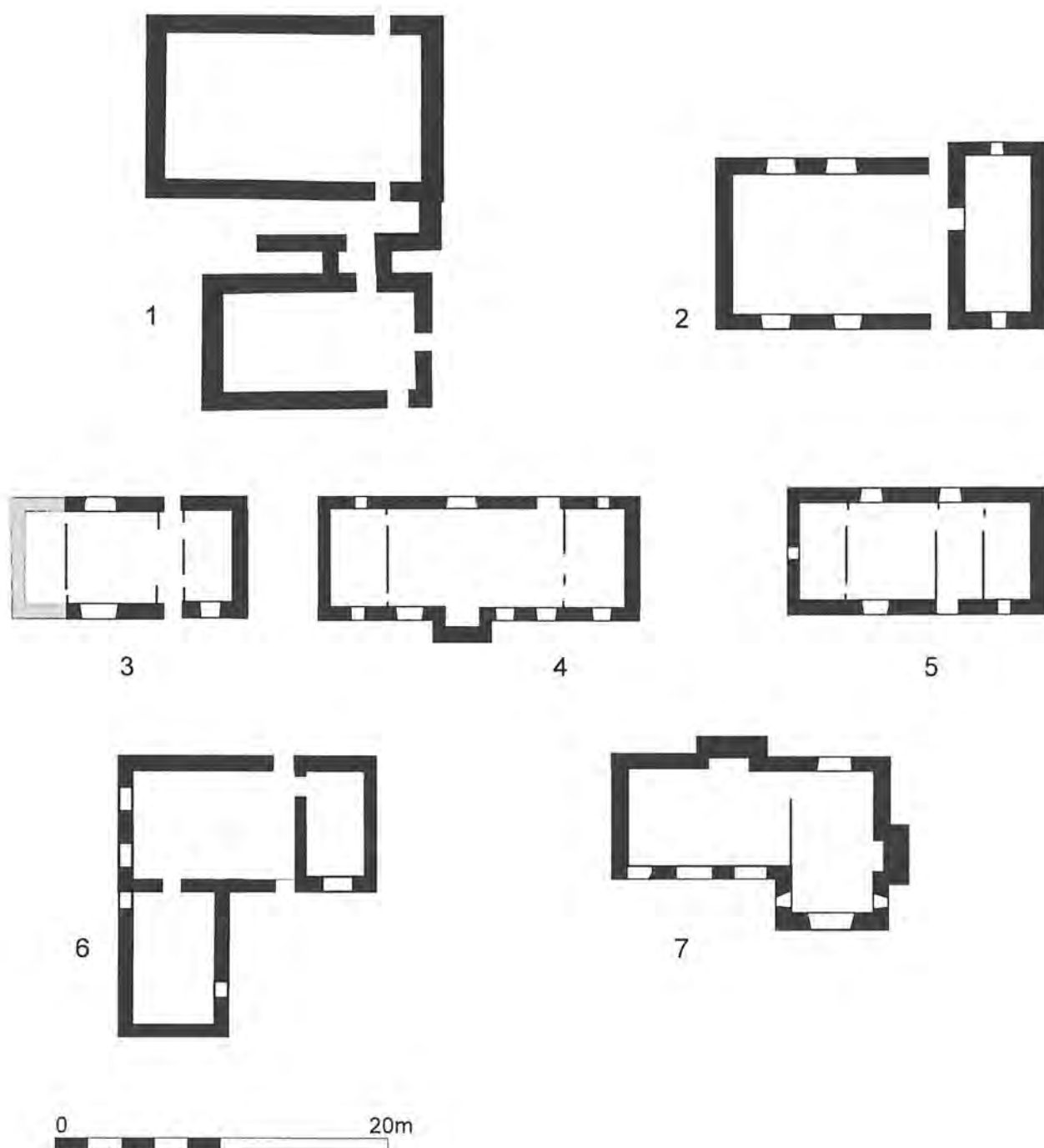


Fig. 35. Bishop's Palace, Bangor. The late 15th century hall compared to other medieval halls in North Wales (after RCAHMW 1964, clx and Johnstone 1999, 265)

1. Rhosyr, Anglesey, 13th century, 2. Bishop's Palace, Gogarth, Llandudno, 12-13th century,
3. Penarth-fawr, Chwillog, 15th century, 4. Cochwillan, Bangor, 15th century, 5. Ty Mawr II, Beddgelert, 15th century,
6. Bishop's Palace, Bangor. Late 15th century, 7. Gloddaeth, Llandudno, 16th century



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