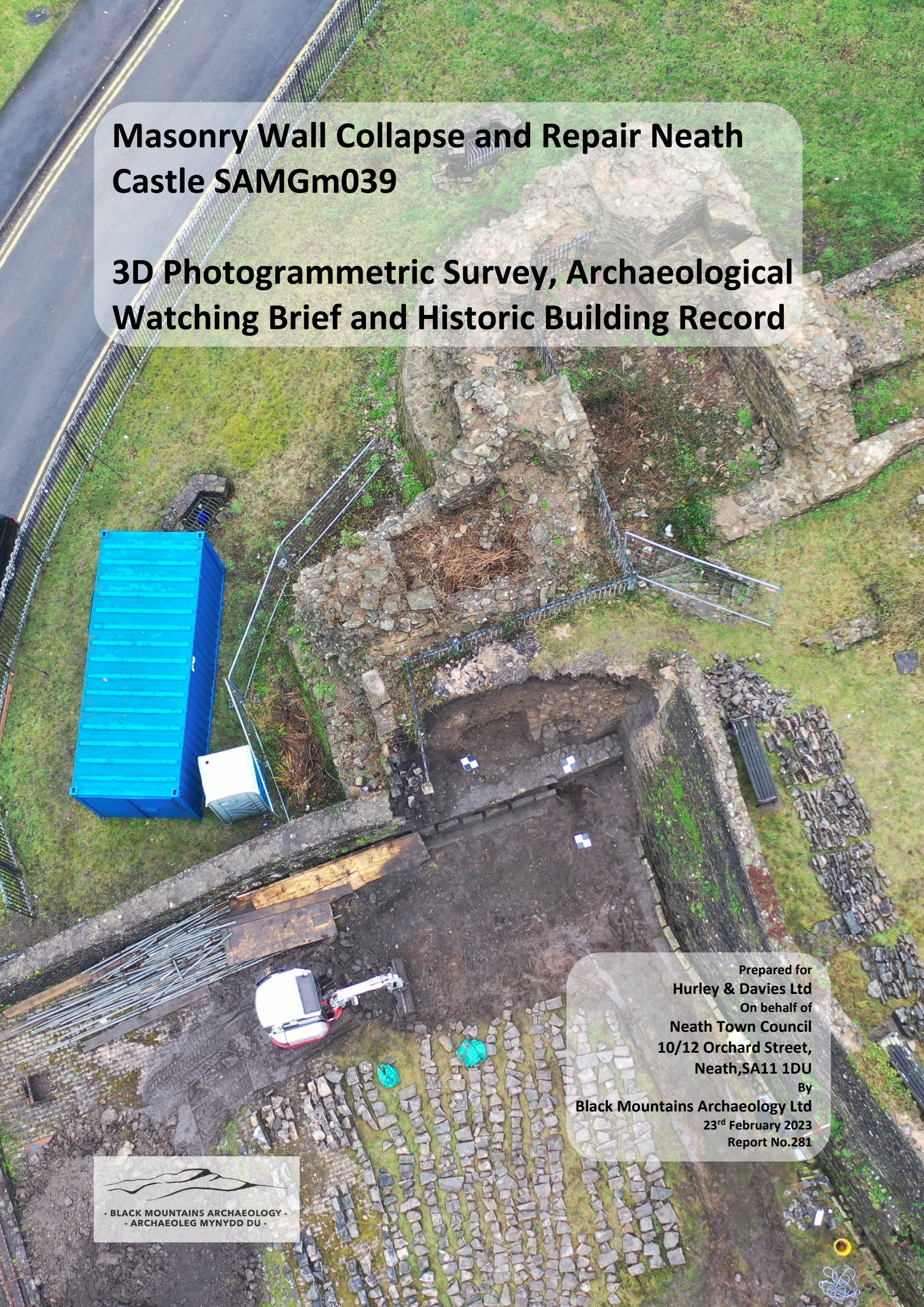
Masonry Wall Collapse and Repair Neath Castle SAMGm039

3D Photogrammetric Survey, Archaeological Watching Brief and Historic Building Record



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Hurley & Davies Ltd
On behalf of
Neath Town Council
10/12 Orchard Street,
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By
Black Mountains Archaeology Ltd
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Report No.281

- BLACK MOUNTAINS ARCHAEOLOGY -
- ARCHAEOLEG MYNYDD DU -

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Comisiynwyd Archeoleg Mynydd Du Fy gan Hurley & Davies Ltd, ar ran Cyngor Tref Nedd a Cadw, i gynnal cofnod adeiladu archeolegol a gwylio briff o flaen llaw gwaith atgyweirio wal maen arfaethedig ar Castell Nedd (SAMGm039), Castell-nedd. Roed y Wal Ffin sy'n dymchwel, sydd wedi'i lleoli ar ochr ogledd-ddwyreiniol y castell ac sy'n ffurfio'r ffin ddwyreiniol Ty Cwrdd Cyfeillion y Crynwyr (LB 11788), mewn a cyflwr cwymp rhannol.

Roedd y briff gwylio archeolegol yn arsylwi ar ddatgymalu darn o'r wal, 5.5m o led, sy'n cwympo yn ogystal â chloddio cyfyngedig o'r deunydd a gadwodd. Nodwyd yr ymchwiliadau wal sy'n dymchwel yn dyddio o'r cyfnod Ôl-ganoloesol, yn ôl pob tebyg o ddiwedd y 18fed canrif. Yn dilyn datgymalu'r wal, dymchwelodd dyddodion Ôl-ganoloesol a Modern rhydd gan ddatgelu olion carreg ganoloesol a dyddodion yn perthyn i Dŵr Drwm Gogledd-ddwyrain Castell Nedd. Yr olion strwythurol, a oedd yn cynnwys sylfaen gogledd/de y wal wedi'i halinio, yn dangos bod yr amrediad gogleddol ynghlwm wrth dwr drwm y gogledd-ddwyrain yn meddu ar ffurf hollol wahanol i'r hyn a awgrymwyd yn draddodiadol (gweler CBHC 2000b, 229). Yn hytrach na bod yn gromennog o ran ffurf, mae amrediad gogleddol y roedd tŵr y drwm yn gromennog tua'r pen deheuol ac wedi'i sgwario tua'r gogledd ochr.

Roedd y rhaglen waith hefyd yn cynnwys cofnod adeiladu Lefel II (Historic England 2016) o'r wal yn dymchwel o'r 18fed ganrif ac olion carreg ganoloesol. Cafodd dau arolwg o'r cwymp Cyflawnwyd Wal Ffiniau i greu 3D cyn-cychwyn eu gynnal ac 'Gefaill Digidol' ffotogrammetrig ôl-cloddiad. Cynhaliwyd yr arolwg cyntaf tra roedd y sgaffaldiau i mewn lle a oedd yn gynnal y wal derfyn sy'n dymchwel. Roedd y sgaffaldiau sy'n cynnal y wal tynnu yn y cwmwl pwynt 3D i gael gwell golwg ar y wal a'i raddoli. Yn dilyn y darganfod gweddillion gwaith maen in-situ y Tŵr Gogledd-ddwyrain canoloesol y tu ôl i'r wal derfyn yn dymchwel, ymgymeryd arolwg 3D ffotogrammetrif ôl-cloddiad i greu ail 'Gefaill Digidol' o'r darganfyddiadau.

Mae'r adroddiad presennol yn nodi canlyniadau'r gwaith cofnodi a gwylio adeilad archeolegol briffio yn unol â 'Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures' gan y Chartered Institute for Archaeologists (cyhoeddwyd 2014, diwygiwyd 2020, yn ogystal a 'Photogrammetric Applications for Cultural Heritage Guidance for Good Practice' (2017)' a 'Understanding Historic Buildings: A Guide to Good Recording Practices' (2016) gan Historic England.

Black Mountains Archaeology Ltd were commissioned by Hurley & Davies Ltd, on behalf of Neath Town Council and Cadw, to carry out an archaeological building record and watching brief in advance of a proposed masonry wall repair at Neath Castle (SAMGm039), Neath. The collapsing Boundary Wall, which is located on the northeast side of the castle and forms the eastern boundary of the Quaker Friends Meeting House (LB 11788) burial ground, was in a state of partial collapse.

The archaeological watching brief observed the dismantling by hand of a 5.5m wide section of the collapsing wall as well as limited excavations into the material it retained. The investigations identified the collapsing wall was Post-medieval in date, likely late 18thcentury. Following dismantling of the wall, loose Post-medieval and Modern deposits collapsed revealing medieval masonry remains and deposits belonging to the Northeast Drum Tower of Neath Castle. The structural remains, which comprised the foundation of a north/south aligned wall, indicated that the northern range attached to the northeast drum tower possessed a form entirely different to that which has traditionally been suggested (see RCAHMW 2000b, 229). Rather than being simply apsidal in form, the northern range of the

drum tower was apsidal towards its southern end and was squared off towards its northern side.

The programme of works also included a Level II building record (Historic England 2016) of the collapsing 18th century wall and medieval masonry remains. Two surveys of the collapsing Boundary Wall were carried out to create pre-commencement and post-excavation 3D photogrammetric 'Digital Twins'. The first survey was undertaken while scaffolding was in place supporting the collapsing boundary wall. The scaffolding supporting the wall was removed in the 3D point cloud to gain a better view of the wall and its phasing. Following the discovery of the in-situ masonry remains of the medieval Northeast Tower behind the collapsing boundary wall, a post-excavation 3D photogrammetric survey was undertaken to create a second 'Digital Twin' of the discoveries.

The present report sets out the results of the archaeological building recording and watching brief in accordance with the Chartered Institute of Archaeologists' Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures (published 2014, revised 2020), and Standard and Guidance for an Archaeological Watching Brief (Published 2014, revised 2020), as well as Historic England's Photogrammetric Applications for Cultural Heritage Guidance for Good Practice (2017), and Understanding Historic Buildings: A Guide to Good Recording Practices (2016).

Acknowledgements and Copyright

The project was managed, and the aerial UAV (drone) survey undertaken by Richard Lewis MCIfA. The archaeological watching brief was conducted by Richard Lewis and Dr Rhys Morgan PhD. The report was written by Dr Rhys Morgan and Richard Lewis. The Welsh translation was provided by Dr Rhys Morgan. The 3D photogrammetric modelling was prepared by Richard Lewis. The illustrations were prepared by Dr Rhys Morgan and Richard Lewis. The authors would like to thank James Dawe (Hurley & Davies) and Mike Williams (Taliesin) for help and support during the project. Special thanks to Jonathan Berry (Cadw) for support and guidance throughout the project. Finally, the authors are grateful to Kathryn Charles of Neath Town Council for appointing us to undertake the archaeological programme.

	Name	**Date**
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Quality assurance by	Richard Lewis	20/02/23
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1 Introduction

1.1 Project Background and Proposals

1.1.1 Black Mountains Archaeology Ltd/*Archeoleg Mynydd Du* Cyf were commissioned by Hurely & Davies Ltd, 206 High Street, Blackwood, NP12 1AJ on behalf of Neath Town Council, 10/12 Orchard Street, Neath, SA11 1DU to carry out an archaeological building record and watching brief in advance of a proposed masonry wall repair at Neath Castle (SAMGm039), Neath. The collapsing Boundary Wall, which is located on the northeast side of the castle, was in a state of partial collapse.

1.1.2 In accordance with Scheduled Monument Consent (SMC) granted on 6th March 2020, Condition 4.1, e) states:

- No works, including site clearance, shall commence until Cadw has been informed, in writing, of the name of an appropriately qualified archaeologist operating to CIfA published standards and guidance who will carry out an appropriate programme of archaeological mitigation works and historic building recording in accordance with a written scheme of investigation, which has been submitted to, and approved in writing by, Cadw. No works shall commence until Cadw has confirmed in writing that the proposed archaeologist and archaeological works are acceptable.

1.1.3 Consequently, Cadw required a programme of works, set out in accordance with an archaeological Written Scheme of Investigation (Lewis 2020), in the form of a historic building record and watching brief. The historic building recording consisted of a Level II record of the collapsing wall prior to the commencement of conservation repair work and an archaeological watching brief during all excavation work conducted in and around the wall.

1.1.4 The programme of works consisted of a 3D photogrammetric survey of the masonry wall, the partial dismantling of around 5.5m of the wall, limited excavation into the southeast bank, under archaeological watching brief conditions, to allow for concrete reenforcing, granular backfill and the rebuilding of the wall, and then finally a post-excavation 3D photogrammetric survey of the remains of the medieval NE tower revealed by the investigations (Figure 1). The archaeological programme was carried out between the 9th December 2020 and 28th January 2021.

1.1.5 The present report sets out the results of the archaeological building recording and watching brief in accordance with the Chartered Institute of Archaeologists' *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures* (published 2014, revised 2020), and *Standard and Guidance for an Archaeological Watching Brief* (Published 2014, revised 2020), as well as Historic England's *Photogrammetric Applications for Cultural Heritage Guidance for Good Practice* (2017), and *Understanding Historic Buildings: A Guide to Good Recording Practices* (2016).

2 Background

2.1.1 The collapsing Boundary Wall, which forms the main focus of the proposed development, is situated within the Scheduled Ancient Monument of Neath Castle

(SAMGm039) and Neath Town Centre Conservation Area (147). The Boundary Wall is of at least 18th century date and retains behind it medieval deposits of the stone castle and former earlier ring works (Figure 1 and 2).

2.1.2 The town of Neath originated in the 12th century as a planted medieval borough and was established along the eastern bank of the River Neath. Both the castle and town were erected on the line of the Sarn Helen Roman road (RR622), which led in a northeast direction through the vale from Neath to Coelbren (and eventually Brecon) (Sherman and Evans 2004, Figure 15). The area along the road in which Neath was established was also an ancient crossing point of the river. The town of Neath represented the extent of Norman expansion into Welsh territories at this time. Neath Abbey was established by Richard de Granville in 1129–30 AD, on the western side of the river, which can be seen as evidence of the Norman consolidation of this area at this time. Granville built a castle, likely a motte or ring work, within the former fort of *Nidum* (SAMGm215), but this had all but disappeared by 1207, when King John's confirmation to Neath Abbey noted 'the place were Richard de Granville's castles formerly existed'. Dating the construction of Granville's castle is naturally difficult, although it was probably built before 1130 (RCAHMW 2000a, 156). Earl Robert of Gloucester was Glamorgan's second Normal lord and may be the founder of the surviving stone castle. Robert's son, then Earl William, issued a charter after Robert's death (in 1147) to the town, which could have only been possible under the protection of a castle (RCAHMW 2000b, 229; Newman 2001, 459–60). Neath Castle is first mentioned in 1183, when besieged by the Welsh. The castle is also mentioned again during a subsequent besiegement in 1231, when it was destroyed by the army of Llywelyn ap Iorwedd (Whittle 1992, 118).

2.1.3 Initially, Neath Castle took the form of an earthen and timber ring work, erected on the eastern bank of the River Neath. The castle was roughly ovular in form and was built perhaps sometime after 1120 against a natural scarp overlooking the river. The castle was later developed in stone, after its destruction in 1231, with the addition of an ovoid curtain wall, two projecting towers and a simple gatehouse, on the site of the present 14th century gatehouse, which utilises an existing tower in its construction. The later gatehouse was built sometime after 1321, when in the hands of the unpopular Hugh Despenser, then lord of Glamorgan. This episode of rebuilding followed the partial destruction of the castle as a result of the local rebellion against Edward II and Despenser (Kenyon 2010, 127). The external (western) elevation of the gatehouse survives. Windows and a springing arch, in dressed Sutton stone, along with walls of roughly coursed Pennant sandstone and river cobbles, can presently be seen. The earlier postern was found during investigations in the mid-20th century, situated below the 14th century gatehouse (RCAHMW 2000b, 229–45).

2.1.4 The north curtain wall of the castle is demarcated by a revetment wall of at least 18th century date, which was built into the natural scarp and atop earlier masonry foundations. This later wall encloses the burial ground of the Friends Meeting House, which is said to have been built in 1799 (Newman 2001, 459). A number of buildings extended along the interior of the north curtain wall. At the eastern end the north range terminates with a rectangular, two celled structure (Chamber A), built against the northeast tower. The northwest room and wall were found to contain a large, cobbled hearth.

2.1.5 The collapsing Boundary Wall, which abuts the later revetment wall on its eastern side, runs northeast from Chamber A and in parallel alignment to the northeast tower. The fact that this wall abuts the later revetment wall means that it is also of at least 18th century construction. The space directly behind the wall contains the original foundations for the curtain wall and parts of the northeast tower, as well as medieval, Post-medieval and modern infilling.

2.1.6 The Quaker Friends Meeting House is a Grade II Listed (LB 11788) Georgian period three-bay, two storey, hipped roof building with sash windows. Built 1799-1800 and opened in 1801 on land donated by Lady Molly Ann Hanbury Leigh (nee Mackworth, Miers) who inherited the Gnoll Estate and Neath Castle on the death of her husband Sir Robert Mackworth in 1794. There were Friends or Quakers in Neath from the 1650s, but persecution led to many emigrating to North America. Joseph Tregelles Price (1754-1854) was a leading industrial figure and manager of Neath Abbey Ironworks and is buried at the Meeting House. He founded the first Peace Society and was a patron of the anti-slavery movement and a promoter of the ironworks school founded by his father, Peter Price (1739-1821), who is also buried here. Around 45 burials are known, the headstones have since been moved to the outside edge of the burial ground (Williams 2002).

2.1.7 **Pictorial and cartographic evidence**

1.1.1 Neath Castle has been depicted in artwork for at least 280 years. Many though are contradictory and no doubt several have been miss-dated. The earliest image of the castle is the engraving by Samuel and Nathaniel Buck dated to 1741 (Plate 1). Samuel Buck (1696-1779) and his brother Nathaniel (died between 1759-1774) were arguably the finest topographers and artists of historic places in the mid-18th century. The brothers created over 400 engravings of historic buildings (castles, monasteries, mansions etc) and over 80 views of towns and cities from 1726 to around 1759. The combined works known as Buck's Antiquities were often sold in sets by county or subscribers, such as the Society of Antiquaries and members of the nobility. They toured England and Wales visiting predominantly the landed gentry and their estates, who became benefactors/subscribers, creating numerous sketches from which finished drawings were developed and engraved.

2.1.8 The Buck brothers engraving (Plate 1) depicts Neath Castle in fairly poor condition with the usual vegetation on wall tops suggestive of a ruinous state of the monument. The image is framed with the Mackworth's The Gnoll mansion in the background. The curtain walls of the castle are not shown clearly and may have been in an advanced state of decay at this time. A square tower is shown against the northwest gatehouse drum tower in the location where the Quaker Friends Meeting House will be built. A small house with a pitched roof is shown close to where the Friends Meeting House Burial Ground is and the end of Castle View.

2.1.9 Benjamin Ralph's engraving from 1760 (Plate 2) is little different from the Buck Brothers engraving. The castle is depicted almost identically and in exactly the same frame as the Buck Brothers engraving, with The Gnoll mansion visible on the hill.

2.1.10 Richard Wilsons painting dating to around 1765-70 (Plate 3) shows a view to the northeast of the gatehouse and south curtain wall. An arched culvert is visible on

what was probably a tributary or small stream off the River Neath a short distance from the castle.

2.1.11 Hendrik-Frans De Cort's painting of Neath Castle 1790-1810 (Plate 4) is very detailed, capturing the The Gnoll artistically framed through the north curtain wall of the castle. The square tower against the northwest gatehouse drum tower has disappeared, presumed collapsed at this time. The north curtain wall is shown standing to several metres in height and the northeast drum tower is shown with just one wall standing but this wall is higher than the gatehouse. The small house with a pitched roof is shown here again, with red tiles, close to where the Friends Meeting House Burial Ground is and the end of Castle View.

2.1.12 Warwick Smith, a prolific 18th century landscape painter, has dated his painting of Neath Castle to the 5th July 1795 (Plate 5). The image is framed towards the southeast and shows what may be the remnants of the square tower against the northwest gatehouse drum tower and also shows the very high wall belonging to the northeast drum tower still standing. It also shows a significant masonry structure in between the northeast drum tower and square tower, which may be the surviving north curtain wall. The image also shows significant vegetation on the walls of the castle.

2.1.13 Edward Dayes (1763-1804 artist) and J. Storer's (1771-1837 engraver) image of Neath Castle (Plate 6) shows the masonry in a significant state of decay. The square tower and north curtain wall are not shown. The high wall of the northeast drum tower still stands though albeit covered in vegetation. The 1807 date ascribed to the image must be incorrect as the Friends Meeting House was built by 1801 and is not shown.

2.1.14 John George Wood's depiction (1811) of Neath Castle (Plate 7) shows for the first time the Friends Meeting House built hard up against the northwest gatehouse tower. As well as showing the River Neath, the image also depicts the small pitched roof house shown on earlier images. The last remaining and very tall wall section belonging to the northeast tower is still shown standing at this time.

2.1.15 The 1821 engraving (Plate 8) by Richard Wilson is almost certainly the same as his painting dated 1765-70 (Plate 3). The 1821 date being erroneous. The engraving shows the castle much as described above but in much more clarity with possibly the Neath Abbey Ironworks in the background. The Friends Meeting House is not shown.

2.1.16 Neath Castle is depicted by Thomas Dugdale and W. Woolnoth, in Curiosities of Great Britain England and Wales, Historical, Entertaining, and Commercial 1845 (Plate 9). The image clearly shows both the small house with a pitched roof shown in earlier images and the Friends Meeting House. The north curtain wall is shown standing to a significant height and the tall masonry remains of the northeast drum tower is also still standing.

2.1.17 Neath Castle can be seen in detail, in plan, for the first time on the 1876 Town Plan (Plate 10). The south curtain wall is shown as a thin boundary at the rear of the Castle Street properties. The cock fighting pit is not depicted in the centre of the castle but the north curtain wall is shown bounding the Friends Meeting House Burial Ground. The meeting house is shown much as it is today. The collapsing wall at the southeast end of the burial ground is shown as a thin line that extents to the edge of the

northeast drum tower return wall. The drum tower wall is shown as a significant piece of masonry extending from the tower north to the road on the line of the modern wall.

2.1.18 **Previous investigations**

2.1.19 1993 – GGAT carried out an evaluation at Neath Castle during repair and consolidation work. Nine trenches were manually excavated to trace features under threat from landscaping work undertaken to provide public access to the interior of the castle. A further trench was excavated across the rear of the gatehouse for an electrical cable for floodlights. Several wall lines were traced, and floor levels were located to the rear of the gatehouse. Most of the walls uncovered were probably of medieval date, albeit with some repair and consolidation. It was also observed that excavated walls frequently joined with already exposed walls, especially within the western service room.

2.1.20 1994 – GGAT carried out a watching brief at Neath Castle during landscaping and improvement work for Neath Town and Council. The work noted that many of the above ground walls of the castle had been constructed on the lines of earlier walls. In many cases, the early walls had been incorporated into later ones, suggesting that the internal arrangement of the castle had altered little over time.

3 Location, Topography and Geology

3.1.1 The proposed development is centred on NGR SS 275377.950, 197803.776 and is located wholly within the Scheduled Ancient Monument of Neath Castle (SAMGm039), which lies adjacent to the Friends Meeting House and graveyard, as well as Neath Town Centre Conservation Area (147) (Figure 1). The site of Neath Castle is bounded along its northern and eastern edges by housing estate, which is accessed via Castle View. Running along the southern perimeter of the castle is Castle Street. Immediately east of the castle is a large car parking area. The River Neath also bounds the site of the castle to the north, which runs in a broadly NE/SW direction towards Aberavon Beach, and along its route it feeds into the various waterways situated throughout Neath, including the Neath Canal, Crythan Brook and Eastland Brook.

3.1.2 In terms of topography, Neath is situated at the base of the Vale of Neath. Consequently, the town of Neath, as well as those other settlements situated along the vale, including Cadoxton and Tonna to the north and Aberdulais to the northeast, is relatively low-lying, being situated at approximately 10mOD. Neath is also surrounded by a small series of hills, including Mynydd au to the west, Mynydd Blaenhonddan to the north and Cefn Morfydd to the east.

3.1.3 The superficial geology within the proposed development is defined by glaciofluvial sheet deposits, composed primarily of detrital and coarse-grained sands and gravels. These deposits formed up to 2 million years ago during the Devensian period, in an environment dominated by ice age conditions. The underlying bedrock is composed of Swansea Member mudstone, siltstone and sandstone, which formed approximately 308–10 million years ago during the Carboniferous period, in an environment dominated by rivers. These bedrock deposits are coarse- to fine-

grained in texture and form beds and lenses reflecting the channels, floodplains and levees of the associated with the Vale of Neath (BGS 2021).

4 Objectives

4.1.1 The *definition* of an archaeological **Building Investigation and Recording** as set out by the Chartered Institute for Archaeologists (CIfA) is a programme of work intended to establish the character, history, dating, form and archaeological development of a specified building, structure, heritage asset or complex and its setting, including buried components, on land, in inter-tidal zones or underwater.

4.1.2 The *purpose* of an archaeological Building Investigation and Recording is to examine a specified building, structure, heritage asset or complex, and its setting, in order to inform:

- The formulation of a strategy for the conservation, alteration, demolition, repair or management of a building, structure, heritage asset or complex, and its setting.
- Or
- To seek a better understanding, compile a lasting record, analyse the findings/record, and then disseminate the results.

4.1.3 (*Chartered Institute for Archaeologists' Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures*, published 2014, revised 2020).

4.1.4 The programme of building recording was implemented according to Level II (Historic England 2016). Historic England note "… a Level II building record provides a descriptive record with the structures seen, described and photographed. The examination of the structures will produce an analysis of its development and use and the record will include the conclusions reached, but it will not discuss in detail the evidence on which this analysis is based. A plan and sometimes other drawings may be made included but the drawn record will normally not be comprehensive and may be tailored to the scope of a wider project. The presentation of these observations in a written report, taking account of related documentary and historical evidence. The preparation of an archive of digital data recovered and records made as a result of the project, and the deposition of this archive in a suitable receiving museum or similar institution."

4.1.5 The principal method of building survey utilised measured 3D photogrammetric techniques implemented in accordance with the standards set out in Historic England's *Photogrammetric Applications for Cultural Heritage Guidance for Good Practice* (Published 2017).

4.1.6 The main objectives of the photogrammetric survey were to produce metrically accurate, rendered and photorealistic 3D modelling of the survey area, buildings and general scenes, georeferenced with high accuracy. Modelling utilises Structure for Motion (SfM) photogrammetric techniques obtained throughout camera capable UAV (drone) to produce measurable 3D models of the photographed scene. The term photogrammetry was coined by Prussian architect Albrecht Meydenbauer in an 1867 article called 'Die Photometrogaphie' and Dominique Arago, a French surveyor, was using photographs to create topographic maps as early as 1840. Modern

photogrammetric methods used flat lensed camera to create photogrammetric montages of buildings or other methods such as stereoscopy using multiple aerial images to create the illusion of depth (3D) for 2D images. Present-day photogrammetry uses sophisticated algorithms and workflows to digitally stitch each pixel together to create real world measured 3D representations of the photographed scene with outputs including dense point clouds (LAS), triangular meshes (OBJ) and orthophotography (plans and elevations – georeferenced TIFF). The accuracy or, more appropriately, the margin of error is calculated using the ground sampling distance (GSD), which is the distance between two adjacent pixel centres normalised to real world dimensions. Centimetre accuracy of photogrammetric outputs is reached by using Real Time Kinematic (RTK) GPS (satellite navigation systems) survey methods of control points within the surveyed area.

4.1.7 The *definition* of an archaeological **Watching Brief** as set out by the *Chartered Institute for Archaeologists* (CIfA) is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.

4.1.8 The *purpose* of an archaeological Watching Brief (as defined by CIfA) is:

- To allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of a development or other potentially disruptive works.
- To provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard.

4.1.9 A watching brief is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

4.1.10 The objective of a watching brief is to establish and make available information about the archaeological resource existing on site.

4.1.11 (Chartered Institute for Archaeologists' *Standard and Guidance for an Archaeological Watching Brief*, published 2014, revised 2020).

4.1.12 The *Research Framework for Wales* sets out the knowledge base of past research and a rationale for future studies (https://www.archeoleg.org.uk/index.html). The present investigation will be undertaken considering the key themes and where there are limitations in current knowledge, particularly where the present investigations can enhance our understanding of some of these key areas. For example, current important medieval themes for consideration where there are weaknesses in the knowledge base are the chronological development of earth and

timber castles in Wales, and their adoption by Welsh rulers, remains inconsistently understood. Key research questions include:

- The reasons for location – are they associated with existing focal points?
- The extent to which they were built by Welsh lords following the early Norman incursions,
- The local and regional historic contexts for the founding and abandonment of undocumented timber castles,
- Their subsequent administrative, military or domestic role,
- Their impact on the wider landscape, and the creation of planted settlements and planned landscapes,
- The nature of the construction of their earthworks and associated structural remains,
- Their relationship to broader settlement patterns such as villages, towns, ecclesiastical sites, mills, field systems and fishponds.

4.1.13 Masonry castles have been widely studied and described, with a move towards understanding form, function and landscape setting. The place of stone castles within the Welsh administrative system requires further exploration, particularly outside of Gwynedd where it is clear that they did not necessarily replace the commotal *Llys* and *Maerdref* as centres of governance but complemented them as lavish occasional residences, fortresses and status symbols. Key research questions include:

- The administrate role of the castle,
- The military role of castles,
- The relationship of stone castles with summer grazing pastures and upland estates,
- The cultural and economic impact of castle building programmes, in particular those of Edward I,
- The architectural development of native stone castles,
- The dating of individual masonry castles and their architectural features,
- Architectural affinities between high status stone castles and the evidence this provides for a dissemination of ideas and designs amongst patrons and craftsmen,
- The relationship of stone castles to designed landscapes of parks, gardens, fishponds, warrens and forests.

4.1.14 A Research Framework for the Archaeology of Wales: Medieval 2017 http://www.archeoleg.org.uk/pdf/review2017/medreview2017.pdf.

4.2 Legislative Framework

4.2.1 Planning legislation is set out in the *Town and Country Planning Act 1990*. *Planning Policy Wales (PPW 11th Edition)* sets out the land use planning policies of the Welsh Government. Chapter 6 sets out the Welsh Government's policy towards the historic environment. It states "*The planning system must take into account the Welsh Government's objectives to protect, conserve, promote and enhance the historic environment as a resource for the general well-being of present and future generations. The historic environment is a finite, non-renewable and shared resource and a vital and integral part of the historical and cultural identity of Wales. It*

contributes to economic vitality and culture, civic pride, local distinctiveness and the quality of Welsh life. The historic environment can only be maintained as a resource for future generations if the individual historic assets are protected and conserved. Cadw's published Conservation Principles highlights the need to base decisions on an understanding of the impact a proposal may have on the significance of an historic asset." (PPW 2021, 126).

4.2.2 Underpinning PPW are a series of legislative powers and TANs. *The Planning (Wales) Act 2015* sets out a series of legislative changes to deliver reform of the planning system in Wales, to ensure that it is fair, resilient and enables development. The 2015 Act also introduces a mandatory requirement to undertake pre-application consultation for certain types of development. *The Town and Country Planning (Development Management Procedure) (Wales) (Amendment) Order 2016* defines in Schedule 4 (l) the parameters and definitions for the requirement of pre-application consultation by Welsh Ministers, particularly in response to the effect of statutory designated monuments, buildings, and parks and gardens.

4.2.3 Any works affecting an ancient monument and its setting are protected through implementation of the *Ancient Monument and Archaeological Areas Act 1979*. In Wales the 1979 Act has been strengthened by *The Historic Environment (Wales) Act 2016*. The 2016 Act makes important improvements for the protection and management of the Welsh historic environment. It also stands at the centre of an integrated package of secondary legislation (Annexes 1-6), new and updated planning policy and advice, and best-practice guidance on a wide range of topics (TAN 24 Historic Environment). Taken together, these support and promote the careful management of change in the historic environment in accordance with current conservation philosophy and practice.

4.2.4 The *Ancient Monument and Archaeological Areas Act 1979* and *The Historic Environment (Wales) Act 2016* sets out a presumption in favour of preservation *in-situ* concerning sites and monuments of national importance (scheduled/listed), and there exists in the current Planning Policy Wales (Chapter 6) a presumption in favour of preservation *in-situ* of all types of heritage assets.

5 Methodology

5.1.1 The programme of works consisted of a 3D photogrammetric survey of the failing masonry Boundary Wall, the partial dismantling of around 5.5m of the wall, limited excavation into the southeast bank, under archaeological watching brief conditions, to allow for concrete reenforcing, granular backfill and the rebuilding of the wall, and then finally a post-excavation 3D photogrammetric survey of the remains of the NE medieval tower revealed by the investigations (Figures 1-7).

5.1.2 The investigation consisted of Level II historic building recording of the collapsing wall, as well as an archaeological watching brief, which applied to all works in connection with the dismantling of, and excavations beyond, the wall. A photogrammetric record of the collapsing Boundary Wall was made, together with a note on its phasing. The structures were recorded with a blend of RTK GPS measured survey, photogrammetry (3D modelling) derived from both aerial (drone) and

terrestrial cameras. The archaeological programme was carried out between the 9th December 2020 and 28th January 2021 during low winter sunlight.

5.1.3 All demolition and excavation work was performed by hand. During the dismantling of the Boundary Wall, a large stratigraphical section of soils were uncovered, which represented Post-medieval and modern backfill. This section was recorded and photographed, before it collapsed in its entirety, revealing the remains of medieval masonry and other associated deposits. This masonry belonged to the northeast drum tower of the castle. All structures and deposits revealed after the collapse of this section were recoded photogrammetrically.

5.1.4 The archaeological recording techniques conformed to the best industry standard. All deposits were recorded using a single continuous context numbering system pro forma (summarised in Appendix III). All contexts were recorded in section and plan at scale. All contexts were photographed in digital using a Canon EOS 2000D DSLR camera with a 24.7mp, 22.3mm x 14.9mm CMOS sensor. The ground investigations were tied into the Ordnance Survey National Grid and Datum using an GNSS/Glonass (GPS) Receiver and data logger with a <20mm tolerance.

5.1.5 All classes of finds were retained (cleaned and catalogued) and arrangements for final deposition agreed as set out in the requirements of the Chartered Institute for Archaeologists' *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials* (2011) and the Museums and Galleries Commission' *Standards in the Museum Care of Archaeological Collections* (1994). The archive of archaeological records and artefacts has been prepared to the guidelines set out in Historic England's *Management of Archaeological Projects* (1991) Appendix 3. The final archive of records relating to the preparation of the report has been prepared to Historic England's guidelines set out in the *Management of Archaeological Projects* (1991), Appendix 6 and the *National Standard and Guidance to Best Practice for Collecting and Depositing Archaeological Archives in Wales 2017*.

5.1.6 When substantial quantities of undiagnostic, residual or modern material were recovered, an on-site recording and discard policy for these classes of find was employed. However, sufficient material was retained to understand the nature, date and function of the deposit from which it was recovered.

5.1.7 The capture, processing and output of 3D models conformed to professional industry standards and best practice guidelines set out by Historic England's *Photogrammetric Applications for Cultural Heritage Guidance for Good Practice* (2017). The full photogrammetric 3D model and 'Digital Twin' of the collapsing wall can be viewed here: https://p3d.in/f380u. The full photogrammetric 3D model and 'Digital Twin' for the medieval structural remains of the NE tower beyond the southern edge of this wall can be viewed here: https://p3d.in/dw4It.

5.1.8 The programme of building recording was implemented in accordance with a Level II building survey, as set out by Historic England's *Understanding Historic Buildings: A Guide to Good Recording Practice* (2016), the only nationally (UK) recognised building recording standard; *Photogrammetric Applications for Cultural Heritage Guidance for Good Practice* (2017); as the Chartered Institute for Archaeologists' *Standard and Guidance for the Archaeological Investigation and Recording of*

Standing Buildings or Structures (published 2014, revised 2020). The presentation of these observations is set out in this report, taking account of the related documentary and historical evidence.

5.1.9 The archaeological watching brief was carried out to the standards of the Chartered Institute for Archaeologists' *Standard and Guidance for an Archaeological Watching Brief* (published 2014, revised 2020).

5.1.10 A copy of the report and digital archive will be supplied to the client and their agents, the regional HER (GGAT) and the Royal Commission of the Ancient and Historical Monuments of Wales (RCAHMW). Submission of photogrammetric images acquired by drone to the RCAHMW will follow the *RCAHMW Unmanned Aerial Vehicle (UAV) Policy*. All data has been digitally stored in appropriate formats (SHP, DXF, TIFF, RAW, JPEG, PDF etc) with the archive destination in mind. All data will be submitted to the relevant archives in accordance with the RCAHMW's *Guidelines for Digital Archaeological Archives* (2015) and the regional HER's *Guidance for the Submission of Data to the Welsh Historic Environmental Records (HERs)* (2018).

5.1.11 All work has been carried out in accordance with the professional standards of the Chartered Institute for Archaeologists (CIfA).

6 Results

6.1.1 The investigation consisted of Level II historic building recording of the collapsing Boundary Wall, as well as an archaeological watching brief, which was applied to all works in connection with the dismantling of, and excavations beyond, the wall.

6.1.2 All demolition and excavation work was performed by hand. During the dismantling of the collapsing Boundary Wall, a large section of material was uncovered, which represented modern backfill over the medieval masonry remains. This section was recorded and photographed, before it collapsed in its entirety, revealing the remains of medieval masonry and other associated deposits. This masonry formed part of the Northeast Drum Tower of Neath Castle. Also abutting the northeastern edge of this masonry was a medieval deposit, comprising mostly midden material. All structures and deposits revealed after the collapse of the modern backfill material were recoded photogrammetrically.

6.2 Digital Twin – 3D Photogrammetric Record

6.2.1 Two surveys of the collapsing Boundary Wall were carried out to create pre-commencement and post-excavation 3D photogrammetric 'Digital Twins'. The first survey was undertaken while scaffolding was in place supporting the collapsing Boundary Wall. The wall was photographed from all angles, the resultant 1195 high-resolution photographs were then processed in proprietary photogrammetry software and aligned using ground control points (GCPs). The scaffolding supporting the wall was removed in the point cloud to gain a better view of the boundary wall and its phasing. Some unavoidable 'ghosting' of the removed scaffolding can be seen in the 3D model. The dense point cloud generated over 55 million points with a mean RMS error of 0.012m. The Ground Sampling Distance achieved a great 0.31cm/pixel. The full photogrammetric 3D model and 'Digital Twin' of the collapsing Boundary Wall can be viewed here: https://p3d.in/f380u.

6.2.2 Following the discovery of the *in-situ* masonry remains of the northeast tower behind the collapsing Boundary Wall, a post-excavation 3D photogrammetric survey was undertaken to create a second 'Digital Twin'. The medieval masonry remains were photographed from all angles, the resultant 472 high-resolution photographs were then processed in proprietary photogrammetry software and aligned using ground control points (GCPs). The dense point cloud generated over 15 million points with a mean RMS error of 0.006m. The Ground Sampling Distance (GSD) achieved was a great 0.301cm/pixel. The full photogrammetric 3D model and 'Digital Twin' for the medieval structural remains of the Northeast Tower can be viewed here: https://p3d.in/dw4It.

6.2.3 The 3D Photogrammetric surveys were carried out by UAV (drone), equipped with a Hasselblad 35mm equivalent 20mp, 1" sensor, 4k UHD camera and a terrestrial Canon EOS 2000D DSLR camera with a 24.7mp, 22.3mm x 14.9mm CMOS sensor. The ground investigations and aerial survey were tied into the Ordnance Survey National Grid and Datum using a GNSS/Glonass (GPS) Receiver and data logger with a <20mm tolerance. The 3D model was produced using proprietary photogrammetry software and aligned using known ground control points (GCPs). Dimensional control was then applied to each model and then reproduced using the new parameters and optimised cameras to create dense point clouds high face count meshes. Models were then exported to OBJ format. Ground Control Points (GCPs) were used with a sub-20mm error margin to OSGB36 (Ordnance Survey National Grid, Newlyn Datum). High resolution orthographic renders (orthoplanes and orthomosaics) were exported and scaled in georeferenced raster (TIFF and JPEG) format.

6.3 The Collapsing Boundary Wall and Quakers Wall (Figures 1-4, Plates 11-12)

6.3.1 The collapsing northeast/southwest aligned Boundary Wall [007] was situated towards the western edge of the castle's northeast drum tower. Access to the wall was provided by scaffolding attached to its outer (western) face. In terms of function, the wall served to retain a large amount of soil and other built-up materials that accumulated in and around the remains of the castle's northeast drum tower [012]. A large section of the wall had sustained significant damage, where a quantity of masonry had fallen. This area measured approximately 0.8m x 0.9m and extended downwards from the top of the wall. Immediately below this area a sizeable crack also existed on the exterior wall face, which extended approximately 2.3m below the top of the wall. Together, this area of fallen masonry and sizeable crack meant that the wall required imminent repair work.

6.3.2 The overall Boundary Wall [007] length was 17m long and had an average width of 0.6m. The wall was divided into two visible phases of development, an 18th century section measuring 5.5m wide by 5m high abutting the north curtain wall, and a later 19th century or modern phase (replacement/repair) extending NE towards Castle View. The later phase was in good condition, with cement pointing, and was built over splayed masonry at ground level on the NE side, which may be considerably older. The Boundary Wall [007] top incorporated an inclined slope of around 20–30 degrees from the north curtain wall to Castle View. This meant that the height of the wall varied from approximately 3m at its northeast end to roughly 5.5m at its southwest. The southwest end of the wall was seen to abut, and was therefore later

than, the large northwest/southeast aligned retaining wall (Quakers Wall [005]), which sat atop the masonry remains of the North Curtain Wall [006], which defined the southern edge of the Friends Meeting House burial ground. This larger retaining wall, known colloquially as the 'Quakers Wall', provided the collapsing wall with a *terminus post quem* of the 18th century.

6.3.3 The Quakers Wall [005] showed two principal phases, the first belonging to the medieval North Curtain Wall [006] that incorporated a pronounced batter which, from the wall's visible base, extended to around 2m in height. This batter comprised a slope of roughly 75 degrees, which contrasted sharply with the remainder of the later Post-medieval wall, which only had a slight inward batter. A greater part of the Quakers Wall comprised fine-grained, dark blueish grey sandstone and isolated areas of course-grained sandstone masonry of a lighter brownish grey hue. However, both types of masonry were more or less identical in size, with blocks measuring roughly between 0.15–0.5m in width. The shape of the different types of masonry was also more or less identical, as both comprised blocks of a slightly rounded aspect, indicating that most were shaped from fluvial boulders likely derived from within surrounding riverine deposits. Both the earlier [006] and later [005] parts of the Quakers Wall were repointed with a sandy hydraulic lime mortar, meaning that the original mortar of the former was not visible.

6.3.4 The collapsing section of the Boundary Wall [007] was composed of irregularly coursed grey sandstone masonry bonded with a buff/yellow sandy hydraulic lime mortar. However, certain parts of the wall, particularly at its top, had traces of 20th century grey cement mortar applied to it. The masonry that made up the wall was rustic in appearance. Some of the stones appeared entirely undressed, although where dressing was detected, it was rudimentary. The boundary wall's masonry was also irregularly coursed. The Boundary Wall comprised an inner and outer face surrounding a core comprising a mix of small stones and sandy hydraulic lime mortar. Immediately to the northeast of the collapsing Boundary Wall, an additional short section of Post-medieval walling [016] was noted perpendicular to and keyed into the boundary wall, and was constructed on top of the northeast drum tower's masonry. The small section of walling was roughly coursed (eight courses) sandstone and measured 2.6m long by 0.94m high and 0.41m wide.

6.3.5 **Discussion**

6.3.6 Structural analysis of the collapsing Boundary Wall [007] revealed it to be of Post-medieval date. More specifically, the inclusion of hydraulic lime mortar within the wall would suggest that it was of 19th century date. However, the cement mortar applied to the top of the wall indicated that it sustained repair work during the 20th century. The Quakers Wall [005], which the collapsing wall abutted, is also of Post-medieval date, although refining the date for the construction of the wall was difficult as the mortar within was not visible. However, the Quakers Wall was incorporated directly onto the remains of the far older medieval North Curtain Wall of Neath Castle [006]. Providing a precise construction date for the North Curtain Wall is difficult, although as the north curtain wall formed an integral part of the castle's *enceinte*, its construction was possibly contemporary with the rebuilding of the castle after its destruction in 1231, when the addition of an ovoid curtain wall, two projecting towers and a simple gatehouse was constructed.

6.4 Deposits and Features Beyond the Collapsing Boundary Wall (Figures 1-2, Plates 13-16, 20-24) – Later Post-medieval Phase

6.4.1 The archaeological watching brief observed the dismantling by hand of around 5.5m of the collapsing Boundary Wall [007], as well as limited excavations into the material it retained. Several deposits were encountered and were recording in section. These deposits represented Post-medieval back-filling or tipping events behind the Boundary Wall [007]. The section collapsed almost immediately following the dismantling of the Boundary Wall [007] due to the very soft and friable nature of the back-filled deposits. However, prior to collapse a record was made of the stratigraphy but the section collapsed before any photogrammetric or drawn record could be made. The uppermost deposit within the section (001) comprised dark brown silty clay-loam topsoil with frequent rooting throughout (001). The depth at which this topsoil was encountered varied between 0.05m – 0.15m. The deposit situated below this topsoil (002) comprised a highly friable silty clay, mid-brown in colour, which contained frequent demolition material throughout, most notably in the form of masonry and patches of ashy lime mortar. In total, deposit (002) measured 0.45m in overall thickness. Deposit (002) also contained within it a significant number of ceramic sherds and shards of glass, mostly of Post-medieval and modern date. These included ceramic sherds of Bristol glazed stoneware, North Devon gravel-tempered ware and white earthenware, and fragments of glass beer and mineral water bottles as well as and a glass jar (see Section 6.6 below). Underlying deposit (002) was a layer of dark brown silty clay, very friable, with fragments of ashy lime mortar throughout. In terms of depth, deposit (003) was not bottomed, but was seen to measure >0.73m. It was also observed that deposits (002) and (003) abutted an earlier deposit (004), which was itself seen to abut both the Quakers Wall [005], along with the castle's north curtain wall [006]. Deposit (004) was deliberately tipped northward, over the northern edge of the Quakers Wall. Compositionally, this deposit comprised dark brown silty clay with frequent sandstone cobbles throughout, ranging in size from 0.15–0.4m. In terms of depth, deposit (004) was again not bottomed, but was seen to measure >1.25m in depth.

6.4.2 **Discussion**

6.4.3 The earliest stratigraphical structures and deposits recorded, excluding the Quakers Wall [005] and North Curtain Wall [006], were the Boundary Wall [007] followed by significant back-filling events behind (east) the Boundary Wall [007]. It was apparent that wall [007] was erected directly along the northern edge of the castle's northeast drum tower, before deposit (004) was deliberately tipped behind the wall, from the top of Quakers Wall [005]. The deposition of (004) was then followed by that of (003) and (002), which were again deliberately deposited behind wall [007] after its construction. Deposit (002) (see Section 6.6) contained a mixture of 18th to 20th century finds and therefore this deposit must be considered a fairly recent back-filling event of mixed material behind the boundary Wall [007]. None of the deposits or features recorded during this phase of the watching brief were directly connected to the medieval activity of Neath Castle. Instead, they can be regarded as deriving from attempts during the 18th and 20th centuries to enclose the eastern edge of the Friends Meeting House burial ground.

6.5 Deposits and Features Beyond the Collapsing Boundary Wall (Figures 1-2 and 6-7, Plates 15-19) – Earlier Medieval Phase

6.5.1 The 5.5m wide section collapsed almost immediately following the dismantling of the Boundary Wall [007] (see above) due to the very soft and friable nature of the back-filled deposits. The section revealed by this collapse was cleaned by hand, and it was noted that further archaeological features and deposits were present. The principal discovery being the previously unrecorded masonry remains of the medieval Northeast Tower and an *in-situ* medieval deposit, possibly a palaeo-horizon (historic ground surface).

6.5.2 The uppermost deposit comprised a thin dark brown silty clay topsoil (001), 0.05m thick. Below this topsoil layer were two demolition deposits (014 and 015) forming dumping layers. The later deposit (015) was a light-brown gritty rubble deposit containing crushed lime mortar and small (<0.1m) stones. The earlier deposit (014) comprised a dark-brown gritty, friable deposit containing crushed lime mortar and small (<0.12m) stones. At the southern end of the section, deposit (014) directly overlay the medieval wall core [012] of the Northeast Tower. The medieval wall core [012] was composed of large (<0.3m) rounded riverine cobbles held in a buff-coloured lime mortar. Two areas of surviving facing stones of coursed tabulated limestone held by a buff-coloured lime mortar were present on the north and west facing elevations. Both areas of facing stone had an angle of slope of twelve degrees (from vertical). Abutting the north facing elevation of the Northeast Tower was a potential medieval palaeo-horizon (historic land surface) deposit containing large stone cobbles intermixed with fragments of oyster shell and miscellaneous marine shell, held in a matrix of dark brown silty clay (011). Overlying the medieval deposit (011) and medieval wall core [012], and underlying demolition deposit (014), were multiple interdigitised tip lines forming a significant dumping episode over the wall core and lower facing stones of the medieval Northeast Tower (013). The deposit was light brown and white in colour and very friable containing crushed lime mortar and small (<0.15m) stones. The deposition of this deposit is likely contemporary with the construction of the 18th century Boundary Wall [007]. Deposit (013) was also seen to have been banked up against the remains of an E/W running wall [016], which originally abutted the eastern edge of wall [007], forming a short return that transected the footprint of the Northeast Tower. This return wall was compositionally identical to wall [007].

6.5.3 **Discussion**

6.5.4 Deposits (013), (014) and (015) were either Post-medieval or modern in date and related to the episode of backfilling mentioned above, where masses of demolition material were tipped behind wall [007] from the top of the Quakers Wall [005]. None of these deposits matched particularly well with those recorded within the previous section (see Section 6.4), indicating that the episode of backfilling from which these deposits derived comprised the tipping of masses of heterogenous material. Deposit (011) and the masonry remains [012], however, were clearly far earlier in date. The latter would have originally formed part of Neath Castle's Northeast Drum Tower. According to the RCHAMW report (2000b, 237), this tower had a northern range attached to it, within which a chamber was located. This chamber comprised two

rooms, with the western room being accessed from the tower proper via a doorway to the south, beyond which the smaller eastern room was situated, which was partitioned from the former room by the inclusion of a thin wall. According to the RCHAMW's plan (Figure 2), this range was apsidal in form and its northernmost wall joined up with the castle's eastern curtain wall at a 90-degree angle. However, the remains of foundation [012], which ostensibly belonged to this range, indicates an entirely different form. This difference in form is indicated by the presence of the north/south running wall face incorporated into the western edge of [012]. Rather than forming a simple apsidal projection from the northeast drum tower, it appears as if the northernmost wall of the range extended only around 3m eastward before turning northward at an angle of 90 degrees, as represented by the western face of [012]. This northward return then extended for a distance measuring anywhere over 1m, before turning again at an angle of 90 degrees in an eastward direction. It was this final eastward return that met up with the castle's north curtain wall. The archaeological evidence, therefore, indicates that rather than being simply apsidal in form, the northernmost range of the tower was apsidal towards its southern end and was squared off towards its northern. Deposit (011), which comprised mostly midden material and which abutted the eastern edge of [012], possibly derived from the final phases of activity associated with the northern range and the northeast drum tower as a whole.

6.6 Finds (Plates 20–24)

6.6.1 All finds derived from a single context (002), which represented a dump of demolition and waste material, deposited behind the collapsing wall. These finds covered two categories: ceramic and glass.

6.6.2 **Ceramic - Post-medieval and modern** (by Joyce Compton)

6.6.3 This component forms a small assemblage amounting to nine sherds, weighing 609g. The pottery is in relatively good condition, though a white earthenware base sherd has pitted surfaces and a plate rim sherd is discoloured, perhaps burnt. The assemblage mainly comprises modern white earthenware and stoneware, dating to the 19th and 20th centuries.

6.6.4 There are three sherds of white earthenware, one is a plate rim with blue transfer-printing and two are from similar, apparently undecorated, open vessels, perhaps sugar bowls or slop basins. The plate rim sherd is discoloured and may have been burnt following breakage. The undecorated white earthenware comprises a rim sherd and a base from different vessels. The base has a solid footring showing a small firing scar resulting from proximity to another vessel in the kiln. The surface of the base is dotted with small pits which probably occurred after deposition.

6.6.5 The modern stoneware comprises five relatively large sherds (419g), all from large containers. There are joining flagon rim and strap handle sherds, a second rim from a similar flagon, a base sherd, and an angled body sherd which may derive from a spirits bottle. The flagon shoulder is stamped with the maker's mark Price Bristol. This firm, and rival firm Powell of Bristol, cornered the market for stoneware containers, especially after Powell invented the Bristol Glaze in 1835, which gave stoneware bottles and jugs a smooth finish, very often with a two-tone brown wash. The firms of Price and Powell amalgamated in 1906 to become Price, Powell & Co.

The base sherd, also from a large container, has broken along a firing fault which has partly filled with glaze.

6.6.6 Earlier post-medieval pottery is represented by a single base sherd in North Devon gravel-tempered ware with customary green-brown internal glaze. This pottery type is dated broadly to the 17th to 19th centuries.

6.6.7 **Glass - Post-medieval and modern** (by Joyce Compton)

6.6.8 The post-medieval and modern glass amounts to a total of six sherds, weighing 1389g. Almost all of the assemblage comprises 19th and 20th century bottles and jars and there are three semi-intact vessels. The earlier piece is a rim sherd in weathered green glass, perhaps deriving from a flask. Representative examples illustrated in Dumbrell (1992, 147) are broadly dated to the 18th and early 19th centuries.

6.6.9 The dark green bottle glass consists of two largely complete beer bottles. There is an almost complete, unmarked cylindrical pint bottle, and the lower section from a larger bottle, embossed on the body with ROGERS JACOB St BREWERY BRISTOL, enclosing a Trade Mark roundel of crossed bottles. The underside of the base is embossed P & R B. These initials represent a firm of bottle-makers, Powell and Ricketts of Redcliffe, Bristol, whose partnership ran from 1853 until 1923 (Made in Bristol, accessed 19/08/21). William Rogers' Jacob Street brewery in St Phillips was operational from about 1852 until 1935.

6.6.10 There are three sherds of blue-green bottle glass, including the neck from a Codd-type mineral water bottle, which may have been broken off to extract the 'marble' used as the closure for this type of bottle. The remaining sherds are two large fragments from the same cylindrical jar. The rim appears to be moulded to take a pressed metal lid and the underside of the base is embossed with B & Co Ld. This logo may represent Bagley & Co Ltd, a Yorkshire firm of bottle makers, in operation from 1890 to 1975, originally making bottles but later branching out into decorative tableware.

6.6.11 **Conclusion** (by Joyce Compton)

6.6.12 Most of the assemblage dates from the mid 19th into the early 20th century. The exceptions are likely to be the North Devon gravel-tempered ware and the glass flask rim, although these could easily have been deposited at the same time as the later material. It may be of interest to note a Bristol origin for much of the collection, which perhaps demonstrates the importance of Bristol as a place of manufacture, as well as the convenience of shipping across the channel.

7 Conclusion

7.1.1 During the archaeological watching brief, which observed the dismantling by hand of 5.5m wide by 5m in height of the collapsing wall as well as limited excavations into the material it retained, several deposits were encountered and were recording in section. Based on the ceramic and glass finds discovered within deposit (002), these deposits likely accumulated beyond the collapsing wall during the early 20th century. The collapsing wall, however, was Post-medieval in date, likely late 18th century, and so too was the Quakers Wall. However, the Quakers Wall is of high significance to the history of Neath Castle, as within its fabric are the far older remains of the castle's

original northern curtain wall, its construction was possibly contemporary with the rebuilding of the castle after its destruction in 1231, when the addition of an ovoid curtain wall, two projecting towers and a simple gatehouse was constructed..

7.1.2 As a result of the collapse of the modern deposits detailed above, older medieval structural remains were revealed beyond the eastern edge of the collapsing wall. These remains formed part of the Northeast Drum Tower of Neath Castle. The structural remains, which comprised the foundation of a north/south aligned wall [012], indicated that the northern range attached to the northeast drum tower possessed a form entirely different to that which has traditionally been suggested (see RCAHMW 2000b, 229). Rather than being simply apsidal in form, this northern range of the drum tower was apsidal towards its southern end and was squared off towards its northern.

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9 Appendices

9.1 Appendix I: Figures

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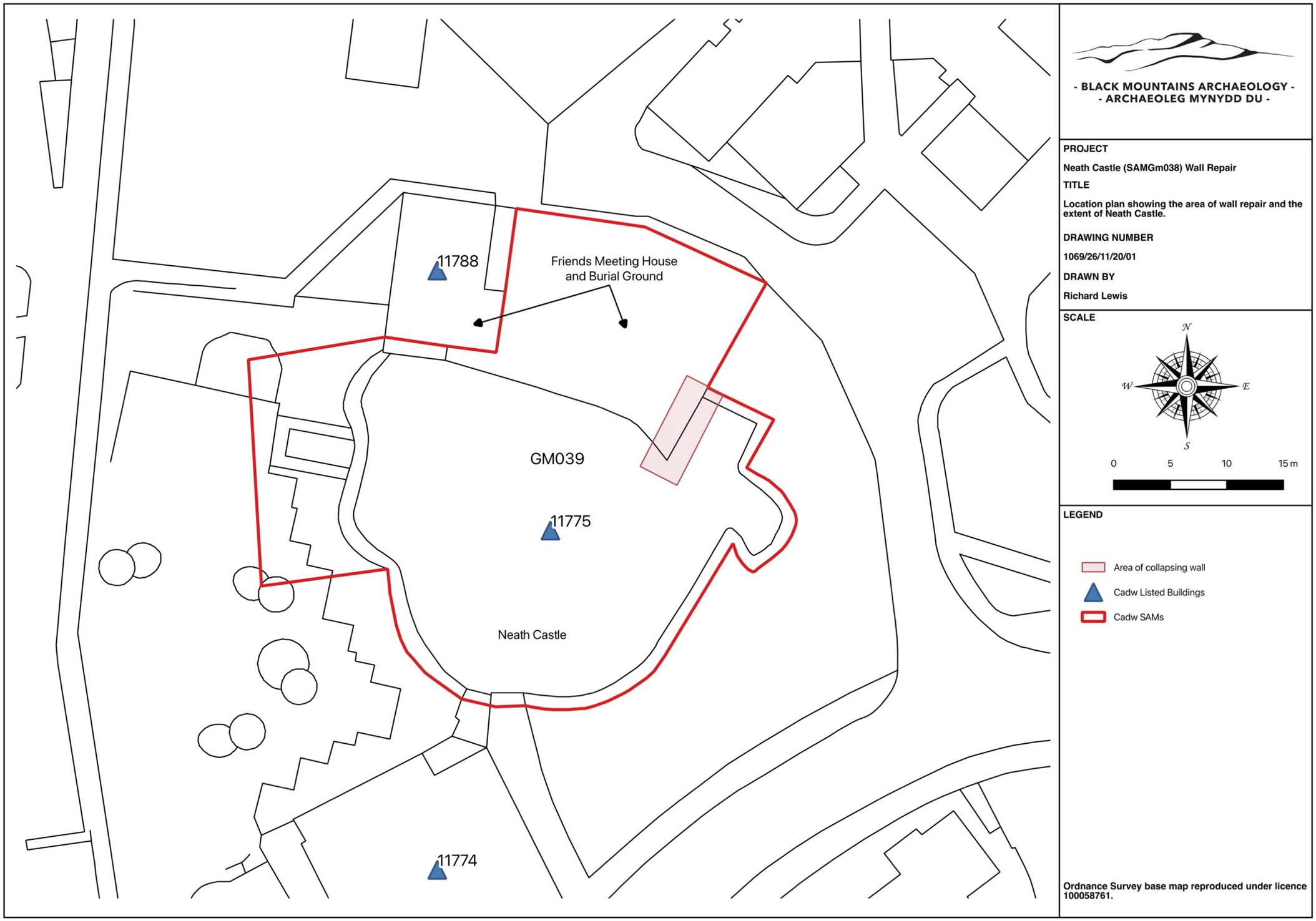

Figure 1. Location plan showing area of wall repair and the extent of Neath Castle (SAMGm039).

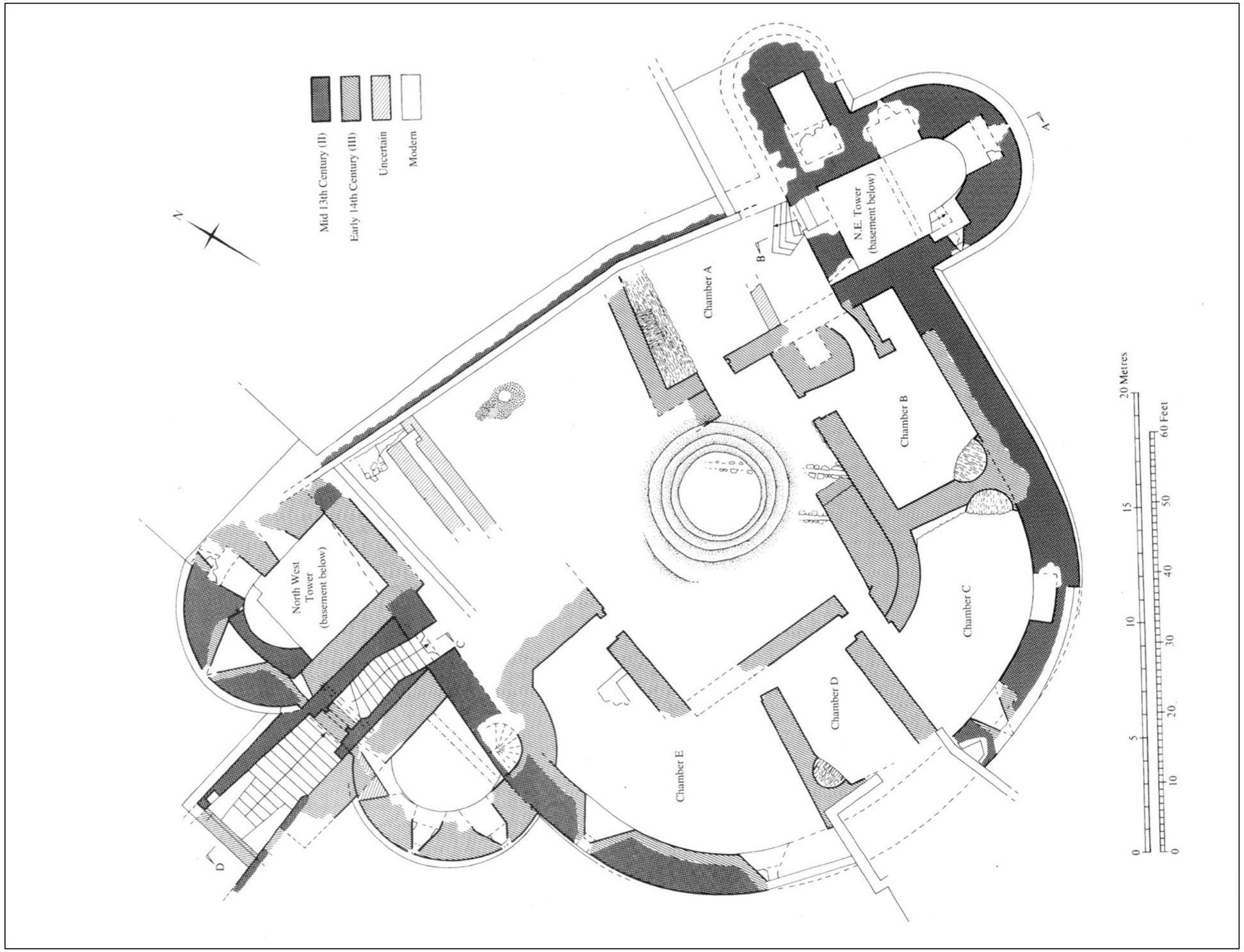

Figure 2. Plan of Neath Castle (SAMGm039) (RCAHMW 2001, 236). © Crown Copyright: Royal Commission on the Ancient and Historical Monuments of Wales

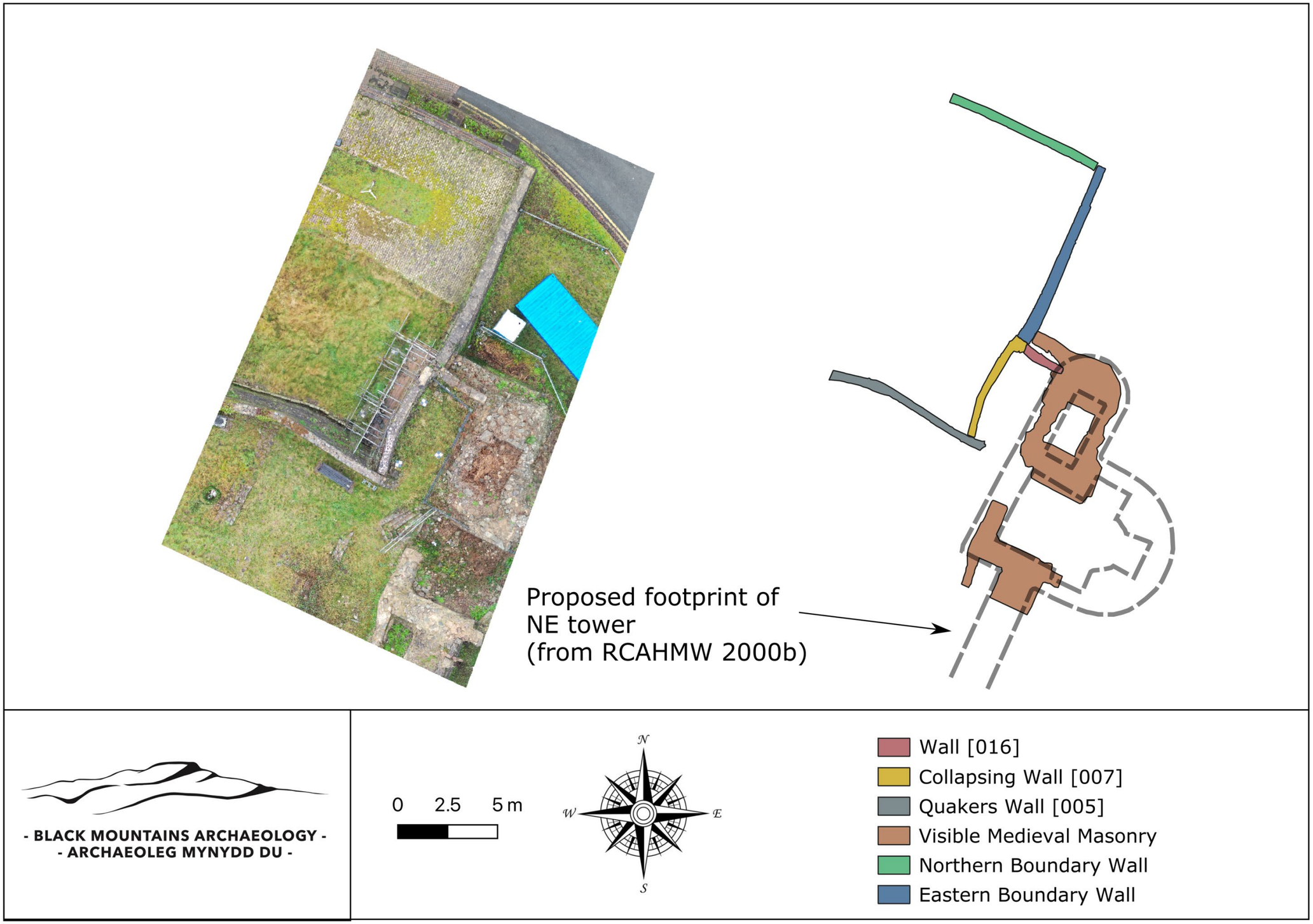

Figure 3. Pre-excavation plan of collapsing wall, Quakers Wall and features associated with the northeast tower of Neath Castle with photogrammetric still (left) and phased schematic (right)

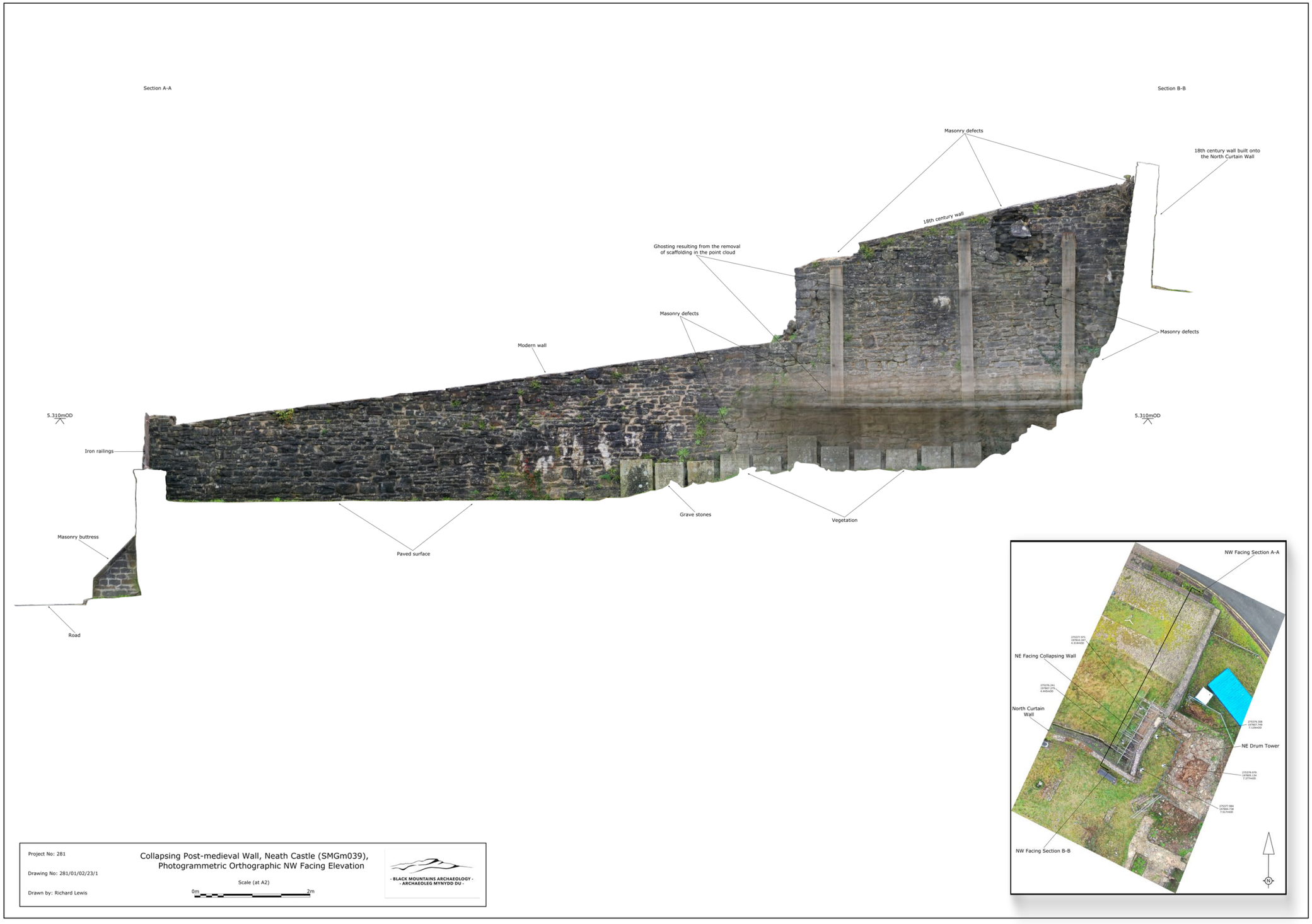

Figure 4. Pre-excavation/dismantling 3D photogrammetric orthographic elevation of the collapsing Post-medieval Wall, Neath Castle (SMGm039).

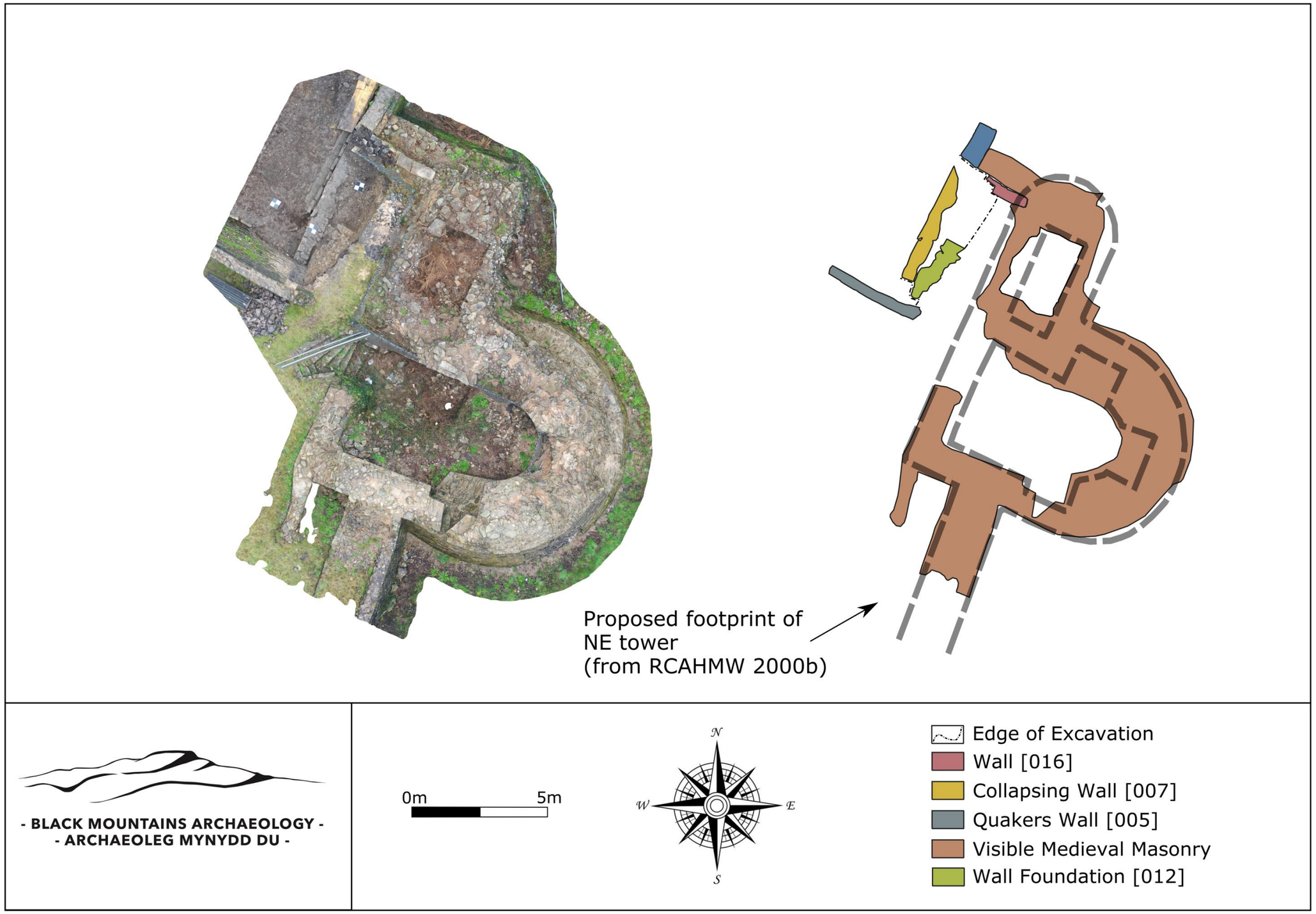

Figure 5. Post-excavation plan of collapsing wall, Quakers Wall and features associated with the northeast tower of Neath Castle with photogrammetric still (left) and phased schematic (right)

Figure 6. Post-excavation 3D photogrammetric orthographic elevation showing the masonry of the Northeast Tower [012], medieval deposits (011) and later back-filling deposits (013, 014 and 015), Neath Castle (SMGm039).

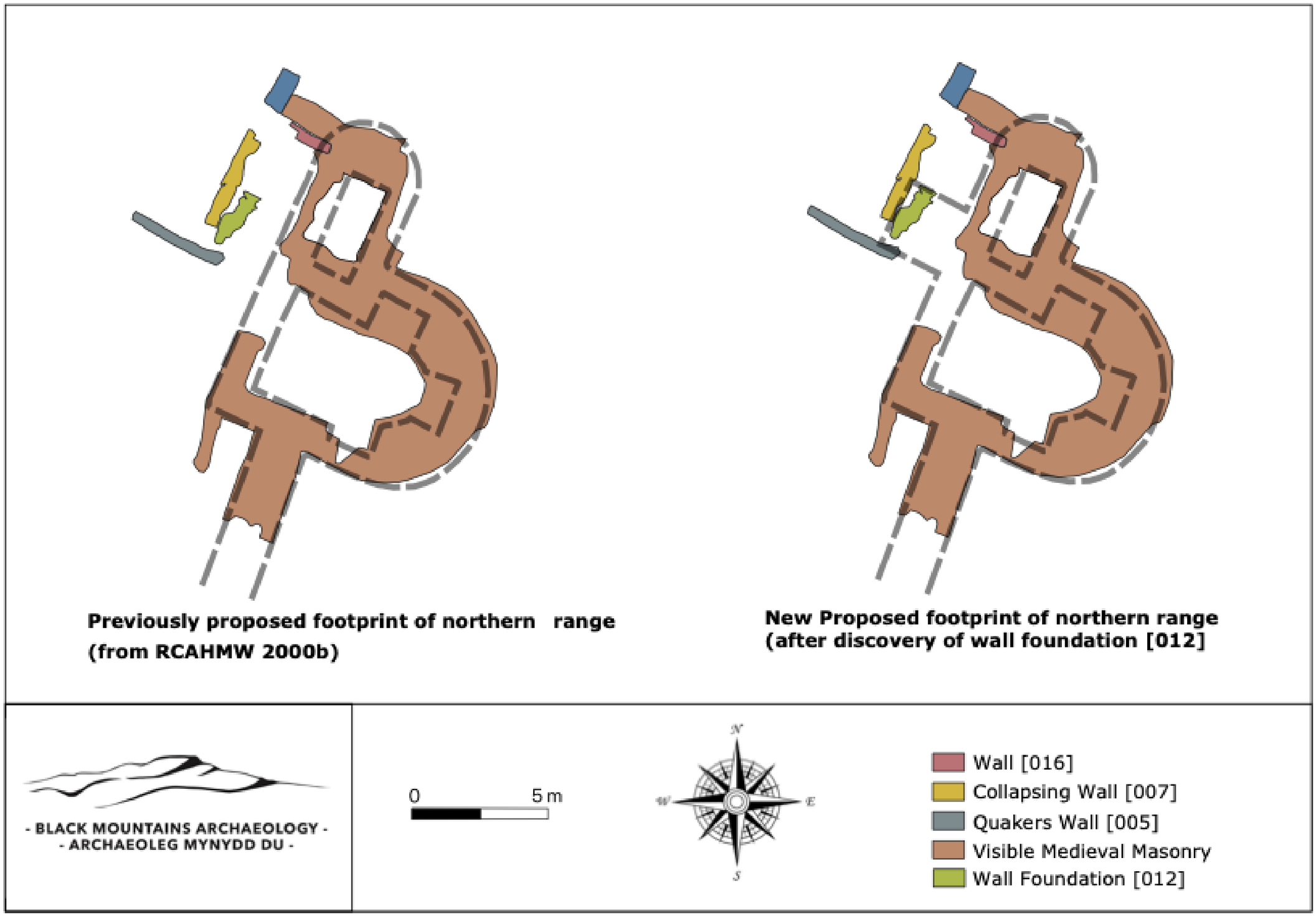

Figure 7. Previously proposed footprint of northern range (RCAHMW 2000b) (left) and new proposed footprint of northern range (right), based on discoveries during watching brief

9.2 Appendix II – Plates

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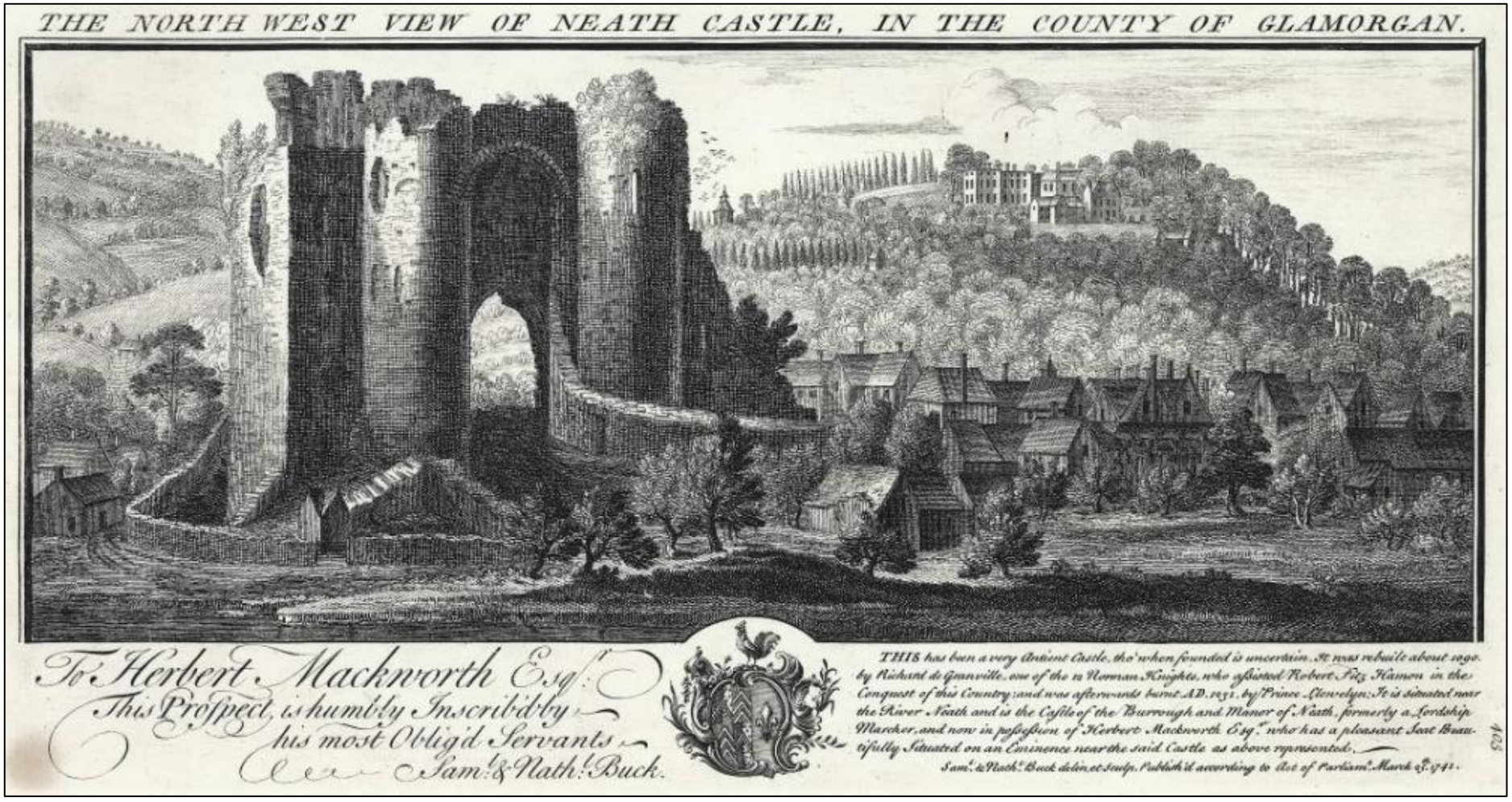

Plate 1. 1741 The northwest view of Neath Castle, in the county of Glamorgan. Samuel and Nathen Buck. National Library of Wales, Public domain via Wikimedia Commons.

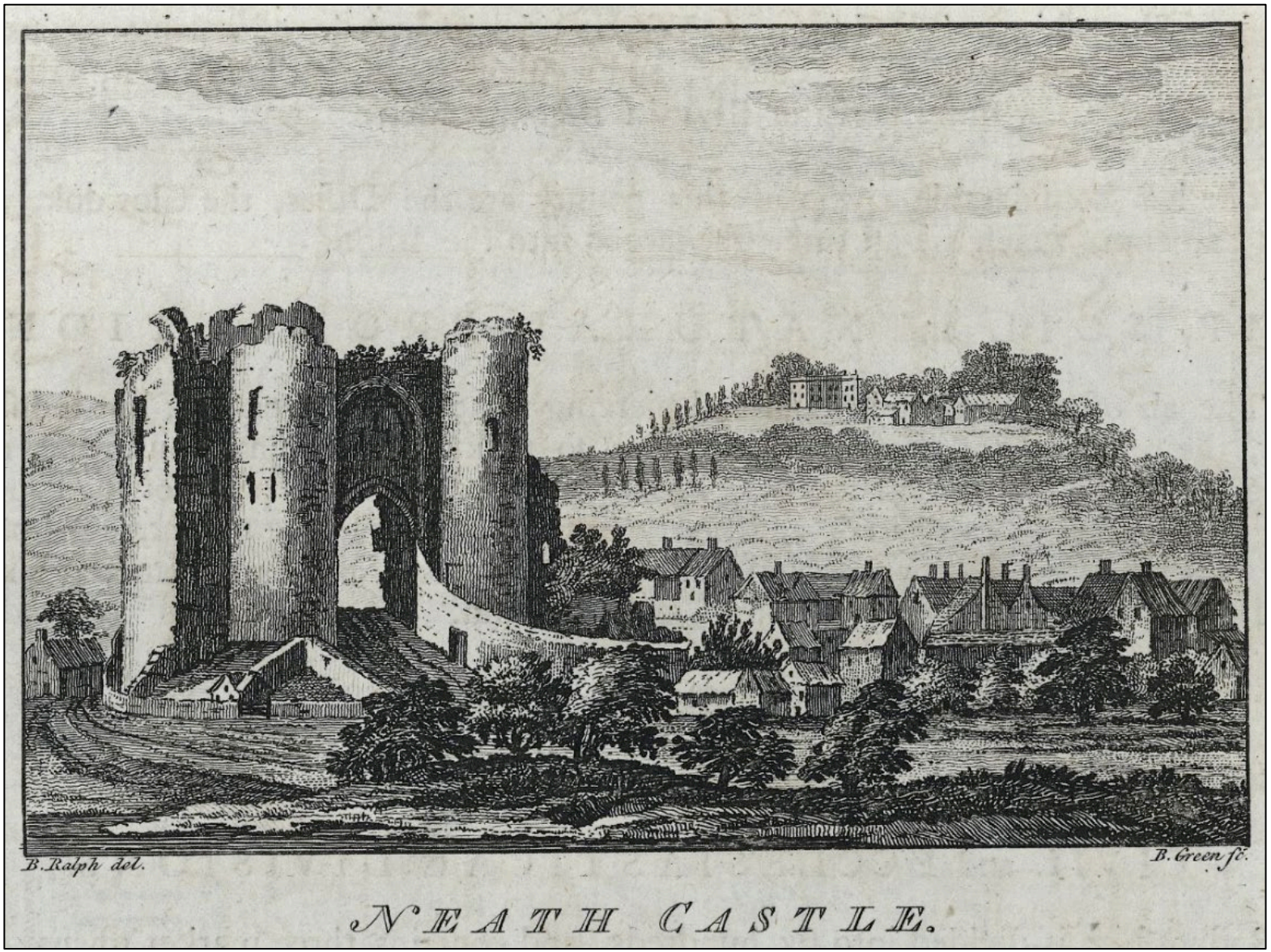

Plate 2. 1760 Neath Castle by Benjamin Ralph. National Library of Wales, Public domain, via Wikimedia Commons.

Plate 3. 1765-70 Neath Castle Glamorganshire, by Richard Wilson, Public domain via Wikimedia Commons.

Plate 4. 1790-1810 Neath Castle by Hendrik-Frans De Cort, The Gnoll and Castle at Neath, Public domain, via Wikimedia Commons.

Plate 5. 5th July 1795 Neath Castle by Warwick Smith. National Library of Wales, Public domain, via Wikimedia Commons.

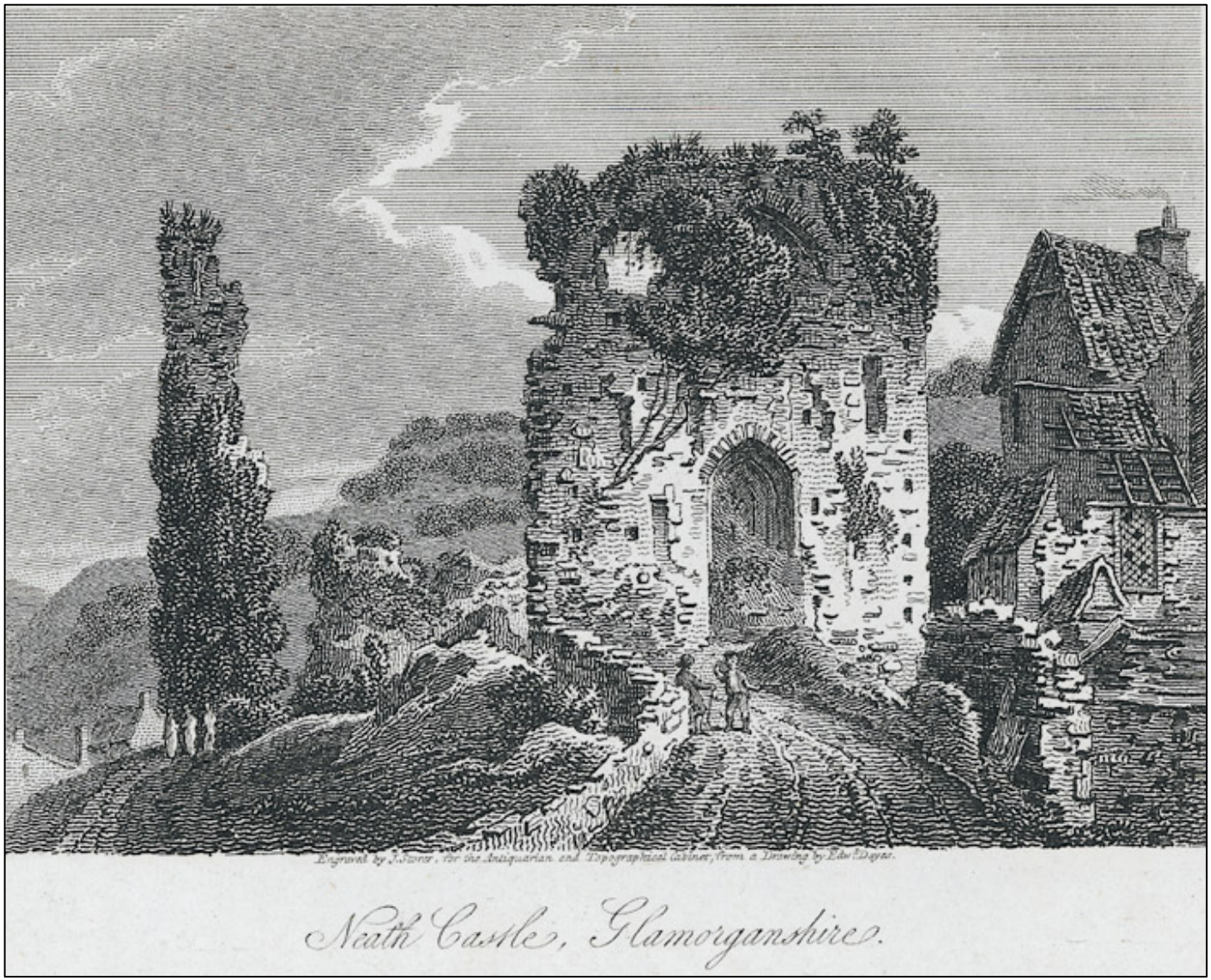

Plate 6. 1807 Neath Castle by Edward Dayes 1763-1804 (artist) and J. Storer 1771-1837 (engraver) National Library of Wales, Public domain, via Wikimedia Commons.

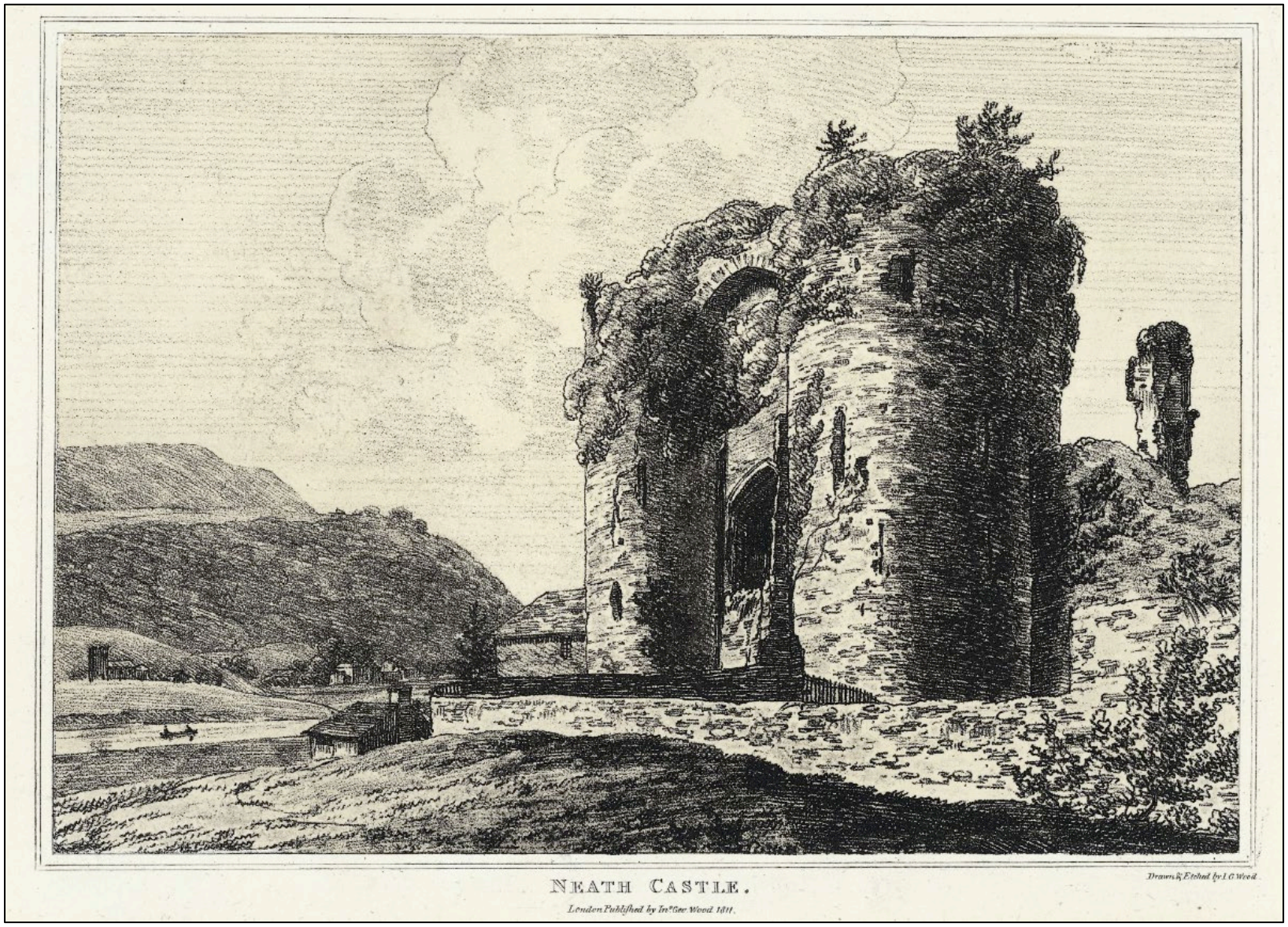

Plate 7.1811 Neath Castle in Woods Rivers of Wales, by John George Wood, National Library of Wales, Public domain, via Wikimedia Commons.

Plate 8. 1821 Neath Castle by Richard Wilson. The 1821 date is erroneous and is a duplicate of his painting dating to 1765-70 (Plate 3). © The Trustees of the British Museum. Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0).

Plate 9. 1845 Neath Castle by Thomas Dugdale and W. Woolnoth, in Curiosities of Great Britain England and Wales, Historical, Entertaining, and Commercial. © Alarmy.

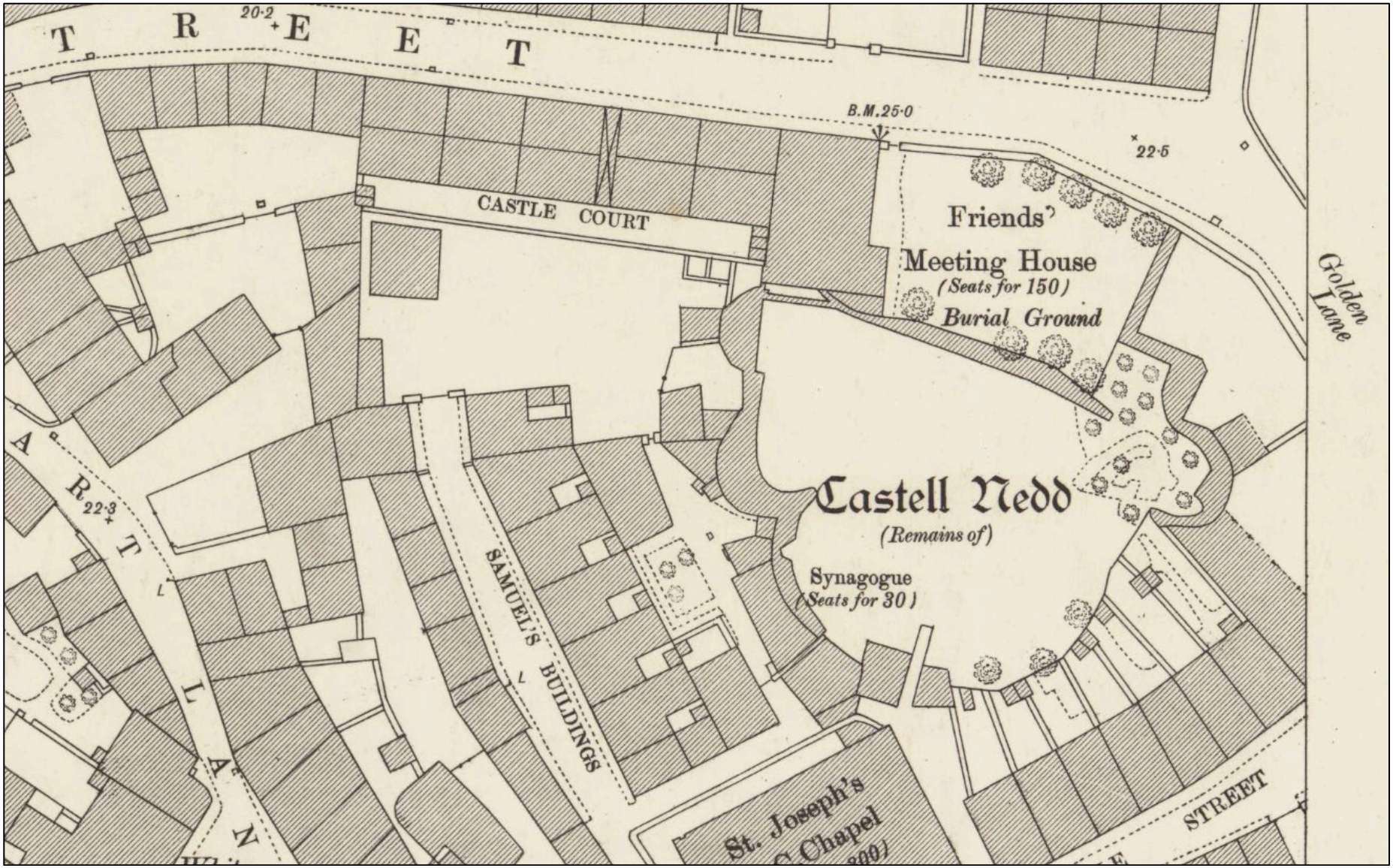

Plate 10. 1876 Neath Town Plan 1-500 - Glamorganshire XVI.9.12, surveyed 1876 and published 1878. © Landmark Information Group.

Plate 11. Oblique view to NE of the collapsing Boundary Wall and Quakers Wall atop the North Curtain Wall.

Plate 12. Nadir view of the collapsing Boundary Wall and Quakers Wall atop the North Curtain Wall.

Plate 13. Oblique view of stratigraphical deposits during dismantling of the Boundary Wall [007] prior to the section collapsing (view south).

Plate 14. Oblique view of stratigraphical deposits during dismantling of the Boundary Wall [007] prior to the section collapsing (view northeast)

Plate 15. View to southeast of controlled demolition of the Boundary Wall [007] following the collapse of the section.

Plate 16. View to east of controlled demolition of the Boundary Wall [007] following the collapse of the section.

Plate 17. View to the east of the excavated and cleaned section (following the collapse) showing the masonry of the Northeast Tower [012], medieval deposits (011) and later back-filling deposits (013, 014 and 015).

Plate 18. View to the east of the excavated and cleaned section (following the collapse) showing the masonry of the Northeast Tower [012], medieval deposits (011) and later back-filling deposits (013, 014 and 015).

Plate 19. View to the south showing the masonry of the Northeast Tower [012], including surviving facing stones, medieval deposits (011) and later back-filling deposits (013, 014 and 015).

Plate 20. Sherds of modern stoneware from deposit (002)

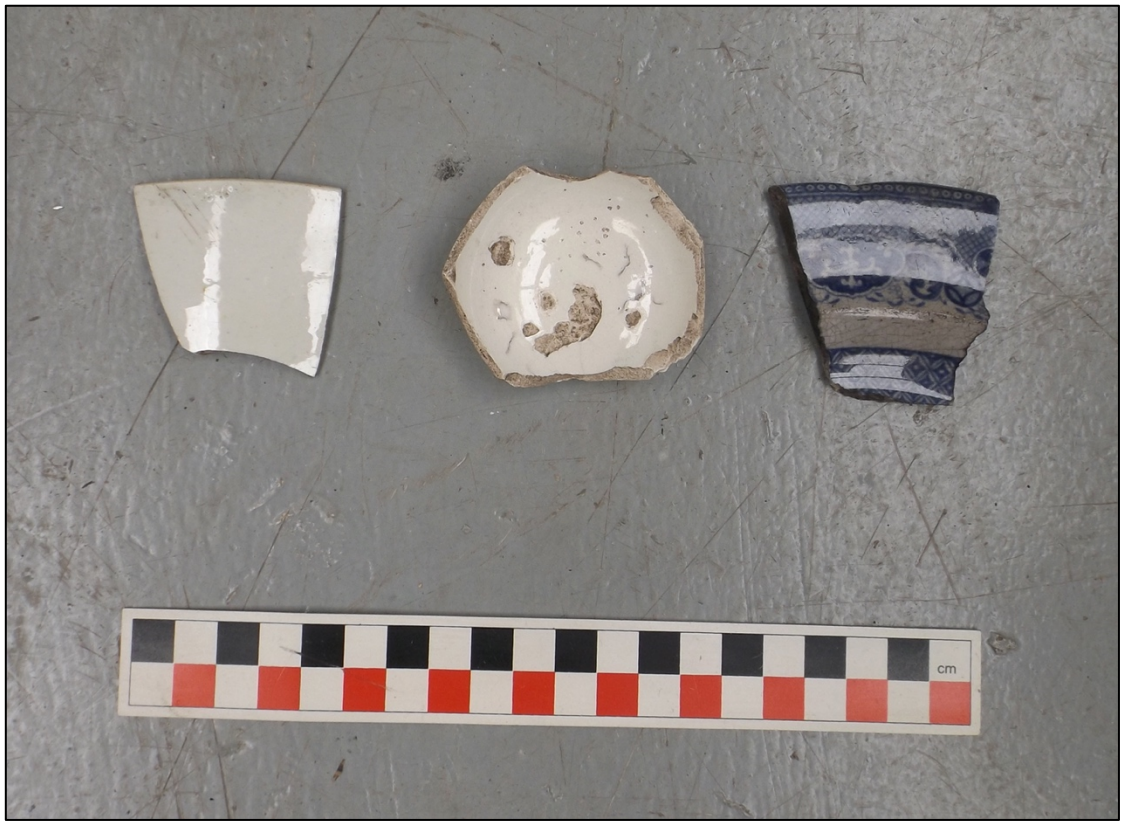

Plate 21. Sherds of modern white earthenware from deposit (002)

Plate 22. Sherd of North Devon Gravel-tempered ware (Post-medieval) from deposit (002)

Plate 23. Modern glass finds from deposit (002)

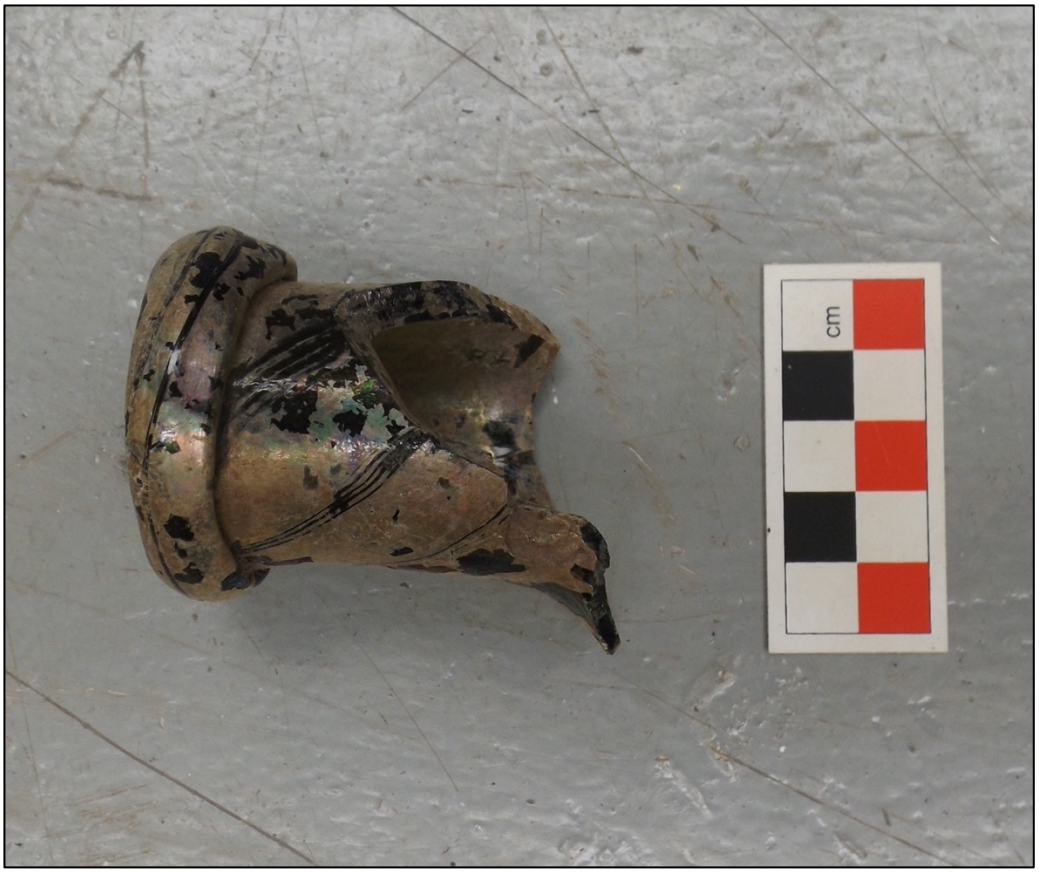

Plate 24. Spout of Post-medieval flask from deposit (002)

9.3 Appendix III – Context Inventory

During the archaeological watching brief, which observed the dismantling by hand of around 5.5m of the collapsing wall as well as limited excavations into the material it retained, several deposits were encountered and were recording in section. The initial section was recorded following the dismantling of the collapsing Boundary Wall. Due to the highly unstable nature of the deposits behind the Boundary Wall the section collapsed shortly after exposure. A second section was cleaned following the collapse revealing Post-medieval dumping behind the Boundary Wall, which covered the remains of the medieval northeast tower's core and several areas of hitherto unknown facing stones.

Context	Type	Depth/ dimensions	Description	Period
001	Deposit	0m – 0.15m	Dark brown silty clay loam topsoil with frequent rooting throughout.	Modern
002	Deposit	0.15–0.6m	Highly friable silty clay, mid-brown in colour, with frequent demolition material throughout (e.g. masonry and patches of mortar). A small ceramic and glass assemblage also retrieved from this deposit.	Modern
003	Deposit	>0.73m	Dark brown silty clay, very friable, with fragments of ashy lime mortar throughout.	Post-medieval/ modern
004	Deposit	>1.25m	Dark brown silty clay with frequent sandstone cobbles throughout, ranging in size from 0.15–0.4m.	Post-medieval/ modern
005	Structure		Quakers Wall (North Curtain Wall).	Post-medieval
006	Structure		North Curtain Wall of Neath Castle.	Medieval
007	Structure		Collapsing Boundary Wall.	Post-medieval
011	Deposit	0.15m thick	Medieval deposit containing large stone cobbles intermixed with fragments of oyster shell and misc. marine shell, held in a matrix of dark brown silty clay. Possibly a midden or palaeo-horizon deposit.	Medieval
012	Structure		Medieval wall core of northeast tower, with two areas of surviving facing stones. The core is composed of large (<0.3m) rounded riverine cobbles held in a buff-coloured lime mortar. Surviving facing stones are of coursed tabulated limestone held by a buff-coloured lime mortar.	Medieval
013	Deposit	1.3m thick	Interdigitised tip lines forming a significant dumping episode over the core and lower facing stones of the medieval northeast tower. Deposit is light brown and white in colour and very friable containing crushed lime mortar and small (<0.15m) stones. Possibly contemporary with the construction of the 18th century Boundary Wall.	Post-medieval
014	Deposit	0.4m thick	Dark-brown gritty, friable deposit containing crushed lime mortar and small (<0.12m) stones forming a dumping episode.	Post-medieval

015	Deposit		Light-brown gritty rubble deposit containing crushed lime mortar and small (<0.1m) stones forming a dumping episode.	Post-medieval
016	Structure		Small section of masonry walling surviving to eight rough courses built over North East Tower foundations and keyed into the Boundary Wall [007]. Dimensions 2.6m long x 0.94m high x 0.41m wide.	Post-medieval

9.4 Appendix IV – Finds Register

All finds derived from deposit (002), which was modern in origin and situated on the eastern side of collapsing wall [007]. These finds included modern sherds of pottery as well as modern and Post-medieval glass.

Ceramics

Context	Pottery type	Description	Colour	Number	Weight (g)	Date	Notes
002	earthenware	modern ceramics	white	3	63	modern	rim sherd from a plate with blue transfer-printed decoration, discoloured perhaps burnt; rim and base from two different open vessels, the base has pitted surfaces and a small firing scar on the underside
002	stoneware	modern ceramics	buff	5	419	modern	joining flagon rim and handle sherds, marked on shoulder 'PRICE BRIS…'; rim from a second flagon; base sherd from a large vessel, broken along a firing fault which has partly filled with glaze; angled body sherd from a large vessel with two-tone brown external glaze, the darker glaze has dribbled down the body
002	earthenware	NDGTW	buff	1	127	post med	base sherd, internal green-brown glaze

Glass

Context	Glass type	Colour	Number	Weight (g)	Date	Notes
n/a	bottle	dark green	2	882	modern	Almost complete cylindrical beer bottle, unmarked, rim missing; lower section from a cylindrical beer bottle, embossed on body 'ROG..S JACOB St BREWERY BRISTOL', enclosing a roundel with crossed bottles within, surrounded by 'TRADE MARK', embossed under base 'P & R B'
n/a	bottle	blue-green	3	446	modern	rim and part of neck, Codd-type mineral water bottle; base, body and rim, cylindrical jar, non-joining but from same jar, mould lines, occasional bubbles, lid-seated rim, embossed under base 'B & Co Ld K 165'
n/a	bottle	dark green	1	61	?18th C	rim and neck from a wine bottle or, more likely, a flask, irregular applied rim, dia 46mm approx, weathered

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