ARCHAEOLOGY WALES

Field evaluation:

National Slate Museum, Gilfach Ddu, Gwynedd

September 2024

Report No. 2312

By

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REGISTERED ORGANISATION CIfA

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Prepared for Amgueddfa Cymru

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Summary

In August 2024, Archaeology Wales Ltd was commissioned by Amgueddfa Cymru to carry out an archaeological field evaluation at the National Slate Museum, Llanberis, in association with works to create an Interpretation Hub for The Slate Landscape of North-west Wales World Heritage Site at the National Slate Museum, Llanberis, Caernarfon LL55 4TY. National Grid Reference SH 58542 60248. The local planning authority is Cyngor Gwynedd Council (CGC).

A total of four trenches and eight test pits were set out across the site. However, it was not possible to excavate Test Pits 10, 11 and 12, due to the presence of buried services. Archaeological deposits and features were encountered within four of the test pits and three of the trenches. The archaeological features within Trenches 2 and 3 likely relate to a railway shown on an undated Vaynol Estate Map. The map does not show the Dinorwic Workshop Complex and so must predate 1870. The remaining features all relate to the construction and use of the workshop complex.

Crynodeb

Ym mis Awst 2024, comisiynwyd Archaeology Wales Ltd gan Amgueddfa Cymru I gario allan mantoliad cae archeolegol yn yr Amgueddfa Llechi Cymru yn gysylltiedig â Gwaith I greu Hwb Cyd-dreiddiad ar gyfer y Safle Treftadaeth y Byd Tirwedd Llechi Gogledd-orllewin Cymru yn yr Amgueddfa Llechi Cymru, Llanberis, Caernarfon LL55 4TY. Cyfeirnod Grid Cenedlaethol SH 58542 60248. Yr awdurdod cynllunio lleol yw Cyngor Gwynedd Council (CGC).

Roedd cyfanswm o bedwar ffos ac wyth twll profi ei gosodi ar draws y safle. Ond nad oedd yn bosib agor twll profi 10, 11 a 12, oherwydd gwasanaethau wedi'i cloddi. Roedd dyddodion a nodweddion archeolegol wedi ei darganfod o fewn pedwar twll profi ac o fewn tair ffos. Mae'r nodweddion archeolegol o fewn ffosydd 2 a 3 yn debygol o fod yn gysylltiedig â rheilffyrdd sydd yn dangos ar fap Ystâd Vaynol sydd heb ei dyddio. Nad yw'r map yn dangos y Cymhlyg Gweithdai Dinorwig ac yna rhaid iddo fod yn gynharach na 1870. Mae'r nodweddion arall yn perthyn i'r adeiladu a defnydd y cymhlyg gweithdai.

1. Introduction

1.1.1. In August 2024, Archaeology Wales Ltd (AW) was commissioned by Amgueddfa Cymru to carry out a field evaluation at the National Slate Museum, Llanberis, Caernarfon, LL55 4TY, centred on NGR SH 58542 60248 (Figure 1). The work was conducted in advance to the proposed refurbishment of the National Slate Museum and associated works to create an Interpretation Hub. The local planning authority is Cyngor Gwynedd Council (CGC).

1.1.2. A total of four trenches and eight test pits were located within the proposed development area to assess the presence/absence and character of the archaeological resource within the site (Figure 2). However, only five of the test pits were excavated due to the presence of buried services. Archaeological deposits and features were encountered within four of the test pits and three of the trenches.

1.1.3. A Written Scheme of Investigation (WSI) was prepared by Irene Garcia Rovira MCIfA, Archaeology Wales Project Manager, prior to the commencement of works. The WSI was approved by Heneb Gwynedd Archaeological Planning Service (Heneb GAPS) prior to work commencing on site.

1.1.4. The fieldwork took place between the 19th of August 2024 and the 5th of September 2024. It was carried out by Siân Thomas (AW Project Officer), Lucy Morrison, Hannah Lycett-Smith, Menna Griffiths and Sarah Popplewell of Archaeology Wales.

1.1.5. The Archaeology Wales Project number is 3124, the site code is NSM/24/EV.

1.1.6. All works were carried out in accordance with the standard required by The Chartered Institute for Archaeologist's *Standard for Archaeological Field Evaluation* (2023) and the *Universal Guidance for Archaeological Field Evaluation* (2023).

2. Site Description and Archaeological Background

2.1. Site Description

2.1.1. The National Slate Museum is located on the outskirts of Llanberis, about 13km southeast of Caernarfon and 18km south of Bangor. Llanberis is located 400m to the southwest of the site. The site, part of the Slate Landscape of Northwest Wales World Heritage Site, is located at National Grid Reference SH 58542 60248.

2.1.2. The site is underlain by the by the Llanberis Slates Formation. This is a sedimentary bedrock formed during the Cambrian period. No superficial deposits are recorded across the site (BGS 2024).

2.2. Historical Background

2.2.1. The Dinorwic Workshop Complex, or Gilfach Ddu was built in 1870 on land largely created by the tipping of slate waste from Wellington and/or Muriau quarries into Llyn Padarn. The workshops included saw-sheds, patternmaking shops, a foundry, blacksmith shops, stores, engine sheds, a canteen and a chief engineer's house. Up until 1925 all machinery was powered by a De Winton water wheel, later replaced by a Pelton wheel (Cadw 1999).

2.2.2. Historic map regression documents the workshop complex for the first time in the OS County series map of 1890. A railway system runs into the main building in a north to south direction. The area to the west is dominated by quarry tipping, while structures associated with the quarry are documented to the east. The first reference to the museum is documented on the 1975 OS map edition.

2.2.3. The former Dinorwic Workshop Complex was registered as a Grade I listed building in 1999 (LB 22656). Furthermore, three elements associated with Dinorwic Quarry are scheduled (CN 163): the Hafod Owen Winding Engine, the locomotive shed and the water wheel and housing. These elements are within

and adjacent to the museum building.

2.2.4. The development area is within the Slate Landscape of Northwest Wales - Dinorwig Slate Quarry Mountain Landscape World Heritage Site (UNESCO Ref No. 1633). The WHS is formed of six areas, which together represent an outstanding example of an industrial landscape that was profoundly shaped by the quarrying and mining of slate. These quarries and mines served not only a national market but also an international one, with the roofing slates and architectural slabs produced in these quarries being transported around the world (Anon 2020).

2.2.5. Archaeology Wales Ltd was commissioned to undertake an Archaeological Watching Brief in December 2023 (Morrison 2024), followed by a Desk Based Assessment in July 2024 (Stratton *et al* 2024) within the grounds of the National Slate Museum.

2.2.6. The watching brief (Morrison 2024) confirmed the position of the nine exploratory holes and monitored the soakaways and hand dug pits. The results largely evidenced the quarry waste upon which the former Dinorwic slate quarry workshops were built. Moreover, the remains of a wall were seen in Soakaway SA02. The examination of historic maps indicates that the wall may have been a boundary/retainer wall belonging to a track documented on the 1839 Tithe map of the studied area.

2.2.7. Quarry activity ceased in 1969, and the area was subsequently transformed into a museum, which opened in 1972.

3. Aims and Objectives

3.1.1. The main objective of the archaeological evaluation was to confirm the presence or absence of archaeological remains and to sufficiently characterise these to inform the potential requirement for any further archaeological work.

3.1.2. The general aim was to:

- Determine the presence or absence of buried archaeological remains within the Site
- Investigate and record all deposits and features of archaeological interest within the Site
- Provide a sufficient level of information to allow determination of any additional requirements for mitigation
- Disseminate the results of the fieldwork through an appropriate level of recording.

3.1.3. A report will be produced that will provide information which is sufficiently detailed to allow the archaeological resource to be better understood. The information could then be used to help inform further archaeological work undertaken in association with the proposed development.

4. Methodology

4.1.1. The work was undertaken to meet the standard required by The Chartered Institute for Archaeologist's *Standard for Archaeological Field Evaluation* (2023) and the *Universal Guidance for Archaeological Field Evaluation* (2023).

4.1.2. A total of four trenches and eight test pits were set out across the site (Figure 2). However, it was not possible to excavate Test Pits 10, 11 and 12, due to the presence of buried services. Trench 2 was also shortened by two metres due to the presence of an electric cable along its southern edge. The sizes of each Test Pit and Trench, including maximum depth, are given in Table 1.

Test Pit/Trench No.	Length (m)	Width (m)	Depth (m)
1	5.8	3.3	0.75
2	7	5	0.55
3	6.9	4.1	0.6
4	5.5	3	0.4
5	0.5	0.5	0.29
6	1.2	0.7	0.06
7	1.2	1	0.25
8	0.5	0.5	0.5
9	0.5	0.5	0.47

Table 1: Test Pit and Trench measurements.

4.1.3. The trenches were excavated to the top of the archaeological horizon or until a suitable depth was reached and it was clear that no archaeological features or deposits were present. The natural substrate was not reached in any of the trenches.

4.1.4. The test pits were excavated by hand while the four trenches were excavated using a tracked 360º mechanical excavator with a toothless ditching bucket. The removal of the overburden soils was done under the supervision of a competent archaeologist.

4.1.5. Any archaeological remains encountered were hand cleaned, excavated, and recorded through the use of proforma recording sheets, high resolution digital photography, and GPS.

5. Evaluation results

5.1. Introduction

5.1.1. There were five test pits, and four trenches excavated across the site, with features being encountered all of the test pits and three of the trenches. Trench 1 was devoid of any archaeology.

5.1.2. The natural horizon was not encountered in any of the trenches, which is due to the fact that the National Slate Museum is located across a levelling deposit of quarry waste, with the northern section of the site having been partially

reclaimed from the lake. The area was levelled and extended into Llyn Padarn during the 19th century, prior to the construction of the Dinorwic Workshop Complex, or Gilfach Ddu in 1870 (Stratton *et al.*, 2024). The levelling deposit of slate waste was encountered in Test Pit 5, as well as Trenches 1 to 4.

5.1.3. The uppermost deposit across all of the trenches and test pits was a modern gravel formed of small angular slate chippings, which has been laid down by the National Museum in recent years to form a safe surface for visitors accessing the site (see Appendix 1 for the Context Inventory).

5.2. Trench 1

5.2.1. The basal deposit encountered within Trench 1 was slate waste (101), which had a minimum thickness of 0.55m (Figure 3). The deposit was comprised of loose large to medium sized slate fragments. Occasional lenses of dark greyish-black silt were evident within the deposit.

5.2.2. This was overlain by deposit (100), which was a dark greyish-black silt with frequent small angular slate fragment inclusions. The deposit had a maximum thickness of 0.2m.

5.3. Trench 2

5.3.1. Trench 2 was excavated to a maximum depth of 0.55m (Figure 4). The earliest deposit encountered within the trench was slate waste (203), which was recorded along the western half of the trench. The deposit was the same as (101) and measured 7m in length by 1.7m in width and had a thickness of 0.1m. The deposit abutted wall (204), which was oriented north to south and measured 7m in length by 0.6m in width and had a minimum depth of 0.5m. The wall had been constructed of large slate slabs with no obvious bonding material (Figure 4). It was likely constructed in order to retain deposit (203).

5.3.2. The wall was overlain by slate waste deposit (208), which had been deposited along the eastern half of the trench. The deposit measured 7m in length by

2.45m in width and had a minimum thickness of 0.5m. The deposit was similar in nature to (203) and (101), however, no lenses of silt were present within it.

5.3.3. The deposit had been cut by [206] which was a construction cut for stone lined drain (205). The drain was orientated north-north-west to south-south-east and measured 5m in length by 0.6m in width and had a depth of 0.3m (Figure 5). The drain was constructed from slate with the base of the drain having been lined with thin slabs, the sides consisted of small rectangular blocks, which supported the large cap stones. The drain contained fill (207), which was a dark greyish-black silt, with moderate small slate inclusions. The fill had a maximum thickness of 0.03m.

5.3.4. The drain was overlain by (201), which was a deposit of dark grey black silt that had a thickness of 0.4m. The deposit was only evident within the eastern half of the trench, having a maximum width of 2.5m. It abutted deposit (202) which was recorded within the western half of the trench, having a maximum width of 1.7m. Deposit (202) was a mid yellowish-brown silty sand, which had a maximum thickness of 0.3m.

5.3.5. Both deposits were overlain by modern gravel deposit (200), which was the same as (100) and had a maximum thickness of 0.25m.

5.4. Trench 3

5.4.1. The trench was excavated to a maximum depth of 0.8m, with the basal deposit (303) being encountered at a depth of 0.2m (Figure 6). The deposit was formed of slate waste, the same as (101) and had a minimum thickness of 0.4m.

5.4.2. The deposit had been cut by wall (304), which measured 5.4m in length by 0.6m in width and had a minimum depth of 0.8m (Figure 6). The wall was broadly orientated north to south and was constructed in the same manner as wall (204). It is possible that these walls formed part of the same, larger feature.

5.4.3. Flagstones (308) had been laid over the northern section of the wall and

continued to the east beyond the limit of excavation. These likely formed part of the inner courtyard surface and were contemporary with the construction of the Gilfach Ddu workshops.

5.4.4. Dark greyish-black silt deposit (310) was recorded in the south-eastern corner of the trench and appeared to overlay wall (304). The relationship was slightly uncertain due to later truncations and disturbance. The deposit had been cut through by brick structure (305). The structure measured 1.4m in length by 0.3m in width and 0.35m in height. The bricks were key shaped refractory bricks and had likely come from a chimney, possibly one located within the site, although this is impossible to confirm. The narrower inside faces of the bricks were vitrified and so it is likely they were originally part of the foundry chimney. The purpose of the brick structure was unclear (Figure 7).

5.4.5. The bricks were overlain by large slate slab (302), which is likely modern in date and was placed to form part of the modern surface of the museum courtyard. The slab measured in excess of 1.5m in length by 0.64m in width and had a thickness of 0.09m.

5.4.6. Along the western side of the slab was concrete deposit (301), which measured 1.7m in length by 0.35m in width and 0.36m in thickness (Figure 7). It contained the remains of a linear impression, likely from an iron bar possibly part of a rail line. The relationship of the concrete to slab (302) is not certain. The eastern side of the concrete was flat, suggesting it had been poured up against a solid structure, however, that is unlikely to have been slab (302) as the slab was not as thick as the concrete and the two did not abut. It is then likely that concrete (301) is earlier than the slab and may have been poured against wall (304), but it is not possible to be certain.

5.4.7. Mid orange-brown sand deposit (311) was recorded overlying flagstones (308) and measured 3m in length by 1.10m in width and 0.25m in thickness. This was overlain by modern slate gravel (300), which had a maximum thickness of

0.2m.

5.5. Trench 4

5.5.1. Trench 4 was excavated to a maximum depth of 0.4m, with basal deposit (402) encountered at a depth of 0.33m (Figure 8). The deposit was formed of slate waste, the same as evidenced in Trenches 1 to 3.

5.5.2. The deposit was overlain by (401) which was a dark greyish black silt with lenses of yellowish brown sand and slate. The deposit appears to have been a mixed dumped layer potentially used to level this area of the inner courtyard. There were two rail sleepers recorded within this deposit in the southern limit of excavation, one of which still had the chair preserved. The deposit had a thickness of 0.31m.

5.5.3. Drain (403), which was located in the north-west corner and had been cut into (401). The drain had been constructed from brick and the iron grill was still in situ.

5.5.4. The drain was overlain by modern slate gravel (400), which had a thickness of 0.02m.

5.6. Test Pit 5

5.6.1. The test pit had a maximum depth of 0.29m. The basal deposit was (506), which was the same slate waste evident across the site. The deposit had a thickness of 0.12m (Figure 9).

5.6.2. It had been cut through by [502], which was the construction cut for foundations (503). The cut measured in excess of 0.5m in length by 0.25m in width with a depth of 0.2m. The foundations were formed of a light brownish-yellow mortar with small to medium slate inclusions. The foundations supported wall (504), against which the test pit had been excavated.

5.6.3. Abutting the foundations was iron plate (505) which was not fully revealed but had a thickness of 0.07m. It is possible that the slab related to a drain.

5.6.4. This was overlain by dark grey black silt deposit (501), same as (401), which had a thickness of 0.15m. This was in turn overlain by modern slate gravel (500), which had a thickness of 0.02m.

5.7. Test Pit 6

5.7.1. Test Pit 6 had a maximum depth of 0.06m. The basal deposit encountered within the test pit was flagstone (602), which likely formed part of the original courtyard surface (Figure 10). This was overlain by (601), which was the same dark greyish-black silt as seen in both Test Pit 5 and Trench 4. It had a thickness of 0.05m.

5.7.2. The silt deposit was overlain by slate gravel (600), which had a thickness of 0.01m

5.8. Test Pit 7

5.8.1. Test Pit 7 had a maximum depth of 0.25 (Figure 11). The basal deposit within the test pit was dark greyish-black silt (704), which was the same silt deposit evident across Test Pits 5 and 6 and Trench 4. The silt had a thickness of 0.15m.

5.8.2. The silt had been cut by [703], which was the cut for a slate lined gully (702) that ran along the southern outside face of the wall against which the test pit had been located. The gully had a slate base and side and had been constructed flush with the wall probably to collect rain water. A downpipe was noted just to the west of the test pit.

5.8.3. The gully had become backfilled with deposit (701), which was a mid brownish-grey silt with frequent small slate inclusions. The backfill had a thickness of 0.06m. It was overlain by (700), which was the modern gravel deposit evident across the site that had a thickness of 0.07m.

5.9. Test Pit 8

5.9.1. The test pit was located inside one of the workshops along the southern range of the building and was dug alongside an internal wall.

5.9.2. The test pit had a maximum thickness of 0.5m (Figure 12). The basal deposit was mid brownish-red sand (803), which had a thickness of 0.39m. The sand had been cut by [806], which was the construction cut for the internal wall. The cut measured 0.5m in length by 0.31m in width and had a depth of 0.39m. The cut contained a stepped slate foundation (805). The foundation supported internal wall (804).

5.9.3. The construction had been backfilled by (802), which was a dark brownish-black sand. This was overlain by an ash deposit, which had a thickness of 0.09m. The ash was in turn overlain by (800), which was a dark brownish-black sand that measured 0.02m in thickness. The sand formed part of the modern floor level within the workshop, with flagstones also evident within the room.

5.10. Test Pit 9

5.10.1. Test Pit 9 had a maximum depth of 0.47m with the basal deposit (903) being encountered at a depth of 0.42m. The deposit consisted of slate waste, evident across the rest of the site (Figure 13).

5.10.2. This had been cut by [901], which was the construction cut for the lift, which accesses the wheel pit above. The cut contained concrete foundation (902), which measured in excess of 0.8m in length and 0.45m in thickness. The foundation was not fully exposed due to its continuing depth.

5.10.3. Overlying this was deposit (900) which was the modern late gravel seen across the site. It had a thickness of 0.42m.

6. Finds

6.1. Overview

6.1.1. A total of 57 iron objects, twelve sherds of pottery, two fragments of glass, one animal bone and two bricks were collected during the evaluation. A full finds quantification table is presented in Appendix II.

6.2. Iron – Dr Tim Young

6.2.1. The submitted assemblage comprised a total of 57 items, weighing a total of 10.4kg, derived from three archaeological contexts. The majority of the items (47 pieces) derive from context (303), with lesser assemblages from contexts (401) (7 pieces) and (506) (3 pieces). The full catalogue is presented in Appendix III.

Methods

6.2.2. All materials were examined visually, using a low-powered binocular microscope where required. X-radiographs of the objects have also been consulted. All measurements quoted are in mm, although the objects, where appropriate, would have been designed to dimensions in inches.

6.2.3. This assessment was conducted in September 2024 and was commissioned by Dr Rhiannon Philp of Archaeology Wales

Results

Context (303)

6.2.4. Item #1 is a substantial (560mm x 56mm x 12mm) wrought iron bar with three holes along its axis. The use of such a bar is not intrinsically determinable.

6.2.5. Item #2 (a right-angled corner, 103mm across, fashioned from wrought iron) is likely to have a structural purpose, but that purpose is not specifically identifiable.

6.2.6. Item #3 is a small cast piece with parallel ridges (one with a central 'tooth') together with a central circular large hole. This item is probably best interpreted as part of a clamp. The most common modern use of a component of this type is to secure car batteries onto their housing and this item may have fulfilled a similar mechanical role.

6.2.7. Items #4 to #18 are all examples of fastenings (?rivet, bolts, nuts, nails, ?washer) that are typical of the range of fasteners present in 19th century

assemblages. Many of the items show evidence for being cut (the precise tool employed for the cutting is not clear, but they appear to have been by shears or cold-set perhaps.

6.2.8. Items #19 and #20 are fragments of two large chain links (formed from wrought iron rod of 25mm and 22mm diameter respectively), similar severed – in these cases apparently by a single cut traversing both sides of the link.

6.2.9. Items #21 to #29 are fragments of iron rod varying from 13 to 25mm (suggesting stock sizes from ½ to 1 inch). This items almost all show clear evidence of cutting, although with these items they could equally be residual fragments of stock as be debris from dismantling/demolition.

6.2.10. Smaller diameters are represented by items #30 to #34 and these ae classed as wire. With the smaller diameters the origin of the fragments is even less clear, with fragmentation by corrosion and additional potential origin.

6.2.11. Item #36 comprises two strands of tightly twisted wire.

6.2.12. Rectangular- and square-sectioned wrought iron bar fragments are represented by item #36 to #41. Once again, one of these items shows oblique cutting, similar to the items previously described from dismantling/ demolition.

6.2.13. Items #42 and #43 are small fragments from fractured cast iron plates.

6.2.14. Items #44 and #45 are fragments of wrought iron. Piece #44 is an unidentifiable fragment, but #45 is a trough-shaped item, tapering to a point. It is unclear whether this was a deliberate form, or whether, perhaps more likely, this is a longitudinal spall from an object such as a small pick.

6.2.15. Item #46 is a small piece of cast iron that appears to be a worn object fragment but is insufficient to determine from what it was derived.

6.2.16. Item #47 is a small piece of ferruginous concretion, probably purely weathering products and not containing an artefact.

Context (401)

6.2.17. Item #48 is a substantial iron cotter pit, approximately 150mm in overall length. Pins of this size were commonly employed to secure the cast iron wheels of drams to their axles but they were also employed in other settings within both steam power and structures.

6.2.18. Corrosion/accretion obscures item #49, which appears to show a curving length of round bar reducing to a chisel tip. This might perhaps be interpretable as a curved spike of a form used to attach rails (or their chairs) to sleepers, but it is insufficient to confirm this interpretation.

6.2.19. Item #50 is a small fragment of a boot heel tap.

6.2.20. Items #52-54 are pieces of ferruginous concretion, dominated by coal, coke and clinker. Some small incorporated particles, particularly millimetric spheroids, might be potentially be from iron working (hammerscale) rather than being clinker droplets

Context (506)

6.2.21. Items #55 and #56 are fragments of concretion, similar to those from context (401).

6.2.22. Item #57 is a concretion containing a tapering void indicating the former presence of a small iron object, probably a nail.

Interpretation

6.2.23. The materials mostly appear to represent the deposition of scrap, rather than more casual loss or discard. Most of the items fall into the categories of either offcut/remainders from stock materials or debris generated by dismantling or demolition.

6.2.24. Very few of the items are specifically identifiable; most are generic components/materials.

6.2.25. The identification of deposits rich in coal and coal burning waste, presumably

from steam boilers, may be another outcome.

Further work

6.2.26. There is no further work necessary on the assemblage.

6.3. Pottery

6.3.1. Pottery was recovered from deposits within Trenches 2, 3 4 and Test Pit 5 (Table 2). All the sherds were of 19th to 20th century date.

Trench/Test Pit	Context	Fabric	Sherd Count	Weight (g)
2	208	Earthenware	1	20
3	303	Cream Ware	1	1
4	401	Earthenware	1	19
5	501	Cream ware	9	44

Table 2: Pottery recovered during the evaluation

6.3.2. The Earthenware sherd from (208) was unglazed and derived from the base of a vessel, likely a jug or jar. The other Earthenware sherd from (401) was a pink-bodied brown glazed vessel, likely to be a drinking vessel.

6.3.3. The Creamware sherd from (303) was very small and abraded and is thought to have been intrusive into the deposit.

6.3.4. The sherds from (501) all belonged to the same vessel. Part of the base of the vessel survived and preserving part of a stamp. 'Newcastle' can be seen around the outer edge with '1960' in the centre. It is likely the jar was produced my Mailings pottery (Mailing History website).

6.4. CBM

6.4.1. A total of two bricks were recovered from brick structure (305) within Trench 3, which weighed 4750g.

6.4.2. The bricks were wedge shaped and were key shaped refractory bricks and had a deposit of vitrified material on their narrower faces. They were likely

originally part of the foundry chimney, and they date to the 19th century.

6.5. Glass

6.5.1. A single fragment of rectangular apothecary bottle likely dating to the 19th century was recovered from (303) in Trench 3. The fragment displayed a partial word "…UCE" embossed on the surface. This may be part of a brand name or linked to the contents of the bottle.

6.5.2. A further fragment of bottle neck from a similar type of bottle was recovered from the same context but was not part of the same bottle and had a slightly clearer green colour.

6.6. Animal Bone

6.6.1. A single animal bone was recovered from Test Pit 5 deposit (501). The bone is likely a tibiotarsus from a small to medium sized bird.

7. Environmental Archaeology

7.1. Overview

7.1.1. A single sample of approximately 5 litres was taken from fill (207) within drain (205). The sample is currently being processed and the results will be added to this report once complete. The sample was returned to Archaeology Wales' Finds and Environmental processing facility, where it was processed using a three tank, recycled water flotation system. During the flotation process, a 500µm mesh was used to collect the residue and a 300µm mesh to collect the flot. The residue was then washed through a sieve stack containing 10mm, 5mm, 2mm and 500µm mesh sizes. Each fraction was kept separate to aid drying.

7.1.2. Quantities of remains are described as occasional (<5 items), moderate (5-25 items), frequent (25-100 items) or abundant (>100 items).

7.2. Results

7.2.1. The sample produced frequent fragments of slate and clinker, a byproduct of the burning of coal. No further items of archaeological interest were present and it is likely that this is a backfill or levelling deposits comprised of waste materials from the surrounding area.

7.2.2. No further work is recommended.

8. Discussion and Interpretations

8.1.1. A total of five test pits and four trenches were excavated within the proposed development area to assess the presence, absence, and character of any archaeological remains. Archaeological features and deposits were encountered in four of the test pits and three of the trenches.

8.1.2. The basal deposits (303) and (506) in Trenches 3 and 5 contained a moderate quantity of iron artefacts which have been interpreted as scrap consisting of offcut/remainders from stock materials or debris generated by dismantling or demolition of larger objects. The majority of the artefacts were recovered from the area of Trench 3. These predate the construction of the structures described below.

8.1.3. Walls (204) and (304), recorded within Trenches 2 and 3, are thought to relate to the same structure and predate the construction of the Dinorwic Workshop Complex in 1870. An undated Vaynol Estate Map (Figure 14) depicts a railway cutting running north to south through the eastern section of the site. The walls recorded within these two trenches are believed to relate to the railway and formed part of the retaining walls which appear to be depicted on the map along the western and eastern edges of the rail line.

8.1.4. The remaining features relate to the construction and use of the Dinorwic Workshop Complex. The flagstones within Trench 3 and Test Pit 6 are thought

to be the original inner courtyard surface, and the foundations within Test Pit 8 relate to the construction of the workshop. The foundations within Test Pit 5 relate to the construction of a building along the western edge of the inner courtyard, which was added to the Workshop Complex between 1889 and 1900 as shown by the historic mapping (Stratton *et al.* 2024).

8.1.5. The drain within Trench 4 and the probable rain water gully in Test Pit 7 were likely added at a later date. A levelling deposit was recorded across the south-western section of the inner courtyard, which was formed of a dark greyish black silt, likely waste from industrial processes that were occurring within the workshops. This included the inclusion of a small amount of scrap metal. Both of the drain and the gully had been cut into this deposit and so post-dated the construction of the workshop.

8.1.6. In addition to wall (304) a small brick feature was recorded within Trench 3. The bricks were reused from a chimney, as is indicated by their shape and the vitrification present on some of the brick faces. Where these bricks were sourced from is currently unknown. They may have come from a chimney within the site, but this is unclear. The purpose of the feature is not clear, and it did not appear to have a relationship with any of the other features and deposits recorded within the trench.

8.1.7. There were two rail sleepers within deposit (401) in Trench 4. Only the ends of the sleepers were recorded as they continued beyond the southern limit of excavation. Although these appeared to run parallel to one and other it is not believed they were in situ. Deposit (401) was a mixed dumped deposit, likely used to level off the area, which indicates that the sleepers were dumped with the deposit and so originated from elsewhere. No rail lines are depicted running along the southern limit of Trench 4 on the historic mapping. Rail lines are shown to the west, south and east and it may be that the sleepers originated from one of these lines, although it is not possible to confirm this

without further excavation.

8.1.8. The location of all trenches and features are depicted in association with the historic railway, coal store, crane and museum buildings in Figure 15.

9. Conclusion

9.1.1. The evaluation trenches have added little to our understanding of Gilfach Ddu. Trenches 2 and 3 revealed the remains of a revetment wall, which formed the western edge of a railway depicted on a Vaynol estate map, likely drawn in 1869. The evaluation has shown that the wall survives in good condition below ground level, and it is possible that the eastern wall of the rail line also survives well.

9.1.2. The brick structure in Trench 3 was formed of refractory bricks, which based on their shape would likely have come from a chimney. The foundry within the Gilfach Ddu workshops was located in the south-western corner of the workshop shop range, with a chimney still standing within this. It is possible the bricks originated from this chimney, with them being reused after the chimney had been repaired. However, as discussed above it is not possible to be certain of this. If it were the case however, then it is evidence of repair and maintenance taking place to the Gilfach Ddu workshops. The workshops operated for just over 100 years and must have been repaired and maintained over the course of their lifespan.

9.1.3. The location of the sleepers within Trench 4 may suggest a previously unknown rail line within the workshop complex, located along the southern edge of the trench. This is believed to be unlikely however, as it is depicted on any of the historic map sheets, and they formed part of a mixed dumped deposit. They likely did originate from one of the rail lines within the complex but are not currently in situ.

10. Archiving

10.1.1. The report will be uploaded to Heneb – Gwynedd HER and with the RCAHMW alongside a full digital copy of the site archive and any digital borne data.

10.1.2. The site archive will be prepared in accordance with the CIfA Guidelines Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives' (2020).

10.1.3. All the finds from the site are to be retained and deposited with the National Slate Museum.

11. Acknowledgements

11.1.1. We would like to extend our deepest gratitude to Sebastian Eduardo Pérez Parry, Robin Glass, and Ffion Perry for their volunteer work and dedication during the field evaluation at the National Slate Museum. Their commitment, enthusiasm, and attention to detail were key to the success of this project.

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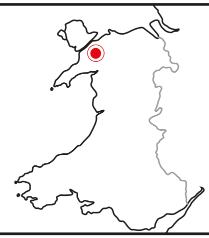
Figure 1. Site Location

Site Location



N

0 2.5 5 km

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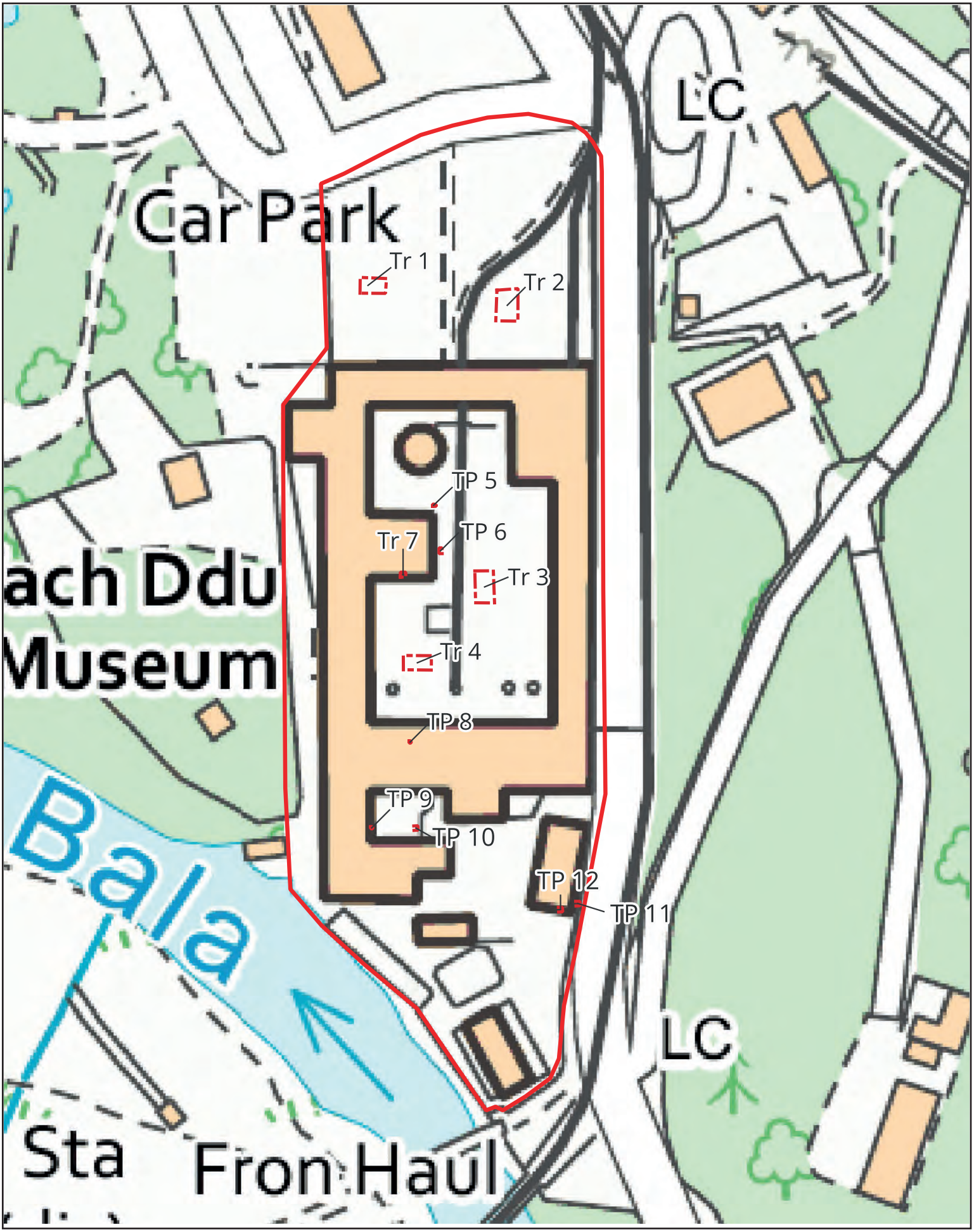
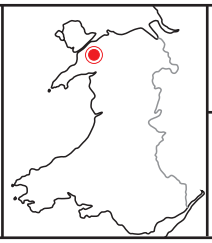


Figure 2. Trench and Test Pit locations

Trench

Site Boundary



N

0 25m 50m

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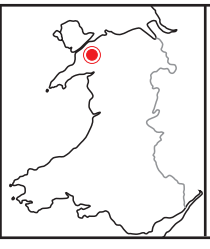
Trench 1, looking west. 2x 1m sacle.

East facing section Trench 1. 1m scale.

Figure 3. Trench 1 plates



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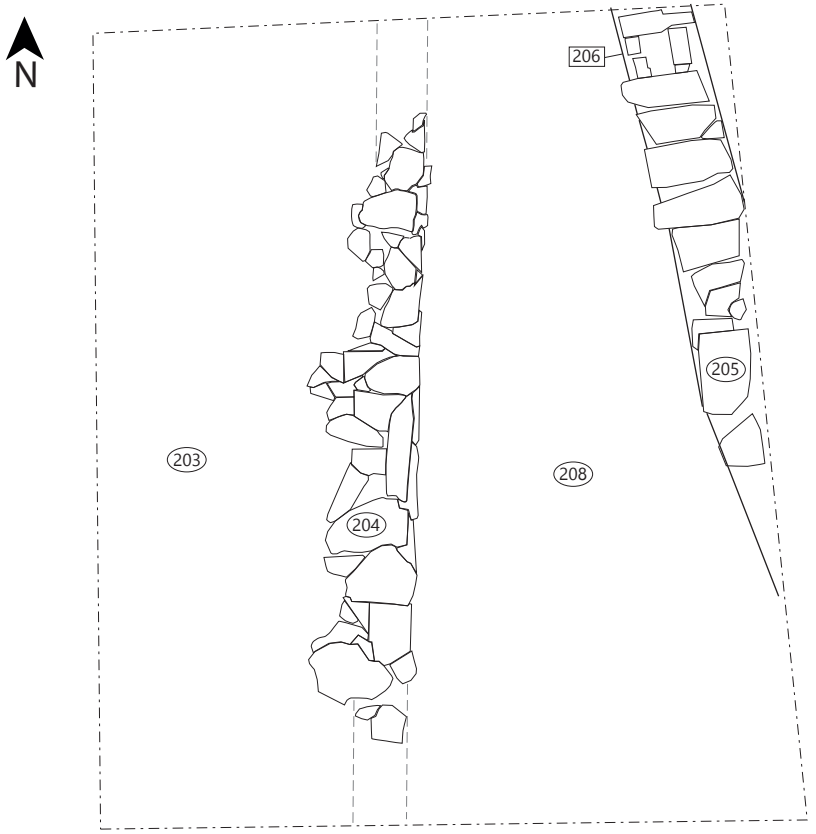
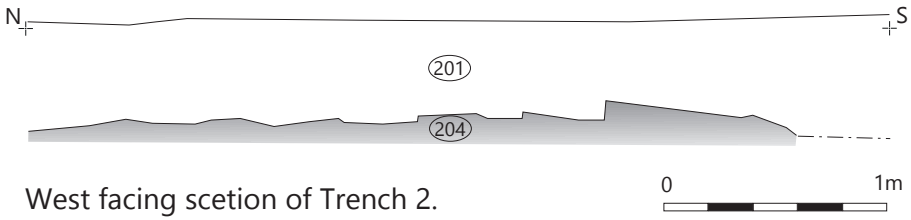


Trench 2 plan.



West facing scetion of Trench 2.

Trench 2 looking north. 2x 1m scale.

Wall (204), looking west. 2x 1m scale.

Figure 4. Plan and plates of Trench 2

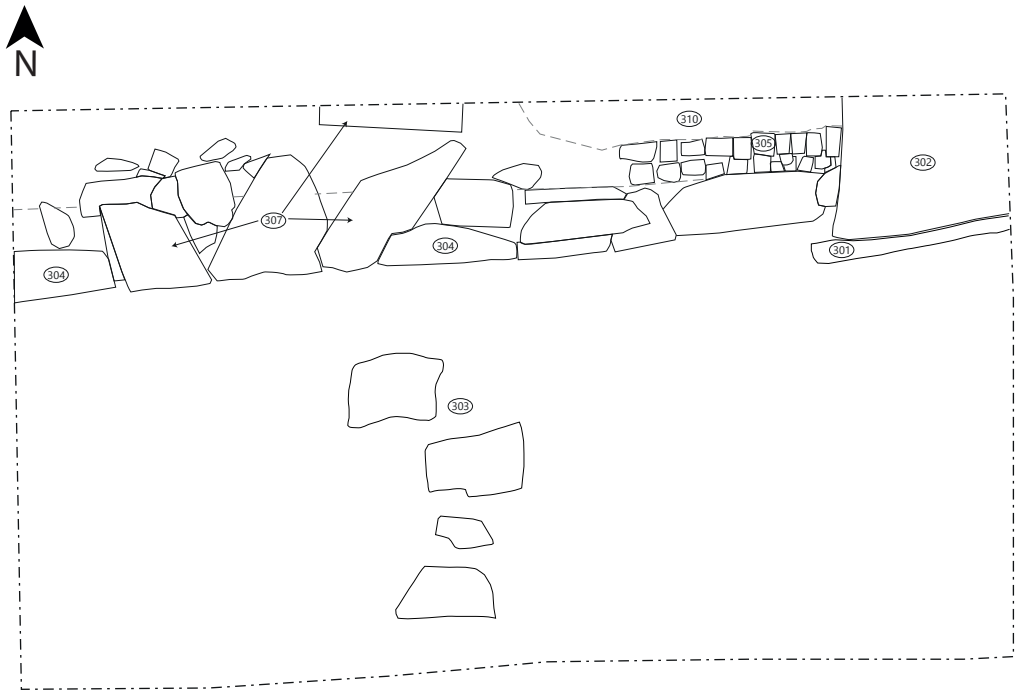
ARCHAEOLOGY WALES

Drain (205), looking east. 1m sacle.

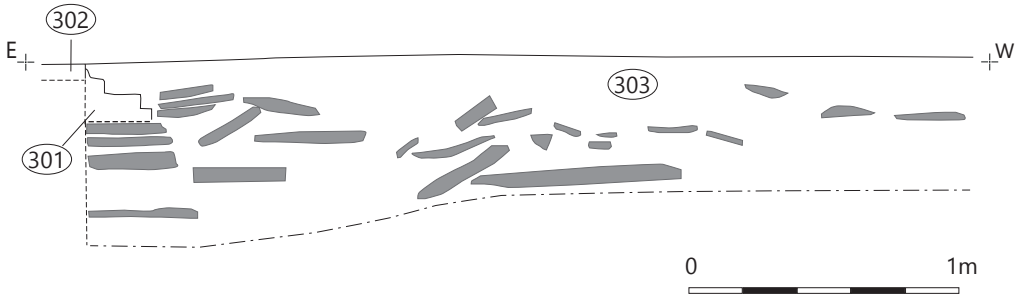
Drain (205). 0.5m scale.

Figure 5. Trench 2 plates

ARCHAEOLOGY WALES



Trench 3 plan.

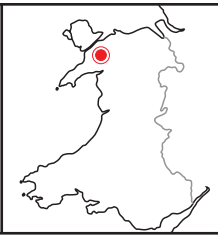


North facing section of Trench 3.

Trench 3 looking east. 2x 1m scale.

Wall (304), looking east. 1m scale.

Figure 6. Plan and plates of Trench 3



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Slab (302) and concrete deposit (301), looking east. 1m sacle.

Brick structure (305), looking east. 1m scale.

Figure 7. Trench 3 plates

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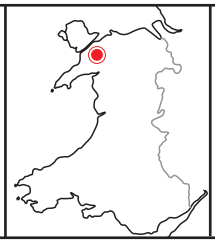
Trench 4, looking east. 2x 1m sacle.

Drain (403), looking west. 1m scale.

Rail sleeper with chair, looking south. 0.5m scale.

Figure 8. Trench 4 plates



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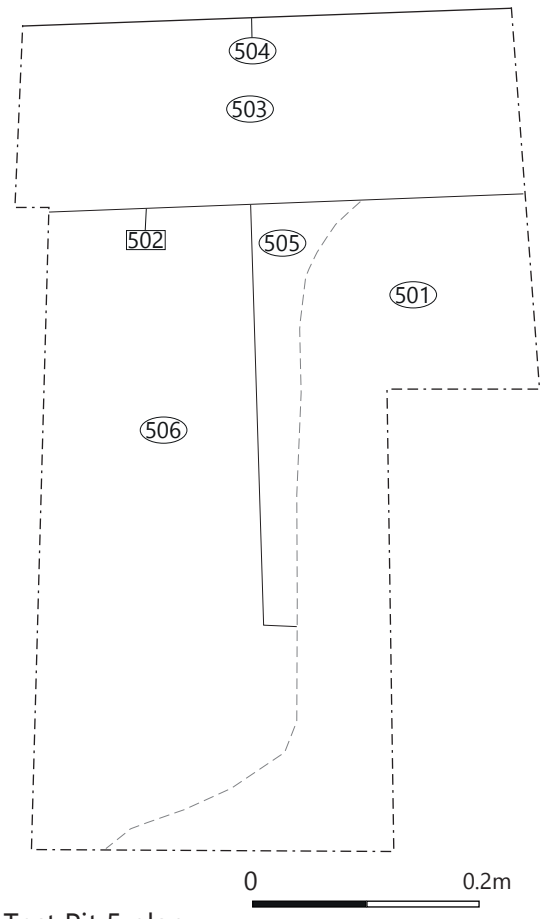


Test Pit 5 plan.

Test Pit 5, 0.5m scale.

South facing section of Test Pit 5. 0.5m scale.

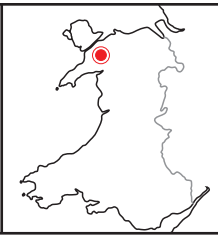
Figure 9. Plan and plates of Test Pit 5

ARCHAEOLOGY WALES

Test Pit 6, 0.5m scale.

South facing section of Test Pit 6. 0.5m scale.

Figure 10. Plates of Test Pit 6



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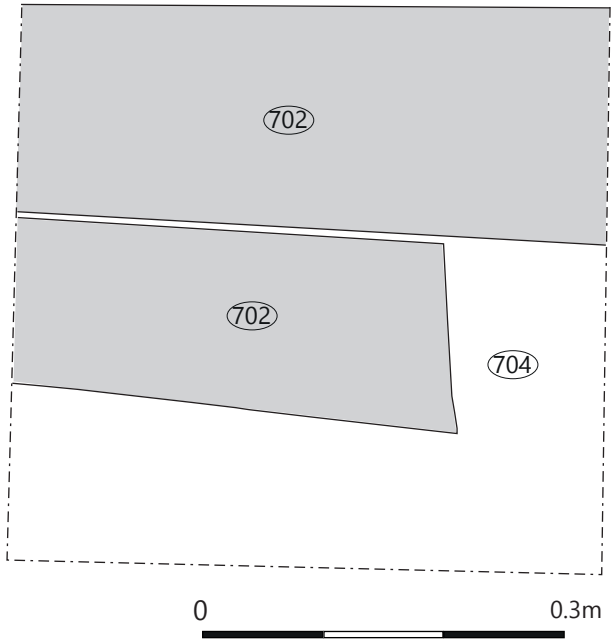


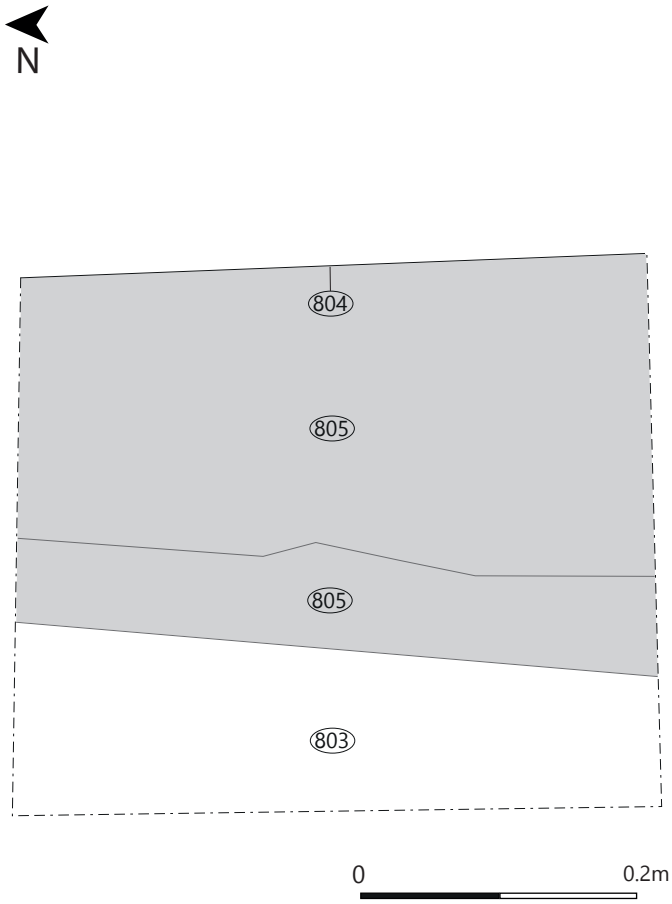
Test Pit 7 plan.

Test Pit 7, 0.5m scale.

East facing section of Test Pit 7. 0.5m scale.

Figure 11. Plan and plates of Test Pit 7

ARCHAEOLOGY WALES



Test Pit 8, 0.5m scale.

Test Pit 8, 0.5m scale.

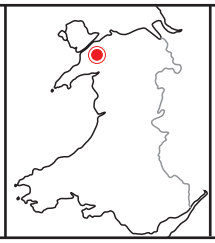
North facing section of Test Pit 8. 0.5m scale.

Figure 12. Plan and plates of Test Pit 8

ARCHAEOLOGY WALES

Test Pit 9, looking east. 0.5. sacle.

Figure 13. Test Pit 9 plate

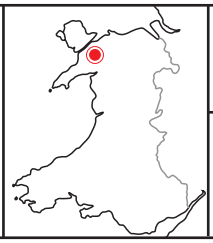


ARCHAEOLOGY WALES

Figure 14. Walls (204) and (304) shown over an undated Vaynol Estate Map.

Archifau Gwynedd Vaynol Collection 4149

Feature
Trench



N

0 10m 20m

ARCHAEOLOGY WALES

Figure 15: Plan showing the location of the historic railway, with the trenches, features, coal store and crane.

ARCHAEOLOGY WALES

Appendix II:
Finds Quantification Table

ARCHAEOLOGY WALES

Appendix I:
Context Inventory

Appendix I: Context Inventory

Trench	Context No.	Type	Fill of	Description	Length (m)	Width (m)	Depth/thickness (m)
1	100	Deposit		Dark greyish-black silt with frequent small angular slate fragment inclusions.	5.8	3.3	0.2
1	101	Deposit		Loose large to medium sized slate fragments. Occasional lenses of dark greyish-black silt were evident throughout.	5.8	3.3	0.55
2	200	Deposit		Dark greyish-black silt with frequent small angular slate fragment inclusions.	7	5	0.25
2	201	Deposit		Dark grey black silt.	7	2.5	0.4
2	202	Deposit		Mid yellowish-brown silty sand.	7	1.7	0.3
2	203	Deposit		Loose large to medium sized slate fragments. Occasional lenses of dark greyish-black silt were evident throughout.	7	1.7	0.1
2	204	Structure		Wall constructed from slate.			
2	205	Structure		Stone lined drain constructed from slate.	5	0.5	0.3
2	206	Cut		Cut for drain (205).	5	0.5	0.3
2	207	Fill	205	Dark greyish-black silt, with moderate small slate inclusions. Fill within drain (205).	5	0.5	0.03
2	208	Deposit		Loose large to medium sized slate fragments.	7	2.45	0.5
3	300	Deposit		Slate gravel.	6.9	4.1	0.2
3	301	Deposit		Concrete deposit.	1.7	0.35	0.36
3	302	Deposit		Slate slab.	1.5	0.64	0.09

Trench	Context No.	Type	Fill of	Description	Length (m)	Width (m)	Depth/thickness (m)
3	303	Deposit		Loose large to medium sized slate fragments. Occasional lenses of dark greyish-black silt were evident throughout.	6.9	4.1	0.4
3	304	Structure		Wall constructed from slate.	5.4	0.6	0.8
3	305	Structure		Brick structure formed of key shaped refractory bricks.	1.4	0.3	0.35
3	306	Cut		Cut for brick structure (305)	1.4	0.3	0.35
3	307			VOID			
3	308	Deposit		Slate flagstones.	2.5	1.1	0.06
3	309	Cut		Cut for wall (304).	5.4	0.6	0.8
3	310	Deposit		Dark greyish-black silt.	1.4	0.35	0.12
3	311	Deposit		Mid orange-brown sand deposit.	3	1.1	0.25
4	400	Deposit		Slate gravel.	5.5	3	0.02
4	401	Deposit		Dark greyish black silt with lenses of yellowish brown sand and slate.	5.5	3	0.31
4	402	Deposit		Loose large to medium sized slate fragments. Occasional lenses of dark greyish-black silt were evident throughout.	5.5	3	0.07
4	403	Structure		Stone drain with iron grill.	0.68	0.51	0.3
4	404	Cut		Cut for drain (403).	0.68	0.51	0.3
5	500	Deposit		Slate gravel.	0.9	0.5	0.02
5	501	Deposit		Dark greyish black silt with lenses of yellowish brown sand and slate.	0.9	0.5	0.15
5	502	Cut		Construction cut for foundation (503).	0.5	0.25	0.2
5	503	Fill		Light brownish-yellow mortar with small to medium slate inclusions.	0.5	0.25	0.2

Trench	Context No.	Type	Fill of	Description	Length (m)	Width (m)	Depth/thickness (m)
5	504	Structure		Wall over foundations (503).			
5	505	Deposit		Iron plate.	0.5	0.3	0.07
5	506	Deposit		Loose large to medium sized slate fragments.	0.9	0.5	0.12
6	600	Deposit		Slate gravel.	0.5	0.5	0.01
6	601	Deposit		Dark greyish black silt .			0.05
6	602	Deposit		Flagstone.	0.5	0.5	
7	700	Deposit		Slate gravel.	0.27	0.54	0.07
7	701	Fill	702	Mid brownish-grey silt with frequent small slate inclusions, fill within (702).	0.57	0.2	0.06
7	702	Structure		Stone lined gully	0.57	0.35	0.12
7	703	Cut		Cut for gully (702)	0.57	0.35	0.13
7	704	Deposit		Dark greyish black silt.	0.57	0.54	0.15
8	800	Deposit		Dark brownish-black sand.	0.5	0.5	0.02
8	801	Deposit		Ash deposit.	0.5	0.5	0.09
8	802	Fill	806	Dark brownish-black sand, fill of [806].	0.5	0.31	0.5
8	803	Deposit		Mid brownish-red sand.	0.5	0.19	0.39
8	804	Structure		Wall	0.5		0.19
8	805	Structure		Slate foundation for wall (804)	0.5	0.31	0.2
8	806	Cut		Construction cut for wall (804).	0.5	0.31	0.39
9	900	Deposit		Slate gravel.	0.6	0.8	0.42
9	901	Cut		Construction cut for lift foundations.	0.8		0.45
9	902	Fill		Concrete foundations.	0.8		0.45

ARCHAEOLOGY WALES

Appendix II:
Finds Quantification Table

Area	Context Number	Object Type	Quantity	Weight (g)
Test Pit 5	506	Fe	3	508
Test Pit 5	501	Pottery	9	44
Test Pit 5	501	Animal Bone	1	0.25
Test Pit 5	501	Fe	1	3
Tr2	208	Pottery	1	20
Tr3	303	Fe	10	1999
Tr3	303	Fe	11	1383
Tr3	303	Fe	1	2950
Tr3	303	Fe	23	2658
Tr3	303	Pottery	1	1
Tr3	303	Glass	2	29
Tr3	303	CBM	2	4750
Tr4	401	Fe	8	698
Tr4	401	Pottery	1	19

ARCHAEOLOGY WALES

Appendix III:
Iron Artefact Summary Catalogue

context	item wt (g)	item #	notes
303	3036	1	Bar: 560mm x 56mm x 12mm iron bar; perforated by 24mm diameter holes, 65mm from one end and 60mm from the other, this end also has a smaller 16mm diameter hole, 28mm from the end; one side shows patches of adhering slatey concrete or mortar, within which the single hole has a 40mm diameter shadow, suggesting the location of possible washer.
	219	2	Wrought iron corner brace?: irregular wrought iron right angle; bar has maximum section of 20mm x 10mm, irregularly tapering down to 5mm x 10mm at tips; arms 103mm long; the accretion includes hammerscale
	83	3	Clamp?: 42mm square, 5mm thick, flange to 12mm on one side with raised part (13mm x 4mm) to 17mm above base; low ridge 5mm wide to 10mm above base 10mm from opposing side; X-ray indicates central hole is 15mm in diameter
	111	4	Rivet?; 105mm long, 13mm diameter, head tapers out to 23mm over c.8mm.
	151	5	Bolt: 18mm diameter bolt shaft; thread approximately 10 turns/inch; one end flat, the other cut oblique to wedge; 85mm max length
	432	6	Bolt: 18mm diameter bolt shaft, thread approximately 10/inch; one end cut twice obliquely to wedge; 147mm max length; other end carries two square nuts, each 30mm square and 17mm thick
	76	7	Bolt: 27mm a/f hex, but swollen, 12mm thick, on shaft c.12mm across, shaft appears square, so possibly carriage bolt head, but this is not certain
	251	8	Bolt: dome head 35mm diameter and 14mm tall, shaft 17mm in diameter; threaded for at least 32mm; probably round section continues to head

context	item wt (g)	item #	notes
	448	9	Bolt: square headed bolt; 34mm square head, 10mm thick; 194 long, 18mm diameter, threading visible for 50mm
	280	10	Bolt: 42mm a/f hex bolt head; 23 mm thick; c30mm diameter shaft bent and cut obliquely
	76	10	Bolt: 17mm diameter bolt shaft, 50mm long, c10 threads/inch; one end straight, the other cut slightly oblique
	339	12	Nut/bolt: appears to be a 33mm x 33mm x 38mm large nut on c20mm shaft; X-ray provides hint this is actually two nuts in alignment.
	104	13	Nut: 30mm square x 17mm thick item
	40	14	Nut: 23mm a/f hex by 12mm (1/2 inch) thick, probably a nut, but the apparent hole is only visible on one side
	15	15	Nail: chisel ended nail; shank starts at a size of 4mm x 5mm below head and 5mm x 1.5mm at preserved tip; the head is obscured; machine made
	9	16	Nail: 80mm nail, rectangular section, chisel tip; similar to 15g example above, but head as preserved is smaller
	3	17	Nail: 25mm long fragment of head section of wire nail, highly corroded
	21	18	Washer: concretion bearing 25mm diameter 3mm thick perforated disc
	247	19	Chain link: fragment of probable chain link forged from 25mm rod, cut across both sides on single line oblique and at 45 degrees to link
	430	20	Chain link: part of chain link formed of 22mm rod; overall 85mm x 90mm; cut obliquely at right angles to link

context	item wt (g)	item #	notes
	100	21	Rod fragment: 50mm length of 20mm diameter rod, both ends cut obliquely
	83	22	Rod fragment: 45mm length of c18mm diameter rod; concreted and bloating; both ends cut obliquely in a more-or-les parallel manner
	96	23	Rod fragment: 70mm length of c18mm diameter bloating iron rod, but ends cut obliquely, one leaving pointed burr
	514	24	Rod fragment: 140mm length of 25mm diameter rod; one end flat, the other cut obliquely, wrought iron
	123	25	Rod fragment: 74mm long, 20mm diameter, rod; both ends have oblique cuts
	83	26	Rod fragment: 74mm length of 18mm diameter rod; one end even the other oblique
	166	27	Rod fragment: 92mm length of c20mm rod; both ends have slightly oblique fractures and whole piece curves slightly
	114	28	Rod fragment: 127mm long 13mm diameter rod; one end has possible burr, the other cut obliquely
	186	29	Rod fragment: 40mm long section of 33mm rod; both ends oblique - not clear if the rod is deformed or cut obliquely
	8	30	Wire: 83mm long section of 6mm rod
	13	31	Wire: 5mm x 5mm wire expanding to 12mm x 5mm at one end; 105mm long
	12	32	Wire: 87mm long, 6mm diameter rod
	6	33	Wire: 60mm long piece of 5mm wire expanding into bulbous tip

context	item wt (g)	item #	notes
	9	34	Wire: 115mm long wire to 5mm diameter, but frequently corroded narrower
	32	35	Twisted wire: 200mm two-strand twisted wire; 1 twist per 15mm approximately,
	10	36	Bar fragment: 28mm long fragment of ?8x12 bar, highly corroded and edges worn so section and dimensions uncertain
	155	37	Bar fragment: almost rhomboidal bar sides 20mm and 17mm, 65mm long; axes 25mm and 20mm
	95	38	Bar fragment: 15mm square-sectioned bar, 50mm long; both ends cut obliquely
	162	39	Bar fragment: c.27x12mm bar 110mm long, slightly curved
	64	40	Bar fragment: 90mm length of irregular form c.24x5mm section but variable,
	136	41	Bar fragment: 80mm long 10mm square bar, slightly bent
	442	42	Plate fragment: 105mm x 55mm fragment of cast iron plate 16mm thick with chamfered edge; narrows asymmetrically to 32 mm; probably simple fractures, not cut and not an intentional shape.
	40	43	Plate fragment: 25mm x 55mm triangular section of 8mm thick cast iron plate
	12	44	Wrought iron fragment: 35mm x 5mm x 12mm scrap of wrought iron
	133	45	Wrought iron fragment: 110mm x 30mm trough-shaped piece of wrought iron narrowing almost to point at one end; too accreted to determine if this is a torn piece of thick wrought iron (e.g. pick point) or a folded piece of thinner iron; the density appears too high to be a folded thin sheet

context	item wt (g)	item #	notes
	15	46	Cast iron fragment?: magnetic, stone-like material, presumably cast iron; 19mm x 17mm approximately flat base; profile rises to a central, approximately 5mm wide strip 8mm above the base; this carries a with central boss c6mm in diameter with its top at 12mm above the base; the profile is asymmetric: one basal angle is a simple angle, the other has a vertical face3-5mm tall; object has passing resemblance to a gun flint in shape.
	8	47	Concretion: small fragment of concretion, probably not artefact in itself
401	163	48	Cotter pin: formed of 18-20mm x 5mm bar; eye c 12mm across internally and 35mm x 25mm externally; tails overall 120mm and 115mm from top of eye; they show a bend 60mm below eye, suggesting the thickness of the bar through which the cotter passed.
	61	49	Spike?: 93mm x 15mm x 20mm concretion, appears to show iron inside wedging to 10mm x 2mm at one end, from 12mm diameter round at the other; possibly a spike?
	7	50	Boot heel tap: curved decomposed iron, 10mm x 5mm section, c 50mm long
	29	51-53	Concretion: coal/iron/coke rich concretion
	435	54	Concretion: clinker-rich concretion apparently broken from planar surface, X-ray shows ghost of square object within
506	500	55-	Concretion:, debris not just slate but is dominated by clinker/coal

context	item wt (g)	item #	notes
		56	
	6	57	Nail?: elongate concretion, iron now mould- square/rectangular section narrowing down the 45mm length of the concretion; suggests nail?

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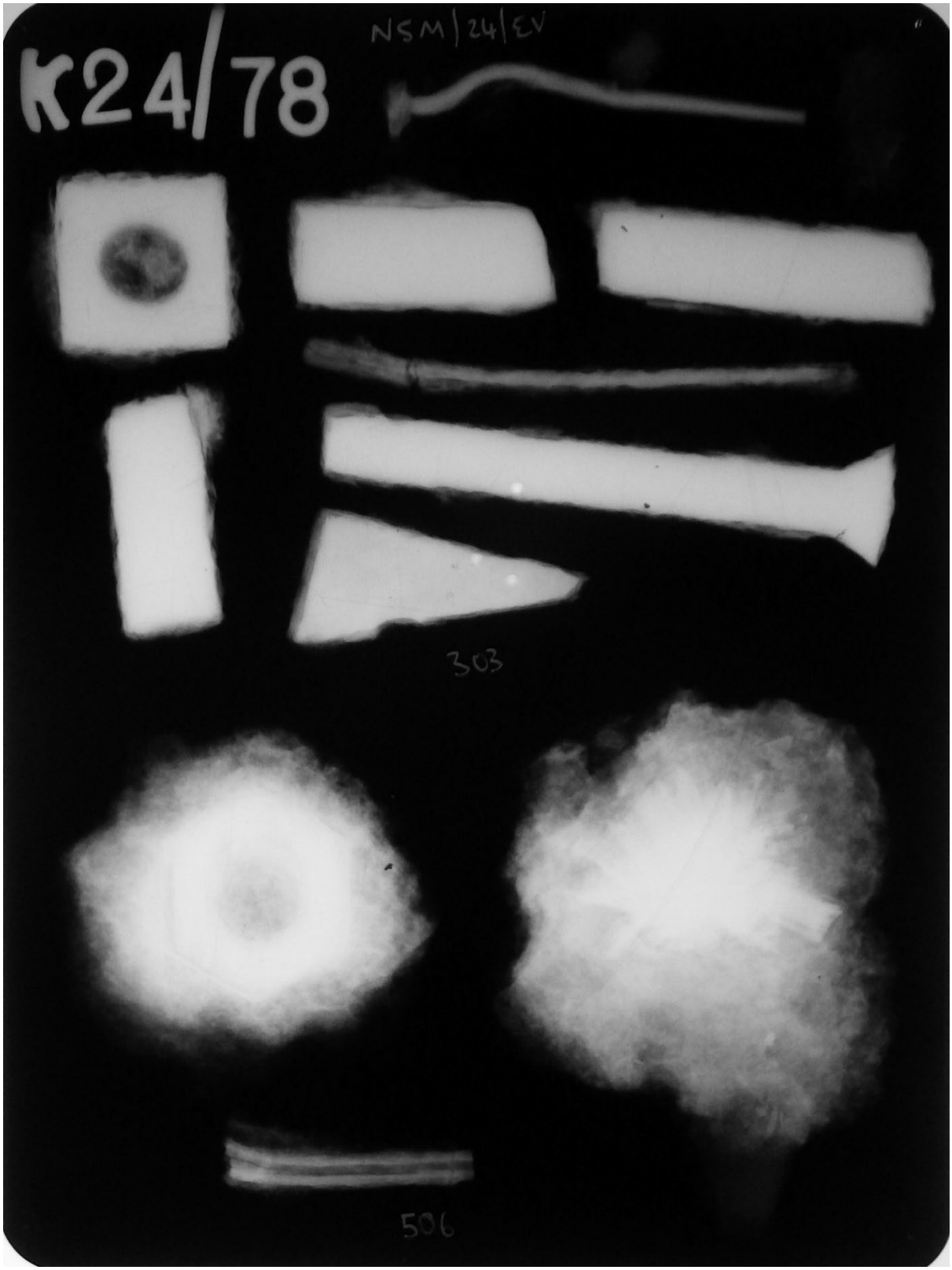
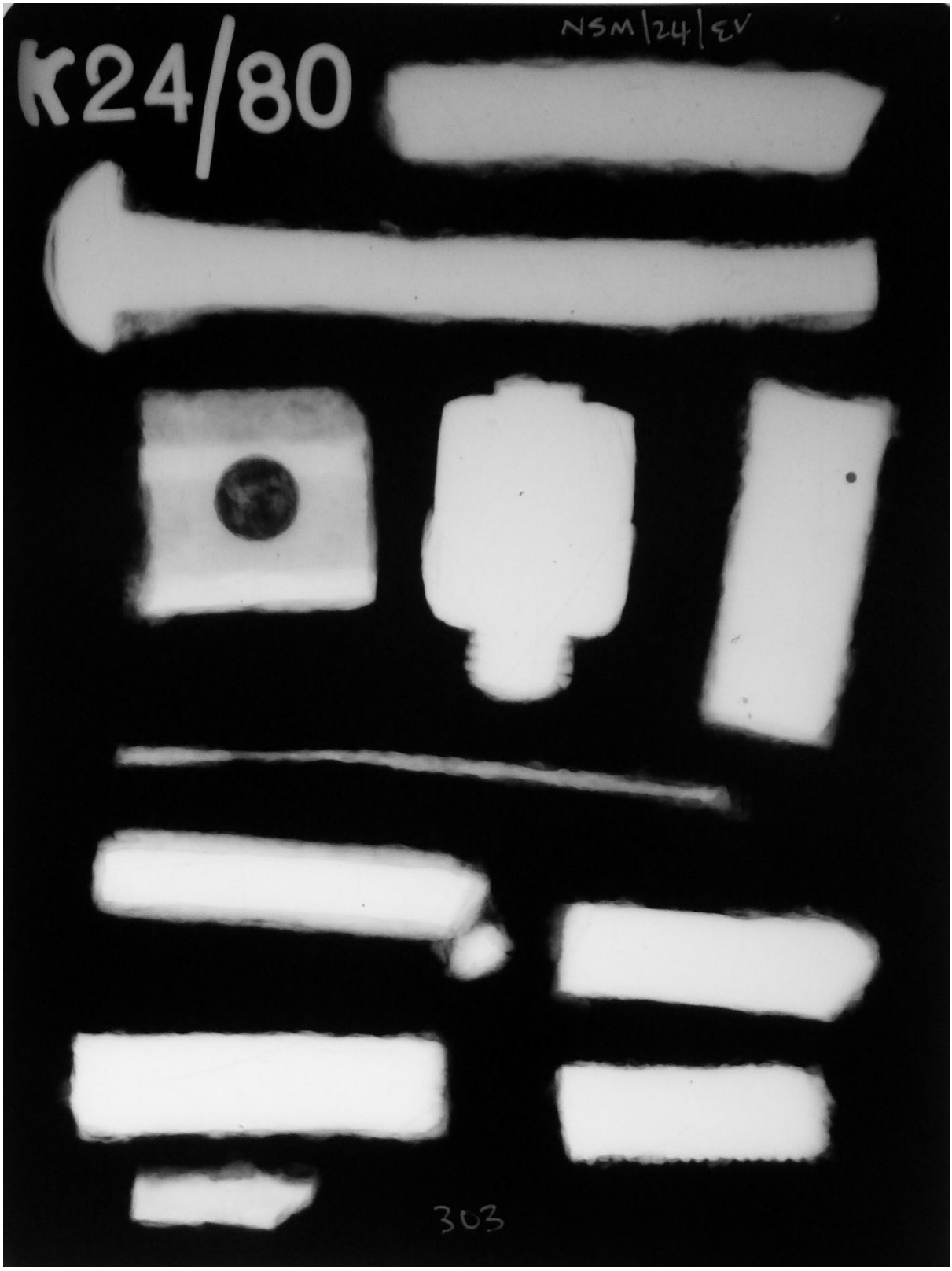
Appendix IV:
Iron Artefact X-Ray Plates

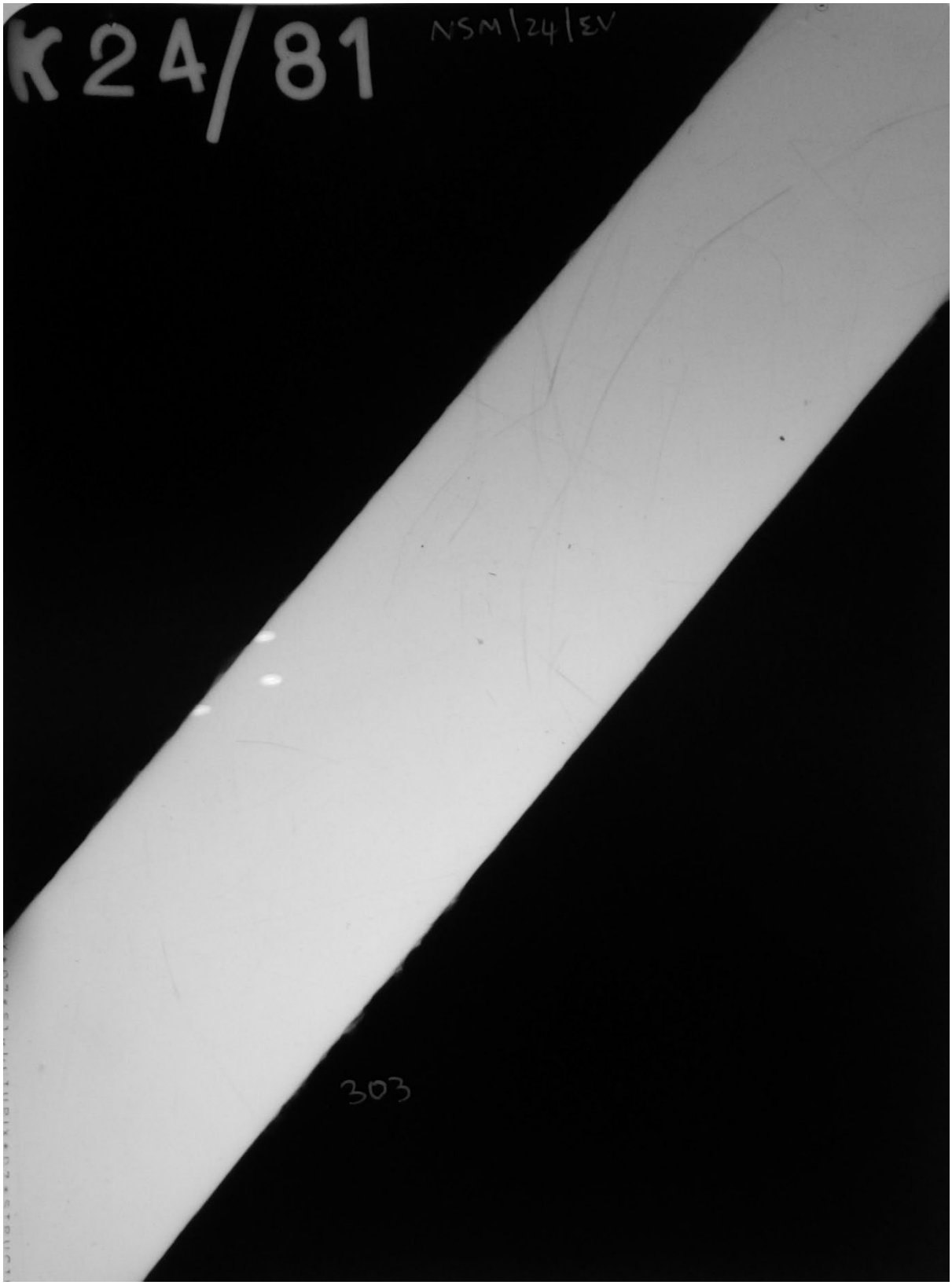

NSM 24 EV
303
K24/76


K24/77
NSM/24/EV
303


K24/78
NSM/24/EV
303
506


K24/79
NSM|24|EV
401


K24/80
NSM/24/EV
303


K24/81
NSM/24/EV
303

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Appendix V:
Selection Strategy

Selection Strategy

Project Information	
ID	3124
Name	National Slate Museum
Project Management	
Project Manager	Irene Garcia Rovira
Post Excavation Manager	Rhiannon Philp
Organisation	Archaeology Wales
Stakeholders	
Collecting Institution(s)	Heneb - Gwynedd HER; RCAHMW; National Slate Museum
Project Lead / Project Assurance	Lucy Morrison
Landowner / Developer	Amgueddfa Cymru
Other	
Resources	No unusual resources required outside of AW normal operating equipment and personnel to implement this Selection Strategy.

Context
Archaeological field evaluation to be undertaken in association with the proposed refurbishment of the National Slate Museum and associated works to create and Interpretation Hub for The Slate Landscape of Northwest Wales World Heritage Site at the National Slate Museum, Llanberis, Caernarfon LL55 4TY, United Kingdom – National Grid Reference SH 58542 60248

Digital Data

Stakeholders
Rhiannon Philp (PX manager), Irene Garcia Rovira (Project Manager), RCAHMW, Heneb –

Gwynedd HER
Data Management Plan (DMP)
Selection and De-selection
DMP Attached as a separate document
Amendments
Detail any amendments to the above selection strategy here.

Date	Amendment	Rationale	Stakeholders

Documents

Stakeholders
Rhiannon Philp (PX manager), Irene Garcia Rovira (Project Manager),
Selection and De-selection

Selection

2.1. All original documentary material created during data gathering will be selected for inclusion in the final archive. Duplicates, photocopies of originals and research materials will be de-selected during archive completion

2.2. Selection reviews will be undertaken after the following phases:
- Fieldwork
- Reporting
- Archive Completion

2.3. Relevant Standards and Guidance:
- CIfA. 2020. Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials.
- CIfA. 2022 revision. Code of conduct: professional ethics in archaeology
- Any information provided by Receiving Institutions

2.4. It is not envisaged that the selection decisions will deviate from standard guidelines

De-selection

It is envisaged that the material de-selected from inclusion in the preserved archive will be duplicates, re-productions, miscellaneous material, correspondence and GDPR/confidentiality created during the analysis phase of the project. De-selected material will therefore be retained to supplement AW/AE's research files. A copy of the complete digital working archive incl. the preserved archive is stored on AW/AE's server.

Amendments			
Detail any amendments to the above selection strategy here.			
Date	**Amendment**	**Rationale**	**Stakeholders**
26/06/2025	Physical documentary archive deselected	Full digital copy uploaded to RCAHMW	AW; RCAHMW

Materials

Materials Selections Template			
No	**Find type**	**Selection Strategy**	**Stakeholders**
3.1	Pottery	Retain until at least after Assessment. Further selection decisions to follow results of assessment.	Specialist; PXM; National Museum Slate
3.2	CBM	Retain until at least after Assessment. Further selection decisions to follow results of assessment.	Specialist; PXM; National Museum Slate
3.3	Metals	Retain until at least after Assessment. Further selection decisions to follow results of assessment.	Specialist; PXM; National Museum Slate
3.4	Animal Bone	Retain until at least after Assessment. Further selection decisions to follow results of assessment.	Specialist; PXM; National Museum Slate
3.5	Modern (post 20th C) Material	Note in paperwork and discard on site.	Site Staff; PXM

No	ALL	**Material type**	All categories
Stakeholders			

Rhiannon Philp (PX manager), Irene Garcia Rovira (Project Manager),

Selection

a) All artefacts are returned to AW/AE Finds and Environmental processing facility and dealt with in accordance with the professional standards set in the Chartered Institute for Archaeologists' Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials (2020). Selection may also be made prior to deposition based on Society of Museum Archaeologists' Selection, Retention and Dispersal of Archaeological Collections guidelines (1993), National Standard and Guidance to Best Practice for Collecting and Depositing Archaeological Archives in Wales (2017) and consultation of the receiving institution's deposition guidelines
b) Selection reviews will be undertaken after the following phases:
- Fieldwork
- Assessment
- Analysis (if required)
- Archive Completion

c) Relevant Standards and Guidance:
    - CIfA. 2020. Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials
    - Historic England. 2011. Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (second edition)
    - Society of Museum Archaeologists. 1993. Selection, Retention and Dispersal of Archaeological Collections
    - National Panel for Archaeological Archives in Wales. 2017. The National Standard and Guidance to Best Practice for Collecting and Depositing Archaeological Archives in Wales
d) It is not envisaged that the selection decisions will deviate from standard guidelines

Uncollected Material

All material will be collected in the first instance unless obviously modern (plastics/post 20th century artefacts).

De-Selected Material

After assessment stage material may be deselected based on the advice of the relevant material specialist and the requirements of the receiving institution. The selection strategy will be updated to reflect any decision made on de-selected material.

De-selected material will be assessed for educational value and retained/passed to an educational provider if deemed of use. If no further use is identified the de-selected material shall be discarded via Smiths Waste Management and deposited

within their South Wales waste processing facility.

Amendments			
Detail any amendments to the above selection strategy here.			
Date	**Amendment**	**Rationale**	**Stakeholders**
26/06/25	AW to hold finds until NSM is reopened	Upgrade work ongoing	AW; NSM

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Appendix VI:
Data Management Plan

Data Management Plan

Section 1: Project Administration

Project ID
3124
Project Name
National Slate Museum, Llanberis
Project Description
In August 2024, Archaeology Wales Ltd was commissioned by Amgueddfa Cymru to carry out an archaeological field evaluation at the National Slate Museum, Llanberis, in association with works to create an Interpretation Hub for The Slate Landscape of North-west Wales World Heritage Site at the National Slate Museum, Llanberis, Caernarfon LL55 4TY. National Grid Reference SH 58542 60248. The local planning authority is Cyngor Gwynedd Council (CGC). A total of four trenches and eight test pits were set out across the site. However, it was not possible to excavate Test Pits 10, 11 and 12, due to the presence of buried services. Archaeological deposits and features were encountered within four of the test pits and three of the trenches. The archaeological features within Trenches 2 and 3 likely relate to a railway shown on an undated Vaynol Estate Map. The map does not show the Dinorwic Workshop Complex and so must predate 1870. The remaining features all relate to the construction and use of the workshop complex. All work conformed to the standards and guidance set by the Chartered Institute for Archaeologists (2020). AW is a Registered Organisation with the CIfA.
Project Funder / Grant reference
Amgueddfa Cymru
Project Manager
Irene Garcia Rovira
Principal Investigator / Researcher
Lucy Morrison
Data Contact Person
Rhiannon Philp (rhiannon.philp@arch-wales.co.uk)
Date DMP created
01/08/2024
Date DMP last updated
26/06/2025
Version
V2
Related data management policies
This DMP is guided by the Project Brief, CIfA Standards and guidance, trusted digital repository guidelines (RCAHMW) or other best practice guidance (see brief for details)

Section 2: Data Collection

What data will you collect or create?

The table below provides a summary of the data types, formats and estimated archive volume for data collected / created as part of this project. As the project progresses, more detail regarding files will be added to this DMP.

Type	Format	Estimated volume (Data Archived)
Text/documents	PDF (.pdf)	3
Images	Photographs (.jpg) PDF (.pdf)	132 1
Spreadsheets	Excel spreadsheet (.xlsx)	2
GIS	Shapefiles (.shp plus associated files)	3 groups

How will the data be collected or created?

Data Standards / Methods

- Standard methods of data collection will be applied throughout the project, working to best practice guidance where applicable / available. In general, data acquisition standards are defined against RCAHMW Guidelines. Specific or additional guidance relevant to this project are listed below, and will
- be updated as the project progresses.
- Methods of collection are specified within the Project Design and will meet the requirement set out in the Project Brief, the organisation recording manual and relevant CIfA Standards and guidance.
- Where appropriate, project contributors external to the organisation will be required to include data standards, collection methodology and metadata with individual reports and data.
- Specific guidance:
  - Chartered Institute for Archaeologists, 2020. Standard and guidance for the archaeological investigation and recording of standing buildings or structures.
  - Historic England, 2016. Understanding Historic Buildings: A Guide to Good Recording Practice

Data storage / file naming

- The data produced will be uploaded at regular intervals during the project as a way of backing up the information.
- The working project archive will be stored in a project specific folder on the internal organisational server. The internal organisation server is backed up to a cloud-based storage system to maintain an up-to-date security copy of the organisation wide data.
- Project folders are named following established organisational procedures and the folder hierarchy and organisation devised will be understood by all members of staff involved in the project.
- Data collected will be downloaded and raw data will be stored in the appropriate folder.

- File naming conventions following established organisational procedures, based on RCAHMW file naming guidance, and include version control management.
- The data stored will be checked by the project manager regularly as a means of quality assurance.

Section 3: Documentation and metadata

What documentation and metadata will accompany the data?

- Data collected will include standard formats which maximise opportunities for use and reuse in the future (see Section 2, above).
- A RCAHMW metadata document will be included with the digital archive and include all data types included within the archive. A working copy will be kept on the organisational server in the Project Folder. A copy of the form containing HER required data will also be created.
- Data documentation will meet the requirement of the Project Brief, Museum Deposition Guidelines, Digital Repository Guidelines and the methodology described in the Project Design methodology.
- An archive catalogue documenting both physical and digital archive products will be maintained and submitted with both the Museum and Trusted Digital Repository

Section 4: Ethics and legal compliance

How will you manage any ethical, copyright and Intellectual Property Rights (IPR) issues?

- The project archive will include the names and contact details of individuals who intend to volunteer or participate in the excavation and post excavation stages. We have a GDPR compliant Privacy Policy which underpins the management of personal data; any personal data is managed through a secure cloud-based database and not retained on the project specific folders.
- Personal data will be removed from the archaeological project archive and permission to include individual's names in any reporting is gained prior to use.
- Copyright for all data collected by the project team belongs to the organisation, and formal permission to include data from external specialists and contractors is secured on the engagement of the specialist or contractor.
- Where formal permissions and/or license agreements are linked to data sharing, they will be included in the project documentation folders and will accompany the archaeological project archive.

Section 5: Data Security: Storage and Backup

How will the data be stored, accessed and backed up during the research?

- Organisational IT is managed by an external data management provider, who is also responsible for the management and verification of our daily back-ups and who supports access to security copies as needed
- Sufficient data storage space is available via the organisational server, which includes permissions-based access. The server is accessible by staff on and offsite through a secure log-in
- Off-site access to the project files on the organisation's server is provided to support back-up of raw data while fieldwork is ongoing. Where internet access for data back up is not possible, the raw data will be backed up to a separate media device (such as laptop and portable external hard drive).

- Project files will be shared with external specialists and contractors directly using the same system, with the wider project team gaining access to only the files needed using permissions-based access

Section 6: Selection and Preservation

Which data should be retained, shared, and/or preserved?
• The Selection Strategy and DMP will be reviewed and updated as part of the Post Excavation Assessment and Updated Project Design and following full analysis. Updated documentation will be included in all reporting stages. • Prior to deposition, the Selection Strategy and DMP will be updated and finalised in agreement with all project stakeholders (including the Local Planning Archaeologist, Client, Museum, RCAHMW). • Selection will be informed by the Project Design, defined against the research aims, regional and national research frameworks, specialist advice and the significance of the project results. • The project will be published as an online technical report (accessible via RCAHMW and as part of this archive), with full access to research data. • The data archive will be ordered, with files named and structured in a logical manner, and accompanied by relevant documentation and metadata, as outlined in Sections 2 and 3 of this DMP. • Deselection will be undertaken automatically on any duplicate or unusable files, such as blurry or superfluous photographs.
What is the long-term preservation plan for the dataset?
• The digital archive will be deposited with the RCAHMW, which is working towards becoming a certified repository with Core Trust Seal. • The archive will be prepared for deposition by the project team and the costs for the time needed for preparation, and the cost of deposition have been included in the project budget.
Have you contacted the data repository?
• AW has an ongoing agreement with the RCAHMW who the intended repository for digital data are.
Have the costs of archiving been fully considered?
• A costing estimate has been produced to allow for the preparation of the archive and has been included in the project budget.

Section 7: Data Sharing

How will you share the data and make it accessible?
• The museum and digital archive repository and will be updated as the project progresses. • The investigations have resulted in the following documents: Project Design, Field Evaluation Report • A final version of the project report will be supplied to the Historic Environment Record, and any data which they request can also be provided directly. • The location (s) of the final Archaeological Archive will be included in the final report

Are any restrictions on data sharing required?
• A temporary embargo may be required on the sharing of the project results. If this is the case, specific details once agreed will be included in the updated version of this DMP and will be documented in the overarching Project Collection Metadata. • Data specific requirements, ethical issues or embargos which are linked to particular data formats will be documented within the relevant metadata tables accompanying the project archive

Section 8: Responsibilities

Who will be responsible for implementing the data management plan?
• The Project Manager and Post Excavation Manager will be responsible for implementing the DMP, and ensuring it is reviewed and revised at each stage of the project. • Data capture, metadata production and data quality is the responsibility of the Project Team, assured by the Project Manager and Post Excavation Manager. • Storage and backup of data in the field is the responsibility of the field team. • Once data is incorporated into the organisations project server, storage and backup is managed by an external company. • Data archiving is undertaken by the project team under the guidance of the Post Excavation Manager, who is responsible for the transfer of the Archaeological Project Archive to the agreed repository. • Details of the core project team can be found in the Project Design.

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