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Groundwell Ridge Roman Villa, Swindon: Excavations 2003-2005

Richard Brickstock, Kayt Brown, Greg Campbell, David Dungworth, Vanessa Fell, Karla Graham, Derek Hamilton, Andy Hammon, Phil Harding, Nicola Hembrey, Bob Hill, Sarah Jennings, Neil Linford, Paul Linford, Louise Martin, Geoff Morley, David Earle Robinson, Jörn Schuster, Jane Timby and Pete Wilson

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Summary

Key conclusions from the project are that: the main structures on the site represent the domestic elements of a villa complex, the stone buildings being occupied from the second to the late fourth or early fifth century; there is artefactual evidence for pre-Roman occupation; there is limited evidence for first-century Roman occupation; Building 2 incorporates a bath suite; the area of Building 2 was reused in the post-Roman period as the site of a major post-built timber building. The survival of key deposits of Roman-period waterlogged deposits was demonstrated in the area below the spring line in the north-eastern part of the scheduled area.

303 boxes of artefacts were collected during the three seasons' work, among them 1841 small finds. Structural assemblages of ceramic building material, *opus signinum, tesserae* and stone came from roof, floor and under-floor; pipework is evidenced in lead and wood (iron junction collars to hold wooden pipes were collected). Mortar, painted plaster, lead cames and glass came from walls and windows; structural ironwork – much of it possibly mid-first century – came from internal features. Domestic life is reflected in assemblages of pottery, iron tools and implements, and stone whetstones; eating habits are evidenced in the collections of shell and animal bone. Coins, gaming counters and a small lead plaque of Isis give flashes of the people inhabiting the site; literacy is hinted at by the presence of an iron stylus and possible wooden writing tablets. Their personal adornment includes brooches, bracelets, hairpins, a finger ring and many glass beads.

Keywords Excavation, Geophysical Survey; Prehistoric; Roman; Early Medieval; Post medieval; Animal Bone; Plant Remains; Mollusca; Pottery; Ceramic building Material; Glass; Copper Alloy; Iron; Flint; Lead; Mortar; Stone; Plaster

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Acknowledgements

With a project of this nature it is difficult to credit all those whose contributions were essential to its success. That having been said it is clear that our biggest debt is to the people of Swindon whose enthusiasm for the site was crucial to securing its preservation and who also provided the bulk of the volunteers that formed an essential element of the on-site team, as well as visiting the project, literally in their thousands, over the three seasons.

Particular thanks are due to Chris Walker and his family who provided various facilities for the project that made all our lives easier and, in Chris's case, for his unquenchable enthusiasm as a volunteer, guide for school groups and almost daily visitor when not digging! Staff of Swindon Borough Council, English Heritage's partners in funding the project, notably Ed Stanford, Russell Weymouth, Liz Smith, Robert Dickinson, David Allen, Isobel Thompson, Ursula Edmunds and Nicky Pardoe provided much valuable support. Equally the enthusiasm of Roy Canham, Wiltshire County Archaeologist and Archaeological Advisor to Swindon Borough Council, was of great benefit to the project.

The establishment of the Friends of Groundwell Ridge extended our partnership with the voluntary sector that, from the start of the project had included the Wyvern Historical and Detector Society. In the final season Wessex Archaeology provided the on-site staff, with funding from the English Heritage Historic Environment Enabling Programme, and particular thanks are due to Rob Perrin whose commitment to the project made the implementation of the partnership work.

Finally it is impossible to undertake work on Roman, or perhaps any period, in Swindon without acknowledging the debt that we all owe to the many years of commitment to the archaeology of the area by Bryn Walters and Bernard Phillips. In the case of Groundwell Ridge this debt is will be clear from the summary of work in 1996 and 1997, but they also gave freely of their knowledge throughout the project.

Richard Brickstock would like record his gratitude to Ms Jennifer Jones of the Department of Archaeology, Durham, for XRF analysis of *denarii* and also for additional cleaning of sf. 200513008.

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1. Introduction

1.1 Reasons for and Circumstances of the Project

The site was discovered in 1996 during housing development and was purchased jointly by English Heritage and Swindon Borough Council. Following the purchase the site was given to Swindon Borough Council to manage as part of an area of open space that ran along the south-facing slope of Blunsdon Ridge within the housing development. In addition the site was afforded statutory protection as a Scheduled Monument (National Monument Number 29664).

On purchase it was agreed that the site should be managed for the benefit of the residents of the Swindon area and a Feasibility study on the future of the site was jointly funded by English Heritage and Swindon Borough Council (Land Use Consultants 2002).

One of the declared objectives was to provide the people of Swindon to become involved in their heritage. During the development of the English Heritage 'Beacon Project' programme this desire to involve local people was converted into a Community Archaeology project for which the archaeological background and interim results are presented below.

2. Archaeological Background

This section draws heavily on reports by Bernard Phillips (1997) and Bernard Philips and Bryn Walters (1998), Dr M Corney (1998), Paul Linford and Louise Martin (Linford and Martin 2002) and Neil Linford (2002) to whom thanks are due.

2.1 Site location (Figure 1)

Groundwell Ridge Roman site is located within the north Swindon development area at NGR SU 1408 8935. The site is some 1.2km west of Ermine Street and was probably located within the territory of the Cornovii, a sub-tribe of the Dobunni (tribal capital Cirencester – *Corinium*)

A number of Roman sites are known in the Swindon area, including the Roman small town of Wanborough (*Durocornovium*) located on Ermine Street 10km to the south-east (Phillips and Walters 1977; Burnham and Wacher 1990, 160-164; Anderson *et al* 2001), and villa sites at Badbury (Walters 1981) and the recently discovered site at Lydiard Park (http://www.wessexarch.co.uk/projects/wiltshire/lydiard_park/new_car_park.html), with less clearly understood evidence of Roman-period buildings known from a number of other sites including: Coate Water (SMR no SU18SE317); Downs View Road (SMR nos SU18SE312/314/315); Queens Park (SMR no SU18SE320); Old Town ((SMR no SU18SE323/324); Westlecot (SMR no SU18SW300); Toothill Farm (SMR No SU18SW309). A major local pottery industry is known in West Swindon, with evidence recorded from: Whitehall Farm and nearby find spots (SMR nos SU18SW306/307/310/312/324/327/370) Closer to the Groundwell site Iron settlements are known at Groundwell Farm (5^{th}-3^{rd} century BC –

Gingell 1982) 1.5km south-east and the Motorola Factory (6th-5th century – Walker *et al* 2001), 0.7km to the east.

2.2 Discovery of the Site

Prior to the development, fieldwork to the west of the site produced pottery; earthworks were surveyed in the grounds of Blunsdon Abbey and around the same time the dredging of a pond (in the Abbey grounds?) produced Roman pottery. Although the earthworks of the site were noted at the time they were assumed to be lynchets (Philips and Walters 1998, 4).

The first Roman-period evidence from the site took the form of pottery recovered by Mr Lloyd, an amateur archaeologist, from soil tests-pits dug by the developer. This material was taken to Swindon Museum, but its significance was not realised at the time. The quality of the remains on the site was only demonstrated during the stripping of the road lines for the housing development, when substantial buildings were cut into.

2.3 Initial Salvage recording (1996)

At the instigation of Roy Canham, the County Archaeologist, Bernard Phillips recorded features exposed in clearance work for roads associated with the extension of the proposed housing into the southern part of the site (Phillips 1997).

In the southernmost road-scrape this work revealed a pair of walls at right-angles aligned slightly off north-south and east-west. The east-west element extended for at least 40m and the north-south wall for at least 10m. The north-south wall was joined/butted by the east-west wall on its western side. These were interpreted as ‘courtyard walls’. An apparently later ditch ran parallel to the north-south wall on its western side. To the east of these walls a silted pond, with a later stone cistern inserted into it, and overlain by a stone surface were observed in section – deposits in this area being at least 1.5m in depth.

Approximately 40m north of the ‘courtyard walls’ at least three walls of a building incorporating a hypocaust in one room (Building 2) were recorded in a second road-scrape. These remains are described as ‘badly damaged’ by the road-scrape, but the hypocaust was recorded as containing large quantities of building material.

Some 20m west of Building 2, an extensive level platform is delimited by scarps on its western and eastern sides, a small, machine-cut, trial pit revealed building debris on either side of a north-south limestone wall (Building 1).

A third road-scrape 25m north-west of Building 1 revealed two connected lengths of stone-filled drainage slots, aligned north-south, and north-east to south-west. A further 25m west, under what is now Pennine Way, a ditch was recorded aligned NNW-SSE.

2.4 Evaluation Excavations 1997

Five trenches were excavated by Bryn Walters and Bernard Phillips in 1997. What follows is based on their report (Phillips and Waters 1998).

Trench A was cut across the level platform that incorporated Building 1. It took the form of a 25m x 2m trench with 1.6m x 2.5m extension on its southern side. At least five roughly north-south walls were recorded suggestive of at least two phases of construction, mostly utilising the local coral ragstone. In addition three east-west walls were found. The plan is suggested to represent a structure that originally incorporated corridors on its eastern and western sides. Dating evidence covered the range 2nd-4th century and it would appear that the main floruit of the structure was 3rd-mid 4th century. The trench produced a hoard of 13 coins dating to post-AD 260 and closing with an issue of Diocletian (AD 284-305). In addition a hoard of mid-4th century silver incorporating elements from, probably, three bowls was found in a pit cut through a floor within the building (Henig in Phillips and Walters 1997, 37-39).

Trench B (10m x 2m) was located some 50m north of Buildings 1 and 2 and below the terraces and slopes that occupy the northern part of the site, over the site of a walled structure indicated in the geophysical survey. A coral ragstone surface, possibly a yard, was located, along with a possible beam slot that may have been contemporary with the surface. The yard surface produced a coin of Valentinian I or Valens (AD 364-78) and when part of the yard surface was removed a possible wall foundation, again of coral ragstone, was revealed.

Trench C (6m x 2m) was located on a mound within the area of terraces *c* 65m north-west of Trench B. Immediately below the turf and topsoil part of what may have been a worn path or trackway was revealed.

Trench D (6m x 2.5m) was located immediately east of the remains of Building 2 in the south-eastern part of the site and incorporated on its western side a north-south wall that had been seen the previous year. The wall (2), which was rendered with plaster on its western side, was interpreted as the eastern wall of a cold plunge bath, which had apparently later been sub-divided into rooms. A further wall (3) ran east-west across the trench and was butted by wall 2, but the use of the same mortar in both walls was taken to indicate that they formed part of the same campaign of construction. A north-south linear feature (13), possibly a drain or robber trench, pre-dated the bath buildings construction. The coin evidence suggested that the bath building, or part of it may have gone out of use, and perhaps been demolished prior to the end of the 3rd century, or perhaps early in the 4th century.

Trench E (5m x 4m) was located at the top of the slope where stone blocks had been noted protruding through the turf on a level platform that was delineated by ditches or gullies. The main feature in the area was a 1.2m x 1.45m long, north-south aligned, cistern built of very large, finely cut limestone blocks, with a lead pipe at floor level on the western side. It was 0.63m x 0.57m internally, and 0.73m deep, with a star-shaped hole, possibly to take a metal pillar or other feature. The southern side was disturbed, but incorporated a limestone slab with two surface grooves, these latter possibly relate to drainage. The structure was suggested as a possible *nymphaeum*. The cistern had been largely cleared-out in the post-medieval period, possibly for use as a shooting-butt, as it produced 18th/19th century pottery and modern shotgun cartridge cases. The cistern walling had been raised at some point, using faced coral ragstone blocks, possibly to facilitate its use as a shooting butt, but the changes could possibly have been earlier as there was other evidence of repair or alteration. A stone-built feature ran southwards away from the cistern for *c* 2.2m. Two courses of

masonry defined its sides, which were up to 0.4m high, the channel that they defined being a maximum of 0.5m wide, narrowing so that the sides almost meet at its southern end. This feature was interpreted as a soak-away.

2.5 Topographic Survey

A hachured topographic survey was undertaken by Dr M Corney 1997 (Corney 1998) and the results are incorporated in Figure 1. It serves to emphasise the complexity of the site. Dr Corney divided the site into three main components: I) earthworks occupying the upper plateau; II) the steep south south-facing scarp; and III) features on the ground to south of area II.

Area I was seen as being characterised by five platforms divided by north-south linear features and by its extensive views to the south and south-west, one platform incorporating the stone cistern or possible *nymphaeum*.

Area II was characterised as an area of terraces running the full east-west length of the area surveyed. In the western part of the site a road or track was identified for 150m. To the east two terraced platforms were defined 'that largely mirror the configuration of the platforms recorded in Area I; again they were separated by north-south linear features.

Area III covers the area of buildings at the bottom of the slope, with a complex series of structures and boundary features proposed.

2.6 Summary of Geophysical Surveys 1996-2005

Neil Linford, Paul Linford, Louise Martin.

Initial geophysical surveys were conducted at Groundwell in 1996 and 1997 after the unexpected discovery of the remains of a Roman villa (see Linford 1999) and magnetometry and earth resistance survey were applied over areas of *c* 1.2 and *c* 2.2 hectares respectively. Modern disturbance due to construction work on the site resulted in disappointing magnetic results but the resistance data identified four possible buildings and the extent of an enclosure, although there was some uncertainty towards the north where anomalies were weaker.

In 2002 these surveys were extended to cover the whole of the now scheduled area and the adjacent open land of the "Combe field" to the east (see Linford and Martin 2002) – a total area of *c* 5.8 hectares (Figure 2). The survey results suggest that, whilst Roman activity in the form of masonry buildings, enclosures and ditches was concentrated towards the centre of the site, archaeological remains are likely to extend across other parts of the protected area. However, the magnetometer and earth resistance surveys appear to be responding to different features, often superimposed, hinting at more than one phase of activity on the ridge. This is further supported by a change in alignment of about 9° between anomalies detected at the top and bottom of the slope.

Away from this central area is a less dense pattern of anomalies. To the west two circular magnetic anomalies might hint at a prehistoric presence on the ridge. The rectangular platform noted in the earthwork survey (Corney 1998) has also been

detected and the earth resistance survey provides evidence to suggest substantial quarrying activity in this area. To the east, in the “Combe field”, the absence of response to further masonry and wall footings may be due to ploughing damaging any such features. Alternatively it is possible that the hedge and ditch separating this field from the rest of the site represents a relict boundary marking the eastern edge of the Roman site. Nevertheless, the magnetometer has detected ditch anomalies on the same alignment as the building remains in this field and one of these is also a candidate for the eastern boundary.

A trial ground-penetrating radar (GPR) survey (see Linford 2002; Linford and Linford 2004) was additionally conducted covering a 60x60m area over Building 1, identified in the resistance survey. Somewhat surprisingly, given the disappointing results that might be expected from a GPR survey over a conductive, clay-rich soil, this survey was highly successful: perhaps because the Roman remains were very near the surface. The GPR survey revealed additional detail of both the building’s internal structure and its immediate surroundings. This new evidence (taken with magnetic anomalies possibly indicating the presence of a thermoremanent feature) suggests that this might have been a high-status structure incorporating a hypocaust, perhaps an extended aisled building.

Owing to this success, the GPR survey was extended in 2003 to cover an area of 3.6ha with the results further complementing the earth resistance and magnetic surveys. Although more limited in extent, the GPR survey corroborates the earth resistance data, suggesting a series of walled enclosures and track-ways associated with the building that perhaps extend throughout the complex of high-status Roman buildings revealed throughout this site. Some elements of phasing may also be indicated through the apparent depth of burial suggested by the wider GPR data.

In 2004 the GPR survey was extended to encompass the planned area for excavation of Building 2 that summer. This survey was less successful due to the presence of overgrown vegetation covering the site and the complexity and depth of the archaeology revealed by the subsequent excavation. An additional attempt was made in 2005 to trace the extent of a deeply buried curving wall exiting the excavation area. This survey was conducted with a deeper penetrating 225MHz centre frequency antenna but again the considerable spread of rubble in the area of Building 2 made it almost impossible to distinguish significant building remains.

Extensive geophysical survey of the entire area under the protection of Swindon Borough Council at Groundwell Ridge has demonstrated a wealth of archaeological potential. However, in terms of the function of the site, and how this may have developed over time, the geophysical surveys raise as many new questions as they answer and further complementary investigation will be required to address these issues.

2.7 Excavations in 2003-2005

The excavations undertaken during this period divide into three (see Figure 2 for Trench locations):

1. 2003 English Heritage and SBC, working with the Wyvern Historical and detector Society, excavated five trenches designed to evaluate/mitigate the

impact of cycleways and footpaths (Trenches 4 and 5), prior damage to the site (Trench 3) and to assess the immediate context of the known buildings in the southern part of the site (Trenches 1 and 2).

2. 2003 Time Team excavations. Undertaken in The Combe and on the wooded hill to the east of the Scheduled area and in a number of surrounding gardens as part of their 'Big Dig'. This involved the digging of 37 1x1m test-pits and four trenches. 'The evaluation identified a number of Roman deposits and features including a posthole and associated stone surface, a possible wall and a deposit of probable demolition rubble. In addition a stone culvert and a buried soil horizon may also date to the Roman period, although a later date for these is more likely (Brett 2003, 3).
3. 2004-5 English Heritage and SBC, with Wessex Archaeology and HEEP funding in 2005, excavated two trenches, again working with the Wyvern Historical and Detector Society in 2004 and local metal detectorists in 2005 as part of a Community Archaeology project. Trench 6 (2004 and 2005) was located over building 2, damaged by road construction activity in 1996, and Trench 7 (2004) across the line of what was suggested by Dr Corney as a possible Roman road in the western part of the site.

The EH/SBC excavations were developed as part of EH's Beacon Programme, with the 'Beacon Prize' of Community Involvement. The 2003 season, as evaluation/mitigation excavations designed to demonstrate that the areas impacted by the infrastructure works were largely archaeologically sterile, was not an appropriate vehicle for significant Community Involvement – encouraging people to join a project during which it was hoped to find relatively little significant archaeology appeared self-defeating. However the Community Archaeology aspects were amongst the primary drivers of the 2004 and 2005 seasons.

3. The Excavated Sequences

3.1 Trenches 1 and 2

These trenches were located to the south of Building 2 and were designed to establish the extent and character of deposits away from the main structures. Trench 1 was 5m square and Trench 2 15.5 x 18m in area. Features recorded were primarily small pits and some possible post holes in both trenches. In addition there were modern drainage features, along with evidence of damage sustained during the discovery of the site in 1996 and, in Trench 2, a shallow former terrace edge. The presence of the step formed by the terrace edge had led to the accumulation of stone, presumably ploughed/eroded off the Roman buildings to the north. Finds suggested that most of the features were probably Roman period in date, although there were modern field drains and some residual flint.

3.2 Trench 3

Trench 3 was located on the line of an east-west service trench cut across the site by Thames Water before the archaeological importance of the area was known. The line of this service trench is to be followed by one of the cycleways that is proposed for the site.

A 30m length of the service trench was re-excavated to the bottom of the archaeological deposits visible in each side using a mini-digger. The section was positioned so as to cross the line of one of the springs that rises on the hill slope at the geological junction between the Oxford Clay and the overlying Coral Rag.

The resulting sections were cleaned and any finds observed recovered. The spoil heap was scanned by metal-detector. Both sections were drawn (Figure 3), although the eastern 2m of the south-facing one was not drawn as the section was unstable, and the trench was located by TST. A total of 36 contexts were recorded, including natural subsoil (1320, 1329). In the western part of the section 1320 was sealed by 1319 a leached layer that may represent a buried ploughsoil; samples taken should inform us on this.

Overlying 1319, 1318 was a buried ploughsoil that was sealed by a stony layer (1316) that pre-dated a large feature (1323) that was probably the same as features 1328 and 1334, but separated from them by an area of running water that obscured the section face and an area of collapse. This feature extended to the point where the eastern end of the section was obscured by further collapse that made the section unstable to too dangerous to clean (a distance of some 17.2m). The bottom profile of 1323/1388/1334 was irregular and it appears probably that it originated as the course of the spring that still follows down the hill. What is not clear, and may be resolved by the samples taken, is whether the profile has been subject to modification by man. In any event it would appear clear that the filing of the feature was occurring in the Roman period, although an initial view that the filling was entirely/primarily Roman period given a lack of evidence of later material in the fills recorded (1317, 1324-26, 1330-32), has been disproved during assessment. Carbon^{14} dating of samples from context 1318, a suspected buried Roman land surface, suggested the presence of intrusive material (D Hamilton and D Robinson *pers comms*) (see Appendix 1). The survival of wood in the top of fill 1332 suggests that until the digging of the Thames Water trench that the deposits within the feature were almost certainly water-logged. The cutting of the Thames Water trench, which is filled with limestone aggregate, has served to create a ‘French Drain’. This has led not only to the reduction of the local water table, away from the direct flow of the stream north of the Thames Water trench, but also the dewatering of all deposits to the south with consequent loss of environmental and other data. Non-Roman finds included a flint scraper.

The sections were extensively sampled for geoarchaeological, environmental and dating purposes (see below).

3.3 Trench 4

This trench was located where two of the proposed cycleways would join on the north side of the scheduled area and turn to run roughly north-south down the slope. Prior negotiation had determined that the preferred route for the cycleway was in the line of a shallow gully located *c* 3m east of the stone built cistern or *nymphaeum* investigated by Phillips and Walters in 1997.

The original proposal was to dig a trench 15x5m aligned north-south down the gully. A 5x5m area was opened over the northern third of this area where the cycleway would cut into the break in slope. The main fill of the gully (1603) was shown to be entirely modern producing barbed-wire and a medicine bottle close to the bottom of

the north-facing section. A tiny amount of primary fill (1605) produced finds including Roman period pottery. However 1605 could have had a later origin as a water-borne fill of the gully, the Roman material being carried down from higher up the slope. This is possible as it appears that the gully originated as a stream-bed at a time when the spring line on the hill was located higher up the slope. The most likely position for the higher spring line being the geological junction of the Coral Rag with the overlying Red Down Clay, in the area of what is now St Andrew's Ridge village. The existence of a higher, earlier spring line would explain how the stone built cistern/*nymphaeum* was supplied with water as it is located above the current spring line.

An irregular feature (1607) was recorded in the south-east corner of the trench which appears to represent a tree-throw hole. It was sealed by a layer of weathered/fragmented natural subsoil (1608) which could derive from erosion of the surrounding natural deposits. The natural 1602/1610 was tested on the western side of the gully to establish that it was not redeposited. The upper part of the natural subsoil (1602) was quite badly degraded, appearing quite clayey, while the lower part gradually became stonier, suggesting the impact of weathering and root penetration, however it was clear that it was undisturbed.

3.4 Trench 5

Trench 5 was located on the western side of the scheduled area where it is proposed that a footpath will descend the steepest part of the slope by way of a set of steps.

The trench was 20x3m and aligned north-south down a shallow gully. After the removal of the turf it was clear that there was a stony deposit running down the centre of the gully and it was decided that the best way to approach the area was to dig a series of six sections. The northernmost two were positioned so as to investigate the area where the gully turned from running roughly east north-east to west south-west to north-south. The others were located along the length of the north-south gully.

At the northern end of the trench the shallow gully (1753) was shown to be the latest in a series of features that had occupied/formed the linear depression running down the face of the slope. The earliest was a curved feature, probably timber slot (1738), up to 0.45m deep that was cut by gully 1753 on the north side of the section. However to the south it was truncated at a much lower level by stone-filled feature 1751, the northernmost element of a stone-built culvert. Cut 1751 was pre-dated by a further cut (1715) which was probably associated with the timber-slot. The slot seems to have served to hold a revetment on the south-eastern side of the gully and was lined with white calcined material suggesting that it had been in long term contact with running water. Slot 1738 was a key feature in understanding this area as it produced a glass button of sixteenth-century date and as it was cut by the stone-lined culvert this demonstrates a post-medieval origin for the culvert.

Feature 1715 was cut into layers 1722 and 1723, and in the northernmost section in the trench there was a flat-bottomed cut feature of undetermined shape (1743). These features and deposits indicating that the terrace at the northern end of the trench had been subject to human modification and as the only dateable find was a sherd of second-century or later Roman pottery from layer 1723 it possible that this activity was Roman period, although clear the pottery could be residual.

In the third section, where the cut for the culvert was represented by feature 1718 the stone structure survived with some capping stones in place under an upper clay fill. In this area the culvert was fully silted-up, whereas in the next section down the slope (the fourth) it was open and contained running water. The form of the culvert in this area was different as the north-south one (1725 in this area) was joined by a second culvert from the west (1728) (Figure 4). The structure was similar to that in the third section and the overlying stones were carefully replaced to ensure the continued function of the culverts. A silty deposit (1727) used to fill the upper part of the trench containing the north-south culvert produced medieval pottery of twelfth- to thirteenth-century date, as did the equivalent deposit (1731) from the western arm, with the highest fill in the western arm producing material of twelfth- to fifteenth-century date.

A fifth section revealed a further section of the culvert, the cut for the trench being recorded as 1717. It was not possible to fully section the culvert as that part of the trench contained standing water, but the culvert here appeared well-preserved.

The sixth, southernmost, section occupied the full width of the trench and revealed the most complex sequence. The culvert her was pre-dated by three features, 1762, 1764 and 1784. The earliest of these was 1784, but as it only appeared in the eastern edge of the trench its form was not clear. 1762 appeared as a shallow rounded gully, *c* 0.25m wide and 0.15m deep, that was filled with a deposit (1747) that also extended eastwards to seal feature 1784 and produced one sherd of second-century, or later, Roman pottery. The gully turned towards the eastern edge of the trench. 1764 was a stone lined gully, the lining being represented by 1763, that was *c* 0.6m wide and 0.2m deep that was filled with two deposits (1706 and 1716), which respectively produced one and three sherds of second-century, or later, Roman pottery. These gullies, which presumably extended up the slope, may be Roman in origin, given the dating of the pottery, or the material could be residual. The stone built culvert, 1765/1766 in this area survived fairly well on the northern side of the section, but was silted-up (1768). On the south side of the trench an attempt had been made to replace the drain with a factory-made ceramic pipe at a higher level, but this was broken and due to being located at a higher level probably fairly ineffective when inserted.

The stone-built-culvert, as noted above, must be post-medieval or modern in date as it post-dates slot 1738, which produced the sixteenth-century glass button. However no modern material was recovered from any of the sections excavated, other than the ceramic pipe deriving from a modern attempt to renew/reinstate the drain line. In form the stone-built structure is consistent, throughout it is trench built, with the construction trench depth increasing from *c* 0.7m in the third section to over 0.90m in the fifth. It is built with a stone base, stone walls and stone capping, the capping stones varying from flattish slabs to irregular small boulders which are sealed with a deposit of stone rubble, itself sealed by clay or silt to the top of the construction trench. The culvert channel is 0.15-0.25m deep and 0.08-0.15m wide.

Down the whole length of the north-south part of the trench a dark deposit with some stone was noted in the centre of the gully (feature 1748). The existence of this deposit suggest that once the bulk of the construction trench for the stone-built culvert had been backfilled the upper part may have been left open and allowed to fill over time.

3.5 Trench 6

G Morley and P Wilson

This trench was opened over Building 2 (Figure 5) and taking in the area damaged in 1996 when the roads for the housing development were stripped with the objectives of:

- Establishing relative survival within and outside the area of damage
- Providing readily recognisable archaeology as the basis of the community archaeology project
- Developing a better understanding of the Building 2, and the character and development of the site.

In 2004 the trench was 20m east-west by 25m north-south, in 2005 this was reduced to 14m north-south by 11m.

Phase 1 (Pre-Roman)

The subsoils are of two types, that defined by context 5109 is the underlying drift deposit, which is a dense clay of an Oxford Clay type. The second (5108) is the more prevalent of the two and is probably a colluvial deposit. It is a silty sand and was exposed across the whole area of Trench 6.

Layers described as accumulation and dump are found on top of the natural and below the earliest features. The lowest of these (5032) is similar to the colluvium, but contains fragments of carbonised material.

Phase 2.1 (1^{st} – 2^{nd} century) (Figure 6a)

Layer 5080 was possibly the remains of a dump of material or a subsoil. Above the natural subsoil and distributed across the site are layers of near natural, contaminated with small stones and probable flecks of ceramic building material (CBM), this horizon layer is typified by 5214, which was revealed by the cut for drain 5194, and may represent a construction layer, possibly relating to Building 2.

The earliest features are probably from a phase prior to the construction of the bath suite in Building 2. These were seen as linear and curvilinear features in the south-eastern part of the trench and an oven structure and an irregular cut feature at the north end of the trench. A large curvilinear feature, 5027, was partially excavated in 2004 and was shown to be over 2m in depth and in 2005 was seen to be in excess of 3m long. To the west it was running below the later structures and to the east it disappeared into the limit of excavation. The lower fill 5040 was comprised of large stones, possibly representing a foundation. The upper soil fills, 5028 and 5077 appear to be from the robbing phase of this feature, but predating the construction of Building 2.

Adjacent to 5027 there was another linear feature (5030) which was only seen for 1.20m running in a north-west to south-east direction, and was shown to have a maximum depth of 0.34m. Like 5027, 5030 had suffered major truncation during road construction and therefore their inter-relationship and the level from which they were cut has been lost.

At the north end of the trench an oven (5159) was found in a cut (5175) in the natural subsoil. Oven 5159 measured 1.10m by 0.90m and was located close to the future wall line 10004 (here 5052), and within what was later to become Room 6. The oven was cut by a shallow, irregular feature (5178) some 1.90m in length, which was itself truncated by the cut for the main west wall of Building 2.

In the north-east corner of the trench a sub-circular cut feature (5182) was found, measuring 0.99m by 0.71m, this may be the heavily truncated remains of an early pit possibly pre-dating the building phase. The phasing is based on the pottery spot-dating as all stratigraphic relationships were removed during the road stripping.

It is possible that these features are contemporary; however, the northern group appear to have a very different character from those to the south group and could be part of the early domestic arrangements of the first phase of the villa structure, or possibly related to an otherwise unknown timber precursor to Building 2.

Phase 2.2 (2nd century) (Figure 6b)

The earliest elements of a structure on the same alignment as Building 2 are probably two elliptical patches of mortared stone (10147; 10148). These features appear to be post-pads for an early, possibly open-fronted, structure facing west. The post-pads later being incorporated within walls 10068 and 10070. These walls also known as 10004 further to the north, form part of the later main west wall of Building 2. Wall 10070 is the earlier of the two and also captures a small post hole, 10145, which was built within the wall up against 10147, suggesting that 10070 may originally have been a dwarf wall with timber uprights. Whether this wall continued much further to the south is unknown, as is what form of structure it represents, free-standing wall, or part of a structure. Wall 10068 is seen to be built over the remains of 10070 and captures post pad 10148. Once 10068 is built, 10070 serves to link Room 1, the cellar, to the south and Room 2a to the north, and possibly the west wall for an otherwise unidentified room between the two. At an early stage, before the construction of the main wall north-south 10004, began, a room was planned and the foundation raft for it was laid out. The room, Room 4, is towards the north end of Trench 6. The walls were added later after the completion of 10004, but it is mentioned here due to the timing of the initial construction work, represented by layers, 10121, a layer of irregular coral ragstone with tile flecks, approximately 0.15m thick below 10120, another layer of coral ragstone 0.10m thick.

Wall 10068 forms the northern part of the western wall of Room 1, the southern element being 5006. The division between the two being represented by a blocked-up area, possibly a window for received light from above, or perhaps a niche in the wall. Two layers of plaster were recorded on 10068, both yellowish-brown, with the first, 10102, only 10mm thick and the upper layer, 10069, 40mm thick. 5006 also has the remains of a plaster facing on this wall. In all, three coats are noted of graduating thickness, from the first coat, possibly only 2mm thick, the middle coat, 4mm thick, to the final extant coat which was up to 12mm in thickness. All these only survive sporadically and variable preservation, but the primary coat appeared the best preserved and was seen to turn the corner into the above mentioned window or niche. The two upper coats may also have done this, but if so, they have since crumbled – there was no evidence of plaster adhering to the blocking. There is

another, possibly similar, construction break in the south wall of Room 1, 5184. The plaster here does not survive in the area around the break, so it is impossible to say whether this was a window recess or niche, or merely represents a break in construction. The break in construction in the western wall is roughly 1 metre wide. 0.9m high and penetrates through the thickness of the wall. The break in the south wall is slightly smaller, being at 0.70m wide, but is over 1m in height. The remaining two walls, 10073 and 5007, the north and east walls respectively appear not to incorporate breaks. The north wall has two layers of plaster, 10074 and 10078, these are both quite thick at 15mm each, and the east wall also appears to have two extant layers but both of these are quite thin. The primary layer is 2mm in thickness and the next is 5mm, there is a possibility that there was a third, but this was uncertain. All the plaster in this room is stated as being plain in colour, a very pale brown to yellowish brown, and unfinished in any way. These walls form a room with internal dimensions 3.70m east-west and 4m north-south with a maximum visible depth of 1.57m. The one irregularity of the walls in this room is that the east wall is considerably thicker than the others at a maximum of 0.95m thick compared to an average of 0.75m. This may be due to it needing to withstand more pressure than the others, due to the presence of the hill slope to the east. Within the cellar room at the very base of excavation were discovered two timbers running east to west apparently sitting on the natural clay 5186 and waterlogged enough to be suitable for taking a dendrochronology sample from (although the wood proved unsuitable for dating; C Groves *pers comm*). The timbers appear to represent joists for the original wooden floor of the cellar, the planks of which did not survive.

Running east-west and continuing the line of the south wall of Room 1 to the west was what appeared to be the south wall of the main building complex linking Buildings 1 and 2. This wall, 5005, appears to be contemporary with 5184 and 5006. It is only seen running for 2.20m where it appears to end, this could be the location of a gateway, but appears more likely to represent truncation of the wall by machine in 1996, which left the rest of 5005 surviving to a maximum of two courses high. To the west, on the limit of excavation, a wall, 5093, was seen on a similar alignment and is presumably a continuation of this wall; it too was truncated by machine action. The cut for this wall cuts through two layers which sit above the natural subsoil. These are 5168, a brown silty clay layer, and 5104, a reddish brown, silt-loam, which pre-date its construction.

To the east of the cellar room is a very thin room, or corridor, running north to south, this is of a different construction to the walls of Room 1 and may be later, however, wall 5007 appears to turn 90º, or wall 10073 continues, to form part of the northern side to this room. On the whole, the walls are considerably thinner with an average width of 0.55m and consist of the southern wall, 5009; the eastern wall, 5025; the northern wall 5024; and 5007 bounding the room on the west. There is a marked narrowing of the north wall where the stub wall from Room 1 meets 5024. The end of the stub is very squared and may be the point where this construction phase stopped, or may be a doorway with half built in the style of the retaining walls of the cellar and the other side of the door being of more ‘normal’ dimensions for the room. The internal dimensions of this room are 0.55m east-west and 2.20m max north-south. This room may have originally been larger and incorporated the room to the east mentioned below as there is a possibility that wall 5025 was a later addition.

Only a small part of the room to the east was seen as it was adjacent to the eastern limit of excavation. The size of the room east-west can only be guessed at, but it has the same dimension north-south as the previous room or corridor. The north and south walls are shared with the above room, 5024 and 5009 respectively, and the west wall is 5025. These may continue for some way as geophysics results have shown linear anomalies in this area.

To the north of Room 1 is a further possible room. The north wall of Room 1, the south wall of Room 2a and the main north-south wall (10004) would form three sides of it. As the removal of structures, such as furnace 10062 was not within the remit of the project, it was not possible to demonstrate with any certainty that the room actually existed. The only relevant evidence is what may be a wall foundation, 10092 located within cut 10090, which was 0.75m in width, ran north-south for at least 1.5m and would have formed the fourth wall of a room 2.40m east-west by possibly 3.60m north-south, if it was contemporary. This wall was robbed out at some stage to a depth of 0.25m below the 1996 truncation (5002), and then the backfill was covered with late rubble deposit 10018.

Within the main body of the bath suite the original dimensions of Room 2a can be plotted quite precisely from the truncated remains of its walls. The main north-south wall of the building (10004) formed the west wall, 10151 formed the north wall, with possibly 5204 and a slight return visible at its southern end forming the eastern and southern walls respectively. This would enclose an area 3.6m east-west and approximately 2m north-south. There is a possibility that wall 5204 is not original and that the first east wall was in a different position, this is due to 5204 appearing as a discrete construction during the 2005 excavation. However the relationships between walls in this area are unclear due to a mortar spread which obscures many of the divisions. As indicated above the south wall is suggested as a projection of the scant remains of the south-eastern return of 5024 to meet up with wall 10004. This entire wall and most of the south half of 5204 appears to have been lost during the machining for the road construction (5002). In its original form Room 2a, located closest to the furnaces through the use of the bath suite represents a the *caldarium* and incorporated a hypocaust and a flue through the north wall into Room 2b, as flue structure 10020 and its floor, 10084, may be contemporary with this wall. The northern end of the east wall appears to have a different style of facing on the east side, represented by 5174, and this may point to the existence of a previously unknown room to the north-east that was largely removed by machine-scrape 5002. Information on the early internal arrangements of Room 2a was not forthcoming, although the locations of two *pilae* were seen, 10103 and 10104, they do not appear to be from this phase. The former was only seen as a cut through the upper carbon-rich layers whilst the latter was seen sitting on floor layer 10045 which is a fire-hardened, possible mortar surface, which might have been of this phase and reused to support 10103 and 10104.

Very little remains of the earliest eastern furnace, which would have predated wall 5204. The location of the original furnace is shown by the cut for its rake-out (10142), and the carbon-rich deposit within this cut (10099), and it appears that the original centre of burning would have been in a similar place just to the west of the later furnace 10060.

North of east-west wall 10151 is Room 2b. This appears to be another rectangular room, originally measuring 3m east-west and 1.6m north-south. As with the other rooms, the west wall is formed by 10004. The south wall, 10151, is shared with Room 1, the east wall is 10152 and the north wall is shared with Room 5 and is numbered 10058. This room would have formed the *tepidarium* after the hypocaust was complete. The initial phase of the hypocaust in this room consisted of at least 9 *pilae* in three east to west rows. These are 10105, 10106, 10107, 10108, 10109, 10110, 10111, 10114, and 10149. The extant *pilae* were well constructed, consisting of *bessales* placed on a larger tile, but three of these, 10105, 10114 and 10149 were only seen as mortar patches. There were almost certainly more, but these were lost during subsequent alterations. The easternmost *pilae* 10108 and 10109, may be belong to a later phase as they were built on layer 10063 whilst the others are on a surface of a different matrix, 10064, the former may relate to a later phase but it was impossible to see without excavation. Traces of mortar 10115 were seen adhering to wall 10058, possibly from fixing *tubuli* to the wall, it may date from this early phase.

To the north again, beyond wall 10058 is Room 5, possibly the *apodyterium* (changing room) of the bath-suite. It is delineated by walls 10004 to the west, 10058 to the south, and 5187 to the east and a robber trench, 5041 to the north forming a room 3.60m north-south and 2.20m east-west. Wall 5187 was substantially damaged most of its eastern side had been removed by truncation 5002. The wall was apparently constructed without mortar, possibly being clay-bonded. The robber trench, 5041, appears to be along the line of a possible internal dividing wall. The trench is only 0.13m deep, not enough to represent the removal of a wall of similar construction to the others, there being no traces of a structure remaining within, or beneath it. The dividing wall may not have been from the primary building phase, but due to the loss of most if not all of the original floor, it is impossible to say. Over most of the room all that is left was the sub-floor. This may be from the primary building phase, but it is unlikely due to the presence of a well worked square block of probable ragstone, 5067, which is probably re-used in its present position. This substrate is made up of a number of different possible tip deposits, 5054, 5062, 5064, 5065, and 5066. Above these is a possible remnant of the original floor, 5063, which appears as a yellow/brown mortar bonding amongst and above the substrate.

The last room of this phase to be described is Room 6, once again to the north of the previous room. The only structural elements recorded from this room are the main north-south wall 10004, here called 5052, and the robbing trench for the south wall (5041 – described above). The minimum dimension north-south is 3.30m to the limit of excavation, and the east-west dimension can be suggested to be the same as that for Room 5 at 2.20m. Before the construction of wall 5052 a channel, 5153, was constructed leading from this room and leading to Room 4, possibly as a flue for the hypocaust serving Room 4. A mortar layer, 5152, was either laid either side of the channel at a later date, or as a part of the construction. 5152 lies under a possible occupation layer 5124 and may be the substrate for a floor now lost, or an external working surface which would be consistent with the presence of a small otherwise unrecorded *praefurnium.* At the north end of wall 5052, just south of the limit of excavation three was a gap in the wall, which had been later blocked by insert 5218. The gap was 0.65m in wide and extended through the full width of the wall. With these dimensions it is thought to be a doorway possibly leading out to the courtyard, or open area, between Buildings 1 and 2.

Features within the area between Buildings 1 and 2 were numerous and included a dwarf wall parallel with 1004 to the west of Room 6 (5116), which could belong to any period of use of Building 2 (Phases 2.2-2.5) and a line of three postholes (5045, 5047, 5049) on an alignment slightly to the east of that of 5116 outside Room 1. The latter were all truncated by road scrape 5002 and again could originate at any time during the use of Building 2. Both might represent the outer walls of verandas or covered walkways on the west side of the building. The existence of the early foundation raft within the area of Room 4 and the differences in character and alignment of the two elements appears to preclude the existence of a continuous walkway adjacent to wall 10004.

Phase 2.3 (Later 2nd century) (Figures 6c and 7)

The main alterations visible from this phase are the extensions to Rooms 2a, 2b and the eastern furnace and the construction of Room 3.

The main north-south wall, 10004, was cut through immediately to the west of rooms 2a and 2b to form what appears to be a large rectilinear extension to these rooms. The cut, 10164, was only visible on its southern side as it appears that the northern edge seems itself to have been cut away by a later extension, 10153. On the southern side, the edge of the cut was left rough, as it was below floor level, and the sub-floor of the extension appears to have been levelled by the insertion of silty material 10047. Running north-south, parallel to the remains of 10004, a cut (10048) was created for the foundations of the west wall of the extension. This comprised of two, possibly separate events of foundation construction, 10049 and 10050. 10049 runs north-south and apparently forms the foundation of the new western wall of the extension, it was observed extending for 0.85m+ and was 0.32m wide. 10050 is recorded as a possibly separate event, but at a similar level, and is best described as part of the substrate for the floor of the new extension It appears to be separated from 10049 by a deposit of sand, 10038, some 0.30m wide. 10055, the layer above 10050, consists of pitched stones forming an upper layer of substrate. 10055 may act as a stone raft for the entire room as 10067, a remnant of the possible main wall main wall of this phase, appears to sit above it. Unfortunately no associated floor remains survive to support these suggestions and due to the need to preserve the walls *in situ*, the area exposed was limited. However, both 10050 and 10055 are confirmed to be from an early phase as they are seen on both sides of the later apse wall 10006, apparently extending under it. Wall 10003 may also be from this phase. It butts on to the east side of wall 10004. It extends 1.5m north-south and is between 0.40 and 0.50m in width. It may have been inserted at this time to act as a springing point for an arch, or other form of entrance to the new room. It would give the extension estimated internal dimensions of 3.20m north-south and 1.60m east-west.

It was possibly at this time that the furnace to the east was also extended.
The extension consists of a pair of walls 1.2m east-west and 0.40 – 0.50m in width. These walls were built next to wall 5204, but not adhering to it in the visible foundations, and were set in cut 10140 which cut through the rake out from the previous furnace. The rake-out from the new furnace must be located to the east beyond the limit of excavation. However there was a small amount of a carbon-rich deposit, 10098, which was located in the base of this new flue and continued through the wall line 5204.

The alignment of the walls suggests that the extension to the west of Rooms 2a and 2b may have been planned, if not constructed, at the same time as Room 3, the cold plunge bath. The main evidence for this is that the main south wall of Room 3 appears to be butted by a possible element of the Room 2a/b extension (10007). An element of uncertainty also surrounds the construction of Room 4. As mentioned above, the foundations for the room were laid before the construction of the main north-south wall (10004), but the walls of the room itself appear to have been constructed after it was finished. The sequence, as mentioned earlier, is difficult to determine, but it would appear that Room 4 may be earlier than Room 3 as seen, but could be contemporary with the early version of Room 3 represented by floor 5125. This was impossible to confirm as a later posthole removes the junction of the west wall of Room 4, 10132, and the north and west walls of Room 3, 10139, and 5087. The rebuild of the shared wall between Room 3 and Room 4, which is described below, may be due to converting a previously exterior wall into an interior wall of a cold plunge bath. The construction of Room 4 as seen incorporates the building's main north-south wall 10004, here called 10138, the west wall of this room 10132, the north wall 5053 and the shared wall with Room 3, 10139. This creates a room with internal dimensions of 2.40m north-south and 3m east-west, with walls surviving to a maximum height of 0.52m. Plaster/mortar was found adhering to walls 5053, 10132, and 10139 within the room (5217, 10133, and 10134 respectively), it was very uneven and varied widely in thickness and may be no more than a rudimentary form of pointing. It appears to have been applied to 5053 first then to 10132, as an overlap was recorded. As there appears to be no doorway or other entrance giving access to a floor at the level utilised for the *pilae*, it appears that the *pilae* are a part of the original design for this room and not a later insertion. This is corroborated by the evidence from channel 5153 as mentioned above. The western end of this channel through wall 10004 appears burnt; however, this is the only evidence we have for the flue being used for a furnace, and for the firing of the hypocaust of Room 4, as no trace of carbonised matter was found amongst the *pilae*. This may suggest that the highly irregular *pilae* described below, are not original and that the room was subject to some unknown change. There is, however, a suggestion of a robbed out step coming through the eastern wall from Room 5 in a similar position to that in Room 3. The *pilae* in Room 4 are made of several different materials: 10127, 10128, and 10129 are constructed from stone and cement, 10130 and 10131 are composed of *bessales* on a *tegula* base, and 10124 appears as a single stone roof tile. The other *pilae:* 10088, 10089, 10122, 10123, 10125, and 10126 are only identified by their mortar bases. The *pilae* were located directly on 10120, the upper 'raft' foundation of Room 4. To the north of this room was found a possible north-south dwarf wall, 5116, running up to 5053. The wall is seen running for 2.61m and has a width of 0.57m. It may be part of a temporary structure built in the corner of Rooms 4 and 6. This wall appears to be from a period contemporary with if not soon after the construction of Room 4 as what appears to be the main courtyard surface butts up against the walls of both. Within the area enclosed by the dwarf wall were seen areas of moderate burning on a clay surface, 5115. This may be the residue from some domestic or light industrial process in the structure. A single posthole, 5039, was recorded in the area to the west of Room 4, and it, like the postholes recorded near Room 1, may be the remains of a colonnade running along this side of the building.

The apparent sequence of construction of Room 3 began with the building of a dwarf wall, 5148, running alongside, but not bonded with 10004, here called 5057. This wall, running the full width of Room 3, was only 0.20m wide and seemed to serve as

an entrance step to the bath from the much higher floor of Room 5, the possible changing room. Butting wall 5148 is the main visible phase of wall construction for the room, the apse and associated east-west walls. These was given one number during 2004, 5087, but was divided up into its constituent elements in 2005, the south wall, 10008/5087, the north wall, 10139/5087 and the apsidal end, 5087. All of these were constructed after the 'step' wall and are of exceptionally high quality, with well squared blocks and good coursing. There is a possibility that the apsidal end is not contemporary with the east-west walls as seen. This is suggested by an apparent construction break on the inner face of the north wall, 10139, where the construction mortar contains a higher ratio of *opus signinum* than the exterior face, possibly relating to rebuilding of the western end of the room, and perhaps explaining the uncertainty regard the relative phasing of elements of the westward extension of Rooms 2a and 2b, Room 3 and Room 4. The visible walls give a room with internal dimensions of 2.80m east-west from the inside of the apse to the step and 1.90m across the apse and 2.20m across the main body of the room, the room narrows to 1.70m across the springing point of the apse arch. The maximum height of standing masonry here is 0.82m to the original floor level.

The floor was laid at this point and consisted of two layers of mortar, 5133. The lower layer appeared coarser than the upper, and thicker, showing an initial solid waterproofing layer topped with a thinner levelling layer, which in turn had 5125, the tile floor of the bath, laid upon it. This floor then had a waterproof seal around the wall corners and up the walls put upon it, 5132. This is a skim of *opus signinum* running up the internal face of the bath, it may correspond to a layer of very similar material seen on the exterior face of 5057, (interior of Room 5), numbered 10161, which may show the remains of the waterproof covering continuing up the steps and into the *apodyterium.* This confirms that the substrate of Room 5 is earlier than Room 3, but that the floor surface may have been added later, or have been replaced. The bath must have had a drain at this stage but as all walling material was left *in situ* it was not seen. However it is likely that it utilised the same course as the later drain 5164.

It was at this point, or earlier, obviously, that a ditch (5194) to serve as a drain was inserted. The uncertainty regarding its inception in part arises from the possibility that it may also have carried excess run-off from the springs on the hill-slope, thereby serving to protect Building 2 from inundation. 5194 ran in a southerly direction across open area west of Building 2. In its first phase the drain was simply ditch estimated at over 3.5m maximum width and just over a metre deep. The first two fills of this primary drain, 5195 and 5130 indicate heavy and continuous silting, leading to the possibility that it was an open ditch.

Room 1 also appears to have undergone a change in form. If the 'niche' in the southern wall, 5184, was actually such, and not a construction break, then it must have been filled in at some stage after the initial construction, but before the room went out of use. This is stated due to plaster facing being seen on the interior of the blocking, 5209, of this gap.

Phase 2.4 (Later 2nd century – 3rd century) (Figure 6d)

The next major event appears to have been a major re-build of the west end of Rooms 2a and 2b. This time, the western extension to the rooms appears to have

been remodelled into two rooms with western apses, with Room 2b being extended slightly to the north, impinging on the south wall of Room 3.

The new apsidal end of Room 2a is represented by wall 10006 which to an extent appears to utilise the foundations of the walls and floors of the previous room. However, where, on the northern side of the room it returns to an east-west alignment, it appears to cut through a backfill deposit, 10031, that was either put down to fill the area of the extension that was no longer going to be used, or had accumulated if there was a time lag between the first large extension going out of use and the new double apse being built. Wall 10006 enclosed an area of *c* 1.50 x 1.50m (Room 2c). Of the walls lining, only one tile, possibly a *bessalis* remained *in situ*. This is fixed to the wall with a thick layer of *opus signinum*, 10160; the thickness diminishes either side of this tile possibly to receive *tubuli* for conveying hot air up through the wall, indicating this was a heated room. The presence of lead pipe (10023), possibly for drainage, in the west wall suggesting that it might be a hot plunge bath, although pipe as recorded may have been a later insertion (see below). An alternative interpretation of Room 2c would be as a *laconicum* (hot dry room).

The extension of Room 2b to the west involved the creation of a curved wall over-sailing part of the southern wall of Room 3, presumably to maintain the north-south width of the *tepidarium*, shown by cut 10153, as it approached the new western apse and not have to accommodate a slight L-shape at the western end as would have been the case had it simply incorporated the northern part of the earlier extension. The shape and position of one *pila,* 10113, illustrates this as it is at an angle to all the other *pilae* in the room, echoing the shape of the new internal wall face. The other two *pilae* in the western extension of the room, 10112 and 10141, are also from this period as they sit on a new surface (10118), but conform more closely alignment of the rest of Room 2b. All three these *pilae* are of a much rougher construction than those within the main body of the room, being built of what appear to be fragments of *bessales* and *tubuli.* This new enlargement would have brought the internal face of the north wall round in an arc with no sharp corners. This is shown by wall 10009 which is a rough wall replacement for the lost southeast external corner of Room 3.

Further changes were observed on the eastern side of Room 2b where a wall was inserted (10010) abutting walls 10058, 10151 and 10152. The structural sequence is certain on the north and south sides, but has to be presumed on the east as a layer of mortar, 5188, lies over this whole area obscuring constructional detail. This appears to indicate a total remodelling of the upper parts of, at least this part of, the bath suite at this time.

Phase 2.5 (Later 3rd-century – 4th century) (Figure 6e)

The most significant change was the replacement of the eastern furnace by one located on the south side of Room 2a. The construction of the *praefurnium* (10062) with an adjacent working space required the north wall of Room 1 to be demolished, and the infilling of the room. The lowest fill within Room 1 was an olive clay (5099) 0.36m thick, overlain by 5021, a mixed deposit up to 0.66m thick. There appears to have been a hiatus after this deposit was laid down, as into the top of it was cut a very shallow pit 5022, containing the possible remains of a hobnail shoe alongside other domestic debris. The presence of this feature suggests that the abandonment of Room 1 may not have been directly a result of the change to the southern furnace.

The upper fill of room 1 (5008) may represent the intentional demolition of part of the structure no longer in us, as it incorporated large quantities of building rubble. The form of the rubble deposit suggested that the demolition took place from the north which is consistent with the insertion of the *praefurnium.* Prior to this last phase of infilling, the window/niche in the west wall was filled in. As there is no plaster face on the blocking 5185 it is possible that this was only blocked just before the backfill was put into the room. However, the neatness of the blocking suggests that it may have been inserted earlier, while room was still in use and may have had a plaster coating which has now been lost.

Possibly built on top of the latest infill of the north half of Room 1, 10072, is a small single skin wall running east-west, 10071, which appeared to join with a stub of a wall of larger material, 10077, against wall 10075. This is thought to be the new south wall of the *praefurnium* working area. With the old north wall of Room 1 cut through by 10079 to make way for 10062, this would leave a very narrow room, possibly for the sheltered storage of fuel and for the stokers. The *praefurnium* structure (10062) was constructed of mortared stone and mortar, seen as exterior face 10159, and was faced internally with *bessales,* constructed in a seemingly random bond. The wall of the furnace survives to a height of 0.43m without evidence of springing for a roof.

Another alteration to take place at this time was the simultaneous blocking of the old eastern *praefurnium* and the reshaping of the hypocaust in Room 2a to allow for better air flow. This was achieved with the insertion of a rough block of mortared masonry (10011) some 1.7m east-west and at least 1.4m north-south. This block, in its north-south axis had been truncated by the road-scrape, so it may have completely filled the eastern end of the room originally. 10011, which as was mortared together with *opus signinum*, had a curved interior face, possibly to direct hot air from the new southern furnace. It may also have been at this time that a new flue between the *caldarium* and the *tepidarium* was inserted (10017). It is possible that flue 10020, although not totally obscured by the construction of 10011, but its effectiveness may have been reduced. 10017 was 0.5m to the west of 10020 and when it was inserted it appears the western end of wall 10151 had to be demolished (cut 10154), this was replaced by a rough wall serving the same purpose numbered 10030. Above flue 10017 appears the only remaining possible section of sub-floor found on site, 10150, which serves to indicate the possible original floor level within Room 2.

It is possible that there was a further phase of rebuilding in Room 2c, including a possible re-structuring of the western apse. It is unknown what form this took, but is represented by rough stonework 10005 which forms part of the surviving western wall. Within this stonework, a lead-pipe was found in a rough cut through the wall. The insertion of the pipe may have been a later event or just roughly done at the time of construction. It incorporates a possible cut through the wall (10025), a tile lining (10024), and a stone covering (10022) and a section of lead pipe (10023). As suggested above probably for drainage, as it would discharge into the area of drain 5194.

The floors in Room 2b appear to have been re-used and not necessarily cleaned, but the floors in Room 2a appear to be new and seem to be laid up against the newly inserted wall 10011 then have *pilae* (10103, 10104) built on it. This floor (10045) is

possibly only constructed of beaten re-deposited natural, but may be mortar. It has however been burnt to a very hard surface.

During the use of the southern furnace (10062) much ash built up around the rake out pit. The primary layer of ash (10056) was at least 0.22m thick. Overlying it ashy deposit 10061 and above this the burnt deposits start to take on a less ashy appearance and become almost pure burnt wood fragments. This carbon-rich deposit was seen to be built up over a period of time, layer 10054 overlain by 10037. A slot was excavated across the furnace further to the north to examine the area where the furnace entered Room 2a, here the stratigraphy was seen to be similar with a clay floor lining, 10039, below a deposit of densely packed burnt wood fragments (10046) 0.25m deep.

In Room 2a the lowest soot deposit was 10053 and associated contexts. To the north within Room 2b a very similar deposit was found, 10033, which also appeared in both north-south flues (10017 and 10020), suggesting again that they were in contemporary use.

Without the removal of walls and floors to get sealed dating evidence it is difficult to suggest relative dating where changes do not relate to the structural sequence demonstrated by the walls. However, given the extent of change observed in and around Room 2 it appears likely that the last main alteration to the structure of the bath suite, the raising of the floor of Room 3, the cold plunge bath, may also belong to this phase (Figure 8). This seemed to occur without the removal of the *bessales* from the surface of the floor below. A layer of mortar was applied on top of the floor tiles, over which was deposited make-up layer 5126 which was composed of limestone rubble. Above 5126 *opus signinum* (5089) appears to have been laid directly down in two layers, the lower thicker and coarser than the upper. The new tile surface (5131) was laid on this mortar bed and appeared to be mainly *bessales,* with two *lydions* irregularly placed. The tiles only survived in the apsidal end of Room 3, so this can only be taken as a representative sample. However, impressions in the mortar suggest that the majority of the lost tiles were *bessales*. The changes to the floor level necessitated the raising of the outflow drain from the bath. The drain is located in the south-west corner of the room from where it would have led into the pre-existing external drain. As recorded the location of the drain is represented by a probable robbing cut (5090) that presumably relates to the removal of a lead pipe or similar after the bath had gone out of use. A change occurred at some point to the structure of the external drain, and it may be linked to the modification of the cold plunge bath outflow. A drain (cut 5180), was inserted along the line of the pre-existing ditch (5194). Within the cut was a stone-built drain (walls 5164 and stone capping 5146), filled with silt (5163). The walls were of two very different constructional styles, the eastern wall having a very straight and even face and being made from regular, faced stones averaging 0.15-0.20m in size; whereas the western wall was composed of stones with no discernable face, and 0.40-0.50m in size. The capping stones were irregularly rhomboidal in shape and were laid down from the south and working north each stone overlapping its southern neighbour. The insertion of the stone-built drain involved the demolition and rebuilding of a section of the wall linking Buildings 1 and 2. The rebuild surviving as 5166, an area of stone and brick/tile on the line of the wall below road scrape 5002 which had removed the wall to the east and west.

Surviving occupation or floor layers were found very infrequently, mostly due to later robbing and general disturbance. However, a possible floor was found in one of the south-eastern rooms. In the area of the possible room between Rooms 1 and 2 a yellow/brown sandy clay layer, 5145, seems to form a levelling horizon for a layer of gravel-mortar, 5144, above. Traces of occupation were also found in Room 6 above the level of mortar floor 5152. This layer, 5124, is from a later stage of the building's use as it appears to overlie the blocking of the possible doorway, 5218, found in the west wall of this room. The blocking event did not totally fill the full thickness of the door opening, in effect creating a niche in the eastern side of the wall. The possible occupation layer abuts this and continues across the large majority of Room 6 and contains patches of carbonised material and areas of burnt clay. This had a maximum depth of 0.40m, so it may represent several floor layers, or the dumping of quite pure soil.

Phase 2.6 (Later 4th century, or later)

This appears to have been the final form of this part of the villa until its abandonment and eventual collapse, possibly sometime during the fifth century. During the use of the structure the courtyard appears to have been kept clear, and most of the area to the east was removed by machining.

If there was an abandonment phase where silting deposits occurred this appears to have been lost due to the later robbing events which have mixed these deposits up. The subsequent collapse of the building may have been promoted by demolition and robbing. The collapse layers all appear homogenous and show few signs of structure indicating that the rubble was very disturbed during this period probably as part of the robbing activity.

The courtyard area had thick deposits predominantly composed of stone rubble, CBM, nails and domestic refuse, 5014, 5044, 5051 and 10087.

Within the rooms, the depth of collapse material depended greatly on depth below ground level of the structural elements and the extent of robbing. In Room 1 no deposits were seen above the level of the last deliberate infilling, suggesting much robbing or moving of the rubble as no ploughing is known to have occurred to explain this. In the south-eastern rooms very little demolition material was found. One layer, 5134, which was 0.10m in depth, was found lying on a possible floor 5144 suggested above as possibly representing a floor within the possible room between Rooms 1 and 2. The other deposit, 5169, was unusual as it appeared to be located in a late trench, 5183, within the room. It is unknown what the function of the trench was, but it may have been to rob out the floor layers. The southern *praefurnium* contained many deposits mostly either relating to a direct collapse of a nearby structure or the dumping of material of a single type (5073, 5139, 5140, 10036, 10041 and 10051). Room 2, possibly due to the extra depth of the hypocaust, also shows many different layers (5017, 5068, 5081, 5114, 5129, 5141, 5150, 5165, 5210, 5211, 10002, 10016, 10018, 10019, 10021, 10028, 10035, 10052). Within these deposits cut 10103 represents the robbing of a *pila* in Room 2a.

An early event in the post-occupation phase of Room 4 was the robbing of the *pilae* in the central and western parts of the room. Subsequently layers of debris formed or were deposited. 10086 may represent undisturbed post-occupational accumulation,

while 5082 included quantities of building material representing demolition or collapse. The only apparent demolition layer in the area of Room 5 is a scatter of possible collapsed wall stones (5037) that extended into the northern part of Room 2b. Room 6 contained no evidence of accumulation or demolition material, only later structural features or topsoil.

Phase 3 (Post-Roman/pre-8th century) (Figures 6f and 9)

This phase was defined as a series of post-pits cut into the levelled remains of Building 2. Feature 5110 lay within the area of Room 6 and was cut into soft deposits with a clearly defined post-pipe (0.94m deep) surrounded by a cone-shaped post-pit (1.70m diameter). Post-pit 5119 was *c* 1.10m square and located in the south-east corner of Room 3 (the cold plunge bath) and was cut through the *opus signinum* of the upper floor level (5089) and into the lower *opus signinum* and tile floor (5125/5133). However the demolition/collapse material (5088) filling the north-eastern part of the cold plunge bath sealed the post-pit, but not the post-pipe. This suggests that the completion of the levelling of Building 2 was contemporary with the construction of the timber building represented by the post-pits, the intention presumably being to create a level platform for the new building.

Post-pit 10095 was sub-rectangular and 1.56 x 1.03m in size and 0.7m deep. It removed the junction between the western walls of Rooms 3 and 4. During the record completion phase it became clear that apparent robbing activity between Room 3 and the possible hot plunge bath (Room 2c) was in fact further substantial post-pit that had removed structural material – the full limits of the activity were not established.

Further smaller post-pits up to 0.4m deep were recorded (5083, 5107; 10144/10157) which, possibly with a number of shallower features (5034; 5036; 5061; 5070), probably represented elements of the building, the full extent of which was not established. However there was an impression of a structure aligned roughly obliquely to Building 2, possibly north-west to south-east and. However if post-pit 5182 (see Phase 2.1 above) was than is suggested by the associated finds and is included in this phase the alignment of the timber structure could be closer to that of Building 2. It is also possible that 5107, which appears as a southern outlier with respect to the main group of features, may not be associated with the others, which would further weaken the impression of a north-west to south-east alignment.

Phase 4

No medieval features were recognised.

Phase 5 (16th-20th century)

Two ceramic pipe land drains (5011, 5012) were recorded cutting across the northwest corner of the trench.

3.6 Trench 7 (Figure 10)

Trench 7 aligned north-south and was 30 x 3m in area, although full excavation was restricted to the western third. It was positioned so as to provide a cross-section through a broad linear earthwork running along a pronounced terrace formed by the

underlying Coral Ragstone reef. The earthwork was suggested as a possible Roman road by Dr Corney (1998) – the profile being consistent with an *agger* flanked by two side ditches.

Phase 4 (Late 12th-15th century)

The resulting section was consistent with a road, probably consisting of two phases of east-west 'bank' capped with gravel overlying subsoil (5832) or apparently naturally accumulated layers (5824, 5826, 5830). Some uncertainty attached to the character and origins of the earliest phase of bank (5821) which could in fact be a natural clay loam deposit incorporating fragments of Coral Ragstone., which was converted to an *agger* by the digging of the north (represented by 5818 in Figure 10) and south (largely removed in Figure 10) ditches. 5818 occupied a depression 2.5 wide and perhaps originally 0.4m deep. On excavation there was an impression of there being a greater quantity of stone on the surface of 5821 than in the body of the bank although a separate deposit could not be defined. This phase did not any dating material and could be Roman in date, although the sealing of 5818 directly by the second phase of road (5808), which produced medieval material, suggests that the structure as a whole may be medieval (Phase 4).

5808 was up to 0.1m in depth and extended across the full width of the first phase of road and was similar in character to 5821, again with a impression of more stone on the surface than in the body of the layer, but with the addition of quantities of burnt clay. As mentioned above 5808 produced medieval material demonstrating its medieval date. To the north its associated ditch was filled with 5801, the layer that sealed 5808, while to the south there was a possible surviving ditch fill (5828) that suggested that the associated ditch had been *c* 1.7m wide, the north ditch being perhaps 2.2m wide and up to 0.3m deep.

Phase 5 (16th-20th century)

The southern roadside ditches were shown to have been largely removed by what was probably a continuation of the stone-built culvert recorded in Trench 5. The builders of the culvert having reused the line of the ditch. On the line of Figure 10 the cut for the culvert was 0.9m wide at the top narrowing to 0.22m at the level of the stone structure of the culvert. The odd profile of the upper part of the cut possibly reflecting collapse of the deposits that it was cut through on the northern side. The trench had been backed with clay (5806) that was visible from just beneath the topsoil. The clay sealed a deposit of stones (5836) that overlay the capping stones of the culvert (5837).

3.7 Quantification of Site Records:

Deposits, cuts and built structure records:	656
Drawings	308
Photographs (site record)	281
Photographs (digital outreach/general)	754

4 Finds and environmental material

Nicola Hembrey

The three seasons (2003-5) at Groundwell Ridge produced an assemblage that, although dominated by Roman material, does contain some items of medieval and post-medieval date.

The material was studied by a number of specialists: Richard Brickstock (coins); Kayt Brown (ceramic building material); Greg Campbell (shell); David Dungworth (industrial debris); Andy Hammon (animal bone); Phil Harding (flint); Nicola Hembrey (registered finds, wooden objects, building stone and wall plaster); Bob Hill (mortar); Sarah Jennings (glass); and Jane Timby (pottery), who have supplied the summary reports presented in Sections 4.1-4.10. Karla Graham and Vanessa Fell have supplied a Conservation Summary (Section 4.11).

Table 1. Groundwell Ridge 3641 – summary of all material

Material	Standard	Skull	Stewart	Total No of Boxes
Pottery	12	3		14
Stone	29	1		30
Flint	(+ 2003 finds inc within stone sf)	1		1
CBM	114	1		115
Animal Bone	9	1		10
H Bone		1		1
Fossil		1		1
Plaster/Mortar/Op sig	45			45
Industrial Debris	2			2
Miscellaneous	1	1		2
Charcoal				1
Shell	2 (+ 2003 finds inc within ind deb)	1		3
Stone SF	1			1
Cu-Alloy SF			3	3
Lead SF	1		1	2
Cu-Alloy & lead SF	1			1
Iron SF			12	12
Glass SF		1	1	2
Bone SF			1	1
Wood			1	1
Enviro samples	ca 48	1	2	51
Mortar samples	5			5
	Total			**303**

Box sizes:
Standard - 45 x 23.5 x 17 cm Skull - 25.5 x 18 x 17 cm Stewart - 32 x 23 x 14.5 cm

4.1 Registered Finds, Wooden Objects, Wall Plaster and Building Stone

Nicola Hembrey, with contributions by Jörn Schuster

Wood

Several fragments of (probable) coniferous wood were collected from context 5099 in 2004. These fragments are in thin layers, and might possibly be writing tablets. They display evidence of working in the form of cut straight edges, slightly rounded corners and, on at least two straight edges, there is a possible marked-out straight line parallel to the cut edge, *c* 5mm away from the edge, conceivably a marking-out line (V Fell, *pers comm*.). These fragments are currently in cold storage, have been subject to a (very) small amount of basic cleaning by EH conservator Vanessa Fell, and will be included in the conservation assessment.

Building or Structural Stone

The assemblage of stone, while moderate in number, displays little variation; roof tiles are (with one exception) are of two types, an oolitic shelly limestone, probably from the Cotswold region (Dr D Williams, *pers comm*.) or a sandy limestone, both of similar buff colour. The floor tiles are all of a pinkish/grey micaceous Pennant sandstone, with the tesserae also of the same stone, with very occasional tesserae of a buff colour, indicating that the floor would have been mostly all one tone. Dressed stone was mostly of one yellow/white oolitic limestone, probably from the Bath region (Dr D Williams, *pers comm*.). It is not thought likely that any of this material was imported any great distance.

Wall Plaster

As would be expected, a large quantity of wall plaster, mortar and *opus signinum* was also collected, much of the plaster being painted. Brief study by the author of the assemblage of painted plaster reveals that this was mostly plain, although there was plaster with colour variation, through reds and pinks into creams, greens and an occasional beautiful turquoise; the pattern would have been very simple. A few fragments bearing decorative motifs were also recovered. It seems fairly clear, then, that this bath house would have been of a plainer, rather than a more ostentatious, style.

Registered Finds

The assemblage of registered finds from Groundwell comprises 1841 objects, contained within 27 boxes.

Non-metal small finds include rubbing stones, stone and tile tesserae, and several gaming counters. Objects of animal bone include fragments of pins and a needle, as well as a bone bracelet fragment. A few small finds of CBM were collected, among them a ceramic tile with a cloth print, one ceramic tile with iron attached, and one stone tile with attached nail.

Of greatest note within the collection of non-metal small finds is the assemblage of glass objects, among them four green glass ovoid beads and eighteen tiny

rectangular and cylindrical beads of glass (green), bone, ?coral (pink) and ?jet, all found within context 10033, a soot/charcoal layer on the subfloor of the *tepidarium* (Room 2b), which also contained an iron buckle.

The assemblage of ironwork comprises 1319 objects. Overwhelmingly small miscellaneous structural fittings, there are many nails, but other classes of structural fitting are also represented, such as cleats, wallhooks, staples, L-clamps, junction collars etc. One obvious and three possible fragments of T-clamps are present; most commonly used to attach tiles, particularly box tiles, to the walls of bath houses. As in any assemblage, there are a few objects that are too fragmentary in nature to fit well within a classification other than 'object', 'lump' or 'fragment'. There were several objects that may be classified as 'tools' or 'implements'; one awl was present. There were fragments of 12 blades. There are very few objects that may be considered 'personal' in nature; the stylus and two possible bow fragments from bow brooches. There was one vessel rim fragment. There were fragments of seven horseshoes, and one hipposandal (horseshoe fitting).

Fifty-five objects of lead were collected, mostly waste fragments, strip fragments or fragments of window cames, as would be expected. A few tokens were in evidence, as well as one weight and one iron pin with lead head. A large lead water pipe was found. One of the most interesting objects collected from site was of lead, a small lead plaque of a female deity, representing the goddess Isis.

The assemblage of 121 copper-alloy objects contains 76 coins (see Section 4.2), as well as various personal ornaments such as a few bracelets, brooches, hairpins and a finger ring. Other objects include: links, pin heads, one complete silvered pin, one buckle associated with the beads from Room 2b mentioned above), one leaf-shaped stud, one ?harness fitting of post-medieval date

4.2 Coins

Richard Brickstock

The three seasons of excavations at Groundwell Ridge (2003-05) produced some 76 coins, the vast majority of them being found in Trench 6 in the course of 2004. When added to the 50 coins yielded by earlier investigations in 1997 (Moorhead 1998), they bring the total for the area to 126. Of this total, however, thirteen coins make up a scattered hoard (*ibid*); eleven are only partially legible; and a further four are modern – but this still leaves a total of nearly one hundred legible Roman coins for consideration.

The two sets of finds may be briefly summarized as follows, using the date periods set out in the Brickstock (2004)

Table 2. Coins from Groundwell Ridge by Date Period

Date of issue	Current finds	Previous finds	Total
up to AD 41	1	-	1
41-54	-	-	-
54-68	-	-	-
69-81	-	-	-
81-96	1	-	1
96-117	-	-	-
117-38	-	1	1
138-61	-	-	-
161-80	-	-	-
180-92	-	-	-
193-217	-	-	-
'193-217'	1	1	2
222-38	-	-	-
238-60	-	-	-
260-75	11	15 (incl.11 in hoard)	26
'260-75'	2	8 (1 in hoard)	10
275-86	-	-	-
286-96	-	2 (1 in hoard)	2
296-317	3	2	5
317-30	-	4	4
330-48	20	5	25
'330-48'	5	2	7
348-64	-	2	2
'348-64'	11	2	13
364-78	8	2	10
378-88	-	-	-
388-402	2	-	2
Illeg. C3/C4	7	4	11
Modern	4	-	4
Total	**76**	**50**	**126**

Although the total number of coins is perhaps barely great enough to merit graphical treatment or statistical analysis, the legible Roman coins (of which there are 97 exclusive of the purse hoard) may also be summarized in graphical format (see Figure 11).

Coins produced earlier than AD 260 are largely absent from the assemblage: the 1997 investigations yielded only two such coins, a *denarius* of Hadrian and a counterfeit Severan *denarius* (Moorhead 1998); the 2003-5 work added a very worn republican *denarius*, a corroded *as*, probably of Domitian, and a further counterfeit *denarius*, probably of Septimius Severus.

These coins hint at earlier, perhaps unexplored, levels on the site going back at least to the later second century. The republican coin is clearly residual, ie. a coin that survived to be deposited in an archaeological level considerably later than its mint-date. A small percentage of such early *denarii* certainly continued to circulate alongside later, fresher, coin (witness, for example, the small purse hoard recently found at Vindolanda containing both republican and Severan issues – Brickstock

2000) - and this very worn coin could well have been deposited as late as the later second century or even, at the outside, during the first quarter of the third century.

This coin is also of some numismatic interest: as well as being significantly worn, it is also badly corroded, preventing precise identification, but it appears to be a *denarius 'serratus'*, a serrated edge being a fashion/technique used intermittently until the mid-60s BC. Why this technique was employed (for some, but by no means all, the issues of the period) is still a matter of speculation: one possibility is that it may have been an experiment designed to prevent forgery, but it could equally well have been a simple decorative fashion (Crawford 1974). The surface of this particular coin had a considerable quantity of iron corrosion adhering to it, but additional cleaning (as well as comparative XRF analysis) confirmed the initial identification (made on the basis of an x-ray image).

Amongst the early finds, the Flavian *as* is badly corroded, precluding an assessment of circulation wear; and the state of wear of the Hadrianic coin was, unfortunately, not recorded. Thus these two coins cannot be taken as evidence for late-first or second-century occupation, since it is unclear whether they should be regarded as residual or whether they might have been deposited relatively soon after passing into circulation.

The two counterfeit *denarii* almost certainly belong to the reign of Septimius Severus (AD 193-211) or to the following decades. There is still debate over the production date of such counterfeits. They could have been produced at any time after their prototypes (which range in date from Severus to Maximinus, AD 193-238) went into circulation, but the predominant view is perhaps still that of Boon (1988, 124-26; see also Brickstock (2002, 8), ie. that they were largely produced in the decade following the reintroduction of the 'antoninianus' (the double *denarius*) in AD 238. In any case they are unlikely to have remained in circulation much beyond the middle of the third century. They therefore provide some evidence of coin activity during the first half of the century.

Coins of the later third century are perhaps marginally under-represented relative to the fourth century, but probably not significantly so given the small sample size: this comment relates both to the coins of AD 260-75 (normally very common, and reasonably well-represented here) and to those of the period of Carausius and Allectus (AD 286-96) Coins of this date are absent from the 2003-5 assemblage; and limited to one or perhaps two coins in 1997. With respect to the 1997 assemblage Moorhead (1998, 27), discusses a scattered hoard of 13 coins. All date to AD 260-75 with the exception of a coin of the first decade of Diocletian (284-305). It is possible, as suggested, that this represents a *legitimist* hoard, i.e. one lacking coins of the usurpers Carausius and Allectus; alternatively, it is perhaps more likely that the Diocletianic coin is a stray, to be regarded as a separate site find rather than part of the hoard.

From that period onwards, the shape of the coin histogram indicates a fairly 'normal' distribution of finds for a Romano-British site. The five coins recovered from trenches two and three during 2003 paralleled the pattern of finds observed in 1997 in that the bulk of the finds fell with the date-range AD 260-340. The 2004 and 2005 seasons, however, in addition to yielding more coins from that period, also produced a significant quantity of later coins, in particular eleven FEL TEMP REPARATIO copies of the 350s; eight coins of the House of Valentinian (AD 364-78) and two Theodosian

issues (AD 388-402). As a result it is now clear that occupation of the site continued throughout the latter part of the fourth century and may well have extended into the fifth century.

4.3 Glass

Sarah Jennings

The vessel and window glass comes from the Roman and post-medieval periods only, and no medieval glass was identified.

In 2003 the evidently modern glass was treated as a bulk find, with only the Roman or potentially Roman glass given 'small find' numbers. In the two subsequent seasons all fragments, or groups of fragments, were given small find numbers. Occasionally the same number was given to more than one window pane or glass vessel, but this is rare. The comments below refer to all three seasons of excavation.

Fragments were recovered for at least thirty RB glass vessels, and probably for a further three vessels, but these fragments are so small and featureless and the contexts unstratified that their attribution has to remain uncertain. A small number of fragments have an identifiable form. These include pieces of a square bottle, 2 folded rim bowls, 2 wide mouth bowls in good quality colourless glass, and an unguentarium base. Most of the identifiable vessels date from the later 1st century through to the 3rd century AD.

Examples of both the two main methods of manufacturing window glass in the Roman period have been found on the site – cast and cylinder blown. There are 11 definite cast fragments and 3 probable cast pieces, and 50 fragments of cylinder blown glass representing a maximum of 29 different items.

The post-medieval glass assemblage comprises small fragments of fairly modern window glass and piece of modern bottles.

4.4 Pottery

J R Timby

The three years of archaeological work carried out at Groundwell Ridge has resulted in the recovery of *c* 7229 sherds of pottery, weighing 42.5 kg, largely dating to the Roman period but also accompanied by small quantities of Iron Age, Medieval and post-medieval material.

In general terms the assemblage was in very poor condition, reflected in the overall average sherd weight of just 6 g, exceptionally low for Roman material, which is generally well-fired and quite robust. This may be a consequence of shallow topsoil, or ongoing soil movements from the Roman period onwards redepositing and fragmenting material.

To date the assemblage has been recorded by sorting into broad fabric groups based on inclusions present, the frequency and grade of such inclusions and the firing colour. Known regional or traded wares have been coded following the system advocated for the National Roman reference collection (Tomber and Dore 1998). More local or presumed local wares have been grouped and coded in a similar manner. The sorted assemblage has been quantified by sherd count and weight for each recorded context. The resulting data has been entered on to an Excel spreadsheet. Table 3 summarises the main wares recovered from each year of work.

Dating has, in many cases, had to remain quite vague as many contexts produced unfeatured local wares or just single sherds, which could date to anytime after the earliest known production date.

Table 3: Summary of Roman pottery recovered by year

Year	Roman									Tot No	Tot Wt
	SAM	ImpFW	AMP	DORBB1	OXF	NF	ROBSH	OVW	OTHER		
2003	31	0	0	107	47	0	12	0	1012	1209	7753
2004	106	13	48	687	224	23	117	11	4018	5298	28391
2005	3	0	0	73	17	0	24	0	527	644	6406
TOT	***140***	***13***	***48***	***867***	***288***	***23***	***153***	***11***	***5557***	***7151***	***42550***

Key: SAM – samian; ImpFW – imported finewares; AMP – amphorae; DORBB1 – Dorset black burnished ware; OXF – Oxon products; NF – New Forest wares; ROBSH – late Roman shelly ware; OVW – Overwey ware

Prehistoric

Overall eleven sherds of prehistoric pottery have been recovered, four very small sherds in 2003, and a further seven in 2004. The fabrics are diverse and include flint-tempered, calcite, sparse grog and oolitic limestone. The only featured sherd is a beaded rim jar suggesting a later Iron Age-early Roman date for this piece although many of the other sherds could be earlier. Most appear to be redeposited.

Roman

Roman pottery dominates the assemblage with a total 7151 sherds. This comprises a small quantity of imported fineware and amphora, a slightly greater proportion of regional imports, and a large quantity of local wares, which effectively account for 78% of the Roman assemblage by sherd count. The pottery ranges in date from the 2nd to 4th century with a greater emphasis towards the later Roman period.

Continental imports mainly comprise samian, accompanied by a small quantity of imported colour-coated wares from the Argonne, the Moselle, Central Gaul and Cologne. Samian wares account for 2% by sherd count of the total Roman assemblage and are predominantly plain wares. A total 48 sherds of amphora have been recorded, largely from the Dressel 20 olive oil container from Southern Spain but with a few Gallic wine amphora and a single example of a fish sauce amphora from Cadiz (Camulodunum 186).

The main regional import is Dorset black burnished ware which accounts for 12% overall by sherd count and includes forms typical of the 2nd-4th century. Products from the Oxfordshire industry are also well represented with white ware mortaria, colour coated tablewares and mortaria and white-slipped mortaria. Overall these account for 4% of the total assemblage. The other three main regional suppliers represented are all very typical of the 4th century, and include colour-coated wares from the New Forest, Overwey white ware from Tilford, Surrey and from the last quarter of the 4th century, Midlands shelly ware. The bulk of the local assemblage comprises wares from the various Wiltshire industries including North Wiltshire, Savernake ware and South-west white slipped wares.

Medieval / post-medieval

Some 67 sherds of medieval and later pottery were noted as present in the assemblage. The medieval wares are largely local types typical of the later 12-14th century.

4.5 Ceramic Building Material

Kayt Brown

A total of 6970 fragments of ceramic building material, weighing 561.412kg was recovered by hand during the excavations of 2003 and 2004 at Groundwell Ridge and retained for analysis. A further 46 boxes of ceramic building material were recovered during the 2005 excavation.

The 2003 assemblage was in a poor condition with a mean piece weight of just 22g. The complete assemblage was fully recorded, quantified by type and by fabric, the thickness of all tiles was measured where possible and any surface markings were noted. The collection was dominated by unidentifiable fragments with one or no surfaces and plain flat tiles that could not be identified to type. Roofing material was represented by *tegula* and *imbrices.* Box-flue tiles formed the smallest component of the 2003 assemblage. The poor condition and the high degree of fragmentation limit the information available from this material.

The 2004 assemblage was recovered from Trench 6, with a substantial proportion of the material originating from the topsoil (53% by fragment count, 26% by weight). Of the stratified material context 5081(accumulation/dump in room 2), produced the largest group of material and this, along with 5082 (demolition layer), were fully recorded in order to offer a clear picture of the assemblage. For the remainder of the assemblage quantification was by count, weight and type with surface markings also being noted. The material from 5081 and 5082 was dominated by both box-flue tile fragments and unidentified, plain flat fragments. *Tegula* and *imbrices* were also recorded but it was not possible to reconstruct any complete widths or lengths. Fragmentation of the box-flue precluded any study of the keying patterns. The complete depth of only two tiles (non-keyed) could be reconstructed, both 95mm. The lower part of a hollow voussoir was also identified. Seven possible *tesserae* were recorded. A breakdown of the tile types from the topsoil shows similar proportions of types to the fully recorded material and the remainder of the 2004 assemblage again reflects the proportions already observed. In addition one hexagonal tile was

identified as were ten fragments of an unknown tile type. Five of these consisted of a combed flat tile, with a 'flange' projecting at 90o from one edge. An additional five flanges were identified, detached from the main body of the tile. This tile form appears to have been made for a specific purpose and the tiles are standardised in terms of fabric and size.

The 2005 material has yet to be assessed, but following a brief scan would appear to reflect the 2004 assemblage in terms of fabrics and proportions of tile types, with all the tile types represented. A single context, 50019 (from Room 2b), accounts for a substantial proportion of this assemblage. At least two complete and a number of partial *bessales* were observed, measuring 180mm square, 30-35mm thick. A number of complete widths and lengths of box-flue were also noted and may offer scope for looking at keying patterns. Very large fragments measuring at least 330mm long and 50mm thick may be from *sesquipedalis*. The assessment of the 2005 material will follow the format used in 2004 and only context 50019 will be fully recorded. A basic quantification will be provided for the remainder of the assemblage, which survives in variable condition.

4.6 Mortar

Bob Hill

Mortar was recovered from 67 contexts (23 standard boxes) over the two seasons, with the 2005 season providing the bulk (38 contexts, 22 boxes). Most comprised 'bulk' loose material from infill deposits, particularly collapse deposits 10019 (7) and 10035 (3). A programme of mortar sampling from certain key contexts was also undertaken in order, it was hoped, to provide evidence for sequence or separate phases of construction work. An assessment of the potential of the mortar to answer such questions has been carried out.

Most of the mortar was of a white to very pale brown colour (*Munsell* 10YR 8/2 – 8/3) except where it was burned or had otherwise come into contact with heat. It all contained aggregate which was mainly crushed brick as well as pieces of stone varying from tiny fragments up to quite sizeable lumps. The larger pieces of mortar varied in thickness up to 70mm. Some pieces had flat surfaces representing where it was used as the bedding for tile or *opus signinum* and possibly for the finer plaster render used for walls and ceilings.

4.7 Technological material

David Dungworth

The 2003-2005 excavations produced just over 1.7kg of slags and other miscellaneous materials

The material is listed is summarised in Table 4 below:

Table 4

Description	Quantity

smithing hearth bottom	227.48g
non-diagnostic ironworking slag	895.95g
blast furnace slag	31.85g
fuel ash slag	56.55g
Clinker	77.21g
partially burnt coal	195.51g
Coal	22.51g
fired clay	206.49g
Pumice	22.03g

Iron smithing is indicated by the presence of smithing hearth bottoms. The total quantity of ironworking slag recovered from all three seasons is small and represents perhaps a single smith working for a few weeks.

The blast furnace slag almost certainly does not relate to any ironworking activities on site as there is such a small amount and it is unstratified or from topsoil contexts.

The remaining material is not indicative of any particular technological process. Much of this material (clinker, coal, fired clay, etc) could be generated in a domestic context. In addition, much of this material is unstratified or from topsoil contexts.

4.8 Vertebrate remains

Andy Hammon

The 2003-2005 excavations at Groundwell Ridge have produced a small hand-collected animal bone assemblage totalling 10 boxes.

The assemblage is mainly comprised of the major domesticates: cattle, sheep/goat and pig. All parts of the skeleton appear to be represented. Occasional equid, deer and bird (principally domestic fowl) specimens were also noted.

A small amount of additional material from sample heavy residues was not scanned. It mainly consists of small unidentifiable fragments from the large domesticates (David Earle Robinson *pers comm*).

Taphonomic factors should not impact adversely on the information potential of the assemblage: surface preservation and fragmentation was generally moderate.

Overall, the material appears to represent a typical hand-collected Romano-British assemblage.

4.9 Molluscan remains

Greg Campbell

There are 2 standard boxes (in three different boxes) containing molluscs retrieved by hand, and from sieved samples from the 2004 and 2005. A small amount of material was also obtained from the 2003 excavations.

The land snails from the excavations are largely what would be expected from the present day habitat and include large numbers of *Pomatias elegans*, and other snails such as *Cepea* sp. Some samples from well-sealed deposits may provide limited information on the Roman environment but the potential is likely to be very low.

Marine shell appears to be confined two trenches 1, 2 and 6. There is a fairly large assemblage of oyster shell (*Ostrea edulis*), with small numbers of mussels *(Mytilus edulis*) and saddle oyster (*Anomiida*e) also present. Single specimens of common whelk (*Bucciunum unjdatum*) and cockle (*Acanthocardia* sp.) were also noted. The assemblage has the potential to provide information on the diet of the inhabitants; on the range of shellfish consumed and the sources from which shell fish was procured. Full assessment of this material is recommended.

4.10 Flint

Phil Harding
(updated with 2005 material by Nicola Hembrey)

A total of 109 pieces of worked flint were recovered from the 2003-5 excavations. The largest groups came from Trenches 6 (38 pieces) and 2 (29 pieces). Most of the material is of uncertain provenance and likely to be redeposited. The surface condition of the material includes both patinated and unpatinated pieces. It is uncertain whether any material may have been introduced with imported Chalk, possibly during marling.

There are a small number of pieces, principally from Trench 2, including a blade core, associated blades and a rejuvenation tablet, that may be of Mesolithic date. In addition, the flint from Trenches 6 and 7 includes eight blades and two blade cores. This material is patinated and is sufficiently technologically and typologically similar to suggest that it derives from the same industry. A small assemblage of Mesolithic material was collected from the line of the Swindon ring road in the 1970s during preliminary field survey work in advance of the construction of the road. The additional spread of flint artefacts provides a low-density spread of material that confirms the use of the ridge by Mesolithic hunting bands and early farming communities.

A large, well-made end scraper made on a flake was found in Trench 3, which appears to have been broken and re-used.

The remaining material, which consists predominantly of undiagnostic flakes, is undated; however some pieces have abraded striking platforms, a technique that is more frequently associated with Mesolithic and Neolithic than with later industries. There were no retouched tools.

4.11 Conservation of the Finds

Karla Graham and Vanessa Fell

Where appropriate, metalwork was x-rayed including 889 ferrous, 72 copper alloy and 1 silver small find numbers. Soil blocks containing nails and potential writing tablets were also x-rayed.

The coins from 2003 and 2004 were x-rayed and cleaned according to MAP2 standards to clarify surface detail prior to examination by the numismatist.

Number of x-radiographs (2003-2005) – 60

5. Preliminary Discussion

The scatter of lithic material suggests, not surprisingly, earlier prehistoric use of the area and the Iron Age pottery has similar implications for the late pre-Roman Iron Age, although in neither case have contemporary features been identified.

When the site was purchased in 1999 it was, given the evidence available, suggested as a possible Roman-period rural religious complex with associated service buildings occupying the southern part of the site. While the structure found in Philips and Walters Trench E may well represent a *nymphaeum*, as suggested at the time, the balance of the evidence suggests that the site may be a moderately prosperous villa with two major domestic buildings and the possible *nymphaeum* perhaps representing a religious focus for the family or villa community. The single votive from the site, the lead Isis plaque, is perhaps most likely to represent a personal position reflecting the religious adherence of the owner rather than supporting the interpretation of the site as being primarily religious.

The Philips and Walters work, combined with the ground-penetrating radar survey have demonstrated that the western building (Building 1) was aisled in form and *c* 15m north-south by 9.75m east-west and in common with many aisled villa buildings was sub-divided during its later phases of use. Building 2 appears as a substantial structure perhaps 20m north-south and of an uncertain east-west dimension, although the geophysical work suggests that it may be up to 20m. Although the bulk of the structure investigated in 2004-5 consisted of elements of the bath suite, it is clear that the building had a complex history and was not entirely given over to bathing. Room 1 (the cellar) in itself represents a complex sequence and provides hints of a phase with a colonnaded entrance. Although the survival of the structure away from the 1996 road stripping is remarkable, it is clear that in the absence of hypocausted sub-floors, or further cellars, the roadworks could have removed complete rooms and therefore it is not clear if we are dealing with building that incorporated wings set around a courtyard, or a building that extended as a roofed structure across the full width. The presence of the eastern furnace serving the bath suite suggest the possibility that the area east of it might have open providing access to bring in flue etc, but is far from conclusive. Ceramic evidence suggests Roman period occupation extended into the late fourth century.

The surviving topography demonstrates that an artificial terrace was created to provide a level space for the construction of Buildings 1 and 2. What is currently not clear is the location of the ancillary buildings that would represent the bulk of the farm complex. Slight earthworks exist in the low laying area to the west of the main

buildings, albeit with some probable ‘enhancements’ related to modern construction activities, and may represent one possibility. An alternative would be a separate farm compound outside the possible boundary wall observed in 1996 that would have been lost under the Ash Brake housing development.

The level terrace constructed for Buildings 1 and 2 appears to have been the reason that the builders of the timber structure that overlay Building 2. Their determination to build on the location, demonstrated by the digging of post pits through mortared masonry walls and the floors of the cold plunge bath, is clear. Equally their apparent demolition of parts of the building in the area of the cold plunge, after the creation of post-pit 5119, further underpins the point.

That the presence of the spring line on the ridge was an important element of the site from at least the Roman period is apparent through its utilisation for the water supply for the bath suite and the construction of the post-medieval culvert, presumably to channel water to a point somewhere south-west of the site. The later attempts to provide field drainage, and to maintain the flow of the culvert at the southern end of Trench 5, suggest that in more recent years the springs may have been more of a problem than asset.

6. Future Work

The project is currently going through an Assessment in line with MAP2 (Appendix 4 (English Heritage 1991) - amended in light of the adoption of MoRPHE (English Heritage 2006) with a view to developing an Updated Project Design for an analytical programme. Although this it is still to be determined it is likely that the major outcome from the analytical phase will be a journal article. It is hoped that the analytical phase will start in late 2006.

APPENDIX 1.

Radiocarbon dates from a possible buried land surface (context 1318) in Trench 3

Derek Hamilton

The samples were processed at the Oxford Radiocarbon Accelerator Unit, and prepared using methods outlined in Hedges *et al* (1989). The samples were measured by procedures described in Bronk Ramsey *et al* (2004). The laboratory maintains a continual programme of quality assurance procedures (Scott 2003). These tests indicate that measurements presented here should be free of any significant laboratory offsets and that precision quoted is realistic.

The results in Table 5 are quoted according to the international standard known as the Trondheim convention (Stuiver and Kra 1986), and are conventional radiocarbon ages (Stuiver and Polach 1977). The calibrated date ranges were calculated using the IntCal04 dataset (Reimer *et al* 2004) and the computer program OxCal v3.10 (Bronk Ramsey 1995; 1998; 2001), by the maximum intercept method (Stuiver and Reimer 1986). They are quoted in the form recommended by Mook (1986), with the end points rounded outwards to 10 years. The calibrated distributions shown in Figure 12 were calculated by the probability method (Stuiver and Reimer 1993), again using IntCal04 and OxCal v3.10.

Table 5: Radiocarbon results from Groundwell Ridge.

Laboratory Number	Sample	Material	$\delta^{13}C$ (‰)	Radiocarbon Date (BP)	Calibrated Date (95% confidence)
OxA-13476	GWR 3641 [4020]	charcoal, *Corylus avellana*	-24.4	1848 ± 27	cal AD 80 – 240
OxA-13609	GWR 3641 [4014]	charcoal, *Fraxinus excelsior*	-26.0	3315 ± 55	1740 – 1450 cal BC

As these two samples were spot sampled from the same context, the results were tested for statistical consistency by the method outlined in Ward and Wilson (1978). These two samples are, however, not statistically consistent (T'=635.6, v=1, T'(5%)=3.8; Ward and Wilson 1978), which suggests that either intrusive or residual material was dated from this context.

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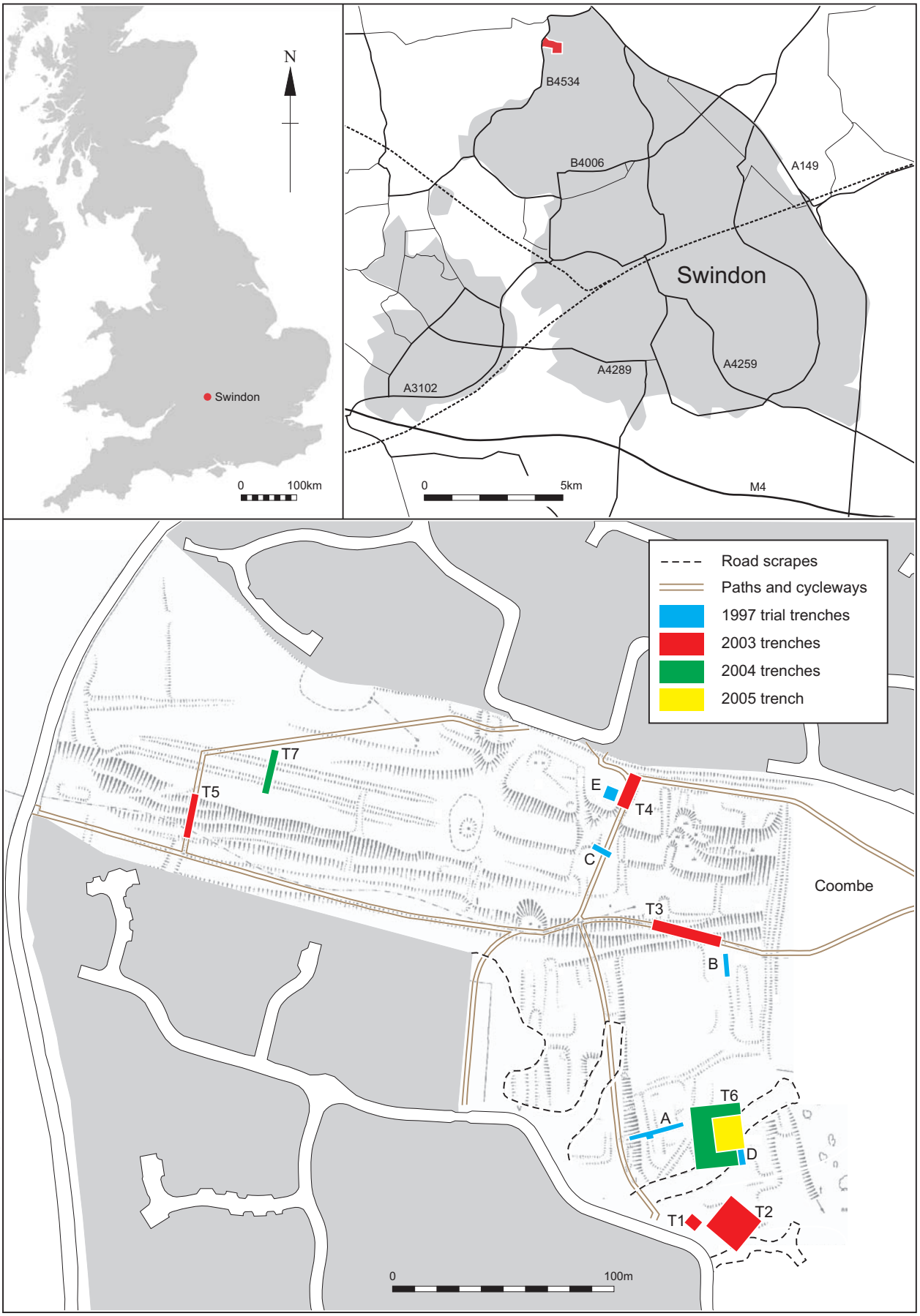

Figure 1. Groundwell Ridge, Swindon. Site location showing trench locations, road scrapes and proposed paths and cycleways.

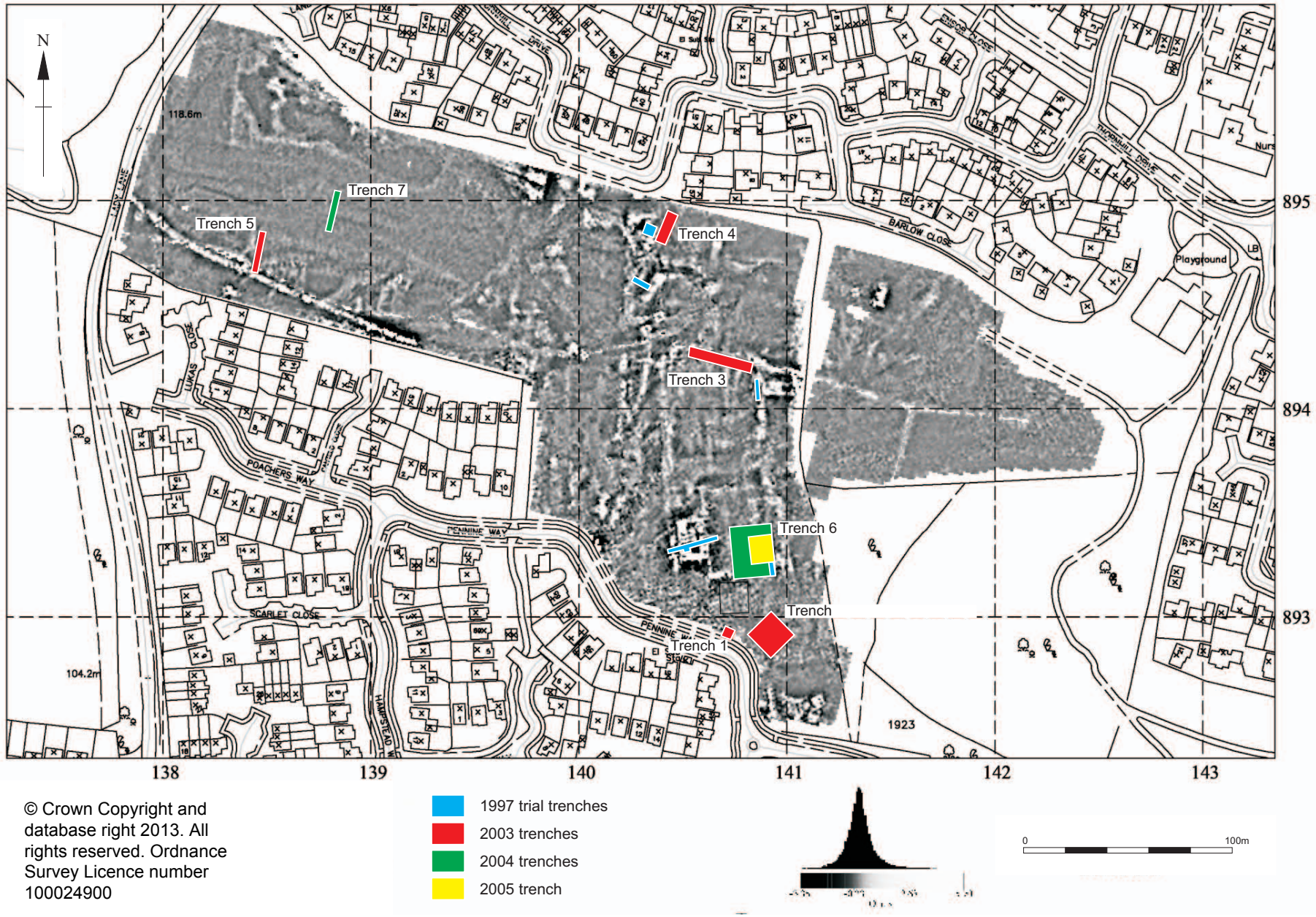

Figure 2. Groundwell Ridge, Swindon. Trench locations shown against results of magnetometer survey

Figure 3. (left) Recording of Trench 3 south-facing section showing water-logged deposits. View north-west. Photo © English Heritage

Figure 4. (below) Trench 5 post-medieval culvert showing junction of main north-south culvert (upper element) with branch joining from west and cap-stone removed. View near vertical/north-east. Photo © English Heritage

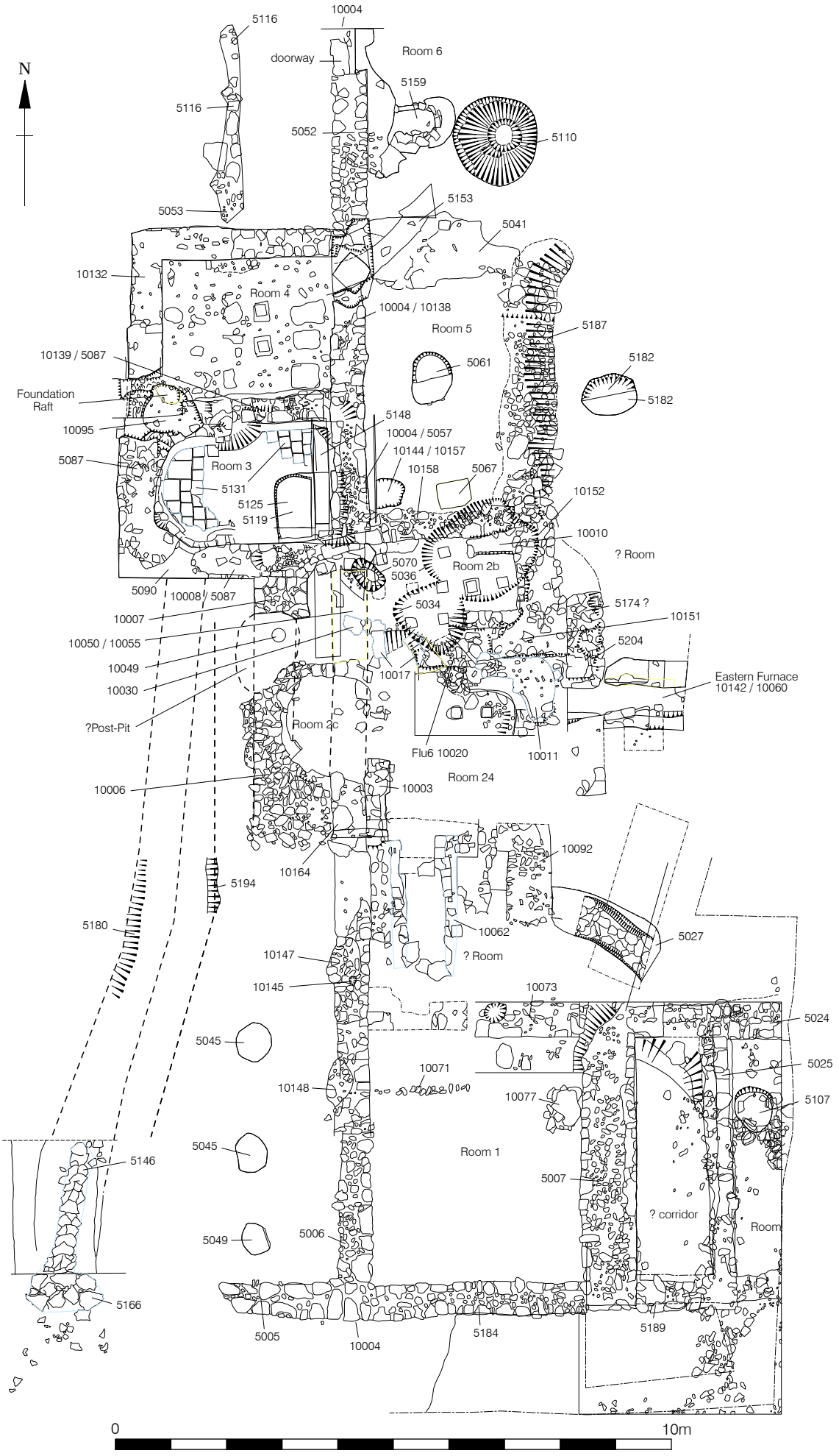

Figure 5. Trench 6 - overall plan of Building 2

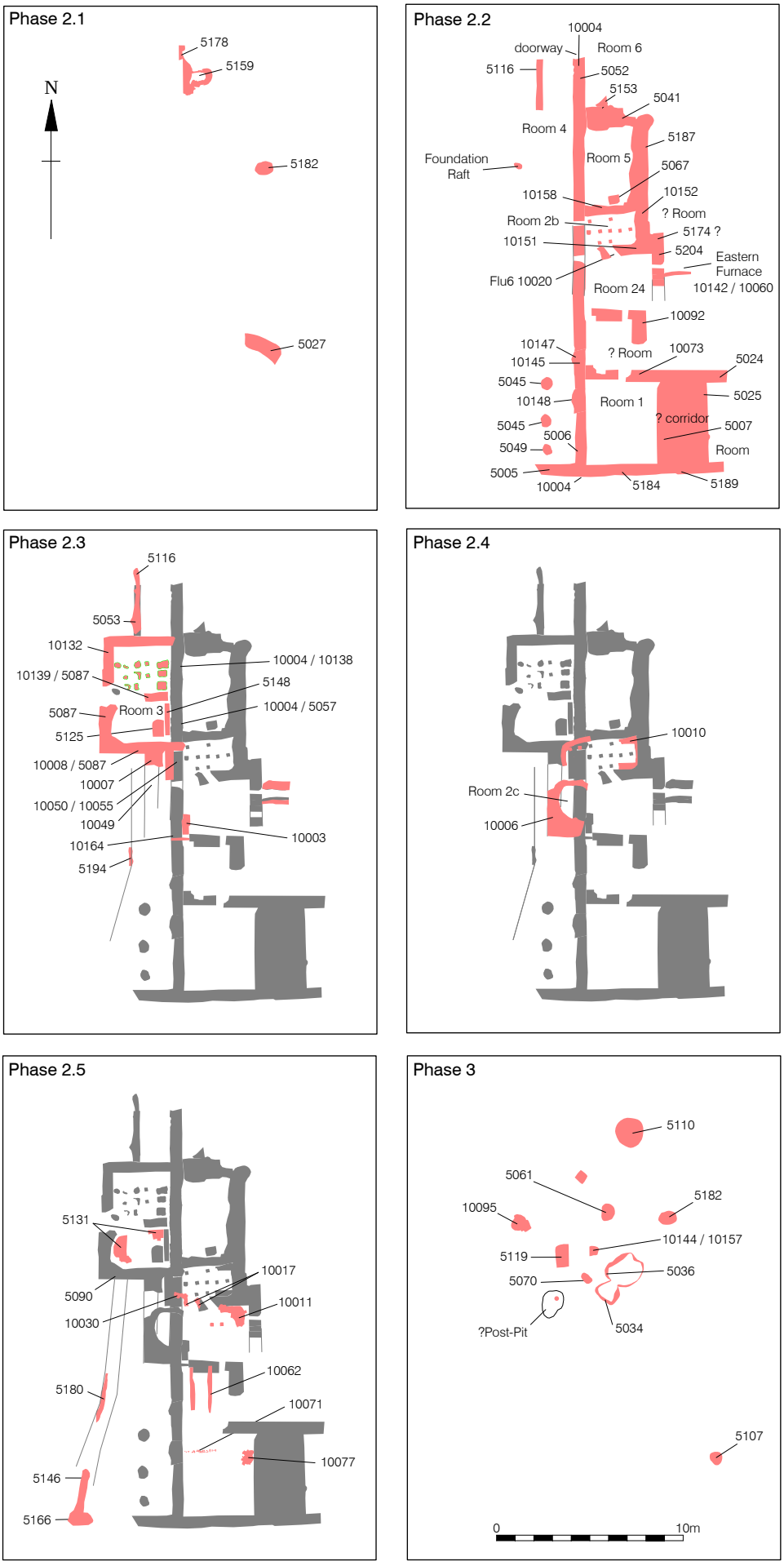

Figure 6. Trench 6 - structural phase plans

Figure 7. Trench 6 Building 2 hot range of bath suite with caldarium (hot room Room 2a) central, tepidarium (warm room Room 2b) with pilae to right, early furnace in for ground and replacement furnace on right edge of frame. The cold range is to the left. View west. Photo © English Heritage

Figure 8. Trench 6 Building 2 cold plunge bath (Room 3) showing both phases of opus signinum and tile floor and post-Roman post-pit (5119). View west. Photo © English Heritage

Figure 9. Post-Roman post pit 5110 cut into area of Room 6 of Building 2
Photo © English Heritage

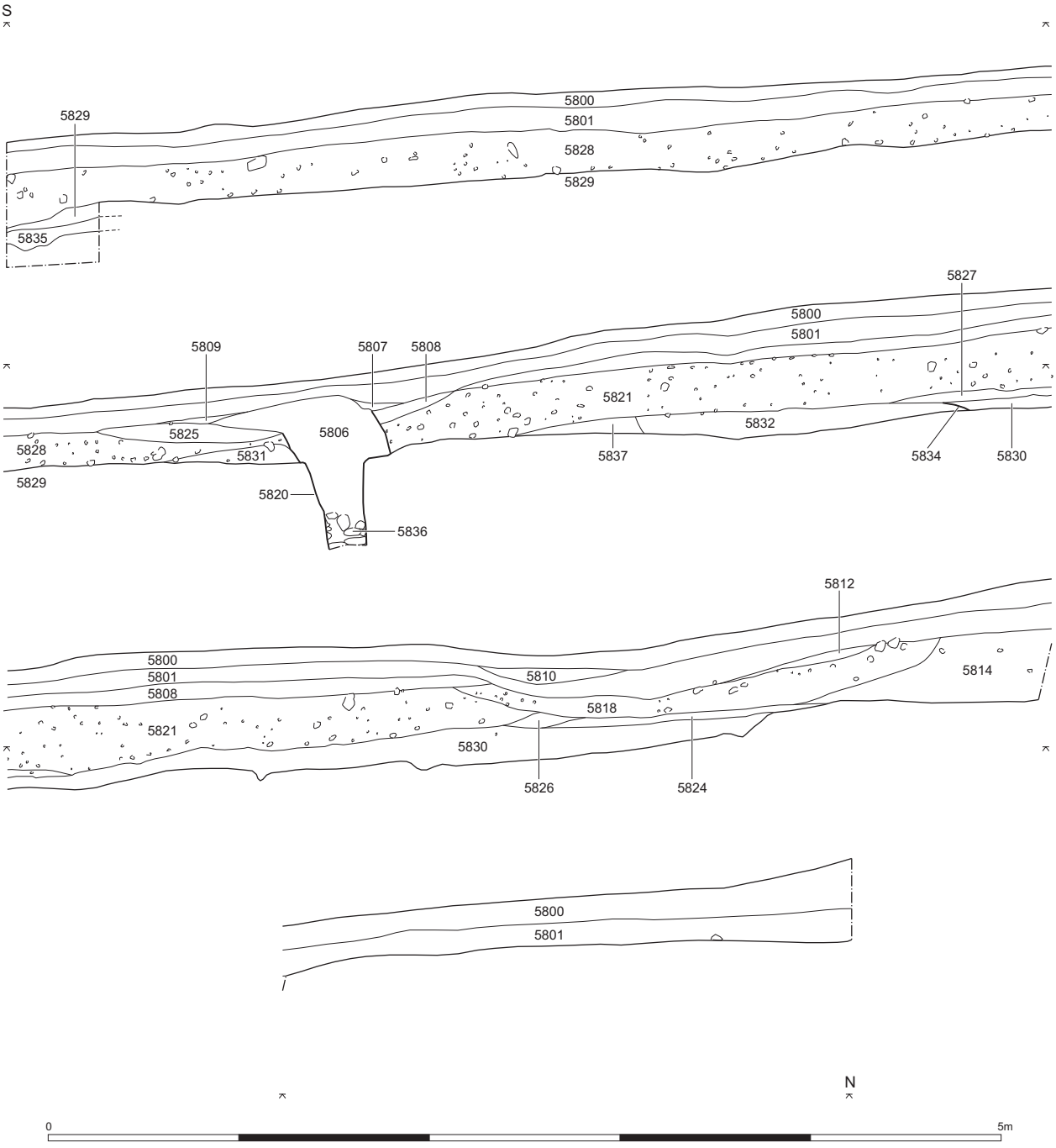

Figure 10. Trench 7 - east-facing section across the road

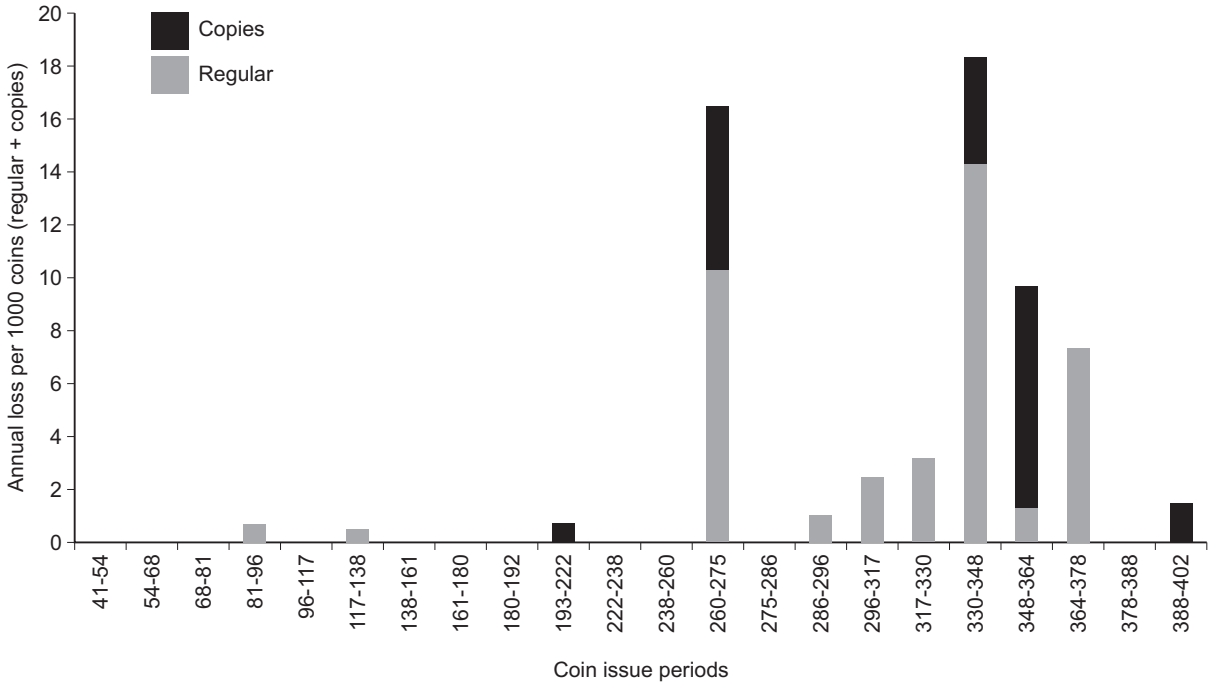

Figure 11. Annual loss of coins. The histogram represents (No. of coins/No. of years in period) x (1000/site total). For the methodology used, see Brickstock (2004).

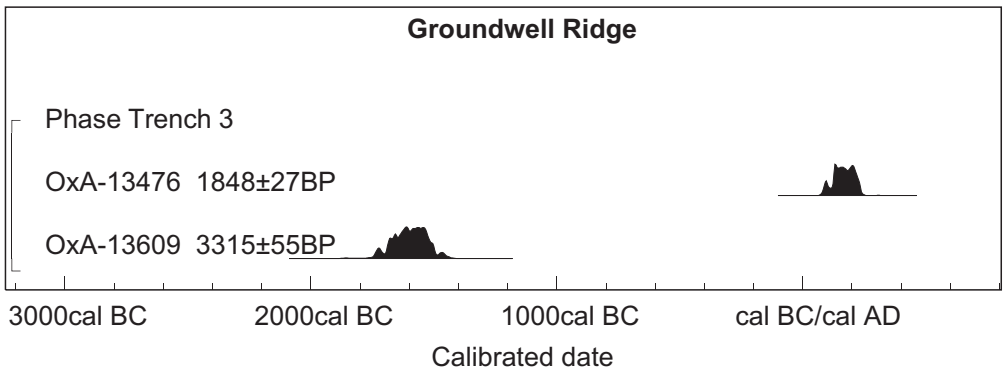

Figure 12. Graphical representation of the calibrated radiocarbon dates from Trench 3 using the probability method (Stuiver and Reimer 1993).