An Archaeological Assessment of Excavations Undertaken at the Lufton Roman Villa, Brympton, Somerset, 2016-2017

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Contents

Foreword

This post-excavation assessment was substantially complete in 2018 and it is with heartfelt apologies that the authors recognise the delay. One of the authors has been seriously ill. The other author has been seriously over-committed in parts of his personal and professional life. In 2020 and 2021 the global pandemic also caused difficulties. Together these factors have led to this unavoidable delay.

Introduction

This report details the working methods and results of archaeological excavations carried out on the Roman villa at Lufton, north of the village of Lufton in Brympton Parish, Yeovil, Somerset. The National Grid Reference for the site is ST 51563 17824 (centre of Trench A) Two seasons of excavations were undertaken between 2016 and 2017 by Newcastle University and the South Somerset Archaeological Research Group (Somerset HER 36582). Trench A was excavated between the 1st August and the 26th August 2016 and Trench B between 24th July and 4th August 2017.

The villa was first identified in the aftermath of the Second World War and excavated by Leonard Hayward, FSA and pupils from Yeovil Grammar School between 1946-1952 and 1960-1963 (Hayward 1952 and 1972). It is a Scheduled Ancient Monument No. 1006159 (Somerset HER 53634).

The site is bounded on all sides by arable land. Currently the location of most of the villa and the scheduled area are set aside and unploughed, although the scheduled area has been ploughed in the recent past.

The site was subjected to a geophysical (magnetometry and resistivity) survey in 2009 (Caldwell 2009). This identified a roughly rectangular high resistance anomaly in the same location as a very noisy magnetic anomaly (Fig 1). These were considered to represent the location of the known structure but it was noted that it was difficult to precisely correlate the recorded plan of the building with the geophysics.

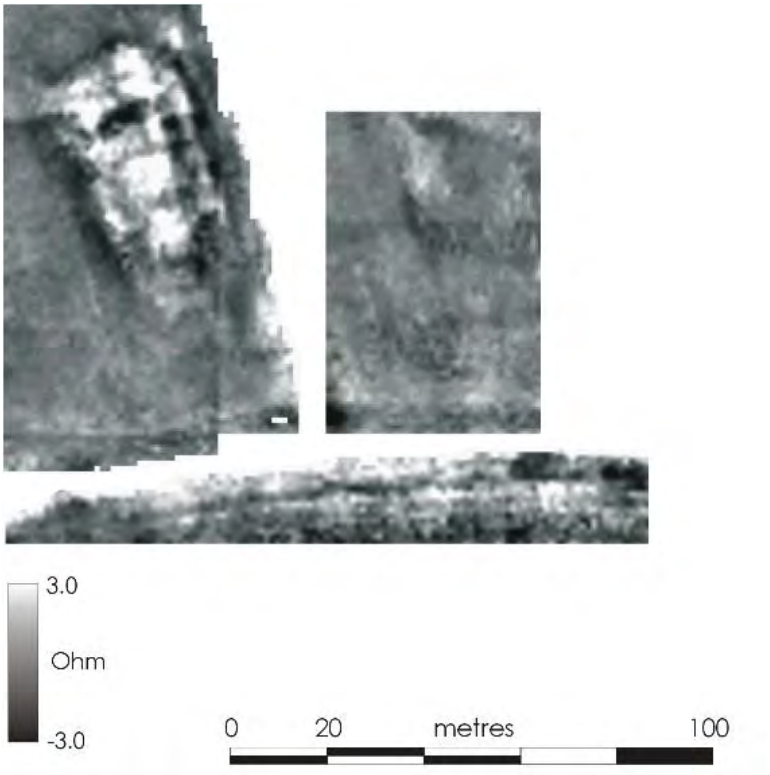

Figure 1 Resistivity results, showing the villa as a high resistance anomaly. It proved difficult correlating this geophysical plot with the specifics of the groundplan of the villa (Caldwell 2009).

The excavations were carried out in accordance with a project design submitted to Historic England and the Scheduled Monuments Consent that was granted conditional on the project design (Gerrard and Agate 2015). Metal detecting of the excavated area was permitted under a Section 42 licence.

Two trenches were excavated. Trench A was 15m x 15m and Trench B was 7m x 4m with a 2m x 4m extension at its south-western corner. On both trenches the turf and ploughsoil were removed by a machine using a toothless excavator under archaeological supervision. The exception to this was the extension to Trench B, which was entirely dug by hand. Both trenches were backfilled by machine and reseeded.

In this report context numbers are indicated thus [100]; Small Finds are indicated thus <1> and Sample numbers thus {2}. In Trench A context numbers started at [100] and Small Find numbers at <1>. In Trench B context numbers began at [1000] and Small Find Numbers at <5000>.

Weather conditions during the course of the excavation. The 2016 excavation of Trench A took place in very dry and hot conditions. The lack of water caused some difficulties during the course of the excavations and this was mitigated by water from a bowser. Conditions for the 2017 excavation of Trench B were rather better.

The completed archive of finds, written, drawn and photographic records currently resides at Newcastle University. In due course it will be deposited with a suitable local repository under the Site Codes LUF16 and LUF17 with the Accession Number TTNCM 68/2015.

Geological Background

The site is located on a slight platform approximately one third of the way down a small valleyside sloping down to a small watercourse known as Balls Water. The solid geology is Early Jurrasic Dyrham Formation Siltstone and Sandstone (British Geological Survey 2012). The site is located at 51.22m AOD.

Archaeological and Historical Background (James Gerrard)

The Mesolithic

Evidence for Mesolithic activity is rather limited. Southern Somerset was exploited by Mesolithic groups as soon as conditions became conducive following the end of the last glaciation. Chance finds of lithics are indicative of populations living, moving through and exploiting the landscape (Webster 2007, 48-53).

The Neolithic

There is significant evidence for Neolithic activity in Somerset (Webster 2007, 63-72). Other than the monumental complexes typical of Exmoor, the Mendips and the Dorset Chalk there is substantial evidence from the Somerset Levels. At a local level the hilltops of both Ham Hill and Cadbury Castle have produced considerable evidence for Neolithic activity. The majority of the remaining evidence is restricted to chance finds of polished axes, other lithics

and the like. Previous work around Lufton has produced some flints that are likely to be of Neolithic date (Gerrard *et al*. 2016, 36).

The Bronze Age

Considerable Bronze Age remains have been discovered in Somerset and there is significant evidence for local activity. Ham Hill and Cadbury Castle feature as major foci and stray finds of metal work from the Yeovil area are worthy of note too. Burial evidence has been forthcoming from Stoford, Bunford Hollow and at other sites. The project investigated what was probably a domestic ring ditch of Bronze Age date in Unwin's Field approximately 350m to the south of the villa and other prehistoric features of potentially Bronze Age date exist in the field Hungerford immediately south of the villa (Gerrard and Agate 2013 and Gerrard *et al*. 2016).

The Iron Age

During the Iron Age Lufton sat within the environs of the major multivallate hillfort of Ham Hill. During the later Iron Age a large enclosure was constructed at Ilchester that has sometimes been described as an 'oppidum'. Another major Iron Age site has been recently excavated at Lyde Road on the north eastern edge of Yeovil. Analysis of the landscape around Cadbury Castle has demonstrated the intensity of Iron Age landscape division and activity. At Lufton geophysical survey demonstrates the fields to the south of the villa were divided by a network of trackways and enclosures. Where these features have been excavated they have proven to be silting up during the Late Iron Age or early Roman period (Gerrard and Agate 2013, Gerrard and Agate 2015, Gerrard *et al.* 2016). A significant small find of Iron Age date is alleged to have come from these fields and was reported to the PAS in 2007 (SOM-4C93D6). It is now in the Somerset County Museum TTNCM 93/2009.

The Roman Period

Historically, the Roman period begins in Somerset with the conquest of the region by *Legio II Augusta* in the years following the Claudian invasion of AD43 (Leach 2001). Archaeologically the appearance of Rome is heralded by evidence for military activity at Ham Hill, Cadbury Castle and Ilchester, where a fort appears to have been constructed. The Fosse Way, running from Exeter to Lincoln and skirting the Somerset Levels, runs approximately three kilometres to the north west of the site. To the east the Ilchester-Dorchester Roman road passes approximately two kilometres from the site. Both of these roads were major arterial routes during the Roman period. Local networks of tracks are more difficult to reconstruct but the footpath known as 'Kissmedown Lane' runs west of the site from Montacute to Ilchester and may be another Roman route (Leach 1994).

The Roman fort at llchester occupied a major road junction and seems to have given way to the development of a small Romano-British urban centre known as *Lindinis* (Leach 1982 and 1994). In the late Roman period the town was walled and probably became a *civitas* capital. Occupation within the walls and extensive suburban activity and extramural cemeteries suggest that it was the major market and service centre locally for much of the Roman period.

Lufton occupies a site within the rural hinterland of Ilchester. Evidence for Romano-British activity in the region is abundant. Villa buildings are known at Ilchester Mead (Hayward 1981), East and West Coker (Moore 1862as well as over the county border at Bradford Abbas in Dorset. Further afield, villas exist at Dinnington (SOM HER 53887), Seavington St Mary (Graham and Mills 1995) and Lopen (Brunning 2001). Another villa or roadside settlement is known from Westlands (Radford 1928) and a potential villa is known at Stanchester. Non-villa settlements are rather less well known. Major sites have been

excavated far to the north around Somerton at Bradley Hill (Leech 1981) and Catsgore (Leech 1982) but the evidence from the immediate area of Yeovil is restricted to scatters of pottery that probably indicate settlement sites. The rural settlement excavated at Yeovilton (Lovell 2006) is a useful exemplar of the kind of non-villa rural settlement locally.

Archaeological evidence from the immediate environs of the villa is dominated by the landscape research undertaken by the project between 2012 and 2015 (Gerrard and Agate 2013, Gerrard and Agate 2015, Gerrard *et al*. 2016) and some more recent commercial work. To the south the network of Iron Age enclosures seem to have fallen largely from use in the early Roman period. The limited number of late Roman features were ditched elements of landscape divisions. At the northern end of the 2015 trench in Hungerford the fills of the late Roman ditches were almost sterile blue-grey clays, associated with some limited palynological evidence for a pastoral landscape (Gerrard *et al*. 2016, 43-45). Given the proximity of these features to the villa the absence of evidence for occupation and activity in their fills is remarkable.

To the east of the villa an evaluation in 2005 by Oxford Archaeology (2005) identified a number of late Roman field boundaries and a single inhumation burial (Oxford Archaeology 2005, 8). This individual is likely to represent one of the late Roman inhabitants of this landscape.

Early Medieval

In common with much of western Britain the evidence for early medieval activity is limited (Gerrard 2013). In the fifth and sixth centuries Cadbury Castle to the east was refortified (Alcock 1995) and there is some evidence that Ham Hill may also have been occupied at this time (Burrow 1981; Leivers *et al*. 2007). Evidence for activity within the walls of Ilchester during the immediately post-Roman centuries is equivocal (Leach 1982 and 1994). The 'Anglo-Saxon' takeover of the region in the seventh century remains largely opaque but by the late Saxon period both Yeovil, Ilchester and Montacute were centres of some note and the majority of the present day villages were in existence by the time of the Domesday survey (Costen 2011). The closest 'site' that might be an early medieval centre exists towards the northern end of Odcombe where a series of fields are named 'England', which is thought to relate to the 'Inland' of early medieval estate centres (Gerrard *et al*. 2013). There is some evidence that such placenames are also associated with Roman settlement activity in Southern Somerset.

Medieval and Later

The current settlement pattern was fixed by the eleventh century and medieval developments saw the growth of Yeovil as a market centre that eventually eclipsed Ilchester. A small deserted medieval settlement, possibly called 'Barrow', was evaluated by the project in 2014 800m to the south west of the villa (Gerrard and Agate 2017). Lufton became a small village centre with its own minor parish church, but the villa site may have been within the Parish of Thorne until the post-medieval period (Barker 1986, 33). Certainly the position of the villa was 'liminal' being close to the parish boundaries between Lufton, Thorne, Odcombe and Montacute.

The landscape we see today is largely the product of post-medieval Inclosure and modern intensive agriculture. For much of the Medieval period the fields the villa occupied were too heavy and wet for ploughing and it was not until the post-Second World War period that they were ploughed for arable agriculture. This led to the discovery of the villa and its subsequent excavation by Hayward (1952 and 1972).

Hayward's Excavations 1946-1952 and 1960-1963 (James Gerrard)

Leonard Hayward FSA and his wife Nora Hayward directed excavations at the Lufton Roman Villa over the course of nine years (Fig 2). The first campaign was between 1946 and 1952, the second campaign between 1960 and 1963 (Hayward 1952 and 1972). Most of the labour for these excavations was drawn from Yeovil Grammar School and Yeovil Girls School. James Gerrard and his parents knew both Leonard and Nora Hayward and James is at pains to emphasise that although the current report may offer different interpretations and, at times, criticisms of the previous excavations no disrespect is intended. More than half a century separates what shall be termed 'Hayward's excavations' and the current Newcastle University project. Methodologies, techniques and understandings have advanced and it is only right that interpretations will have changed too.

Figure 2 Leonard Hayward excavating the fish mosaic in Room 14 ©CHAC

Lufton, like many Roman sites, suffers from a constant repetition of its groundplan in a wide-range of secondary literature. This has given the erroneous view that the site was more or less dug as an open area by Hayward. Unfortunately, this is not true. Hayward excavated the site over many years as a series of small trenches. He published no trench plan, the closest to one is a composite plan of the southern end of the building (Hayward 1972, Fig 3). An archive drawing in the Community Heritage Access Centre (CHAC) in Yeovil provides a glimpse of the complexity of Hayward's excavation (Fig 3 and Fig 4).

The story of Hayward's excavations seems to have been one of increasing technical competency. The earliest interventions were carried out at the north end of the building with very limited stratigraphic control. The emphasis here appears to have been on exposing walls and mosaics. As the excavations progressed a greater emphasis on stratigraphic control (as evidence by the use of trenches with standing baulks and sections) is evident. Nevertheless, the complexity of individual stratigraphic sequences seems to have largely

eluded Hayward and his team and there is a sense that the excavations were largely driven by preconceived notions of the layout and chronology of the structure.

Given the length of time that has passed since Hayward's interventions it proved frustratingly difficult to correlate observable features in the ground with Hayward's trenches (see Phase G). We have attempted to reconcile our observations in the field and post-excavation analysis with what we know of Hayward's trench location with varying degrees of success. Take Room 6a (stratigraphic account, below) as an example. It should have been partially excavated by Hayward, but contained *in situ* deposits in areas that ought to have been cleared by Hayward's team. Elsewhere we failed to identify Hayward's Trench XIV, which ought to have been within our trench but could not be discerned (see Phase G below).

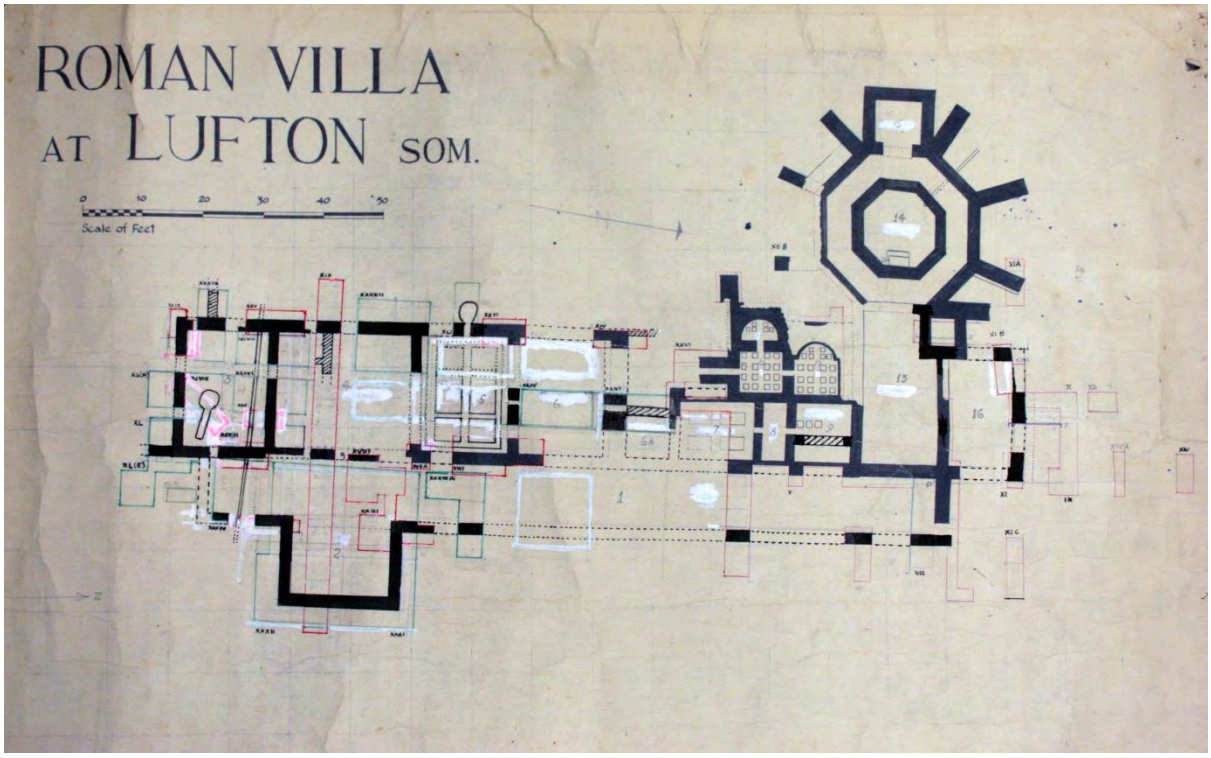

Figure 3 An archive drawing from the CHAC in Yeovil, showing Hayward's trench locations. The accuracy of this document is unknown and its palimpsest nature suggests that it was a working plan, subject to additions, alterations and amendments. The red ink appears to relate to the 1946-1952 season, the green to the 1960-1963 campaign. © Hayward Archive, Community Heritage Access Centre.

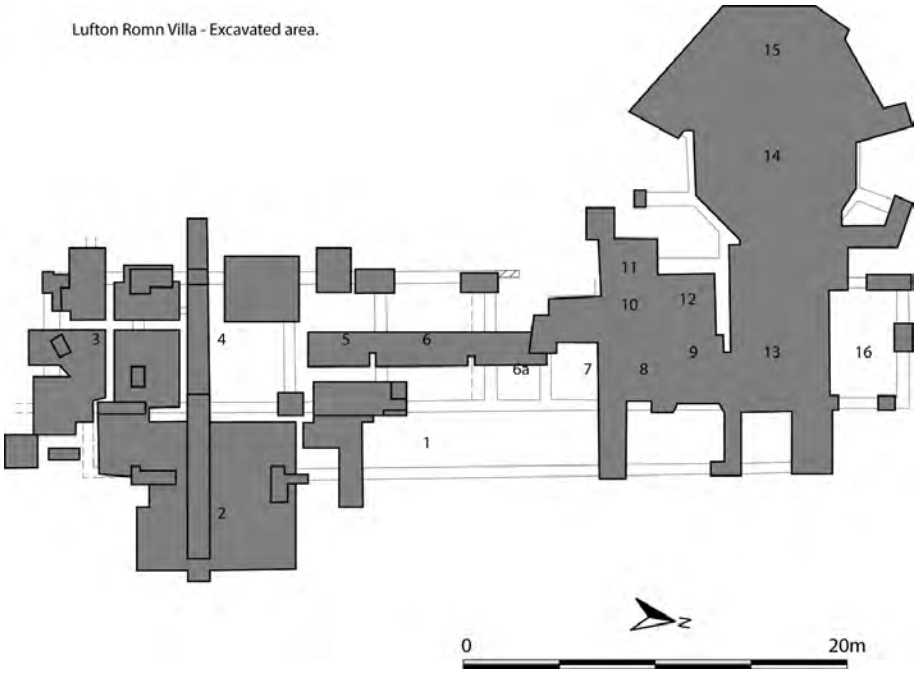

Figure 4 The grey areas are the previously excavated portions of the villa (redrawn from Hayward 1952; 1972 by A. Agate). Numbers refer to Hayward's room numbers.

Stratigraphic Discussion (James Gerrard)

Locating the Trench

The project design stated that our strategy for the investigation of the building was to re-examine the southern part of the structure (Gerrard and Agate 2015). Specifically we intended to evaluate the survival of the mosaics within Room 4 and to excavate some deposits apparently left undisturbed by Hayward in that room and also Room 2. Achieving the level of precision necessary to locate Trench A over these rooms was always going to be difficult. Hayward (1972, 59 and Fig 1) provided a six figure grid reference and a location map which marked the location of the 45m long building with a single cross. The geophysical surveys carried out in 2009 showed a large rectangular high resistance anomaly and a noisy magnetic area but was not able to convincingly plot the diagnostic elements of the structure (*ie* the position of the octagonal bath house). There was also the additional challenge that the southern end of the structure – as claimed by Hayward (1972, Fig 3) – had walls that potentially indicated that it was not in fact *the end* of the building. Thus our strategy in 2016 was essentially akin to archaeological pin the tail on the donkey. Admittedly we had opted for a large trench (Trench A) and we hoped to quickly determine where we were within Hayward's plan based on identifying wall lines.

Early in the 2016 season we were convinced that we had achieved our goal. We had identified walls that we thought were the rear wall of the villa, a wall that appeared to be the corridor walls, walls that seemed to match the location or Room 2 and even internal features, such as a stone-lined channel, burnt deposits along with a seemingly gutted and almost archaeologically sterile room, where the partially excavated Room 4 ought to be located. As the season progressed structural elements that did not conform to the expected plan began to be revealed. However, these were all in areas that appeared (according to our

interpretation) to have been poorly or not explored by Hayward. At the end of the season a number of interim reports carried this interpretation of the 2016 discoveries (Gerrard and Agate 2016a; Salvatore 2017, 400-402).

In the event this understanding of the site was erroneous but it took until 2017 for us to prove this. In 2016 we had actually placed the trench over the middle of Hayward's structure. Trench B, designed to investigate the bath house (Gerrard and Agate 2016b), was laid out following the erroneous assumption and was thus excavated too far north. This was proven when we found the bath house in a small extension of Trench B to the South.

The site archive for Trench A (LUF16) uses our erroneous understanding of the layout of the building in its language to describe the excavated features. We have not altered the primary archive but a room concordance is offered in Table 1 and in the digitised context register.

LUF16 Room number (used in site archive)	**Actual room number**
1	5 / 6
2	6
3	Not excavated by Hayward
4	New room
5	Between 6 and 10
Tessellated room	6a
Hypocaust	10 and 11

Table 1 Concordance of room numbers between those assumed in the 2016 field season and the actual numbers as proven by the 2017 season.

Phase A: Natural

The undisturbed natural subsoil - a firm dark grey clay with yellowy orange mottling [1020] – was exposed in the far north of Trench B and also in a small sondage north of buttress [1004]. Its character was consistent with that of the natural encountered in previous seasons at HUN15, UNW13 and UNW12.

Phase B: Pre-Building

Pre-villa deposits were encountered in parts of Trenches A and B. In Trench A a firm orangey-brown clayey silt [150] was encountered at 50.83m AOD at the bottom of the sequence in the 'new room' and running under its walls. This was essentially a disturbed deposit akin to natural and, with the exception of a few small chips of CBM and occasional charcoal and mortar flecks, contained no finds. Presumably this deposit was the ground surface on which the room was constructed.

In Trench B a firm grey sandy silty clay [1019] that ran under buttress [1004]. This deposit contained moderate well-sorted mortar flecks and some occasional well rounded fragments of Yeovil Stone. This deposit was only exposed in plan and also in the small sondage north of [1004]. It is difficult to characterise its form or function. It may simply represent a disturbed ground surface associated with the construction of the villa.

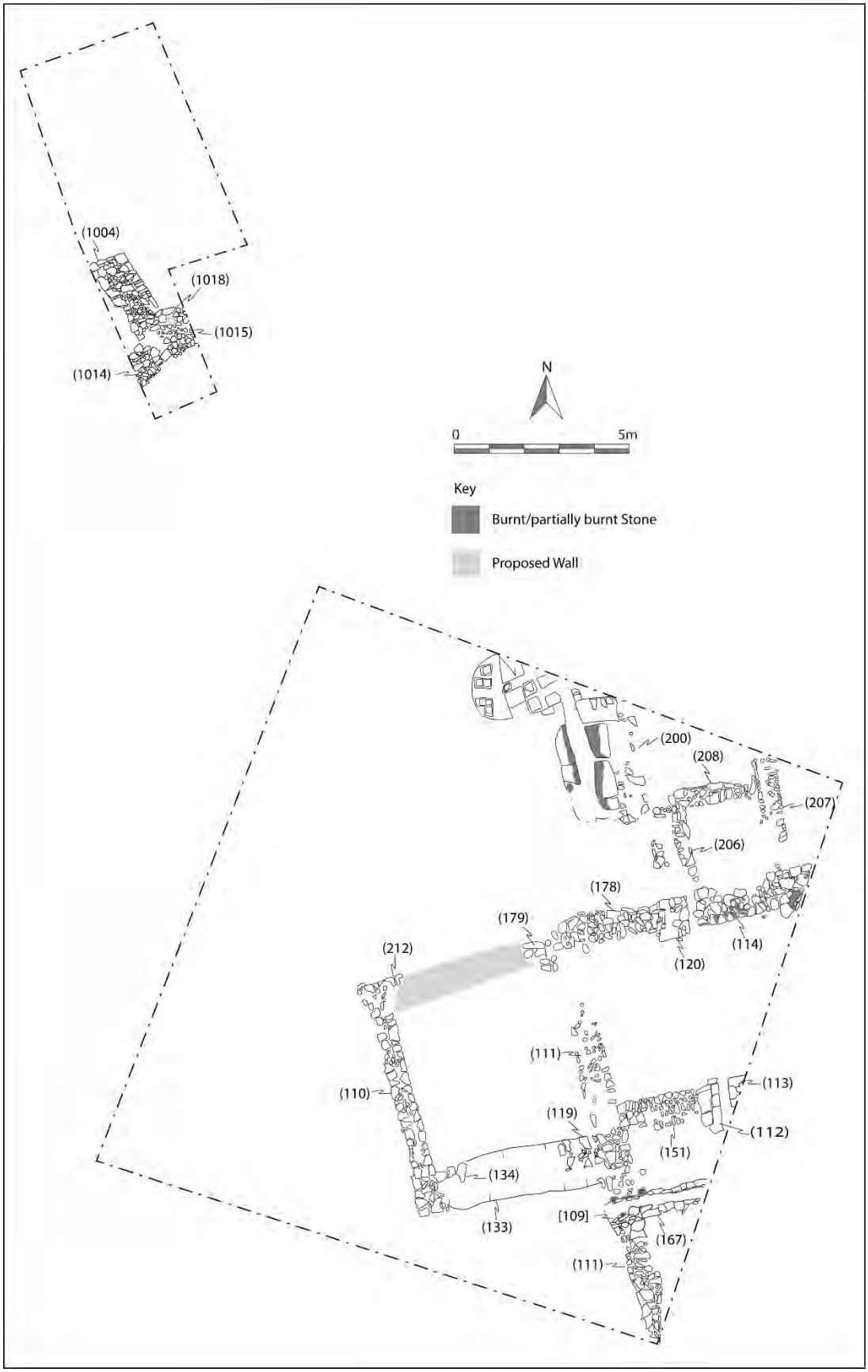

Figure 5 The excavated walls

Phase C: The construction of the villa and a description of its structural elements

It has proven extremely difficult to reconcile Hayward's vision of a one or two phase building with the sequence encountered during the current excavation. The extensive nature of the previous excavations and the more limited nature of the current interventions means that constructing a narrative of how the building developed over time is very problematic. Changes in construction and use are discernible but how they relate to one another is more difficult to ascertain. In order to present a clear narrative which does not seek to mislead or misdirect we have decided to provide an account of the structural elements encountered during the excavation. We do not believe that the building was laid out in one phase and, as will become clear, sub-phases of construction activity can be demonstrated. What we cannot do at present is demonstrate the chronological relationship, whether absolute or relative, between sequences in different rooms. Thus activity descriptions of the sequences in individual rooms are presented as the following Phase.

The building that Hayward described is often portrayed as a single range with an *exedra* (Room 2) at the southern end and a bath suite at the northern end. Access between these ends of the building was provided by a corridor (Room 1) or veranda that ran continuously along the front of the structure. Trench A encompasses the middle of this 'range' and the transition from southern part of the structure to its northern half characterised by heated rooms and baths (Fig 5 and 6). This is an important point and one to which we shall return.

Figure 6 Trench A looking north. Wall [110] to the west and [111] to the east.

Figure 7 The northern half of wall [111] (looking north. The butt joint of wall [151] is visible in the foreground and wall [178] in the background.

The main and seemingly primary elements of the building are walls [111] and [178] and [114], which form the western and northern walls of Rooms 5 and 6 (Figs 7 and 8). Wall [111] survived three courses high (with the first course offset) in the south but was reduced to a wall head north of Room 5. It was constructed of roughly hewn Yeovil Stone and Hamstone laid in regular courses and survived for a length of at least 6.83m. At its northern end wall [178] joined [111] at a right angle (the precise relationship of these walls could not be determined but it seems likely they were of one build). This wall, also constructed of roughly hewn Yeovil Stone and Hamstone seemingly laid in regular courses, was exposed largely as a wall head, although where it formed the southern side of the hypocaust channel for Room 6 [120], it was four courses high. The quality of the stone work in [120] was of somewhat better quality. North of the hypocaust channel the wall continued as [114]. What struck the authors and Hayward (1972, 65) was the thickness (1.2m) of this wall.

Figure 8 Wall [114] looking east. Note the width.

Hayward (1972, 65) offers no explanation for the great thickness of this wall. What seems clear from the current excavations is that [114/178] must be the northern end of the southern group of rooms. The villa was laid out across a considerable slope and measurements on the modern ground surface reveal an observable fall in slope as follows: 51.23m AOD (South West Corner Trench A); 50.61m AOD (North West Corner Trench A) and 49.64m AOD (North West Corner Trench B). Terracing, as Hayward observed in another context (Hayward 1952, 96), must have been necessary for the building to function. This falls into even sharper focus given that we can demonstrate that the difference in height between the base of the hypocaust flue for Rooms 10 and 11 and the wall head [178] (at the same approximate physical level as the early deposits in Room 6) is 86cm. The difference between the base of the hypocaust flue and the stratigraphically high oven feature [142] in Room 6 is 101cm.

It is our contention that the villa was essentially two blocks. A southern group of rooms terminating at wall [178] / [114]. This wall not only served as the end of the range but also functioned as a revetment wall marking the terracing. To the north of this wall a northern group of rooms was constructed on a lower terrace. What we cannot at present determine is if this southern group of rooms was an earlier structure on to which the northern group was added, or if the two groups of room were planned together as one build. There are good reasons to have a degree of physical separation between domestic rooms and a bath block. Fire is one, but flooding, given the running water required for the baths, might be an

equal risk. There is a tentative hint, perhaps, that everything to the north of wall [114] was an addition. Wall [207] (the rear wall of Room 1 and eastern wall of Room 6a) was not bonded into [114] and is offset from what appears to be the return of [114] to the south. Of course, wall [207] may not be part of the primary, or even secondary build of the northern group of heated rooms so its testimony is currently equivocal.

Approximately half way along the length of wall [111] exposed in the trench a cross wall [157] was identified (Fig 9). This wall, constructed of roughly hewn Yeovil Stone, was of herringbone construction. It terminated in neatly laid and dressed Hamstone blocks [112] that formed with similarly constructed [113] either side of a hypocaust channel that ran through this dividing wall between Rooms 5 and 6. What is clear is that [157] was not bonded with [111] and this partition wall must have been inserted after the exterior walls were erected.

Figure 9 Wall [157] and hypocaust channel with Hamstone lining [112] and [113]. The southern end of wall [111] is also visible.

To the north of [114] and [178] were the complex of structures described by Hayward as Rooms 6a, 7, 10, 11 and also part of Room 1. The relationships between these walls are not clear cut.

Rooms 10 and 11 were apparently contemporary builds and described as Structure [170] (Fig 10). This was exposed by removing the fills of Hayward's trench (Phase G) and the surrounding walls appeared to be sealed by horizontal stratigraphy running south. The apse [183] was separated from Room 10 by walls [185] and [187] and the southern wall of Room 10 was numbered as [184]. These were well-constructed from regularly coursed and worked Yeovil Stone and lined with a pink mortar/concrete on the interior. On this surface the *pilae* stacks were constructed from CBM. The apse had two L-shaped supports made from three *pilae* each ([194] to [196] in the south, [197] to [199] in the north). The flue running through the crosswall [185/187] between Rooms 10 and 11 also contained a *pilae* stack [193]. Additional *pilae* or the bases of *pilae* stacks were set upon the floor of Room 10 ([189]-[191]).

Figure 10 Rooms 10 and 11 [Structure 170] looking west.

To the south or Room 10 and joined to it by a flue that ran through [184] was the external furnace / flue [182). This was made from very large blocks of Hamstone, which were separated by a channel that narrowed towards it base. The edges of the Hamstone blocks were fire-reddened by heat (Fig 11).

Figure 11 The hypocaust flue for Rooms 10 and 11 (visible in the background). The fire reddened blocks of hamstone.

To the east of flue [182] was wall [200]. This was only partially exposed and appeared to be of well-mortared roughly hewn and regularly coursed Yeovil Stone. It should form the west wall of Room 7.

Hayward saw a wall to the east as dividing Room 7 from Room 1). This wall [207], which we partially exposed and defined, was of roughly hewn and regularly coursed Yeovil Stone but much narrower than [200] and of less robust construction. To complicate matters the excavator of the deposits in Room 7 halted excavation on top of a context, which he considered to run under [207]. If this were so (and the observation is not certain), then [207] may not be the eastern wall of Room 7 (although an earlier wall on a similar line could be hypothesised). Abutting wall [207] was wall [208]. This ran east-west from [207] to abut [200]. It was also of a similar nature and of one build with wall [209]. Together these walls defined Room 6a (Structure 206) and the southern limit of Room 7 (Fig 12). They were very narrow (0.25m wide) and are clearly secondary to [207] and [114]. Within the space defined by these walls a plain grey tessellated pavement [203], made up of lias cubes approximately 1in (2.5cm) square, was discovered (Fig 12). Interestingly, this pavement, rather than being sunken in the middle as Hayward asserted (1972, 65), sloped from a height of 50.97m AOD in the east to 50.75m AOD in the west. The western end was partially disturbed but other than this the pavement was in a good state of preservation. The gradient of the slope is probably best explained by hypothesising that the pavement has slumped into either partially collapsed hypocaust or subsided into a major cut feature.

Figure 12 Room 6a looking south, showing the tessellated pavement [203]

The relationship between Structures [170] and [206] is not straightforward and its elucidation is not helped by the incomplete nature of our excavation in this area. We consider it likely that Structure [170] and wall [200] may represent an early phase of construction. Wall [207] might then represent a subsequent phase of construction and Structure [206] a further phase that built Room 6a. What this may mean for Room 7 is difficult to determine, as the consideration of the 'internal' deposits (below) makes clear.

We should also note the challenges that the hypocausts of the structure present. Hayward (1972, Fig 2) would have us believe that Rooms 5 and 6 were intended to be fired from a relatively small stokehole to the west of Room 5. Whether the hypocaust in Room 6 was ever completed remains a moot point (certainly we found no evidence of it having ever existed) but the channel leading through [114]/[120]/[178] surely implies something to the north of that wall in a phase predating Room 6a (for wall [209] blocked the line of the channel). If Rooms 7 and 9 were also heated - as Hayward (1952, 102-104) would have us believe) where were they fired from (no connection with the flue for Rooms 10 and 11 is shown on Hayward's plan)? There is a possibility that in an early phase the area occupied by Room 6a could have been utilised for a stokehole arrangement designed serve both Room 6 and Rooms 7 and 9. These issues, of significant importance to understanding the history of the building unfortunately cannot be answered without further work.

The 'new room', which we identified to the west of Rooms 5 and 6, was primarily defined by wall [110] (Figs 13-15). This was two courses, built on top of an offset basal course, of roughly hewn regularly coursed Yeovil Stone with some Hamstone. It ran for 6.72m parallel to wall [111]. At the southern end of [110] a wall line was identified running between [110] and [111] and forming the southern end of the wall. This line of this southern wall survived primarily as a robber trench [133]. However, at the western end some coursed Yeovil Stone blocks [134] were identified and observed to be keyed into [110] and thus of one build with it. At the eastern end of the robber trench further Yeovil Stone blocks marked the terminus of this wall [119], abutting [111] and thus later than it (Fig 14). The northern end of the room was closed by another seemingly heavily robbed wall. This was marked at its western end by a single stone [212] and at its eastern end by Yeovil Stone wall remnant [179]. Together these appear to mark a wall line that closed the northern end of this room. To the north of wall [110] was a thick deposit of smashed lias rooftiles [121] that would overlie any continuation northwards of [110]. Presumably these rooftiles are evidence for the materials that roofed the 'new room'.

Figure 13 Trench A looking north: Wall [110] and remnants of wall [134], which are keyed into [110].

Figure 14 Robber cut [133] looking west. In the foreground the relationship between wall [110] and [119] can be observed and in the background wall [110] and remnant [134] are visible.

Figure 15 The 'new room' looking south. At the right handside (western) of the image and in the foreground the end of wall [110] can be seen and its return eastwards as [212]. At the left handside (eastern) wall remnant [179] is visible.

Room 14

Room 14, the octagonal bath house, was fully excavated by Hayward and surviving images demonstrate the extent of his interventions. The interior of the building was completely cleared and it would appear that the extent of the secondary buttresses was ascertained by exposing the wall heads and, in places, their height.

The excavations exposed elements of the partially robbed walling of the octagonal bath house. These were contexts [1014] and [1015], which would have joined at the north-west angle of the octagon. Both walls were formed of roughly hewn Yeovil Stone laid in a herring bone formation and set in a creamy yellow mortar. To the south of this wall (on the interior) was a deposit of hard light pink mortar [1013], which served as a bedding for the fish mosaic [1009].

Externally a wall 2.2m long and 0.4m wide roughly hewn Yeovil Stone blocks arranged in a random coursed / squared to course arrangement and mortared together with a yellowy cream mortar (1004). This wall is undoubtedly the north-west buttress identified by Hayward. This buttress and the others were argued by Hayward to be secondary features. Little evidence of this survived (the relevant area was heavily robbed) but a small stretch of badly truncated Yeovil Stone walling [1016] may have been added to the exterior of the octagon as an additional support at the same time the buttress was built. A similar arrangement was discerned by Hayward (1952, 99).

Phase D: Occupation of the villa: a room by room stratigraphic account

Room 1

Room 1 was identified by Hayward as a corridor running along the front of the main range of the villa. The only part of Room 1 investigated in the present excavations was a small area in the north east corner of Trench A, east of Room 6a. No deposits associated with the occupation of this room were excavated.

Room 5

Room 5 was partially excavated by Hayward (1972, 64-65). His trenches mainly explored the room's eastern and central areas, which were beyond our limits of excavation (See Phase G, below). On the western side of the room Hayward explored a hypocaust flue that connected to an external stokehole (Hayward 1972, 64-65).

In Trench A only a small part of Room 5 was exposed in the south-east corner and to the east of wall [111] and this area was barely investigated by the present excavation. The main discovery was a length of channel that ran through the wall to the limit of excavation. The sides were made of neatly coursed hamstone blocks [167], which contrasts with Hayward's (1972, 65) description of this hypocaust having herringbone masonry (Fig 16). The full extent to the west was not determined beyond the line of wall [111], but it was noted that some upright hamstone pieces were burnt red on their edges in this area. This presumably relates to Hayward's stokehole found in his Trench XLI. The fill of the channel was a firm to soft grey clay with occasional charcoal flecks, moderate creamy yellow mortar flecks and fragments along with occasional pieces of stone and CBM [176]. The general impression was of a very mixed and disturbed deposit. Hayward's (1972, Fig 3) plan would seem to suggest that he had not excavated this part of the hypocaust. If this was the case then it might suggest that the channel had been infilled with [176].

Figure 16 Hypocaust channel in Room 5. Note the burning on the stones at the western end, towards the location of Hayward's stokehole.

Room 6

Wall [111], roughly hewn and regularly coursed Yeovil Stone, formed the west wall of Room 6. The north wall was unusually wide (0.8m) and divided by a hypocaust channel into western [178] and eastern [114] lengths, which were both constructed of roughly hewn and regularly coursed Yeovil Stone. The southern wall was also divided by a hypocaust channel into a western [151] length (of roughly hewn Yeovil Stone arranged in herringbone courses) and an eastern [113] lengths (roughly hewn, regularly coursed Yeovil Stone). The eastern wall was beyond the limit of excavation.

Within Room 6 the earliest deposit was a firm greyish brown silty clay [201]. Micromorphology (Shillito, this report) suggests this deposit is 'largely composed of lime' and contains fungi associated with building decay. The lime and CBM components might indicate that this was a bedding layer for a pavement or a floor surface. Finds include an irregular radiate dated AD270-290 <190> and two fragments of late Roman BB1.

This layer was cut by [186], a small oval pit, truncated at one end and containing a firm reddish brown silty clay fill [177] that contained no finds. Another oval pit, or butt-end of a linear cut, was excavated just to the south of [186] as [205]. [205] cut [201] and was filled with a firm reddish brown silty clay and evidence of burning [204]. This fill contained two sherds of undiagnostic pottery. Interpretation of this feature is difficult but we suggest that it represents the robbed out flue of some kind of feature – possibly a grain drier.

To the north of [205] a series of thin, interleaving burnt deposits (Figs 17-19) containing charcoal sealed [177]. The earliest of these was firm reddish brown silty clay [177],

containing no finds, but overlain by a firm dark yellowish brown sandy clay [174]/[175] containing no finds and described in thin-section as 'a massive deposit consisting of… angular quartz grains embedded in a fine grained matrix' (Shillito, this report). Over this deposit was [171], a firm dark brownish grey silty clay. This was described in thin-section as a 'mixture of fine calcitic ash and abundant charcoal fragments' (Shillito, this report). This was sealed by [169] a small, thin deposit of yellowish brown mortar, possibly the remnants of a floor surface. Over this was a firm greyish brown silty clay [166], sealed by a firm reddish brown silty clay [164], which was below another firm reddish brown silty clay [159]. This deposit contained a coin of Allectus AD293-296 <186> and two small burnt sherds of BB1.

Both layer [159] and fill [204] were cut by [141], a butt-end of a linear cut running parallel with wall [151]. This feature appears to have been a construction cut for a length of burnt stonework [142]. This survived on the north side as a heavily burnt stones lining a flue and backed by unburnt stonework. The south side appeared to have been robbed or disturbed but a few burnt stones marked the other side of a flue channel. Within the flue was deposit [135], a soft dark greyish brown sandy silt with pinkish patches and charcoal inclusions. This fill contained 11 fresh sherds of BB1. A Type 25 bowl was present and two heavily burnt body sherds decorated with just diagonal burnished lines. This vessel is likely to be a Type 18 bowl of late fourth or early fifth century date (Gerrard, this volume). The northern side of the flue was overlain by a firm yellowish brown silty clay [140] containing four sherds of BB1.

The published description by Hayward (1972, 65) of the sequence in Room 6 is difficult to make sense of. He appears to have recognised the burnt deposits and a complex sequence of stratigraphic events. We shall eschew from attempting to reconcile our interpretations with his.

The channels in the north and south walls of the room would imply that it was originally designed to have a hypocaust. However, we have found no evidence that any such hypocaust existed. What is certain is that the construction of Room 6a blocked the hypocaust channel in the north wall. The earliest excavated deposits may have been, at least in part, a component of a floor that may or may not have originally included a tessellated pavement. The evidence from the micromorphology suggests that this room may have been derelict in some sense before the pit and possible flue were constructed. The burnt deposits may, therefore, be at least in part rakeout and redeposited ash from some activity involving heat. If the stratified coins are not residual then this should have occurred in the latter decades of the third century. The burning appears to have continued into the fourth century when the remnants of a stone-lined flue, perhaps one end of a grain drier or oven, appear to have been in use. This feature may have gone out of use at the end of the fourth or during the early fifth century, if the burnt BB1 sherds are from a Type 18 bowl. Unfortunately the archaeobotanical remains shed no light on what these activities may have been (O'Meara, this report).

Figure 17 Possible remnants of a stone-lined oven or graindrier flue [142]. Note the burning on southern edge of the northern side and the robbed/disturbed southern side of the feature.

Figure 18 Interleaving burnt deposits in Room 6 [164], [166], [171]

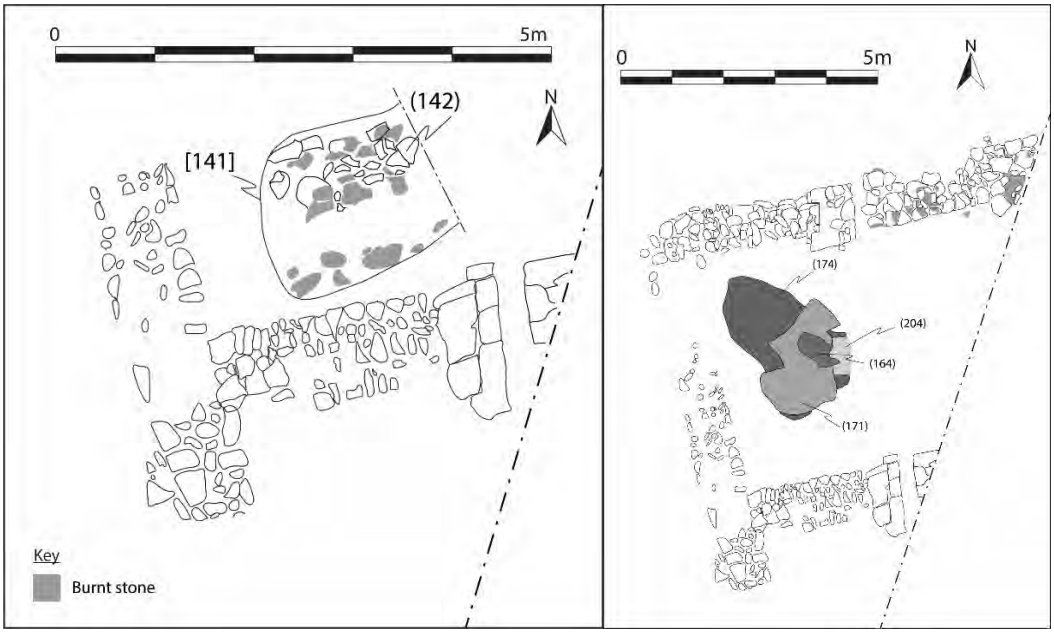

Figure 19 Grain drier in Room 6 (see Fig 17) (left) and schematic illustration of interleaving deposits in Room 6 (see Fig 18) (right)

Room 6a

Room 6a was partially excavated by Hayward (Figs 20-21). One of his plans shows the western half of this small square room excavated and covered by a plain grey tessellated pavement that had sunk in the middle (Hayward 1972, 65 and Fig 3).

Use

Overlying the pavement [203] was a thin black layer of firm sandy silty clay approximately 1cm thick [202]. This contained a number of intact oyster shells (Winder, this volume), two probably fourth- or fifth-century glass beads, an intact fourth-century bone hairpin <191> (Gerrard, this volume), some fish bone and bones from the neck of a chicken or chickens (Rielly, this volume) as well as some charred archaeobotanical remains (O'Meara, this volume). It is difficult to imagine that this deposit had been disturbed by Hayward and [202] it would appear to be an *in situ* 'occupation' deposit.

Figure 20 Working shot of deposit [202] under excavation showing oyster shells sitting on the pavement [203]. Bone hairpin <191> was found just to the right (south) of these oyster shells on the north side of wall [114].

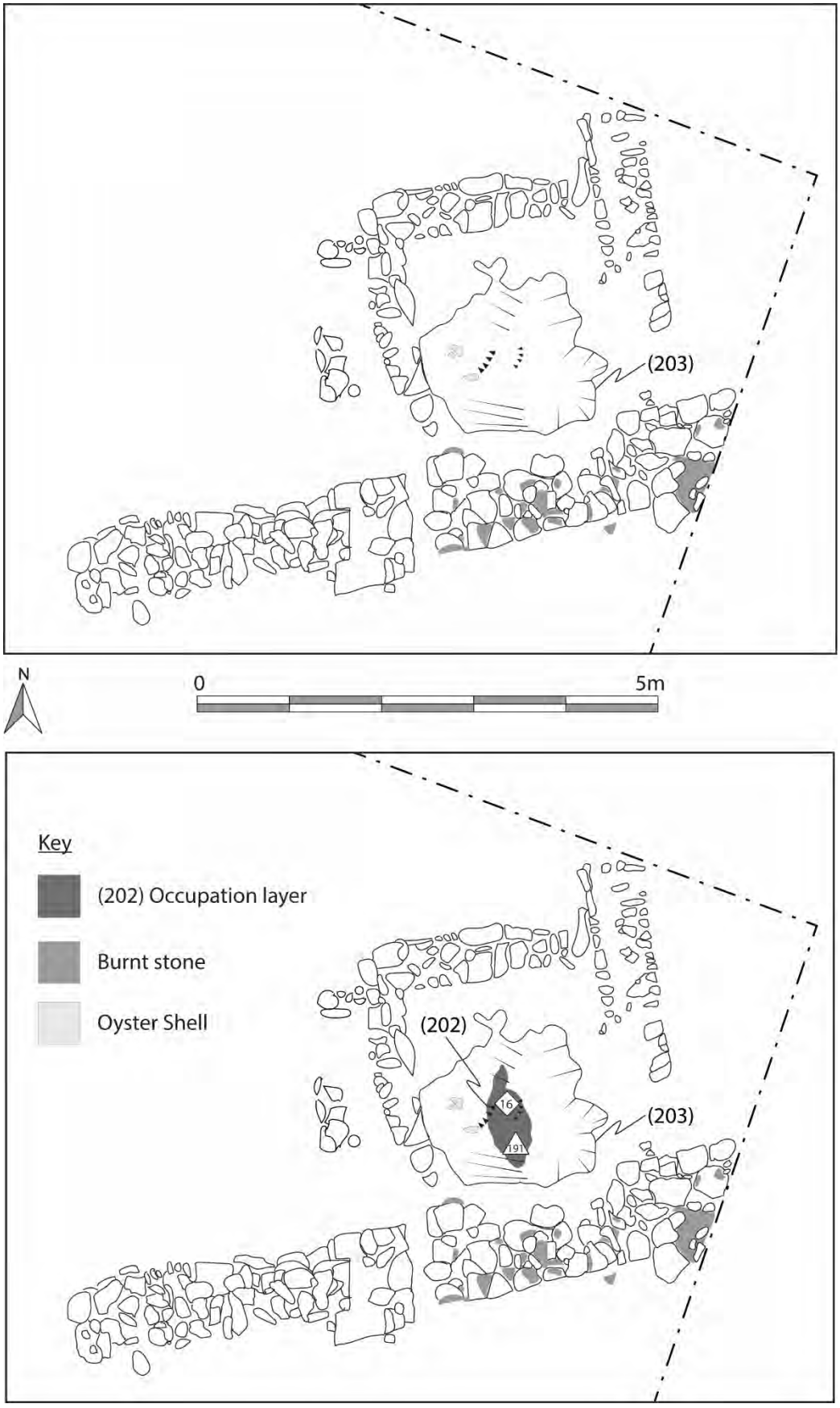

Figure 21 Room 6a. Tessellated pavement [203] (top) and pavement with overlying deposit (202) below.

Room 7

Room 7 was only partially explored north of Room 6a's wall [208] (Fig 22). This room was partially excavated by Hayward in an L-shaped trench that examined its western wall and the entirety of the northern end of the room. It was described as:

> 'a small one [room], heated by a channelled hypocaust, the sides of which were plaster faced; two spaces for wall flues were noted in the northern wall, which was of much poorer workmanship, suggesting later modification. The floor had been of large (1 in) blue and red tesserae, and many fragments of wall plaster in cream, red and purple were recovered from the channels. A flanged bowl of late Roman date was found on the floor of the hypocaust' (Hayward 1952, 102).

Almost nothing of this description can be reconciled with the observations of the 2016 excavations in the southern portion of this room. After removal of the stratigraphically high layers ([163], [173]) that sealed deposits in Room 7 and the north wall of Room 6a [208] a firm light greyish brown silty clay layer was encountered containing some small flecks of CBM and occasional small fragments of Hamstone and Yeovil Stone. This layer was 0.1-0.2m thick and was excavated to a depth seemingly below the lowest courses of wall [207]. No finds were recovered from the deposit.

At the time of excavation we were labouring under a misapprehension about our location within the building (see above) and it was assumed that [210] was one of a series of external deposits. There was certainly no evidence of plaster, pottery, tesserae or an *in situ* hypocaust to be seen. Two potential interpretations seem possible: first, that [210] was the upper fill of a robbing episode truncating deposits within Room 7; second, that Room 7 was demolished and infilled with deposits under [210] before wall [208] was constructed.

Figure 22 Room 6a looking north with Room 7 beyond. Note the character of the deposits north of wall [208] in Room 7 and also in the northern limit of excavation. No sign of Hayward's hypocaust in Room 7 is visible.

Rooms 10 and 11

Rooms 10 and 11 were almost completely excavated by Hayward (1952, 101-102 and Pl. X.2) (Figs 10 and 11). Room 10 was a rectangular hypocausted structure with Room 11 forming an apsidal western end. To the south of Room 10 Hayward excavated a flue and furnace area made from large fire reddened hamstone blocks. All of Room 11, part of Room 10 and the flue/furnace area were identified and reinvestigated in the northern end of Trench A.

Use

Hayward's excavations removed virtually all of the interior deposits within these rooms. The only exception to this was in the angle between [185] and [184] overlying *pilae* stacks [189] to [192]. Here Hayward had left the fills of the structure *in situ* (just visible in Hayward 1952, Pl. X.2) (Fig 23). Overlying the demolished hypocaust stacks was a thin, ashy dark grey silty clay with occasional to moderate charcoal flecks [158]. This contained a single sherd from a dropped-flange BB1 bowl of late third- to early fifth-century date. This deposit was overlain by a compact light creamy yellow coarse sand mortar layer [155]. It would appear that this is evidence for the hypocaust in Room 10 having been removed during the life of the structure and the room refloored with a mortar deposit.

Figure 23 Photograph by Hayward showing the deposits left in situ in Room 10. Hayward believed these to represent the mortar floor that would have been supported by the hypocaust pilae. Our excavations (and this photograph) show that the mortar floor [155] overlay a deposit [158] that overlay the demolished hypocaust ©CHAC

Room 14

To the north and east of buttress [1004] was an external deposit that was probably contemporary with the occupation of the villa. Layer [1011] was a soft to firm dark greyish brown silty clay containing occasional fragments of white lias tile, occasional charcoal and mortar flecks along with fragments of animal bone and pottery. The large fresh fragments of pottery totalled 77 sherds weighing 1146g. Almost the entirety of the assemblage was BB1 with Wessex Archaeology forms 2, 3 and 25 present. There were also two sherds of NFCC. A late Roman (AD250-400/450) date seems most appropriate for this group. The animal bones are mainly cattle and sheep sized but include some chicken and duck bones. The deposit is best interpreted as refuse being dumped around the back of the bath house between its buttresses.

The new room

Pre-building

In the southern part of the room a firm orangey-brown clayey silt [150] was encountered at 50.83m AOD. This was essentially a disturbed deposit akin to natural and, with the exception of a few small chips of CBM and occasional charcoal and mortar flecks, contained on finds. Presumably this deposit was the ground surface on which the room was constructed.

Phase I

Internally the earliest activity was a layer of compact, light yellowish- to whitish-brown coarse sand and mortar [161/165] (Figs 25 and 26). The deposit ran parallel to Wall [111] and was approximately 15cm thick and truncated to the west by [213]. [161/165] contained occasional large <20x30x10cm irregular pieces of Yeovil Stone and a single sherd of undiagnostic BB1. Interestingly, approximately a quarter of a neonatal or infant skeleton was recovered from this deposit (Langthorne, this volume). It is likely that these are the remains of a disturbed infant burial, which are common with Romano-British domestic contexts (Millett and Gowland 2015). Conditions were very dry so the burial may have been missed by the inexperienced excavators, or alternatively the burial could have been disturbed by the later remodelling of the room and the disarticulated remains recovered by the excavation team. In addition parts of a butchered juvenile sheep were also recovered from this deposit (Rielly, this volume) (Fig 52).

This white mortar deposit recalls the “3in layer of white mortar” (Hayward 1972, 64) found partially overlying the mosaic in Room 4. It would appear to represent an early floor surface that was largely removed in later modifications to the building.

Phase II

Following the apparent truncation [213] of the putative Phase I white mortar floor an intact BB1 jar [145] (dateable to AD350-450: Gerrard, this volume) had been placed and then chocked around with large Yeovil Stone blocks [143], flush against the west wall [110] (Fig 24). Fragments of three second century glass vessels were recovered from [143] and directly below the BB1 jar [145]. The lid of the BB1 jar was sealed with a piece of slate a tegula [144]. The vessel contained nothing. There was no fill to speak of except a tiny mineralised lump. A few sherds of glass were recovered from below the pot (Shepherd, this volume). The pot [145] is likely to represent a placed or special deposit and similar depositions in the floors of Roman buildings can be encountered locally at sites such as Bradley Hill (Leech 1981). It seems that when the white mortar floor was removed the new phase of activity was marked by the placing of this special or votive deposit.

Figure 24 Pot [145] looking west after the removal of the tegula and slate tile [144] covering the mouth of the vessel. Note the way the vessels is chocked around with stones [143] in the corner between wall stump [134] and wall [110].

After the placing of [145] and the surrounding stones [143] a thin layer of firm, mid brown sandy silt 2cm thick, with occasional patches of redeposited burnt clay and CBM chips was deposited [138] over the remainder of the room. This was overlain by a firm greyish yellow brown sandy silty clay [137] approximately 10cm thick. This deposit was almost sterile and other than the occasional small stone and mortar flecks was almost devoid of finds. The exceptions to this observation were encountered close alongside wall [110]. In the southern part of the room a small spread of stones, *imbrices* and pottery [116/129] sat on the surface of [137] and their matrix was indistinguishable from the context (Fig 27). The pottery totalled sixty-six sherds from at least three late Roman BB1 vessels, as well as individual sherds from Oxfordshire and New Forest colour coated wares. A single, unusual glass fragment from this deposit may be late Victorian in date (Shepherd, this report). If this is so, then it must be intrusive. Further to the north an iron wedge was found <176>, a hand-sized but unworked pebble <175> and a fragment of whetstone were recovered <174>. Finally, a large bun-shaped lead ingot was also found set into the surface of this deposit <196> (no traces of a cut for this object were distinguishable).

The overall impression of this phase of activity is of a partially completed remodelling of the building. It is possible that [137] was intended as a levelling deposit, or given its clayey composition even as a form of damp course, prior to the putting down a mortar bedding layer for a mosaic or other type of flooring. This never occurred and the small group of finds perhaps suggests a space abandoned to storage and builder's supplies.

Figure 25. The southern, excavated end of the new room. This shows western wall [110] at the far left and [137] in section and lead ingot <196> in the far distance by the tools.

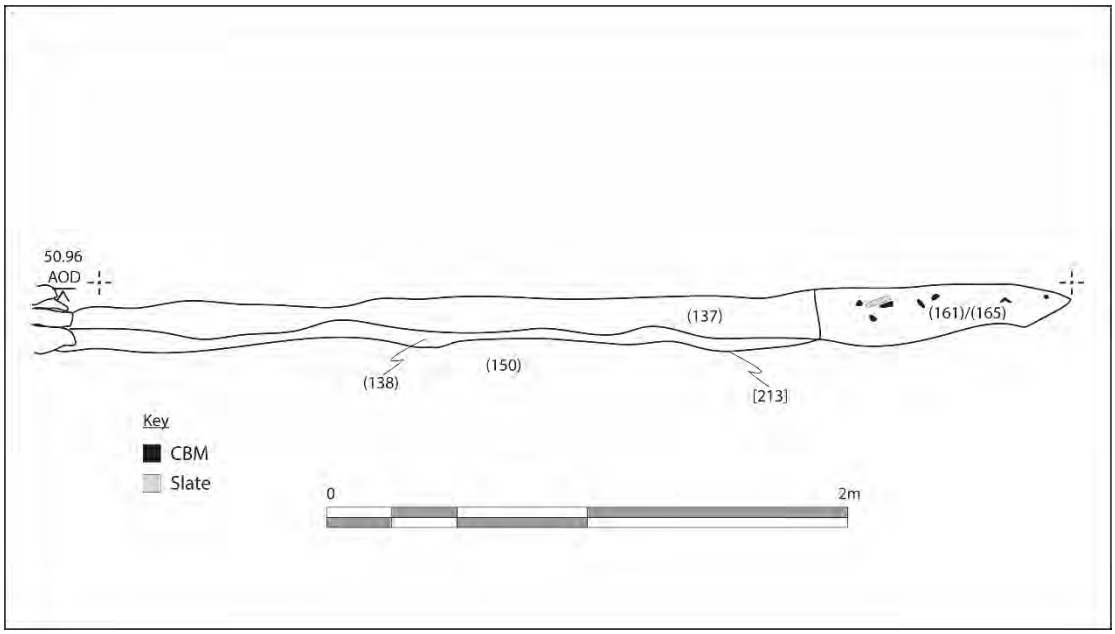

Figure 26 Section 4: south-facing section through the 'New Room'. Compare with Fig 25

Figure 27 Deposit of tile and pottery [116]/[129]

Phase E: The demolition and/or collapse of the structure

Room 1

A deposit of collapsed wall plaster [210] was encountered in this area but left unexcavated. Presumably this plaster has fallen from the walls of the building. A variety of colours was present in the small quantity of material collected from cleaning over the top of this deposit.

Figure 28 Fallen plaster in Room 1 [210]. The north east corner of Trench A looking north.

Room 5

Overlying the infilled hypocaust channel was what appeared to be a stratigraphically high and disturbed layer [147], sealed by features interpreted as Hayward's interventions and demolition deposits.

Room 6

Within Room 6 Phase D deposits [140] and [135] were both truncated by a roughly square shallow cut [131] 0.1m deep. This was filled with a firm reddish brown silty clay [130] containing 33 sherds of late Roman pottery. On excavation this feature was interpreted as part of Hayward's interventions. In favour of this interpretation is the fact that [131] also cuts layer [147], a firm yellowish brown silty clay that sealed the head of wall [151] and features in Room 5. Against the interpretation is the difficulty of matching [131] with any of Hayward's known interventions and the quantity of pottery from [130]. Possibly it was a robbing feature and its shallow depth suggests it could have been intended to rob flat paving stones.

Room 6a

Overlying Phase D occupation deposits [202] was a firm light yellowish brown sandy silty clay containing small pieces of Hamstone and Yeovil stone as well as considerable patches of redeposited cream mortar [188] (Fig 29). This was overlaid by a firm dark brown sandy silty clay containing frequent angular and sub-angular Yeovil Stone rubble [180]. This in turn was overlain by [173] another firm light yellowish brown silty clay containing moderate quantities of Yeovil Stone rubble and fractured lias slate. [173] sealed the wall heads and expanded to the east to seal a deposit of collapsed wall plaster in Room 1 [210]. Presumably all of these deposits relate to the decay and demolition of the structure. The few finds from these layers include small quantities of late Roman pottery. These deposits were truncated by features associated with Phase G Hayward's Trenches XLVI and XVI.

Figure 29 Rooms 7 and Room 6a looking east before excavation. Rubble deposits [180] fill Room 6a and deposit [210] fills Room 7. Truncations in the foreground and parallel to wall [114] are thought to be related to Hayward's interventions.

Room 14 – external deposits

The main evidence for the demolition and collapse of the bath house (Room 14) was found in the southern end of the main part of Trench B and occupied a position between the bath house buttresses (Figs 30-31). Overlying rubbish deposit [1011] was a loose dark grey silty clay with frequent fragments of Hamstone and Yeovil Stone rubble, lias slates and occasional fragments of CBM [1010]. This deposit contained an illegible late Roman coin <5015> and 11 fresh sherds (533g) of late Roman pottery. Overlying this deposit was context [1005] a firm mid-brown silty clay, containing rodent bones indicative of owl pellets (Rielly, this volume), and which surrounded a dense spread of largely Yeovil Stone with some lias, slate and Hamstone. Only five sherds of pottery (34g) were recovered from this deposit but it was noticeable that it also included two oyster shells.

To the east of buttress [1004] and partially overlying [1005] was a deposit of smashed lias roof tiles [1006]. This layer probably represents elements of roofing material and can be considered the same to a very similar deposit [1007] that lay to the north of [1004]. Both [1006] and [1007] contained a single sherd of BB1.

Given the relatively small area of excavation it is difficult to ascertain the complete significance of the deposits described above. They are certainly demolition or collapse deposits. It is probable that all of these deposits had been picked over by stone robbers. Large and well-dressed stones were noticeable by their absence. The deposits of roofing material may be in situ where they slide from the roof, or might be discard heaps from where stone robbers cast aside broken or unsuitable materials. It had been hoped that the area between the buttresses might have been utilised for post-Roman occupation activity but no traces of such occupation were recoverable. There were no signs of postholes, stakeholes, cut features or burning.

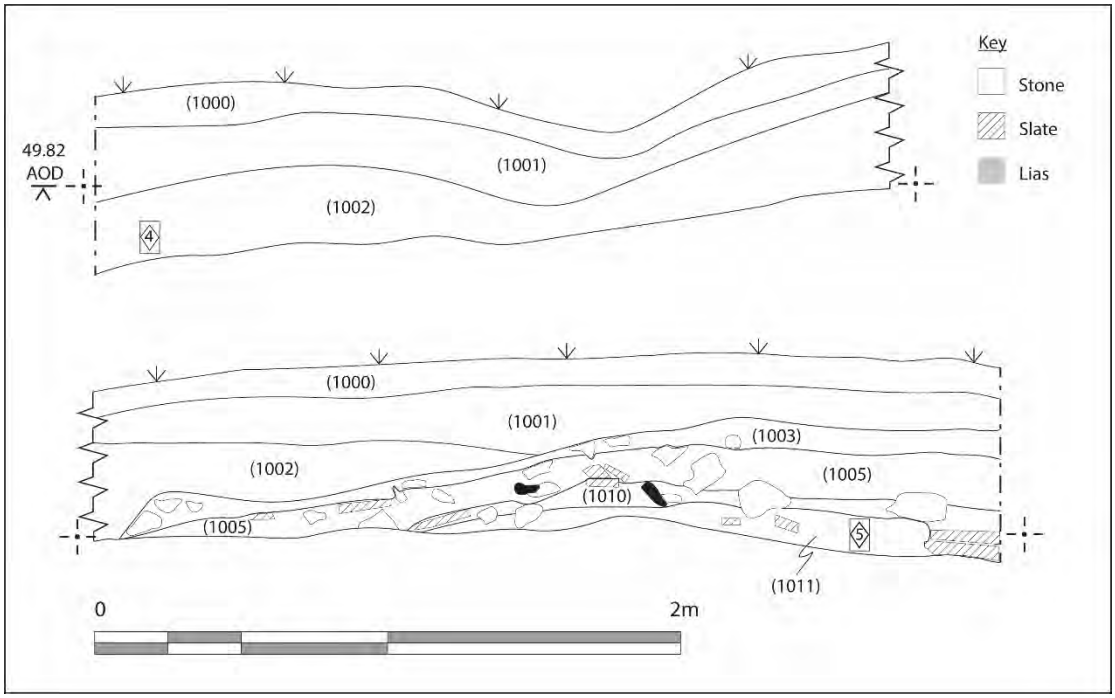

Figure 30 The west facing limit of excavation in Trench B, northern half.

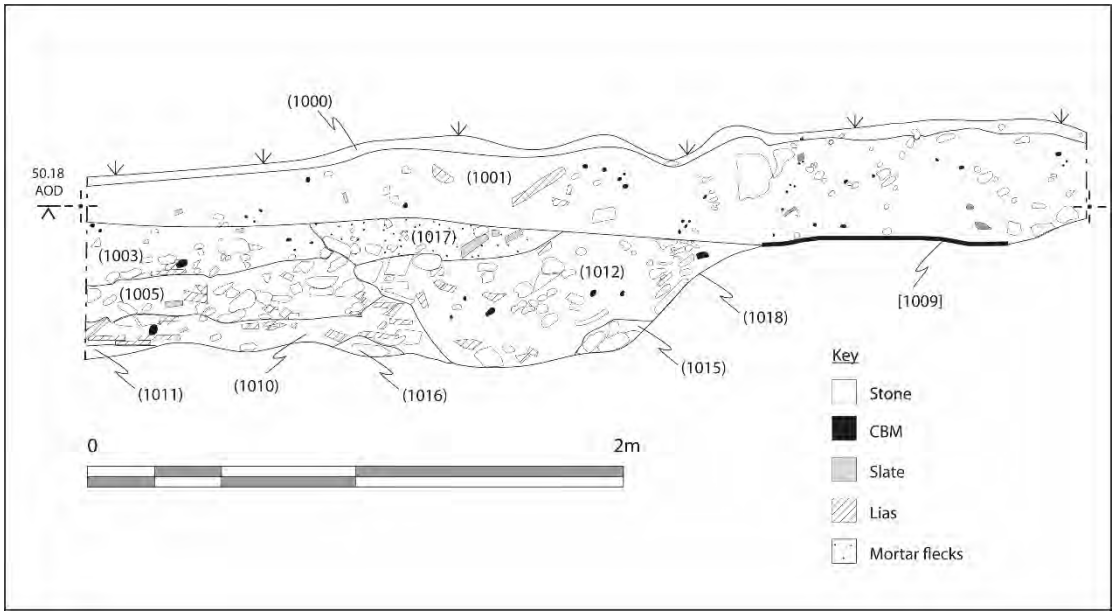

Figure 31 The west facing limit of excavation, Trench B, the southern half.

New Room

Just to the north of wall [110] a spread of smashed and splintered lias tile [121] was found sealing [137] and the line of Room 6's northern wall. This appeared to have been a deposit of *in situ* smashed roof tiles, where they had slid from the roof of the building during its collapse or demolition (Fig 32).

At the other end of the room the southern wall was almost entirely robbed out by flat bottomed cut [133], the yellowish brown silty clay fill of which [132] contained a single sherd of a BB1 dropped-flange bowl. This robber cut truncated [137] and was sealed by [115].

Figure 32 Roof collapse [121] north of the new room.

External deposits to the west of the building

Extensive rubble deposits were observed in plan to the west of Room 5 and the 'new room' (Fig 33). These were partially investigated in the south-west corner of the trench. Two layers were identified. The earliest [117] was laid down horizontally and extended westwards from [110] for three metres. Approximately 0.1m thick it was a firm greyish brown sandy silt with frequent and tightly packed Yeovil Stone and Hamstone rubble along with some CBM fragments. Overlying this deposit was [107], a greyish brown silt, containing frequent, tightly packed Yeovil Stone rubble and occasional CBM fragments. The deposit was 0.25m thick and tapered downhill to the west. It also overlay tile spread [121], suggesting that these tiles had slipped from the roof before rubble layer [107] was deposited. Five iron nails, three pieces of lead waste, an iron structural fitting <143> and a coin <172> of AD354-361 were recovered from this deposit.

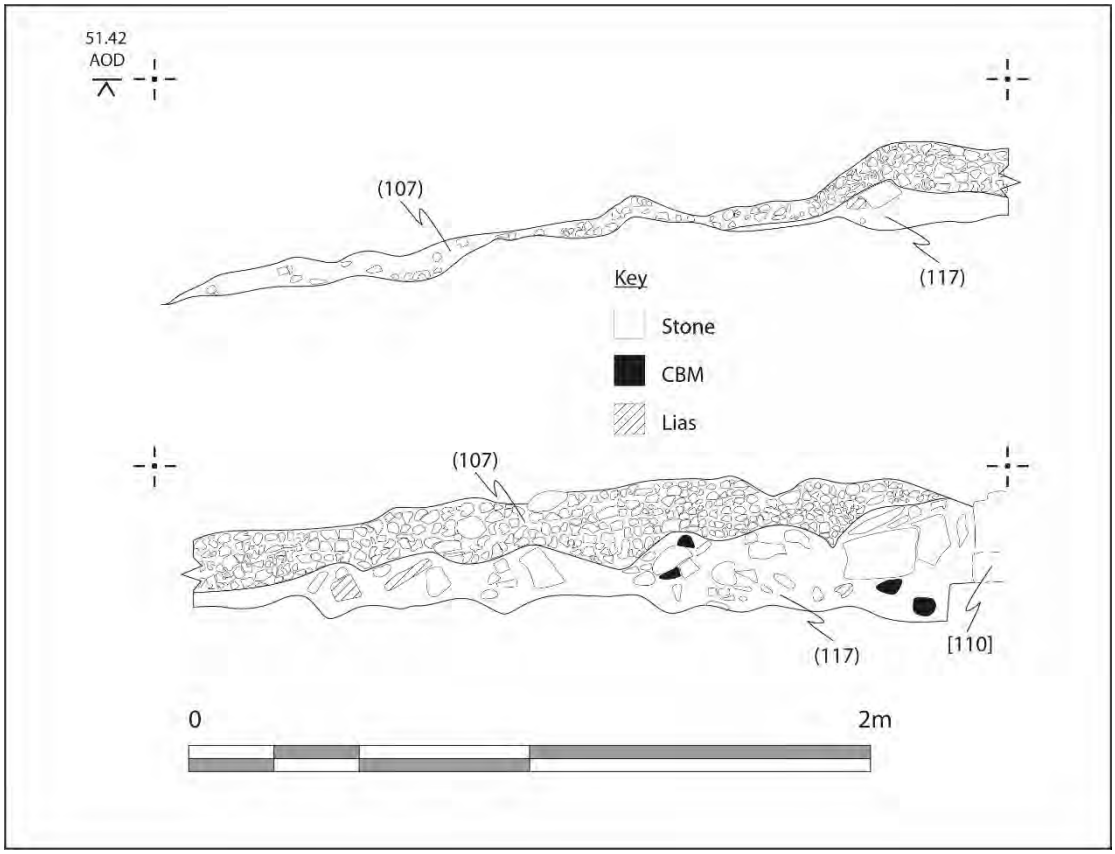

Figure 33 Section 1: south facing section through demolition deposits west of the building

Phase F: post-demolition

Phase F has a somewhat nebulous existence and relates to a small number of contexts that exist stratigraphically between the latest apparent Phase E demolition and collapse deposits but before Hayward's Phase G interventions.

In Trench A only deposit [103], a light yellowish brown silty clay with charcoal flecks, can be assigned to Phase F. It contained a fragment of horseshoe <100>.

The sequence in Trench B was a little more complex. Potential Phase F deposits were found in the southern part of the Trench B. Deposit [1003] sealed all deposits in the trench and was a layer of sub-rounded Yeovil Stone, Hamstone, lias and CBM that sloped from south to north. It overlay wall [1004] and contained 51 sherds of pottery (448g). These were mainly BB1 sherds but included some OXRC and greyware fragments. A coin of AD324-330 <5008> was also recovered from this deposit. This layer is best interpreted as demolition rubble possibly disturbed by ploughing.

Sealing [1003] was a firm light yellowish brown silty clay that extended over the northern three quarters or so of the trench [1002]. This deposit contained 55 sherds (weighing 546g) of pottery. The majority of this assemblage was Romano-British but three sherds of post-medieval industrially produced blue and white ware were also recovered. Eight Roman coins ranging in date from AD270-290 to AD353-361 were also recovered from this deposit with the aid of a metal detector <5001-5007 and 5011>. This layer is perhaps best interpreted as a buried soil but the presence of Roman coins within it, in a stratigraphically high position, is curious.

Phase G: Hayward's Excavations and modern activity

The area covered by Trench A should have encompassed six of Hayward's trenches. These will be described, together with what could be correlated with their existence in the 2016 excavations, from south to north (Fig 40).

The southernmost trench was Hayward's Trench XLI. This was a rectangular trench laid out east-west to encompass the stokehole for the hypocaust in Room 5. No sign of this trench was visible but the hypocaust was partially excavated. Just to the north and separated from Trench XLI was a rectangular trench running north south, exposing the rear wall of Rooms 5 and 6 and the crosswall junction between them (Trench XXII). This trench was visible very clearly in the early stages of the excavation as a friable medium brown clayey sand with frequent rubble and CBM inclusions [105] (Fig 34) . This deposit was loose and the rubble appeared to have been dumped in tiplines. It filled [106], a linear cut with irregular sides and a concave base and approximately 0.4m deep. Hayward's Trench XIV, which should lie just to the north of [106] to encompass the junction between the west [111] and northern [178] walls of Room 6 was indiscernible.

Figure 34. Working shot (Trench A: looking north) showing the brown fill [105] of Hayward's Trench XXII [106] in line with Wall [111]. Excavated cut [109] is partially visible to the east (right) and may represent Trench XLIV.

Within Room 6 an irregular north-south linear cut with concave sides and a flat base was identified [109]. It ran from the hypocaust flue between Rooms 5 and 6 northwards truncating significant burnt deposits (see above) and appeared to terminate in a shelving and rounded butt-end before it reached wall [178] / [114] of Room 6. Cut [109] was filled with a firm dark brown silty clay containing charcoal and mortar flecks and moderate quantities of sub-angular Yeovil Stone rubble and occasional pieces of CBM [108]. It was

unclear what this feature was on excavation. We assumed it was either a robber cut or possibly one of Hayward's trenches. On reflection it would appear to correlate with Hayward's rectangular north-south Trench XLIV, although as excavated it is too narrow. It is unclear from Hayward's diagram as to whether Trench XLIV joined Trench XLIV (which represents its continuation northwards through Room 6a) or was separated from it by a narrow baulk. A baulk might explain [109]'s termination to the south of Wall [178].

Trench XLIV ought to have run northwards bisecting Room 6a. The rear wall of 6a should run through the middle of the trench with deposits exposed to the west and the tessellated pavement [203] exposed in the east. The problems of reconciling Hayward's trench XLIV with the sequence recorded in Room 6a have been discussed above. What was identified was a small L-shaped cut [124], filled with a firm dark yellowish brown silty clay [123] containing rubble, two plastic cups and a Horlicks milk bottle <213>-<215>. This cut appeared to have been dug to investigate the hypocaust channel through the northern wall of Room 6 that was blocked off by the construction of Room 6a. To the north [124] seemed to continue as north-south linear cut [128] that widened as it approached the northern limit of excavation (Fig 35). This was filled with a rubbly dark-brown sandy silty clay [127]. Cut [128] is likely to represent the continuation of Trench XLVI through Room 6a and into Rooms 10 and 11, where it becomes part of Trench XXVI.

Figure 35 Linear cut [128] looking south. To the south this feature partially correlates with Hayward's Trench XLVI but further north it becomes the complex series of interventions labelled as Trench XXVI. The dogleg of truncated deposit on the right hand side, cut by [154], can be correlated with Hayward's trench plan and [128] seems to represent Trench XXVI in Room 7.

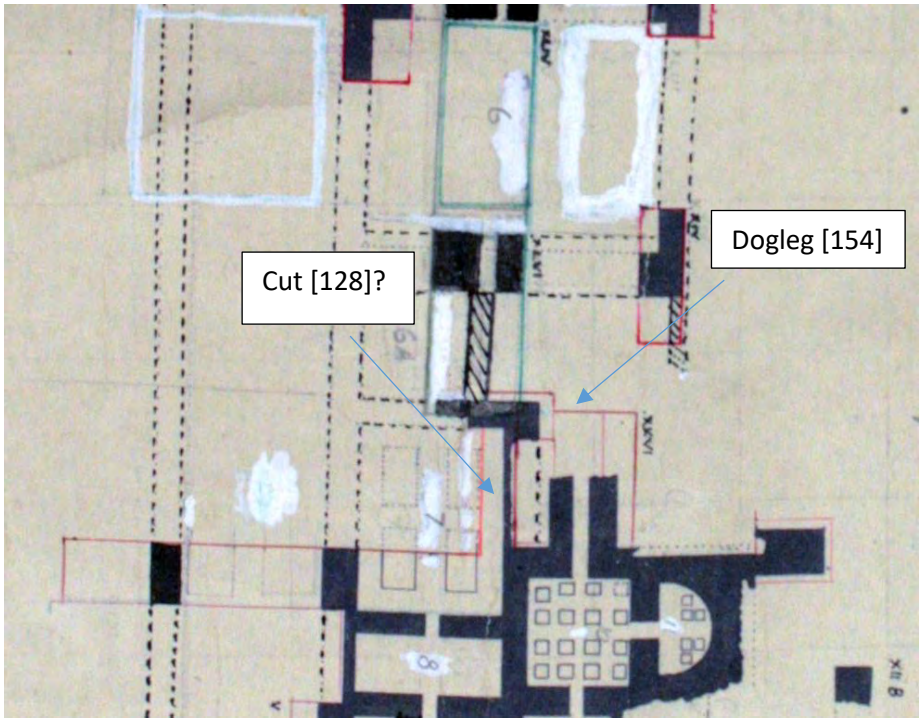

Figure 36 Hayward's trench location plan with Rooms 6a and 7.

The flue and hypocausted Rooms 10 and 11 seem to have been investigated by Hayward in an irregularly shaped 'open area' described, at least in part, as Trench XXVI (Fig 36). We identified two large irregular cuts truncating deposits in the northern part of Trench A. These were described as cuts [125] and [154]. Originally we considered these to represent the robbing of the hypocausted structure (Figs 37-39). Certainly the large and thick rubble deposits sealing this end of the trench were problematic to excavate and edges were not always clear-cut ([104], [115], [126], [139], [148], [211]). We consider it sensible to interpret [125] and [154] as representing Hayward's Trench XXVI.

Figure 37 Rooms 10 and 11 looking north with the fill [126] of Hayward's interventions in situ.

Figure 38 The flue for Rooms 10 and 11 looking south, with the fill [126] of Hayward's intervention in situ.

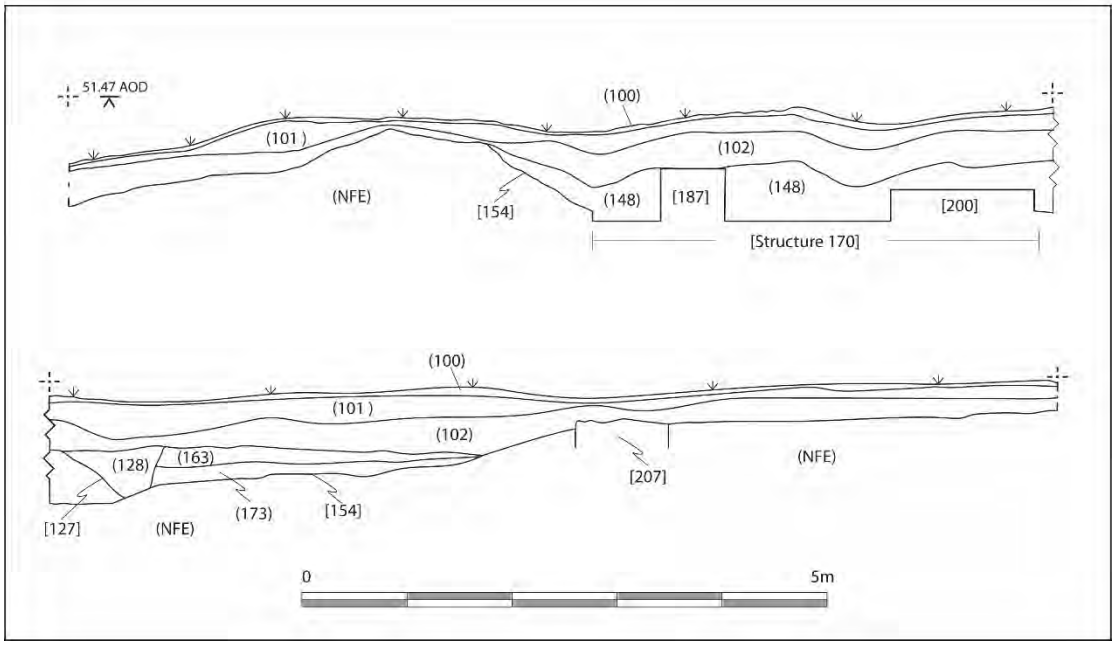

Figure 39 The Northern Limit of Excavation in Trench A (S Facing)

The situation was far more straightforward in Trench B. In the southern extension a cut feature was identified running east-west [1018] and having the appearance of a robber cut aligned with walls [1014] and [1015]. This feature with concave sides and a 'U' shaped profile is almost certainly Hayward's investigation of the bath house wall line. It was filled with a rubbly deposit [1012] and light yellowish brown dump of sand, which looked to be redeposited mortar [1017].

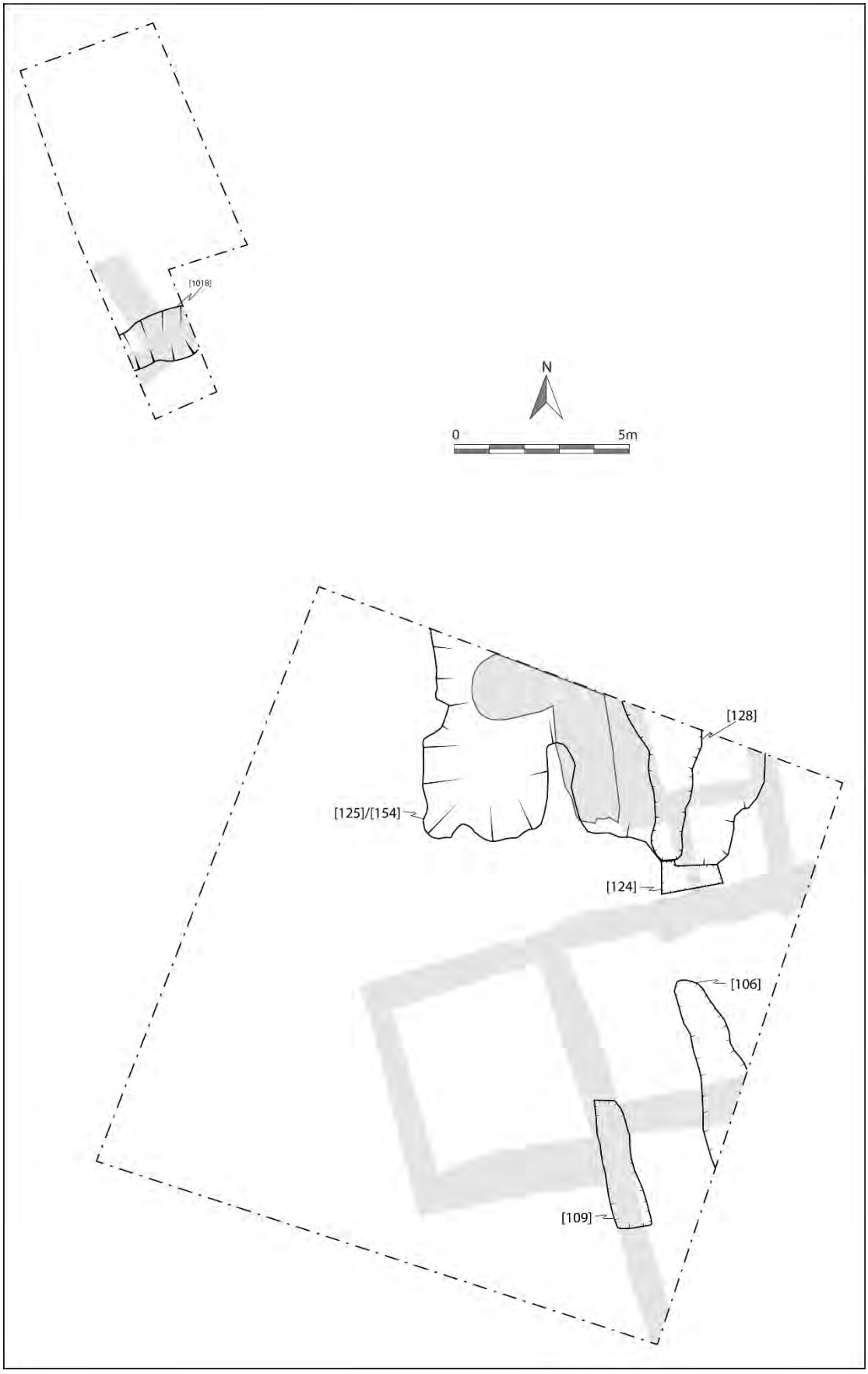

Figure 40 Cut features identified in the excavations that can be equated with Hayward's trenches.

Phase H: Modern

The archaeological deposits in Trenches A and B were both sealed by layers of ploughsoil/subsoil and turflines (Fig 41). In Trench A ploughsoil/subsoil type deposits extending over the entire trench were layers [101] and [102], which were analogous to [1001] in Trench B. A corroded coin of the House of Valentinian <5012> was found in [1001], directly above mosaic pavement [1009]. Over these subsoil/ploughsoils was a well-established turfline [100] and [1000]. The only finds of note from the turf were a shotgun cartridge, a modern dog whistle ad some fragments of drinks cans (these finds were not retained in the archive). They adequately summarise the role of the site today as a place for recreation and the control of vermin.

Figure 41 Removal of turf and ploughsoil by machine in progress. Wall [111] starting to be exposed.

Discussion and Interpretation of the Building (James Gerrard)

The Lufton villa is justly famous as one of a small number of high status rural buildings with large and ostentatious octagonal bath houses. Various scholars, starting with Hayward, have advanced a number of interpretations of the structure. The excavator saw it simply as a villa, or well-appointed farm. De la Bedoyere has suggested a cult function for the building. Following in this vein of reasoning, Todd (2005) and Perring (2002) have suggested that the structure may have functioned as a Christian baptistery. Henig (2006) suggested that the building was simply an ostentatious Late Antique reception room (see also Walters 1996) more recently Witts (2019) has argued that the building may have functioned as 'the equivalent of a modern leisure centre'. In the first part of this discussion we review these interpretations.

The cultic function can be simply dismissed. There is nothing in the finds assemblage, nor really the architecture or mosaics to indicate either a pagan or a Christian interest in the site. Romano-Celtic temples from the region – of which there are several – yield significant quantities of coins and other objects with religious connotations. These are not apparent in the Lufton finds assemblages. Henig's (2006) reservations regarding the function of the building as a baptistery are well-founded and both Todd and Perring's views must be dismissed as anachronistic interpretations based on later structures.

This leaves Henig's (2006) view of the space as an elaborate reception room and Witt's (2019) view of the building as an essentially public bathing establishment. The use of the octagonal pool as a bath is evidenced by the steps down into it, which Hayward encountered. The pool is not so large that it would serve to hold significant numbers of people. In general terms we prefer to see the building as an ostentatious rural establishment. It is an easy ride from Ilchester and our work in the surrounding landscape has demonstrated that the structure sits at the end of a Late Iron Age / Early Roman trackway in one corner of a large enclosure. To our minds, the building is most likely to have served as a 'villa'. Ancillary buildings, possible traces of which were identified in the geophysical survey, perhaps provided services to the elite establishment, which may have served as a 'weekend retreat', or even a hunting lodge for a local *dominus* and his clients. Our understanding of Roman landholding in Britain is opaque and under-theorised but we can certainly entertain the notion that the 'villa' at Lufton may have been, at least by the fourth-century, ancillary to another grander building or buildings in the local and regional landscapes.

Research Questions

The Project Design posed four research questions (Gerrard and Agate 2015, 12-13):

1) What is the exact site of the villa?
2) What is the current state of preservation of the below ground remains of the villa?
3) Is there any evidence for post-Roman occupation?
4) Is there any evidence for the economic basis of the villa?

The first question has been answered conclusively. We have located the villa and georeferenced both the physical remains and our trenches using GPS.

The second question has revealed that the villa survives very well. The remains of the bath house, including its mosaic, are quite shallow. The rest of the villa seems to survive well and is covered by extensive deposits of disturbed demolition rubble.

We have been unable to conclusively address the third research question. The coin list has been significantly augmented but there are no Theodosian coins. We were unable to recover suitable samples for radiocarbon dating. Some elements of the pottery assemblage may point to early fifth century activity. However, the question of early post-Roman activity (fifth and sixth century) occupation must remain open. We should also note the faunal assemblage, which includes species that suggest the building was, at some point, derelict and inhabited by owls.

The fourth research question has been addressed in a variety of ways. We have recovered a small but important faunal assemblage that contributes significantly to our understanding of the site. The amphibian, small mammal, fish bones and mollusc shells are particularly important in this regard. Similarly, the CBM assemblage contributes fresh knowledge to a relatively poorly studied aspect of villa sites in the West Country. The pottery and other finds augment the general outlines of the site's economy sketched by Hayward in his earlier reports (Hayward 1952 and 1972). However, the excavation of further, artefact and ecofact rich, deposits is needed to truly grasp the economy of the site.

Overall, we consider the two seasons of excavation to have been highly successful. We have not only addressed our research aims, but fulfilled the university's training requirements as well as raising the profile of the site locally and nationally.

Further fieldwork

Following the 2016 and 2017 excavations the project has paused fieldwork. This has been driven by a combination of circumstances. There was the pressing need to complete the post-excavation assessment of the excavation and take stock of the results. There have also been very real personal and professional challenges confronting both of the project directors in the intervening years.

If there were to be future excavations a number of outstanding and new questions relating to the interpretation of the building should be addressed:

1) Can deposits or features associated with the final phase of the building's occupation be identified and dated?
2) There are artefact and ecofact rich deposits deposits surviving unexcavated between Rooms 6 and 10 (north of wall [178]). The excavation of these could provide important evidence for the villa's economy and would also clarify the nature of the probable terracing between the southern and northern parts of the building.
3) The original intention of Trench B was to re-excavate the bath building (Room 14) to assess its preservation and to also measure a height AOD on the floor of the bath. We have successfully demonstrated the preservation of the bath's mosaic floor but we did not manage to re-investigate the bath itself.

In many respects the 2016 and 2017 seasons can be categorised as *evaluations*. We have identified and examined the archaeological resource and are now in a far better position to understand the building as a whole and to direct future interventions.

Further Analysis and Publication

Publication of the results of these excavations can proceed based on this post-excavation assessment.

Outstanding pieces of work include:

1) Further digital inking up of field drawings and the preparation of additional publication quality illustrations
2) The micromorphology samples from Trench B have not yet been analysed.

We envisage producing a publication that synthesises the results of these excavations with those of the project in surrounding landscape and the associated geophysical surveys. In the project design (Gerrard and Agate 2015) we assumed that publication would take place in a journal article. We now favour moving towards publication of the excavations and landscape survey in a slim standalone volume, perhaps to be published by British Archaeological Reports.

Assessment of the Romano-British Pottery (James Gerrard)

Introduction
The excavations produced 521 sherds of Romano-British pottery weighing 7.62kg from 33 individually numbered contexts in Trench A. Trench B produced an additional 249 sherds weighing 2.89kg. The condition of the assemblage is mixed. In Trench A the average sherd size was 15.2g, although it ranges from 1g fragments to a complete vessel and survived in a variety of states from abraded to fresh. In Trench B the average sherd weight was 11.6g but generally the survival of individual sherds was better. Individual assemblages were small (1-30 sherds) in general, but some contexts contained over a hundred sherds.

Methodology
The pottery was fully quantified using the standard measures of sherd count and weight. Estimated Vessel Equivalents (EVEs) were not recorded for this assessment as the assemblage is too small for them to be statistically meaningful. The assemblage was recorded in an Excel spreadsheet using National Roman Fabric Reference Collection codes. The database is ultimately based on standards established by the Museum of London Archaeology and Specialist Services (Symonds 2002).

Fabrics
BAT AM 2
Late Baetican amphora (Tomber and Dore 1998, 85). 1 sherd, 35g.
CHINA
Post-mediaeval industrially produced blue and white tablewares. 4 sherds, 8g.
GREY
Unsourced greywares. 17 sherds, 134g.
OXF RS
Oxfordshire Red Colour Coated Ware (Tomber and Dore 1998, 176). 22 sherds, 327g.
NFO CC
New Forest Metallic Colour Coated Ware (Tomber and Dore 1998, 141) 15 sherds, 273g.
NFO PA
New Forest Parchment Ware (Tomber and Dore 1998, 141). 1 sherd, 30g.
NFO WH
New Forest White Ware (Tomber and Dore 1998, 142). 1 sherds, 58g.
NFO RS
New Forest Red Slipped wares (Tomber and Dore 1998, 142, 144). 10 sherds, 56g.
NFZ GW
Norton Fitzwarren Grey Ware (Holbrook and Bidwell 1991, 175). 19 sherds, 197g.

OXID
Unsourced Oxidised Wares. 6 sherds, 123g.
LEZ SA2
Samian from Lezoux (Tomber and Dore 1998, 32) 1 sherd, 2g.
SED BB1
South-East Dorset Black Burnished Ware (Tomber and Dore 1998, 127). 672 sherds, 9234g.
SED OWW?
South-East Dorset Orange Wiped Ware (Gerrard 2010). 1 sherd, 35g.

Quantification

	Sherd count	Sherd Count %	Weight (g)	Weight %
BAT AM 2	1	0.107991	35	0.332953
CHINA	3	0.323974	8	0.076104
SED BB1	672	72.57019	9234	87.84247
GREY	174	18.7905	134	1.274734
NFO CC	15	1.61987	273	2.597032
NFO RS	10	1.079914	56	0.532725
NFO WH	1	0.107991	58	0.55175
NFO PA	1	0.107991	30	0.285388
NFZ GW	19	2.051836	197	1.874049
LEZ SA2	1	0.107991	2	0.019026
OXID	6	0.647948	123	1.170091
OXF RS	22	2.37581	327	3.110731
SED OWW	1	0.107991	35	0.332953
Total	926	100	10512	100

Table 2 Quantification of the pottery by sherd count and weight.

The assemblage is not a large one for a Roman site (Table 2). The dominance of SED BB1 is not unexpected given the location (Allen and Fulford 1996, Fig 243). The current assemblage is approximately a third of the size of that recovered by Hayward (1972, 67), which contained 61% SED BB1. There must, however, be a strong suspicion that Hayward's collection policies, particularly in the earlier seasons, emphasised fine wares over 'hard black wares' (Hayward 1972, 67).

A single oxidised BB1 sherd may be a fragment from a SED OWW vessel (Gerrard 2010). These are extremely rare outside of Dorset (although occasional sherds have been identified: Rachael Seager Smith pers. comm.). Assuming that this sherd is from a SED OWW vessel, and not simply a manufacturing error in the Dorset kilns, then it ought to date from the beginning of the fifth century. It was found in [104], which means that its utility as dating evidence is limited.

The remaining fabrics are typical of late Roman pottery assemblages in south-western Britain. The New Forest kilns (Fulford 1975) provided a range of tablewares and cooking vessels. As is typical many of the New Forest sherds are derived from the high-fired glossy purple beakers (Fulford 1975, Types 27 and 47). The Oxfordshire potteries (Young 1977)

provided a range of imitation samian red-slipped table wares. None of these exhibited stamping or white paint, which perhaps suggests that the majority of the Oxfordshire vessels recovered pre-date the middle of the fourth century. Hayward (1972, Fig 6.7) certainly recovered stamped vessels, and the sample size is so small that it is probably unwise to draw too many conclusions.

Other fabrics include a range of local unsourced greywares, which may have originated around Ilchester (Leach 1982). Norton Fitzwarren Storage jars were also present in very small numbers. A single think-walled body sherd from a Baetican olive oil amphora is likely to derive from the later Dr23 and may be the only evidence for late Roman imports at the site. A tiny sherd of Central Gaulish Samian from a DR37 bowl has decoration in a Hadrianic-Antonine style and must be residual. Hayward (1972, 67) found only 'two scraps' of samian and these sherds and the current fragment are probably derived from the early Roman activity to the south (Gerrard and Agate 2015).

Pottery of intrinsic interest

A complete Type 3 (Seager Smith and Davies 1993) SED BB1 jar decorated with a band of burnished diagonal lines [145] (Fig 42) was recovered from a location chocked with stone blocks and sealed by a slate tile and a *tegula* in the 'new room'. Vessels set in the floors of Roman buildings as votive deposits are not unusual and can be paralleled locally at Bradley Hill (Leech 1981).

The jar is, in many respects, a typical product of the late Roman Black Burnished kilns. What makes it somewhat unusual is the fact that the decoration is just a band of burnished diagonal lines, rather than the more usual obtuse lattice. There is always the possibility that this decoration is simply a manufacturing error and that the potter failed to complete the lattice. That said, the band of diagonal lines is typical of one of the latest SED BB1 forms – the Type 18 bowl (Gerrard 2004, 2015) – and is paralleled by vessels from very late fourth and fifth century contexts at Barnsley Park (Gloucs.) (Webster and Smith 1982, Nos. 14 and 145). It also has a post-firing hole in one side, which might be indicative of so-called 'ritual killing'.

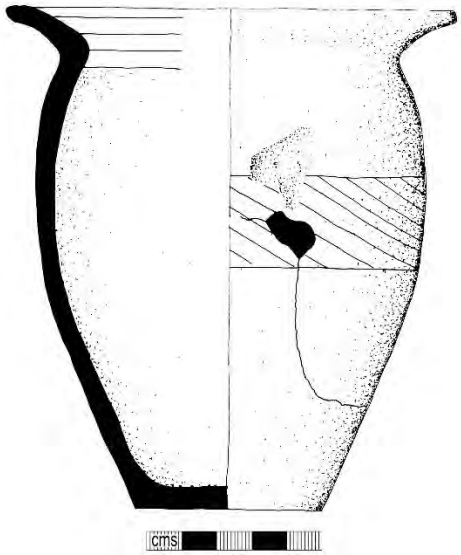

Figure 42 SED BB1 Type 3 jar, with diagonal burnished lines and post-firing perforation from [145]. Drawn by Hatti Farr.

One other sherd of intrinsic interest deserves a mention here. A burnt SED BB1 sherd from a wide-bodied jar or bowl was recovered from the burnt deposits in the corridor [135] (Fig 43). This body sherd is almost certainly from a Type 18 bowl (Gerrard 2004, 2015) and should date from the very of the fourth or early decades of the fifth century. Indeed, current thinking would suggest that the type did not come into production until the AD360s, which might make this sherd one of the latest Roman objects from the site.

Figure 43 Body sherd from a burnt SED BB1 vessel, possibly a Type 18 bowl (Photograph and drawing by Mark Hoyle)

Recommendations

- The primary use of the pottery will be to provide a chronology for the excavated deposits
- A full report, drawing comparisons where necessary with Hayward's assemblage, should form a component of any publication.

Assessment of the Roman Coins (James Gerrard)

The excavations by Hayward produced 15 coins. A further five coins were recovered during metal detecting associated with the geophysical surveys and are all from the immediate environs of the villa (recorded individually on the Somerset HER). Finally, the current excavations have produced 53 coins from Trench A and another 15 coins from Trench B. The vast majority of these were recovered with the assistance of Mr Mike Charles, a volunteer metal detectorist.

The coins from the recent excavations survived in a variety of conditions. Some were well preserved, other were totally obscured by corrosion. Fifteen coins were cleaned to aid identification. A summary catalogue can be found in Table 1.

Small Finds No.	Context No.	Date	Obverse	Reverse	Reece Period	Coin Diameter (mm)
132	0	330-335	House of Constantine	GE 2+2	17	16
133	0	C3/C4	Illegible	Illegible	0	13
134	0	341-348	House of Constantine	2 vics	17	13

135	0	341-348	House of Constantine	2 vics	17	15
166	0	270-273	Tetricus I		13	16
167	0	341-348	House of Constantine	2 vics	17	17
168	0	C3/C4	Illegible	Illegible	0	12
182	0	C3/C4	Illegible	Illegible	0	18
185	0	354-361	House of Constantine	FTR FH	18	13
189	0	330-335	Urbs Roma	Wolf and Twins	17	18
194	0	364-378	House of Valentinian	Gloria Romanorum	19	15
195	0	C3/C4	Illegible	Illegible	0	16
197	0	330-335	Contantinopolis	Victory on a prow	17	11
198	0	330-348	Constantinian	2 Vics	17	14
199	0	364-378	House of Valentinian	Securitas Reipublicae	19	17
200	0	354-361	House of Constantine	FTR FH	18	9
202	0	C3/C4	Illegible	Illegible	0	13
5010	0	353-361	House of Constantine	FTR FH	18	9
5013	0	353-361	House of Constantine	FTR FH	18	10
5016	0	330-335	House of Constantine	Gloria exercitus, 2 standards	17	14
5017	0	353-361	House of Constantine	FTR FH	18	6
102	100	C1/C2	Illegible	Illegible	0	25
103	100	330-341	House of Constantine	GE 2+2	17	18
104	100	270-290	Irregular radiate		14	18
105	100	348-350	House of Constantine	FTR hut	18	20
106	100	350-353	Magnentius	2 vics	18	20
107	100	354-361	House of Constantine	FTR FH	18	15
108	100	270-273	Tetricus I		14	18
109	100	330-335	House of Constantine	GE 2+2	17	17
110	100	Farthing ?			0	10
111	100	354-361	House of Constantine	FTR FH	18	13
112	100	354-361	House of Constantine	FTR FH	18	10
123	100	307-318	Constantinian	Soli Invicto Comiti	16	21
101	102	41-54	Claudius I	Minerva	2	22
118	102	341-348	House of Constantine	2 vics	17	14
119	102	364-378	House of Valentinian	Securitas Reipublicae	19	17
120	102	335-337	Theodora		17	15
121	102	270-290	Irregular radiate		14	15
122	102	341-348	House of Constantine	2 vics	17	16
116	104	341-348	House of Constantine	2 vics	17	15

172	107	354-361	House of Constantine	FTR FH	18	16
187	111	324-330	Helena	Securitas Reipublicae	16	16
165	115	294-325	Tetrarchic/Constantian	//PLON	16	19
169	115	268-270	Victorinus		13	17
170	115	341-348	House of Constantine	2 vics	17	14
171	115	335-341	House of Constantine	GE 2+1	17	13
173	115	270-290	Irregular radiate		14	16
177	139	324-330	Constans	Providentiae Caess	16	18
179	139	330-335	House of Constantine	GE 2+2	17	16
180	139	268-270	Victorinus		13	20
181	139	268-270	Victorinus		13	21
183	139	337-341	Theodora		17	15
184	148	318-324	Crispus	Caesarum Nostrorum, VOT X	16	20
206	148	C3/C4	Illegible	Illegible	0	9
186	159	293-296	Allectus	Pax?	14	24
190	201	270-290	Radiate		14	18
5000	1001	270-290	Irreg Rad	Illegible	14	17
5012	1001		Poss. House of Valentinian			18
5002	1002	353-361	House of Constantine	FTR FH	18	14
5003	1002	353-361	House of Constantine	FTR FH	18	16
5004	1002	C3/C4	Illegible	Illegible		15
5005	1002	270-290	Irreg Rad	Illegible	14	9
5006	1002	C3/C4	Illegible	Illegible		14
5007	1002	353-361	House of Constantine	FTR FH	18	13
5011	1002	C3/C4	Illegible	Illegible		6
5008	1003	324-330	House of Constantine	[PROVID]ENTIAE[CAESS]	16	17
5015	1010	C3/C4	Illegible	Illegible		14

Table 3 Summary coin list.

Discussion

The current excavations produced 67 coins of which only 54 can be identified to a reign or numismatic period (Table 3). Even with the addition of the identifiable coins from Hayward's (1952 and 1972) excavations and those from the surrounding fields we are left with only 70 identifiable coins, which is too small for meaningful statistical analysis (Fig 44).

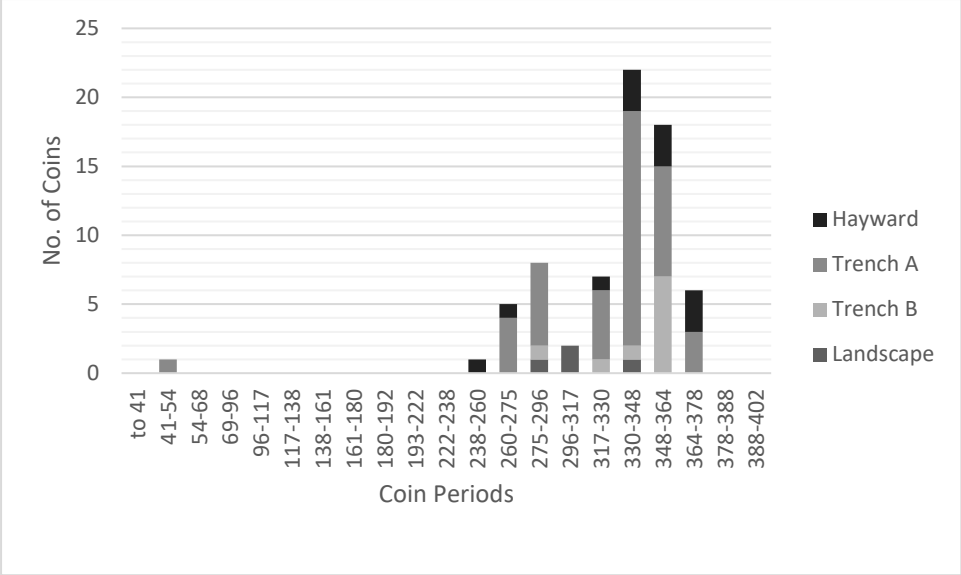

Figure 44 The number of identifiable coins by Reece period.

Accepting the statistical limitations of the sample size, we may consider the coins using Reece's (1991) methodology. In Fig 45 they have been converted into per mills values. This demonstrates a virtual absence of coin loss until the late third century (the single first-century coin in likely to be associated with the Late Iron Age / Early Roman activity in the field to the south: Gerrard and Agate 2015). There is enough coin loss between AD260 and AD296 to suggest that activity began in earnest at the villa site in the late third century and the presence of coins of the early fourth century - a time of typically low coin loss in Britain – indicates continued activity. The middle of the fourth century sees considerable coin loss, these are *nummi* and their local imitations of AD330348 and AD348-364. Finally, AD364-378 (The House of Valentinian) features but perhaps not as prominently as many other West Country sites. The absence of coins later than AD378 suggests that the site was no longer part of whatever interactions involved low value coins in the last decades of the Roman period. One might anticipate some Theodosian coinage at a site like Lufton, so its absence may be significant. It need not indicate abandonment, but perhaps a major change in function or use.

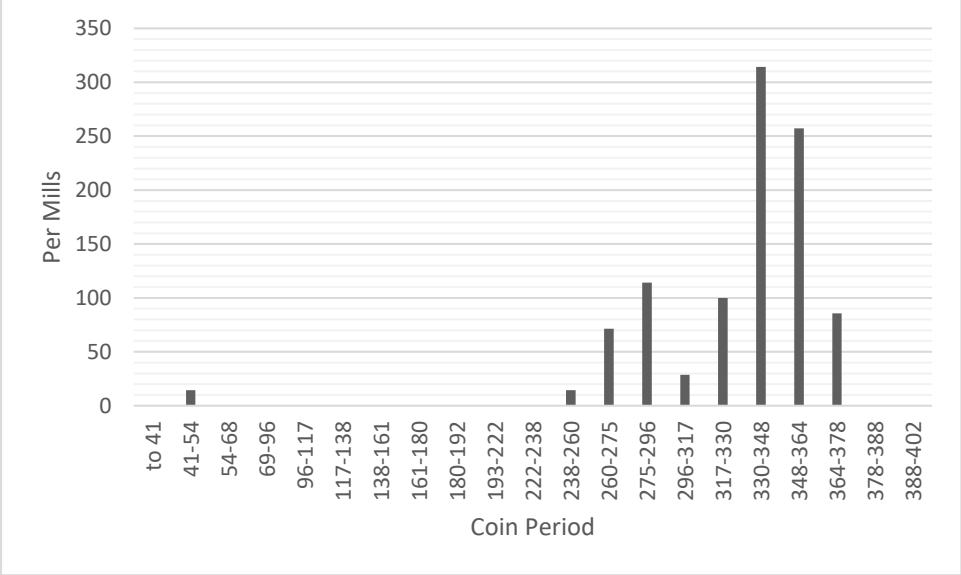

Figure 45 All legible coins from Lufton as per mills values by Reece period.

Assessment of the Romano-British Small Finds (James Gerrard)

Introduction

Twenty four objects were recovered from Trenches A and B. In addition to these artefacts the excavations also produced 124 fragments of lead and 127 iron nails or fragments of nails. Preservation was generally good.

Methodology

The finds have been recorded in a Microsoft Excel spreadsheet and a copy of the spreadsheet is held in the archive. The preservation of the objects was good and due to this no conservation beyond basic cleaning has yet been undertaken.

Finds have been identified using standard catalogues (Crummy 1983, Manning 1985) and functional categories have been assigned to each find using the scheme developed by Crummy (1983, v). This scheme is not without its difficulties (Cool and Baxter 2000, Crummy 2007). However, it is widely used and thus useful for inter-site comparisons of assemblages.

<u>Personal Adornments</u>

Brooches: only three fragments of brooches were recovered: the head and spring of an early Roman brooch <107> [+], part of a brooch pin <207> [171] {10} and <5014> [+], an incomplete part of what is probably a Langton Down derivative brooch of first-century AD date (Hattatt 1989, Fig 165).

Hairpins: a single hairpin <191> [202] of Crummy's (1983) Type 5 was recovered from the thin, dark layer overlying the tessellated pavement (Fig 46). This is a fourth-century type and is highly polished bone.

Glass beads: four glass beads were recovered from Trench A and one from Trench B (Table 4). <113> was a long, biconical green glass bead of Guido's (1978) Type 14, which she assigns to the second or third centuries AD. The remaining beads were all small, translucent blue glass examples (Guido 1978, Types 14 and 15). Similar beads from the Late Roman cemetery at Lankhills (Hampshire) have recently been discussed by Cool (2010, 292-293) and good parallels for the Lufton examples come from a grave in a late fourth- or possibly fifth-century cemetery at South Shields (Snape 1994, Fig 7 and 58 and 59).

Small Find	Context	Sample	Colour	Diameter (mm)	Form
113	100	By hand	Opaque green	4	Biconical
203	202	16	Deep translucent blue	3	Biconical
204	202	16	Light translucent blue	2	Globular
205	152	14	Deep translucent blue	3	Globular
5019	1005	1	Deep translucent blue	3	Biconical

Table 4 Glass beads from the excavations.

Belt fitting: an unstratified copper-alloy ring <127> was recovered by metal-detecting from the spoil heap (Fig 46). Plain rings such as this were probably part of late Roman belt sets (Crummy 1983, 139.

Hobnails: individual hobnails were recovered from samples taken from <211> [148] and <212> [166]. They indicate the use of nailed footwear by the inhabitants of the site.

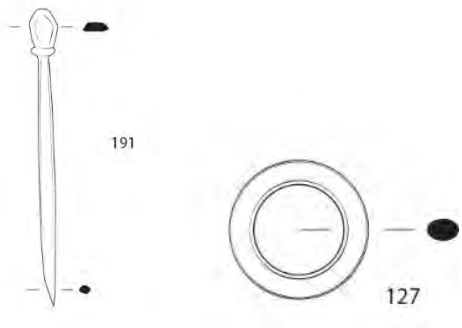

Figure 46 Hairpin <191> and copper-alloy ring, possibly from a belt set, <127> (Drawn by Mark Hoyle)

Household objects

A large stone trough with a form perhaps best described as a reuleaux triangle <124> [+] was discovered during machining. It is roughly hewn, probably Roman in date and manufactured from local stone (Hayward this report). It may have served as a mortar or trough.

Another stone object was a fragment of column <188> [+]. This is discussed by Hayward (this report).

Two unstratified lead pot repairs <192> and <193> indicate an interesting in repairing pottery vessels.

Tools

Only two objects that can be described as tools were recovered. The first was a fragment of a whetstone <134> [137] and the second was an iron wedge or cold chisel <136> from the same context (Manning 1976, 25) (Fig 47).

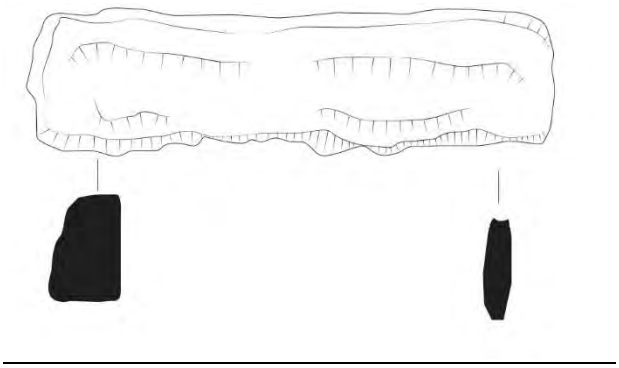

Figure 47 Iron wedge or chisel <136> (Drawn by Mark Hoyle)

Fixtures and Fittings

Two structural fittings were recovered. The first was an incomplete iron double-spiked loop <164> [115] and the second was a 'T'-shaped staple <143> [107]. Both are of typical Romano-British forms (Manning 1985).

Nails: 113 iron nails were recovered from a range of contexts. Many of these were of typical Romano-British form (Manning 1985) and some had their tips bent over or were bent from extraction. A summary catalogue is available in the archive.

Evidence of Metal Working

The most significant piece of metal working evidence was a large bun-shaped lead ingot <196> weighing in excess of 37kg from [137]. Hayward (1972, 64) discovered evidence for the robbing of lead pipes from the villa. Therefore it might be assumed that this ingot was simply the product of large quantities of lead scrap being collected together and melted down into a convenient ingot that was heavy enough to deter casual theft. Alternatively, the lead may have been stockpiled for building work that was never completed. The reasons for its non-recovery are puzzling and the form of the ingot is such as to defy typological dating.

The excavations also produced (mainly by metal detecting) 110 fragments of lead weighing 1.7kg. These fragments included pieces of cut sheet, solidified splashes and dribbles and other pieces of waste. Such collections are typical of the virtually every Romano-British site where intensive metal-detecting has been undertaken and point to ubiquitous leadworking – literally *plumbing*.

Discussion and recommendations

The assemblage is small and not atypical for a late Romano-British site. The trough, ingot, dress accessories and the iron wedge are arguably the most important objects. The objects suggest inhabitation, structures and building maintenance. Individually the objects cast some light on the function of Rooms 6a and the 'new room'. It is a shame that there are not more items from the deposits in Room 6.

Any publication should include an illustrated report on the small finds. Where relevant they should also be discussed in conjunction with the stratigraphic report.

Assessment of the Post-Roman Small Finds (James Gerrard)

A small number of post-Roman finds were recovered (Fig 48). These included: an iron key <126> from (102). Its form does not fit that of Roman keys and it is presumably post-medieval loss; approximately 75% of an iron horseshoe <100> from (103) in the south-west corner of Trench A. Both of these contexts are stratigraphically high and there is no reason to suppose that either of these objects is anything other than a post-Roman chance loss.

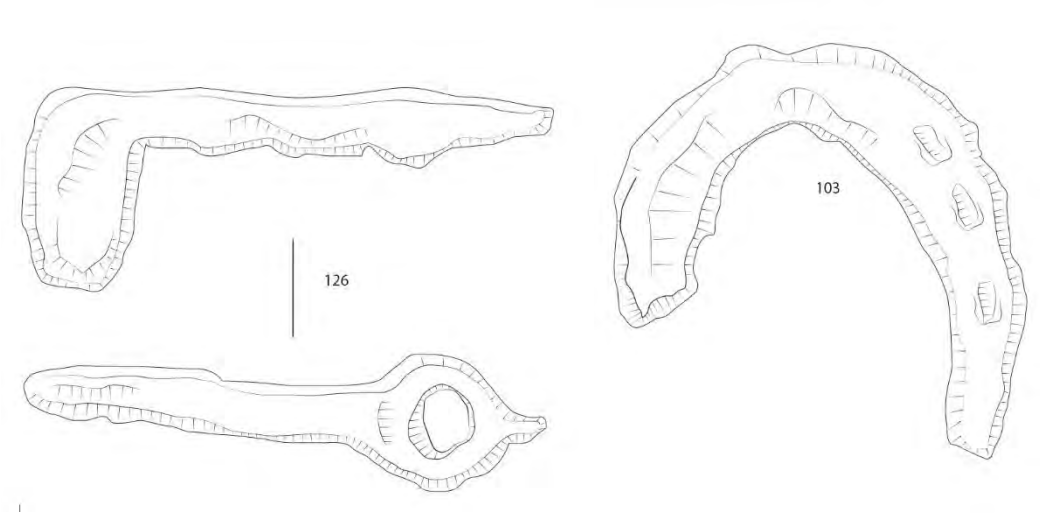

Figure 48 Post-Roman finds: Key <126> and horseshoe fragment <100> (Drawn by Mark Hoyle)

Of somewhat more interest are a small glass 'Horlicks' milk bottle <213>, two plastic cups, one red <214> and the other white <215>, from [123], which is the backfill of one of Hayward's trenches. Other traces of Hayward's interventions included a number of round-sectioned wire six inch nails, of which only one from [100] was retained in the archive.

A single piece of unstratified lead shot presumably relates to hunting / pest control in the recent past.

No further work is recommended on this material.

Assessment of the glass (John Shepherd)

Thirty-two fragments of glass were submitted for identification. All are fragmentary, including five very small splinters ([140] x2; [166]; [202] x2) (Table 5).

Twenty-one of the fragments cannot be assigned to any particular vessel shape, although the majority appear to be Roman according to the colour of the glass and the finish. Two body fragments have thin wheel-cut lines on them ([143] and [152] and are definitely Roman in date.

Of the diagnostic items, all are Roman apart from the tricorn 'prunt' with an eight-dot 'raspberry' motif [129]. This is a very unusual piece of glass, for any period. Although the colour could be Roman, the finish of the item – especially the sharp and precise moulding of the 'raspberry' dots, suggests the use of a machine made tool. This is likely therefore to be from a 19th century vessel, the precise form of which is still difficult to ascertain, although it is probable that the tricorn element is a decorative foot from a Victorian 'floriana' type vessel. Further work will continue on this piece to find a secure parallel.

Seven other fragments come from Roman vessels. Four are form the ubiquitous square-sectioned, prismatic bottle ([115] x2; [139]; [143]). This is a common and ubiquitous bottle form from the second half of the first century through to the beginning of the third century, although the main period of production and use was during the late first and early second centuries. They were used primarily as in transit containers but also, secondarily, as domestic containers and, especially the larger examples which could be up to 300mm high, even as cinerary urns.

The two fragments from [145] are the best dated. They come from typical mid-2nd century drinking vessels. The colourless glass is thin and quite brittle, a distinctive glass type.

Three window glass fragments are present, including one edge and a corner. This window glass, the matt/glossy variety, is typical of the first and second centuries and may have continued in use beyond that date, but the cylinder blown technique appears to replace such cast glass during the late second and third centuries.

Context	Acc no	Phase	No. of frags	Colour	Description
0			1	NG	Vessel
102			2	COL	Vessel
102			1	NGB	Vessel
102	<157>		1	NGB	Window, matt/glossy variety
102			1	NGB	Window, matt/glossy variety, corner
115			1	NGB	Bottle or jug, neck
115			2	NGB	Bottle, square-sectioned (Isings Form 50), body
115			4	NGB	Vessel
115			1	NGB	Window, matt/glossy variety, edge
121			1	NGB	Vessel
129			1	COL with green tint	Bowl? Tricorn base with 8 dot raspberry stamp.
129			1	NGB	Vessel
132			2	NGB	Vessel
135	{2}		1	COL	Vessel
135			1	COL	Vessel
139			1	NGB	Bottle, square-sectioned (Isings

					Form 50), body
140	{3}		2	COL	Vessel, splinter
143			1	COL with green tint	Vessel, horizontal wheel-cut lines
143			1	NGB	Bottle, square-sectioned (Isings Form 50), body
145			2	COL	Beaker, straight-sided, horizontal wheel cut lines above rounded carination
152	{14}		1	COL	Vessel, horizontal wheel-cut lines
166	{9}		1	NGB	Vessel, splinter
202	{16}		2	NGB	Vessel, splinter

Table 5 Catalogue of the glass.

Assessment of the worked stone (Kevin Hayward)

INTRODUCTION AND AIMS

Six sacks, one loose item of stone and two small boxes of stone roofing tile, tesserae, paving stone, rubble and architectural stone, were retained at excavation from Lufton Villa, Somerset (LUF16 and LUF17)

This large sized assemblage (330 examples; 49457g) was assessed in order to:

- Identify the fabric of the unworked and worked stone to determine what the material was made of and from where it was coming from.
- Identify the form and function of the stone to provide clues as to its use at Lufton Villa

- Make comparison between the 2016 (Trench A) and 2017 (Trench B) stone assemblages
- Databases stonelufton16.mdb and stonelufton17.mdb accompany this document and form part of the site archive.
- Make recommendations for further study.

METHODOLOGY

A site visit was conducted by this specialist during August 2017 to examine the fabric, form of the stone and ceramic building material and layout of the site relative to local sources of stone and clay.

The application of a 1kg mason's hammer and sharp chisel to each example ensured that a small fresh fabric surface was exposed. The fabric was examined at x20 magnification using a long arm stereomicroscope or hand lens (Gowland x10).

As there was no Somerset or Dorset stone fabric reference collection housed at PCA, then consultation of the local geological memoirs (Bristow et. al. 1997; Hopson et. a. 2007; Wright et. al. 1958) and 1:50,000 geological maps (Sheets 297; 298; 312) ensured a good understanding of the underlying geology as well the identifying local sources or stone suitable for rubble, ashlar, paving, roofing and quern production. Consultation of articles on worked stone from Somerset (Prudden 2001) and Dorset (Thomas 2008) provide additional geological information.

One further source of information was provided by the specialist's own reference collection of stone samples compiled from earlier research (Hayward 2009) and his work on villas in and around Wiltshire (Hayward 2016; Hayward 2017a) and Dorset (Hayward in prep. a and b). Where the stone fabric matched with the Museum of London series, it was designated the appropriate MoL 4digit code. However, where the stone fabric had no exact match (just one example), the fabric was prefixed by *LUF* and a number thus *LUF1.*

Local stone resources

The site lies in a part of Somerset dominated by Lower Jurassic (Middle Lias) Pennard silts and marls and sands and close to a 0.6 to 8-metre-thick unit represented by Junction Bed (ferruginous and argillaceous limestones) (BGS Sheet 312). Within close proximity is the rusty brown-red-grey Ham Hill stone, a freestone from the Upper Lias (Toarcian) which has in the past been used extensively in sarcophagi, finials, column bases and capitals (Dinnington – Hayward in prep. a) within the Dorset-Wiltshire area as well as much further afield such as the Temple of Claudius precinct at Colchester (Hayward 2009). Also accessible are flaggy calcareous limestones of the Blue and White Limestone, the former as close as 1-2km away, the latter with large outcrops on the banks of the River Parrett at Langport, further afield.

To the south lie progressively younger Middle Jurassic – Upper Cretaceous rocks, some of which (E.g. Fullers Earth Rock; Melbourn Rock) may be suitable as dimension stone and construction rubble). The site also has excellent riverine links (via the River Parrett) to outcrops in North Devon such as the Morte Slates as well as the major SW-NE road the Fosse Way and with it accessibility to a whole package of geologically old, hard sandstones (Brownstones, Pennant sandstone) and soft Jurassic freestones (Bath stone).

STONE – Petrology

A review of 9 rock types, their geological character, source and probable function/ form are summarised below (Table 6). A more detailed consideration as to their origin and use of this moderate assemblage are reviewed below in the summary.

MoL fabric code	Description	Geological Type and source	Use at LUF16 and LUF17
3113	Light-grey to dark grey carbonaceous calcareous mudstone	Kimmeridge Dolostone Kimmeridgian (Upper Jurassic) e.g. Kimmeridge Bay lithology La from Silchester (Allen & Fulford 2004, 13)	Small Design Tesserae 6 examples 22g Trench A 1 example 3g Fill of robber Hayward trench [108] Trench B 5 examples 19g Turfline [1000] Mosaic [1009] including mosaic

3116	Soft white powdery fine limestone	Chalk Upper Cretaceous (Upper Chalk) Outcrops lie 15km to south	Trench B only Small Tessarae 4 examples 16g Turfline [1000] period E rubble spread [1003]
3118	Very Hard white calcareous nodular deposit	Tufa (Holocene) spring water deposits possibly from the River Yeo or River Parrett	Trench B only Rubblestone with pink opus signinum attached 3 examples 4790g Turfline [1000] Period E slates dump [1006]
3125	Hard indurated chalk	Hard Chalk Upper Cretaceous, Local Dorset Outcrops local (Allen & Fulford 2004; Allen et. al. 2007)	Small Design Tesserae 30 examples 89g Trench A Fill of hypocaust [126] Layer in 'new room' [138] Fill of Hayward's trenches [152] Tessalated Pavement [203] 21 examples 64g Trench B 9 examples 25g Period H Topsoil by hand [1002] Period C Mosaic [1009]
3142	Yellow and Red brown banded ferruginous skeletal grainstone (limestone)	Ham Hill stone Upper Lias (Toarcian) (178-174 million years; Cope *et. al.,* 1980): Hamdon Hill, Somerset GR (ST 478 173) Yellow and Grey Beds	Small Design Tesserae, Stone Trough, rubblestone 4 examples 9121g. Also seen in mosaic in Room 2 South Wing (Smith 1972, 73) and Worked construction stone /walling rubble and columns around octagonal building (Hayward 1952; 1972) [126] and hypocaust (Gerrard 2018) Trench A Design Tessarae1 example 3g Fill of Hypocaust [126] Stone Trough 1 example 8000g Turfline [1000] Trench B rubblestone for walling and lacing courses 2 examples 1118g Turf line [+]
3153	Fissile Fine grained dark grey muddy limestone	Blue Lias - Blue Lias Formation Lower Jurassic (Lias) Outcrops lie 1-2km north of the site but workable units from Charlton Mackrell 10km are suggested (Hayward 1952, 92)	Border Tessarae, rare design tesserae, roofing paving 77 examples 20772g Trench A 32 examples 4287g Design and Border Tesserae 30 examples 599g, [0] Rubble [102], fill of Hayward's trenches [104], [105], [108] Room 5 [112], rubble layer [115] **Roofing** 2 examples 3688g [105] Roofing collapse 'new room' [121] Trench B 45 examples 16485g **Border Tessarae** 21 examples 620g Topsoil by hand [1002] **Paving** 1 example 1600g Turfline [1000] **Roofing** 23 examples 14220g Turfline [1000] Period E rubble [1005] and slate dump between buttress [1004] rubble spread [1005]and Black layer under rubble spread [1010]
3154	Very fine grained fissile to even-bedded pale grey-white micritic limestone - calcareous mudstone has distinctive watermarks or calcite veins which criss-cross the fabric of the stone	White Lias Triassic (Langport Member Penarth Group), Langport on the River Parrett	Border Tessara, stone roofing 19 examples 5131g Trench A 10 examples 4807g **Border Tesserae** 6 examples 178g Fill of Hayward's trench [108], [152] **Stone Roofing** 6 examples 8363g Turfline [100] Rubble backfill [102] Roof collapse 'new room' [121] Trench B 9 examples 324g Border Tessarae 9 examples 324g Mainly turfline [1000] Topsoil by hand [1002]
3154V	Very fine grained even bedded pale grey-white micritic limestone with distinctive narrow calcite veins or watermarks and large pentamerid brachiopod rich cementstone	Brachiopod rich White Lias White Lias Triassic (Langport Member Penarth Group), Langport on the River Parrett or possibly the local transitional bed	Architectural stone and rubblestone perhaps for Herringbone walling 2 examples 1861g Trench A 1 example 928g Stone column [100] turfline Trench B 1 example 936g Rubblestone Turfline [1000] Noted earlier in herringbone walling at Lufton (Hayward 1952, 92; Williams 1971, 104)

LUF1	Lustrous, fissile grey green slate	Morte Slate, Frasnian, Devonian Ilfracombe and an inlier just 7-10km west of Yarford,	Stone Roofing or just possibly waterproof sealant layers in the stone construction walling as no nail hole 9 examples 1554g Trench A 2 examples [102] rubble layer Trench B 7 examples 1127g period E slates deposit between buttress and rubble [1006] and black layer under rubble [1010]

Table 6 Table summarising the character, source, quantity and probable function of the main stone types from Lufton Villa

Proportions by stone type only include collected material (Fig 49). Excluded are the huge quantities of worked Yellow Ham Hill stone and rubble stone seen in earlier excavations (Hayward 1952; 1972) including foundation walling, door sill, furnace, stone channel as well as structures seen from the present excavations e.g. the flue from the current excavations (Gerrard 2016). This local source of hard yellow and red bioclastic freestone lies some 3 miles to the south of Lufton and supplied villas (often via the River Parrett) in the Somerset/Dorset/Wiltshire region with suitable quality stone for architectural carving, paving slabs, funerary monuments. Villas as far north as Yarford (Hayward 2010), east at Teffont Evias (Hayward 2017a), as well as at Dinnington (Hayward in prep. a) and Dewlish (Hayward in prep. b) have examples of its use. There is also Yeovil stone (a hard sparsely oolitic ragstone from the Lower Jurassic) only recorded from excavation notes used in the walling

In terms of retained stone, it can be seen below (Figure 2) that locally acquired Blue Lias (possibly quarried from exposures as close as 2km away) and White Lias (Langport) from slightly further afield dominate the assemblage. There is Morte slate, a Devonian metashale, from North Devon identified from other villas mainly to the north of this region (Williams 1971b, Table 2) is represented, no doubt made accessible by the proximity of the River Parrett.

As expected some of the much smaller more portable tesserae cubes come from further afield especially the tiny design tesserae present on the mosaic [1009] including the hard white Chalk (Upper Cretaceous) and soft chalk from outrops 15-20km to the south and Kimmeridge Shale (Upper Jurassic -Dorset). The larger border tesserae (Blue Lias; White Lias) come from the same local source as the roofing

There are some differences with the assemblage from 2016 (Hayward 2017) not least the occurrence of a large quantity of low density calcareous Tufa. Tufa in central southern England, always forms an important component of villa stonework because it is often used in vaulted ceilings and arches often coated in opus signinum (e.g. Hayward in prep. c). Although, it has not been possible to pinpoint a source for the Tufa, local outcrops in a calcareous rich part of Somerset would have accumulated at spring lines or at there confluence with Rivers (e.g Yeo and Parrett). The examples have hard *opus caementatum* or possibly even waterproof *opus signinum*, acting as a sealant in waterproof conditions. There is also far less White Lias, nearly all of it consisting of tessarae. Only soft white chalk tesserae were recorded from 2017,

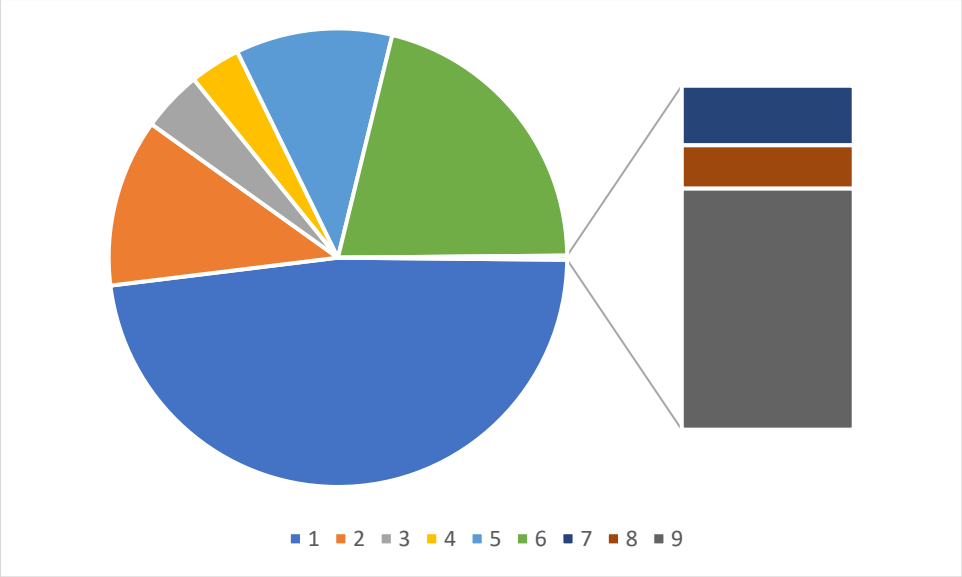

Figure 49 Proportion of stone by rock type (weight%) ***1= Blue Lias 2= White Lias 3= White Lias fossiliferous 4= Morte Slates 5= Tufa 6=Ham Hill stone 7=Kimmeridge dolostone 8= White Chalk 9= Chalk Rock***

Stone Function

By function it can be seen below (Fig 50) that roofing stone dominates (56% by weight). Other important contributors are the rubblestone (8% by weight) and a stone trough (16% by weight). Paving (3.2% by weight), and architectural stone (1.9% by weight) on the other hand usually an important part of a villa site assemblage are very poorly represented. The very large number of individual tessellated stone (14.4% by weight) cubes (276) emphasise the importance of mosaic flooring in this villa, as seen by in-situ floors in Trench A [203] Trench B [1009] With the exception of the large quantity of tesserae found from Trench A, the proportions by function do not vary greatly from Trench A 2016 (Hayward 2017) and Trench B suggesting a certain degree of intermixing and dispersal following villa disuse and collapse.

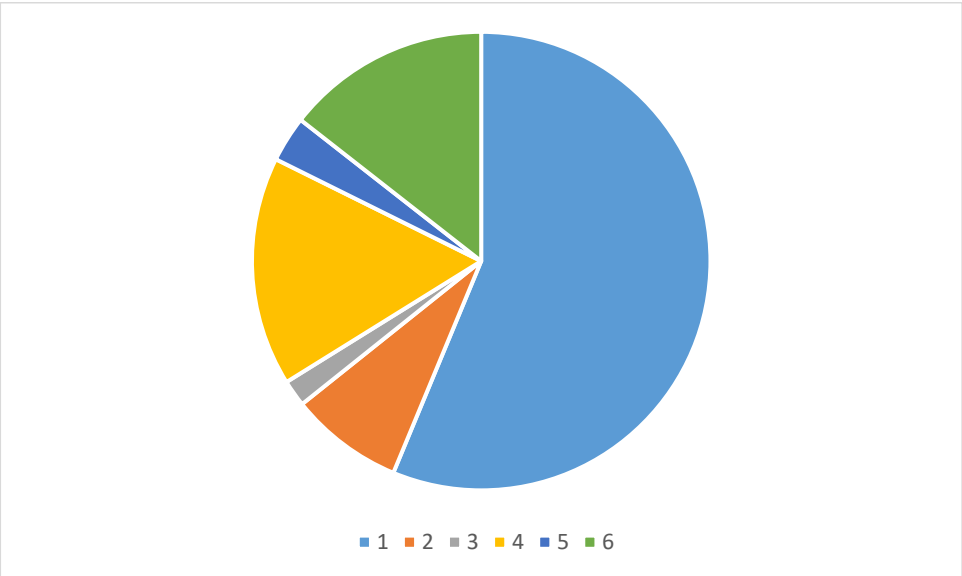

Figure 50 Stone type by function (wt%) ***1= Roofing 2= Rubblestone 3= Architectural stone 4= Stone Trough 5=Paving 6= Tesserae***

Stone Column 1 example 928g
The unstratified stone column <188>, from Trench A (Hayward 2017) is an extremely rare use of White Lias in architectural decoration with no examples identified from the Cotswold and Dorset Region (Williams 1971b). Normally this rock is too fissile for this purpose, hence its widespread use at Lufton in roofing and in tesserae. However, the White Lias used in this lathe turned column is more even-bedded, fossiliferous variant suitably soft though perhaps accounting for its rather degraded weathered form.

There are no other archibtectural elements or indeed ashlar carved from the finer types of Middle and Upper Jurassic limestone (e.g. Doulting stone; Bath stone; Portland stone), that characterise many villas in south-central England suggesting that perhaps these better-quality rocks were robbed out and incorporated into the fabric of buildings in nearby villages.

Stone Trough <124> 1 example 8000g
The function of a large, roughly tooled, triangular shaped trough recovered during machining in Trench A remains unclear. However, it is likely to be either a container for water, ash or possibly for mortar mixing. What this object shows however, are the limitations that the local Ham stone stone-type had for accurate stylised carving.

Tesserae 274 examples 7140g
Numerically, individual cubes of tesserae are by far the most common (107 examples 1851g) which is not surprising given the number of fragmentary patterned pavements discovered between 1960 and 1963 (Smith 1972, 71-76), including two [203] (Trench A) [1009] (Trench B) from the recent excavations Six different rock types are represented in these excavations (Indurated Chalk, soft white chalk, Kimmeridge Shale, White Lias, Blue Lias, Ham Hill stone) each with a distinctive hue (white, dark grey, very pale grey, dark grey and brown) respectively. This palette of colours is supplemented by the red ceramic tile (Hayward 2017b) showing just how much investment was put in to the schemes. As a rule of thumb softer stone (indurated chalk, white chalk and Kimmeridge shale) is associated with the design tesserae (8mm x 8mm x 8mm) or the slightly larger (12mm x 12mm x 12mm) whilst harder fissile materials (Blue Lias; White Lias) form the much larger border tesserae (35mm x 25mm x 25mm) in the larger tessellated pavement e.g. One obvious exception is the harder red bioclastic limestone (Ham Hill) used as a design tesserae from [126] in Trench A selected for its hue rather than ease of working.

The larger border tesserae come in two sizes. A majority of the easier to cut White Lias were flat square (20mm x 20mm x 10mm), whilst the harder blue Lias are bigger and slightly thicker (35mm x 35mm x 18mm). Two different types of mortar were seen attached on these individual cubes in Trench B clearly indicating derivation from two different pavements. One attached to the rear of a design tessarae from [1002] is a type of pink fine *opus signinum* with tiny flecks of glass. The other, found in loose tessarae throughout the site is a more conventional hard white lime mortar.

There are several half cubes and what appear to be part finished border tesserae in blue lias from the Phase G rubble in Trench A [115].

A large majority of the tesserae came from Trench A 224 examples (82% number of examples) specifically the tessellated pavement [173] [203].

Most of the loose stone tesserae from Trench A were found to concentrate in Rooms 5 and 6 along with red ceramic tesserae in Hayward trench fill [108], with a new stone tessellated surface [203] in Blue Lias (not seen by this specialist) in Room 6a (Structure 206)[1].

Many of the loose stone tesserae from Trench B were recovered from the 'fish mosaic' floor [1009], which consisted entirely of design tessarae in two sizes (12mm x 12mm x 12mm) and (8mm x 8mm x 8mm). Two rock types were represented the darker grey Kimmeridge Dolostone and the finer white Indurated chalk. Most of the larger border tessarae come from the Period E rubble spreads.

Roofing 40 examples 27825g

By far the most frequent category of stone find by weight are the roofing tiles 27825g (59%) These are represented by many large to near complete stone roofing tiles in three lithologies (White Lias, Blue Lias and Morte slate).

Lias flagstones (assumed to derive from Charlton Mackrell) (Hayward 1952, 92) dominate the assemblage 26200g. Both the blue and white lias lithologies are ideally suited to the production of roofing slabs: as they easily split into large slabs 20-30mm thick and can easily be trimmed to shape. At least two forms can be identified from Trench A; each with a circular (8-11mm) nail hole at one end. One can be described as a seven-sided long and narrow form (367mm x 235mm x 19mm) from the roof collapse north of the 'new room' [121], whilst a second form from this context is shorter (320mm) and wider (at least 300mm). From Trench B there were two new complete forms, again each with a circular (8-11mm) nail hole at one end. One can be described as having a pointed very narrow pentagonal shape (335mm x 170mm x18mm) [1010] whilst a second unstratified example has a rectangular "special" form perhaps for the eaves of the building.

A third source of roofing material comes from much further afield. The identification of a lustrous, fissile grey-green slate from the rubble back fill [102] in Trench A and in a slate group in Period E between a buttress and rubble [1006] and black layer under rubble [1010] Trench B were found to be lithologically comparable with Morte Slate from the Devonian of North Devon. This rock had been identified in roofing close by at Dinnington Villa (Hayward in prep. a) and from Yarford Villa (Hayward 2010) in North Devon. Accessibility to Dinnington and Lufton would have been River Parrett, which incidentally seems to account for the presence of Ham Hill at Yarford (Hayward 2010).

All of the slates from Lufton lacked a nail hole which may suggest that these tiles could have been used as waterproof sealant layers in the stone construction walling rather like the use of North Wales slate in Victorian industrial and residential brick and stone structures. However, it is far more likely, given that they are frequently found together intermixed with Blue and White Lias tiles e.g. [1006] with nail holes that they were roofing materials.

As well as from unstratified and modern layers throughout the site, large accumulations of roofing tile were identified (both Morte and Blue Lias) in the period E accumulation of slates between the period C buttress [1004] and period E rubble spread [1005]. Given their concentration, it seems probable that they roofed the structure supported by the buttress. A second grouping, from a similar area, the black layer beneath period E rubble [1005] may also relate to this structure.

Paving 1 example 1600g
A solitary thick (40cm) Blue Lias slab 1600g from an unstratified context, provides the only evidence so far for stone pavers at Lufton Villa. As with the roofing, these fissile cementstones are ideally suited for the purpose for which they were intended as they can easily split into large slabs and can easily be trimmed to shape. Stone paving is often associated with bath-house floors.

Rubblestone
As well as the loose lacing course material and rubblestone identified from the 2016 (Hayward 2017) assemblage, the use of Ham stone (Grey Bed and Yellow Bed) rubblestone extends to the numerous stone foundation walls seen during 2016 and 2017 as well as the excavations from the 1950s and 1960s (Hayward 1952; 1972). Only from Trench B, there are lumps of Tufa, possibly broken up and reused e.g. in the period E slate dump [1006], between buttress [1004] and period E rubble spreads. Usually these low density calcareous deposits provided ideal material for vaulting in villas and are seen time and time again in these stone assemblages e.g. Northamptonshire (Stanwick), Dewlish, Dinnington, (Dorset), Brading (Isle of Wight), Chedworth (Gloucestershire). (Hayward pers. obs.).

SUMMARY/POTENTIAL

An assessment of the retained stone assemblage from Lufton Villa, shows that most of, many of the materials (calcareous mudstones, tufa and limestones) used in the roofing, rubble, paving, tesserae

and architectural stone column came from the surrounding Lower Jurassic. What is more the much larger architectural elements recorded on site come from the nearby Ham Hill exposures, merely 3 miles from the villa, including rare examples of hypocaust with Ham Hill stone lined flue channel (Williams 1971, 115). These findings are in accordance with earlier studies (Hayward 1952; 1972)

What this study shows is that some of the much smaller, portable tesserae (Kimmeridge shale, Indurated chalk) and 5% of the roofing tile (Morte Slate) come from much further afield. The dolostone tesserae also comes from Kimmeridge Bay along the Dorset coast, whilst the white chalk and indurated chalk all as the smallest design tessarae are from outcrops to the south of Lufton. Both the very small dark Dolostone and hard white indurated chalk were used in the period 3 construction of the fine mosaic [1009], suggesting this highly embellished flooring used materials from further afield. These materials were identified from Dinnington Villa (Hayward in prep. b) and formed part of the large agglomerated Purbeck-Portland industry of East Dorset (Allen and Fulford 2004; Allen et. al. 2007). The Morte slate (Devonian – North Devon) was quarried from the south side of Exmoor and the Brendon Hills (Prudden 2001, 29) and used in villas close by such as Yarnford (Hayward 2010). Proximity to the River Parrett permitted this rock to be brought south and used as roofing at Lufton, Dinnington Villa (Hayward in prep. b) and other villas (Williams 1971, Table 2), as well as allowing Ham Hill stone to be transferred downstream to Yarnford (Hayward 2010).

Petrologically, the assemblage and material recorded on site, bears several close comparisons with Dinnington Villa (Hayward in prep. a). For example, in the large-scale use of Ham Hill (used at Dinnington in capitals, guttering and voussoir blocks: Hayward in prep. a), White Lias roofing and a similar palette of tesserae stone types. What is different are the variety of materials at Dinnington (16 lithotypes) although future excavations may reveal considerably more materials.

Apart from the tesserae used in the mosaics and the few fragments of painted wall plaster there is just a single lathe turned architectural element and one paving stone made from better quality White Lias from Trench A. This is surprising, as most villas in south-central England e.g. Dorset (Dinnington, Dewlish, Halstock) Wiltshire (Box) and Somerset (Yarford), Gloucestershire (Chedworth) have large quantities of architectural ornament made from high quality freestone. It seems probable that this material was robbed and reused into the fabric of later buildings in the district.

Apart from the tesserae which are very well represented in Trench A in the area of the tessellated floor [203], the proportions by function do not vary greatly from Trench A 2016 (Hayward 2017) and Trench B suggesting a certain degree of intermixing and dispersal following villa disuse and collapse.

Finally, because of the small numbers and intermixed nature of stone and ceramic roofing tile (imbrex and tegulae) recovered (Hayward 2017b) it is not possible to ascertain whether certain rooms were roofed with red ceramic tile or stone tiled or indeed a mixture of both (flat grey stone with red imbrex roof). The evidence from Lufton, however, does seem to suggest both were used in accordance with other villas in Dorset and Somerset that both stone and roofing tile were used (Williams 1971; Lucas 1993; Putnam 2007).

Assessment of the ceramic building material (Kevin Hayward)

INTRODUCTION AND AIMS

Ten sacks of Roman ceramic building material and mortar were retained from the excavations (LUF16; LUF17).

This moderate sized assemblage (101examples; 39056g) were assessed to:

- Identify the fabrics used in the roofing tile, brick, tesserae box flue tile

- Identify the form and function of the ceramic building material to provide clues as to its use at Lufton Vill**a**
- Make comment on the ceramic building material used in the mosaic
- Make comment on the painted wall plaster and *opus signinum*
- Make comparison between the ceramic building material assemblages from the 2016 and 2017 excavations.
- Databases cbmlufton2016.mdb; cbmlufton2017.mdb accompany this document and are contained within the site archive.
- Made recommendations for further study.

METHODOLOGY

A site visit was conducted by this specialist during August 2017 to examine the fabric, form of the stone and ceramic building material and layout of the site relative to local sources of stone and clay.

The application of a 1kg mason's hammer and sharp chisel to each example ensured that a small fresh fabric surface was exposed. The fabric was examined at x20 magnification using a long arm stereomicroscope or hand lens (Gowland x10).

As there was no Somerset or Dorset ceramic building material fabric reference collection housed at PCA, each fabric was prefixed by LUF and a number thus *LUF10*. Also, consultation of the local geological memoirs (Bristow et. al. 1997; Hopson et. a. 2007; Wright et. al. 1958) and 1:50,000 geological maps (Sheets 297; 298; 312) ensured a good understanding of the underlying geology as well the identifying local sources of clay.

Previous work and local clay resources

Except for the occasional specialist contribution to the construction of a particular villa e.g. Halstock (Bellamy 1993, 111), very little is known about the fabric and form of Roman tile and brick in Dorset and Somerset. Furthermore, these reports are often very short and provide general comments on form. This makes it difficult to compare the fabric and form of the assemblage from Lufton with any other villa site.

The site lies in a part of Dorset dominated by Lower Jurassic (Middle Lias) Pennard silts and marls and sands and close to a 0.6 to 8-metre-thick unit represented by Junction Bed (ferruginous and argillaceous limestones) (BGS Sheet 312). The Pennard silts and marls have been noted as a possible clay source for brickmaking (Hayward 1952, 92). Other local clays suitable for the production of brick and tile include the Lower Lias clays in Marshwood Vale and at Mudford in the Vale of Ilchester, from the Fullller's Earth at East Chinnock and Bradford Abbas; and from Oxford Clay at Melbury Osmond (Wilson et. al. 1958, 208).

Upper Cretaceous Lower Chalk and Lower Lias calcareous limestones would provide a local source of lime suitable for mortar and *opus signinum* production.

CERAMIC BUILDING MATERIAL

Only Roman tile and brick is present.

Condition and Distribution.

Trench A

Much of the 30kg of roofing tile, box flue tile, brick, tesserae and *parietalis,* that remains was in a very good state of preservation. For example, a near complete example of a curved imbrex was recovered from pottery spread [129] in the 'new room', whilst a very large section of a flanged tegulae, including its complete width was identified from [144] a tegula covering a complete BB1 jar. There are also numerous complete to near complete examples of *pedalis* [105] and *bessalis* sized brick [155], still with mortar and opus signinum attached. Evidence

for reuse in the form of mortar on broken surfaces is completely lacking and the assumption is that much of the material was left in-situ (or collapsed soon after) abandonment.

Complete examples are found in most of the rooms excavated (Rooms 1-6)

Trench B

Unlike, the excavation from Trench A (Hayward 2017) most of the 9kg of roofing tile, box flue tile, brick, tesserae and *parietalis,* that remains was in a fragmentary condition. For example, none of the bricks or roofing tile have more than one complete dimension, and it is only the small ceramic design tessara from the mosaic [1009] that are complete. However, individual fragments are large, each having a definable profile or form that enables it to be categorised as either a roofing tile, or brick, with no undiagnostic flat tile. The largest piece was a curious asymmetric shaped imbrex from the period E black layer [1011] probably for use on the eaves of roof

Fabrics

A review of the fabrics and the forms of ceramic building material with which they are associated with are summarised in Table 7.

Building materials made out of orange fine sandy fabrics (LUF10; LUF11) completely dominate the assemblage (76 examples 33094g) accounting for 85% by weight of the assemblage. All of the brick, tessarae including the scored pedalis bricks are made of this fabric. Mottled silty and grog rich fawn coloured iron oxide rich fabrics on the other hand (LUF12; LUF13) which account for the remaining 15% are restricted to roofing materials (especially imbrex), tubuli and box flue tile.

Fabric	Description	Use at LUF16/LUF17
LUF10	Very fine orange very loose orange sandy fabric with occasional flecks of white calcareous shell, occasional chaff or very fine moulding sand. Abraded appearance due to its poor consolidation	Tegulae, bessalis, imbrex, tesserae, box flue tile 19 examples 6776g Trench A Common 16 examples - 5704g. Used in many different elements especially Tesserae. [100] Fill of Hayward's trenches [108] backfill rubble room 4 [115] Low flanged tegulae with flange profile 7 rubble layerl [102] more rarely imbrex fill of Hayward trench [105] Period D Mortar floor Room 10 bessalis brick [155] and Wide combed box flue tile modern rubble fill [102] Trench B Present 3 examples 1072g Used in a design tessarae in the period 3 mosaic [1009] a larger border tessarae [1002] from the top soil and large asymmetric shaped imbrex from the period E black layer [1011]
LUF11	Comparable to LUF1 but with a reduced core, more ironshot red iron oxide, and occasional micro-laminae Similar clay source suggested	The main brick fabric including all large scored pedalis sized bricks, tegulae mammata,, some tesserae, tegulae, box flue tile 57 examples 26318g Trench A Very common 21 examples 18589g Used in all large comb scored keyed pedalis sized bricks [+] Period G fill Hayward's Trench Room 6 [105] F [136] Bessalis associated with pilae stack Period C Rooms 10 and 11 [193]. Keyed Tegulae mammata [136] and Parietalis [136]. tesserae [106] [115] Tegulae flange profile 7 [139] [144], Wide comb box flue tile [100] [105] Trench B very common 36 examples 7730g Used in all large comb scored keyed pedalis sized bricks [1000] Period E Slates between buttress and rubble [1006] period 5 black layer [1010] Bessalis probably from a pilae stack [1000] period 5 rubble layer [1005] and black layer [1010] Imbrex period 5 black layer [1010]
LUF12	Very busy light fawn fabric numerous fine quartz fragments with black iron oxide red iron oxide and very fine yellow silty micro laminae	Rare - 5 examples 2722g All Trench A restricted use to imbrex [102] period D 'new room' [129] and narrow straight and zig-zag combed box flue tile period G fill Haywards Trench Room 6 [105] Period D Burnt Patch Room 6 [159]
LUF13	Busy light fawn to orange sandy (grit) sized quartz fabric with large white chalk inclusions 2-3mm across, very large red iron oxide and possible grog inclusions. Rare fine silty lamiae	Moderate 9 Examples 3154g box flue and roofing material only Trench A 7 examples 2653g restricted use to roofing material (tegulae flange profile 14/22 and imbrex) [102] period G fill Haywards Trench Room 6 [105] and probable drain – tubulus Period D Mortar Floor [155]

		Trench B Rare 2 examples 501g tegulae only from period 5 rubble [1005] and black layer [1010]

Table 7 Table summarising the character, quantity and probable function of the main ceramic tile and brick fabrics from Lufton Villa

FORMS

Figure 51 summarises the proportion of different forms of ceramic building material from these excavations.

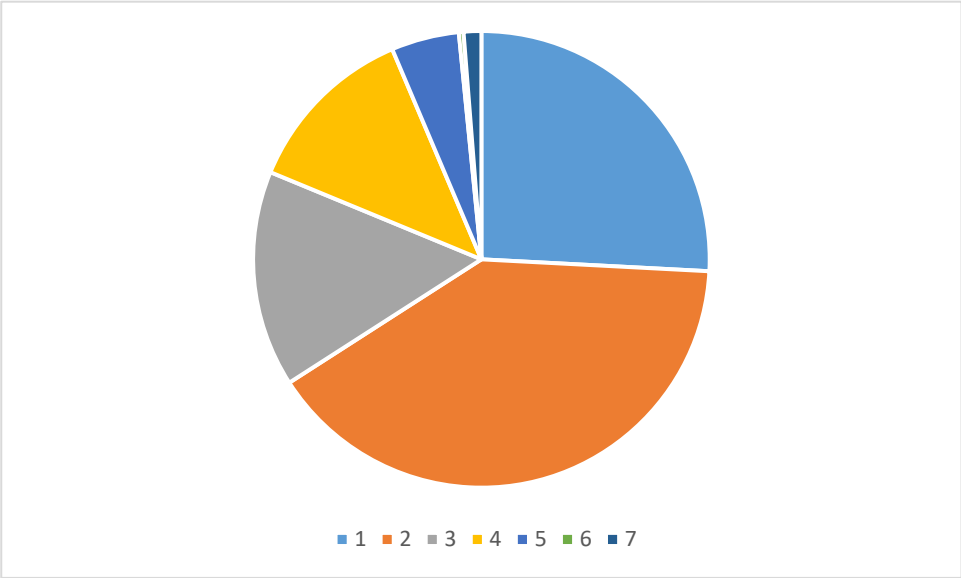

Figure 51 Proportions (wt%) of different types of ceramic bulding material 1= bessalis *(pilae stack) brick 2= Keyed Brick 3= Tegulae 4= Imbrex 5= Box Flue Tile 6= Drain 7= Tesserae*

Brick 26 examples 25827g

Proportionally, by weight kg (66%) the most important category is the large complete or near complete bricks. These included the smaller bricks associated with *pilae* stacks and larger items of keyed brick. All are made from the very fine loose sandy fabrics *LUF10* and *LUF11.*

bessalis 13 examples 10121g

Small, complete 200mm x 200mm x 30mm and fragmentary *bessalis* sized bricks were most commonly used as *pilae* stacks as in the period C Grand Tile Stacks in Room 10 and 11 [193] from Trench A. Also in Room 10 and 11 there were other examples [194] to [199]. All of these examples were from the hypocaust (Structure [170]).

From Trench B the material is more fragmentary and is located either in period E rubble [1005] or grey C [1008]

Keyed Brick: *pedalis/lydian; tegulae mammata and parietalis* 13 examples 15706g

The characteristic feature of the ceramic building material assemblage at Lufton Villa are the large quantity of thick (41mm-65mm) comb keyed *pedalis* or *lydion* sized bricks. In Trench A these locate from the fill of Hayward's Phase G trench in Room 6 [105] and the fills of Hayward's investigations of Rooms 10 and 11 [136].

In Trench B, they are found albeit in a more fragmentary condition from the period E roofing slate dump between the buttress and rubble layer [1006] and black layer [1010]

The combing is coarse and in each case, forms a cross at the centre of the brick. It is keyed, rather than it being a signature mark because there are traces of pink *opus signinum* embedded in the combing from [136]. Also present from [136] is an example of 50mm thick *tegula mammatae,* with a flattened clay lump or *mammae* in one corner overlying onto this keying. One further example of a keyed brick, this time a thinner (29mm) combed

parietalis, also from [136] with mortar on one side and *opus signinum* on the other may suggest that these are wall tiles, partitioning off one room from another. With an absence of comparative data, it is only possible to speculate at this stage if this is some sort of regional bath-house tradition.

Roofing Material 42 examples 10852g

Flanged tegulae and curved imbrex roofing tile account for 28.7 weight % of all ceramic building material. They are present in a range of fabrics (LUF10-LUF13) indicating that more than one kiln source was response for their manufacture.

Tegulae 13 examples 6002g

All the flanges in the tile are small (35-40mm), typical elsewhere e.g. London of later Roman roofing material (Hayward pers. obs.) There were two different flange profiles. First the flat topped, undercut profile 7 associated with the finer LUF10 and LUF11 fabric appear to be associated with later episodes of the villa's development such as their use capping the jar in the 'new room' [144] and in Room 6 (suggesting roof collapse) and later rubble backfill in the same general area [102]. These were only identified in Trench A (Hayward 2017)

A second profile, a more complex upward facing top, with then a concavo-convex form (profile 7) associated with the coarser busier fabric LUF13 is found also in the late rubble backfill [102] and from the fill of Hayward's wall trench on the south side of Room 2 [105] in Trench A. In Trench B, these fabrics and profiles are restricted to just two examples both from Period E from a rubble layer [1005] the other a black layer beneath it [1010]

Imbrex 29 examples 4850g

Curved imbrex are characterised by relatively thin (16mm) gently sloping forms in the coarser groggy fabrics in Trench A *LUF12* and *LUF13* in post-Roman layers [102] (period H) and Phase G [105]. There is also a rare near complete example from the pottery and tile spread in the 'new room' [129], which is indicative, like the larger tegulae pieces of in-situ collapse of the roof following late Roman abandonment.

In Trench B, two near complete examples, both from local sandy fabrics LUF10 and LUF11 were recovered in period D black layer [1010] and the overlying younger period E black layer [1011]. The latter has an unusual asymmetrical profile with angles of 40 degrees and 90 degrees and may have served as an imbrex on the ridge or more probably eaves of a roof.

Box Flue Tile 6 examples 1882g

Two forms of wall jacketing are represented, all in Trench A. Each has a different comb widths. Very coarse (10mm thick) straight combs like that used on the keyed bricks are made from the fine LUF10 and LUF11 fabrics. These form sizeable examples of wall jacketing such as those from later dumped and unstratified contexts [100] [102] [105].

A second group has narrower straight [105] or zig-zag combing [108] (again both in post Roman Hayward robber fills) in the grittier silty fabric LUF12. It is not clear whether these differences are chronological or merely represent the contemporary production of two kilns, each with their own clay type and style of combing.

Tesserae 15 examples 130g

Most of the red ceramic tesserae, in fabrics *LUF10* and *LUF11* were of the larger design size (35mm x 25mm x 25mm) and are often identified along with the darker and lighter hues of the White and Blue Lias stone (Hayward 2017a) in Room 6 and are often found dispersed in the post-Roman Hayward trench fills [108]. It would seem likely that these larger red tiles would have been used together in a single tessellated floor for the corridor area.

Just two tesserae came from Trench B, significantly there is a small red design tesserae (8mm x 8 mm x 8mm) in the period C mosaic floor [1009]. The use of ceramic building material as the red hue in a mosaic therefore seem to be preferred over burnt mudstone rocks from the Dorset coast such as the red Kimmeridge mudstone at Silchester and closer to the Dorset coast (Allen et. al. 2007).

Tubuli 1 example 490g
A thick (25mm) sharply curved element from Room 10 in Trench A [155] is likely to represent a surviving section of ceramic drain or *tubuli,* possibly to convey water or heat. This seems probable given the identification of large Ham stone lined culverts from this excavation (Gerrard and Agate 2016)

WALL PLASTER/OPUS SIGNINUM

The presence of waterproof *opus signinum* on side of the wall tile or *parietalis* from a post Roman Hayward robber fill [136] is indicative of protection against damp and condensation. There are also examples adhered to tufa rubble from Trench B (see Hayward 2018). This is typical of bath-houses and villas with underfloor heating. It is possible however that this may simply provide the backing (*arriccio)* for a layer of wall plaster. There is a layer of plaster adhered to the other side to the *parietalis* suggesting the wall tile divided up two rooms.

Small fragments (13 examples 85g) of painted wall plaster are only encountered in Trench B. This small group mainly from topsoil [1000] [1001] [1002] but also period E rubble layer [1003] and the earlier period D black layer [1011] are backed by two types of coarser arriccio. First, those with a white coarse backing and lumps of ceramic building material (thus a type of low density *opus signinum)* seen backing a parietalis in Trench A (see above) and either back plain red and grey splash in a period D black layer [1011] or a complex pink, red and white pattern seen from [1002]. A second *arriccio* backing is a lime-rich fine gritty recipe with yellow-brown angular ceramic inclusions associated with plain pink-red and turquoise plaster from topsoil [1000] [1001] and period E rubble [1003]. One the basis of different arriccio types and associated fresco a minimum of two schemes of wall plaster are present at Lufton.

SUMMARY/POTENTIAL

An assessment of the retained ceramic building material from Lufton Villa (LUF16; LUF17) shows that all the major elements associated with heated corridor type villa building are present (box flue tile, *bessalis pilae* stacks, *tubuli,* tesserae, *tegulae mammatae*, keyed brick; painted wall plaster; *opus signinum*). Many of these are complete examples are often in an excellent state of preservation with little if any evidence for reuse or breakage, implying in-situ collapse and abandonment of the villa following its disuse with little subsequent alteration. The large number of thick keyed *pedalis* or *lydian* sized bricks, *tegulae mammatae* and *parietlis* with combing some with relic *opus signinum* or plaster are the key feature of this group. The implications are that some (certainly *the parietalis*) represents wall tile. However, in the absence of comparative data from other villas, it is not clear whether this brick keying is a regional tradition in this part of the province.

There is very little difference in the fabric and form of the assemblage between Trenches A and B and many are intermixed along with the worked stone possibly following Haywards excavations.

Coarser siltier fabrics (*LUF12* and *LUF13*) are associated with imbrex and fine combed box flue tiles suggesting specialist kiln manufacture whilst the much heavier brick and most of the tegulae are made from much finer sandy fabrics, probably manufactured on site from Pennard clays.

The mosaic from Trench B uses small design tesserae made out ceramic building material for the red hue rather than burnt Kimmeridge mudstone which is present in other assemblages.

Finally, because of the small numbers of ceramic roofing tile and stone recovered (Hayward 2017a; Hayward 2018) it is not possible to ascertain whether certain rooms were roofed with red ceramic tile or stone tiled or indeed a mixture of both (flat grey stone with red imbrex roof). The evidence from Lufton, however, does seem to suggest both were used in accordance with other villas in

Dorset and Somerset that both stone and roofing tile were used (Williams 1971; Lucas 1993; Putnam 2007).

Following completion of the excavations I would recommend that this assemblage is compared with the form of the tile and brick from Dinnington with the work that Peter Warry has been undertaking and discussing.

Note on the Lufton Fish Mosaic (Patricia Witts)

The re-excavation of part of the fish mosaic around the pool in Room 14 uncovered two fish in the positions designated C1 and C2 by the original excavators[2]. The fragmentary remains of the head of another fish facing C1 were also noted, bringing the number of known fish in the mosaic to 30. Subsequent research has established that this fish had been noticed by Leonard Hayward as it is indicated in his sketch of Panel B and mentioned in his excavation diary, but it was not included in his published total[3].

Fish C2, which was re-exposed almost in its entirety, has its head to the right and is readily recognisable as a swordfish. This is the only fish in the mosaic identifiable as a particular species. Fish C1 faces the opposite direction and was completely uncovered. It has a prominent eye and a wavy mouth. Its head is angled downwards and intrudes into Panel B, with only the body of the fish fitting within Panel C. The head of the additional fish is represented by five dark blue-grey tesserae in a curved row with one red tessera inside the curve; three rows of white tesserae follow the line of the curve on the outside.

Fish C1 measures 46.5 cms at its maximum extent from the mouth to the upper tip of the tail. The exposed area of Fish C2 measures 55.5 cms from the upper tip of the tail to the edge of the excavation. The white band in which the fish are depicted is 20.5 cms wide, and the band of guilloche below the fish is 28 cms wide. The bedding for the tesserae is minimal.

The exposed area of mosaic was found to be in a good state of preservation. Since 1946 there has been some loss of the outer band of guilloche and minor losses to the inner band. A small area of damage was apparent in the centre of the body of Fish C1 by the side of a dent in the mosaic. As this can be seen in photographs taken in 1946, it does not represent subsequent deterioration.

By the standards of the time the mosaic had been well recorded in the original excavations, with many black and white photographs and rubbings of most of the fish. The re-excavation allowed a comparison to be made with the rubbings. While the rubbing of Fish C2 was broadly accurate, it was apparent that the rubbing labelled as Fish C1 was of a different fish (D6). Previously it had been thought that Fish D6 was incomplete but the correct attribution of the rubbing shows that this was not the case. Probably through simple administrative error, no rubbing had been made of Fish C1

[2] Starting with the panel on the western side of the room by the entrance to Room 15, and proceeding clockwise from the position of a viewer within the pool, each panel was designated with a letter of the alphabet and the fish within each panel were numbered from left to right. Panel C was on the northern side of the pool, with those uncovered in the re-excavation being at the western end of this panel.

[3] The excavation archive, including the sketch and diary, is held in the Community Heritage Access Centre, Lufton (www.southsomersetheritage.org.uk).

and only its tail is visible in the early photographs. The 2017 re-excavation enabled this fish to be recorded properly for the first time.

Fish C1 fits awkwardly into the angle of the octagonal border around the pool. It is notable that the lower tip of the tail of Fish C2 directly abuts the tail of Fish C1, with the latter's body angled to avoid the tails overlapping. The mosaicist(s) evidently adopted a spontaneous way of working rather than setting out the positions of the fish in advance.

Seeing the excavated area made it possible to envisage how the building could have been experienced in the context of the surrounding landscape. This prompted further thoughts about the imagery of the fish mosaic and the other two figured mosaics found in the original excavations. Unusual elements in each mosaic offer clues as to how the building might have functioned. For this and for a detailed discussion of the fish exposed in 2017, see Witts (2019).

Assessment of the animal bones (Kevin Rielly)

Introduction

A re-examination of the Roman villa following two previous incursions (Hayward 1953 and Hayward 1972) took place in the fifth and sixth seasons of the Lufton Project. This involved digging two open trenches, the first (Trench A, some 17m by 17m) across the central part of this fourth-century corridor villa; the second (Trench B, 10m north-south and 4m west to east), in the sixth season, at the northern end of the villa incorporating part of the bath house (Room 14). These investigations have provided additional data to that previously compiled and in particular, a somewhat more detailed review of the environmental evidence. This archaeological aspect was ignored in the earlier and was mentioned only sparingly in the later of the two previous excavations (and see Conclusions).

The two incursions provided a moderate quantity of bones, generally well preserved, taken both by hand recovery and from an extensive series of 40 litre bulk samples. The samples provided a small number of fish bones. These were identified by Philip Armitage who also provided comments on fish exploitation.

Methodology

The bone was recorded to species/taxonomic category where possible and to size class in the case of unidentifiable bones such as ribs, fragments of longbone shaft and the majority of vertebra fragments. Recording follows the established techniques whereby details of the element, species, bone portion, state of fusion, wear of the dentition, anatomical measurements and taphonomic including natural and anthropogenic modifications to the bone were registered. The sample collections were washed through a modified Siraf tank using a 1mm mesh and the subsequent residues were air dried and sorted.

Description of faunal assemblage

The excavations provided a grand total of 328 hand collected animal bones with an additional 755 taken from 15 samples, here combining the results from Areas A and B (Table 8). There was a small proportion of unstratified bones but the major proportion of bones from both trenches were phased (as shown in Table 1). The phases used here are as follows:- A – Natural, B - Pre-Building, C – Construction, D – Occupation, E – Abandonment, demolition, collapse and robbing, F - Post demolition, G - Hayward excavation and H – Modern. Bones could be allocated to Phases D through to H as shown in Tables 1, 2 and 3.

Notably, a number of deposits represent infills following the earlier Hayward excavations (Phase G), here largely restricted to Trench A, as most of Trench B was beyond the confines of the Hayward trenches. While these collections are undoubtedly disturbed it is assumed that these nonetheless have some potential value as they are almost certainly derived from the villa. There is a potential problem, however, in that bones were recovered

from the later of the two Hayward incursions (1960-63). Comments were made about bones collected from most parts of the villa although in particular from Room 4 (accounting for 106 fragments). While Trench A does not include Room 4, the bones recovered from these infills (Phase G) may be biased, perhaps limited to those bones which, for whatever reason, were not retrieved during the 1960s excavations. There is also the possibility of some modern intrusion, perhaps especially regarding the incidence of small mammals/amphibians which may relate more to the previous trenches acting as a pit-fall trap rather than some indication of the microfauna living in this area during the use or perhaps just following the abandonment of the villa (and see below).

Rec/Tr/Feature	**Phase**						
Row Labels	**D**	**E**	**F**	**G**	**H**	**UP**	**All**
HC/A							
Robbing				45			45
new room	10			75			85
New room?	9						9
Room 10				5			5
Room 11				2			2
Room 6	2	8		17			27
Room 6a		5	1				6
Other				1	3	34	38
HC/B							
all the trench					6		6
ext Room 14	36	57			12		105
Siv/A							
Room 10	29						29
Room 11				50			50
Room 6	258						258
Room 6a	115						115
Other						30	30
Siv/B							
ext Room 14	116	157					273
Total HC	**57**	**70**	**1**	**153**	**9**	**34**	**328**
Total Siv	**518**	**157**		**50**		**30**	**755**
Grand Total	**575**	**224**	**1**	**203**	**9**	**64**	**1083**

Table 8. Distribution of hand collected (HC) and sieved (Siv) bones by recovery (Rec) method, trench (Tr), phase and feature, where UP is unphased.

Overall there is a moderate to high level of surface damage across these bone collections, irrespective of source, essentially related to root etching. This level of post depositional abrasion has undoubtedly limited the survival of butchery marks and in many cases may have contributed to the moderate levels of fragmentation. Indeed there are relatively few bones with cut marks and the cattle bones, in particular, are rarely greater than 25% complete. However, as the sheep and pig bones are generally 50% complete or greater, this fragmentation may relate more to deliberate breakage rather than post depositional damage.
Note also that there is a relatively good representation of microfauna amongst the samples (in Trench A), many of these complete, suggestive of a good potential for bone survival.

Phase D (Occupation of the villa)

Occupation deposits were located within Rooms 6, 6a, 10 and the new room (NR) adjacent and to the west of Room 6 (Trench A) as well as up against the exterior of the bath house (Room 14) in Trench B. The majority of the Trench A collection was retrieved from the samples and especially from a layer [202] overlying a tessellated pavement in Room 6a and from a series of burnt layers in Room 6. The deposits in both trenches appear to show a wealth of sheep/goat and pig relative to cattle (hand collected and sieved) which is perhaps also shown by the greater abundance of sheep- rather than cattle-size fragments (see Tables 2, 3, 4 and 5). These domesticates are generally represented by a mix of parts, with one notable exception. The remains of a mortar floor [165] within the New Room provided the partial remains of a single juvenile sheep (see Figure 52), the 11 bones comprising the posterior part of the skull as well as parts of both maxillae, both mandibles, the hyoid, a carpal and both metacarpals and finally two 1st phalanges. A butchery cut to the occipital condyles demonstrates the method used to decapitate this animal. This particular set of bones can be classed as processing waste, the major meat bearing part of the carcass sent off and disposed of elsewhere. The young age of this animal may suggest, perhaps not surprisingly, that this villa operated as or was associated with a production centre. This status is also indicated by the presence of very young pig bones from [137] located within the New Room.

Phase:	**D**	**D**	**E**	**E**	**F**	**G**	**H**	**H**	**UP**
Trench:	**A**	**B**	**A**	**B**	**A**	**A**	**A**	**B**	**A**
Species									
Cattle		4	1	12		8		9	3
Equid				5				3	
Cattle-size	1	17	4	20	1	17		1	8
Sheep/Goat	12	5	2	9		53	1	2	5
Pig	3			3		8			5
Sheep-size	3	6	5	8		55			14
Chicken	2	2	1			6		3	1
Mallard		2				5			
Dove						1			
Total	**21**	**36**	**13**	**57**	**1**	**153**	**1**	**18**	**36**

Table 9. Distribution of hand recovered animal bones recovered from Trenches A and B (LUF16 and LUF17) by phase and species

As well as the major domesticates, there is a good proportion of poultry, no doubt forming a major supplementary part of the diet (Table 10). Chicken is best represented although there is also duck and dove.

The latter two species may signify the hunting of game and/or the use of a diverse range of domesticates. Other food species present could include the large passer (thrush-sized) and possibly the small crow as well as fish. Most of the fish bones (10 out of the 12 bones dating to this phase) were taken from the sample derived from [202] in Room 6a, these including 4 Labridae (wrasse family) precaudal vertebrae (possibly the same fish) and 7 unidentifiable fish fragments (1 vertebra and 6 spines). In addition a single freshwater eel vertebra was provided by the burnt deposit [175] in Room 6. Notably, a large proportion of the chicken bones were also found within [202], largely composed of tracheal rings (identified as chicken-size), a total of 16, these conceivably taken from just one bird (each chicken tends to have in excess of 100 such rings, after McLelland 1965, 652).

Phase:	**D**	**D**	**E**	**G**	**UP**
Trench:	**A**	**B**	**B**	**A**	**A**
Species					
Cattle	1		1		
Cattle-size	12	13	27		3
Sheep/Goat	2	5	1		
Pig	1	2	1		
Sheep-size	206	56	74	35	17
Hare					1
Small mammal			40		
Common shrew	5				
Vole	4	3	5	1	
House mouse	4				
Wood mouse	1				
Mouse/vole	12				
Small rodent	95	37	6	12	6
Chicken	7				
Chicken-size	31				
Small crow	1				
Large passer	6				
Common frog			1		
Amphibian	2			2	
Freshwater eel	1				3
Labridae	4				
Uniden fish	7		1		
Total	**402**	**116**	**157**	**50**	**30**

Table 10. Distribution of sieved animal bones recovered from Trenches A and B by phase and species.

The presence of large collection of small mammals (mainly rodents), it was suggested, may relate to Hayward's trenches acting as pit-fall traps. However, the various sieved Phase D deposits would appear to underly the extent of the previous trenches suggesting they are more likely to date to the occupation period of the villa or at least perhaps soon after its abandonment. If not a pit-fall trap, it is conceivable that these bones represent the remains of owl pellets, these birds roosting within newly abandoned parts of the villa. A similar interpretation was used to explain the large quantity of rodent remains found amongst the late 1st century ruins of the Roman legionary fortress at Wroxeter and also within the probable abandonment levels at the Roman villa of Gatehampton, Oxfordshire (O'Connor 2002, 62 and Sharpe 2006, 30-32).

Phases E and F (Abandonment and post-demolition)

The Phase E collections are principally taken from Trench B, namely demolition layers [1005], [1006] and [1010], although a few bones were also retrieved from deposits within Rooms 6 and 6a in Trench A (see Tables 2, 3 and 4). The identifiable domesticate bones in this phase favour cattle and sheep/goat (especially in Trench B) with numerous cattle-size fragments in the hand collected assemblage, this tempered somewhat by a greater proportion of sheep- rather than cattle-size pieces in the sample collections. All the cattle bones in Trench B were derived from rubble spread [1003], this also providing the five equid bones, comprising three loose teeth, a pelvis piece and a 1st phalange. These clearly represent the disarticulated remains of at least two adult individuals. There is again a notable quantity of rodent bones from the samples, derived from both [1005] and [1010] perhaps again indicative of continued owl pellet deposition. The latter deposit also provided an unidentified fish vertebra as well as the sacrum of a common frog.

Phase F is represented by a single cattle-size fragment found in one of the Room 6a levels.

Phase	**D**		**E**		**G**				
Hayward Room:	**NR**	**R6**	**R6**	**R6a**	**NR**	**R6**	**R10**	**R11**	**Robbing**
Species									
Cattle				1	4	1			3
Cattle-size	1		1	3	11	1		1	3
Sheep/Goat	12		2		20	8	3		20
Pig	3				5				3
Sheep-size	1	2	4	1	30	4	1	1	14
Chicken	2		1		3				2
Mallard					1	3	1		
Dove					1				
Total	**19**	**2**	**8**	**5**	**75**	**17**	**5**	**2**	**45**

Table 11. Distribution of hand recovered animal bones recovered from LUF16 (Area A) Phases D, E and G by location and species, where R is Room (Hayward annotation), NR is new room and Robbing refers to a robber trench external to the villa.

Phase G and H (Hayward excavations and Modern)

The collections associated with the Hayward infills (Phase G) were located throughout the various parts of the villa excavated in Trench A, these providing a major part of the site assemblage. Of interest is the

preponderance of sheep/goat bones within the hand collected component, perhaps also shown by the abundance of sheep-size from the samples. Notably, a similar pattern is demonstrated within the individual room collections (Tables 4 and 5). There is again a mix of skeletal parts and a further indication of local production as highlighted by the presence of a neonate cattle scapula from (136), this forming the fill of a robber trench. These major domesticates are complimented as in Phase D with a variety of poultry and/or (in the case of mallard) with small game. Indirect evidence for rat is shown by a sheep-size rib from a Hayward backfill deposit [115] within the New Room, which has been heavily rodent gnawed, most probably by one or more rats. Obviously as a backfill it cannot be confirmed whether this evidence can be used to show that rats were present in this Late Roman villa. In addition, rat gnawing appears to be more common within late post-medieval collections (based on evidence from a number of London sites, after Rielly in prep), the inference being that such gnawed bones are more likely related to the attentions of the later arriving brown rat rather than its smaller cousin the black rat.

Phase	**D**			**G**
Hayward Room:	**R6**	**R6a**	**R10**	**R11**
Species				
Cattle	1			
Cattle-size	11		1	
Sheep/Goat	1	1		
Pig		1		
Sheep-size	136	59	11	35
Hare				
Common shrew	5			
Vole	3	1		1
House mouse	3	1		
Wood mouse	1			
Mouse/vole	12			
Small rodent	70	13	12	12
Chicken	1	2	4	
Chicken-size	6	25		
Small crow		1		
Large passer	6			
Labridae		4		
Freshwater eel	1			
Uniden fish		7		
Amphibian	1		1	2
Total	**258**	**115**	**29**	**50**

Table 12. Distribution of sieved animal bones recovered from LUF16 (Area A) Phases D and G by location and species where R is Room (Hayward annotation).

Finally both trenches provided a few hand collected bones from modern levels (Phase H), these representing soil layers just below the turf – [1001] and [1002]. This assemblage is mainly composed of cattle fragments, although the other two mammalian domesticates are also represented as well as chicken. 2 out of the three chicken bones (all from [1002]) are rather large, which would be expected within such late deposits. This same soil layer provided a few equid bones, comprising teeth and metapodial fragments, potentially from the same adult animal. The crown height of one of the maxillary teeth came to 66mm, which translates to an age of about 5 to 6yrs (after Levine 1982).

Conclusions and recommendations for further work

These excavations provided a moderately sized collection clearly dated to within the Late Roman occupation of the villa and reasonably well preserved, considering surface damage as well as fragmentation. Recovery by both hand collection and sieving has ensured the possibility of a thorough appraisal of the bones deposited or that have accumulated within the villa structure. It should of course be stated at the outset that these collections will undoubtedly be limited as any waste collections dating to the occupation of the villa would have generally been deposited beyond the confines of this building, those found within then representing opportunistic waste dumps dating to the construction, reconstruction or perhaps the demise of this structure. The quantity found nevertheless is sufficient to provide information concerning the range of food animals used and to a certain extent about species preference and exploitation practises (based on the available age and size data amongst the domesticate collections). An example of this is the evidence pertaining to the keeping/breeding of animals as shown by the presence of bones belonging to very young cattle and pig, obviously suggestive of the villa as a production centre.

There are undoubtedly problems with this dataset, in particular regarding the Hayward 'backfill' component. This essentially applies to Trench A, with the removal of bones added to the disturbance of these levels. While no bones were kept from the original excavation, they were removed from the later incursion, this mainly looking at the southern half of the villa, here encompassing a major part of the area enclosed within Trench A. The second report states that 'bones and bone fragments were found in all rooms, with by far the largest number [106] in room 4, which was probably the kitchen...ox bones predominated, but sheep and pig also occurred' (Hayward 1972, 67). The predominance of ox (cattle) clearly contrasts with the better representation of sheep/goat found in these collections, varying between sheep dominant in Phase D, to similar cattle and sheep in Phase E and finally an overriding predominance of sheep within the backfill assemblage (Phase G). There is perhaps the suggestion of a somewhat biased recovery in Trench A and at the least that these collections may have had a large part of the cattle component removed. However, with the likely exception of Phase D, there appears to be a similarly large component of sheep/goat or at least of sheep-size fragments within the lower well stratified levels. It should be stated that the very different quantities of bones between the upper and lower levels suggest that they are not directly comparable and yet the similarity could nevertheless be significant. One possibility is that the bones in the Hayward infills may well represent those removed in the earlier excavation along with the rest of the spoil and then replaced at the termination of that season's work, this collection then most probably representing a relatively unbiased assemblage.

Obviously, however, the evidence from Phase G and from the site in general, does not compare with the predominance of cattle demonstrated by the 1960-63 excavation. Indeed the present evidence doesn't comply with the general pattern seen at Roman sites, commonly showing a rise in cattle usage by the 3rd and 4th centuries and in particular within highly Romanized settlements, as villas (see King 1978 and King 1984). However, it should be stressed that there are exceptions. King (1978) refers to the animal bones found within the 4th century deposits at the Star Roman villa in Shipham in Somerset. Though the quantities are small, this also shows a predominance of sheep/goat over cattle, although unlike at Lufton, also demonstrating a good proportion of pig bones, another Romanized trait (see King 1984, 193). The use of chicken, which appears to

be well represented, can also be viewed as a high status indicator, here referring to quantity rather than mere presence (after Cool 2006, 98-101). Game also tends to be more prevalent at high status sites and in particular large game (ibid, 114), however, apart from the possibility of wild duck, some large passers and a hare bone from an unstratified deposit, there is perhaps little evidence for affluence (although see below).

In conclusion it can be observed that there are certainly depositional worries concerning the 'backfill' collections but their general similarity to the underlying strata suggest the data can be amalgamated, although obviously treated as separate phases. As stated, there is sufficient information to warrant a moderately detailed review of faunal usage, although the principal collections are largely contained within the problematic upper levels.

Finally, the presence of fish bones is certainly important, particularly regarding the rather minimal evidence concerning use of this food resource from smaller settlements in this general area during the Roman period. Notable collections have been found in Somerset and Dorset especially from urban contexts as at Ilchester and Dorchester, while smaller quantities were recovered from a few Romano-British settlements. However, it would appear that Lufton may well be the first villa in this area with a collection of fish bones (after Locker 2007, 153). The fish bone evidence from the various sites in this part of Britain (essentially the south and south-west, ibid) appears to suggest a particular regional distinction with the collections predominantly composed of freshwater eel and the wrasses (Labridae). Clearly Lufton villa, despite the very small collection, follows this regional pattern. The flesh of the wrasse was apparently highly esteemed during the Roman era, as remarked upon by both Pliny and Columella (after Couch 1863, 26). While perhaps not suggesting a degree of affluence, the presence of this fish could at least indicate a degree of Romanising influence.

Figure 52. The sheep/goat 'butchers waste' collection from (165) in the new room showing the remains of the skull to the left, a single metacarpal on the right, these joined by a pair of mandibles across the middle of the group.

Assessment of the Human Bone (James Young Langthorne)

Introduction
The following report details the results of an assessment of the human remains found within mortar layer [161] inside Room 4 of the Lufton Villa, dated to the Roman period.

Methodology

The assemblage was assessed to determine the completeness and condition of the skeletal remains and the age and sex of the individual. Additionally any gross pathology presented by the bones is recorded to site and the morphological changes described.

Assessment of condition and completeness
The condition and completeness of skeletal remains has a direct impact on the quantity and quality of information that can be recovered from them. The condition of the bone was documented following to the stages of surface preservation proposed by McKinley (2004):

- Grade 0 - Very good: Surface morphology clearly visible with fresh appearance to the bone and no modifications.
- Grade 1 - Good: Slight erosion and patchy surface.
- Grade 2 - Good-Moderate: More extensive surface erosion than grade 1 with deeper surface penetration.
- Grade 3 - Moderate: Most of bone surface affected by some degree of erosion; general morphology maintained but details of parts of surface masked by erosive action.
- Grade 4 - Moderate-Poor: All of bone surface affected by erosive action; general profile maintained and depth of modification not uniform across whole surface.
- Grade 5 - Poor: Heavy erosion across whole surface, completely masking normal surface morphology, with some modification of profile.
- Grade 5+ - Very Poor: As grade 5 but with extensive penetrating erosion resulting in modification of profile.

Completeness of a skeleton is calculated based on the percentage of the entire skeleton extant. Completeness can be affected by a variety of factors including truncation by later features as well as the state of preservation of the skeleton itself.

Age estimation
The age of an individual can be assessed using a range of complemetary variables comprising the stages of epiphyseal fusion (Buikstra and Ubelaker 1994, chapter 4), dental eruption (Ubelaker 1989, chapter 5 or Hillson 1996, chapter 5), and, additionally for adults, dental attrition (Brothwell 1981), changes within the pubic symphysis (Brooks and Suchey 1990) and the auricular surface (Lovejoy 1985). Subsequent to the collection and collation of ageing data the skeleton was placed into one of the following age ranges (Based on categories outlined in Buikstra and Ubelaker 1994):

- Neonate birth
- Infant birth - one year
- Juvenile 1 - 11 years
- Adolescent (Adol) 12 - 20 years
- Young Adult (YA) 20 – 34 years
- Middle Adult (MA) 35 – 49 years

- Old Adult 50+ years
- Unspecified Adult 20+ years

Sex Determination

Sexually dimorphic traits in the pelvis and skull can be used to ascertain the sex of adult individuals, based on the work of Acsádi and Nemeskeri (1970), Buikstra and Mielke (1985), Milner (1992) and Phenice (1969). It is not possible to gauge the sex of a juvenile skeleton. Thus assessed an individual can be placed into one of six categories:

- Male A positively identified male adult individual
- Female A positively identified female adult individual
- Male? conclusively The individual compared favourably to the male sex but not
- Female? conclusively The individual compared favourably to the female sex but not
- Indeterminate The survey of the individual has proved inconclusive
- Unknown. its sex. The individual lacks the necessary elements that would determine

Pathology

Any pathological alterations of bones are recorded by describing the type and location of the changes to individual bones, their distribution within the skeleton and potential differential diagnoses. These descriptions are based on the standards defined by Roberts and Connell (2004). Classifications of pathology are based on Roberts and Manchester (1995), Auferderheide and Rodríguez-Martín (1998), and Walker (2012).

Results

The skeletal material recovered from layer [161] consisted of:

- 3 fragments of parietal bone
- Petrous part of the right temporal bone
- Right pars lateralis of the occipital bone
- 4 fragments of rib shaft
- Left and right humerii
- Left and right ulnae
- Left radius
- Left and right femora

These elements all appeared to have originated from the same individual and were treated accordingly as an articulated skeleton. The table below summarises the data collected during the assessment of the articulated skeletal material:

Context No.	Completeness	Preservation	Age	Sex	Pathology
161	25%	Good-Moderate	Neonate-Infant	N/A	None visible.

No pathological changes were identified during the assessment.

Conclusion

The results of the osteological assessment may suggest that the human bone found within layer [161] was a deliberately deposited below the floor surface of Room 4. The practise of burying infants, mostly aged between birth and one month, is relatively common and has been noted within both rural and urban contexts (Watts 1989). Examples would include the neonatal bones found during the archaeological investigations at the Shippam's Factory in Chichester (Taylor 2008) and one of the buildings excavated during the Cannington Bypass Project (Hinkley Point 2014).

The motivations behind this funerary custom are much debated with theories ranging from infanticide (Moore 2008), to the infant not been perceived as important or as lacking a true personality until teething at 6 months old (Watts 1989,373 & Ucko 1968-70, 270) or a more ritualised act such as was suggested by Scott who posited that such examples of burial could be the result of a re-emergence of earlier Celtic fertility rituals (Scott 1991, 118).
Given the limited nature of the assemblage from the Lufton site further work is not recommended. The results of this assessment should form part of any later publication text.

Archaeobotanical Remains (Don O'Meara)

INTRODUCTION

During the course of the 2016 field season 12 soil samples were collected and processed by the project; this consisted of c.470 litres of sediment. During the 2017 field season 3 samples were taken, consisting of c.120 litres of sediment. The samples from these two seasons were examined separately, but are combined together in this report. These were taken to extract material of archaeobotanical interest as well as artefactual interest which may be pertinent to our understanding of the environment and depositional history of the area being excavated in line with best practice (English Heritage 2011), and to address the key research aims proposed for the archaeobotany of Roman Britain (van der Veen et al. 2007). Small amounts of artefactual material were also recovered and will be integrated with the other finds recovered by hand during the excavation.

The material from 2016 and 2017 was processed (flotation) by Geoflo in Somerset. This report primarily concern of this report are the archaeobotanical flots, with reference to some of the material recovered in the heavy residues.

The artefactual material from the heavy residues from the 2016 season has been recorded on the associated table and tabulated slightly differently depending on the nature of the material:

- Bone fragments: weighed in grams.
- Clinker/ash: weighed in grams.
- Glass: fragment count
- Beads: individual counts
- Iron Nails and tacks: individually counted.
- CBM: weighed in grams. Much of this material was highly fragmentary, differences in weight between samples can be thought of as qualitative differences, rather than quantitative differences in CBM distribution at the site as material would have been collected by hand, and initially after sample processing.
- Pottery. This material was first weighed and then the fragments counted. Therefore, for example in sample {1} (126) the Roman pottery is recorded as 2f;5 i.e. 2 fragments weighing 5 grams. Differences in distribution can also be understood in the context of the CBM material above.

To recover the magnetic residues the dried heavy residue was scanned with a hand magnet. Primarily this was done to retrieve residues of metallurgical activity, in particular hammer scale and spheroid hammer scale. Processing procedures and nomenclature follows the

conventions set out by the Historic England (Historic England 2015). All samples produced magnetic material, however, this was generally in the form of naturally occurring magnetic minerals. Most samples produced some hammer scale material, but in very low quantities; often less than 10 total fragments of material.

The dried residues from the 2016 material were examined by Newcastle University Undergraduate Naomi Oya under the supervision of Don O'Meara. During the course of the project 100% of the dried heavy residue was examined and subsequently discarded, i.e. material not of environmental or artefactual interest was not retained with the archive. The material from the 2017 season was sorted by staff at Geoflo, with pertinent material being forwarded for consideration in this report. In the accompanying table it is marked as 'P' for present.

The flot was scanned at x60 magnification for charred and uncharred botanical remains. Identification of these was undertaken by comparison with modern reference material held by Don O'Meara, and by reference to relevant literature (Cappers et al. 2010) and (Jacomet 2006). Plant taxonomic nomenclature follows Stace (2010), except in the case of the cereal remains where Zohary et al. was used (Zohary et al. 2013, Table 3). The charcoal remains have not been identified at this stage, though it is noted that the charcoal from the flots was generally small (less than 5mm). One of the most charcoal rich samples, {**14} (152)**, was almost exclusively material smaller than 3mm and had the appearance of being heavily abraded (or possibly trampled). However, sample **{3} (1011)** from 2017 contained a large number of charcoal fragments bigger than 5mm which would be suitable for charcoal analysis.

The flot matrix is presented on a scale from 1-5; 1-less than 5%, 2-up to 20%, 3-up to 35%, 4-c.40-60%, 5-Over 80%. Cereal grains and other seeds are counted in terms of the total number of individual items. For wild plant remains the presence of an asterisk * next to the quantity signifies this material was charred.

For the purposes of clarity the references to 'seeds' identified here refer to the seed or fruit structures unless otherwise stated; that is to say the propagule or disseminule structures. Cereal grain was recovered in a charred condition and where mentioned refers to the charred caryopsis.

DISCUSSION OF THE PLANT REMAINS

The numbers of charred plant remains from the 2016 samples were generally recovered in low frequencies, though all but one sample produced some charred cereal remains. In contrast the material from the 2017 excavations produced a much large number of charred grains with the three samples producing between 89-156 total charred cereal grains. For both these years remains were limited to occasional oats, a small number of wheat and barley identifications, a small number of charred spelt wheat glume bases and larger numbers of indeterminate charred cereal types. Some of the indeterminate types may be classified as spelt type wheat grains, but their overall level of preservation does not allow such an unambiguous identification; though the presence of spelt chaff suggests this might be the case. In the larger assemblages from 2017 it is clear that the heavily charred and fragmented material from the 2016 excavations is typical for the site as a whole, rather than reflecting the smaller numbers of material recovered from the 2016 material. A charred seed of wild radish found in **{16} (202)**, as well as brome grass from two of the 2017 samples, can be seen as plants typically found in cereal processing waste dating to the Romano-British period.

Also of note were the charred seeds of flax from **{2} (135)** and **{7} (159)** in 2016 as well as **{2} (1010)** from 2017. These may relate to the use of the plant for its oil. A fragment of hazelnut shell from **{16} (202)** and **{3} (1011)** from the 2017 material was the only other example of a plant which may have been consumed. The wild plant remains found were generally desiccated remains may be considered

to be part of the soil seed bank (Carruthers and Straker 1996, Hall 2003, 23). A contrast can be seen between the 2016 and 2017 material; where more charred material was present in all of the 2017 samples compared to those from 2016. The exception to this was **{14} (152)** from 2016 which most closely resembles 2017 material in terms of the presence of charred wild and domestic plant seeds.

DISCUSSION OF THE FLOT MATRIX

As well as the plant remains from the washover/flot a large volume of material is also recovered which forms the matrix on which the plant remains are extracted. This generally consists of roots, charcoal fragments, as well as small volumes of insect remains, rodent bones and other light material which might be present in the soil. In this case large numbers of terrestrial molluscs were present in the flots and will be sent off for specialist analysis. A small amount of charred round wood type material was identified in samples **{10} (171)** and **{12} (175)**. Broadly speaking the material from 2017 produced larger charcoal fragments, in particular the charcoal from **{2} (1010)** and **{3} (1011)**. At low power it could be seen that some of this material is likely to be oak wood charcoal, though some roundwood fragments and charred herbaceous material is also present. This material would be suitable for radiocarbon dating, should this be required.

DISCUSSION OF THE HEAVY RESIDUES

The material recovered from the heavy residues can be added to the other artefactual assemblages for their final analysis. In terms of the overall taphonomy of the site a few points can be made. The preservation of bone appears to be quite good, with fish and bird bone recovered in sample **{16} (202)**. As well as this the presence of egg shell fragments in a number of samples, as well as marine shell and terrestrial molluscs point to non-acidic soil conditions.

The relatively frequent occurrence of rodent bones in both the heavy residue and the flot material should be borne in mind when considering how burrowing might lead to mixing and contamination of archaeological deposits.

The archaeomagnetic material (the magnetic residues minus the naturally magnetic minerals) were characterised by very low frequencies of hammer scale and spheroidal hammer slag, which suggests the area excavated was not in the vicinity of an area where metal working activity was taking place. However, from the 2017 samples, and specifically from **{3} (1011)**, where 83 grams of iron working slag was recovered, including a small number of tap slag fragments and a number of droplets of iron rich slag. In addition a fragment of highly fired clay was recovered (c.5x5cm) which appeared to be a fragment of kiln furniture. These small quantities do not suggest iron working in the immediate vicinity, but do point to the redeposition of iron working waste in the general area of the site.

DATING POTENTIAL

From the point of view of whether the samples produced enough material for radiocarbon dating it is suggested that the samples can be divided into those with low, medium and high potential. These are outlined on the attached table as L, M and H (towards the top of the table). However, it must be borne in mind that issues of intrusiveness and residuality should be considered before material is sent for dating. These issues have been investigated by Pelling et al. (2015) for sites in the UK. It can be generally stated that the more promising material comes from the 2017 excavation, as these samples are characterised by more frequent charred cereal remains, as well as suitable roundwood charcoal fragments. The presence of coal in the samples should be borne in mind however, and if coal was used as a fuel in combination with wood then this will potentially negatively affect the potential of this material for dating purposes.

PRIMARY CONCLUSIONS

1. Charred plant remains are present in low frequencies from the 2016 material and in relatively higher frequencies from the 2017 material.
2. Chaff and weed seeds are uncommon from both years, suggesting the material recovered here might represent late activity in the cereal processing process (after the chaff and main weed seeds have been separated), or may represent drying of stored grain before milling. Though the latter might be less likely as spelt is often stored in its spikelets.
3. Some evidence of non-cereal plant use can be seen in the presence of charred flax seeds and hazelnut shell.
4. Non-charred remains are relatively uncommon and are likely to represent material from the soil seed bank, or possibly intrusive modern material.
5. Charcoal from the 2016 excavations was generally recovered in low densities and in a highly fragmentary state. The material from 2017 presents a more promising assemblage for analysis due to the size and frequency of the individual fragments.

Assessment of the snail shells (Matt Law)

Introduction and methods.

Molluscs from flots and residues of samples from excavations at Lufton Roman Villa, near Yeovil, Somerset, were presented for analysis. 14 samples were scanned, of which 5 were selected for analysis. 200 shells from each of these samples was identified to species level under a low power microscope using a reference collection. Ecological information is derived from Evans (1972), Kerney and Cameron (1979), and Davies (2008). Nomenclature follows Anderson (2008).

For each gastropod taxon within a sample, the most commonly represented non-repetitive element (usually the shell apex, umbilicus, or body whorl with mouth) was counted to determine the minimum number of individuals (MNI) present. This avoids the underestimation reported when only shell apices are counted (Giovas 2009).

As an aid to interpretation, taxa were arranged into groups, broadly following those of Evans (1972) and Evans (1991). These are:

1a. Oxychilidae. 'Glass snails', taxonomically related species of shaded places, represented here by *Aegopinella nitidula*, *Nesovitrea hammonis*, *Oxychilus cellarius*, and *Vitrea contracta*.

1b. *Carychium tridentatum*. A widespread shade-demanding species.

1c. *Discus rotundatus*. A shade-demanding species.

1d. Other shade-loving species. Represented here by *Acanthinula aculeata*, *Clausilia bidentata*, *Ena montana*, *Euconulus fulvus*, *Lauria cylindracea*, *Punctum pygmaeum* and *Vertigo pusilla*.

3. Intermediate/ catholic. Molluscs with a broad range of ecological tolerances. Represented here by *Cepaea spp*., *Cochlicopa lubrica*, and *Trochulus hispidus*.

4a. Commonly open country. Snails associated with open habitats such as short grassland. Represented here by *Pupilla muscorum*, *Vallonia costata*, *Vallonia excentrica*, and *Vertigo pygmaea*.

5a. Amphibious species. Represented here by *Galba truncatula*.

5b. Obligatory marsh. Species peculiar to marshes. Represented here by *Succinea putris*.

7. Introduced since the Bronze Age. Represented here by *Cornu aspersum*.

8. Burrowing. Snails with subterranean lifestyles, represented by *Cecilioides acicula*.

The groupings broadly represent a progression from woodland conditions through more open environments to gradually wetter conditions.

Note that not all taxa within a group are present in all samples. Although useful as a broad guide, the use of ecological groups may mask fine details, therefore consideration is also made of individual species counts.

Results

Minimum number of individuals (MNI) are presented in Table 13. There was a wide range of preservation, with some shells maintaining a glossy appearance with their proteinaceous periostracum intact, while others had become white and lost the shell's organic component. Several of the more decayed shells bore minor to gross calcareous deposits (Figure 1).

		Context	126	148	158	159	174
		Sample	1	5	6	7	13
		Context description	Fill of hypocaust	Fill of possible hypocausted room	Hypocaust fill	Burnt patch	Burnt layer
Species	Ecological Group						
Aegopinella nitidula	1a		2	2	3	7	11
Nesovitrea hammonis	1a			1	2	2	
Oxychilus cellarius	1a		13	10	34	22	4
Vitrea contracta	1a		9	2	7	3	
Discus rotundatus	1b		22	50	19	40	12
Carychium tridentatum	1c		1	2	1	27	16
Acanthinula aculeata	1d					9	
Clausilia bidentata	1d				1	4	
Ena montana	1d						

		Context	126	148	158	159	174
		Sample	1	5	6	7	13
Euconulus fulvus	1d		1				
Lauria cylindracea	1d				2		
Punctum pygmaeum	1d					5	
Vertigo pusilla	1d					1	1
Cepaea sp.	3		2	2	1	1	1
Cochlicopa lubrica	3		3	6	4	10	7
Trochulus hispidus	3		91	95	57	28	112
Pupilla muscorum	4a		2	5	2	2	1
Vallonia costata	4a		9	10	28	8	2
Vallonia excentrica	4a		23	13	33	19	23
Vertigo pygmaea	4a		7	1		1	2
Galba truncatula	5a					2	
Succinea putris	5b		1				
Cornu aspersum	7		1		1		
Cecilioides acicula	8		13	1	5	9	8
Total number of taxa (s)			**16**	**14**	**16**	**19**	**13**
MNI			**200**	**200**	**200**	**200**	**200**
Earthworm granule						*1*	
Ostracods						*1*	1

Table 13 *MNI of snails from Lufton Roman Villa.*

Discussion

Deposits from within former buildings are highly likely to be temporally mixed, with very little of the deposition having occurred during the occupation phase (LaMotta & Schiffer 1999, 22). The high number of snails here with intact periostraca (the protein layer that surrounds the shell in life) or a

glossy, translucent appearance, suggests that many of the snails are recent intrusions. These may have been brought down into the deposit through root action or burrowing by worms. The Group 8 snail *Cecilioides acicula* is a subterranean species, known to live up to 2 metres underground. It is believed to be a medieval arrival in the British fauna (Evans 1972, 186; Davies 2010, 170). The 'fresh' snails are largely Group 3 and 4 taxa, associated with open environments or catholic in their ecological tolerances. A fauna of this kind would be expected from short sward grassland and arable land.

Another group of snails bore calcareous concretions, ranging from relatively light to gross concretions which obscured much of the detail of the shells (Figure 53). Their association with a building may suggest that they were part of the sedimentary matrix used in lime mortar, which has been reported from later buildings in Britain (Murphy 2001; Law 2014). The gross concretions look rather more like tufa, however. The shells with calcareous concretions are mostly Group 1 species, which are associated with shady places, as well as small numbers of Group 5 taxa (and two ostracod carapace valves), found in marshy conditions. This a good fit for tufa deposition in a spring line in wooded conditions, like many other tufa sites in Somerset and further afield (Davies 2008, Chapter 6).

Tufa, a calcium carbonate precipitate formed on chalk and limestone, has been used as a building material at a number of Roman villas in Britain. In particular, it was used in to line the hypocausts at Richborough, Kent (Williams 1971, 175), which may also be the case at Lufton. As a light building material, it has also been used in the vaulting of bathhouse roofs, for example at Fishbourne, West Sussex and Sparsholt, Hampshire (Williams 1971, 174).

Tufa deposition was more prevalent in the humid climate of the late Mesolithic, and formation of substantial deposits largely ceased around 5000BP (Davies 2008, 86), although there is still active deposition in Somerset (Baker & Simms 1998). The source of the Lufton tufa is likely to be local, there are active springs north of Ball's Hill which issue water that has percolated through the calcareous rocks of the Beacon Limestone Formation and may have given rise to extensive tufa deposits. Further afield, there is active tufa deposition in the present day within the woods around Ham Hill (South Somerset District Council 2008). Extensive tufa deposits may have had special significance in the Mesolithic and early Neolithic, being the focus of ritual activity elsewhere in Somerset, for example at Langley's Lane near Midsomer Norton (Davies & Lewis 2005). The possibility that such a site exists in the vicinity of the Lufton villa site bears consideration.

Figure 53 Two shells of Cochlicopa lubrica with gross calcareous concretions

Assessment of the oyster and other marine mollusc shells (Jessica Winder)

SUMMARY

- A small number of whole oyster shells together with fragments of oysters, mussels, and cockles were examined from excavations at Lufton Roman Villa in 2016.
- The items were identified, counted, and the information tabulated.

- Measurements of the oyster shells were taken where possible and summary statistics calculated.
- Evidence of epibiont infestation and other characteristics were also noted for the oysters.
- The size data for the Lufton oysters was visually compared with the measurement data of Roman oyster samples from sites in Dorset at Alington Avenue and Greyhound Yard in Dorchester, Halstock Roman Villa, and Shapwick.
- There seemed to be similarities in size and shape between the Lufton and the Dorchester samples when the data was examined - but the apparent similarities could not be tested statistically because of the low numbers of shells in the Lufton samples.
- It is possible to speculate that the oysters from Lufton may have originated in the same location as for the Dorchester oysters – thought to be the Poole Bay and Poole Harbour area.

INTRODUCTION

A small number of oyster shells (*Ostrea edulis* Linnaeus) and fragments of other marine mollusc shells including mussels (*Mytlilus* sp.) and cockles (*Cerastoderma* sp.) were recovered by hand and by sieving of bulk samples from Trench A during the 2016 excavations at Lufton Roman Villa. The contexts in which shells were found are listed in Table 14. The quantity of marine mollusc remains and the defining features of the oyster shells have been recorded and tabulated.

Context	Type	Comments
121	Deposit	Roof collapse Room 5
126	Deposit	Fill of hypocaust
135	Deposit	Burnt deposit in corridor by Room 2
139	Deposit	? Fill and robbing episode
148	Deposit	Fill of possible Hypocausted Room
152	Deposit	Fill of 153 (cut for 152)
158	Fill	Hypocaust fill
159	Deposit	Burnt patch
166	Deposit	Underlaying (164) clay layer
171	Deposit	Burnt layer underlying (166)
174	Deposit	Brown clay underlying (171)
175	Deposit	Burnt deposit near W facing the LOE
202	Deposit	Occupation layer overlying tessellated pavement
204	Fill	Red clay deposit on burnt patch
1005	Deposit	Rubble layer beneath [1003]
+		Unstratified

Table 14 Contexts with oyster and marine shell

METHODS

For each bag of shells, the specimens were first identified to species. The oyster shells (*Ostrea edulis* Linnaeus) were sorted into left valves and right valves and counted for each category. The shells needed to have an intact hinge ligament scar area to be counted. Distinction between left and right valve is based on the shell characteristics since the two

valves differ. The left or lower valve is approximately cupped and bears concentric slightly protruding growth stages together with radiating ribs (though these may be worn and less noticeable). The right or upper valve tends to be flatter with no radiating ribs and the concentric growth lines are smoother. The internal centralised adductor muscle scar also occupies a slightly different position and orientation in the left and right valves.

For each type of valve, the shells were separated into those that were measurable, and those that were un-measurable. To be measurable the shell or shell fragment needed to have both the hinge ligament scar and the adductor muscle scar, so that at least two thirds of the shell was present. Measurements have sometimes to be estimated where the shell margin is broken. Estimated measurements are marked as such on the original recording sheets. Measurement of maximum width (more correctly termed the biological height) and maximum length were taken when possible. Evidence for infestation or encrustation by epibiont organisms was sought and other features were noted. Fragments that did not include a hinge ligament scar were not counted or measured but were weighed.

More details about methods can be found in Winder, J. M. *Oyster shells from archaeological sites: a brief illustrated guide to basic processing* which can be downloaded from the https://oystersetcetera.wordpress.com/2011/03/29/oyster-shells-from-archaeological-sites-a-brief-illustrated-guide-to-basic-processing/.

RESULTS

Species present

Oyster, mussels, and cockle shells are represented but only a few oyster shells remain sufficiently intact to record size, infestation evidence, and other characters. All other shell material is fragmentary. A few small fragments of an unidentifiable gastropod that might be a Littorinid are in the sieved samples; and an unidentifiable bivalve is represented by two hinge fragments. There are also several fish bones including scales, small pieces of egg shell, and a fragment of mammal bone.

Numbers

Only four contexts [121], [139], [202], and [1005] yielded intact oyster shells and everything else was fragmentary (less than 5mm). See Table 15 for the numbers of shells and their distribution. There were 24 whole oyster shells and 123 small fragments from all contexts. There were 186 small fragments of mussel shell; and 17 small fragments of cockle shell plus one intact valve; 8 pieces of unidentified gastropod (possibly Littorinid); 2 small hinge pieces of unidentified bivalve; 4 fish bones; and 2 fragments of egg shell.

Context	Sample	Oyster	Oyster	Oyster	Mussel	Cockle	Gastropod	Bivalve	Fish	Egg
		LV	RV	frags	frags	Frags	frags	frags	bone	shell
121		5	2	1	0	0	0	0	0	0
126	1	0	0	2	5	0	0	0	0	0
135	2	0	0	0	0	1	1	0	0	0
139		5	2	1	0	0	0	0	0	0
148	5	0	0	37	10	2	1	0	0	0
152	14	0	0	2	13	1	2	0	1	1
158	6	0	0	2	1	0	0	0	0	0

159	7	0	0	17	1	0	0	0	0	0
166	9	0	0	12	2	1	0	0	0	0
171	10	0	0	10	63	3	0	0	2	1
174	13	0	0	0	2	0	0	0	0	0
175	12	0	0	1	5	1	0	0	0	0
202	16	2	5	34	32	8	4	0	1	0
204	15	0	0	0	50	0	0	2	0	0
1005	Incl. 1	1	1	4	2	1	0	0	0	0
Unstratified		0	1	0	0	0	0	0	0	0
Totals		13	11	123	186	18	8	2	4	2

Table 15 Numbers of marine molluscs and other fragments

The intact oyster shells were sorted into left and right valves, and further sorted into those which met the measuring criteria and those that did not. The results are given in Table 16 which shows that the number of oyster shells recovered from [121] is the same as for [139], and the shells in each of these contexts represent a minimum number of 5 individual oysters. Contexts [202] and [1005] contributed a further 9 oyster valves and 38 fragments. In addition, a single right valve was retrieved from an unstratified deposit. The absolute total of all other oyster shell fragments from the sieved samples amounted to 117.

Context	121	139	202	1005	Unstratified	All other contexts
Oyster left valves measurable	4	4	2	1	0	0
Oyster left valves unmeasurable	1	1	0	0	0	0
Oyster right valves measurable	2	2	5	1	1	0
Oyster right valves unmeasurable	0	0	0	0	0	0
Total number of oyster valves	7	7	7	2	1	0
Minimum number of oysters	5	5	5	2	1	0
Numbers minute oyster fragments	0	0	34	4	0	117

Table 16 Number of molluscs by valve type

Size of oysters

The 22 individual measurable oyster valves were measured for maximum width and maximum length in millimetres and the results are given in Table 17.

Table 4 Oyster shell measurements for [121] [139] [202] [1005] & unstratified

LVMW	LVML	RVMW	RVML
114	85	73	75
85	85	73	73
90	80	90	84
69	69	101	102

118	106	96	68
104	88	90	86
80	80	74	67
90	95	72	62
96	93	65	58
35	35	65	55
71	60	60	56

Table 17 Oyster shell measurements for [121] [139] [202] [1005] & unstratified

Summary statistics were calculated from the measurements and these are presented in Table 18. It should be noted that the small size of the samples used for these calculations affects their accuracy and validity, meaning that the resultant figures are unlikely to accurately represent the entire sample of oyster shells of which these excavated remains are a part and should be viewed with the utmost caution. The inclusion of a single small oyster of just 35 mm diameter has a significant effect on the overall figures.

	LVMW	LVML	RVMW	RVML
Mean	86.55	79.64	78.09	71.45
Standard error	7.01	5.82	4.16	4.39
Median	90	85	73	68
Mode	90	85	73	#N/A
Standard Deviation	23.27	19.31	13.80	14.59
Sample variance	541.27	372.85	190.49	212.87
Kurtosis	1.38	2.04	-1.19	0.33
Skewness	-0.86	-1.23	0.47	0.87
Range	83	71	41	47
Minimum	35	35	60	55
Maximum	118	106	101	102
Sum	952	876	859	786
Count	11	11	11	11

Table 18 Summary statistics of oyster shell measurements for [121], [139], [202], [1005] & unstratified

Determination of the source location for the oysters at Lufton Roman Villa is an important consideration. To this end, for visual comparison purposes only, mean size data and standard deviations are given in Table 19 for oyster samples comprising larger numbers of specimens (minimum number of 30 and ideally 100 or more specimens) recorded at other Roman sites in Dorset.

SAMPLE	mean	stdev	mean	Stdev	mean	stdev	mean	stdev
	lvmw	lvmw	lvml	Lvml	rvmw	rvmw	rvml	rvml
Lufton RV	86.55	23.27	79.64	19.31	78.09	13.80	71.45	14.59
Alington Avenue Phase 40	86.50	17.06	79.69	13.48	78.93	15.41	70.41	12.05
Greyhound Yard [1457] Dorchester	92.39	11.95	85.10	11.96	84.64	12.50	76.84	12.77
Greyhound Yard [1284] Dorchester	96.18	15.52	88.23	14.49	91.04	14.27	85.65	13.82

Greyhound Yard [2394] Dorchester	94.54	16.52	86.11	13.30	80.31	16.87	73.96	14.57
Greyhound Yard [4167] Dorchester	94.90	15.34	88.69	16.28	83.93	15.25	76.52	14.72
Halstock RV	78.51	17.57	73.68	18.16	78.28	16.57	72.25	15.99
Shapwick [210]	75.15	12.89	69.65	9.97	76.44	13.66	70.41	11.76
Shapwick [211]	71.80	10.71	68.58	10.46	66.67	9.87	63.04	10.38
Shapwick [213]	72.69	11.16	67.83	10.89	67.27	10.99	62.60	9.49
Shapwick [214]	77.58	10.53	73.70	10.27	70.52	10.18	63.10	9.49
Shapwick [223]	75.30	12.77	71.67	16.46	67.87	12.03	62.00	11.64
Shapwick [12]	84.95	12.18	80.22	15.22	78.53	12.05	73.46	11.95

Size measured in millimetres		Right valve maximum width	rvmw
Left valve maximum width	lvmw	Right valve maximum length	rvml
Left valve maximum length	lvml	Standard deviation	stdev

Table 19 Size data for oysters from Lufton Roman Villa (2016) in Somerset and Roman sites in Dorset

Infestation evidence

Evidence on shells for infestation and encrustation caused by epibiont organisms during the life of an oyster can help to suggest the source of the oysters because of the variations in occurrence and proportion of different members of the littoral and sublittoral ecosystem around the coast. (Details of infestation and other characteristics for the Lufton oysters can be found on the recording sheets, copies of which are given in the Appendix). Percentage frequency of the different types of infestation on the shell samples can be collated and subjected to statistical analyses to compare oyster samples, provided that the samples are of sufficient size and uncontaminated (not residual).

Tube worm burrows

The most commonly occurring type of evidence for organisms that infested the oyster shells during their life are the small burrows of the marine polychaete worm *Polydora ciliata* Johnston. In the Lufton oyster shells this has a very low frequency of occurrence. The burrows appear as small dumb-bell shaped holes and approximately U-shaped tunnels anywhere on the surface of the shell (see Figs 54, 57 & 58). This worm species is ubiquitous around the British coastline in shells and rocks therefore it has limited used in determining the location of the place where the oysters were collected.

Figure 54 Oyster right valve outer surface showing burrows of mud-tube worm Polydora ciliata from LUF16 [121]

A related but larger species of tube worm burrow belonging to *Polydora hoplura* is sometimes found around the margins of oyster shells particularly the inner surface. This species seems to be or has been restricted in its distribution to the south coast of England. It has greater use in determining the source of oyster beds in antiquity. There was only one possible instance of the larger and related burrow of the tube-worm *Polydora hoplura*. The identification of this is tentative (Figure 55).

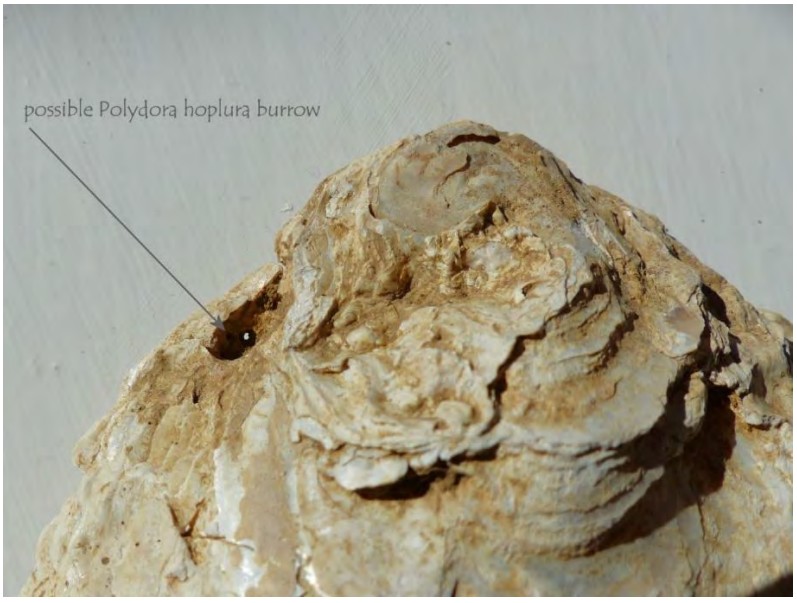

Figure 55 Oyster left valve outer surface showing possible Polydora hoplura burrow from LUF16 [121]

Sponge borings

Another common type of infestation is caused by sponges which penetrate oyster and other shells, particularly thick and old ones. The outer perforations are rounded and scattered over the surface of the shell when the sponge is well-established. They may constitute random lines of regular holes of increasing dimensions at the beginning of their colonisation. Beneath the perforations is a honeycomb-like network of interconnecting passages (Fig 56).

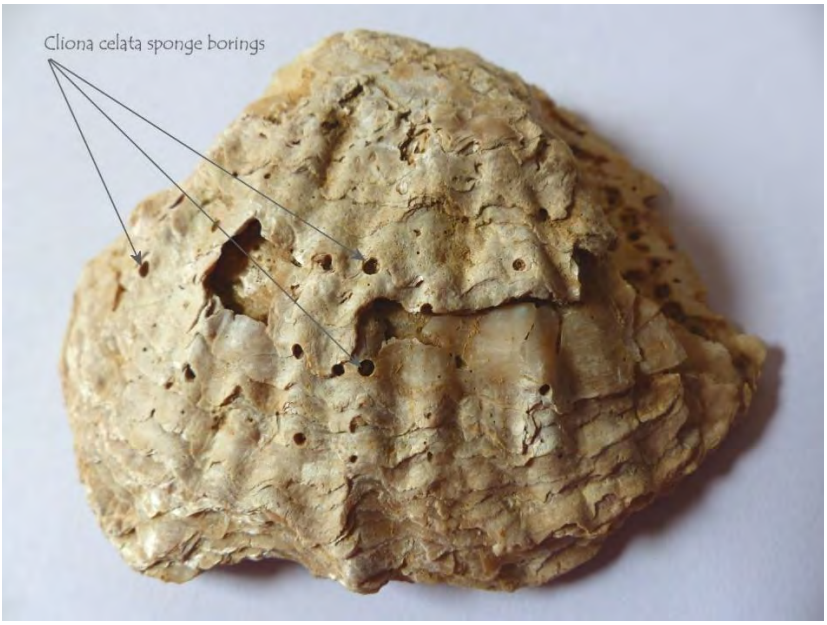

Figure 56 Oyster left valve outer surface showing borings by the sponge Cliona celata from LUF16 [139]

Tube-worm burrows and sponge borings often occur together in the same shells (Figs 57 and 58).

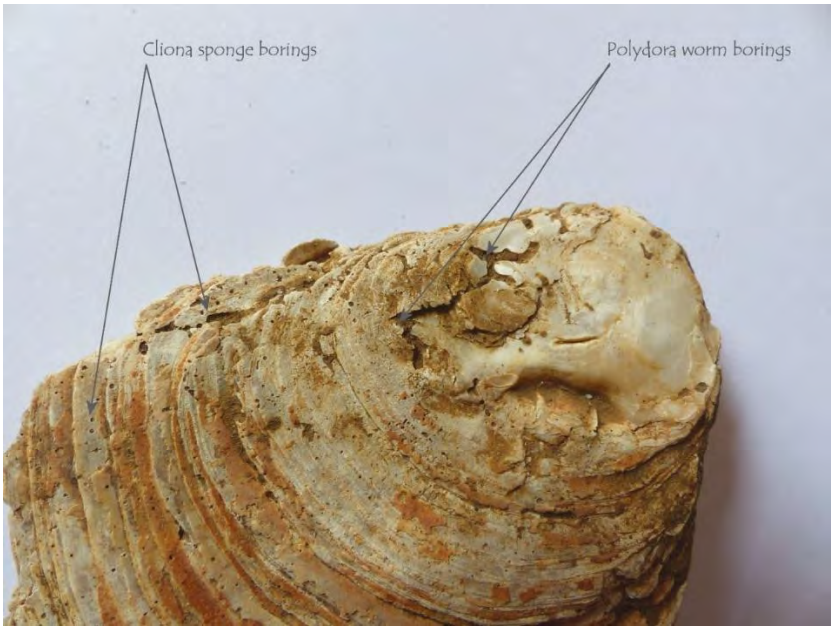

Figure 57 Oyster right valve outer showing both Polydora worm borings and Cliona sponge borings from an unstratified deposit

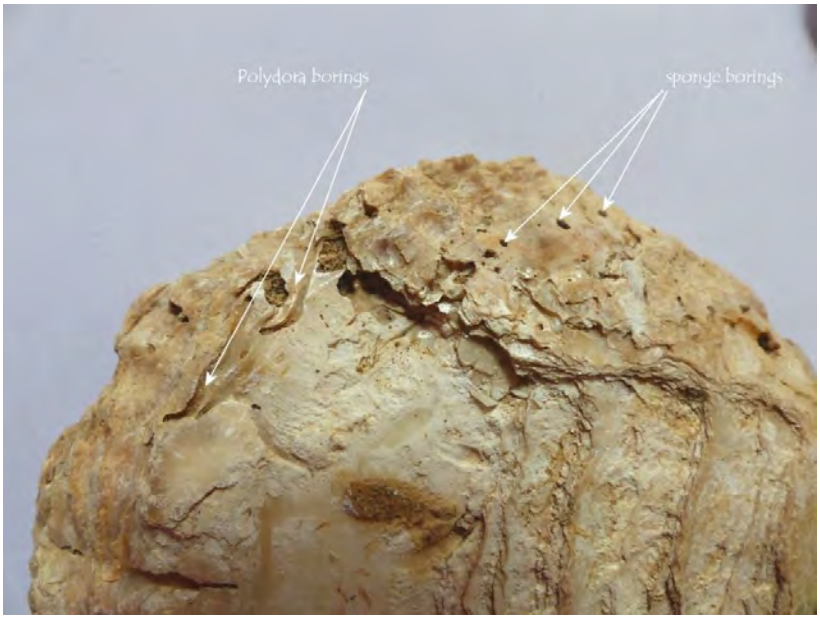

Figure 58 Oyster left valve outer showing both Polydora worm borings and Cliona sponge borings from LUF16 [139]

Boreholes by predatory gastropods

These neat circular holes usually occur singly, though there may be more than one on the shell. They are made by certain carnivorous gastropod molluscs which use a toothed radula (a tongue like structure extruded from the head) to drill through the shell to eat the meat of the animal within. The sting winkle (*Ocenebra erinacea*) is an example of a gastropod mollusc that likes to predate oysters. They are not always successful in their drilling activities. They are most likely to totally penetrate the shell in younger oysters with thinner shells (Fig 59).

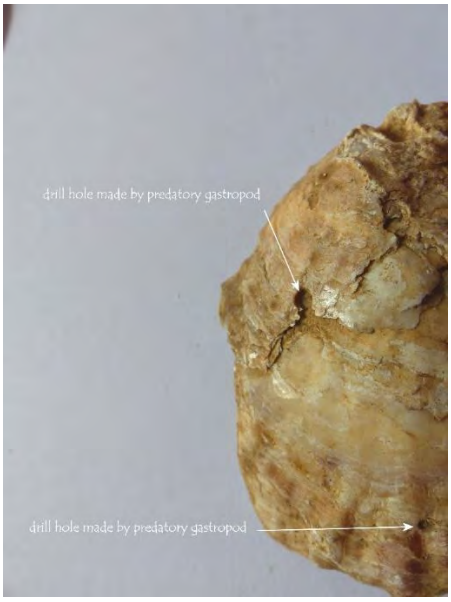

Figure 59 Oyster left valve outer surface showing bore holes made by a predatory gastropod such as the sting winkle Ocenebra erinacea from LUF16 [121]

Other characteristics

Cuts and notches on oyster shells may indicate damage caused when the oysters were opened. They can take the form of V- or W-shaped notches on the lower margins of the valves where knives or other implements have been inserted and twisted to lever the valves apart and get the meat. There are several shells in which peripheral notches have been recorded in the Lufton samples but there is uncertainty as to whether these are original or represent post-excavation damage. Examples of these notches can be seen in Figures 60 and 61.

Figure 60 Marginal notches on oyster shell right valves from LUF16 [121] which may indicate damage caused by opening the oyster to get the meat. The two notches on the right shell look original but the notch on the left is uncertain.

Figure 61 Marginal notch on an oyster right valve, inner surface view, which may be post excavation damage rather than an original knife mark, LUF16 [139]

DISCUSSION

The marine shell material recovered during the 2016 excavations at Lufton Roman Villa is mostly oyster with some mussel and cockle and a couple of unidentifiable fragments of other species. The shells do not appear to be from primary deposits. Most seem to be redistributed materials. This would make interpretations based on data obtained from them problematic. All shells have been recorded as fully as possible. The oyster shells are characteristically large and thick representing specimens of considerable age at death, and they have minimal infestation damage. There is not enough shell material to enable intra-site comparisons between context types, deposit types, site phases, or sequences for Lufton. Shell numbers are also insufficient for making valid inter-site comparisons of size, or infestation frequency, with samples from other Roman sites in the UK. Statistical analyses are not feasible.

However, a visual comparison of the measurement data from Lufton in Somerset with data relating to large oyster samples from Roman sites excavated in the neighbouring county of Dorset, indicates similarities in size. Oyster shells from excavations at Alington Avenue and Greyhound Yard in Dorchester especially have a similar overall size and shape to the Lufton oyster shells. They are also alike in their thickness and age. The Poole Bay and Poole Harbour areas were considered possible locations of the oyster beds being exploited by the Romans for the shells found in Dorchester. Although there is insufficient evidence available from the Lufton oyster shells to draw any conclusions about their source, the waters around Poole seem at least a possible and a logical location for the oyster beds from which they were collected.

Thin section micromorphology assessment of a charred deposit from Lufton Roman Villa, Somerset (Lisa-Marie Shillito)

Introduction

Thin section micromorphology is a technique originally developed to investigate the structure and formation processes of soils, but is now most frequently used in archaeological contexts (Matthews *et al*. 1997). It enables the observation of stratigraphic layers which are too fine to easily distinguish by eye in the field and also enables observation of the depositional processes of materials, and the relationships between different classes of environmental remains and artefacts. It can provide important information on the use of space in settlement sites, as well as identifying floors and occupation surfaces (Gé et al. 1993, Milek 2012), and in understanding the formation processes and taphonomy of sites (e.g. Shillito et al. 2011). This in turn can help significantly with reconstructing the nature and intensity of different activities that may be represented. The deposits of interest are found within Room 6. It is suggeted that [174] and [201] are floor surfaces within this room.

Method

One 7x4 cm block sample (LUF 16 micormorph sample <11>) was collected in the field and processed at Earthslides.com. The sample crosses three contexts, descriptions can be found in Table 20. Observations were made using a Leica DM750P microscope under plane and cross polarised light with magnifications from x2.5 to x400. Size measurements were made using an ICC50 W camera and calibrated EZ software. Descriptions were carried out using standard methodologies (Stoops 2003).

Results (Figs 62 and 63)

Detailed micromorphological descriptions can be found in Table 20. The sample can be divided macroscopically into three broad layers corresponding to field units [171], [174] and [201].

1.1 Sub-Unit 1 (Field Unit 171)

In thin section this deposit is c. 1.5cm in thickness (truncated by top of slide). The deposit consists of a mixture of fine calcicitic ash and abundant charcoal and microcharcoal fragments. Most of these are too small to identify – the largest fragment is about 1mm in diameter and has a cell structure consistent with a hard wood species. It does not appear to be in situ and is more likely to be a dumped deposit of mixed ash and charcoal.

1.2 Sub-Unit 2 (Field Unit 174)

In thin section this deposit is c. 4cm in thickness. It is a massive deposit consisting of abundant sub-rounded to sub-angular quartz grains embedded in a fine grained matrix. There are frequent channel voids, with ocassional small rounded ceramic inclusions and calcaerous material, but no organic material.

1.3 Sub-Unit 2 (Field Unit 201)

The lowermost deposit is around 2-3 cm thick (truncated by bottom of slide). This layer consists of large lime fragments showing various types of microbial activity and abundant mineral staining. The presence of black meristematic fungi is associated with the decay of building materials (Salvadori and Casanova 2016) and may have contributed to the break up of this material. This deposit is very broken up and fragmented compared to the overlying compacted material. There is no organic material present.

Discussion

Tessellated pavement is composed of tesserae (small square blocks) filled with cement. The micromorphology observations are consistent with the hypothesis suggested in the field, that these lower deposits related to a series of floors. Unit [201] is largely composed of lime, which would correspond to the cement expected in a tesselated pavement. Ceramic fragments may have been used as aggregate in the mortar, which is typically a mix of crushed aggregates embedded in a lime binder (Pavia and Caro 2007). Some of the lime has become incorporated into the overlying massive sandy deposit [174] which appears to be construction/packing material. The thin lens of charcoal and ash overlying these deposits is consistent with field obsverations of redeposited burnt material – there is no evidence of in situ burning. Unfortunately there are no additional inclusions which could indicate what activity the fuel relates to.

Figure 62 Section through [171], [174] and [201] sampled for micromorphology.

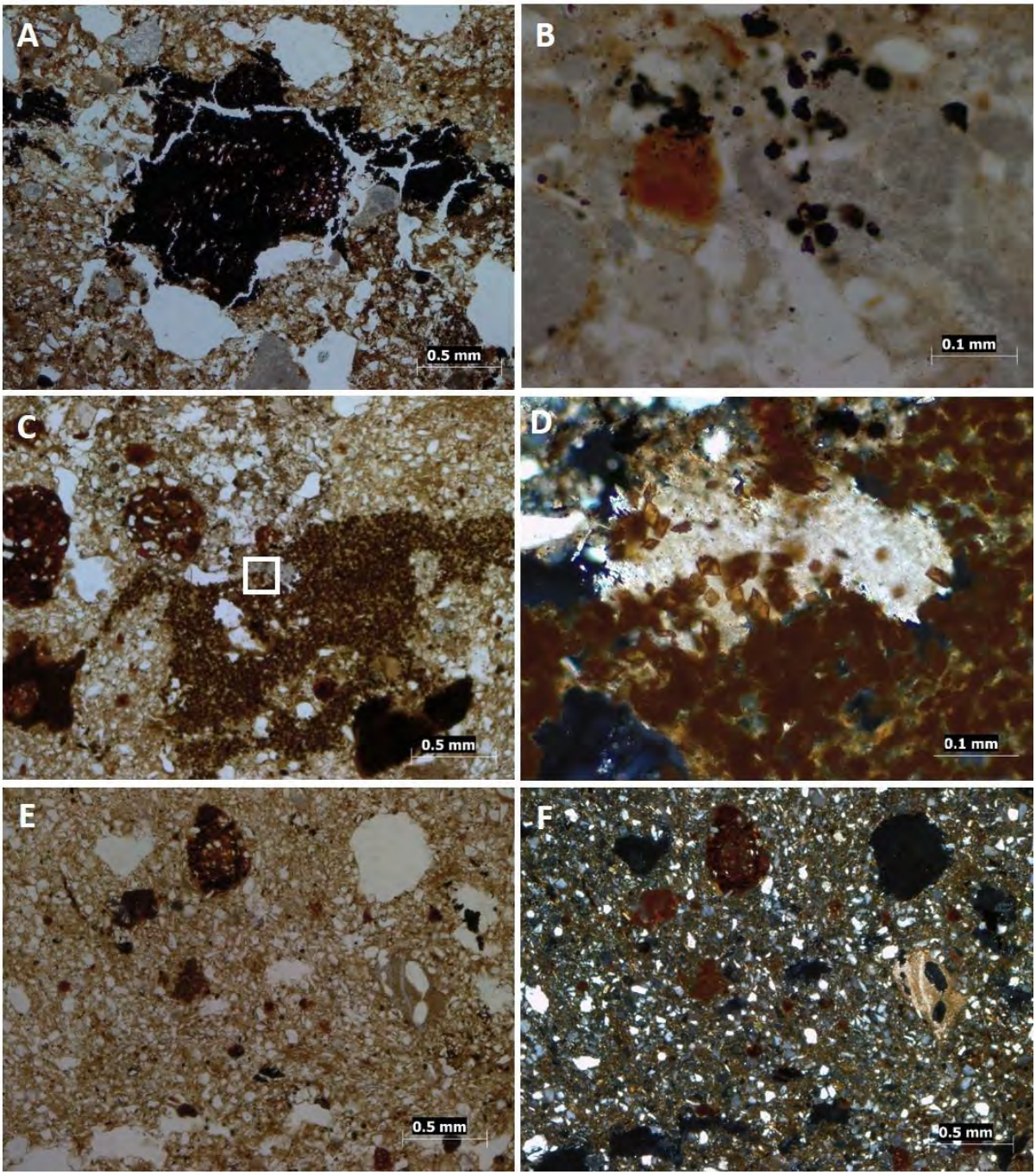

Figure 63 Thin section micrographs. A. unit [171] wood charcoal B. unit [201] lime showing microbial staining C. unit [174] showing lime inclusion with rhomodehral mineral staining D. same as c. in XPL. E. groundmass of [174] showing frequent chanel voids and small rounded ceramic inclusions F. same as E in XPL.

Context	Description	Field interpretation
[171]	Described as a firm dark brownish grey silty clay, with occasional small charcoal flecks and occasional flecks of mortar. 3.2mx1.4m x 0.02m thick. This is the grey deposit visible at the top of the section.	Earliest of a group of burnt deposits and deposits of redeposited burnt material. Each was very thin and are probably to be interpreted as rake out or trample associated with an oven / grain drier

[174]	Described as a firm, dark yellowish brown sandy clay. Apparently inclusionless. This was the deposit we 'called' the 'brown clay' in the field. The deposit under [171]. Approx 3x x2m x 0.07m thick	A floor / levelling deposit predating the burning.
[201]	Described as a firm greyish brown sandy clay, with a few 'irregular inclusions'. Not fully excavated.	A floor / levelling deposit predating the burning

Table 20 field descriptions of deposits

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The 2017 excavation team was comprised of: Antonia Coleman Harvey, James Irwin, Megan Keates, Dan Maughan, Aneta Milczarska, Chris Miloszewski, James Pennington, The supervisor was Josh Basey.

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The people of Lufton and BrymSopton showed great interest in the excavations and toleration for us invading their quiet village. We'd like to extend our thanks to them all and especially to Peter Seib and Liz Glaisher.

Finally, our thanks to anyone who we have missed off this list. Know that your omission is due to our forgetfulness, rather than being due to any lack of appreciation of your efforts.

Appendix A – Trench coordinates

Name,X,Y,Z

TRB 1,351553.472,117839.268,50.225
TRB 2,351549.683,117849.017,49.598
TRB 3,351553.345,117850.446,49.706
TRB 4,351556.117,117844.167,50.236
TRB 5,351553.961,117843.479,50.243
TRB 6,351555.234,117839.971,50.389
TRA SW,351551.567,117817.426,51.169
TRA NW,351558.305,117834.079,50.597
TRA NE,351573.201,117828.398,51.261
TRA SE,351567.506,117812.043,52.093

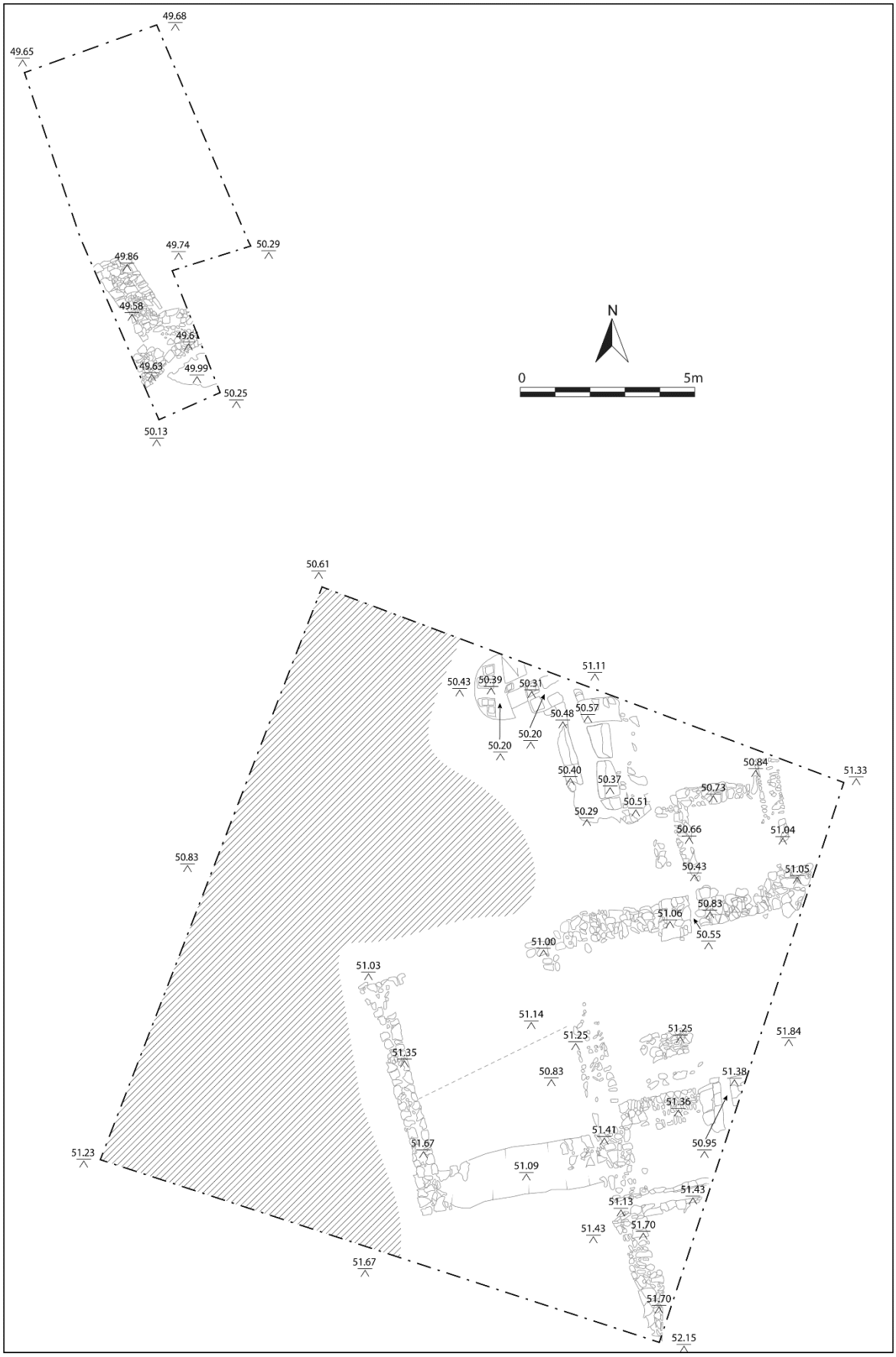


Figure 64 Reduced levels on the modern grounds surface and key architectural features. Further levels on individual contexts can be found in the site archive. Hatched area was unexcavated.

Appendix B – Finds and Section line locations

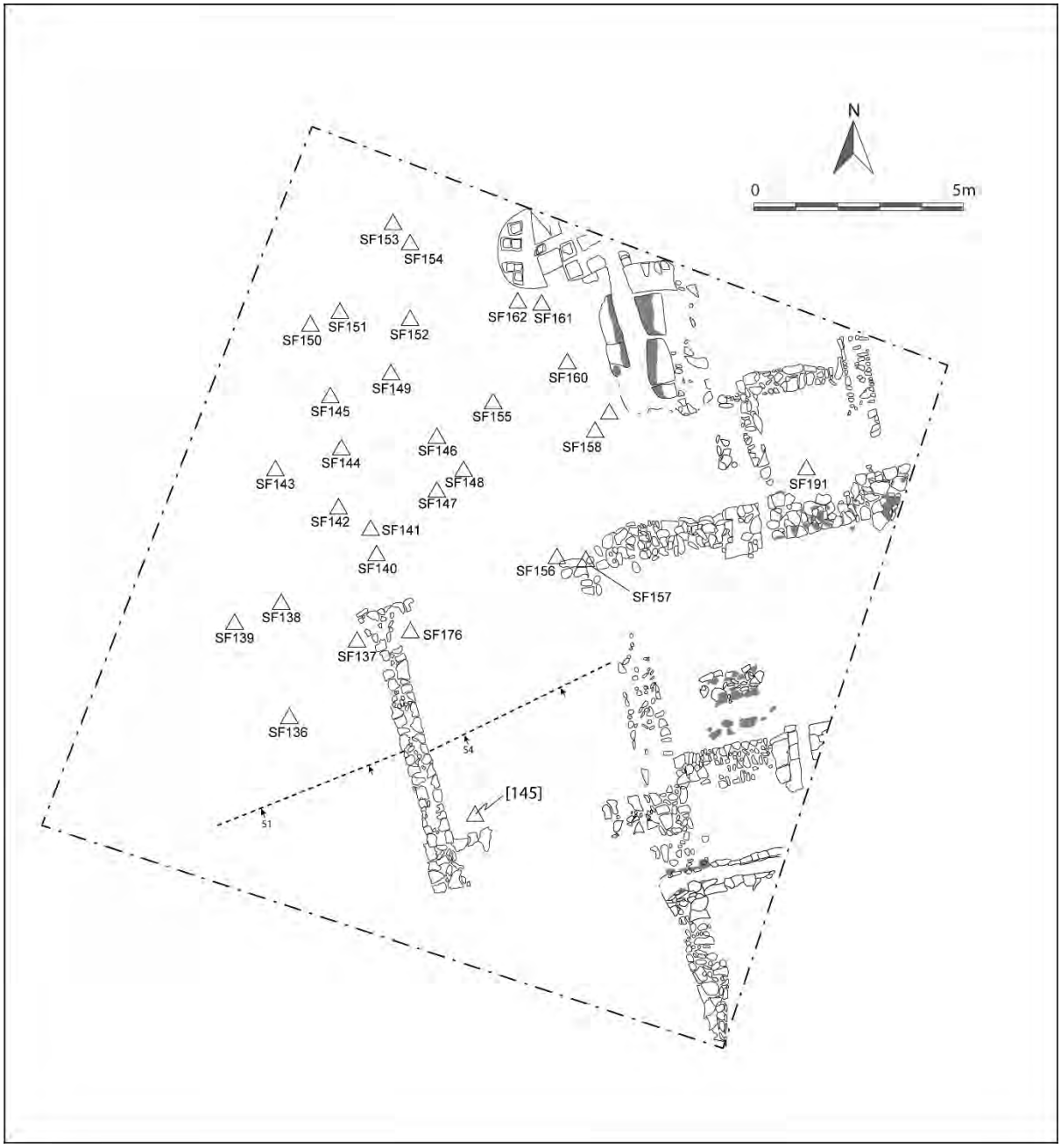


Figure 65 The distribution of selected finds (mainly metal detected objects from demolition deposits) and section locations

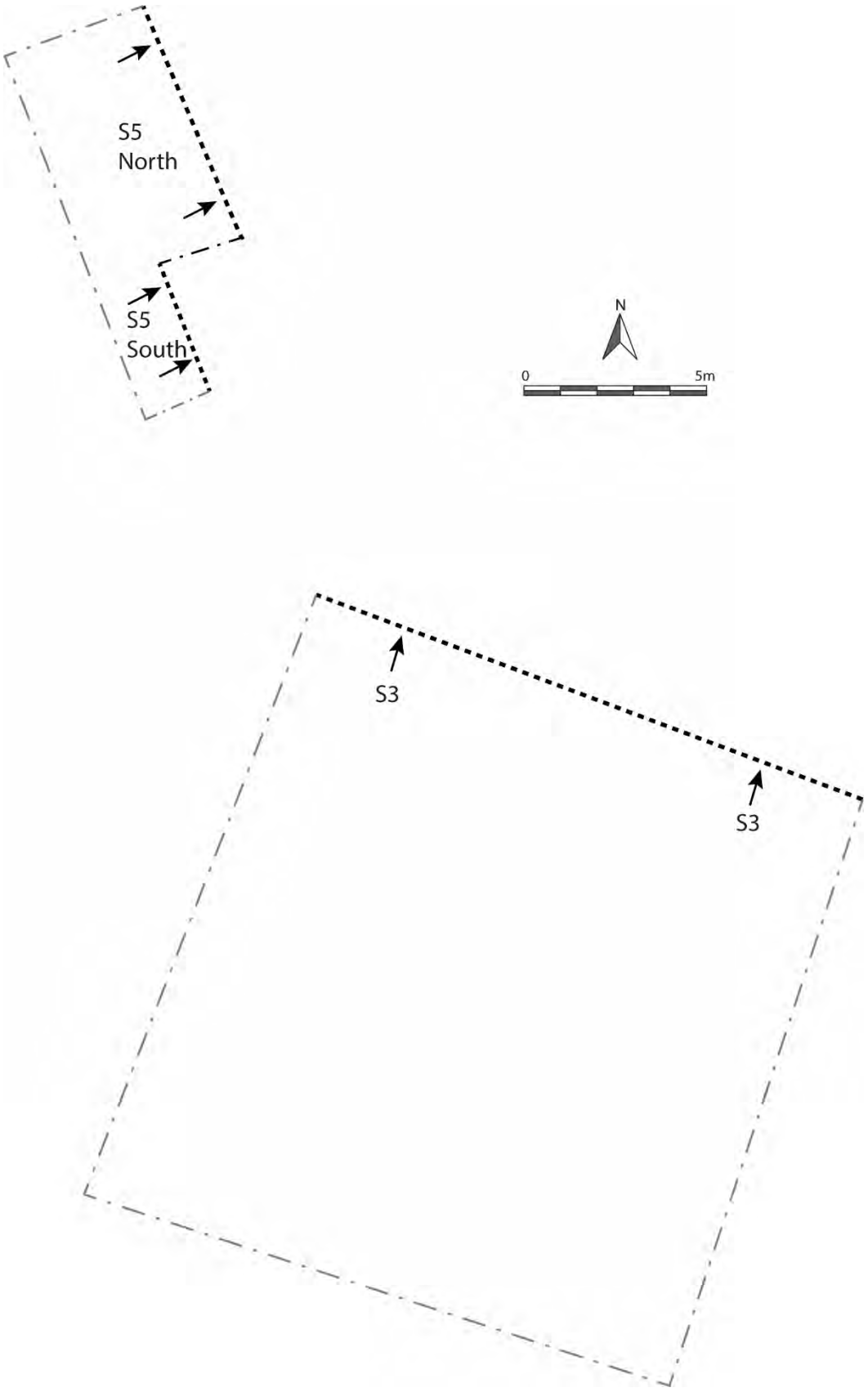
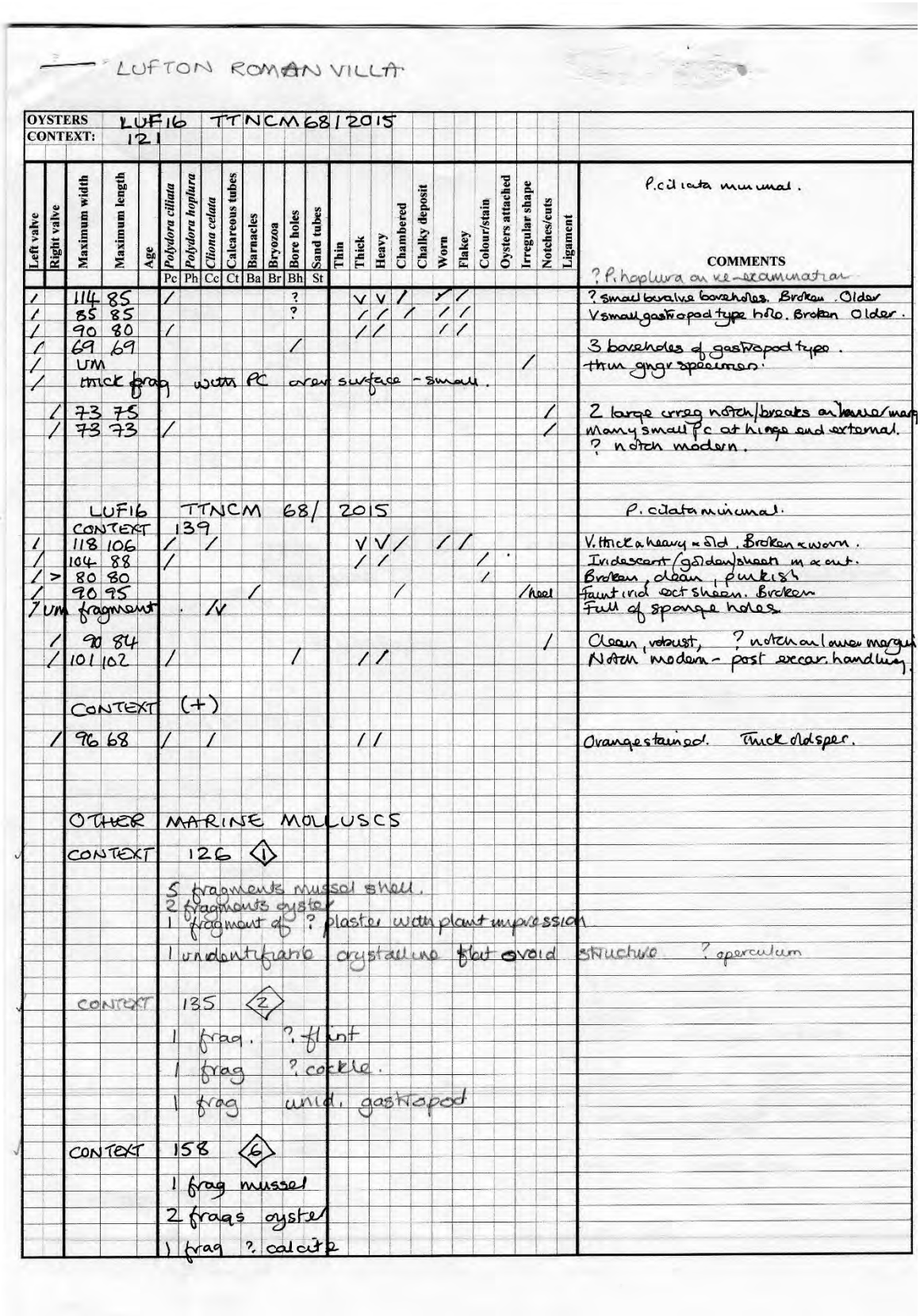


Figure 66 Limit of Excavation section locations

Appendix C – Mollusc Recording sheets



LUFTON ROMAN VILLA

OYSTERS LUF16 TTNCM68/2015
CONTEXT: 121

Left valve	Right valve	Maximum width	Maximum length	Age	Polydora ciliata Pc	Polydora hoplura Ph	Cliona celata Cc	Calcareous tubes Ct	Barnacles Ba	Bryozoa Br	Bore holes Bh	Sand tubes St	Thin	Thick	Heavy	Chambered	Chalky deposit	Worn	Flakey	Colour/stain	Oysters attached	Irregular shape	Notches/cuts	Ligament	COMMENTS
																									P.ciliata minimal.
/		114	85		/						?			V	V	/		✓	/						? small bivalve boreholes. Broken. Older
/		85	85								?			/	/	/		/	/						V small gastropod type hole. Broken. Older.
/		90	80		/									/	/			/	/						
/		69	69								/											/			3 boreholes of gastropod type.
/		UM																							thin ginger specimen.
/		thick frag			with Pc over surface - small.																				
	/	73	75																				/		2 large irreg notch/breaks on lower margin
	/	73	73		/																		/		Many small Pc at hinge end external.
																									? notch modern.
		LUF16			TTNCM 68/ 2015																				P. ciliata minimal.
		CONTEXT			139																				
/		118	106		/	/								V	V	/		/	/						V. thick & heavy = old. Broken & worn.
/		104	88		/									/	/					/					Iridescent (golden) sheen in & out.
/	>	80	80																	/					Broken, clean, pinkish
/		90	95				/									/						/heel			Faint ind ext sheen. Broken
?	UM	fragment			.	/v																			Full of sponge holes.
	/	90	84																				/		Clean, robust, ? notch on lower margin
	/	101	102		/						/			/	/										NOTCH modern - post excav. handling.
		CONTEXT			(+)																				
	/	96	68		/	/								/	/										Orange stained. Thick oldsper.
		OTHER			MARINE MOLLUSCS																				
		CONTEXT			126 ①																				
					5 fragments mussel shell.																				
					2 fragments oyster																				
					1 fragment of ? plaster with plant impression																				
					1 unidentifiable crystalline flat void structure ? operculum																				
		CONTEXT			135 ②																				
					1 frag. ? flint																				
					1 frag ? cockle.																				
					1 frag unid. gastropod																				
		CONTEXT			158 ⑥																				
					1 frag mussel																				
					2 frags oyster																				
					1 frag ? calcite																				

LUFTON VILLA

OYSTERS
CONTEXT: LUF 16 7TNCM68/2015

Left valve	Right valve	Maximum width	Maximum length	Age	*Polydora ciliata* Pc	*Polydora hoplura* Ph	*Cliona celata* Cc	Calcareous tubes Ct	Barnacles Ba	Bryozoa Br	Bore holes Bh	Sand tubes St	Thin	Thick	Heavy	Chambered	Chalky deposit	Worn	Flakey	Colour/stain	Oysters attached	Irregular shape	Notches/cuts	Ligament	COMMENTS
		CONTEXT				148					5														
						10 frag															Mussel shell				
						2 frag															Cockle				
						37 f															Oyster				
						1 f															Gastropod unid.				
						1 frag															bone - ??				
/		CONTEXT				152					14														
						13 f															mussel				
						1 f															cockle				hinge frag one with Pc burrows
						2 f															oyster				
																					? egg shell / fishscale				1 of each. fishscale with fingerprint marks
						1 f															? flint				
						2 f															unid gastropod.				
/		CONTEXT				159					7														
						11+6 f															Oyster				
						1 f															mussel.				
/		CONTEXT				166					9														
						2 f															mussel				
						1 f															cockle				
						12 f															oyster				
		CONTEXT				171					10														
						63 f															mussel				
						10 f															oyster				
						3 f															cockle				
						? 1 or 2															eggshell				
						1 extra															fishscale				
						1															fishbone				
		CONTEXT				174					13														
						2 frags															mussel.				
		CONTEX				175					12														
						5 f															mussel				
						1 f															cockle				
						1 f															oyster				
						2 unid.																			

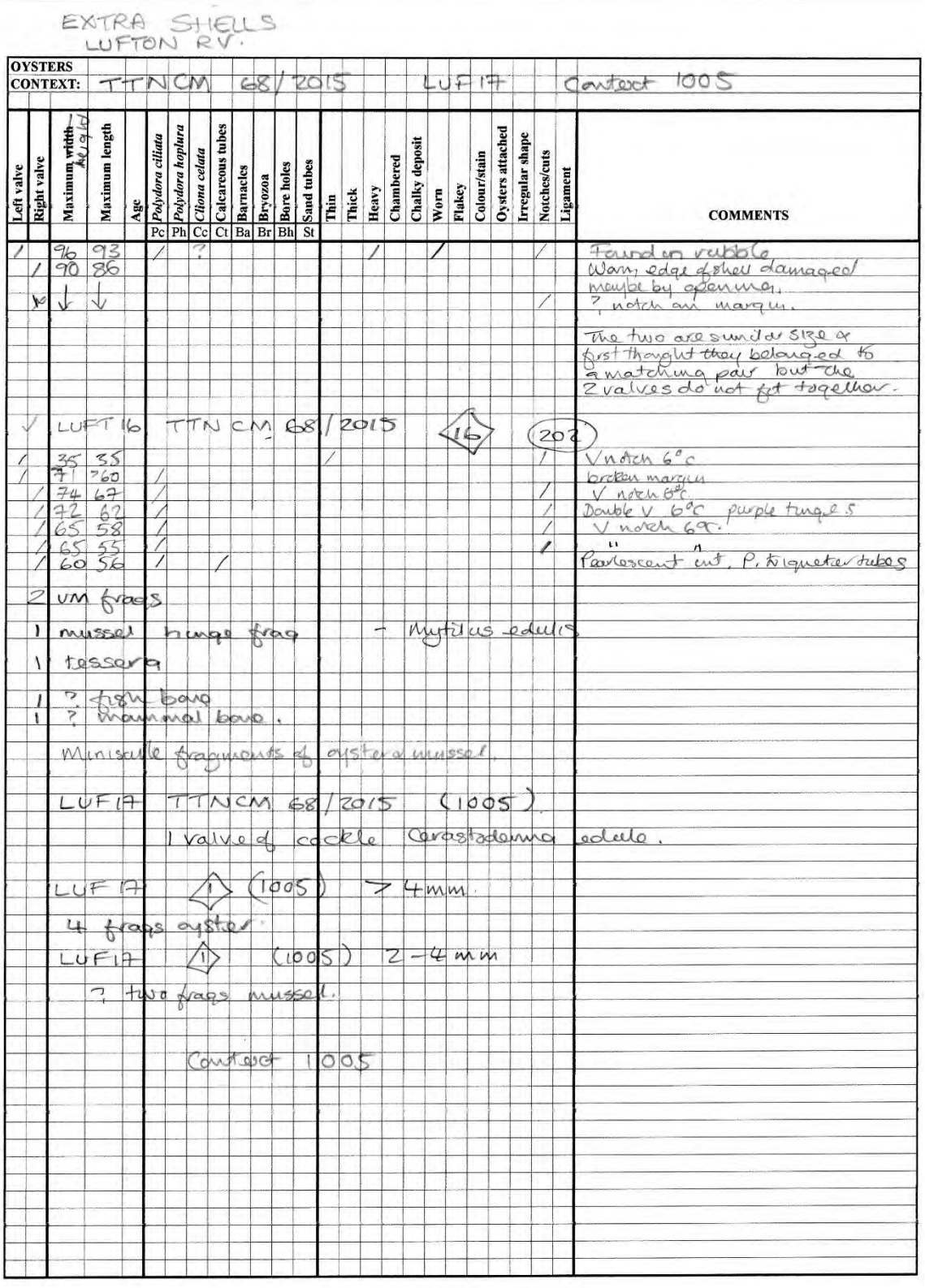
CONTEXT 202 (16)

8 f Cockle
3 f Mussel
32 f Oyster
4 f unid gastropod ?.

CONTEXT 204 (15)

2 unid bivalve hinge frag with teeth. look like mytilus edulis super fically but can't be.

~2 50 mussel frags



EXTRA SHELLS
LUFTON RV.

OYSTERS
CONTEXT: TTNCM 68/2015 LUF17 Context 1005

Left valve	Right valve	Maximum width	Maximum length	Age	Polydora ciliata (Pc)	Polydora hoplura (Ph)	Cliona celata (Cc)	Calcareous tubes (Ct)	Barnacles (Ba)	Bryozoa (Br)	Bore holes (Bh)	Sand tubes (St)	Thin	Thick	Heavy	Chambered	Chalky deposit	Worn	Flakey	Colour/stain	Oysters attached	Irregular shape	Notches/cuts	Ligament	COMMENTS
1		96	93		/	?									/			/					/		Found on rubble
	1	90	86																						Worn edge of shell damaged maybe by opening.
	1	↓	↓																				/		? notch on margin.
																									The two are similar size & first thought they belonged to a matching pair but the 2 valves do not fit together.
✓		LUFT16			TTN CM 68/2015											16							(20?)		
1		35	35										/										/		V notch 6°c
1		71	60		/																				broken margin
	1	74	67		/																		/		V notch 8°c.
	1	72	62		/																		/		Double V 6°c purple tinge S
	1	65	58		/																		/		V notch 6°c.
	1	65	55		/																		/		" "
	1	60	56		/		/																		Fluorescent int. P. triquetra tubes
2	UM frags																								
1	mussel	hinge frag																							+ Mytilus edulis
1	tessera																								
1	? fish bone																								
1	? mammal bone.																								
	Miniscule fragments of oyster & mussel.																								
	LUF17				TTNCM 68/2015 (1005).																				
					1 valve of cockle Cerastoderma edule.																				
	LUF17				(1) (1005)																				> 4mm.
	4 frags oyster.																								
	LUF17				(1) (1005)																				2-4 mm
	? two frags mussel.																								
					Context 1005																				

Figure 67 Mollusc recording sheets

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