
ARCHAEOLOGICAL SOLUTIONS LTD

**ROYAL COLLECTION TRUST, VISITOR ADMISSIONS CENTRE,
LORD CHAMBERLAIN'S LOWER YARD AND PUG YARD,
WINDSOR CASTLE, CASTLE HILL,
WINDSOR, BERKSHIRE SL4 1NJ**

AN ARCHAEOLOGICAL EVALUATION

Author: Kerrie Bull (Fieldwork and report)	
NGR: 496913 176882	Report No: 5581
District: Windsor & Maidenhead	Site Code: AS1944
Approved: Claire Halpin MCIfA	Project No: 7367
	Date: 21 May 2018

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OASIS SUMMARY SHEET**Project details**

Project name	Royal Collection Trust, Visitor Admissions Centre, Lord Chamberlain's Lower Yard and Pub Yard, Windsor Castle, Castle Hill, Windsor, Berkshire SL4 1NJ
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In April 2018 Archaeological Solutions Ltd (AS) carried out an archaeological evaluation on land at the Visitors Admissions Centre, Lord Chamberlain's Lower Yard and Pug Yard, Windsor Castle, Castle Hill, Windsor, Berkshire SL4 1NJ (NGR 496913 176882; Figs. 1 - 2). The evaluation was undertaken as the initial stage in compliance with a planning condition (No.3) attached to planning approval for the demolition of existing structures and the construction of new buildings (RBWM Planning Ref. 17/01607), based on the advice of Berkshire Archaeology (BA).

The evaluation revealed two sections of red brick wall foundation that correlate with garden walls depicted on mid 19th century Ordnance Survey maps, and likely part of the re-development of the Pug Yard in the 1830-1840s, potentially associated with Blore's work of c.1842. One of the walls appears to be of the Inspector's Garden, and within the enclosed garden area is a large pit that contained a layer of aligned cattle metapodial bones, which may have formed part of a formal bed or planter. A seemingly contemporary brick culvert was also recorded and appears to have served the western range, prior to being replaced by a drainage system in 1911. The walls are cut into or abutted by made ground layers that contain similar brick rubble, while Wall M1022 is underlain by a single layer (L1021) that contains a low quantity of late 13th to 15th century pottery, bone and oyster shell, and may comprise an in site medieval deposit at the base of the stratigraphic sequence. The wall foundations are sealed by a sequence of thin made ground layers that contain Victorian to early 20th century pottery; while there is a common incidence of a sparsely distributed residual medieval finds across the sites, including coarse ware pottery, worked stone (including a window mullion) and a copper alloy harness mount.

Project dates (fieldwork)	10 th & 11 th January 2018
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Previous work (Y/N/?)	DBA	Future work	TBC
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P. number	7367	Site code	AS1944
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Type of project	Archaeological evaluation
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Site status	Conservation Area
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Current land use	Entrance area to Windsor Castle (& associated public service buildings)
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Planned development	Extension of admissions facilities (including security provision and educational facilities)
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Main features (+dates)	Wall foundations & culvert (19 th century) Pit, probable garden feature (19 th century) Made ground layers (post-medieval, one layer possible medieval)
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Significant finds (+dates)	Pottery, CBM, animal bone, ironwork (post-medieval) Pottery, worked stone (residual medieval)
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Project location

County/ District/ Parish	Berkshire	Windsor & Maidenhead	Windsor
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HER for area	Berkshire Historic Environment Record
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Post code (if known)	HP23 5RX
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Area of site	c.3500m ²
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NGR	TM 96913 76882
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Height AOD (max/ min)	c.42m AOD
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Project creators

Brief issued by	Berkshire Archaeology
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Project supervisor/s (PO)	Archaeological Solutions Ltd
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Funded by	Mr Theo Manzaroli Purcell 15 Bermondsey Square London SE1 3UN
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Full title	Royal Collection Trust, Visitor Admissions Centre, Lord Chamberlain's Lower Yard and Pub Yard, Windsor Castle, Castle Hill, Windsor, Berkshire SL4 1NJ. Archaeological Evaluation.
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Authors	Bull, K.
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Report no.	5581
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Date (of report)	May 2018
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LORD CHAMBERLAIN'S LOWER YARD AND PUG YARD,
WINDSOR CASTLE, CASTLE HILL, WINDSOR, BERKSHIRE SL4 1NJ**

AN ARCHAEOLOGICAL EVALUATION

SUMMARY

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The evaluation revealed two sections of red brick wall foundation that correlate with garden walls depicted on mid 19th century Ordnance Survey maps, and likely part of the re-development of the Pug Yard in the 1830-1840s, potentially associated with Blore's work of c.1842. One of the walls appears to be of the Inspector's Garden, and within the enclosed garden area is a large pit that contained a layer of aligned cattle metapodial bones, which may have formed part of a formal bed or planter. A seemingly contemporary brick culvert was also recorded and appears to have served the western range, prior to being replaced by a drainage system in 1911. The walls are cut into or abutted by made ground layers that contain similar brick rubble, while Wall M1022 is underlain by a single layer (L1021) that contains a low quantity of late 13th to 15th century pottery, bone and oyster shell, and may comprise an in site medieval deposit at the base of the stratigraphic sequence. The wall foundations are sealed by a sequence of thin made ground layers that contain Victorian to early 20th century pottery; while there is a common incidence of a sparsely distributed residual medieval finds across the sites, including coarse ware pottery, worked stone (including a window mullion) and a copper alloy harness mount.

1 INTRODUCTION

1.1 In April 2018 Archaeological Solutions Ltd (AS) carried out an archaeological evaluation on land at the Visitors Admissions Centre, Lord Chamberlain's Lower Yard and Pug Yard, Windsor Castle, Castle Hill, Windsor, Berkshire SL4 1NJ (NGR 496913 176882; Figs. 1 - 2). The evaluation was undertaken as the initial stage in compliance with a planning condition (No.3) attached to planning approval for the demolition of existing structures and the construction of new buildings (RBWM Planning Ref. 17/01607), based on the advice of Berkshire Archaeology (BA).

1.2 The evaluation forms Stage 1 of the requirements of the condition and will allow the formation of a further mitigation strategy (e.g. further archaeological excavation or preservation *in situ*) for any identified archaeological remains. The mitigation strategy will be specified by Berkshire Archaeology on behalf of the Local Planning Authority.

1.3 The evaluation adhered to the requirements of BA, and a specification compiled by AS (dated 12th January 2018). It was also undertaken according to the requirements of the document, ClfA *Standard and Guidance for Archaeological Evaluation* (2014).

1.4 The aims and objectives of the project were:

General Aims and Objectives

- to determine the location, extent, nature and date of any archaeological features or deposits that may be present; and
- to provide information on the integrity and state of preservation of any archaeological features or deposits that may be present.

Specific Aims

- To determine or confirm the presence/absence and general nature of the remains present;
- To determine or confirm the approximate date or date range of the remains, by means of artefactual or other evidence;
- To determine or confirm the approximate extent of the remains and the effect of the development proposals on them;
- To determine the condition and state of preservation of the remains;
- To determine the degree of complexity of the horizontal and/or vertical stratigraphy present;
- To determine or confirm the likely range, quality and quantity of the artefactual evidence present; and
- To determine the potential of the site to provide palaeoenvironmental and/or economic evidence and the forms in which such evidence may be present; and
- To assess the status of the remains as regards economy, social activity and place in the generic contemporary landscape

Planning policy context

1.5 The National Planning Policy Framework (NPPF 2012) states that those parts of the historic environment that have significance because of their historic, archaeological, architectural or artistic interest are heritage assets. The NPPF aims to deliver sustainable development by ensuring that policies and decisions that concern the historic environment recognise that heritage assets are a non-renewable resource, take account of the wider social, cultural, economic and environmental

benefits of heritage conservation, and recognise that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. The NPPF requires applications to describe the significance of any heritage asset, including its setting that may be affected in proportion to the asset's importance and the potential impact of the proposal.

1.6 The NPPF aims to conserve England's heritage assets in a manner appropriate to their significance, with substantial harm to designated heritage assets (i.e. listed buildings, scheduled monuments) only permitted in exceptional circumstances when the public benefit of a proposal outweighs the conservation of the asset. The effect of proposals on non-designated heritage assets must be balanced against the scale of loss and significance of the asset, but non-designated heritage assets of demonstrably equivalent significance may be considered subject to the same policies as those that are designated. The NPPF states that opportunities to capture evidence from the historic environment, to record and advance the understanding of heritage assets and to make this publicly available is a requirement of development management. This opportunity should be taken in a manner proportionate to the significance of a heritage asset and to impact of the proposal, particularly where a heritage asset is to be lost.

2 DESCRIPTION OF THE SITE

2.1 The site is located on the southern side of Castle Hill, east of the Royal Mews and west of St Albans Street in the historic core of Windsor, adjacent to Windsor Castle. The site is occupied by the existing admissions and education facilities of the Castle, within The Lord Chamberlain's Lower Yard and Pug Yard. It is proposed to improve the public access and facilities in and around the Admissions Yard and provide new learning facilities to improve schools access to the currently unvisited Pug Yard, along with new improved access from St Albans Street.

3 TOPOGRAPHY, GEOLOGY AND SOILS

3.1 The site lies at c.37-40m AOD, on Thames terrace deposits.

4 ARCHAEOLOGICAL & HISTORICAL BACKGROUND

4.1 The historical/archaeological background to the site has been detailed in an archaeological desk-based impact assessment and heritage impact assessment prepared by Purcell. In summary:

Sparse prehistoric and Roman activity has been identified on the chalk outcrop occupied by Windsor Castle and at Caley's Department Store, though the potential for remains of these periods on the current site is thought to be low. Similarly, only sparse finds of later Saxon material have been made locally. The principal potential for archaeological remains on the current proposed development site is for medieval and post-medieval date, with the site located on the edge of the 12th century settlement of New Windsor. It has a potential for street frontage timber buildings, burgage plots and 'back-yard' deposits such as boundaries, industrial features and

refuse pits etc. The site was subject to development in the 19th century when the Royal Mews was built, with new service buildings and yards, and then redeveloped again in the 20th century as the visitor admission and educational facilities that exist today. The site thus also has a potential for buried remains of the 19th century works no longer extant (such as the Inspector's glasshouse). Previous disturbance during the 19th century works is unknown but may be high in parts of the site where ground remodelling with steep slopes has clearly taken place.

4.2 The site thus has the potential for medieval and post-medieval occupation remains associated with this part of the historic core of Windsor, and for buried evidence of its 19th century layout.

5 METHODOLOGY

5.1 The following trenches were initially proposed:

5m x 1.8m trench in the open area of Lord Chamberlain's Lower Yard at the base of the bank, where the new build footprint is proposed

5m x 1.8m trench in the Lord Chamberlain's Lower Yard at the base of the admissions centre steps where the new build footprint is proposed

7m x 1.8m trench to the south of the ticket office in the narrow yard area on the eastern side of St Albans Street, where ground reduction is proposed

The areas where the new build footprint will encroach into Pug Yard are very narrow, but a trench of 5m x 1.8m could be proposed within Pug Yard once this area becomes accessible

5.2 Trenches 1 – 3 were excavated (Fig. 3).

5.3 The archaeological investigation comprised the inspection of the subsoil and natural deposits for archaeological features, the examination of spoil heaps and the recording of soil profiles. Encountered features and deposits were cleaned by hand and recorded using *pro forma* recording sheets, drawn to scale and photographed as appropriate. The excavated spoil was checked for finds.

6 DESCRIPTION OF RESULTS

Individual trench descriptions are presented below:

Trench 1 Figs. 3 - 4

Sample Section 1A 0.00 = 42.35m AOD		
0.00 – 0.08m	L1000	Concrete
0.08 – 0.13m	L1013	Levelling Layer. Sand and gravel
0.13 – 0.23m	L1014	Layer. Loose, CBM, sand and gravel
0.23 – 0.37m	L1015	Layer. Firm, mid - dark grey brown silty clay with moderate

		chalk, CBM rubble and gravel. Modern (19 th – mid 20 th C) pottery (16; 629g)
0.37 – 0.52m	L1016	Layer. Firm, pale yellow grey silty sand with moderate chalk and gravel. Medieval (12 th – 15 th C) pottery (2; 33g)
0.52 – 0.74m	L1049 = L1017	Layer. Firm, pale grey brown silty sand with frequent mortar fragments CBM rubble and gravel. Modern (19 th – early 20 th C) pottery (8; 154g) with residual medieval sherds
0.74 – 1.02m	L1020	Layer. Firm, mid – dark grey brown silty clay with occasional chalk, CBM and gravel. Post-medieval (17 th – 18 th C) pottery (1; 10g)
1.02 – 1.17m	L1021	Layer. Firm, mid – dark grey brown silty clay with occasional chalk, CBM rubble and gravel. Modern (19 th C) and medieval (late 12 th – 15 th C) pottery (23; 165g)

Sample Section 1B 0.00 = 42.37m AOD		
0.00 – 0.07m	L1000	Concrete
0.07 – 0.12m	L1013	Levelling Layer. As above
0.12 – 0.24m	L1014	Layer. As above
0.24 – 0.52m	L1015	Layer. As above
0.52 – 0.77m	L1017	Layer. As above
0.77 – 0.85m	L1026	Fill of Pit F1025
0.85 – 0.99m	L1023	Fill of Pit F1025
0.99 – 1.16m	L1024	Fill of Pit F1025

Description: Trench 1 revealed Foundation Wall M1022 and Pit F1025. A modern service also traversed the trench. The brickwork of M1022 appeared consistent with an 18th century, or perhaps early 19th century date. Similarly Pit F1025 contained post-medieval – modern (18th – 19th C) pottery.

Wall M1022 formed a short section of brick wall foundation extending north-west to south-east and continued north-west into the trench edge. It was built within Construction Cut 1018 (1.30+ x 0.84 x 0.50m), and the cut had vertical sides and a flat base. The cut fill, L1019, was a very dark grey brown silty clay with moderate small sub angular flints and CBM flecks. The exposed section of the wall measured 0.6m in length and was 0.60m wide and 0.46m high including two offset courses at the base creating a wider foundation. It was built of a fairly soft homogenous red brick measuring 8¼" x 4" x 2.5" (210 x 102 x 64mm) with a fairly buff coloured lime mortar. The construction cut around the wall was backfilled by L1019. The brickwork appeared consistent with an 18th century, or perhaps early 19th century date.

Pit F1025 was sub-circular in plan (1.30+ x 1.21 x 0.82m+). It had steep to moderately sloping sides and a concave base. Its basal fill, L1024, was a loose, very dark grey brown silty clay with ash and occasional small sub angular flint gravel. It contained post-medieval (late 16th – 17th century) pottery (13; 240g). Its secondary fill, L1023, was a firm, mid grey brown silty clay with occasional sub angular and sub rounded flints. It contained post-medieval (late 16th – early 18th C) pottery (8; 147g). Its upper fill, L1026, was a friable, pale yellow grey brown silty clay with occasional small sub angular flints. It contained late post-medieval – modern (18th – 19th C) pottery (3; 84g)

Trench 2 Figs. 3 & 5

Sample Section 2A 0.00 = 40.92m AOD		
0.00 – 0.20m +	M1010	Foundation Brick Wall

Sample Section 2B 0.00 = 41.33mm AOD		
0.00 – 0.10m	L1000	Concrete
0.10 – 0.13m	L1001	Tarmac
0.13 – 0.18m	L1002	Levelling Layer. Sand
0.18 – 0.27m	L1003	Levelling Layer. CBM and gravel
0.27 – 0.44m	L1004	Layer. Firm, dark yellow grey silty clay with moderate chalk, CBM rubble and asphalt
0.44 – 0.61m	L1011	Layer. Firm, mid grey brown silty clay with CBM and occasional flint and gravel. Modern (19 th C) pottery (1; 3g)
0.61m +	M1010	Foundation Brick Wall

Description: Trench 2 revealed Foundation Walls M1010 and M1012, and Service Trenches F1005 and F1007. M1010 was constructed of the 'standard' 18th to 19th century red brick.

Service Trench F1005 was linear in plan (3.60+ x 0.55+ x 0.38m+). It had vertical sides and its base was unseen. Its fill, L1006, was a firm, mid grey brown silty clay with moderate small sub angular flint.

Service Trench F1007 was linear in plan (1.20+ x 0.95 x 0.40m+), orientated N/S. It had vertical sides and its base was unseen. Its basal fill, L1008, was a loose gravel. Its upper fill, L1009, was a firm mid – dark grey brown silty clay.

Foundation Wall M1010 was linear in plan (1.73 x 0.67 x 0.28m). It was constructed of limestone and bricks bonded with a lime mortar. The rubble backfill, L1011, contained a modern (19th century) sherd (1; 3g).

Foundation Wall M1012 was linear in plan (1.22 x 0.33 x 0.10m+). It was constructed of CBM rubble bonded with a pale yellow grey lime mortar.

Trench 3 Figs. 3 & 6

Sample Section 3A 0.00 = 38.29m AOD		
0.00 – 0.09m	L1027	Concrete paving slabs
0.09 – 0.14m	L1028	Levelling Layer. Cement and coarse sand
0.14 – 0.25m	L1029	Buried Topsoil. Firm, mid – dark grey brown silty clay with flint gravel, chalk and CBM
0.25 – 0.35m	L1030	Layer. Firm, dark grey silty clay with flint gravel and chalk
0.35 – 0.79m	L1033	Backfill of manhole and drain
0.79 – 0.84m	L1035	?Surface. Compact, pale yellow grey limestone and sand with frequent gravel

0.84 – 0.92m	L1036	?Levelling Layer. Firm, dark grey brown silty sandy clay with moderate chalk and flint
0.92 – 0.97m	L1037	Layer. Firm, mid orange brown sandy clay
0.97 – 1.04m	L1031	Layer. Firm, dark grey brown silty clay with occasional chalk. It contained post-medieval (late 16 th – 17 th C) pottery (1; 2g)
1.04 – 1.13m	L1038	Layer. Compact, pale grey white chalk
1.13m+	L1039	Layer. Firm, dark grey brown silty clay with moderate chalk and CBM. It contained medieval (late 12 th – 15 th C) pottery (15; 143g)

Sample Section 3B 0.00 = 37.49m AOD		
0.00 – 0.08m	L1035	?Surface. As above
0.08 – 0.18m	L1036	?Levelling Layer. As above
0.18 – 0.25m	L1037	Layer. As above
0.25 – 0.38m	L1031	Layer. As above
0.38 – 0.50m	L1038	Layer. As above
0.50m+	L1039	Layer. As above

Sample Section 3C 0.00 = 38.44m AOD		
0.00 – 0.10m	L1027	Concrete Paving Slabs
0.10 – 0.16m	L1028	Levelling Layer. As above
0.16 – 0.89m	L1033	Backfill of manhole and drain

Sample Section 3D 0.00 = 38.47m AOD		
0.00 – 0.06m	L1027	Concrete paving slabs
0.06 – 0.11m	L1028	Levelling Layer. As above
0.11 – 0.22m	L1029	Buried Topsoil. As above
0.22 – 0.33m	L1030	Layer. As above
0.33 – 0.93m	L1033	Backfill of manhole and drain
0.93 – 1.13m	L1034	Layer of Debris. Pale yellow grey chalky sandy silt with frequent CBM, chalk and mortar
1.13 – 1.16m	L1035	Surface. As above
1.16 – 1.19m	L1036	?Levelling Layer. As above
1.19 – 1.21m	L1037	Layer. As above
1.21 – 1.25m	L1031	Layer. As above
1.25 – 1.31m	L1038	Layer. As above
1.31m+	L1039	Layer. As above

Description: Trench 3 revealed Culvert M1040 and Drainage Chamber M1042, and modern (20th century) Pit F1051. The culvert likely dates to the 18th century, though could span the later 17th or early 19th century.

Culvert M1040 was built of brick and extended north-east to south-west across Trench 3, continuing into the trench walls on either side. It was built within construction cut F1041, which cut through chalk layer L1038 and had vertical sides. Its base was unseen. The exposed section of culvert measured 1.55m in length and

0.85m wide with a height of 0.31m. It was built of good homogenous red bricks that measured 8¼" x 4" x 2.5" (210 x 102 x 64mm) and included outer walls (four courses laid on bed) that supported the barrel-vaulted ceiling of the culvert, all of brick set longitudinally with wide dark buff coloured sandy lime mortar joints. Small pieces of tile were also used as spacers between the regular coursing of the brick vaulting. Close to the north-east side of the trench, extra support had been given by a series of bricks added to create a 'rib' of brick over the brick ceiling of the culvert.

The bricks were of a similar form and character to that seen in the construction of Wall M1022 (CBM Report Appendix 2) though of seemingly more variable dimensions some measuring 9" x 3½" x 2¾" or 230x90x70mm. Again, a date in the 18th century is likely, though could span the later 17th or early 19th century.

A brick built drainage chamber, M1042, below a man hole cover, was encountered in the south-east end of Trench 3. It was built of yellow stock bricks that measured 230 x 90 x 110mm laid in regular courses but not discernible bonding pattern. The brickwork was laid with cement mortar from the inner side of the chamber, demonstrated by the mortar protruding through the outer side. Construction Cut F1043 was visible (3.70+ x 1.50+ x 0.64m+). It had vertical sides and a flattish base, and it contained residual medieval (13th – 15th C) pottery (5; 102g)

Large Pit F1051 was ill define in plan due to its size (2.10+ x 1.55+ x 0.80m+). It had vertical sides and its base was unseen. Its fill, L1052, was a loose, mid grey brown silty clay with frequent CBM rubble, plastic and gravel.

7 CONFIDENCE RATING

7.1 It is not felt that any factors inhibited the recognition of archaeological features and finds.

8 DISCUSSION

8.1 The recorded features are tabulated:

Trench	Context	Description	Date
1	M1022	Foundation Wall	18 th C or perhaps early 19 th C
	F1025	Pit	Post-medieval – modern (18 th – 19 th C)
2	M1010	Foundation Wall	18 th - 19 th C
	M1012	Foundation Wall	18 th - 19 th C
3	M1040	Culvert	Likely 18 th C but could span the later 17 th or early 19 th C
	M1042	Drainage Chamber	19 th – 20 th C
	F1051	Pit	Modern (20 th C)

8.2 Each trench contained features, principally brick foundations and drainage features of post-medieval to modern (18th – 20th century) date. Two pits were

revealed: F1025 (Trench 1) was post-medieval – modern (18th – 19th century), and the finds from F1051 (Trench 3) included modern plastic.

8.3 The Foundation Wall in Trench 1 (M1022), of two off-set courses of soft red brick (characteristic of 18th-19th century construction), was orientated NW/SE, and continued north-west beyond the limit of the trench. Its orientation and approximate location appears to correspond to a garden wall depicted in the Pug Yard on the Ordnance Survey map of 1871 (Purcell 2017, 27). The area was subsequently identified as the Inspector's Garden, and likely incorporated in the formal garden depicted on preceding editions that due to a larger scale depict the presence of the garden, but not its finer detail. Excavations close to the north of this wall, on Castle Hill, have previously recorded a similar red brick wall around the perimeter of the site.

8.4 The Foundation Wall in Trench 2 (M1010) utilized comparable brick, but bonded with limestone, and with a rubble foundation. It was orientated SW/NE, and likely corresponds with a garden wall that formed part of the landscaping associated with the western range of buildings and ran parallel to the main northern and eastern structural walls of that range. Critically, this range was known to be part of Blore's work, c.1842, and it is unlikely the postulated garden wall pre-dates the range. In Trench 3 a Brick Culvert (M1040) of comparable brick (wedged with tile to create a vaulted ceiling) was orientated SW/NE, and while not directly corresponding to any structures, appears contemporary and probably served as drainage or water supply to the western range. It does not correspond with the drainage plan of 1911 (Purcell 2017, 29), which may have been a modernization and replacement of the culvert system.

8.5 In all three trenches the brick structures are cut into or abutted by a sequence of made ground layers up to 0.65m thick; typically a sequence of two or three layers, with the wall and layers then sealed by 0.30 - 0.50m of thinner made ground layers which contained 19th century to Victorian pottery, worked stone, metal work and butchered animal bone. The majority of the layers related to the walls contained post-medieval pottery and CBM, however there is one exception: Layer L1021 was partially truncated by Wall M1022, but largely underlay it at the base of the made ground sequence, and the only finds from this layer comprise four sherds of medieval (late 13th to 15th century pottery) coarse ware pottery. The latter includes the rims of two jars or cooking pots, associated with a small fragment of worked oolitic limestone, and small fragments of large mammal, bird bone and oyster shell.

8.6 The small number of discrete features were almost entirely cut into the 19th - early 20th century made ground layers that sealed the wall foundations. Large Pit F1025, close to Wall M1022 was the notable exception, as it truncated Layers L1020 and L1021, and was sealed by Layer L1017, which cut or abutted the wall. The lower fills of Pit F1025 (L1023 and L1024) contained 17th to 18th century pottery, notably yellow and green glazed border wares, and the uppermost fill (L1026) included 19th century pottery that may be derived from the made ground layer above (L1017). The pit, in particular basal fill L1024, also contained 18th-19th century red brick, comparable to that used in the construction of the walls, and a high concentration of charcoal and clinker material (from the environmental samples). The most striking element was a layer of cattle metapodials within L1023. This pit would have been located within the former Inspector's Garden, and given both its

seemingly systematic but rough construction may have been intended as a form of planter or bedding with the rubble and clinker in L1024 used to enhance drainage, and the bone layer in L1023 acting as a bedding surface or even fertilizer.

8.7 The principal archaeological remains recorded relate to the presence of walls associated with gardens and landscaping, visible within the 19th century complex of buildings, and potentially constructed in the transformations of the 1830-40s under the architect Jeffry Wyattville, most likely as part of Blore's work of c.1842. The alignment of the limited extent of the walls uncovered clearly contrasts with the cluster of structures present on the site in the mid 18th century (Purcell 2017, 24), and the postulated chronology also concurs with the presence of re-deposited worked stone including a window mullion, probably from when the church of St John the Baptist was rebuilt nearby between 1820 and 1822. However the area had been consistently occupied and utilized throughout the medieval and early post-medieval periods, and this is reflected in a common incidence of residual medieval artefacts, including a range of locally-produced coarse wares spanning the 11th-14th centuries, a copper alloy (possibly gilded) harness mount, and potentially Tudor brick. The low density of medieval artefacts also includes pottery in Layer L1021, at the base of the stratigraphic sequence, potentially comprising an *in situ* medieval deposit, approximately 1m below ground level.

DEPOSITION OF THE ARCHIVE

Archive records, with an inventory, will be deposited at Berkshire Museum. The archive will be quantified, ordered, indexed, cross referenced and checked for internal consistency.

ACKNOWLEDGEMENTS

Archaeological Solutions would like to thank of Mr Theo Manzaroli of Purcell for commissioning the works and for all his assistance.

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APPENDIX 1 - Concordance of Finds

AS1944 - P7367, Royal Collection Trust, Windsor Castle, Windsor, Berkshire

Feature	Context	Segment	Trench	Description	Spot Date (Pot Only)	Pot Qty	Pottery (g)	CBM (g)	A.Bone (g)	Other Material	Other Qty	Other (g)
1010			2	Foundation Wall				591		Limestone		937
	1011		2	Rubble Backfill	19th-early 20th C	1	5	3714				
	1015		1	Layer	Mid 19th-early 20th C	16	486	1649		Fe Frag	3	262
	1016		1	Layer	12th-14th C	2	33	400	47	O.Shell		8
	1017		1	Layer	19th-early 20th C (includes med sherd)	8	152	4681	41	Marble		114
1018	1019		1	Fill of Construction Cut					27		1	10
	1020		1	Layer	17th- 18th C	1	11	498		Worked Stone	1	144
										O.Shell	1	10
										Clay Pipe	1	1
										Fe Frag	1	9
										Coal		40
	1021		1	Layer	Late 13th-15th C	4	37	193	31	Worked Stone	1	126
										Glass	1	12
										O.Shell		299
										O.Shell		122
1022			1	Brick + Mortar Wall				6556		B.Flnt		71

APPENDIX 2 SPECIALIST REPORTS

The Pottery Report

Peter Thompson

The archaeological evaluation recovered 105 sherds weighing 1.807kg. In total 46 sherds (429g) were medieval, although it is likely that most, if not all, of these are residual. The remaining 59 sherds (1,378g) ranged from post-medieval to modern.

Methodology

The sherds were examined under x35 binocular microscope and recorded according to the Medieval Pottery Research Group Guidelines (Slowikowski et al 2001, Table 1). Fabric codes are those used for the Museum of London pottery type series.

The Pottery

The medieval wares were dominated by Coarse Border Ware. The only glazed medieval sherd that was not of this fabric was in a sandy fabric of a similar type to Wallingford ware, although this particular ware is rarely found east of Reading. Other sherds in similar sandy fabrics are Oxfordshire type wares. The remaining medieval coarseware sherds were in local quartz sand and limestone, and flint tempered fabrics. Pit F1025 contained the most sherds including early modern pottery, but the majority of them were residual and of medieval and early post-medieval date. The other feature, Culvert M1043 contained only medieval pottery but again these are residual.

KEY:

CWM3: Medieval shelly ware 11th-13th

MCW1: Medieval coarse ware 1 (Quartz & Limestone) – common medium sub-angular to sub-rounded quartz, sparse limestone and sparse sub-angular black inclusions, possibly iron stone. Dark grey 12th-14th

MCW2: Medieval coarse ware 2 (Quartz & Shelly Limestone) – common fine to medium and also coarse sub-angular to sub-rounded quartz and moderate shell and limestone. Dark grey, outer margins sometimes red-brown 12th-14th

MCW3: Medieval coarse ware 3 (Quartz) – abundant fine sub-rounded to rounded Quartz. Mainly grey =same as OXY ware? 12th-14th

MCW4: Medieval coarse ware 4 (Flint) – sparse to moderate coarse angular flint, moderate to common rounded quart. Dark grey with pale brown outer surfaces 12th-13th

MCW5: Medieval coarse ware 4 (Quartz & Limestone) – common fine sub-rounded to rounded quartz and sparse to moderate white inclusions. Grey core with pale orange/brown surfaces 12th-14th

MCW6: Medieval coarse ware 6 (Quartz) – fine and occasionally medium mainly rounded quartz with sparse coarse to very coarse mineral inclusions; occasional red iron ore and burnt organics. Mainly pale grey/buff core with pale brown/orange surfaces. 12th-14th

MCW7: Medieval coarse ware 7 (Quartz) – fabric similar to that of Wallingford ware (WA38) although this fabric is not noted as travelling much further east than Reading 12th-14th

MCW8: Medieval coarse ware 8 (Quartz) – moderate to common fine sub-rounded to rounded quartz, with occasional coarse quartz rough surfaces, oxidised orange 13th-15th

OXY: Oxfordshire type ware late 11th-late 13th

CBW: Coarse Border Ware late 13th-15th
 GRE: Glazed red earthenware 16th-18th
 BORDG: Green glazed Border ware mid 16th-17th
 BORDY: Yellow glazed Border Ware mid 16th-17th
 ENGS: English stoneware late 17th+
 LPME: Late post-medieval red earthenware 18th+
 LGRE: Late glazed red earthenware 18th+
 RWE: Refined white earthenware late 18th+
 TPW: Transfer Printed ware mid 18th+
 LGWE: Late colour glaze white earthenware mid 18th+

Feature	Context	Quantity	Date	Comment
	1011	1x5g TPW	19 th -early 20 th	
Layer	1017	1x10g MCW1 3x56g LPMRE 2x51g LGRE 2x35g TPW	19 th -early 20 th	MCW1: outurned cooking pot rim; faint sooting on outer surface
layer	1015	6x208g LPMRE 2x28g LGRE 4x160g TPW 1x2g RWE 3x88g ENGS	mid 19 th -early 20 th	TPW: polychrome decoration ENGS: ink bottles
Layer	1016	1x27g OXY-type 1x6g MCW7	12 th -14 th	OXY-type: fabric coarser than normal
Layer	1020	1x11g GRE	17 th -18 th	
Layer	1021	2x15g MCW1 1x14g MCW5 1x8g CBW	late 13 th -15 th	MCW1: outurned jar rim with slight bead MCW5: flat topped slightly outurned jar rim
Pit 1025	1023	1x19g MCW2 5x99g BORDY 1x17g BORDG 1x15g PMRE	18 th	
	1024	1x4g MCW4 1x9g MCW3 1x9g CWM3 2x103g GRE 8x112g BORDY	17 th	MCW3: flat topped jar rim with slight external bead GRE: bowl? rim 20cm diam, possibly a chamber pot; x1 bowl rim with rouletting BORDY: tripod pipkin rim 14cm diam (Pearce 1992, 57)
	1026	1x68g LPMRE 2x7g LGRE 7x44g MCW2 2x7g MCW3 2x7g MCW4 2x4g MCW5 2x8gCBW 1x24g ENGS	18 th -19 th	MCW2: x1 square beaded jar rim approx 20cm diameter MCW5: applied clay strip CBW: dark green glaze ENGS: shoulder of ink bottle
Layer	1031	1x1g BORDG	late 16 th -17 th	

Layer	1039	11x116g CBW 2x14g OXY 2x10g MCW7	late 13 th -15 th	CBW: mainly glazed sherds, includes a handle from a frying pan or dripping tray MCW7: x1 green glazed
Culvert 1043	1044	4x89g CBW 1x9g MCW6	late 13 th -14 th (residual)	CBW: x2 flanged bowl rims; x1 cooking pot rim (Vince 1985 54) MCW6: flat topped everted bowl rim
Layer	1049	3x41g RWE 1x58g GRE 2x68g ENGS	19 th -early 20 th	
	1059	1x12g LGWE 3x44g RWE 2x65g TPW	19 th -early 20 th	

Table 1: Quantification of pottery by context

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The Ceramic Building Materials

Andrew Peachey

The evaluation recovered a total of 197 fragments (53652g) of CBM in a moderately fragmented to well-preserved condition, with limited levels of abrasion. The technological traits of the CBM: red brick and peg tile are predominantly consistent with a date of manufacture in the 18th to 19th centuries (Table 2), which correlates with much of the associated pottery; however sparse fragments of red brick appear to be of slightly earlier type and may have been incorporated as residual material in made ground layers of backfilled pit deposits, in particular a high concentration of CBM contained in Pit F1025.

The fragments were recorded by fragment count and weight per context, with all data entered into a Microsoft Excel spreadsheet that will form part of the site archive.

CBM type	Date	Fragment Count	Weight (g)
Red Brick	Mid 15 th to Early 17 th C	10	8902
	Late 16 th to Early 18 th C	4	2784
	18 th to 19 th C	20	17847
	Misc. (rubble)	9	2065
Peg tile	Late post-medieval	129	16926
Pantile	Late post/medieval/early modern	25	5128
<i>Total</i>		<i>197</i>	<i>53652</i>

Table 2: Quantification of CBM

A limited proportion of the red brick recorded: contained in 18th to 19th century L1011 and Pit F1025 may have been manufactured in the Tudor period (late 15th to early 17th centuries). These bricks were manufactured in a fabric comparable to all the later CBM: a red-orange fabric tempered with common sub-rounded/sub-angular quartz sand (generally <0.25mm, occasionally to 0.5mm) with occasional red iron-rich, quartz and flint grains (2-8mm). The principal contrast was in their dimensions, and the standards to which they were manufactured. A complete example was present in L1011 with dimensions of 210 x 115 x 50mm; a slightly rough base, slightly irregular arrises and crease marks on the stretcher faces. It is the presence of common crease marks and the relative roughness of the bases and arrises that contrast with the smoother finish of the later bricks in the assemblage.

Also present in limited quantities were red bricks with partial dimensions of ? x 100 x 60mm, with a smooth base and fairly smooth faces, but with slightly rounded arrises (and a lack of any obvious crease marks; probably manufactured between the late 16th and early 18th centuries. These bricks were of a noticeably higher standard than those of postulated Tudor date, but lack the sharp regularity of those produced in the 18th to 19th centuries when increasing industrialisation supported manufacturing techniques. Isolated fragments of this type of brick were present, probably as residual material in Layer L1017 and Pit F1025.

The most common type of brick comprised the 'standard' 18th to 19th century red brick, and included complete examples samples from Wall M1022 and Culvert M1040, with further fragments from Foundation Wall M1010, Layer L1017 and Pit F1025. These bricks have dimensions of 210 x 100 x 65mm with a smooth base, regular smooth faces and sharp regular arrises. These bricks were almost certainly still moulded in hand-presses (not extruded or machine made) but are notable for the consistency and regularity of their manufacture.

The other common component of the CBM assemblage is post-medieval peg tile; generally fairly highly fragmented although a near complete example was recovered from Layer L1049. The peg tiles have dimensions of 205 x 155 x 12-14mm; typically with slightly lumpy or warped profiles/surfaces, knife-trimmed edges (often trimmed over the edge of the former/template) and an un-sanded base. The peg holes at one end are sub-circular and appear cut through with a specific coring tool while the tiles were leather-hard, leaving a slight recess around the perforation. A relatively high concentration of peg tiles were contained in Pit F1025, with other fragments recovered from Layers L1016, L1017, L1038, L1039, L1049 and Culvert F1040.

THE METAL FINDS

Rebecca Sillwood

Introduction

A total of twenty-six objects of metal were submitted for reporting; this breaks down as twenty-one of iron, three of copper alloy and two of lead. The finds were mainly recovered from layers, some of which were later post-medieval to modern in date. A few finds were recovered from a medieval culvert and a possible pit of medieval to post-medieval date.

The Iron

The iron made up just over 80% of the metalwork assemblage, and of that nearly 62% consisted of nails. The nails were found in various layers and features, but are not an easy find to date intrinsically, being a ubiquitous find over multiple periods. It should be mentioned, however, that several of the examples from this trial trenching appear to be rather more recent in date due to their lack of corrosion and general appearance.

The rest of the ironwork is generally unidentifiable, as it consists of amorphous and heavily encrusted fragments. Many pieces may represent further nails, but it is not possible to be certain. One piece found in the fill of the culvert (L1044) looks relatively modern. It consists of a heavy cast rod, bent into a right angle and has the appearance of a structural fragment. Another possible structural fitting was recovered from a layer (L1015). This piece could be a fitting relating to hinges or smaller features such as windows and doors. It consists of a pointed shank with a round right-angled end, similar to hinges illustrated by Margeson (1993, 151, fig. 111).

The Copper Alloy

The copper alloy finds are rather more identifiable than the iron; they include a thimble, a ferrule and a harness mount.

The earliest of the finds is the harness mount, which is T-shaped, with a square loop and traces of gilding. This piece was recovered from a layer (L1039) and is similar to those illustrated by Griffiths (1986, nos. 22-24). It is medieval (13th – 15th century).

A long ferrule, consisting of a tapering tube, with a seam to one side, was also recovered (SF1; L1024). This object is difficult to date, although is likely to be medieval to post-medieval.

A complete post-medieval thimble (SF2; L1024) was found in the same layer as the above ferrule. The piece is made in one piece and is decorated on the upper two thirds and top with indentations, and on the lower border with probable stamped rosettes. The height and style of this example means it is post-medieval in date, possibly 17th century.

The Lead

The two lead fragments are likely to be remnants or offcuts from a larger sheet and may be structural in origin, relating to roofing or plumbing in the castle.

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THE STONWORK

Tansy Collins

Table 3 (below) includes general descriptions of the pieces of works stone retrieved during the trial trench evaluation and photographs are reproduced in the accompanying index. The pieces were retrieved from five contexts, all of which were made ground or layers, apart from one piece retrieved from the upper fill of Pit 1025 (possibly intrusive). These were all encountered within Trench 1.

The two small pieces retrieved from L1021 and L1020 are of little distinction but do retain parallel tooling marks.

Layers 1017 and 1049 produced a number of interesting pieces and these two layers are contemporary. Piece No.8 includes a medieval section of window mullion, broken but including a robust circular moulding with a chiselled mark, probably a mason's mark, on one end. Other recognisable pieces include Nos. 3, 7, 9, 10, 12 and 13. These fragments are all broken and were found within a late 19th or early 20th century made ground layer. They are of varying stone types including fine pink/red marble, white marble and limestone and appear consistent with fragments of church memorials and tombs. No. 10 appears to form a fragment of a pediment to a chest tomb, while Nos. 12 and 13 are consistent with being from high status late 16th or 17th century tomb memorials within a church. Piece No.9 includes a section of tracery from a small unglazed aperture and is likely from a stone screen or tomb within a church.

Though there is no evidence to prove a direct association, it may follow that these pieces originated from the medieval church of St John the Baptist, which was rebuilt in between 1820 and 1822 (Website 1) and extended in 1870. This lies close by to the south of the site and either campaign of work may have seen the demolition of earlier memorials and the distribution of the resultant material for levelling purposes in the area.

References

Website 1 Windsor parish church
<http://www.windsorparishchurch.org.uk/history/>

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Context	Description
L1017	#01 DPs 1-2 99x68x13mm Small fragment of stone tile (sedimentary rock). Upper surface plain faced, lower surface with parallel tooling marks. Outer edges broken.
L1017	#02 DPs 3-4 60x30x32mm Small fragment of white marble slab. Upper surface polished, lower surface smooth but unpolished. Outer edges broken. Indeterminate use, in context probably part of a church memorial.
L1017	#03 DPs 5-6 125x73x51mm Fragment of worked Oolitic limestone. Part of a slab, mostly broken but some tooling marks visible on two outer edges and the depth is intact (51mm) where on the base a probable drip mould is visible suggesting it formed part of a sill.
L1020	#04 84x56x30mm Small fragment of Oolitic limestone. One small area is faced, the rest broken.
L1021	#05 40x34x41mm Small fragment of Oolitic limestone. Upper side faced with tooling marks and some cementitious mortar adhering.
L1026	#06 DPs 7-8 73x77x26mm Small fragment of worked sedimentary rock. Only one small area is intact and displays parallel tooling marks, the rest broken.
L1049	#07 DPs 9-10 316x160x85mm Section of worked Oolitic limestone. Fragment of a longer piece but mostly intact. It consists of a long narrow piece with a right-angled triangular profile. Mortar remains adhering to the long the face, short base and end so that the vertical face would remain exposed. Fine tooling marks are visible.
L1049	#08 DPs 11-12 180x68x79mm A broken fragment of roll moulding. One end is intact with tooling marks and a chiselled cross, perhaps a mason’s mark. This is

	consistent with a window mullion.
L1049	#09 DPs 13-14 490x130x54mm Fragment of architectural stonework (porous limestone). It consists of a small upper portion of a mullion to a very small traceried unglazed aperture at the point where it transitioned to an arched head on either side, both sides with cusping. Part of a stone screen or tracery from a tomb within a church.
L1049	#10 DPs 15-16 145x98x65mm Fragment of architectural stonework (limestone). It is broken on three sides, but surviving elements include one edge with a roll and concave moulding to a section which slopes up to one side. It is consistent in form with a small pediment, perhaps part of the top of a tomb or other churchyard memorial.
L1049	#11 DPs 17 95x91x55mm Small fragment of worked limestone. Broken on all sides apart from one face where rough tooling marks are visible, demonstrating the use of a pointed tool.
L1049	#12 DPs 18-20 313x225x59mm Section of narrow red marble slab. It is broken at both ends but otherwise intact. The upper face and long edges are polished and chamfered, while the base is left rough hewn. Some lime mortar is adhering to the base. From a high status 16 th or 17 th century tomb within a church.
L1049	#13 DPs 21-22 268x210x75 Section of moulded white marble. It consists of a section of string course or skirting with a flat rear side and moulded outer face with a large Cyma moulding and small half-round moulding. From a high status 16 th or 17 th century tomb within a church.

Table 3. Worked Stone Fragments

THE ANIMAL BONE

Julia E M Cussans

A relatively substantial assemblage of animal bone was recovered from trial trench evaluation at Windsor Castle with an assemblage of over 200 fragments being recovered. Bones were recovered from a variety of deposits dating to the post-medieval and modern periods, details of which are given in Table 4. Bone preservation was largely rated as ok on a five point scale ranging from very poor through to excellent with a couple of contexts being rated as having good preservation (Table 4). The bones displayed low levels of abrasion throughout the contexts and the quantity of fresh breakages varied between contexts. Very little bone gnawing was observed and was only seen in the following contexts: L1021, L1038 and L1044.

In total 213 bone fragments were recorded (Table 4) and of these, just less than half could only be identified as large (cattle or horse sized) or medium (sheep or pig sized) mammal; one small (cat or hare sized) bone was also recorded. A further quarter was made up of cattle metapodials from a single deposit that will be discussed more fully below. The remaining assemblage was largely made up of domestic mammal bones which, in order of abundance, were cattle and sheep/goat, dog, pig and cat. No wild mammal bones were recorded, a number of bird and fish bones were however present. Bird bones were largely thought to belong to domestic chickens and geese; although one bone was thought to possibly belong to Brent goose (cf. *Branta bernicla*), a wild winter visiting species. The fish bones likely belonged to large gadid (cod family) fish.

Cattle were represented by a mix of element, a number of which had been butchered, including chop marks. A notable quantity of the bones belonged to neonate animals, which are often linked with a dairy economy, but in an urban setting seem more likely to indicate veal consumption, possibly supplied from a rural dairy farm. Other bones indicated the presence of mature and juvenile animals, indicating a possible mix of uses for the animals. No pathological elements were noted.

Sheep/goat were largely, although not entirely represented by limb elements a good number of which showed signs of butchery. A number of unfused elements were present indicating that at least some of the animals were immature and had likely been slaughtered for prime meat. A number of measurable elements were present, no pathological bones were present.

Pigs were represented by a mix of elements with very few butchery marks noted. The only ageable element present was a neonate bone, other bones derived from more mature animals.

The dog bones present all derived from a single context and likely represent just one or two animals. All of the bones were skull fragments or teeth and the majority appeared to belong to a single fairly young individual. One fragment appeared more mature and different in colour to the other fragments and is thought likely to derive from a different individual. No butchered, pathological or measurable bones were present.

The single cat bone was a distal tibia; no butchery marks or pathologies were evident.

A layer of cattle metapodials was present within possible pit fill L1023 (F1025). Photographic evidence from during excavation (Plate 5) indicated that the metapodials may have been purposefully laid to form some sort of layer, the purpose of which is currently unknown, but it does appear that the majority of the metapodials lie on a similar alignment indicating some thought has gone into their deposition. What is apparent is that this is not an ordinary dump of bones and that these cattle metacarpals and metatarsals have been selected for a specific reason.

Brief details of the metapodial assemblage are given in Table 5. This indicates that metacarpals and metatarsals and left and right hand elements were fairly evenly represented. Butchery marks varied between the fore and hind elements, as did the occurrence of pathologies. Some of the pathologies may be associated with the use of the cattle for traction (Bartosiewicz *et al.* 1993). The noted variation in size and shape of the metapodials likely indicates that the cattle derived from a variety of sources with a mix of breeds, sexes and nutritional conditions, although detailed metrical work would be necessary to examine the detail of this; stable isotope data may also elucidate as to the origin of individual animals. In the 17th and 18th century there are a number of example of animal bones such as horn cores and metapodial being used as building or construction elements (Armitage 1989) and it possible that something of that nature has occurred here, although further investigation would be necessary to determine this both in terms of analysis of the bones themselves and in term of investigating the archaeological stratigraphy of the layer and surrounding deposits, unfortunately during the trial trenching exercise the deposit could not be exposed to its full extent, partly due to the presence of modern electrical cable, but also due to the constraints of the trench itself. A further possible explanation for the collection of a large quantity of cattle foot bones is that the material derived from tanning waste, however if this were the case one would also expect to find high number of phalanges (toe bones) alongside the metapodials (Serjeantson 1989).

Feature	Context	Trench	Description	Spot Date	Preservation	Cattle	Sheep/ Goat	Pig	Dog	Cat	Large mammal	Medium mammal	Small mammal	Bird	Fish	Total
	1016	1	Layer	12th-14th C (residual)	ok		1				1					2
	1017	1	Layer	19th-early 20th C (includes med sherd)	good		3									3
1018	1019	1	Fill of Construction Cut		ok		1									1
	1021	1	Layer	Late 13th-15th C (residual)	ok						1	3		2		6
	1021	1	East of Wall		ok	3		1			1	2		1		8
1025	1023	1	Fill of ?Pit – general	19th C stoneware fragment, but all other sherds medieval	ok	5	4		9		9	26		4	5	62
1025	1023	1	Fill of ?Pit – metapodial layer	18th C (residual early med sherd)	good	53										53
1025	1024	1	Fill of ?Pit	17th C	ok	4	2	2			9	13		3		33
1025	1024	1	Test Pit	17th C (included med sherds)	ok	3	2	1			1	12		3		22
	1025	1	Fill of ?Pit	18th-19th C	ok		1	1			1	1				4
	1038	3	Chalk layer		ok			1				1				2
	1039	3	Layer	Late 12th-15th C (residual)	ok	3	1				3	4				11
1043	1044	3	Fill of Colvert	Late 13th-14th C (residual)	ok		2			1	1		1			5
	1049	1	Layer	19th-early 20th C	ok		1									1
					Total	71	18	6	9	1	27	62	1	13	5	213

Table 4. Quantification of animal bone from Windsor Castle, metapodial layer shaded

	Metacarpals	Metatarsals
Left	14	15
Right	13	11
Total	27	26
Distal fusion	one unfused, all others fused	1 unknown, 2 unfused, 1 fusion line visible, all others fused
Butchery	14 with cut marks. Mostly at back of proximal articulation, but also others on shaft and distal articulation	6 with butchery marks. Mostly chopped across the top of the proximal articulation, few with cuts on shaft or just below proximal articulation
Pathology	One with exostosis on proximal end, one with lump of shaft.	11 with possible pathologies. Some with exostosis at proximal (varying degrees). Some with thin layer of porous bone on parts of shaft. Some with lump on anterior shaft. Additionally several of the bones display varying levels of asymmetry.
Metrics	Considerable size and shape variation	Considerable size and shape variation.

Table 5. Description of cattle metapodials from L 1023.

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THE ENVIRONMENTAL SAMPLES

Dr John Summers

Introduction

During the evaluation at the Royal Collection Trust, Windsor Castle, four bulk soil samples for environmental archaeological assessment were taken and processed. The sampled deposits contained residual medieval (12th-15th century) and post-medieval (16th-18th century) pottery. This report presents the results from the assessment of the bulk sample light fractions, and discusses the significance and potential of any remains recovered.

Methods

Samples were processed at the Archaeological Solutions Ltd facilities in Bury St. Edmunds using standard flotation methods. The light fractions were washed onto a mesh of 500µm (microns), while the heavy fractions were sieved to 1mm. The dried light fractions were scanned under a low power stereomicroscope (x10-x30 magnification). Botanical and molluscan remains were identified and recorded using reference literature (Cappers *et al.* 2006; Jacomet 2006; Kerney and Cameron 1979; Kerney 1999) and a reference collection of modern seeds. Potential contaminants, such as modern roots, seeds and invertebrate fauna were also recorded in order to gain an insight into possible disturbance of the deposits.

All samples >10 litres were 50% sub-sampled for the purpose of the assessment. Should any contain significant archaeobotanical remains (>30 identifiable specimens or abundant charcoal), the remainder of the sample will be processed and the resulting flot retained with the site archive.

Results

The assessment data from the bulk sample light fractions are presented in Table 6.

Carbonised plant macrofossils were relatively limited within the samples, being represented by a small number of barley (*Hordeum* sp.) and free-threshing type wheat (*Triticum aestivum/ turgidum* type) grains in L1044. These are common cereals within the majority of medieval and post-medieval assemblages. In addition to these was an unusual identification of a probable rock samphire (cf. *Crithmum maritimum*) seed, also in L1044. Rock samphire is traditionally a gathered resource from rocky sea cliffs. Foraging for rock samphire has some antiquity in England, even receiving a mention in Shakespeare's *King Lear*. Once harvested, it could be transported in barrels of salt water. It can also be preserved through pickling.

Charcoal remains included oak (*Quercus* sp.) and diffuse-porous vessel patterns, with small diameter roundwood also identified. The most likely source of this is from domestic fuel debris. The samples from Pit F1025

contained greater quantities of clinker, which was abundant in L1024. This is most likely a product of burning coal and reflects a change from earlier wood fuel.

Conclusions

The samples from the present investigation have shown that carbonised plant macrofossils were not being routinely deposited within the sampled features. The small number of barley and free-threshing type wheat grains in L1044 indicates that these cereals were in use at the time, although it is likely that the contemporary diet was significantly more varied. The identification of probable rock samphire in L1044 represents a tantalising glimpse of imported plant foods, which are also likely to have been varied.

References

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Kerney, M.P. 1999, *Atlas of the Land and Freshwater Molluscs of Britain and Ireland*, Harley Books, Colchester

Kerney, M.P. and Cameron, R.A.D. 1979, *A Field Guide to Land Snails of Britain and North-West Europe*, Collins, London

Site code	Sample number	Context	Feature	Description	Trench	Spot date	Volume taken (litres)	Volume processed (litres)	% processed	Cereals		Non-cereal taxa		Hazelnut shell	Charcoal		Molluscs		Contaminants					Other remains				
										Cereal grains	Cereal chaff	Notes	Seeds		Notes	Charcoal >2mm	Notes	Molluscs	Notes	Roots	Molluscs	Modern seeds	Insects		Earthworm capsules			
AS1944	1	1044	1043	Fill of culvert	3	13th-15th C	40	20	50%	X	Hord (2), FTW (1), NFI (3)	X	cf. <i>Crithmum maritimum</i> (1)	-	XX	<i>Quercus</i> sp., Diffuse porous	-	-	XX	-	-	-	-	-	-	-	Fish scale (X), Fish bone (X), Fuel ash slag/clinker (X)	
AS1944	2	1021	-	Layer	1	Late 12th-13th C	40	20	50%	-	-	-	-	-	XX	<i>Quercus</i> sp.	-	-	XXX	-	-	-	-	-	-	-	Fish scale (X), Coal (X), Fuel ash slag/clinker (X)	
AS1944	3	1023	1025	Fill of Pit	1	Late 16th-early 18th C	20	10	50%	-	-	-	-	-	XX	Diffuse porous	-	-	XX	-	-	-	X	-	-	-	Fish scale (X), Fuels ash slag/clinker (XX)	
AS1944	4	1024	1025	Fill of Pit	1	Late 16th-17th C	30	20	67%	-	-	-	-	-	XX	Diffuse porous incl. roundwood	-	X	-	-	XX	-	-	-	-	-	-	Fish scale (X), Fuel ash slag/clinker (XXX)

Table 6: Results from the assessment of bulk sample light fractions from the Royal Collection Trust, Windsor Castle. Abbreviations: Hord = barley (*Hordeum* sp.); FTW = free-threshing type wheat (*Triticum aestivum/ turgidum*); NFI = not formally identified (indeterminate cereal grain)

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OASIS ID: archaeol7-334096

Project details

Project name	LORD CHAMBERLAIN'S LOWER YARD AND PUG YARD, WINDSOR CASTLE, CASTLE HILL, WINDSOR, BERKSHIRE SL4 1NJ (TT)
Short description of the project	In April 2018 Archaeological Solutions Ltd (AS) carried out an archaeological evaluation on land at the Visitors Admissions Centre, Lord Chamberlain's Lower Yard and Pug Yard, Windsor Castle, Castle Hill, Windsor, Berkshire SL4 1NJ (NGR 496913 176882; Figs. 1 - 2). The evaluation was undertaken as the initial stage in compliance with a planning condition (No.3) attached to planning approval for the demolition of existing structures and the construction of new buildings (RBWM Planning Ref. 17/01607), based on the advice of Berkshire Archaeology (BA). The evaluation revealed two sections of red brick wall foundation that correlate with garden walls depicted on mid 19th century Ordnance Survey maps, and likely part of the re-development of the Pug Yard in the 1830- 1840s, potentially associated with Blore's work of c.1842. One of the walls appears to be of the Inspector's Garden, and within the enclosed garden area is a large pit that contained a layer of aligned cattle metapodial bones, which may have formed part of a formal bed or planter. A seemingly contemporary brick culvert was also recorded and appears to have served the western range, prior to being replaced by a drainage system in 1911. The walls are cut into or abutted by made ground layers that contain similar brick rubble, while Wall M1022 is underlain by a single layer (L1021) that contains a low quantity of late 13th to 15th century pottery, bone and oyster shell, and may comprise an in site medieval deposit at the base of the stratigraphic sequence. The wall foundations are sealed by a sequence of thin made ground layers that contain Victorian to early 20th century pottery; while there is a common incidence of a sparsely distributed residual medieval finds across the sites, including coarse ware pottery, worked stone (including a window mullion) and a copper alloy harness mount.
Project dates	Start: 10-01-2018 End: 11-01-2018
Previous/future work	Yes / Not known
Any associated project reference codes	P7367 - Contracting Unit No.
Any associated project reference codes	AS1944 - Sitecode
Type of project	Field evaluation
Site status	Area of Archaeological Importance (AAI)
Current Land use	Other 2 - In use as a building
Monument type	WALL FOUNDATIONS AND CULVERT Post Medieval
Monument type	PIT Post Medieval
Monument type	MADE GROUND LAYER Post Medieval
Significant Finds	POTTERY Post Medieval

Significant Finds	ANIMAL BONE Post Medieval
Significant Finds	IRON WORK Post Medieval
Significant Finds	POTTERY Medieval
Significant Finds	WORKED STONE Medieval
Methods & techniques	"Targeted Trenches"
Development type	Public building (e.g. school, church, hospital, medical centre, law courts etc.)
Prompt	Planning condition
Position in the planning process	Not known / Not recorded

Project location

Country	England
Site location	BERKSHIRE WINDSOR AND MAIDENHEAD WINDSOR Royal Collection Trust, Visitor Admissions Centre, Lord Chamberlain's Lower Yard and Pub Yard, Windsor Castle, Castle Hill, Windsor, Berkshire SL4 1NJ
Postcode	SL41NJ
Study area	3500 Square metres
Site coordinates	TM 96913 76882 52.308763335489 2.356544971721 52 18 31 N 002 21 23 E Point
Height OD / Depth	Min: 42m Max: 42m

Project creators

Name of Organisation	Archaeological Solutions Ltd
Project brief originator	Berkshire Archaeology
Project design originator	Jon Murray
Project director/manager	Jon Murray
Project supervisor	Archaeological Solutions
Type of sponsor/funding body	Mr Theo Manzaroli
Name of sponsor/funding body	Mr Theo Manzaroli

Project archives

Physical Archive recipient	Berkshire Museum
Physical Contents	"Animal Bones","Ceramics","Glass","Worked stone/lithics","other"
Digital Archive recipient	Berkshire Museum
Digital Contents	"Animal Bones","Ceramics","Glass","Worked stone/lithics","other"
Digital Media available	"Database","Images raster / digital photography","Spreadsheets","Text"
Paper Archive recipient	Berkshire Museum
Paper Contents	"Animal Bones","Ceramics","Glass","Worked stone/lithics","other"

Paper Media available "Context sheet","Drawing","Map","Photograph","Plan","Report","Section","Survey "

Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)

Title Royal Collection Trust, Visitor Admissions Centre, Lord Chamberlain's Lower Yard and Pub Yard, Windsor Castle, Castle Hill, Windsor, Berkshire SL4 1NJ. Archaeological Evaluation.

Author(s)/Editor(s) Bull,K

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Brick Culvert 1040 in Trench 3



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DP 01

Piece of worked stone (01) found in L1017 (Scale 100mm)



DP 02

Piece of worked stone (01) found in L1017 (Scale 100mm)



DP 03

Piece of worked stone (02) found in L1017 (Scale 50mm)



DP 04

Piece of worked stone (02) found in L1017 (Scale 50mm)



DP 05

Piece of worked stone (03) found in L1017 (Scale 100mm)



DP 06

Piece of worked stone (03) found in L1017 (Scale 100mm)



DP 07

Piece of worked stone (06) found in L1026 (Scale 50mm)



DP 08

Piece of worked stone (06) found in L1026 (Scale 100mm)



DP 09

Piece of worked stone (07) found in L1049 (Scale 200mm)



DP 10

Piece of worked stone (07) found in L1049 (Scale 300mm)



DP 11

Piece of worked stone (08) found in L1049 (Scale 50mm)



DP 12

Piece of worked stone (08) found in L1049 (Scale 100mm)



DP 13

Piece of worked stone (09) found in L1049 (Scale 100mm)



DP 14

Piece of worked stone (09) found in L1049 (Scale 100mm)



DP 15

Piece of worked stone (10) found in L1049 (Scale 100mm)



DP 16

Piece of worked stone (10) found in L1049 (Scale 100mm)



DP 17

Piece of worked stone (11) found in L1049 (Scale 100mm)



DP 18

Piece of worked stone (12) found in L1049 (Scale 200mm)



DP 19

Piece of worked stone (12) found in L1049 (Scale 200mm)



DP 20

Piece of worked stone (12) found in L1049 (Scale 100mm)



DP 21

Piece of worked stone (13) found in L1049 (Scale 200mm)



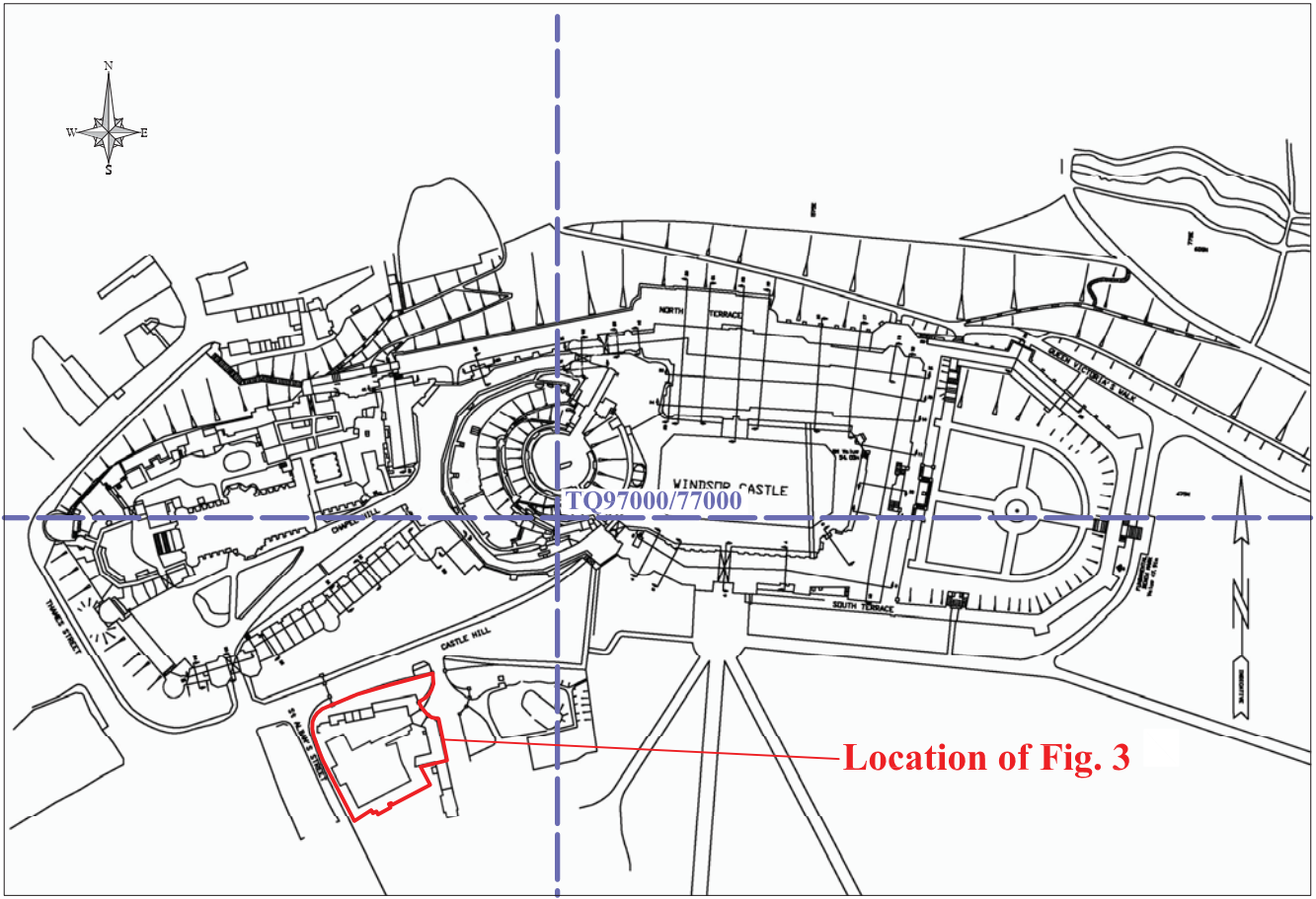
DP 22

Piece of worked stone (13) found in L1049 (Scale 50mm)



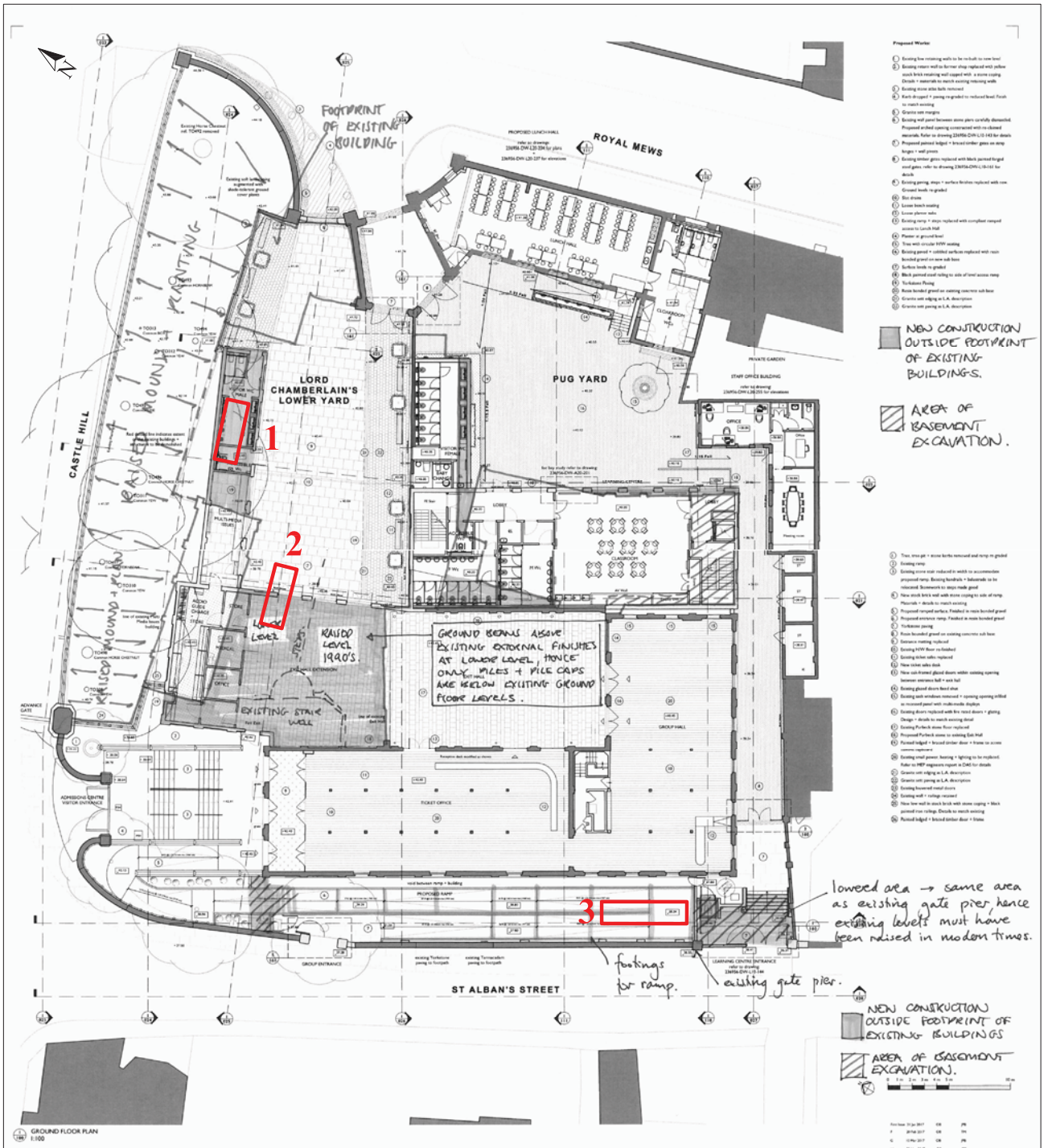
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Fig. 1 Site location plan
 Scale 1:25,000 at A4
 Windsor Castle, Berkshire (P7367)



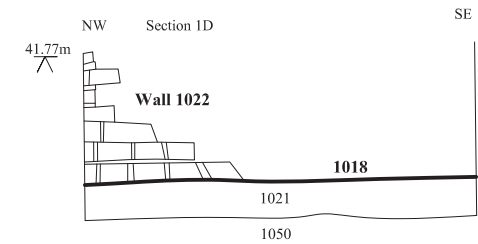
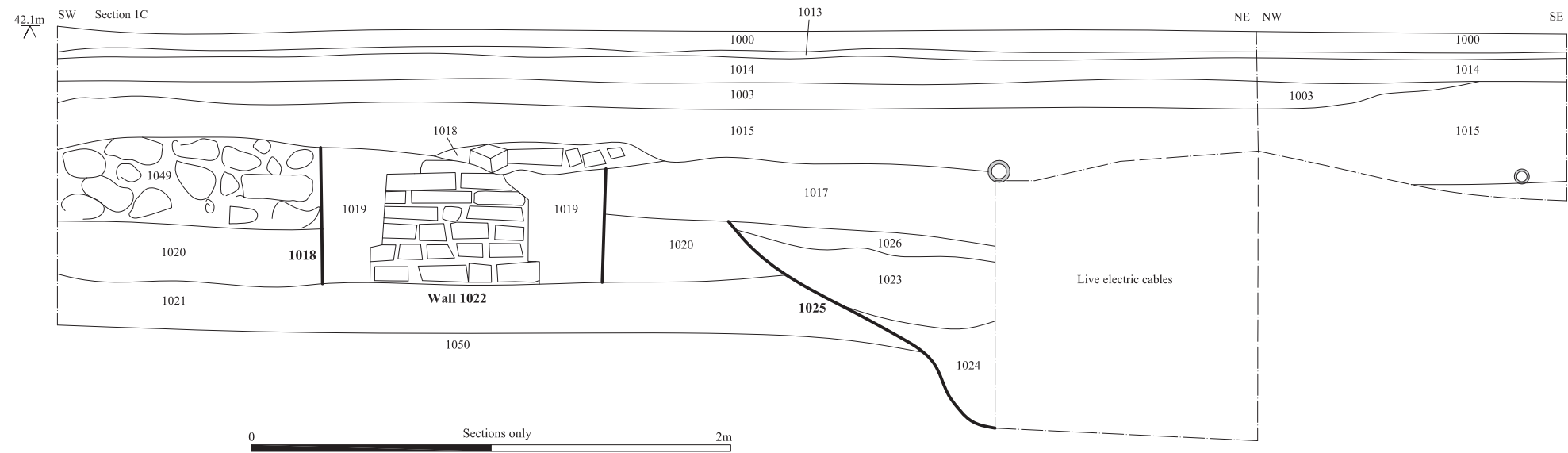
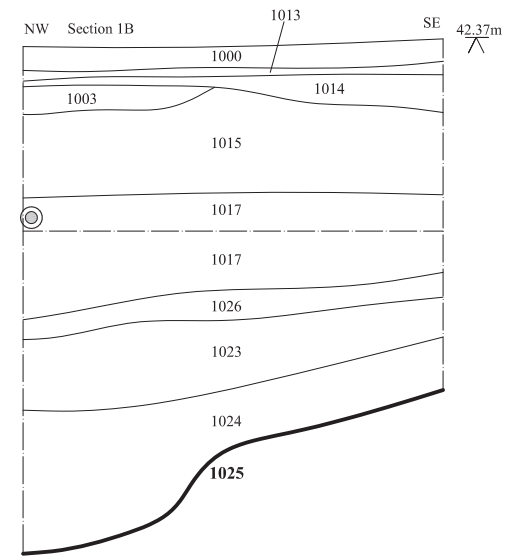
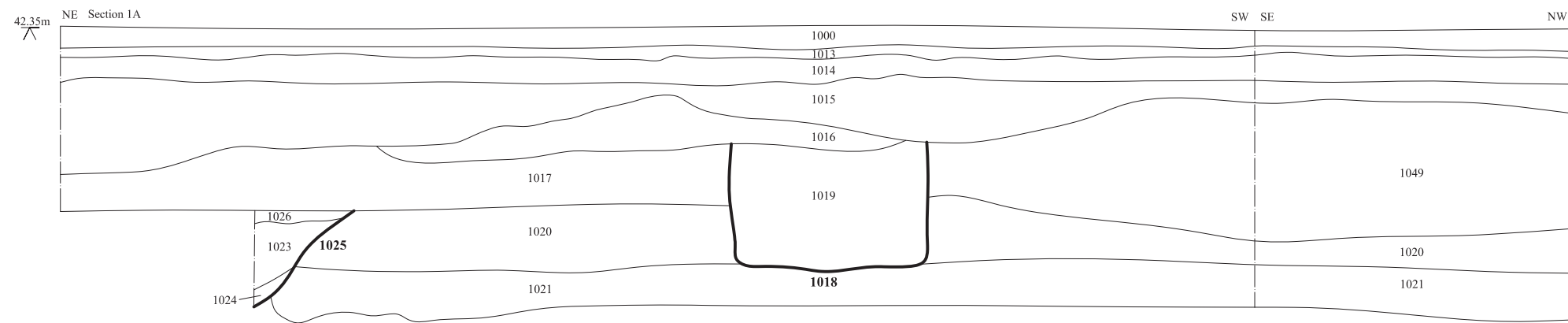
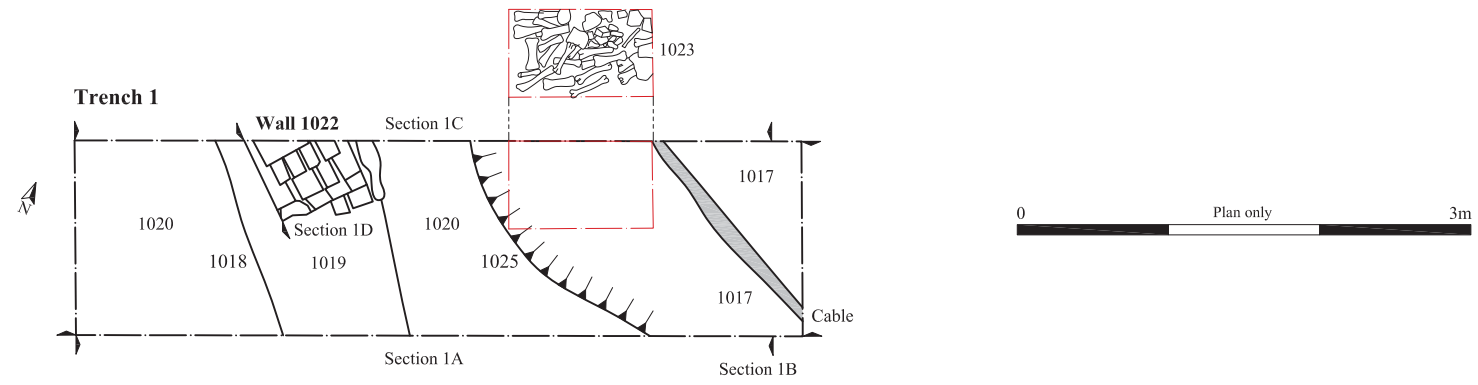
0 250m

<i>Archaeological Solutions Ltd</i>
Fig. 2 Detailed site location plan
Scale 1:4000 at A4
Windsor Castle, Berkshire (P7367)

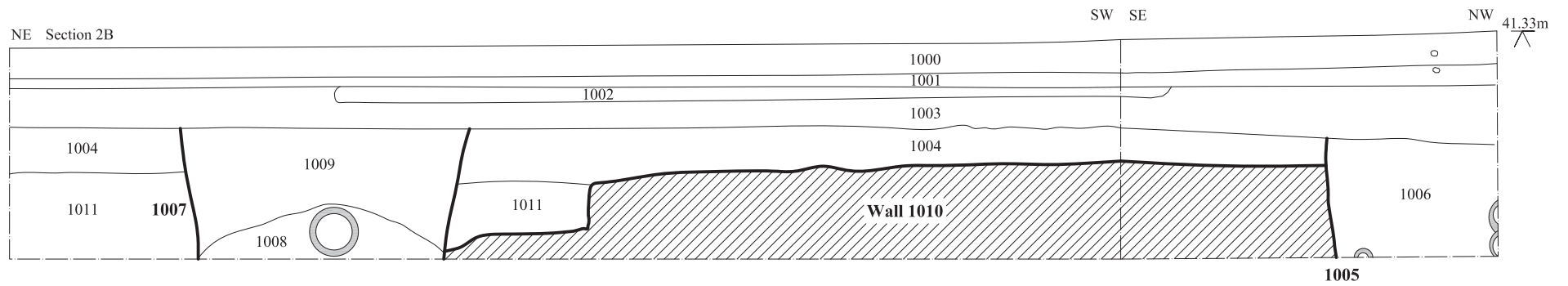
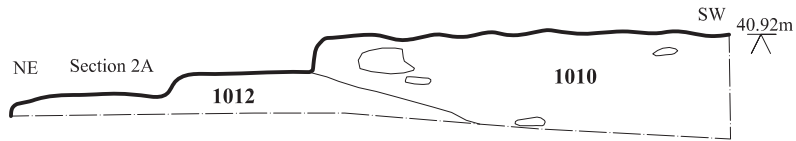
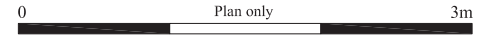
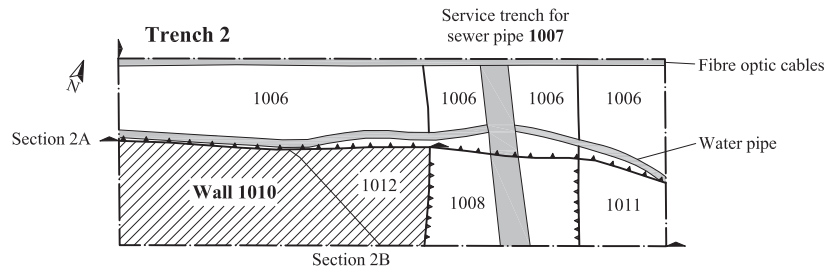


Plan source: Purcell

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 Fig. 3 Trench location plan
 Scale 1:500 at A4
 Windsor Castle Admissions Centre (P7367)



Archaeological Solutions Ltd
Fig. 4 Trench 1 plan & sections
 Scale : Plan 1:50, sections 1:25 at A3
 Windsor Castle, Berkshire (P7367)

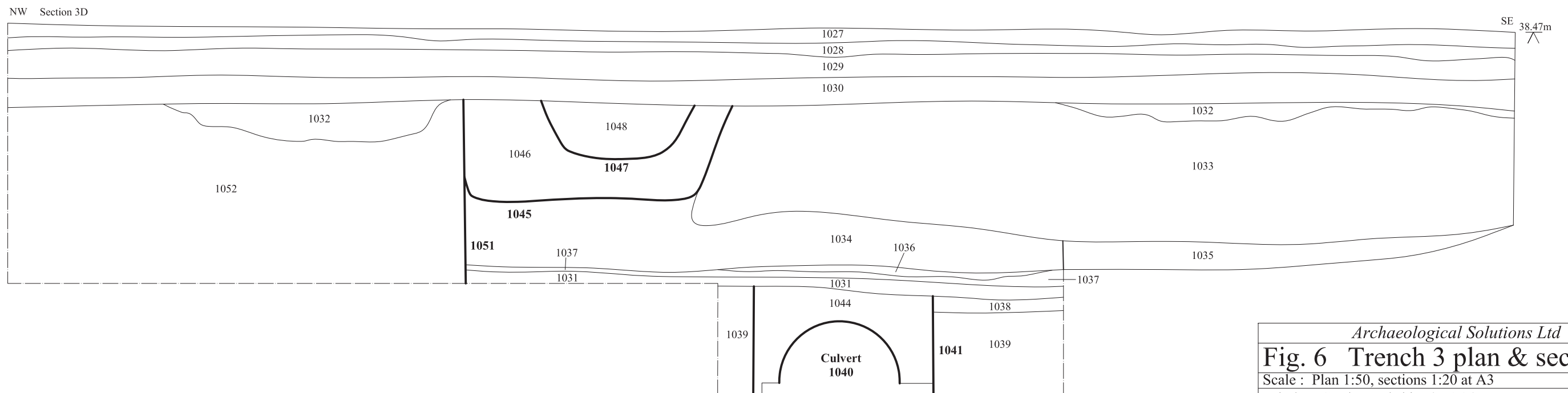
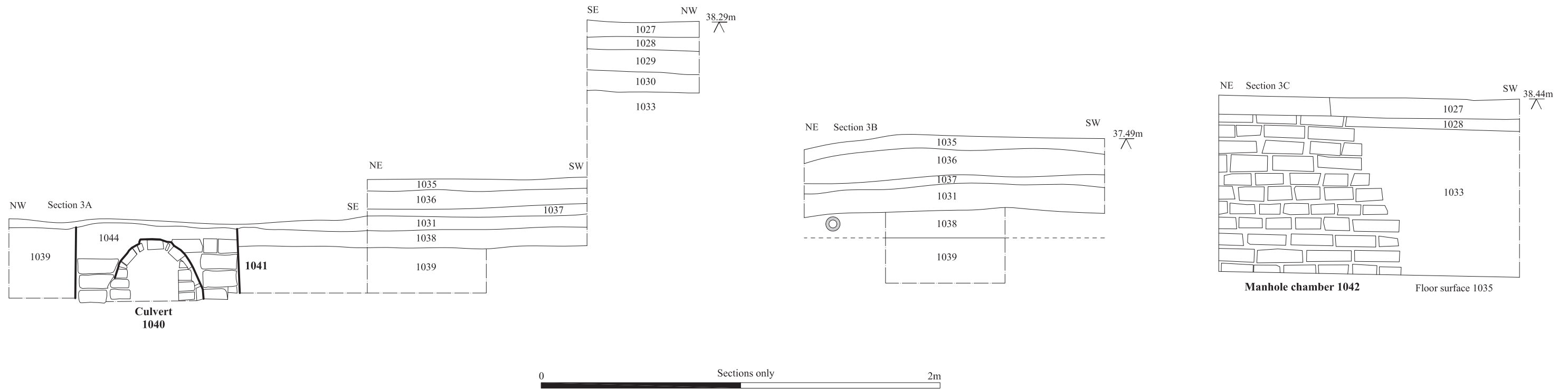
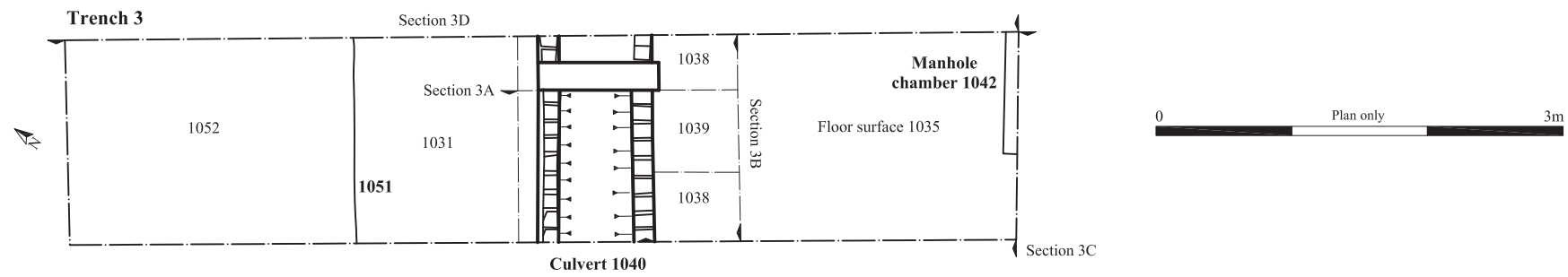


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Fig. 5 Trench 2 plan & sections

Scale : Plan 1:50, sections 1:20 at A4

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Fig. 6 Trench 3 plan & sections

Scale : Plan 1:50, sections 1:20 at A3

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