

## Archaeological Watching Brief Report:

### Caerphilly Castle Moat Banks

January 2023



Report No. 2151

By

John Davey and

Juan Moreno



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Prepared for Cadw

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## Non-Technical Summary

*This report results from work undertaken by Archaeology Wales Ltd (AW) during September to December 2022 at the request of Cadw. The work was undertaken at Caerphilly Castle, Crescent Road, Caerphilly, CF83 1XX, centred on NGR ST 15690 87080, and consisted of a watching brief during groundworks associated with stabilisation works on the Outer East Moat of the castle to ensure the safe operation of the reservoir.*

*No archaeological features of potential medieval origin, contemporary with the occupation of the Castle, were identified during the excavations. A made ground layer (1004) recorded during the earlier trenched evaluation as layer (107) was re-exposed in Area 1W, which appears to be associated with 19<sup>th</sup> and early 20<sup>th</sup> century renovations and reconstructions at the castle. A 20<sup>th</sup> Century path (1006) recorded as layer (108) during the earlier trenched evaluation was also re-exposed in Area 1W, comprising the eastern entrance way to the castle prior to the reconstruction of the eastern bridge. Deposits associated with the mid-20<sup>th</sup> century reprofiling of the moat were also recorded within all areas. A rubble layer (4001) was recorded at the south end of Area 3, below the water line and interpreted as a layer associated with the demolition of buildings recorded at the south end of Castle Street on 19<sup>th</sup> and early 20<sup>th</sup> century maps. These buildings were constructed prior to 1841 and demolished between 1920 and 1937.*

*A total of six artefacts, weighing 1.684kg were recovered during the course of the watching brief. They included small quantities of animal bone, CBM, glass and pottery, all dating from the late 19<sup>th</sup> and early 20<sup>th</sup> centuries and redeposited within mid-20<sup>th</sup> century layers.*

*All work was undertaken in accordance with the standards and guidelines of the Chartered Institute for Archaeologists (2020). AW is a Registered Organisation with the Chartered Institute for Archaeologists.*

## **Crynodeb Annhechnegol**

*Mae'r adroddiad hwn yn ganlyniad i waith a wnaed gan Archaeology Wales Cyf (AW) yn ystod mis Medi a mis Rhagfyr 2022 ar gais Cadw. Gwnaed y gwaith yng Nghastell Caerffili, Crescent Road, Caerffili, CF83 1XX, y mae ei ganolbwynt wedi'i leoli yn NGR ST 15690 87080, ac roedd yn cynnwys briff gwyllo yn ystod y gwaith tir sy'n gysylltiedig â'r gwaith sefydlogi ar Ffos Allanol Dwyreiniol y castell i sicrhau gweithrediad diogel y gronfa ddŵr.*

*Ni nodwyd unrhyw nodweddion archeolegol o darddiad ôl-ganoloesol posibl, a oedd yn cydfynd â meddiannaeth y Castell, yn ystod y gwaith cloddio. Ail-ddatgelwyd haen o dir a wnaed (1004) a gofnodwyd yn ystod y gwerthusiad ffosydd cynharach fel haen (107) yn Ardal 1W, sy'n ymddangos yn gysylltiedig â gwaith adnewyddu ac ailadeiladu yn y 19eg ganrif a dechrau'r 20fed ganrif. Ail-ddatgelwyd llwybr o'r 20fed ganrif (1006) fel haen (108) yn ystod gwerthusiad ffos cynharach hefyd yn Ardal 1W, sy'n cynnwys ffordd fynediad ddwyreiniol i'r castell cyn y gwaith o ailadeiladu'r bont ddwyreiniol.*

*Cofnodwyd gwaddodion sy'n gysylltiedig â'r gwaith yng nghanol yr 20fed ganrif o ailbroffilio'r ffos hefyd o fewn yr holl ardaloedd. Cofnodwyd haen o rwbel (4001) yn ochr ddeheuol Ardal 3, islaw llinell y dŵr, a ddadansoddwyd fel haen sy'n gysylltiedig â dymchweliad adeiladau a gofnodwyd ar ochr ddeheuol Stryd y Castell ar fapiau'r 19eg ganrif a dechrau'r 20fed ganrif. Adeiladwyd yr adeiladau hyn cyn 1841 ac fe'u dymchwelwyd rhwng 1920 ac 1937.*

*Adferwyd cyfanswm o Chwech arteffact, yn pwyso 1.684kg, yn ystod y briff gwyllo. Roeddent yn cynnwys ychydig o esgyrn anifeiliaid, deunydd adeiladu serameg, gwydr a chrochenwaith, oll yn dyddio o ddiwedd y 19eg ganrif a dechrau'r 20fed ganrif a ail-ddosbarthwyd o fewn haenau canol yr 20fed ganrif.*

*Gwnaed yr holl waith yn unol â safonau a chanllawiau Sefydliad Siartredig yr Archeolegwyr (2020). Mae AW yn Sefydliad Cofrestredig â Sefydliad Siartredig yr Archeolegwyr.*

## **1. Introduction**

- 1.1.1 Archaeology Wales (henceforth - AW) was commissioned by Cadw to undertake archaeological mitigation during groundworks associated with stabilisation works on the Outer East Moat of the castle to ensure the safe operation of the reservoir at Caerphilly Castle, Crescent Road, Caerphilly, CF83 1XX, centred on NGR ST 15690 87080 (henceforth- 'the site'). Caerphilly Castle is a Scheduled Monument (GM002) (Figure 1). This watching brief followed on from an earlier evaluation which comprised the excavation of two evaluation Trenches and a GPS transect survey of the eastern moat bank profiles (Glass, 2022).. A Written Scheme of Investigation (WSI) was prepared by John Davey (Project Manager, Archaeology Wales) at the request of Cadw. The methodology that was set out in the WSI was to support *Conditions of the Scheduled Monument Consent, Section 2(6) of the 1979 Act*.
- 1.1.2 The recommendations for an archaeological evaluation and archaeological watching brief of the site have been proposed by Cadw's Historic Environment Branch to support an Ancient Monuments and Archaeological Areas Act 1979 Application for Scheduled Monument Consent. The scheduled monument consent is considered in accordance with Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Conservation Principles) and Annex A of Technical Advice Note 24: The Historic Environment (TAN 24). An earlier trenched evaluation in advance of the stabilisation works was completed by AW in May 2022 (Glass, 2022).
- 1.1.3 All work was undertaken to the standards and guidance set by the Chartered Institute for Archaeologists (CIfA); Standard and guidance for archaeological watching briefs (2020 update). AW is a Registered Organisation with CIfA.
- 1.1.4 The watching brief took place from the 22<sup>nd</sup> September to the 16<sup>th</sup> December 2022 and was supervised by Juan Moreno, Charley James Martin, Menna Griffiths and Rachel Wilmott. The project was managed by John Davey (PhD MCIfA).

## **2. Site Description and Archaeological Background**

### **2.1. Location, Topography and Geology**

- 2.1.1 The site consists of the Outer East Moat of Caerphilly Castle, which is located in the historic core of the town of Caerphilly. The castle is surrounded by its moat, with both residential and commercial properties to the north, east, and south.
- 2.1.2 The site falls within the historic parish of Eglwysilan and lies within the county of Glamorgan.
- 2.1.3 The site is located in the valley of Nant Gledyr which runs roughly west to east and flows through the castle's moats. There is an underground confluence with the Porset

Brook 100m to the east of the site. The combined watercourse flows for 1.5km to the northeast of the site before discharging into the River Rhymney.

- 2.1.4 The Outer East Moat represents the first line of defence of the concentric medieval fortress. The topography of the site is undulating, with raised banks on the east and west sides of the north-south aligned moat. The height of the banks varies from approximately 85.5m aOD in the southeast corner of the site and 85.2m aOD in the northwest area of the site; to lows of approximately 82.3m aOD at the water's edge. The depth of the moat was not surveyed as part of the current works. The eastern bank of the moat is raised above Castle Street by approximately 3m. The western bank is bounded by the eastern curtain wall of the castle to the west. The entire site is bounded by the castle entrance bridge to the south. A gravel pathway runs along the top of the eastern bank. Prior to excavation, the site was covered by a mixture of grass with reeds at the water's edge.
- 2.1.5 The geology beneath most of the site comprises of mudstone, siltstone and sandstone belonging to the Grovesend Formation. This sedimentary bedrock Sedimentary Bedrock formed approximately 308 to 310 million years ago in the Carboniferous Period. In the southern part of the site there is a broad band of alluvium which cuts across the site from east to west in association with the Nant Gledyr (BGS, 2022).
- 2.1.6 There are no geotechnical data for the site and nor are there any BGS historic borehole scans within the site. The closest are boreholes taken 50–150m west of the site within the inner ward of the castle and inner moat in 1956. Unfortunately, the available online scans of these records are of poor quality, rendering them illegible (BGS, 2022).

## **2.2. Archaeological and Historical Background**

- 2.2.1 Caerphilly Castle consists of the remains of one of the largest medieval castles in Europe and the second largest in the United Kingdom. It was built by 'Red Gilbert' de Clare between 1268-1271 due to the ongoing tensions between de Clare and the Welsh prince, Llywelyn ap Gruffudd, who sought to assert his power and influence over this region of Wales during the political instability of Henry III's reign in the late 13th century (Moore 2005, pp. 141-142).
- 2.2.2 The following historic summary is an extract from the Scheduled Monument report description:

*The castle comprises of the remains of a medieval castle built by 'Red Gilbert' de Clare between 1268-1271. Caerphilly Castle is one of the great medieval castles of western Europe. Several factors give it this pre-eminence – its immense size (1.2ha), its large-scale use of water for defence and the fact that it is the first truly concentric castle in*

*Britain. At the time of its building, it was a revolutionary masterpiece of military planning.*

*One of Henry III's most powerful and ambitious barons, Gilbert de Clare, lord of Glamorgan, built the castle. His purpose was to secure the area and prevent lowland south Wales from falling into the hands of the Welsh leader Llywelyn ap Gruffudd, who controlled most of mid and north Wales.*

*The outer skin or ward is formed by a low battlemented curtain wall with large semi-circular projections in the corners and gatehouses in the middle of the east and west sides. Only a narrow strip separates this from the much stronger inner ward which has high curtain walls, circular corner towers and two large strong gatehouses corresponding with the outer ones.*

*The south and north lakes around the castle formed an almost impregnable barrier to attackers. The dams themselves are a major achievement of medieval engineering. The South Dam is earlier than the north dam; its outer face was protected by a massive wall with a battery of projecting buttresses. The outer defences were completed by making a 1.2ha artificial island to the west of the castle, known as the hornwork. The outer gatehouse on the east side is both the present and original entrance. The outer ward is entered via a bridge leading to its east gatehouse with twin D-shaped towers, only the restored outer walls of which remain.*

*The inner ward is the most impressive part of the castle. The corner towers demonstrate varying degrees of preservation. The north-west tower is complete, little remains of the north-east tower and the south-east is partly ruined. It stands at 15m high and leans at an angle 10° from vertical, and the cause, whether subsidence or Civil War slighting, is unknown. The imposing east gatehouse of the inner ward consists of twin D-shaped towers, a central passage with portcullises at both ends and circular stair turrets on the inner corners. The apartment on the second floor was probably that of the constable of the castle.*

*On the south side of the inner ward are the great hall and state apartments. The large ground-floor hall was a sumptuous building. The two doors at the east end led to a buttery and cellar, possibly with a small chapel over them. To the west were the state apartments, well-appointed rooms with fireplaces and a large traceried window on the first floor.*

*To the north-west of the moat lies a 17th century Civil War earthwork gun platform. It is not known if the earthwork was raised by the royalists or if it was the work of parliamentary forces after March 1646.*

*The castle's active history was an extremely short one. By 1283 Edward I had removed the threat of Welsh independence and the need for Caerphilly had gone. Minor Welsh*

*attacks in 1294-5 and 1316 and a siege in 1326-27 failed to make any impact and the castle fell into ruin.*

*This monument is of national importance for its potential to enhance our knowledge of medieval social, domestic, and political life and warfare. The scheduled area comprises the remains described and an area around them within which related evidence may be expected to survive (Cadw, Scheduled Monument Report).*

- 2.2.3 The castle is concentric, built to a high specification, with two sets of twin-towered gatehouses on its east and west sides. It is argued that Caerphilly Castle resembles the castles of Edward I in North Wales, and that it served as some kind of model to the later northern castles. However, the vast restoration works that were commissioned by the Marquis of Bute in the late 19th and early 20th century could have altered the castle's original appearance, making it appear more like Edward I's northern castles (Coldstream 2003, p. 27).
- 2.2.4 The inner ward is enclosed by a substantial curtain wall with a circular tower at each corner, and a larger semi-circular tower in the centre of the south wall. The two towers at the west end have been restored and stand at their full height. Robbing of the wall for stone during the Civil War brought down the north-east tower and the opposite tower leans at an angle 10° from vertical. On the south side of the inner ward are the state apartments and Great Hall. The current hall was built by Hugh Despenser in the 14th century (Hague 1971, pp. 423-426).
- 2.2.5 WSP have undertaken a Heritage Impact Assessment of the proposed development (Platt, 2021). They established that there have been no past archaeological investigations within the site and just two within the study area comprising a 50m radius around the eastern moat. These comprised an archaeological evaluation (Figure 2; A4) and an archaeological watching brief (Figure 2; A5). The archaeological evaluation was conducted in 1999 during improvements to the approach on the south side of Caerphilly Castle 35m south-west of the site. The evaluation revealed no features or finds of archaeological interest, other than a flagged pathway dating to the 19th century and a mixed tarmac and cobble surface dating to the 19th/20th century. The archaeological watching brief, also in 1999, monitored a hand-dug investigative trench excavated along the line of a leaking water pipe 30m east of the southern tip of the site. No deposits of archaeological interest were found. The site and its immediate vicinity are therefore not well understood archaeologically, though much is known about the history and development of the site, as part of Caerphilly Castle (Platt, 2021, 12).
- 2.2.6 The Historic Impact Assessment concluded that there was likely to be potential buried heritage assets that may be affected by the proposals. It was considered that these may comprise:

- *Later medieval remains: There was considered to be a moderate to high potential for evidence of the original moat and associated banks (most likely medieval cut/slope profiling but potentially also including timber stakes and/or stone revetment) within the site footprint, deemed of high or very high heritage significance, and potentially also of later encroachment (e.g field boundaries, burgage plots) after the castle was abandoned, which was deemed of medium significance.*
- *Post-medieval/modern remains: Historic maps show field boundaries and parts of buildings extending across parts of the former Outer Moat and embankments after it fell into disrepair. On the embankments, there was considered to be a high potential for the footings of these buildings, and evidence of the former field boundaries. There is also high potential for evidence of modern (20th century) restoration works. Such remains would be of low heritage significance.*
- *While the site also has high potential for palaeoenvironmental remains within the underlying alluvium to the south, deemed of low or medium significance, and uncertain potential for Roman remains (evidence of a Roman road with possible roadside development and/or burials which may have crossed the site), of medium or high significance, it was felt unlikely that the proposed works would extend as far as these remains.*

2.2.7 Archaeological survival within the majority of the site was anticipated to be high (on the embankments), falling to moderate where the site extends into the edges of the moat itself (Platt 2021).

### **3. Methodology**

- 3.1.1. The watching brief consisted of the monitoring of groundworks relating to the installation of turf re-inforcement on both banks north of the outer entrance bridge (Area 1E and Area 1W) and the installation of coir rolls in Areas 2 and 3 (Figure 2).
- 3.1.2. The groundworks were monitored at all times by a suitably qualified archaeologist. The site archaeologist undertaking the watching brief was afforded the required access by the main contractor to observe and where necessary to record any archaeological remains revealed. No intrusive groundwork, including de-turfing and topsoil stripping, was undertaken without the presence of the site archaeologist.
- 3.1.3. All deposits were recorded by means of a continuous context numbering system and recorded on pro-forma context sheets. Sections and plans of the excavation were photographed using a 12MP digital camera. All works were undertaken in accordance with the ClfA's *Standards and Guidance for an archaeological watching brief* (2020) and current Health and Safety legislation.

## 4. Watching Brief Results

### 4.1. General

- 4.1.1 Four areas were excavated along the moat banks located to the east of Caerphilly Castle. The excavations were conducted using a mechanical tracked excavator utilising a toothless bucket. Two of the Areas (1E and 1W) had been previously excavated and recorded as part of an archaeological trenched evaluation (Glass, 2022). Evaluation Trench 1 equates to watching brief Area 1W; and evaluation Trench 2 equates to watching brief Area 1E. Both evaluation trenches had been backfilled prior to the current watching brief. The two areas were re-excavated and the previously deposited mixed soil was documented accordingly.
- 4.1.2. Areas 1 east and 1 west were located immediately north of the bridge entrance to Caerphilly Castle. Area 2 comprised a thin strip at the toe of the eastern bank of the eastern outer moat and north of the bridge entry to the castle. This strip was located at the base of the eastern moat bank at the water line. Area 3 comprised a similar thin strip at the toe of the eastern bank of the eastern outer moat and south of the bridge entry to the castle. The strip area was also located at the base of the eastern moat bank bordering the water line. Both Areas 2 and 3 also involved dredging soil from the eastern moat bank sides below the water line. Monitoring in this instance was limited to visual inspection of material pulled to the surface. On occasion the soil was placed on a floating barge platform inaccessible to the monitoring archaeologists for safety reasons and monitoring was necessarily at a distance.

### 4.2. Area 1W (Plates 1-4; Figures 2-3)

- 4.2.1. Area 1 West comprised a sub-rectangular area with an irregular southern edge bordering the eastern outer entrance bridge piers and the Outer Castle Curtain walls. The area measured 17m north to south by 28m east to west and was excavated to an average depth of 0.63m from the current ground level. The topography of Area 1W sloped down towards the east and the moat, relatively flat towards the west end and increasing in gradient towards the moat (plate 1). The area had been previously disturbed by the excavation of evaluation Trench 1 and by the installation of a large number of power cables. These were disconnected and removed, further disturbing the layers within Area 1W. For a fuller stratigraphic account of the undisturbed archaeological deposits see *Glass, 2022*; Trench 1.
- 4.2.2. The basal deposit encountered during the watching brief in Area 1W was a firmly compacted mid brown and yellow clay containing occasional small to large angular and sub-angular stones (1002). This deposit was recorded in the western up-slope part of Area 1W at a depth of 0.35m and in the eastern down-slope part at 0.42m. This layer is interpreted as the natural geology and appeared to be overlain by foundations



for the outer curtain wall and gate (plate 2). The foundations for the eastern castle entrance bridge were also exposed at the southern end of Area 1W (plate 3)

- 4.2.3. Located at the southwest corner of Area 1W, adjacent to the curtain wall gateway was a cut [1003] for a stone path (1006). The cut was linear, aligned approximately east-west, shallow (approx. 0.2m deep) with vertical sides and measured approximately 8m long by 2.9m wide (north-south). The fill (1006) contained rounded and sub-angular limestone of varied sizes (plate 3). These were bonded with mid greyish-brown silty clay containing inclusions of coarse sand, mortar and charcoal flecks (plate 4). This is equivalent to path (108) recorded in the earlier evaluation (Glass, 2022). A re-deposited subsoil layer (1004) was also recorded above the natural (1002) on the north side of Area 1W. This layer comprised a compact deposit of mixed mid yellowish-grey, mid brownish-yellow, mid brownish-red and black silty sand with pockets of clay or coarse sands with frequent stone. This layer is interpreted as a made ground deposit composed of mixed stone, mortar and sands deliberately dumped to create a raised solid level for the western bank of the eastern moat and is equivalent to layer (107) recorded in the earlier evaluation (Glass, 2022). Its stratigraphic relationship with path (1006) was not clear.
- 4.2.4. Overlying layers (1004) and (1006) was a redeposited subsoil (1001) consisting of moderately compacted mid red-brown silty clay and containing frequent small to large stones. This layer represents the backfill of the former evaluation Trench 1. This layer measured 0.12m thick. A single fragment of animal bone was observed located within this modern subsoil, but not retained. Above subsoil (1001) was the topsoil (1000), comprising firmly compacted mid grey-brown silty clay containing occasional large stones. The topsoil measured 0.23m thick and was covered by turf.

### **4.3. Area 1E (Plates 5-7; Figures 2-3)**

- 4.3.1 Area 1 East was approximately rectangular in plan and occupied the moderately sloping eastern moat bank. The eastern portion of the area rose steeply to the south towards the bridge entry walls creating a steep incline. The area measured 17m north to south and 12m east to west with a curved southeast corner where the footpath joins to the entrance bridge. Up-slope the area was excavated to a maximum depth of 0.50m and downslope to 0.63m (plate 5). The area contained three redeposited soil layers and there were no archaeological features observed.
- 4.3.2. The basal deposit, recorded at a depth of 0.63m at the western end of the area, was layer (2002). This comprised a deposit related to the build-up and re-profiling of the bank during the mid-20<sup>th</sup> century (plates 5 and 6) and is equivalent to layer (202) recorded during the earlier evaluation (Glass, 2022). The soil comprised a mixture of dark grey silt, grey sand and grey-brown clay containing CBM, glass and brick fragments. Directly above (2002) was a re-deposited subsoil (2001) measuring 0.45m thick and consisting of mottled dark brown silty sand mixed with grey clay, large

stones, black plastic sheeting and brick fragments. This layer represents the backfill of the former evaluation Trench 2. Covering this layer was topsoil (2000) measuring 0.18m thick. The soil was friable and dark brown in colour and consisted of sandy silty clay containing pockets of grey clay (plate 7).

#### **4.4. Area 2 (Plate 8; Figure 2)**

- 4.4.1. Area 2 comprised a long thin strip of ground running north from the northwest corner of Area 1E and bordering the down-slope edge of the eastern bank of the moat along the water line for the installation of coir rolls (plate 8). For safety reasons, monitoring of the soil deposits took place from the bank while the machine bucket contents were deposited on a pontoon floating in the moat.
- 4.4.2. A single soil deposit (3000) was recorded in Area 2, below the topsoil and the waterline. It comprised a loose waterlogged layer of dark grey and brown decaying organic debris and silty clayey sand. The soil contained small to large stone, whole and fragments of brick and broken pieces of plastic and cat tail reeds. Separation of soil horizons was impossible due to submergence. There were no archaeological features observed.

#### **4.5. Area 3 (Plates 9-12; Figure 2)**

- 4.5.1. Area 3 comprised a long thin strip of ground bordering the eastern edge of the eastern bank of the moat, south of the eastern castle entrance bridge for the installation of coir rolls (plates 9-11). Again, for safety reasons, it was necessary to observe the soil deposits dredged up from below the water line from the bank while the machine bucket contents were deposited on a pontoon floating in the moat.
- 4.5.2. A single soil deposit (4000) was recorded in Area 3, below the topsoil and the waterline. The fill consisted of loose, waterlogged dark grey and brown decaying organic debris and silty clayey sand. The soil contained small to large stones, whole brick and brick fragments, modern rubbish and cat tail reeds.
- 4.5.3 Towards the southeastern end of Area 3, close to the south end of the massive wall of the south dam, with its battery of projecting buttresses; deposit (4000) was observed to contain a higher level of large stone rubble (plate 12). This is interpreted as demolition rubble from former 19th and 20th century buildings fronting on to Castle Street recorded on historic maps. These buildings appear to have been demolished between 1920 and 1937 and the rubble then incorporated into modern landforms during the moat re-profiling works of the mid-20th century. Close to the south dam wall, the stone base of a building corner (4001) was glimpsed submerged below the water line. It was not possible to record it in any further detail and its interpretation remains uncertain. However, its location corresponds approximately with that of

buildings recorded on historic maps from 1841 but removed between 1920 and 1937 (Platt, 2021; Figures 6-11).

#### 4.6. Nantgarw Road Entrance (Plates 13-14)

- 4.6.1 A small area measuring 3m by 2.2m inside the Nantgarw Road gated entrance was reduced by machine in order to provide level access for plant to the site compound on the 22nd September 2022. The works did not penetrate below the level of the topsoil which comprised a mid-brownish grey silty clay containing very frequent angular stones and gravel deposited as hardcore around the gate entrance (plates 13-14). No archaeological finds or features were recorded.

### 5. The Finds

#### 5.1 Overview

- 5.1.1 A total of six artefacts, weighing 1.684kg were recovered during the course of the watching brief. They included small quantities of animal bone, CBM, glass and pottery. All artefacts were 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). The artefacts were washed and dried or, where washing was not appropriate, dry brushed.
- 5.1.2. After washing or dry brushing all of the artefacts were assessed to ensure none needed immediate stabilisation.
- 5.1.3. The finds are catalogued in Table 1. All finds were recovered from topsoil.

Context Number	Object Type	Quantity	Weight (g)	Description
Topsoil	Animal Bone	1	111	Butchered fragment of cattle bone - chopped at both ends and cut marks present on the bone.
Topsoil	CBM	3	1217	Brick fragment and two fragments of glazed ceramic utility pipe 19 <sup>th</sup> -20 <sup>th</sup> century
Topsoil	Glass	1	277	Broken body and base of a glass bottle bearing the words "TAFF AERATED WATER CO PONTYPRIDD" and monogram 19 <sup>th</sup> -20 <sup>th</sup> Century
Topsoil	Pottery	1	79	Internally glazed earthenware pot fragment - likely garden ware 19 <sup>th</sup> -20 <sup>th</sup> Century

*Table 1: Quantification of the artefacts recovered from the site*

## **5.2 Summary**

- 5.2.1 The artefacts recovered during the watching brief date to the 19<sup>th</sup>-20<sup>th</sup> century and are residual remnants of discarded waste material within the topsoil. They are of little archaeological value.

## **6. Discussions and Conclusions**

The results of the watching brief confirm those of the earlier trenched evaluation on the site (Glass, 2022). No deposits relating to the medieval construction and operation of the outer east moat were recorded, only deposits relating to its re-profiling during the mid-20<sup>th</sup> century. A metalled path utilised as the entrance to the castle until the mid-20<sup>th</sup> century, previously recorded within Evaluation Trench 1, was also re-exposed within watching brief Area 1W. Extant foundations for the eastern moat bridge piers were also partially exposed in Area 1W. In Areas 2 and 3, soils were dredged up from below the water line rendering their observation in situ impossible. Furthermore, for safety reasons it was not possible to observe the dredged soils closely on the surface due to their being deposited on to pontoons on the moat. Nevertheless, it was possible to ascertain that demolition rubble associated with 19<sup>th</sup> and early 20<sup>th</sup> century buildings located at the south end of Castle Street had become incorporated in to the modern most bank profile established during the mid-20<sup>th</sup> century. It is also possible that the foundations of some of these buildings have survived beneath the water line. Historic maps indicate that these building were constructed by 1841 but demolished between 1920 and 1937. No other significant archaeological features or deposits were recorded.

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Cadw, Scheduled Monument Report: <https://cadwpublic-api.azurewebsites.net/reports/sam/FullReport?lang=&id=2848> (accessed 12/01/2023)

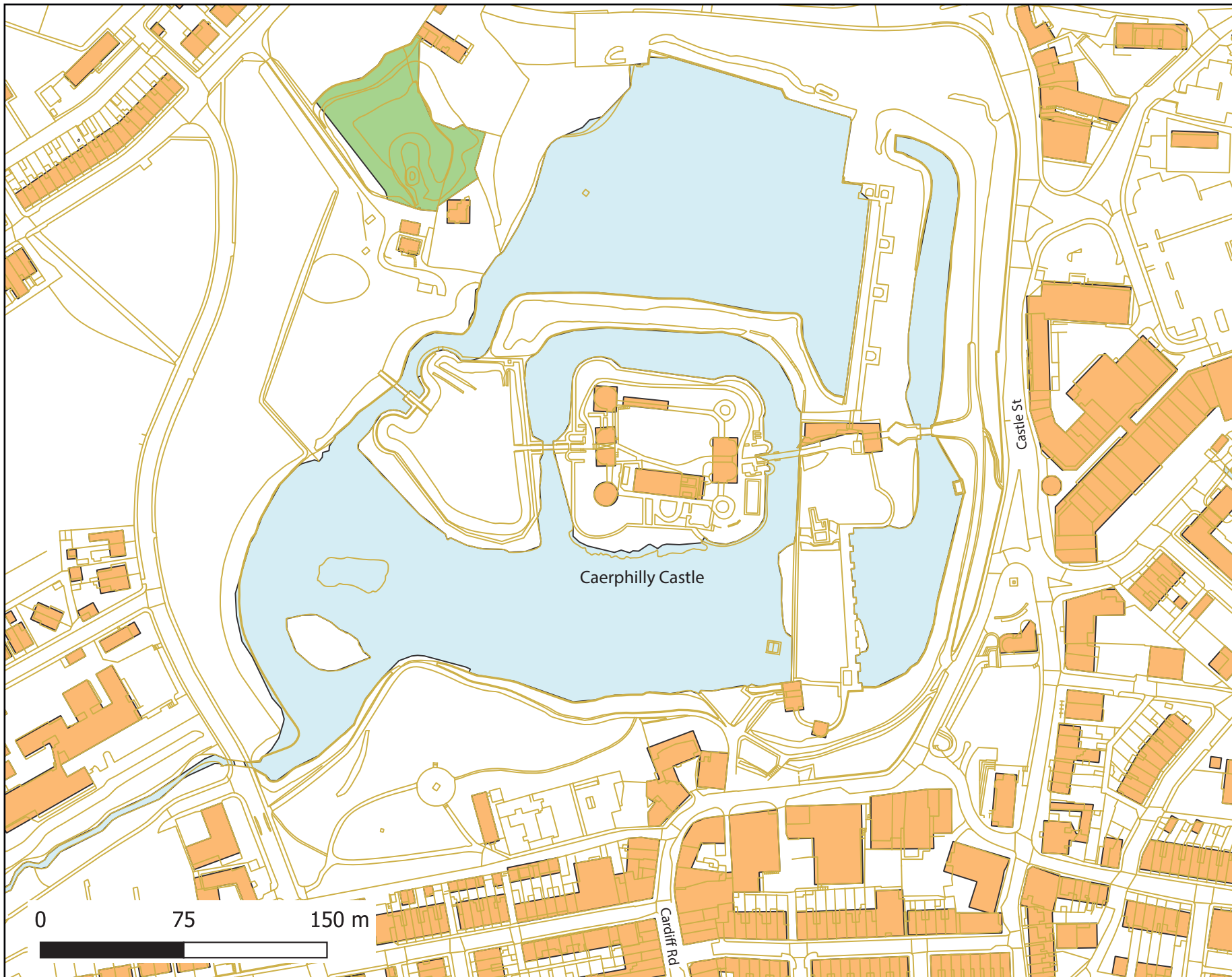


Figure 1: Location plan

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## Key




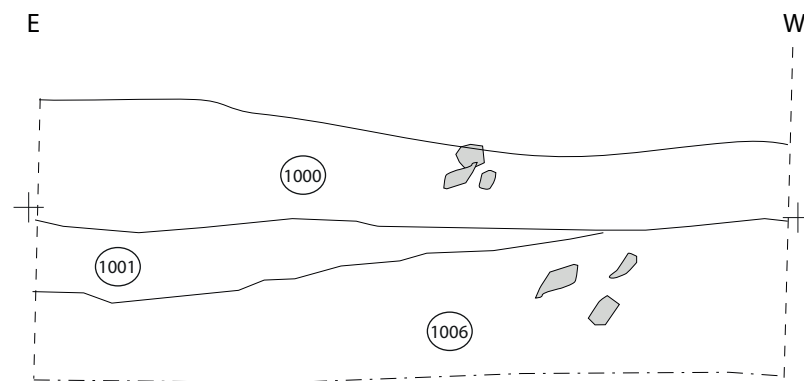
-  Scheduled Monument Boundary
-  Previous Archaeological Investigations
-  Current Archaeological Investigation Area

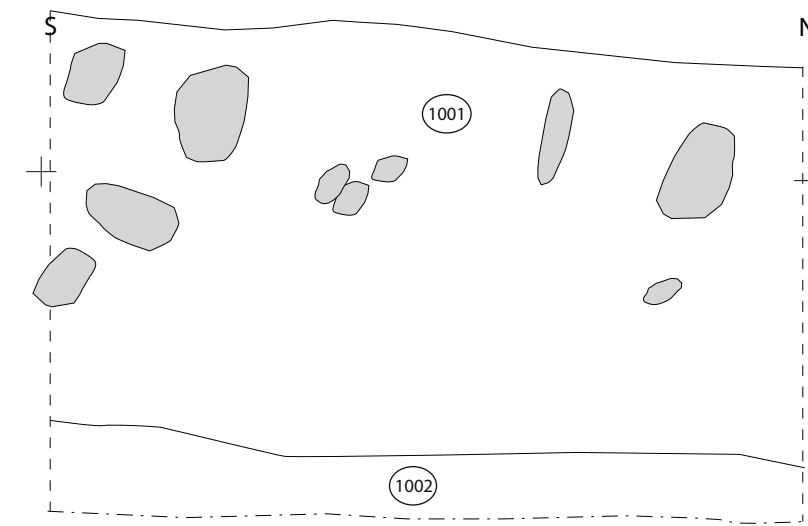
Figure 1: Location plan  
(After Platt, 2021, Fig 2)

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North Facing Representative section within Area 1W

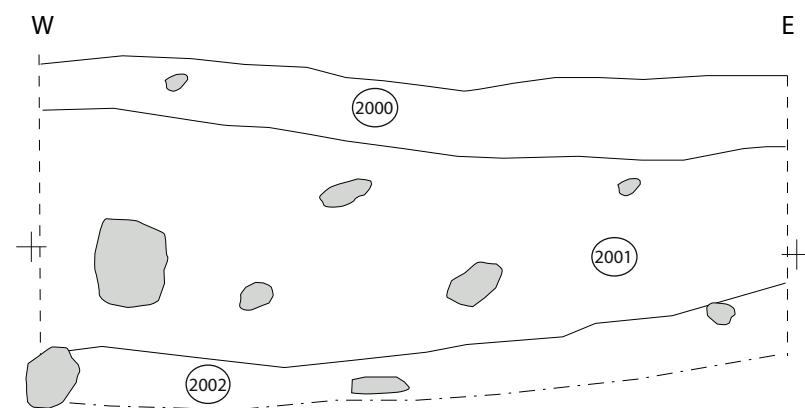


East Facing Representative section within Area 1W



0 0.5m  
Sections 1:10 @ A3

South Facing Representative section within Area 1E



Key  
Stone

Figure 3:  
Representative sections within  
Area 1





*Plate 1: Area 1W, eastern end, view to northwest.*



*Plate 2: Area 1W, East Facing Section, context (1002) and modern electrical services, view to west. 1m scale.*





*Plate 3: Area 1W, North Facing Section, showing foundations of bridge pier view to south. 1m scale.*



*Plate 4: Area 1W, Deposit (1006), view to east. 1m scale.*





*Plate 5: Area 1 E, view to north.*



*Plate 6: Area 1 E, South Facing Section, view to north. 1m scale.*





*Plate 6: Area 1 E, working shot: laying of pre-filled rock mattress. View to northeast.*



*Plate 7: Area 2, laying of coir rolls. View to north.*





*Plate 8: Area 3, south end, removal of reeds in advance of excavation. View to the northeast.*



*Plate 9: Area 3, south end. Driving stakes ready to receive coir rolls. View to northeast.*





*Plate 11: Area 3, north end, excavation of bank. View to south.*



*Plate 12: Area 3, south end. Demolition rubble (4001) derived from 19<sup>th</sup> century buildings dredged up from the moat bank. View to northwest.*





*Plate 10: Nantgarw Road gate excavations, view to northeast. 1m scale.*



*Plate 11: Nantgarw Road gate excavations, view to northwest.*

# *Archaeology* *Wales*

## **APPENDIX I: Context Register**



Context No.	Area No.	Type	Description	Dimensions	Relationship
1000	1W	Layer	firmly compacted mid grey-brown silty clay containing occasional large stones. Topsoil and Turf.	L: 28m x W: 17m x D: 0.23m	Above (1001)
1001	1W	Layer	moderately compacted mid red brown silty clay and containing frequent small to large stones. Backfill of Evaluation Trench 1.	L: 25m x W: 14m x D: 0.12m	Below (1000) Above (1006) & (1004)
1002	1W	Layer	firmly compacted mid brown and yellow clay containing occasional small to large angular and sub-angular stones – Natural?	L: 6m x W: 3m x D: >0.35-42m	Below (1004), [1003]
1003	1W	Cut	linear, aligned approximately E-W, shallow (approx. 0.2m deep) with vertical sides and measured approximately 2.9m wide (N-S)	L: 8.3m x W: 2.9m x D: 0.2m	Filled by (1006), Cuts, (1002)
1004	1W	Layer	compact mixed mid yellowish-grey, mid brownish-yellow, mid brownish-red and black patches. Silty sand with pockets of clay or coarse sands with frequent stone.	L: 10.30m x W: >5.5m x D: >0.15m	Below (1001) Above (1002); same as (107)
1005	VOID				
1006	1W	Fill	rounded and sub-angular limestone of varied sizes set in a mid-greyish-brown silty clay matrix containing inclusions of coarse sand, mortar and charcoal flecks	L: 8.30m x W: 2.9m x D: 0.25m	Below (1001), Fill of [1003], same as (108)
2000	1E	Layer	friable and dark brown in colour and consisted of sandy silty clay containing pockets of grey clay. Topsoil and turf.	L: 17m x W: 12m x D: 0.18m	Above (2001)
2001	1E	Layer	mottled dark brown silty sand mixed with grey clay, large stones, black plastic sheeting and brick fragments. Backfill of the former evaluation Trench 2	L: 17m x W: 12m x D: 0.45m	Below (2000) & Above (2002)
2002	1E	Layer	mixture of dark grey silt, grey sand and grey-brown clay containing CBM, glass and brick fragments. Related to the build-up and re-profiling of the bank during the mid-20th century	L: 3m x W: 12m x D: >0.05m	Below (20001) same as (202)
3000	2	Layer	loose waterlogged layer of dark grey and brown decaying organic debris and silty clayey sand containing small to large stone, brick fragments, plastic and reeds.	L: 118m x W: 1m x D: not seen	

4000	3	Layer	loose waterlogged layer of dark grey and brown decaying organic debris and silty clayey sand containing small to large stone, brick fragments, plastic and reeds.	L: 123m x W: 1m x D: not seen	Above (4001)
4001	3	Layer	19 <sup>th</sup> -20 <sup>th</sup> century demolition rubble comprising large and small angular Pennant Sandstone rubble, including some masonry stones, set within a dark grey silty clay matrix.	Not seen (below water line)	Below (4000)

# *Archaeology Wales*

## **APPENDIX II: Written Scheme of Investigation**

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**WRITTEN SCHEME OF INVESTIGATION  
FOR AN ARCHAEOLOGICAL FIELD EVALUATION  
AND WATCHING BRIEF AT  
CAERPHILLY CASTLE MOAT BANK**

**Prepared for:**  
Cadw

**Project No: 2998**

**April 2022**



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Figure 1. Site Location

Figure 2. Location of Evaluation Trenches and Watching Brief Area

Figure 3. Proposed Development Plans (Option 1a)

Figure 4. Proposed Development Plans (Option 1b)

Figure 5. Proposed Development Plans (Option 1c)

Figure 6. Proposed Development Plans (Option 1d)

# 1 Introduction and Planning Background

- 1.1 This Written Scheme of Investigation (WSI) details a programme of archaeological mitigation to be undertaken by Archaeology Wales Ltd (henceforth – AW) at the request of Cadw (henceforth – ‘the client’).
- 1.2 The proposed development comprises stabilisation works in three areas of the eastern Outer Moat of the castle to ensure the safe operation of the reservoir, at Caerphilly Castle, Crescent Road, Caerphilly, CF83 1XX, centred on NGR ST 15690 87080 (henceforth- ‘the site’). Caerphilly Castle is a Scheduled Monument (GM002) (Figure 1).
- 1.3 The recommendations for an archaeological evaluation and archaeological watching brief of the site have been proposed by Cadw’s Historic Environment Branch to support an Ancient Monuments and Archaeological Areas Act 1979 Application for Scheduled Monument Consent. The scheduled monument consent is considered in accordance with *Conservation Principles for the Sustainable Management of the Historic Environment in Wales* (Conservation Principles) and Annex A of Technical Advice Note 24: The Historic Environment (TAN 24).
- 1.4 In a Scheduled Monument Consent Application Consultation Response Letter from Cadw’s Historic Environment Branch dated 9/2/2022 (Ref. DH), Cadw advised that:

*Before we can determine the application we need to clearly understand the depth, character and degree of preservation of the protected archaeology beneath the current ground surface, as discussed.*

*Following prior consultation with Cadw’s Inspector of Ancient Monuments you propose to undertake an archaeological evaluation to inform the SMC decision.*

*The evaluation is hereby approved scheduled monument consent under Class 7 of the schedule to Article 2 of the Ancient Monuments (Class Consents) Order 1994 in order to supply us with information that is required to determine your application for scheduled monument consent. However, before the evaluation can be undertaken we require the following:*

- 1. The applicant shall commission a suitably qualified and experienced archaeological contractor to carry out an archaeological evaluation; and*
- 2. No work is to commence until Cadw’s Historic Environment Branch has approved the proposed archaeological contractor and their written scheme of investigation (WSI) for archaeological evaluation.*

- 1.5 Consequently, this Specification has been prepared by John Davey PhD MCIfA (Project Manager, AW) at the request of Cadw. It provides information on the methodology that will be employed by AW during the archaeological field evaluation and watching brief.
- 1.6 The primary objective of the archaeological mitigation is to supply Cadw’s Historic Environment Branch with information that is required to determine the application for scheduled monument consent and to ensure that legally protected archaeology is not

destroyed during the groundworks associated with the proposed development.

- 1.7 All work will be undertaken to the standards and guidance set by the Chartered Institute for Archaeologists; Standard and guidance for archaeological field evaluation (2020 update) and Standard and guidance for an archaeological watching brief (2020 update). AW is a Registered Organisation with the ClfA.

## 2 Proposed Works

- 2.1 The proposed development comprises plans for three main Areas of works. These are discussed in detail below:

### 2.2 Area One

The proposed works to the Outer Moat comprise:

Area 1 – erosion control on part of the eastern and western embankments of the Outer Moat. Works to comprise one or more of the following options:

- Option 1a: a pre-filled rock mattress on the embankments (Figure 3);
- Option 1b: turf re-inforced mats on the embankments (Figure 4);
- Option 1c: a geocell system on the embankments (Figure 5); or
- Option 1d: coir rolls at the toe of the embankments (Figure 6).

Archaeological mitigation in Area 1 to comprise two open area evaluation trenches of the Moat Banks. Trenches to be opened by machine at the top of the bank initially. For the lower part of the bank: stratigraphic information from the top of the bank will guide machining of the upper layers only, hand excavation thereafter.

### 2.3 Area Two

Edge protection on the eastern embankment of the northern Outer Moat: works to comprise the installation of coir rolls at the toe of the embankment (Figure 6).

Archaeological mitigation to comprise a watching Brief during groundworks associated with the installation of the coir rolls.

### 2.4 Area Three

Embankment reinforcement on the south-eastern Outer Moat: works to comprise the installation of turf re-inforced mats on the embankment.

Edge protection on the eastern embankment of the southern Outer Moat: works to comprise the either the installation of coir rolls (Figure 6) at the toe of the embankment; or rock rolls and coir logs at the toe of the embankment.

Archaeological mitigation not required at this stage in Area 3.

## 3 Site Description

- 3.1 The site is located on the eastern side of Caerphilly Castle, Glamorgan, Wales (NGR 315690 187080: Figure 1). With the exception of its south-eastern edge, which is bounded by Castle

Street, the site is bounded on all sides by the grounds of Caerphilly Castle.

- 3.2 The site falls within the historic parish of Eglwysilan and lies within the county of Glamorgan.
- 3.3 The site is located in the valley of Nant Gledyr which runs roughly west/east and flows through the castle's moats. There is an underground confluence with the Porset Brook 100m to the east of the site. The combined watercourse flows north-eastwards to discharge into the River Rhymney 1.5km north-east of the site.
- 3.4 The geology beneath most of the site comprises of mudstone, siltstone and sandstone belonging to the Grovesend Formation. This sedimentary bedrock Sedimentary Bedrock formed approximately 308 to 310 million years ago in the Carboniferous Period. In the southern part of the site there is a broad band of alluvium which cuts across the site from east to west in association with the Nant Gledyr (BGS, 2022).
- 3.5 There are no geotechnical data for the site and nor are there any BGS historic borehole scans within the site. The closest are boreholes taken 50–150m west of the site within the inner ward of the castle and inner moat in 1956; these are virtually illegible (BGS, 2022).

## 4 Historical and Archaeological Background

- 4.1 Caerphilly Castle consists of the remains of one of the largest medieval castles in Europe and the second largest in the United Kingdom. It was built by 'Red Gilbert' de Clare between 1268-1271 due to the ongoing tensions between de Clare and the Werlsh prince, Llywelyn ap Gruffudd, who sought to assert his power and influence over this region of Wales during the political instability of Henry III's reign in the late 13<sup>th</sup> century (Moore 2005, pp. 141-142).
- 4.2 The castle is concentric, built to a high specification, with two sets of twin-towered gatehouses on its east and west sides. It is argued that Caerphilly Castle resembles the castles of Edward I in North Wales, and that it served as a model to the later northern castles. However, the vast restoration works that were commissioned by the Marquis of Bute in the late 19<sup>th</sup> and early 20<sup>th</sup> century, could have altered the castle's original appearance, making it appear more like Edward I's northern castles (Coldstream 2003, p. 27).
- 4.3 The south and north lakes around the castle formed an almost impregnable barrier to attackers. The dams themselves are a major achievement of medieval engineering. The South Dam is earlier than the north dam; its outer face was protected by a massive wall with a battery of projecting buttresses. The outer defenses were completed by making a 1.2ha artificial island to the west of the castle, known as the hornwork. The outer gatehouse on the east side is both the present and original entrance. The outer ward is entered via a bridge leading to its east gatehouse with twin D-shaped towers, only the restored outer walls of which remain (Cadw).
- 4.4 WSP have undertaken a Heritage Impact Assessment of the proposed development (Platt, 2021). They established that there have been no past archaeological investigations within the site and just two within the 50m study area, an archaeological evaluation (Figure 2; A4) and an archaeological watching brief (Figure 2; A5). The archaeological evaluation was conducted in 1999 during improvements to the approach on the south side of Caerphilly Castle 35m south-west of the site. The evaluation revealed no features or finds of archaeological interest, other than a flagged pathway dating to the 19th century and a tarmac/cobble surface dating to the 19th/20th century. The archaeological watching brief, also in 1999, monitored a hand-dug investigative trench excavated along the line of a leaking water pipe 30m east of the southern



tip of the site. No deposits of archaeological interest were found. The site and its immediate vicinity are therefore not well understood archaeologically, though much is known about the history and development of the site, as part of Caerphilly Castle (Platt, 2021, 12).

4.5 The Historic Impact Assessment concluded that there are likely to be potential buried heritage assets that may be affected by the proposals. These may comprise:

- **Later medieval remains.** There is moderate to high potential for evidence of the original moat and associated banks (most likely medieval cut/slope profiling but potentially also including timber stakes and/or stone revetment), in whose footprint the site lies, of high or very high heritage significance, and potentially also of later encroachment (eg field boundaries, burgage plots) after the castle was abandoned, of medium significance.
- **Post-medieval/modern remains.** Historic maps show field boundaries and parts of buildings extending across parts of the former Outer Moat and embankments after it fell into disrepair. On the embankments, there is high potential for the footings of these buildings, and evidence of the former field boundaries. There is also high potential for evidence of modern (20th century) restoration works. Such remains would be of low heritage significance.
- While the site also has high potential for **palaeoenvironmental remains** within the underlying alluvium to the south, of low or medium significance, and uncertain, possibly low to moderate, potential for Roman remains (evidence of a Roman road with possible roadside development and/or burials which may have crossed the site), of medium or high significance, it is felt unlikely that the proposed works would extend as far as these remains.
- Archaeological survival within the majority of the site is anticipated to be high (on the embankments), falling to moderate where the site extends into the edges of the moat itself (Platt, 2021).

## 5 Objectives

5.1 To mitigate potential damage to any archaeology within the Scheduled Monument a comprehensive programme of archaeological works is required. This WSI sets out a program of works to ensure that the archaeological evaluation and archaeological watching brief will meet the standard required by The Chartered Institute for Archaeologist's Standard and guidance for archaeological field evaluation (2020 update) and Standard and guidance for an archaeological watching brief (2020 update).

### 5.2 Archaeological Evaluation

5.2.1 An archaeological field evaluation is a programme of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts and their research potential, within a specified area or site.

5.2.2 The purpose of field evaluation is to gain information about the archaeological resource within a given area or site (including its presence or absence, character, extent, date, integrity, state of preservation and quality), in order to make an assessment of its merit in the appropriate context, leading to one or more of the following:

- the formulation of a strategy to ensure the recording, preservation, or management of

the resource.

- the formulation of a strategy to mitigate a threat to the archaeological resource.
- the formulation of a proposal for further archaeological investigation within a programme of research.

5.2.3 Field evaluation will be required for the two areas of moat bank either side of the moat within Area 1 (Figure 2).

### **5.3 Archaeological Watching Brief**

5.3.1 An archaeological watching brief 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 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.

5.3.2 The purpose of a watching brief 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 development or other potentially disruptive works
- 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.

5.3.3 A watching brief will be required during all groundworks associated with the proposed installation of the coir rolls in Area 2 (Figure 2).

## **6 Timetable of works**

### **6.1 Fieldwork**

6.1.1 The programme of archaeological field evaluation will be undertaken prior to the proposed development discussed above, and the archaeological watching brief will be undertaken during all groundworks associated with the development in Area 2. All parties will be informed and updated with the exact start dates of the works.

### **6.2 Report delivery**

6.2.1 A digital copy of the archaeological report will be submitted to Cadw's Historic Environment branch for approval within 8 weeks of the archaeological fieldwork being completed.

6.2.2 A digital copy of the approved archaeological report will also be submitted to the regional Historic Environment Record (HER) and National Monuments Record of Wales (NMR) to be incorporated into these public records.

## 7 Fieldwork

### 7.1 Archaeological Evaluation – Detail

- 7.1.1 The work will be undertaken to meet the standard required by The Chartered Institute for Archaeologists' Standard and Guidance for Archaeological Field Evaluation (2020 update).
- 7.1.2 The archaeological project manager in charge of the work will satisfy themselves that all constraints to ground works have been identified, including the siting of live services and the Scheduled Monument Consent.
- 7.1.3 The evaluation areas are positioned to maximise the retrieval of archaeological information within accessible areas, and to ensure that the archaeological resource is understood.
- 7.1.4 The exact positioning of the trenches will depend on the position of any extant services or other obstructions that come to light during the initial phase of ground works. The locations of the trenches have been agreed with Cadw prior to the commencement of works.
- 7.1.5 The machine excavation of the areas at the top of the moat bank will be undertaken first. Stratigraphic information gained during this initial phase of excavation will then guide the extent of machine excavation that can be employed at the base of the moat bank. At the top of the moat bank the evaluation trenches will be excavated to the top of the archaeological horizon by a 360° excavator or similar machine fitted with a toothless grading bucket under close archaeological supervision. At the bottom of the moat bank machine excavation will only be employed in the upper layers, the extent of which will be guided by the results of the machine excavation of the upper section of the moat bank. Hand excavation will be employed for the remainder of the trench.
- 7.1.6 All areas will be subsequently hand cleaned using pointing trowels and/or hoes to prove the presence, or absence, of archaeological features and to determine their significance. The excavation of the minimum number of archaeological features will be undertaken, to elucidate the character, distribution, extent and importance of the archaeological remains. As a minimum small discrete feature will be fully excavated, larger discrete features will be half-sectioned (50% excavated) and long linear features will be sample excavated along their length - with investigative excavations distributed along the exposed length of any such feature and to investigate terminals, junctions and relationships with other features. Should this percentage excavation not yield sufficient information to allow the form and function of archaeological features/deposits to be determined full excavation of such features/deposits may be required.
- 7.1.7 Sufficient excavation will be undertaken to ensure that the natural horizons are reached and proven, where this can be practically and safely achieved. If safety reasons preclude manual excavation to natural, hand augering may be used to try to assess the total depth of stratification within each area. The depth of the excavation will conform to current safety requirements. If excavation is required below 1m the options of using shoring will be discussed with Cadw, but the intention would be to stop at safe depths.
- 7.1.8 Should potentially significant archaeological features be encountered during the course of the evaluation then Cadw will be informed at the earliest possible opportunity. Cadw may subsequently request that further archaeological work is undertaken in order to fully evaluate areas of significant archaeological activity. Such work may require the provision of additional

time and resources to complete the archaeological investigation. The scope of such work will be agreed with Cadw prior to any extended works being undertaken.

## **7.2 Archaeological Watching Brief – Detail**

- 7.2.1 The work will be undertaken to meet the standard required by The Chartered Institute for Archaeologists' Standard and Guidance for Watching Briefs (2020 update).
- 7.2.2 The watching brief will consist of the monitoring of groundworks relating to the proposed installation of the coir rolls in Area 2.
- 7.2.3 The groundworks will be monitored at all times by a suitably qualified archaeologist. The site archaeologist undertaking the watching brief will be afforded the required access by the main contractor to observe and where necessary to record any archaeological remains revealed. Any intrusive groundwork, including de-turfing and topsoil stripping, will not be undertaken without the presence of the site archaeologist.
- 7.2.4 Where significant or complex archaeological deposits or features are encountered there will be a requirement for those areas to be fenced off and highlighted to all contractors employed on the site. Machines or contractors shall not enter this area until archaeological recording has been completed. If significant archaeological features are revealed during the work, a meeting between the client, Cadw and AW will be called at the earliest convenience.
- 7.2.5 To comply with professional guidelines, a contingency for further access to each such area with a suitably sized team should be provided. Contingency costs will be agreed in advance before any extension to the programme commences and will follow a site meeting between the client, Cadw and AW.

## **7.3 Recording**

- 7.3.1 Recording will be carried out using AW recording systems (pro-forma context sheets, etc.) using a continuous number sequence for all contexts.
- 7.3.2 Plans and sections will be drawn to a scale of 1:50, 1:20 and 1:10 as required and related to Ordnance Survey datum and published boundaries where appropriate.
- 7.3.3 All features identified will be tied into the OS survey grid and fixed to local topographical boundaries.
- 7.3.4 Photographs will be taken in digital format with an appropriate scale, using a 12MP camera with photographs stored in Tiff format.
- 7.3.5 The archaeologists undertaking the evaluation will have access to the AW metal detector and be trained in its use.

## **7.4 Finds**

- 7.4.1 The professional standards set in the Chartered Institute for Archaeologists' Standard and guidance for the collection, documentation, conservation and research of archaeological

(2014) will form the basis of finds collection, processing and recording.

7.4.2 All manner of finds regardless of category and date will be retained.

7.4.3 Finds recovered that are regarded as Treasure under The Treasure Act 1996 will be reported to HM Coroner for the local area.

7.4.4 Any finds which are considered to be in need of immediate conservation will be referred to a UKIC qualified conservator (normally Phil Parkes at Cardiff University).

## **7.5 Environmental Sampling Strategy**

7.5.1 In areas that have previously been disturbed, environmental sampling is unlikely to be required, unless excavations go beyond the disturbed layers and archaeology is encountered below that level.

7.5.2 Features or archaeological deposits that are encountered will be sampled by means of the most appropriate method (bulk, column, etc.) up to 40 litres in size. These samples will be predominantly taken for artefact retrieval due to their potential medieval date.

7.5.3 Where sampling will provide a significant contribution to the understanding of the site AW will draw up a site-specific sampling strategy alongside a specialist environmental archaeologist. All environmental sampling and recording will follow English Heritage's Guidelines for Environmental Archaeology (2002).

## **7.6 Human remains**

7.6.1 In the event that human remains are encountered, their nature and extent will be established, and the coroner informed. All human remains will be left in situ and protected during backfilling. Where preservation in situ is not possible the human remains will be fully recorded and removed under conditions that comply with all current legislation and include acquisition of licenses and provision for reburial following all analytical work. Human remains will be excavated in accordance with the Chartered Institute for Archaeologists' Excavation and Post-Excavation Treatment of Cremated and Inhumed Human Remains: Technical Paper Number 13 (1993).

7.6.2 A meeting with the client, Cadw and AW will be called if the human remains uncovered are of such complexity or significance that the contingency arrangement would not be of sufficient scope.

## **7.7 Specialist advisers**

7.7.1 In the event of certain finds, features or sites being discovered, AW will seek specialist opinion and advice. A list of specialists is given in the table below although this list is not exhaustive.

Artefact type	Specialist
Flint	Kate Pitt (Freelance)
Animal bone	Richard Madgwick (Cardiff University)
CBM, heat affected clay, Daub etc.	Rachael Hall (APS)
Clay pipe	Charley James-Martin (Archaeology Wales)
Glass	Rowena Hart (Archaeology Wales)
Cremated and non-cremated human bone	Richard Madgwick (Cardiff University)
Metal work and metallurgical residues	Dr Tim Young (GeoArch)
Neo/BA pottery	Dr Alex Gibson (Bradford University)
IA/Roman pottery	Jane Timby (Freelance)
Roman Pottery	Rowena Hart (Archaeology Wales)/ Peter Webster (Freelance)
Post Roman pottery	Stephen Clarke (Monmouthshire Archaeology)
Charcoal (wood ID)	John Carrot (Freelance)
Waterlogged wood	Nigel Nayling (University of Wales – Lampeter)
Molluscs and pollen	Dr James Rackham
Charred and waterlogged plant remains	Wendy Carruthers (Freelance)

## 7.8 Specialist reports

- 7.8.1 Specialist finds and palaeoenvironmental reports will be written by AW specialists, or sub-contracted to external specialists when required.

## 8 Monitoring

- 8.1 Cadw will be contacted approximately two weeks prior to the commencement of site works, and subsequently once the work is underway.
- 8.2 Cadw's Inspector of Ancient Monuments shall be invited to attend a site meeting within the first 5 working days of commencement of the project to review the programme, submitted method statement and arrangements that have been established for archaeological mitigation and recording.
- 8.3 Any changes to this WSI that AW may wish to make after approval will be communicated to Cadw for approval.
- 8.4 Cadw will be given access to the site so that they can monitor the progress of the work, they will be kept regularly informed about developments, both during the site works and subsequently during the post-fieldwork programme.

## **9 Post-fieldwork programme**

### **9.1 The Site Archive**

- 9.1.1 An ordered and integrated site archive will be prepared in accordance with: Management of Research Projects in the Historic Environment (MoRPHE) (Historic England 2006) upon completion of the project.
- 9.1.2 The site archive (including artefacts and samples) will be prepared in compliance with ClfA Standard and guidance for the creation, compilation, transfer, and deposition of archaeological archives (2014).
- 9.1.3 The finds, including artefacts and ecofacts, excepting those which may be subject to the Treasure Act, will be deposited with the same institution, subject to the agreement of the legal landowners.
- 9.1.4 Although there may be a period during which client confidentiality will need to be maintained, copies of all reports and the final archive will be deposited no later than six months after completion of the work.
- 9.1.5 Copies of all reports, the digital archive and an archive index will be deposited with the National Monuments Record and Cadw.
- 9.1.6 Wherever the archive is deposited, this information will be relayed to the HER. A summary of the contents of the archive will be supplied to Glamorgan-Gwent Archaeological Trust (GGAT).
- 9.1.7 An OASIS project reporting form will be produced when the project is completed.

### **9.2 Analysis**

- 9.2.1 Following a rapid review of the potential of the site archive, a programme of analysis and reporting will be undertaken. This will result in the following inclusions in the final report:
  - Non-technical summary, in English and Welsh
  - Location plan showing the area/s covered by the evaluation trenching, all artefacts, structures, and features found
  - Plan and section drawings (if features are encountered) with ground level, ordnance datum and vertical and horizontal scales.
  - Written description and interpretation of all deposits identified, including their character, function, potential dating, and relationship to adjacent features. Specialist descriptions and illustrations of all artefacts and soil samples will be included as appropriate.
  - An indication of the potential of archaeological deposits which have not been disturbed by the development
  - A discussion of the local, regional, and national context of the remains by means of reviewing published reports, unpublished reports, historical maps, documents from local archives and the

regional HER as appropriate.

- A detailed archive list at the rear listing all contexts recorded, all samples finds and find types, drawings and photographs taken. This will include a statement of the intent to deposit, and location of deposition, of the archive.

### **9.3 Report to client**

- 9.3.1 Copies of all reports associated with the archaeological field evaluation and watching brief, together with inclusion of supporting evidence in appendices as appropriate, including photographs and illustrations, will be submitted to the client and Cadw upon completion.

### **9.4 Additional reports**

- 9.4.1 After an appropriate period has elapsed, copies of all reports will be deposited with the relevant regional Historical Environment Record (HER), and the National Monuments Record Wales (NMR).

### **9.5 Summary reports for publication**

- 9.5.1 Short archaeological reports will be submitted for publication in relevant journals; as a minimum, a report will be submitted to the annual publication of the regional CBA group or equivalent journal.

### **9.6 Notification of important remains**

- 9.6.1 Where it is considered that remains have been revealed that may satisfy the criteria for statutory protection, AW will submit preliminary notification of the remains to Cadw.

## **10 Staff**

- 10.1 The project will be managed by John Davey PhD MCIfA (AW Project Manager) and the fieldwork undertaken by suitably qualified and experienced AW archaeologists. Any alteration to staffing before or during the work will be brought to the attention of Cadw.

## **11 Health and Safety**

### **11.1 Risk assessment**

- 11.1.1 Prior to the commencement of work AW will carry out and produce a formal Health and Safety Risk Assessment in accordance with The Management of Health and Safety Regulations 1999. A copy of the risk assessment will be kept on site and be available for inspection on request. A copy will be sent to the client (or their agent as necessary) for their information. All members of AW staff will adhere to the content of this document.

### **11.2 Other guidelines**

- 11.2.1 AW will adhere to best practice with regard to Health and Safety in Archaeology as set out in the FAME (Federation of Archaeological Managers and Employers) health and safety manual Health and Safety in Field Archaeology (2002).



## **12 Community Engagement and Outreach**

- 12.1 Wherever possible, AW will ensure suitable measures are in place to inform the local community and any interested parties of the results of the site investigation work. This may occur during the site investigation work or following completion of the work. The form of any potential outreach activities may include lectures and talks to local groups, interested parties and persons, information boards, flyers and other forms of communication (social media and websites), and press releases to local and national media.
- 12.2 The form of any outreach will respect client confidentiality or contractual agreements. As a rule, outreach will be proportional to the size of the project.
- 12.3 Where outreach activities have a cost implication these will need to be negotiated in advance and in accordance with the nature of the desired response and learning outcomes.

## **13 Insurance**

- 13.1 AW is fully insured for this type of work and holds Insurance with Aviva Insurance Ltd and Hiscox Insurance Company Limited through Towergate Insurance. Full details of these and other relevant policies can be supplied on request.

## **14 Quality Control**

### **14.1 Professional standards**

- 14.1.1 AW works to the standards and guidance provided by the Chartered Institute for Archaeologists. AW fully recognise and endorse the Chartered Institute for Archaeologists' Code of Conduct, Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology and the Standard and Guidance for archaeological field evaluation (CIfA 2014) currently in force. All employees of AW, whether corporate members of the Chartered Institute for Archaeologists or not, are expected to adhere to these Codes and Standards during their employment.

### **14.2 Project tracking**

- 14.2.1 The designated AW manager will monitor all projects in order to ensure that agreed targets are met without reduction in quality of service.

## **15 Arbitration**

- 15.1 Disputes or differences arising in relation to this work shall be referred for a decision in accordance with the Rules of the Chartered Institute of Arbitrators' Arbitration Scheme for the Institute for Archaeologists applying at the date of the agreement.

## 16 References

British Geological Survey: Geology of Britain viewer:

[www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html](http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html) (accessed 30/11/20).

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English Heritage, 2002. *Guidelines for Environmental Archaeology.*

English Heritage, 2006. *Management of Research Projects in the Historic Environment (MORPHE).*  
Evans, J., 2019. *Caerphilly Castle, Caerphilly: Archaeological Watching Brief during the excavation of Four Infiltration Test Trenches* (Archaeology Wales Report: 1850).

Moore, David., 2005. *The Welsh Wars of Independence c. 410 – c. 1415* (Stroud: Tempus Publishing).

National Panel for Archaeological Archives in Wales, 2017. *The National Standard and Guidance to Best Practice for Collecting and Depositing Archaeological Archives in Wales.*

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Welsh Archaeological Trusts, 2018. *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)*

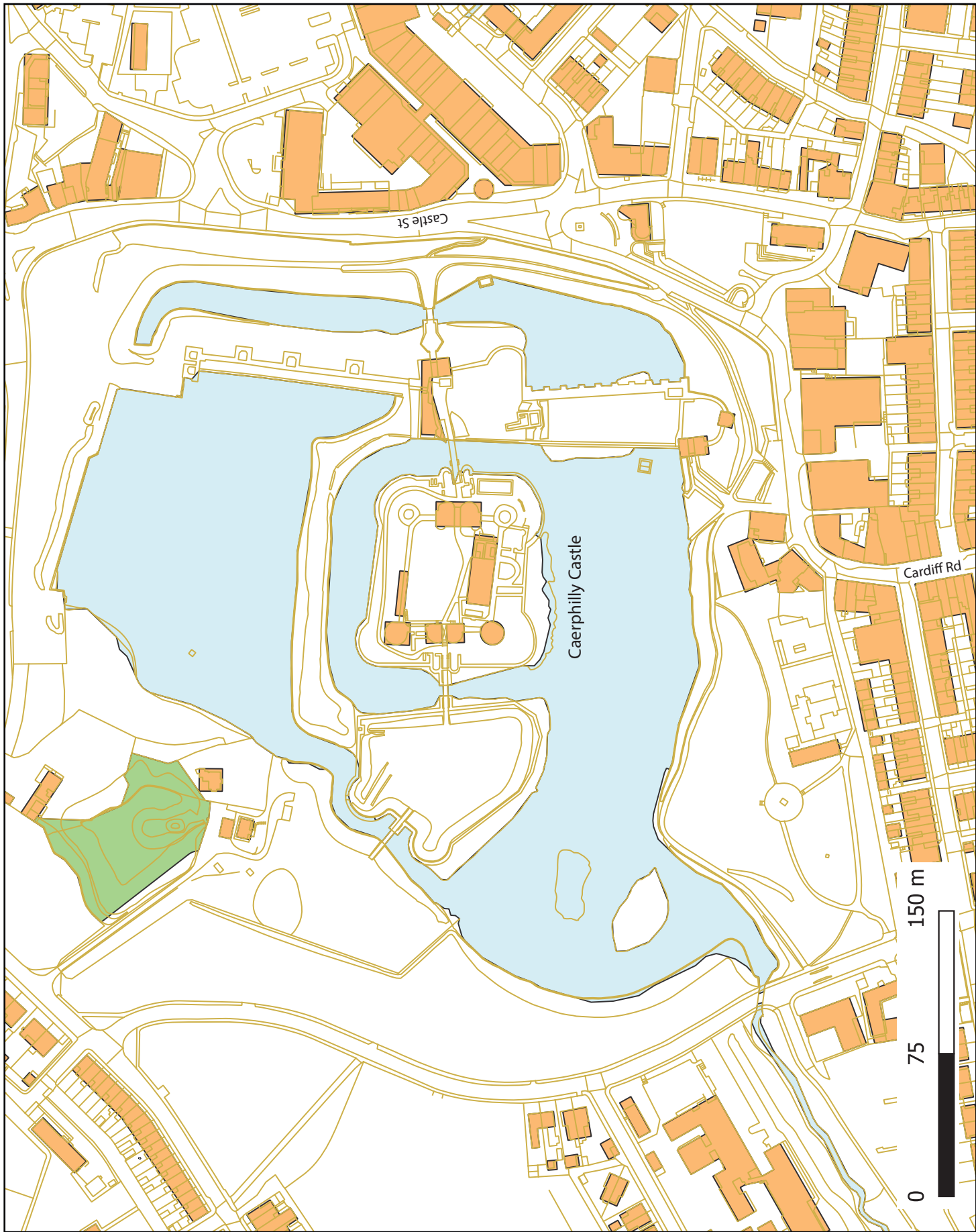


Figure 1: Location plan

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Typical design

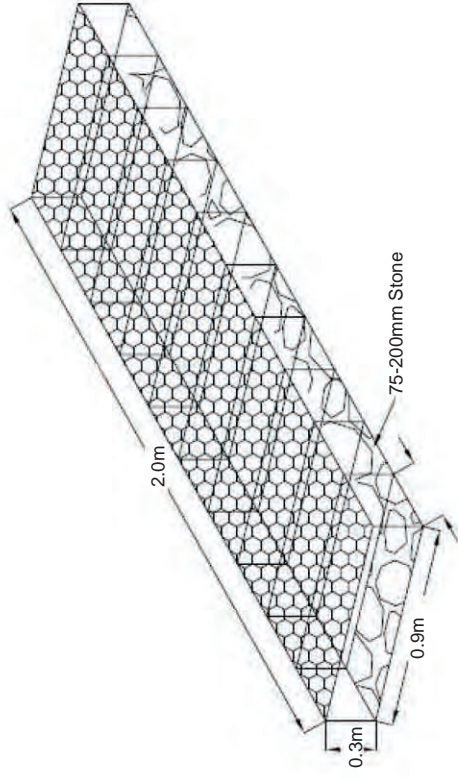


Photo of end product



Draft design

Detail for rock and coil log



Figure 3: Proposed remedial Option 1a (Area 1) pre-filled rock mattress (After Platt, 2021, Fig 26)



Typical design

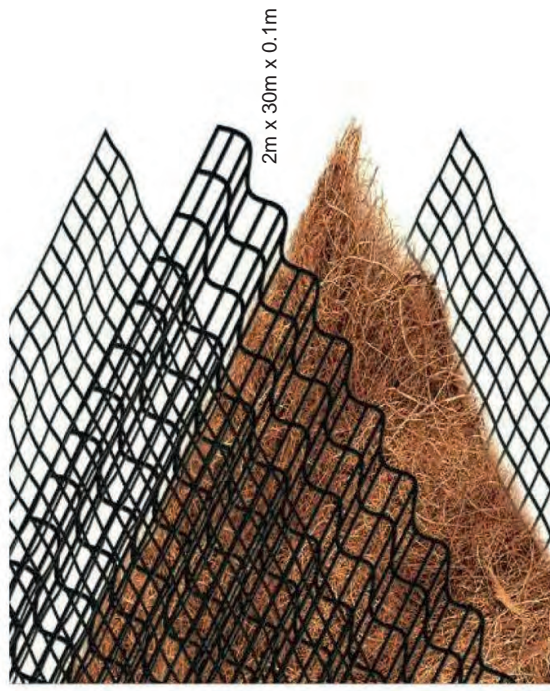


Photo of end product

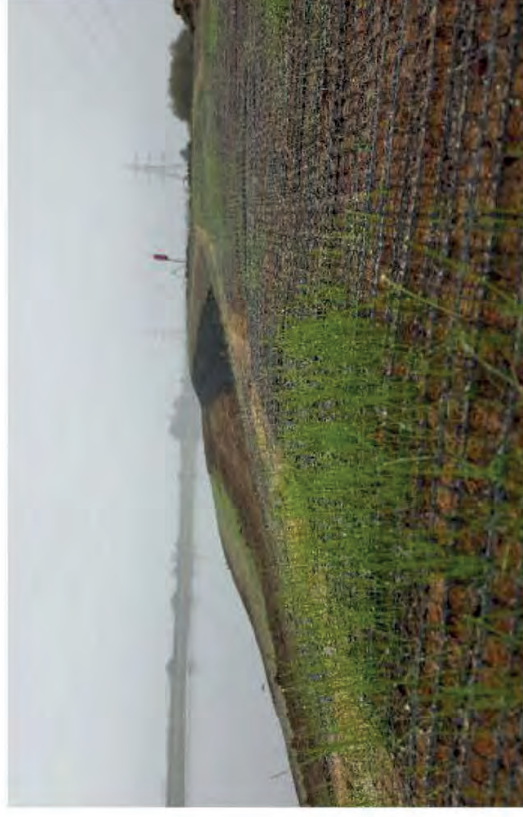


Figure 4: Proposed remedial Option 1b (Area 1) turf-re-inforced mats  
(After Platt, 2021, Fig 27)



Typical design

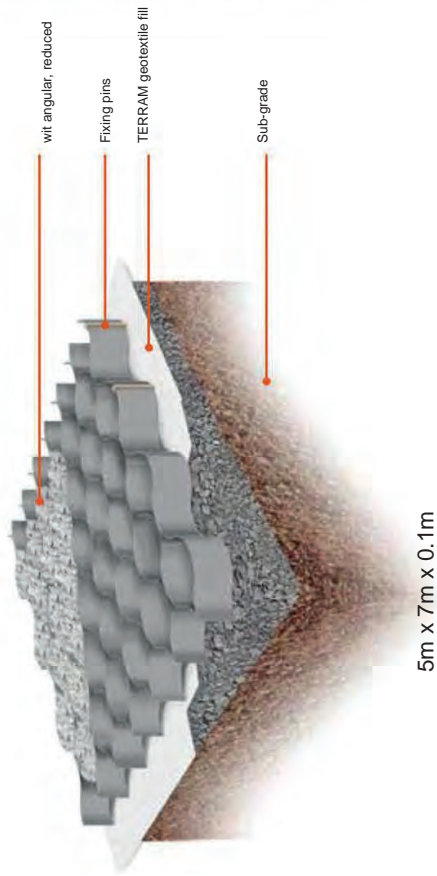


Photo of end product

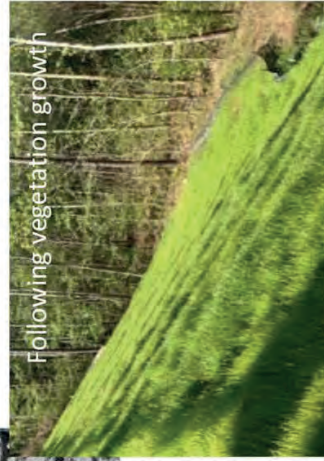


Figure 5: Proposed remedial Option 1c (Area 1) geocell system (After Platt, 2021, Fig 28)





Typical design

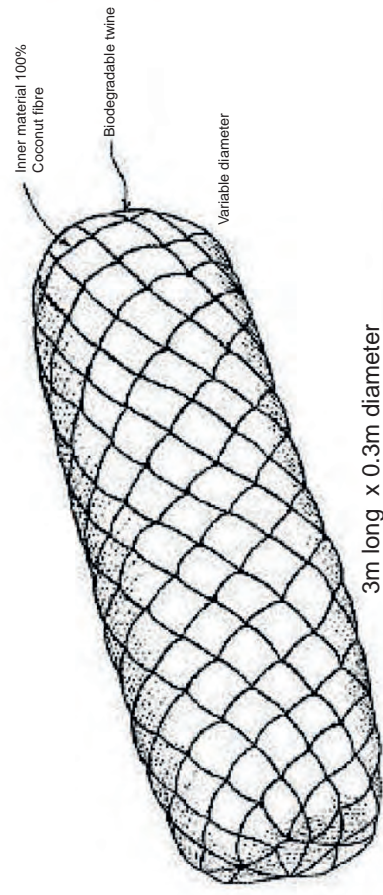
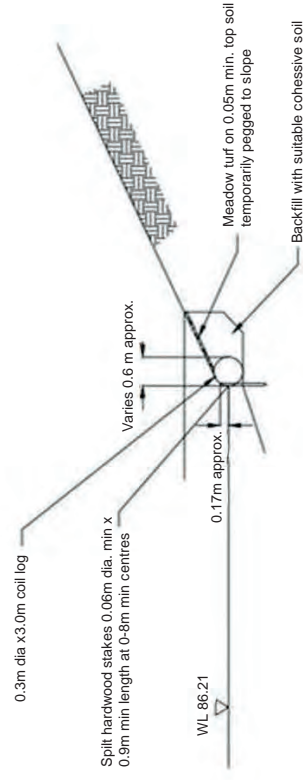


Photo of end product



Draft design



Typical detail for coir log stabilisation

Figure 6: Proposed remedial Option 1d (Area 1), Option 2a (Area 2) and Option 3b (Area 3) coir rolls (After Platt, 2021, Fig 29)



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