PROPOSED ELEVATED WALKWAY, PEMBROKE CASTLE SOLAR, PEMBROKESHIRE: ARCHAEOLOGICAL EVALUATION 2022



DAT Archaeological Services

Prepared by DAT Archaeological Services For: Pembroke Castle Trust





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ARCHAEOLOGICAL EVALUATION 2022

By

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PROPOSED ELEVATED WALKWAY, PEMBROKE CASTLE SOLAR, PEMBROKESHIRE:

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EXECUTIVE SUMMARY

DAT Archaeological Services were commissioned to undertake an archaeological evaluation within the ground floor of the Solar at Pembroke Castle (NGR SM 98177 01647). The evaluation was required to provide information regarding the character and significance of surviving archaeological remains in this area in advance of a proposed elevated walkway across the Solar. The results will inform a forthcoming application for Scheduled Monument Consent, and the scope of any further archaeological works that may be required in advance of the proposed development.

CRYNODEB GWEITHREDOL

Comisiynwyd Gwasanaethau Archeolegol YAD i gynnal gwerthusiad archeolegol o fewn llawr gwaelod y Solar yng Nghastell Penfro (NGR SM 98177 01647). Un o ofynion y gwerthusiad oedd ddarparu gwybodaeth am gymeriad ac arwyddocâd olion archeolegol sydd wedi goroesi yn yr ardal hon cyn creu llwybr dyrchafedig arfaethedig dros y Solar. Bydd y canlyniadau'n hysbysu cais sydd ar ddod am Ganiatâd Heneb Gofrestredig, a gyfle unrhyw waith archeolegol pellach y gallai fod ei angen cyn y datblygiad arfaethedig.

1. INTRODUCTION

1.1 Project Commission

- 1.1.1 DAT Archaeological Services was commissioned by Archaeology Collective on behalf of Pembroke Castle Trust to undertake an archaeological evaluation in the basement below the Solar at Pembroke Castle, Pembrokeshire.
- 1.1.2 The work was required by Cadw in advance of an application for Scheduled Monument Consent (SMC) for improvements in and around the Solar area. The evaluation was required as the proposed works could potentially expose, damage or destroy significant archaeological remains, specifically within the areas of proposed groundworks for stairs for a new elevated walkway (Figure 3). A seperate application for SMC was approved for the evaluation trenches by Cadw prior to the works commencing.
- 1.1.3 The trial trench evaluation aimed to provide information on any archaeological deposits or features within the area of the groundworks for the proposed stairs. The results will be used to provide further information for the forthcoming SMC application for the main works proposed at the site. They will also inform the scope of any further archaeological works that may be required in advance of the main works.
- 1.1.4 Three evaluation trenches were located in the basement below the Solar at Pembroke Castle, Pembrokeshire. Two trenches were positioned where supports for the elevated walkway would be erected, and a third trench in the north-east corner of the basement (Figure 1 and 2; SM 98177 01647).
- 1.1.5 A written scheme of investigation (WSI) was prepared by DAT Archaeological Services providing information on the methodology of the evaluation and submitted to Cadw as part of the application for SMC for the evaluation.

1.2 Scope of Project

- 1.2.1 The WSI detailed the following tasks which would be completed for the evaluation:
 - Provision of a written scheme of investigation to outline the methodology for the intrusive trial trench evaluation which DAT Archaeological Services will undertake;
 - To establish the depth below ground level at which archaeological deposits survive;
 - To ascertain the state of preservation, character, extent and date range for any archaeological deposits identified;
 - To use the information to design a future mitigation strategy at the site which will enable any identified remains to be appropriately investigated and recorded where they will be affected by the proposed development;
 - The information will be used to support an application for Scheduled Monument Consent for the wider suite of works proposed at the site, but specifically the construction of the new stairway within the Solar;
 - Production of a report on and an archive of the results.
- 1.2.2 The overall objective of the evaluation was summarised as:

The implementation of an archaeological evaluation through hand excavated trial trenches within the site of the proposed new stairway in the southeastern corner of the Long Hall, Pembroke Castle. A report shall be

prepared on the results of the evaluation, and an archive created of all finds, records, photographs and plans created. Further mitigation may possibly need to be implemented where significant archaeological remains are identified, the scope of which will be determined following the results of the evaluation.

1.3 Report Outline

1.3.1 This report provides a summary and discussion of the archaeological evaluation and its results, within its regional and wider national setting.

1.4 Abbreviations

1.4.1 Sites recorded on the Regional Historic Environment Record¹ (HER) are identified by their Primary Reference Number (PRN) and located by their National Grid Reference (NGR). Scheduled Monument – SM; Written Scheme of Investigation – WSI; SMC – Scheduled Monument Consent.

1.5 Illustrations

1.5.1 Printed map extracts are not necessarily produced to their original scale.

1.6 Timeline

1.6.1 The following timeline (Table 1) is used within this report to give date ranges for the various archaeological periods that may be mentioned within the text.

Period	Approximate date	
Palaeolithic -	<i>c</i> .450,000 – 10,000 BC	_
Mesolithic –	<i>c</i> . 10,000 – 4400 BC	Pre
Neolithic –	<i>c</i> .4400 – 2300 BC	hist
Bronze Age –	<i>c</i> .2300 – 700 BC	orio
Iron Age –	<i>c</i> .700 BC – AD 43	Ω
Roman (Romano-British) Period –	AD 43 - <i>c.</i> AD 410	
Post-Roman / Early Medieval Period –	<i>c</i> . AD 410 – AD 1086	_
Medieval Period –	1086 - 1536	Hist
Post Medieval Period ² –	1536 - 1750	öri
Industrial Period –	1750 - 1899	n
Modern –	20 th century onwards	

Table 1: Archaeological and Historical Timeline for Wales.

² The post-medieval and industrial periods are combined as the post-medieval period on the Regional Historic Environment Record as held by Dyfed Archaeological Trust



Figure 1: Location of Pembroke Castle, highlighted by red circle.

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Figure 2: Location of Solar basement within Pembroke Castle. Phase plan by N. Ludlow, taken from *Pembroke Castle, Birthplace of the Tudor Dynasty* (Ludlow 2001).

2. THE SITE

2.1 Location

- 2.1.1 The proposed area of ground works associated with the proposed elevated walkway is located in the basement of the Solar at Pembroke Castle, Pembrokeshire, centered on NGR SM 98177 01647 (Figures 1, 2 and 3).
- 2.1.2 The basement is flat; the present surface having previously been levelled with fine gravels to provide access for visitors to the monument.
- 2.1.3 The underlying solid geology of the site is composed of Pembroke Limestone Group rocks of the Lower Carboniferous, although nearby in other areas of the peninsula there are also patches of Breccia of the Triassic period (BGS nd).

2.2 Historical Background and Archaeological Potential

Brief History of Pembroke Castle (From Ramsey 2010)

- 2.2.1 Pembroke Castle (PRN 4518, PE005) is situated at the west end of a precipitous (*c*.20m above Ordnance Datum) Carboniferous Limestone ridge flanked by two, formerly tidal, creeks of the Milford Haven waterway [Figure 1]. The castle occupies the most westerly part of the historic town of Pembroke whose medieval town walls projected from two of its southeastern towers.
- 2.2.2 Wogan's Cave lies on the north side of the peninsula, below the castle walls, from which evidence for human activity from the Palaeolithic and Mesolithic has been recorded, while nearby caves also evidence Bronze Age activity.
- 2.2.3 Given the situation of the peninsula as an easily defended location, it is considered likely that the site had previously been used as an Iron Age promontory fort, many examples of which are to be found in the surrounding area. Roman coins were recovered from Wogan's cave and also the locality, suggesting the site may have been occupied during the Roman period also.
- 2.2.4 There is also the possibility that occupation occurred during the early medieval period
- 2.2.5 A full description and discussion of the history and phasing of the castle by D. J. Cathcart King has been undertaken elsewhere (King 1978), and a brief outline is included below.
- 2.2.6 The castle originated as an 'earth-and-timber' structure founded in 1093 by Roger of Montgomery during the Norman penetration into west Wales after the death of Rhys ap Tewdwr. In the late 12th century it came into the ownership of William Marshal who from 1204 commenced the rebuilding of the fortification in stone and over the next thirty years or so the great round keep, the inner ward curtain wall, chapel, inner gate and turrets were constructed.
- 2.2.7 Throughout the Middle Ages, and later, the castle continued to be enlarged with the addition of a stone curtain wall for the outer ward and numerous other buildings including, probably in the early 14th century by Aymer de Valence, St. Anne's Bastion. Sporadic periods of neglect followed but additional defensive works were constructed during the Civil War years of the 17th century. In 1648 Oliver Cromwell slighted the castle by blowing up four towers of the outer ward and after the Civil War it was abandoned and allowed to fall into ruin. At the time of the publication of the Tithe Map and Apportionment of the Parish of St. Mary in 1842 the outer ward of the castle was described as being under pasture and rented to one Joshua Paynter by

its owner Edward Price Lovedon, but there is no indication that any of the buildings were inhabited at this time.

- 2.2.8 In the late 1870s to the early 1880s Joseph Richard Cobb, the antiquarian, leased the castle from its owners and undertook some clearance work which led to the discovery of the Horseshoe Gate in the inner ward. He also carried out restoration work around the castle gateway, on the wall enclosing the Barbican and on the Bygate Tower (Cobb 1883).
- 2.2.9 In 1915 the castle was scheduled, one of the first privately-owned castles to be afforded such protection, and in 1928 it was acquired by Sir Ivor Phillips who commenced the first restoration, consolidation and rebuilding programme since that undertaken by Cobb, but on a much larger scale. The castle that we experience today is a direct result of this extensive work, which was completed by May 1940. The stairs and roof of the Keep (Great Tower) were restored, as were the Northgate, Westgate and Henry VII towers; extensive consolidation of the outer curtain wall, restoration of the inner curtain, and restoration of the Western Hall was also undertaken.
- 2.2.10 The castle currently lies within the Pembroke Historic Landscape Character Area and is a Grade I listed building [LB No. 6314].

The Long Hall

- 2.2.11 The proposed stair is located within the upstanding remains of the oldest stone building of Pembroke Castle, namely the Old Hall, also known as the Norman Hall (Figure 2). Much renovation work to preserve the castle for future generations was undertaken during the early 20th century by Sir Ivor Phillips, although the amount of below-groundwork in the Old Hall is unknown.
- 2.2.12 According to Ludlow (2001) the Old Hall is typical of 12th century halls, with access to the building gained from the first floor via an external staircase; access to the undercroft being via trapdoor and ladder or stairs. The functions of these two spaces were very different, with the first floor serving the main domestic and residential area until later buildings made it more of a private room, while the undercroft served as a storeroom. Later additions and renovations, both during the medieval period and since, inserted the ground floor openings seen today and therefore its function as a storeroom may have changed.
- 2.2.13 There is thus the potential for archaeological remains, in the form of floor surfaces and occupation layers, relating to the daily activities of a medieval castle to be present within the Solar.
- 2.2.14 Any excavation in the area of the proposed stair has the potential to uncover archaeological remains relating to any period of past activity, although with a higher likelihood of encountering medieval deposits.

Proposed elevated walkway, Pembroke Castle Solar Archaeological Evaluation 2022



Figure 3: Plan of proposed Solar walkway and stair (shown in red). Drawing provided by Acanthus Holden Architects

3. METHODOLOGY

3.1 Fieldwork Methodology

- 3.1.1 The evaluation entailed the hand excavation of two trenches measuring 2m x 1m in size and a third trench measuring 1m x 1m. The two larger trenches (T1 and T2) targeted the location of the proposed supports for the elevated walkway, whilst the smaller trench (T3) was positioned in the north-east corner of the Solar to provide information on any archaeological deposits or features present, the depth of the later medieval wall and the depth of the bedrock (Figure 4; Photo 1).
- 3.1.2 All excavation was undertaken by hand using appropriate tools. All nonarchaeologically significant overburden was removed, and the trench was excavated down onto either natural or archaeological levels.
- 3.1.3 Following the removal of modern floor surface deposits potential areas of archaeology were hand cleaned using trowels to expose the character, distribution and extent of the archaeological remains.
- 3.1.4 All deposits were recorded by archaeological context record sheet, scale drawing and photographs. All individual deposits were numbered using the open-ended numbering system in accordance with DAT Archaeological Services Recording Manual³. The trench plan was recorded by means of measured drawings and sketches. A photographic record was maintained using digital cameras.
- 3.1.5 The trenches were located in relation to nearby walls using measuring tapes.
- 3.1.6 The archaeological evaluation was undertaken on the 1st, 2nd, 3rd and 25th of March 2022.

3.2 Post-Fieldwork Reporting and Archiving

- 3.2.1 All data recovered during the fieldwork will be collated into a site archive structured in accordance with specifications in *Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation* (Brown 2007), and the procedures recommended by the National Monuments Record, Aberystwyth.
- 3.2.2 The results of the fieldwork have been assessed in local, regional and wider contexts. The report includes a desk-based research element to ensure that the site is placed within its wider archaeological context.

³ Dyfed Archaeological Trust Field Services use the Recording Manual developed by English Heritage Centre for Archaeology. A copy will be available for inspection if required.



Figure 4: Plan of basement below Solar showing the location of trenches, sondages and drawn sections (exposed mortar floor shown in grey)



Photo 1: View towards NE corner of basement showing location of evaluation trenches. 1m scale

4. EVALUATION RESULTS

4.1 All numbers within the text within brackets []/() refer to the unique context number given to all individual deposits using the open-ended numbering system in accordance with the DAT Archaeological Services' Recording Manual⁴.

Trench 1

- 4.2 A 2m x 1m trench was opened in the proposed footprint of one of the supports for the elevated walkway across the Solar.
- 4.3 The deposits encountered during the excavation were as follows:

Context	Summary Description
(101)	A pale, orangey-brown layer of crushed stone sand approximately 0.06m thick. The current floor surface.
(102)	A thin, grey layer of crushed stone approximately 0.02m thick. A bedding layer for 101.
(103)	A layer of small to medium stone, lime mortar and gravels used for levelling for surface (101). Up to 0.1m thick.
(104)	Hard, grey, level lime-mortar surface. Hollow sounding when tapped. Covers full extent of Trench 1. A former floor.

Table 2: Archaeological contexts recorded within Trench 1.

- 4.4 The upper gravel layers (101) & (102) were removed using mattocks, trowels and shovels and stored separately so that they could be reinstated on the surface at the end of the works. The underlying layer (103) consisted of loose, small to medium angular stones with pieces of lime mortar adhering to some of them. No small finds were recovered during the removal of this layer. This layer functioned as a levelling layer for (101).
- 4.5 Layer (103) was then removed revealing layer (104), which consisted of a hard, horizontal, lime-mortared surface that covered the whole of Trench 1. When tapped, the surface sounded hollow. No further excavation was carried out in Trench 1. (Figure 5; Photos 2 and 3).



Figure 5: Diagram of west facing section of Trench 1

⁴ Dyfed Archaeological Trust Field Services use a Recording Manual based on the one developed by English Heritage Centre for Archaeology.



Photo 2: View South of Trench 1 after removal of overlying layers, showing floor (104). 1m scale



Photo 3: View of west facing section of Trench 1 with layer (104) in foreground. 1m scale

Trench 2

- 4.6 A 2m x 1m trench was opened in the proposed footprint of one of the supports for the elevated walkway across the Solar.
- 4.7 The deposits encountered during the excavation were as follows:

Context	Summary Description
(201)	A pale, orangey-brown, crushed stone sand approximately 0.06m thick. The current floor surface.
(202)	A thin, grey layer of crushed stone approximately 0.03m thick. A bedding layer for (201).
(203)	A layer of small to medium stone with lime-mortar fragment and gravels used for levelling for surface (201). Up to 0.5m thick.
(204)	Abraded remains of lime-mortar surface. Covers only the southern third of the trench. 0.04m thick. Probably the remains of a former floor.
(205)	Grey/brown silty-clay containing mortar fragments, some animal bone and a high percentage of small to medium subangular stone and slate. Approximately 0.28m thick. Levelling layer for surface (204)
(206)	Dark brown, compact clay-silt. Top of buried soil.

Table 3: Archaeological contexts recorded within Trench 2.

- 4.8 The upper gravel layers (201 & 202) and the levelling layer (203) were removed using trowels, mattocks and shovels and stored separately so that they could be reinstated on the surface at the end of the works. In the southern half of the trench the removal of (203) revealed the abraded remains of a lime-mortared surface (204) which, it would seem, is a continuation of layer (104) in Trench 1. In the northern half of the trench the removal of (203) revealed the mixed layer (205). This layer functioned as the levelling layer for (204). It was decided to insert a 0.5m wide sondage along the east side of the trench down to the bottom of (205) but no deeper than 0.5m. This revealed that (205) continued beneath (204) and functioned as a levelling layer and that (204) discontinued, not because it had been truncated but probably through wear and tear. This might have occurred during the erection of the basement ceiling/solar floor during the first half of the 20th century (Photo 4).
- 4.9 The excavation of the sondage revealed the remains of floor (204) to be up to 0.03m thick. The base of (205) was reached between 0.4m and 0.45m below the present surface. It lay directly upon layer (206) a dark brown, compact clay-silt with small to medium stone, which is likely to be the original ground surface (Figure 6; Photo 5).

Proposed elevated walkway, Pembroke Castle Solar Archaeological Evaluation 2022



Photo 4: View west of Trench 2 showing remains of floor (204) and levelling layer (205). Scale 0.5m.



Figure 6: Diagram of west facing section in Trench 2 sondage



Photo 5: View of west facing section in Trench 2 sondage. Scale 0.5m.

Trench 3

- 4.10 A 1m x 1m trench was opened in the NE corner of the basement below the Solar to ascertain the character of the underlying deposits and discover the depth at which the bedrock stood.
- 4.11 The deposits encountered during the excavation were as follows:

Context	Summary Description
(301)	A pale, orangey-brown, crushed stone sand approximately 0.06m thick. The current floor surface.
(302)	A thin, grey layer of crushed stone approximately 0.02m thick. A bedding layer for (301).
(303)	A layer of white lime-mortar. Up to 0.5m thick. Curves slightly up wall. Probably a former floor surface.
(304)	Thin layer of grey stone particles and dust up to 0.02m thick. Bedding layer for (303).
(305)	Grey/brown silty-clay containing mortar fragments and a high percentage of small to medium sub-angular stone. Approximately 0.21m thick. Levelling layer for (303).
(306)	Hard, light brown mortar containing very high percentage of gravels, small stones and sand. Bedding mortar for the bottom course of the north– south wall dividing the Old Hall and the Solar. At least 0.06m thick.

(307)	Dark brown, compact clay-silt containing occasional charcoal flecks and an oyster shell at the interface with (306). Buried soil. Between 0.3m and 0.4m thick.
(308)	Bedrock surface (limestone). Lies between 0.65m and 0.73 below the present ground surface.

Table 4: Archaeological contexts recorded within Trench 3.

- 4.12 The upper gravel layers (301) & (302) were removed using trowels and shovels and stored separately so that they could be reinstated on the surface at the end of the works. The underlying layer (303) was a white, compact lime-mortar (or possibly gypsum) surface, up to 0.05m thick and curving slightly up the wall. It lay on approximately the same datum as the other surfaces (104) and (204) and covered the whole of trench (Photos 6 and 7).
- 4.13 It was decided to insert a 0.5m wide sondage (with one edge along the west side of the trench and another against the partition wall between the Solar and the Great Hall) down to the top of the underlying bedrock.
- 4.14 The west facing section of the sondage revealed the depth of levelling layer (305) to be approximately 0.22m thick. A wedge of bedding mortar (306) intruded 0.16m into the section from beneath the wall and was sandwiched between (305) and (307). Further along it was observed that (306) lay directly above (307) (Figure 7 Photo 8).
- 4.15 The south facing section of the sondage revealed the base of the wall to be approximately 0.3m below the present ground surface. It sat on a hard bed of light brown mortar (306) containing a very high percentage of gravels, small stones and sand. This lay on top of the old land surface (307); a dark brown, compact, clay-silt containing small to medium stones, the occasional charcoal fleck and an oyster shell. Surface (307) was between 0.3m and 0.4m thick. The limestone bedrock was located below (307), between 0.65m and 0.73m below the present surface (Figure 8; Photos 9 and 10).



Figure 7: West facing section in sondage of Trench 3



Figure 8: South facing section in sondage of Trench 3



Photo 6: View east showing floor (303) - excavated area to ascertain depth. 1m scale



Photo 7: View of Trench 3 and north-east corner of basement. 1m scale



Photo 8: View of west facing section in Trench 3; note wedge of mortar (306) between (305) and (307). 0.5m scale



Photo 9: Close-up of (306) sandwiched between (305) and (307). 0.5m scale



Photo 10: View of south facing section in Trench 3 showing base of partition wall, bedding mortar (306) and buried soil (307). 0.5m scale



Photo 11: View of limestone bedrock in base of Trench 3. 0.5m scale

5. DISCUSSION

- 5.1 Due to the small size of the excavated area it was not possible to ascertain whether the bedrock (308), encountered in the sondage in Trench 3, had been deliberately truncated and was therefore indicative of an old floor surface similar to that seen during an archaeological evaluation in the Great Hall in 2015 (Davies 2015).
- 5.2 The buried soil (307) which lay above (308) in Trench 3, which was also seen in Trench 2, may be surviving evidence of an earlier floor below the later floor (104, 204 and 303). Beaten earth floors were common until the 14th century and the oyster shell seen on the interface between (307) and the levelling layer above (305) could be a sign of occupancy.
- 5.3 It is odd that the east-west partition wall that separates the basement/Solar from the Great Hall is built on top of soil (307) when bedrock lies *c.* 0.5m below. This can be seen in the east-west section in Trench 3; a layer of bedding mortar (306) has been deposited on top of (307) and the wall laid on top. In the north-south section. layer (306) can be seen sandwiched between the buried soil (307) and the levelling layer (305): this, and the fact that no foundation cut for the wall was visible in section indicates that the partition wall was earlier than floor (303). It also suggests that before the partition wall was built, soil (307) possibly extended into the Great Hall. The 2016 evaluation discovered the remains of a possible earthen floor above the bedrock, which supports this suggestion (Davies 2015) (Figures 7 and 8; Photos 8, 9 and 10)
- 5.4 The dating of the lime mortar floor discovered in the evaluation trenches is problematic because no dateable artefacts were found in the floor material (104, 204 and 303) or in the levelling layers (205 and 304/305). It is assumed that all are one and the same floor (they all share the same horizontal level) although (305) is whiter in appearance than (104) and (204), but this might be attributed to it being of a slightly different mix and located in the corner of the basement where it would have experienced damper conditions.
- 5.5 If we assume that this lime mortar floor is medieval then the function of the space it occupies must have changed because the basement of the solar would, before the addition of later walls, have been part of the undercroft of the Great Hall. As such, it would have been used as a storeroom and would not have warranted such a relatively high-status floor. During the 2016 evaluation in the Great Hall, a mixed layer overlying the bedrock was interpreted as the possible remains of an earthen floor befitting a storeroom. This change in use from a storeroom to a room warranting a mortared floor must have occurred during the time when later walls were inserted between the mid/late 12th century and the late 13th century, forming the basement we see today.
- 5.6 Alternatively it could be argued that a floor of this kind would not survive such a span of time and is therefore of modern origin. The floor revealed in Trench 1 was unblemished and in Trench 3, apart from possible water damage, was intact. Also, the trench sections showed no evidence for reflooring which we might expected if the floor was laid in the 13th century and the castle abandoned in the mid-17th century. However, this evidence only comes from two sections, thus it is possible that evidence for reflooring might survive elsewhere.
- 5.7 If it is not of medieval date then the floor unearthed in the Solar basement might originate from either the time of the first restoration of the castle by

Joseph Cobb during the early 1800s or from Sir Ivor Phillips' programme of restoration and rebuilding between 1928 and 1940.

6. CONCLUSION

- 6.1 Three trenches were excavated in the basement of the Solar of Pembroke Castle. After the modern, crushed stone floor was removed each trench revealed a lime-mortared floor. It is assumed that each trench showed different aspects of the same floor.
- 6.2 The dating of the floors was problematic due to the lack of dating evidence within the floor material and the underlying levelling layer. Therefore, to ascertain whether this floor is medieval or modern in origin, expert advice needs to be sought, or the floor material could be subjected to tests to determine its age.
- 6.3 The removal of the levelling layer exposed a buried soil beneath. A single oyster shell found on the interface between it and the levelling layer suggests that this soil could have been an occupied surface before the later floor was laid down.
- 6.4 The top of the limestone bedrock was uncovered in the base of the sondage in Trench 3. It lay beneath the buried soil and was between 0.65m and 0.73m below the present ground surface.

7. SOURCES

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