



# Historic Environment Desk Based Assessment

---

Ysgol-y-Deri, Fort  
Road, Cosmeston,  
Vale of Glamorgan,  
CF64 3RP

September 2021 | Project Ref 06365A

HCUK Group is a multi-disciplinary environmental practice offering expert advice in archaeology, heritage, landscape, arboriculture, and planning. It began life in 2010 as Heritage Collective LLP, before becoming Heritage Collective UK Limited in 2014. In the coming years diversification saw the addition of Archaeology Collective, Landscape Collective and Planning Collective, before all strands came together to be branded under a single umbrella: HCUK Group, based on the acronym for the original company. A home working company since the beginning, we are pleased to employ a talented workforce of consultants and support staff, who are on hand to advise our clients.



## Pre-Planning (Vale of Glamorgan)

### GGAT Planning Services Reference: VOG1490

**Project Number:** 06365C

**File Origin:** \HCUK Group\Projects - Documents\Projects 6001-6500\6301-6400\06365 - Ysgol-y-Deri Primary School, Cosmeston\AC\Reports\Final report PDF

Author with date	Reviewer code, with date
JM, 03.12.2020	RD-0118, 05.12.2020
JM, 07.12.2020	
JM, 17.12.2020	Addition of new masterplan
JM, 15.09.2021	Addition of new information

# Contents

## Non-Technical Summary

<b>1. Introduction .....</b>	<b>5</b>
<b>2. Methodology .....</b>	<b>17</b>
<b>3. Relevant Policy Framework .....</b>	<b>19</b>
<b>4. Archaeological Background .....</b>	<b>23</b>
<b>5. Impact Assessment .....</b>	<b>41</b>
<b>6. Conclusions .....</b>	<b>48</b>
<b>7. Figures .....</b>	<b>50</b>

## Figures

- Fig. 1 Site Location**
- Fig. 2 Detailed Site Location**
- Fig. 3 Geology of the Site**
- Fig. 4 Topography of the Site and environs**
- Fig. 5 Designated Historic Assets and Vale of Glamorgan 'County Treasures' within 1km of the Site**
- Fig. 6 Archaeological sites recorded on the GGAT HER and NMRW within 1km of the Site**
- Fig. 7 Archaeological events recorded on the GGAT HER within 1km of the Site (including events not on the HER as yet)**
- Fig. 8 Historic Maps of the Site**
- Fig. 9 Lidar Data Plot**
- Fig. 10 Modern aerial photograph showing the Site**
- Fig. 11 Indicative development proposals for Ysgol-y-Deri – 15.12.2020**

## Non-Technical Summary

*This archaeological desk-based assessment has been prepared by Archaeology Collective, (part of HCUK Group) on behalf of AECOM, to inform proposals for the proposed new Ysgol-y-Deri at Fort Road, Cosmeston, Vale of Glamorgan, CF64 3RP.*

*The assessment has confirmed that the Site has low potential for archaeological remains for all but Mesolithic and Neolithic flint scatters and medieval agricultural remains respectively. The site appears to have been agricultural land surrounding the former medieval settlement at Cosmeston. Other than the removal of field boundaries in the later 19<sup>th</sup> century and the construction of the railway to the southeast and road realignment to the northwest, there has been no change within the Site.*

*There are only one scheduled monument and one listed building within 1km of the Site, both of which lie over 700m to the west / south and have no intervisibility with the Site due to topography and the railway embankment along the southeastern edge of the Site. There is considered to be no impact from the development on surrounding designated historic assets. The exact design of the development proposals has yet to be decided.*

## Crynodeb Di-Technegol

*Paratowyd yr asesiad desg archaeolegol hwn gan Archaeology Collective, (sy'n rhan o HCUK Group) ar ran AECOM, i lywio cynigion ar gyfer yr Ysgol-y-Deri newydd arfaethedig ar Fort Road, Cosmeston, Bro Morgannwg, CF64 3RP.*

*Mae'r asesiad wedi cadarnhau bod gan y Safle botensial isel ar gyfer gweddillion archaeolegol heblaw am wasgariadau fflint Mesolithig a Neolithig ac olion amaethyddol canoloesol, yn y drefn honno. Ymddengys mai tir amaethyddol yn amgylchynu'r hen anheddiad canoloesol yn Comeston yw'r safle. Heblaw am gael gwarded â ffiniau caeau yn niwedd y 19eg ganrif, adeiladu'r rheilffordd i'r de-ddwyrain ac adlinio'r ffordd i'r gogledd-orllewin, ni fu unrhyw newid o fewn y Safle.*

*Dim ond un heneb gofrestredig ac un adeilad rhestredig sydd o fewn 1km i'r Safle, y ddau ohonynt dros 700m i'r gorllewin/ de ac nid oes ganddynt unrhyw ryngweledd â'r Safle oherwydd topograffi ac arglawdd y rheilffordd ar hyd ymyl de-ddwyrainiol y Safle. Ystyrir na fydd y datblygiad yn cael unrhyw effaith ar yr asedau hanesyddol dynodedig cyfagos. Ni phenderfynwyd eto ar union ddyluniad y cynigion datblygu.*

# 1. Introduction

## Background

- 1.1** This archaeological desk-based assessment has been prepared by James Meek MCIfA, Director of Archaeology Collective (part of HCUK Group) on behalf of AECOM.
- 1.2** The proposed development is for a new school, to be called Ysgol-y-Deri, to be built on a greenfield site land at Fort Road, Cosmeston, Vale of Glamorgan, CF64 3RP (Figures 1 and 2). The site occupies an area of 2.18ha and centred at NGR 317874 168839. It is hereafter referred to as the Site.
- 1.3** The purpose of this assessment is to determine and assess the archaeological potential of the Site and to assess the significance of any relevant heritage assets identified. The report is informed by site inspection, historical information, and by data relating to heritage assets. It seeks to provide sufficient information to allow an informed understanding of the potential impact of the proposed development on the significance of those assets, and to consider the need for solutions (design, engineering) where necessary.
- 1.4** This assessment has been prepared in accordance with Standards and Guidance for Historic Environment Desk-Based Assessment<sup>1</sup> published by the Chartered Institute for Archaeologists (CIfA).
- 1.5** The report considers heritage assets of archaeological interest, including finds/findspots of artefactual and ecofactual material (e.g. stone tools, bone), and locations, features or objects referenced from historic documents. Where appropriate, it refers to archaeological and palaeoenvironmental deposits, including sub-surface archaeological remains of features, buildings and structures. An additional Heritage Impact Assessment has been prepared by HCUK Group for the potential effects of the proposals on the adjacent Lower Cosmeston Farm which has been considered for designation as a Listing Building in 2021<sup>2</sup>.
- 1.6** The standard is stated by CIfA as: *Desk-based assessment will determine, as far as is reasonably possible from existing records, the nature, extent and significance of the historic environment within a specified area. Desk-based assessment will be undertaken using appropriate methods and practices which satisfy the stated aims of the project, and which comply with the Code of Conduct and other relevant regulations of CIfA. In a development context desk-based assessment will establish*

---

<sup>1</sup> CIfA. Standard and Guidance for Historic Environment Desk-based Assessment 2017

<sup>2</sup> HCUK 2021, Heritage Impact Assessment in Wales: Ysgol-y-Deri and Lower Cosmeston Farm

*the impact of the proposed development on the significance of the historic environment (or will identify the need for further evaluation to do so), and will enable reasoned proposals and decisions to be made whether to mitigate, offset or accept without further intervention that impact.*

- 1.7** A desk-based assessment is defined by CIfA as: *.....a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely historic assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of historic assets and, in England, the nature, extent and quality of the known or potential archaeological, historic, architectural and artistic interest. Significance is to be judged in a local, regional, national or international context as appropriate.*
- 1.8** For the purposes of Planning Policy in Wales TAN 24 – The Historic Environment, the **historic environment** is defined as: *All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and deliberately planted or managed (para 1.7, Welsh Government 2017<sup>3</sup>).*
- 1.9** A **historic asset** is: *An identifiable component of the historic environment. It may consist or be a combination of an archaeological site, a historic building or area, historic park and garden or a parcel of historic landscape. Nationally important historic assets will normally be designated.<sup>4</sup>*
- 1.10** This report contains information about the historic environment and historic assets in the vicinity of the proposed development site, which will assist the archaeological advisors to the planning authority in their decision about what, if any, archaeological mitigation will be required.
- 1.11** Further guidance on how the planning system considers the historic environment and historic assets during development plan preparation and decision making on planning and Listed Building (LBC) applications can be found in Planning Policy Wales: Technical Advice Note 24: The Historic Environment (Welsh Government 2017; available online).
- 1.12** This desk-based assessment comprises an examination of digital data held by the Glamorgan Gwent Archaeological Trust (GGAT) Historic Environment Record (HER)

---

<sup>3</sup> Welsh Government 2016, Planning Policy Wales TAN 24 The Historic Environment 2017

<sup>4</sup> Ibid

and by the National Monuments Record of Wales (NMRW) together with documentary research. It incorporates a map regression indicating the impact of change over time. The report also references the 'Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)'.<sup>5</sup> A written scheme of investigation for the methodology of the assessment was submitted to and approved by Glamorgan Gwent Archaeological Trust Planning Services.

- 1.13** This data has been collected for an area comprising a 1km radius of the Site boundary, which is referred to as the 'study area'. This radius has been selected on the basis of professional judgment as being sufficient to determine the archaeological potential of the Site, taking into account its location, topography, and character.

## Topography

- 1.14** The Site occupies an area of 1.45 ha of gently sloping land from north to south at 46m AOD to 44m AOD (Figure 3).
- 1.15** The greenfield Site is located southeast of Lavernock Road, with Lower Cosmeston Farm buildings and a field to the northeast, a belt of woodland to the southeast and with Fort Road lying along the southwest side of the Site..

## Geology

- 1.16** The British Geological Survey (BGS)<sup>6</sup> identifies the underlying solid geology across the northern part of the Site as being Mary's Well Bay Member (Figure 4), a limestone and mudstone, interbedded, a sedimentary bedrock formed approximately 359 to 383 million years ago in the Devonian Period when the local environment was previously dominated by shallow lime-mud seas. The southern part of the site comprises Lavernock Shales Member mudstone, a sedimentary bedrock formed approximately 199 to 201 million years ago in the Jurassic Period when the local environment was previously dominated by shallow seas.
- 1.17** There are no recorded superficial deposits within the Site boundary, although a band of alluvium lies directly to the north of the Site.
- 1.18** A geotechnical survey has been undertaken at the site which concluded that the field is covered between 0.20m – 0.30m of a topsoil overlying natural geology (no

---

<sup>5</sup> Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) reviewed August 2019 – Clwyd Powys, Dyfed, Glamorgan Gwent and Gwynedd Archaeological Trust's

<sup>6</sup> <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

disturbed subsoil was recorded). The geology encountered matched that identified in section 1.16 above<sup>7</sup>.

## Site Visit

- 1.19** A site visit/walkover was undertaken on 24/11/2020 to the Site and its environs. A second visit was undertaken on 14<sup>th</sup> August 2021 when access into the proposed development area was possible. The site area was overgrown and the ground very uneven due to wheel ruts (possibly associated with recent geotechnical works undertaken at the site), but this lack of visibility of the site has been compensated by a detailed review of 1m resolution LiDAR data (Figure 9).
- 1.20** The identified historic assets within the study area around the Site were visited to determine whether there was any intervisibility with the proposed school site. This was also supplemented in August 2021 to view Lower Cosmeston Farm, the 17<sup>th</sup> century farm building of which had been put forward for listing in June 2021. This is dealt with in a separate Heritage Impact Assessment in Wales report.
- 1.21** The following photographs were taken during the two site visits to show the general Site area (Photos 1-6 in 2020 and Photos 7 to 16 in August 2021). These indicate that the topography of the Site itself is relatively flat as can be seen by the surrounding roads. Additional photographs are included in the assessment section below.

---

<sup>7</sup> Hydrock 2021, Ysgol y Deri 2: Phase 2 Ground Investigation Report, dated 18<sup>th</sup> June, Document Reference: YYD-HYD-XX-XX-RP-GE-003





Photo 1: View northwest along Fort Road, with the Site to the right behind the hedge



Photo 2: View northeast along the B4267 Lavernock Road with Site to right behind hedge



Photo 3: View southwest along the B4267 Lavernock Road with the Site to left behind hedge



Photo 4: View south across Lower Cosmeston Farm with Site area behind



Photo 5: View southwest along the B4267 Lavernock Road towards site area (to left in distance)



Photo 6: View northeast along B4267 Lavernock Road towards site area, before Fort Road junction (with site to right in distance)



Photo 7: Looking south across the Site from the eastern entrance from Lower Cosmeston Farm



Photo 8: Looking southwest across the Site from the eastern entrance from Lower Cosmeston Farm



Photo 9: Looking west across the Site from the eastern entrance from Lower Cosmeston Farm



Photo 10: Looking northwest across the Site from the eastern entrance from Lower Cosmeston Farm



Photo 11: Looking north across the Site from the eastern entrance from Lower Cosmeston Farm



Photo 12: Looking northeast across the Site towards Lower Cosmeston Farm



Photo 13: Looking east across the Site towards Lower Cosmeston Farm showing modern sheds in foreground and older courtyard farm buildings behind (with green metal roofs)



Photo 14: Looking north from the centre of the southern boundary of the Site with Fort Road to left and Lower Cosmeston Farm to right



Photo 15: Looking northeast from the southeastern corner of the Site towards Lower Cosmeston Farm to right



Photo 16: Looking south across the Site from the northern boundary adjacent to Lavernock Road



## 2. Methodology

### Sources

**2.1** In preparing this assessment we have compiled readily available archaeological and historical information from documentary and cartographic sources, primarily:

- Glamorgan Gwent Archaeological Trust Historic Environment Record for known archaeological sites, monuments and findspots within 1km of the Site (i.e. the study area);
- Royal Commission on the Ancient and Historical Monuments of Wales National Monument Record information (via e-mail search request);
- Maps and documents held by Glamorgan Archives online.
- Scheduled Monuments, Registered Historic Parks and Gardens, Registered Historic Landscapes; Listed Buildings and Conservation Areas (Cadw / Welsh Government);
- Air photographs held by RCAHMW, Britain from Above and Google Maps;
- Site visit and walkover survey;
- Assessment of the archaeological potential of the area;
- Assessment of the likely impact upon the settings of surrounding features of the historic environment;
- Assessment of likely impacts on any identified remains within the development site (or potential remains) and likely requirements, if any, for further stages of archaeological work; and
- Various online sources.

**2.2** Due to the present Covid-19 pandemic restrictions it has not been possible to visit the NMR or the Glamorgan Archives. Online searches and requests for information have been made in respect of this. Based on CIfA guidance 'although compliance with the Standard (the paragraph at the top of all the S&G documents) is mandatory, deviation from the guidance is acceptable if circumstances require it.' The present Covid-19 pandemic is such a circumstance.

**2.3** The information gathered from the above sources has been verified and augmented as far as possible by site inspection, in order to arrive at conclusions on the significance of the various heritage assets and archaeological remains that have been identified.

## Assessment

**2.4** The assessment seeks to understand and define the significance of heritage assets identified from the sources above. The importance of a heritage asset is the overall value assigned to it based on its heritage significance, reflecting its statutory designation or, in the case of undesignated assets, the professional judgement of the assessor (Table 1).

Table 1: Criteria for Assessing the Importance of Heritage Assets

Importance of the asset	Criteria
Very high (National / International)	World Heritage Sites and other assets of equal international importance
High (National)	Grade I and II* Registered Parks and Gardens, Scheduled Monuments, Protected Wreck Sites, Registered Battlefields, Grade I and II* Listed Buildings, and undesignated heritage assets of equal importance
Medium (Regional)	Conservation Areas, Grade II Registered Parks and Gardens, Grade II Listed Buildings, heritage assets on local lists and undesignated assets of equal importance
Low (Local)	Undesignated heritage assets of lesser importance

## Archaeological Potential

**2.5** The report concludes with (1) an assessment of the archaeological potential of the Site, (2) an assessment of the significance of any archaeological remains that may be present, and (3) an assessment of the likely effects of the proposed development on heritage assets, in terms of physical impact.

**2.6** Archaeological potential is determined through the following levels:

- a. High Potential – where historic assets of a certain period or type are known to exist or where their likelihood of being present is near certain;
- b. Moderate Potential – where the evidence suggests that historic assets of a certain period or type are likely to be present;
- c. Low Potential – where the evidence indicates that there is a slight chance for historic assets of a certain period or type to be present;
- d. Negligible – Where the evidence indicates that previous investigation, former disturbance, topographic location is such that no remains of a certain period or type will be present.

## 3. Relevant Policy Framework

### National Legislation

- 2.7** The Ancient Monuments and Archaeological Areas Act 1979 was previously the primary legislation for protecting archaeological remains and Scheduled Ancient Monuments in Wales. This has been consolidated by the Historic Environment (Wales) Act 2016 which has three main aims as defined by Cadw:
- a) to give more effective protection to listed buildings and scheduled monuments;
  - b) to improve the sustainable management of the historic environment; and
  - c) to introduce greater transparency and accountability into decisions taken on the historic environment.

- 2.8** The new Act consolidates the Ancient Monuments and Archaeological Areas Act 1979 and also the Planning (Listed Buildings and Conservation Areas) Act 1990. It is supported by a number of planning guidance documents, a number of which are still in preparation. The Act most specifically provides better safeguards for the protection of Scheduled Monuments, Listed Buildings and Historic Parks and Gardens. It will also include further guidance on place names.

### Planning Policy Wales – Technical Advice Note 24: The Historic Environment

- 2.9** Planning Policy Wales Technical Advice Note 24 The Historic Environment was adopted on 31st May 2017 which replaced Circular 60/96 'Planning and the Historic Environment and Circular 61/96 'Planning and the Historic Environment: Historic Buildings and Conservation Areas'. This states that '*The purpose of this TAN is to provide guidance on how the planning system considers the historic environment during development plan preparation and decision making on planning and Listed Building (LBC) applications. This TAN provides specific guidance on how the following aspects of the historic environment should be considered:*

- a) *World Heritage Sites*
- b) *Scheduled monuments*
- c) *Archaeological remains*
- d) *Listed buildings*
- e) *Conservation areas*
- f) *Historic parks and gardens*

g) *Historic landscapes*

h) *Historic assets of special local interest'* (Ibid para 1.4)<sup>8</sup>

**2.10** Advice and decisions on planning applications affecting nationally significant historic environment features (or designated historic assets) is provided by Cadw acting on behalf of Welsh Government.

**2.11** TAN 24 also notes the importance of The Conservation Principles document (Cadw 2011)<sup>9</sup> being used for the Sustainable Management of the Historic Environment in Wales *'and provide the basis upon which Cadw discharges certain statutory duties on behalf of the Welsh Ministers'*<sup>10</sup>. It notes that *'Conservation Principles should be used by others (including owners, developers and other public bodies) to assess the potential impacts of a development proposal on the significance of any historic asset/assets and to assist in decision making where the historic environment is affected by the planning process'*<sup>11</sup>.

**2.12** Conservation Principles includes the following six principles.

1. Historic assets will be managed to sustain their values.
2. Understanding the significance of historic assets is vital.
3. The historic environment is a shared resource.
4. Everyone will be able to participate in sustaining the historic environment.
5. Decisions about change must be reasonable, transparent and consistent.
6. Documenting and learning from decisions is essential.

**2.13** The significance of a historic asset is defined in TAN 24 as comprising four heritage values which need to be understood before the significance of the asset can be assessed: Evidential value; Historical value; Aesthetic value and Communal value.

**2.14** TAN 24 discusses Heritage Impact Assessments and notes *'that they are a structured process that enables the significance of a designated asset to be taken into account when considering proposals for change. Heritage impact assessments should be proportionate both to the significance of the historic asset and to the degree of change proposed, and should include sufficient information to enable both the significance of the asset and the impact of change to be understood. A Heritage Impact Assessment should be summarised in a heritage impact statement which*

---

<sup>8</sup> TAN 24, para 1.4

<sup>9</sup> Cadw 2011, Conservation Principles

<sup>10</sup> TAN 24, para 1.10

<sup>11</sup> Ibid

*must form part of any listed building consent, conservation area consent and, when requested, scheduled monument consent applications.'*

**2.15** Guidelines for the preparation of Heritage Impact Assessments in Wales have been prepared by Cadw<sup>12</sup>.

**2.16** TAN 24 discusses what the setting of a historic asset comprises in para 1.25: *'The setting of an historic asset includes the surroundings in which it is understood, experienced, and appreciated embracing present and past relationships to the surrounding landscape. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral. Setting is not a historic asset in its own right but has value derived from how different elements may contribute to the significance of a historic asset.'*<sup>13</sup>

**2.17** It notes that the principles used for determining setting impact *'are equally applicable to all historic assets, irrespective of their designation. For any development within the setting of a historic asset, some of the factors to consider and weigh in the assessment include:*

- *The significance of the asset and the contribution the setting makes to that significance*
- *the prominence of the historic asset*
- *the expected lifespan of the proposed development*
- *the extent of tree cover and its likely longevity*
- *non-visual factors affecting the setting of the historic asset such as noise.'*<sup>14</sup>

**2.18** Further it recognises that *'There will be cases where a proposed development will enhance the setting of a historic asset and this will be treated as a benefit resulting from the development. Mitigation of damaging effects could be achieved through good design and in some cases screening or landscaping.'*<sup>15</sup>

---

<sup>12</sup> Cadw 2017, Heritage Impact Assessments in Wales, May 2017

<sup>13</sup> TAN 24 para 1.25

<sup>14</sup> TAN 24 para 1.26

<sup>15</sup> TAN 24 para 1.28

## Relevant Local Policies: *Vale of Glamorgan Local Development Plan 2011 – 2026*

**2.19** The Vale of Glamorgan Local Development Plan is the spatial development strategy for the area and was formally adopted in June 2017. The Local Development Plan contains policies to protect and enhance the contribution of listed buildings, historic landscapes, archaeology and World Heritage sites as part of managing change in the Council area.

**2.20** The Local Development Plan pre-dates the Historic Environment Act (Wales) 2016, but the approach is similar. The following policies are relevant to this assessment.

Table 2: Relevant Local Policies

Relevant Section	Details
<b>Policy SP10 - Built And Natural Environment</b>	<p>Development proposals must preserve and where appropriate enhance the rich and diverse built and natural environment and heritage of the Vale of Glamorgan including:</p> <ol style="list-style-type: none"> <li>1. The architectural and / or historic qualities of buildings or conservation areas, including locally listed buildings;</li> <li>2. Historic landscapes, parks and gardens;</li> <li>3. Special landscape areas;</li> <li>4. The Glamorgan Heritage Coast;</li> <li>5. Sites designated for their local, national and European nature conservation importance; and</li> <li>6. Important archaeological and geological features</li> </ol>
<b>Policy MD8 - Historic Environment</b>	<p>Development proposals must protect the qualities of the built and historic environment of the Vale of Glamorgan, specifically:</p> <ol style="list-style-type: none"> <li>1. Within conservation areas, development proposals must preserve or enhance the character or appearance of the area;</li> <li>2. For listed and locally listed buildings, development proposals must preserve or enhance the building, its setting and any features of significance it possesses;</li> <li>3. Within designated landscapes, historic parks and gardens, and battlefields, development proposals must respect the special historic character and quality of these areas, their settings or historic views or vistas;</li> <li>4. For sites of archaeological interest, development proposals must preserve or enhance archaeological remains and where appropriate their settings.</li> </ol>

## 4. Archaeological Background

### Introduction

- 4.1** There are 58 historic assets within the 1km study area around the site recorded on the Glamorgan Gwent Archaeological Trust Historic Environment Record (GGAT HER identified by their Primary Record Number - PRN) and the National Monuments Record of Wales (NMRW identified by their National Primary Record Number - NPRN). Cadw data records a single listed building and a single scheduled monument. The County Treasures record of Vale of Glamorgan Council records 5 sites deemed to be of special local interest.

### Designated Historic Assets

- 4.2** There are no World Heritage Sites, Registered Historic Landscapes, Registered Battlefields, Registered Historic Parks and Gardens or Conservation Areas within the 1km study area around the site

### *Scheduled Monuments*

- 4.3** There is a single scheduled monument within the 1km study area, that of the Anti-aircraft and Coastal Battery West of Lavernock Point (SM Reference GM448; Figure 5). The scheduled monument lies some 700m south of the Site. Cadw summarise the scheduled site as follows: *'The monument comprises the remains of a combined heavy anti-aircraft and coastal battery together with associated structures dating from WWII. The battery (Item 'A') consists of two pairs of gun emplacements together with a command post and magazine. Each gun emplacement features a concrete holdfast and ready-use ammunition lockers. Earthen banks protect the two eastern gun emplacements; concrete defences encircle those on the west. The guns could also be depressed for firing out to sea. The partly buried command post is located on the north-west side and controlled the laying and firing of the guns in their anti-aircraft role. A five-bay concrete magazine is located on the SW side. It is partly buried and surrounded by a blast wall for protection. Item 'B' comprises the gun house, a heavily protected single-storey concrete building used as a workshop and storage facility. It is located c.150m to the north-east of the battery. Item 'C' is a coastal searchlight emplacement, originally one of a pair, located 275m south-west of the battery. It is a concrete-built structure and features the well-preserved remains of searchlight housing on its south side. The monument is of national importance for its potential to enhance our knowledge of World War II anti-aircraft and coastal defence practices. The monument is well preserved and is an important relic of actions taken against the perceived threat of German military activity in and above the Bristol Channel. It retains significant archaeological potential, with a*

*strong probability of the presence of associated archaeological features and deposits.'*

- 4.4** The site is located on the top of a cliff on the coastal edge comprising the main remains of the two gun emplacements and the command post. They are semi-sunken into the ground and surrounded by scrub such that they are hidden into the landscape and only visible when close up. The two search light batteries to the northeast and southwest are similarly located.

### Listed Buildings

- 4.5** There is a single listed building within the study area (Figure 5). This is the grade II listed Church of St Lawrence at Lavernock, (reference LB24060) that lies some 890m southeast of the at the end of Fort Road. It has been extensively restored. The Cadw description summarises the listed church as follows: *Parish church with medieval, possibly C12, origins. From the C12 the Black Canons established their influence along both shores of the Bristol Channel; St Augustine's, Bristol held the Manor of Penarth, with the first church at Penarth probably built between 1186 and 1191 when William Saltmarsh was Bishop of Llandaff, Prior of Bristol and Lord of the Manor of Penarth. Lavernock, associated with the Norman manor of Cosmeston, is believed to have always been a Chapel of Penarth, though in C16 there was a specific link with Cogan. The churchyard has early C19 tombstones. Extensive restoration of 1852 refaced the building and replaced windows and roofs. Disfiguring strap pointing has been added at NW. The churchyard wall has a plaque recording the historic radio message in 1897 by Guglielmo Marconi and George Kemp, between Flatholm and Lavernock Point.*
- 4.6** **'Exterior:** *Small medieval parish church. Of local Blue Lias rubble with some ashlar dressings; Welsh slate roof with cruciform finials, kneelers and raised coping; slender bellcote at W. Plan of aisleless nave, S porch, narrow and shallow chancel. Windows have cusped lights. Gabled porch has plain chamfered pointed-arched doorway with voussoirs and 2-light square-headed nave window with moulded hood on each side. Similar single-light window to S side of chancel, and chamfered pointed-arched priests' doorway. Two-light E window with quatrefoil tracery. The N and W elevations have no windows. Plinth. At SE corner of chancel, at ground level, are stones inscribed with cross patterns. Incorporated into the NE and SE chancel are inscribed stones, probably C13 and depicting crosses.*
- 4.7** **'Interior:** *Interior is mostly rendered with some areas of exposed stone, floor of mostly unglazed tiles. C19 roofs, 4 bays, arch-braced trusses with exposed rafters to nave. Narrow pointed chancel arch, chamfered and stopped at base and with a raised impost band. Narrow chancel arch (Newman believes may reflect a C12 origin).'*



- 4.8** In June 2021 Lower Cosmeston Farm was considered for designation as a listed building and as such, based on the Historic Environment Act (Wales) 2016, is afforded interim protection (considered as a listed building) until a decision is made. Due to the proximity of the building to the Ysgol-y-Deri site a separate 'Historic Impact Assessment in Wales' report has been prepared by HCUK Group specifically in relation to this building which should be read in conjunction with this report.

## *County Treasures*

- 4.9** The Vale of Glamorgan keeps a record of County Treasures which includes buildings and monuments considered to be of significance to the local area. The Site lies within the area of Sully and five County Treasures are recorded within the study area (Figure 5).
- 4.10** Two of the County Treasures are the designated sites of the scheduled Gun Emplacement and Battery (2371; GM448) and the listed Church of St Lawrence (851, LB24060). The site of the
- 4.11** A further County Treasure is the churchyard wall plaque recording the radio message in 1897 by Guglielmo Marconi and George Kemp 'a Bronze plaque of 1947 to commemorate the first transmission of radio messages across water on 11 May 1897, by Marconi and Kemp' as also noted in the listing summary (866). This would be considered to be included within the curtilage listing for the church.
- 4.12** The remaining two County Treasures are located some 60m to the north of the Site and comprise the 18<sup>th</sup> century single storey stone rendered cottage 'Cosmeston Cottage' with square headed window openings and gabled porch and corrugated iron roof (853); and the site of the reconstructed medieval village of Cosmeston also directly north of the Site (864). These are not designated features but included here for their identification as their significance is recognised by the Vale of Glamorgan council.

## Non-Designated Heritage Assets

- 4.13** There are 58 individual historic assets recorded on the GGAT HER and NMRW within 1km of the Site. None of these lie within the proposed development area itself.
- 4.14** The GGAT HER search reference is **6418** and the NMRW search is used under licence reference **RCPL2/3/75/040**, reference **RC20-0646**).

## Timescales

### 4.15 Timescales used in this assessment:

Table 3: Timescales

Period	Approximate date	
Palaeolithic –	c.450,000 – 12,000 BC	Prehistoric
Mesolithic –	c. 12,000 – 4000 BC	
Neolithic –	c.4000 – 1800 BC	
Bronze Age –	c.1800 – 600 BC	
Iron Age –	c.600 BC – AD 43	
Roman (Romano-British) –	AD 43 – c. AD 410	Historic
Saxon / Early Medieval –	c. AD 410 – AD 1086	
Medieval–	1086 –1485	
Post medieval Period –	1485 – 1900	
Modern –	1901 – Present	

### 4.16 The GGAT HER and NMRW map are included in this report at Figure 6.

## Prehistoric

Table 4: Prehistoric sites recorded on the GGAT HER and NMRW within 1km of the Site

PRN / NPRN	Name	Summary	NGR	Period
GGAT02750s	Lavernock	Information from National Museum, found in 1940.	ST180685	Palaeolithic
GGAT00775s	Flint Scatter Findspot	Mesolithic and Neolithic flint scatters been found at the following areas during ploughing:- ST 166689; 164684; 166682 and 167685.	ST166682	Mesolithic / Neolithic
GGAT00776s	Flint Scatter Findspot	Mesolithic and Neolithic flint scatters found at the following areas during ploughing:- ST 166689; 164684; 166682 and 167685.	ST167685	Mesolithic / Neolithic
415554	Flint Scatter Site, Sully	Site of Neolithic and Mesolithic flint scatters, as reported by the National Museum of Wales and the Glamorgan Gwent Archaeological Trust.	ST1680168700	Mesolithic / Neolithic
GGAT03570s	Flint Scatter	Mesolithic and Neolithic flint scatters found at the following areas during ploughing:- ST 166689; 164684; 166682 and 167685.	ST167685	Mesolithic / Neolithic
GGAT01379s	Flint Scatter Findspot	A probable Neolithic flint scatter, but no definite artifacts were found during the course of ploughing.	ST172685	Neolithic

414464	Possible Cropmark Enclosure	Cropmark of a circular ditched enclosure, c. 35 m diameter situated 500 m north of Lavernock Point. Its large size suggests that it is an enclosure rather than the remaining ring-ditch of a ploughed out barrow. It may be associated with a similar sized ditched enclosure (NPRN 309445) 300 m to the southwest.	ST1855168664	Prehistoric
--------	-----------------------------	--	--------------	-------------

- 4.17** The HER holds records for 7 assets of prehistoric date...
- 4.18** The earliest record is that of a Palaeolithic find recorded by the National Museum of Wales (GGAT02750s), although the exact location of the find is uncertain, but is recorded as being to the south of the Site. Palaeolithic remains are scarce in this region.
- 4.19** Four sites are recorded for flint scatters comprising Mesolithic and Neolithic artefacts (GGAT00775s; GGAT00776s; NPRN41554; and GGAT03570s). Material from the Mesolithic period is more common in the region and represents artefactual remains associated with the movement of hunter gatherers through the landscape. The majority of Mesolithic evidence comes from coastal areas and along river valleys, although more evidence for wider use of the landscape is coming to light. The Neolithic period is associated with the start of farming communities and permanent settlement sites being established. The fact that the flint scatters recorded in the study area comprise both Mesolithic and Neolithic material may be due to uncertain identification of the material (flint work technology has a number of similarities between the periods) or could even indicate the use of similar settlement or activity sites, where seasonal encampments during the Mesolithic were utilised in the Neolithic due to their favourable topographic positions. These sites are all located to the west of the Site (some actually just outside of the 1km study area, but included within defined areas of flint scatters).
- 4.20** One additional site of a just Neolithic flint scatter is also recorded to the west (GGAT01379s). The record implies that the flint objects found were not definitely archaeological in origin, but presumably due to the proximity of the other flint scatters, the potential was identified.
- 4.21** The final prehistoric site is that of a cropmark enclosure on the coastal edge to the east of the Site (NPRN414464). The cropmark is likely to be an enclosure and may be associated with other cropmarks in the vicinity which are included in the Undated section below.
- 4.22** The potential for archaeological remains dating to the prehistoric period is considered to be moderate, most likely to be in the form of flint artefacts located within the plough soil. These could be of Mesolithic or Neolithic date and be associated with wider spread of activity recorded to the west of the Site. The potential for Palaeolithic material is considered low, and again would be in the form of stray finds

if present. The lack of Bronze Age and Iron Age sites within the study area is such that the potential has to be considered low.

- 4.23** The archaeological importance of any assets of prehistoric date would be considered to be local, relating to stray finds or flint scatters of material.

## Roman

Table 5: Roman sites recorded on the GGAT HER and NMRW within 1km of the Site

PRN / NPRN	Name	Summary	NGR	Period
GGAT05131s 420070	Cog Roman Enclosure	Rectangular cropmark enclosure noted by Paul Huckfield (GGAT) from Google Earth in 2013. It measures c65m by 77m and encloses 0.5 hectares and has a south facing entrance. It is likely to be a Romano-British villa enclosure.	ST1694068600	Roman

- 4.24** The GGAT HER and NMRW hold a single record of Roman date. This is the Roman Enclosure at Cog Farm located around 920m to the west of the Site (GGAT05131s, NPRN 420070). The description suggests it could be a villa enclosure and thus likely associated with agricultural lands around it. There is a lot of Roman activity in the Vale of Glamorgan and so such a site would not be uncommon. There is no other indication of Roman activity within the study area.

- 4.25** The potential for Roman archaeology is considered to be low.

- 4.26** The importance of the assets of Roman date would be considered to be of at least local importance.

## Early Medieval

- 4.27** The GGAT HER and NMRW hold no records of early medieval date within the study area. It is possible that the medieval settlement at Cosmeston or the medieval church at Lavernock may have earlier origins, but the Site area lies outside of these focal points. It is more likely that the Site lay within agricultural lands surrounding settlement areas.

- 4.28** The potential for early medieval archaeology is considered to be low, and if present would most likely be associated with agricultural practices.

- 4.29** The importance of the assets of early medieval date if present, would be considered to be local.

## Medieval

Table 6: Medieval sites recorded on the GGAT HER and NMRW within 1km of the Site

PRN / NPRN	Name	Summary	NGR	Period
GGAT00588s	St Lawrence's Church at Lavernock	Lavernock church seems originally to have been a chapel of Penarth. The church consists of nave, separate chancel, W gable-end bellcote, and S porch. What is visible of masonry and architectural ornament is essentially Victorian, but the slight batter to the nave walls and the absence of windows on the N wall suggests that an original medieval building is concealed within the Victorian makeover (carried out before 1861).	ST1864268211	Medieval
GGAT00589s	Silver Penny Findspot	Silver penny found at Lavernock in a garden adjoining the church.	ST18686822	Medieval
GGAT00592s 300401	Cosmeston Castle	The enclosure and mound are not now recognisable in a pasture field within which there are a number of field banks, and grassed-over disused quarries. Excavation revealed considerable deposits of destruction material dating to the second half of the C17.	ST17666893	Medieval
GGAT00647s	Lavernock settlement site	Shrunken medieval village of Lavernock, with St Lawrence's Church (PRN 588s) being one of the few buildings remaining in the hamlet, and associated evidence to the north and west of the church.	ST18606822	Medieval
GGAT00948s 15278 406400	Cosmeston Shrunken Medieval Village	Cosmeston shrunken village. Roadway & possible tofts visible on air photographs before excavation. A number of properties have been excavated and shown to have been constructed in late 13th or early 14th century, possibly as a planned development, although there are traces of earlier activity. They include two farmsteads and a bakehouse.	ST1776668929	Medieval
GGAT00949s 32357	St Marys Well	In a little cove below Lavernock house, Lavernock parish, where the bay is called St Mary's Well Bay; probably a natural spring.	ST17796785	Medieval
GGAT01399s	Pottery Findspot	A rubble spread was noted under plough. Scattered across this was 13-14th Cnt pottery, and sandstone roofing tiles.	ST174684	Medieval
GGAT01936s 300999	Cosmeston Dovecote	Dovecot bonded with white mortar. Entrance on E. side, sheltered from the wind. Inside 2 rows of cots visible around walls, lower row same level as slabbed floor.	ST17556882	Medieval
GGAT02718s	Lavernock	Medieval building part excavated in 1994 by GGAT (duplicate of PRN 2821s).	ST18656824	Medieval
GGAT02821s	Lavernock Farm	A wall of coursed rubble running north-south was identified to the north of the church towards the western side of the site in Cutting A. Running parallel to this on its eastern side was linear stone feature, possibly a drain, flanked by an area of disturbed paving. To the north was an area of burnt clay; further burnt building debris had been deposited in a shallow hollow which had been dug into the bedrock. All these features can be dated by type, nature or association to the medieval period. The relationship of the features indicates that the building of which the wall formed a part	ST18656824	Medieval

		probably lay to the west, extending outside the excavated area.		
GGAT03733s	Lavernock Churchyard	The churchyard, which is now polygonal, is shown on the tithe map of 1844 (GIRO P/39/12) as irregular	ST18656822	Medieval
301002	Cosmeston, Garden Enclosure	Trapezoidal in plan, the enclosure measures 100m long on the SW side, 55m on the NE, and overall SW-NE 55m. On the SW it is defined by a bank 5m wide and 0.9m high, and a ditch 3m wide; and on the N by a scarp. At the highest point within the S corner is a raised platform 15m by 20m, the site of a dovecote (NPRN 300999). Located a short distance to the SW of the site of Cosmeston village and close to the supposed site of a castle (NPRN 300457). This garden is depicted on the Second Edition Ordnance Survey 25-inch map of Glamorgan XLVII, sheet 15 (1900).	ST1756068850	Medieval

**4.30** The HER holds 12 records for non-designated assets of medieval date within the study area. These include the church (GGAT00588s; LB24060), its churchyard (GGAT03733s) and surrounding former medieval settlement at Lavernock (GGAT00647s; GGAT2718s). Remains recorded at Lavernock Farm are also thought to represent elements of the former medieval settlement here (GGAT02821s). The find of a silver medieval penny in a garden at Lavernock is also recorded (GGAT00647s).

**4.31** The medieval settlement centre at Cosmeston has been more extensively investigated than that at Lavernock, and of course lies much closer to the Site to the northwest and north. This includes the shrunken village site which has been subject to archaeological excavation (GGAT00948s, NPRNs15278 and 406400) and which is now a tourist attraction with reconstructions of a few of the excavated medieval buildings. Also at that site is the medieval dovecote (GGAT01936s, NPRN300999); a garden enclosure (NPRN301002) and Cosmeston Castle (GGAT00592s, NPRN300401). Further to the southwest a spread of rubble was located with 13<sup>th</sup> and 14<sup>th</sup> century pottery (GGAT01399s).

**4.32** The final site of medieval date recorded in the study area is the site of St Marys Well some 930m south of the Site (GGAT 00949s, NPRN32357). The site would likely be a natural spring of which a holy association was later ascribed to it. Often such holy well sites may have been identified as important sites in earlier periods.

**4.33** The potential for medieval archaeological remains within the Site is considered to be low for settlement activity, but moderate to high for archaeological remains of agricultural activity surrounding the Cosmeston settlement site. The road along the southwestern side of the Site is likely to have medieval origins, connecting to the medieval settlement at Lavernock. As discussed in a later section, two small evaluation trenches were undertaken by the Hidden Glamorgan group on land adjacent to Lower Cosmeston Farm which are reported to have produced many

medieval pot sherds and possible evidence for buildings, although the trenches were small and full details of the findings have not been reported upon. This may indicate a medieval pre-cursor to the extant 17<sup>th</sup> century Lower Cosmeston Farm.

**4.34** The importance of the historic assets of medieval date within the Site would be considered to be local, and most likely associated with agricultural practices. In the unlikely event that settlement remains were present, this may have at least local importance.

## Post Medieval & Modern

Table 7: Post medieval and Modern sites recorded on the GGAT HER and NMRW within 1km of the Site

PRN / NPRN	Name	Summary	NGR	Period
GGAT01409s	Cog	Unrecorded limekilns of 18-19th Cnt date have been located at ST 169685 and 168684.	ST169685	Post Medieval
GGAT01596s 414312	Cosmeston Cottage	Cosmeston Cottage is an 18th century single storey cottage. Square headed window openings, gabled porch, corrugated iron roofing.	ST1779168962	Post Medieval
GGAT01597s	Cosmeston Cottage	18th Cnt stone rendered cottages with common ridge & eaves height. Slate roof 2-stacks. Small square headed windows on S elevation, none on N. Lean-to on W.	ST181695	Post Medieval
GGAT01598s	Hill Cottage	2-storey/slate roof/end gable/brick end stack/rendered whitewashed/square headed sashes with glazing bars slate gable porch. Extension with tiles, lean-to-roof.	ST173679	Post Medieval
GGAT01599s	Sutton Farmhouse, Sully	18th Cnt 2-storey stone rendered farm house with slate roof & full gabled dormer with square headed sash windows with glazing bars. Modern extension to N.	ST179683	Post Medieval
GGAT01602s	Upper Cosmeston	Stone, rendered slate roof. 2-storey, square headed casement windows & gabled porch. 2 end stacks single storey extension to W. 19th cnt building.	ST180692	Post Medieval
GGAT02017s	Lavernock Battery	Lavernock Point Battery was conceived as part of the defence scheme for the Severn estuary in the 1860s. It was to defend the channel between Barry Island and Flat Holm and was an enclosed work on the north east shore of the channel at Lavernock Point near Cardiff. Its first armament consisted of three 7-inch RMLs on Moncrieff disappearing carriages.	ST1804167910	Post Medieval
GGAT02430.5s	Taff Vale Railway Cadoxton Branch	Taff vale railway, Cadoxton branch (Maynard 1996).	ST1704268254	Post Medieval
GGAT04372s GGAT04320s 40690	Swanbridge Lime kiln	Swanbridge Lime kiln Shown on 1st Edition OS map 6" 'old limekiln' and remains visible on modern mapping as limekiln disused.	ST1716968304	Post Medieval
GGAT05608s 265858	Lavernock House & Grounds, near Swanbridge	A post medieval house or villa, set within its own ornamental wooded grounds overlooking St Mary's Well Bay, Lavernock,	ST1747067816	Post Medieval

		Sully. The house is depicted on the 1st Edition OS map of 1879 onward and identified as 'Lavernock House'. On the 1st ed. OS map the house is square in shape with a roughly rectangular projection extending northeast and a further associated cluster of outbuildings to the north-east (from the 2nd ed. OS map of 1900 are added two glass houses).		
GGAT05609s	Trig Point, West of Lavernock Point	Triangulation point to the north of Lavernock Point, Sully depicted on the 1st, 2nd, 3rd and 4th edition Ordnance Survey maps of 1879, 1900, 1920 and 1940.	ST1845768083	Post Medieval
GGAT05610s	Trig Point at Roundbush Rocks	Triangulation point at the cliff at Roundbush Rocks near Sully depicted on the 1st and 2nd edition Ordnance Survey maps of 1890 and 1900. Not indicated on the later OS maps from 1920 onward.	ST1859169043	Post Medieval
GGAT05659s	Limekiln II at Swanbridge	Limekiln II at Swanbridge, Sully depicted on historic OS mapping and noted as 'Old' (1st ed. 1:2500 OS map 1879; 2nd ed. 1:2500 OS map 1900; 3rd ed. 1:2500 OS map 1920; 4th ed. 1:2500 OS map 1942).	ST 1688268455	Post Medieval
273947	Saint Anne	Archaeological remains associated with the loss of this vessel are not confirmed as present at this location, but may be in the vicinity. Event and Historical Information: The Saint Anne was a 98nt wooden brigantine, built in 1863 and registered at Quiberon, France. At time of loss on 9 March 1891, the vessel was owned by J Le Buhe, Quiberon, France, and under the command of master J Lecorre. The Saint Anne was enroute from Newport to Pouliguen, France, with a cargo of coal, when it was caught in an east-southeasterly gale force 10 and blown ashore between Penarth and Lavernock Point.	ST1878569336	Post Medieval
309271	Cropmarks W Of Roundbush Rocks,	Relict field boundaries visible on AP (RCAHMW AP965081/53). These features appear to conform to current field boundary arrangements.	ST1851169200	Post Medieval
414346	Lower Cosmeston	A single-unit, end-entry house, dating to the 17th century. <b>Now proposed for listing</b>	ST1792168950	Post Medieval
GGAT06081s	Former Cement Works Offices	This building formerly the offices for the South Wales and Portland Cement & Lime Works, and was constructed in 1890, Lavernock Road, Penarth	ST1816569620	Post Medieval, Modern
GGAT02012s	Anti-Aircraft Battery West of Lavernock Point (GM448)	Emplacement for battery of 4 3.7" or 4.5" heavy anti-aircraft guns set in 'clover leaf' plan around a central semi-circular area housing the battery command post. Rectangular 5 bay magazine block set between 2 of the gun positions. 2 guns in concrete o	ST18056785	Modern
GGAT02014s	Ranny Bay	Artillery house with stable nearby, facing bricks being removed. Foundations of corrugated steel hut. Vents, waterbanks.	ST18556950	Modern
GGAT02708s 300443	Sully Battery	HAA battery (Sully); WW2 4 x 3.7" Mk II radar (PRO Air 2/4768)	ST1805167919	Modern



GGAT02727s	Possible Generator Building	Building (?generator); modern (linked to 15)	ST178678	Modern
GGAT02728s	Modern Searchlight Battery	Searchlight battery; modern (WW2)	ST1869668118	Modern
GGAT02729s	Modern Searchlight Battery	Searchlight battery; modern (WW2)	ST1819168003	Modern
GGAT05202s	Seaward Defence Headquarters, Roundbush Rocks	The Third edition OS map of 1920 shows a quadrilateral area of land at the top of the Roundbush Rocks cliffs and bounded by four War Department boundary stones.	ST1855368978	Modern
GGAT05660s	Quarry III at Swanbridge, Sully	Quarry III at Swanbridge, Sully, a modern stone extraction site first indicated in 1942 (4th ed. 1:2500 OS map 1942). The quarry is not shown on current mapping.	ST1702368435	Modern
GGAT05753s	Tower at Lavernock	A small rectangular stone building decorated with crenelations situated close the cliff edge and known locally as the Marconi Tower. There is no direct evidence that this structure was used for the first radio transmission over open water in 1897. Requires further investigation.	ST1872368280	Modern
GGAT05754s	Commemorative plaque	A bronze plaque set into the churchyard wall of St Lawrence Church commemorates the first radio message transmitted over open water between Lavernock Point and Flat Holm island by Guglielmo Marconi in 1897.	ST1864468201	Modern
GGAT05769s	Royal Observer Corps Monitoring Post, Penarth	Royal Observer Corps monitoring post. Built to provide information to both civil and military authorities in the event of military attack. The site at Penarth is located in undergrowth to the W of the cliff top path overlooking Roundbush Rocks, approximately 500 yards along the track from Upper Cosmeston.	ST18586903	Modern
274124	Amitie	Archaeological remains associated with the loss of this vessel are not confirmed as present at this location, but may be in the vicinity. The Amitie was a 92nt wooden brig built in 1878 and registered at Vannes. At time of loss on 26 October 1909, the vessel was carrying a cargo of pit wood from Vannes to Swansea. The vessel encountered heavy weather and ran ashore 600 yards north of Lavernock Point.	ST1879568657	Modern
310268	Ranny Bay, Possible Crop-Circle	Possible crop-circle, observed 4th of July 1995. Associated, regardless of time & space, with NPRN402168.	ST1857168840	Modern
310267	St Mary's Well Bay, Searchlight Battery	Concrete(?) searchlight battery emplacement. Anti-aircraft and Coastal Battery, west of Lavernock Point, a Scheduled Ancient Monument.	ST1784767746	Modern
414463	Lavernock Point Holiday Camp	Lavernock Point Holiday Camp is situated 2 miles south of Penarth on elevated ground overlooking the Bristol Channel.	ST1831568132	Modern
415108	South Wales Portland Cement and Lime Works	The SW Portland cement and lime works, Penarth, produced cement and lime between 1886 and the 1960's.	ST1818369466	Modern

412864	Glamorganshire Golf Course, Penarth	Founded in October 1890, the Glamorganshire Golf Club in Penarth benefitted from the patronage of the Earl of Plymouth and his land agent Robert Forrest and were gifted a large amount of land on the Downs in lower Penarth for the purpose of laying out a golf course. Initially a 9-hole course, the course was expanded to 18-holes in 1896 with the Welsh Amateur Championships taking place on the full size course in 1897. The course is noted for being the test arena of the Stableford Scoring System. The pavilion was opened on 13 July 1892 and expanded in 1894. The majority of the costs involved were met by the Plymouth Estate. A number of low earthworks were recorded in drifting snow on 24th January 2013, apparently representing the remains of former field systems.	ST1785469520	Modern
--------	-------------------------------------	--	--------------	--------

**4.35** The HER holds records for 17 historic assets of post medieval and 17 of modern date within the study area.

**4.36** Post medieval sites include houses nearby cottages: Cosmeston Cottage (GGAT01596s, NPRN414312 and County Treasure 853); further cottages at Cosmeston to the north, on the edge of the modern settlement (GGAT01597s); and Hill Cottage to the southwest (GGAT01598s).

**4.37** Post medieval farmhouses are also recorded including Lower Cosmeston Farm (NPRN414346) which lies directly to the northeast of the Site, the earliest building of which is described as 'a single-unit, end-entry house, dating to the 17th century'. This farm complex is being considered by Cadw for listing and the setting impacts are considered in a separate report. A number of modern barns and sheds have subsequently been built around the farm. Other farms include Upper Cosmeston Farm to the north (GGAT01602s), Sutton Farmhouse, Sully (GGAT01599s) to the south. Also nearby is the Lavernock House & Grounds, near Swanbridge (GGAT05608s, NPRN265858). Relict field boundaries of post medieval date are recorded west of Roundbush Rocks (NPRN309271).

**4.38** Other post medieval sites include three limekilns are recorded in the area, with one at Cog (GGAT01409s) and two at Swanbridge (GGAT04372s, GGAT04320s, NPRN40690; and GGAT05659s); two Ordnance Survey (OS) trig points are recorded west of Lavernock Point (GGAT05609s) and at Roundbush Rocks (GGAT05610s); and the line of the Taff Vale Railway Cadoxton Branch (GGAT02430.5s) runs along the southern boundary of the Site, carried on an embankment and bridge over Fort Road. A ship wreck sites is also recorded on the NMRW, that of the Saint Anne (NPRN273947), located to the east.

- 4.39** The site of the St Marys Well Battery west of Lavernock Point was initially conceived as a defensive site in the 1860s, a Palmerston era fort (GGAT02017s). The site was rebuilt in the 1940s as the Anti-Aircraft Battery West of Lavernock Point (GGAT02012s). Other World War II defensive sites are the Ranny Bay Artillery house (GGAT02014s); Sully Battery and Mk II radar site (GGAT02708s, NPRN300443); Possible Generator Building (GGAT02727s); Searchlight Batteries (GGAT02728s, GGAT02729s and NPRN310267); and the Royal Observer Corps Monitoring Post, Penarth (GGAT05769s). An earlier defensive site from the 1920s is also recorded, the Seaward Defence Headquarters, Roundbush Rocks (GGAT05202s).
- 4.40** Modern industrial sites are recorded, including the South Wales Portland Cement and Lime Works (NPRN415108) which produced cement and lime between 1886 and the 1960's, and their associated offices (GGAT06081s). A quarry site is recorded at Swanbridge (GGAT05660s).
- 4.41** The Marconi Tower at Lavernock (GGAT05753s) is so called as it is said to have been used for the first radio transmission over open water in 1897, although this has not been confirmed. The radio signal is the one commemorated on the plaque on the Lavernock church wall (GGAT05754s; County Treasure 866).
- 4.42** The location of the shipwreck of the *Amitie* (NPRN274124) is recorded, which ran aground near Lavernock Rocks on 26 October 1909.
- 4.43** Modern sites related to leisure are the Lavernock Holiday Camp (414463) and the Glamorganshire Golf Course, Penarth (NPRN412864). A further rather different site is also recorded on the NMRW, that of a Crop Circle at Ranny Bay (NPRN310268) observed 4th of July 1995.
- 4.44** It is considered that there is a low potential for post medieval sites to be located within the Site, other than remains of agricultural activity as it lies away from the centres of settlement and adjacent to Lower Cosmeston Farm. The potential for modern sites of archaeological significance to be present within the Site is considered to be negligible.
- 4.45** The importance of the assets of post medieval date is would be of local importance only.

## Unknown

Table 8: Sites of unknown date recorded on the GGAT HER and NMRW within 1km of the Site

PRN / NPRN	Name	Summary	NGR	Period
GGAT02725s	Bronze Pin Findspot	Find; undated (bronze pin) (NMW)	ST187694	Unknown
GGAT02779s 309445	Lavernock	Complex of rectangular enclosures, visible as eroded earthworks identified by RCAHMW, possibly representing a farmstead and forming part of the shrunken medieval hamlet of Lavernock.	ST1825068550	Unknown
GGAT03118s 309270 309444	Lavernock Cropmark East	Circular ring ditch seen on RCAHMW AP 965108 41-44 ca. 50m in diameter no indication of dating	ST18376862	Unknown
GGAT03997s GGAT04066s 309260	Sully Enclosure	NMR entry reads: Cropmark of sub-rectangular, ditched enclosure, c. 30m across, its angles oriented to the cardinal points.	ST1733168720	Unknown

**4.46** There are 4 assets of unknown date recorded within the 1km study area. Three of these are cropmarks most likely related to field boundaries and enclosures of uncertain date. These could be prehistoric or related to medieval agricultural practices but due to lack of investigation no more detailed dating has been possible.

## Previous Archaeological Work

Table 9: Archaeological Events recorded on the GGAT HER within 1km of the Site

PRN	Name	Event Type	NGR
GGATE000774	Cosmeston Castle, Partial Excavation, 1977 by GGAT	Excavation	ST17666893
GGATE000823	Cosmeston, Full Excavation, 1983-90 by GGAT	Excavation	ST177689
GGATE000868	Cosmeston Dovecote, Full Excavation, 1983 by GGAT	Excavation	ST17556882
GGATE000909	Cosmeston Castle, 1983, Unspecified event	Unspecified	ST17666893
GGATE000914	Cosmeston Castle, Survey, 1977 by GGAT	Field Survey	ST17666893
GGATE001579	Field visit to Lavernock, cropmark enclosure, 2006 by GGAT	Field visit	ST1825068550
GGATE001595	Field visit to Lavernock cropmark 2006 by GGAT	Field visit	ST18376862
GGATE001602	Field visit to Sully enclosure, 2006 by GGAT	Field visit	ST17336872
GGATE003263	Cosmeston Medieval Village Excavation by Wessex Archaeology, 1993 full excavation of medieval building and yard (report 1996)	Excavation	ST17746894
GGATE003910	Cosmeston Medieval Village management plan prepared by Heritage Projects (1985-88)	Management Plan Landscape	ST17746894
GGATE003926	Lavernock Farm, Lavernock: Archaeological Field Evaluation, 1994 by GGAT in the area of a shrunken medieval village adjacent to Lavernock Church	Evaluation	ST1870068260

GGATE004321	Cosmeston to Cog Moors Pumping Main intermittent watching brief 1994-1995 by GGAT (four locations recorded, little found except a few finds)	Watching Brief	ST1712368887 ST1686269226 ST1746968872 ST1775669029 ST1645069747 ST1536669564 ST1454769084
GGATE005431	The Rural Settlement of Roman Britain undertaken by Reading University and Cotswold Archaeology creating a resource that brings together the excavated evidence for the rural settlement of Roman Britain (2015). Four locations recorded	Research Project	SS5858587907 ST0336769850 ST4627287763 SO3038114970
GGATE005601	Land off Lavernock Road, Cosmeston, Penarth, watching brief 2006 by Cardiff Archaeological Unit Ltd	Watching Brief	ST1725968429
GGATE006100	GGAT150: Rapid Coastline Zone Assessment of four locations by GGAT 2016 - 2017	Research Project	SS5711599529 SS4812885240 SS6683491638 SS8538776101

**4.47** The HER holds records for 15 previous archaeological investigations within the study area (Figure 7). Two of these are larger research projects covering larger areas of Wales (Coastal Zone Assessments and Rural Settlement of Roman Britain). Other sites relate to the works undertaken at Cosmeston Deserted Medieval Village, a number of watching briefs and a few site visits.

**4.48** The nearest previous archaeological investigations to the Site are all located at Cosmeston Deserted Medieval Village.

**4.49** As yet not recorded on the HER are four further investigations undertaken in the vicinity. These include an Archaeology and Heritage Assessment, geophysical survey and trial trench evaluation undertaken on part of the proposed residential development on the 'Land at Upper Cosmeston Farm' development site to the northeast of the Ysgol-y-Deri site.

**4.50** The Heritage and Archaeology Assessment was prepared by Environmental Design Partnership Ltd in August 2020 (report reference edp5187\_r003e)<sup>16</sup>. As part of this report the geophysical survey was undertaken by Sumo Services in January 2019<sup>17</sup> and the trial trench evaluation by Glamorgan Gwent Archaeological Trust (GGAT) in March 2019<sup>18</sup>.

<sup>16</sup> Environmental Design Partnership Ltd, 2020, Land at Upper Cosmeston Farm, Lavernock Road, Penarth: Archaeological and Heritage Assessment (report reference edp5187\_r003e)

<sup>17</sup> Sumo Services, 2019. Geophysical Survey Report: Upper Cosmeston Farm, Penarth, Wales (Survey Report 14192)

<sup>18</sup> GGAT 2019, Land at Upper Cosmeston Farm, Penarth, Vale of Glamorgan: Archaeological Evaluation (GGAT Report No. 2019/019)

- 4.51** The geophysical survey included 5 areas of survey. Area 1 was located directly northeast of Lower Cosmeston Farm and Areas 2a and 2b, south of the farm and directly east of the Ysgol-y-Deri Site. Areas 3, 4 and 5 were located further northeast. Areas 1, 2a and 2b revealed no anomalies of likely archaeological significance and no further work was undertaken in the area. Potential archaeological anomalies were recorded in Areas 3, 4 and 5 which were subject to limited trial trench evaluation.
- 4.52** The trial trenching comprised only seven trenches and the summary of the report states that *'Of the seven trenches excavated, Trenches 1 and 2 contained field drains and Trenches 3 and 4 were negative. Trench 5 contained a linear break in the bedrock, but it was unclear whether this break was an archaeological feature or a natural geological break, however the natural break was considered the most likely cause. Trench 7 contained archaeological deposits in the form of two linear ditch deposits and a possible post-hole or pit, but none of these features provided any dating evidence.'*<sup>19</sup> The report also concluded that many of the anomalies identified on the geophysical survey related to geological changes and not archaeological activity.
- 4.53** A further scheme of archaeological work has been undertaken by the 'Hidden Glamorgan' group as reported on via their website and specifically the blog-page 'Lower Cosmeston Farm Development-Archaeology and Heritage Assessment' dated 05.04.2020<sup>20</sup>. Two trial trenches were opened by the group close to Lower Cosmeston Farm (the exact locations are not provided via the website and there is confusion as to whether it was undertaken within an area subject to geophysical survey or not). The results were summarised as follows: *'What we have discovered through two trial trenches are archaeological remains of almost certain medieval date. We also uncovered hundreds of pottery shreds and various other small finds from this area.'* It is not known if any formal report has been prepared on the work. The Hidden Glamorgan group do however admit that *'Due however to the limited size of the excavations we cannot presently state the exact nature of the remains, and the conclusions that we can draw from them are at this time limited'* although still state that the results show that *'Given the close proximity of these archaeological remains to the medieval village of Cosmeston, there is undoubtedly a connection.'* It is likely that a medieval precursor was present at Lower Cosmeston Farm and so there is likely to have been some contemporaneity of occupation between the farm and the village.

---

<sup>19</sup> Ibid

<sup>20</sup> <http://glamorganhistoryandarchaeology.blogspot.com/>

## Map Regression, Aerial Photographs and LiDAR data

- 4.54** The earliest map available to view for the Site was the 1845 Tithe Map of Lavernock (Figure 8, top left). At this time the site area was divided into three fields: a strip down the northeastern edge (No. 27), a large field covering most of the area (Field No. 37) and a part of the woodland to the southeast (No. 38). The line of Fort Road defined the southwestern boundary of the site as exists today and at that time the road to the north was on a different alignment, curving past Lower Cosmeston Farm to the northeast and Cosmeston village to the northwest. The fields were unnamed comprising meadow (Nos 27 and 37) and wood (39) all farmed by William Hawker (Of the adjacent Cosmeston Farm) and the landowner was the Marquess of Bute. The narrow field to the northeast (27) suggests it is a remnant of medieval strip farming around the village of Cosmeston.
- 4.55** The 1879 OS map shows that the northeastern field boundary had been removed to create a larger field and that the woodland to the south had also been altered, possibly removed (Figure 8, top right). The line of a drain runs through the southern part of the field.
- 4.56** The 1920 OS map (Figure 8, bottom left) is the first to show the railway which forms the southern boundary of the Site. An embankment had been constructed to carry the railway. Lavernock Station was located to the southwest of the Site.
- 4.57** The 1940 OS map is the first to show the present straight alignment of the B4267 creating the northwestern boundary of the site (Figure 8, bottom right). This straight alignment removed the curves running past Lower Cosmeston Farm to the northeast and the Cosmeston to the northwest. The map indicates that Fort Road was called Station Road at that time, leading to Lavernock Station.
- 4.58** A single aerial photographs of the Site is visible through the Britain from Above website, (Reference WPW041282 (1933) - View of Portland cement and lime works, Penarth). The photograph predates the road realignment and shows the curving line of the road past Lower Cosmeston Farm and Cosmeston village. The Site area is visible as a featureless field.
- 4.59** Aerial photograph reference C818412 held by the NMRW (dated 01/05/1998) shows the site of the deserted medieval village of Cosmeston with the Site in the foreground. The photograph clearly shows a linear earthwork along the northeastern side of the Site. This is also visible on the 1945 aerial photograph available through Google Maps and on modern aerial photographs (Figure 10). It relates to the former field on the northeastern side of the Site shown on the Tithe map.
- 4.60** Lidar data was analysed for the Site in detail, due to the actual field being overgrown during the Site visit and also it was noted that the grown was covered in numerous

wheel ruts. The Lidar data demonstrates that the earthwork noted on aerial photographs does still survive as an earthwork within the field, suggesting a boundary running along the northeastern side of the Site and then curving to form a further boundary along the southeastern end of the site (Figure 9). These represent the former field boundaries as shown on the 1845 Tithe Map of Lavernock. Slight linear features running northwest to southeast (parallel with the northeastern boundary) are suggestive of slight ridge and furrow, the remains of medieval strip farming. This would confirm that the Site area lay within the agricultural land surrounding Cosmeston during the medieval period and was very unlikely to have been used for settlement or other forms of activity.



## 5. Impact Assessment

### Proposed Development

- 5.1** The proposed development comprises the construction of a new primary school within the Site, to be located on the northeastern side of the Site. Access roads and parking will lead south from the B4267 close to the northeastern corner of the Site and provide parking to the northwest and southwest of the proposed school building.
- 5.2** A Multi Use Games Area (MUGA) will be constructed to the south of the school building. A further soft outdoor area on the northeastern side of the MUGA.
- 5.3** Much of the southern half of the site is shown as open ground on the proposals plan, suggesting it will not be developed or landscaped.
- 5.4** A nature / habitat area is proposed for the southwestern corner of the site adjacent to the disused railway embankment, with woodland retained.
- 5.5** The exact nature of the proposed development is not known, but the following activities are all likely to be needed which could expose, damage or destroy any buried archaeological remains that may be present within the Site:
- a. Ground preparation works (topsoil stripping);
  - b. Geotechnical investigations;
  - c. Construction of contractor's compounds or storage areas;
  - d. Excavation of foundations or platforms for proposed buildings;
  - e. Construction of playing fields and associated drainage and levelling works needed;
  - f. Construction of roads and parking areas;
  - g. Landscaping works (earth moving, construction of ponds or levelling); and
  - h. Service installation.

## Factors Affecting Archaeological Survival

**5.6** Archaeological remains can survive as earthworks and as below ground archaeological features, finds and layers. Part of the assessment process is to consider what factors may have affected archaeological survival. That is to say, what conditions would have enhanced the chances of survival and what conditions would have reduced the chances of survival.

**5.7** The subject of archaeological preservation has been covered comprehensively elsewhere<sup>21</sup>, and it is a subject which is subject to ongoing review as our understanding grows. The following addresses some familiar scenarios for assessment reports such as this, to allow the reader an insight into some 'typical' scenarios.

### Rural Locations

**5.8** In rural locations, below ground remains are likely to be sealed by a relatively thin series of layers. Typically a topsoil of c.100-200mm and a subsoil of 100-300mm. Therefore, they may be sealed by 200-500mm of deposits. There are variations to this including landscapes affected by colluvial or alluvial deposits, although not relevant for this Site. Earthworks are most common in areas not subject to modern, mechanised ploughing, although earthworks can be preserved in hedgerows, wooded areas and even as plough-reduced remnants within arable fields.

**5.9** Assessment has indicated that the former field layout as shown on the 1845 Lavernock To the map is still discernible as low earthworks today. The remains of former medieval strip farming may also be present. The Site would appear to have been used as agricultural land since the medieval period. The original layout has changed to a certain extent with the removal of two earlier field boundaries.

**5.10** The present shape of the Site has been defined by Fort Road to the southwest, which may have medieval origins linking Lavernock with Cosmeston; the railway to the southeast; and the realignment of the B4267 to the northwest. These activities are unlikely to have caused any disturbance within the Site.

**5.11** Overall if archaeological remains are present within the Site, they are likely to be relatively shallow beneath the present ground surface and in a relatively good state of preservation.

---

<sup>21</sup> Historic England 2016. Preserving Archaeological Remains. Decision-taking for Sites under Development

## Assessment of Significance and Potential Effects

### Designated Heritage Assets

- 5.12** The closest Scheduled Monument to the site is the Anti-aircraft and Coastal Battery West of Lavernock Point (GM448). The site is located some 750m south of the Site on the southern side of the railway embankment. The scheduled monument comprises a series of low lying buildings on the coastal edge. The significance of the scheduled monument is in its surviving remains and views out across the Bristol Channel. The proposed school development will not interrupt any views to and from the gun emplacement. Due to the distance, topography and siting of the scheduled monument, there will be no effect on the significance of the monument from the proposed development.
- 5.13** The grade II listed Church of St Lawrence at Lavernock is located 890m southeast of the Site (Photos 17 & 18). The church is accessed via Fort Road which leads from Cosmeston (and the B4267) to the settlement and church at Lavernock. The church is located on a slightly raised area from the road, although it does not have a tower and there is no intervisibility between the proposed new school Site and the church. The intervening topography, including the railway embankment and the distance of the church from the Site is such that there will be no effect on the significance of the monument from the proposed development.



Photo 17: View north of southern façade of St Lawrence Church



Photo 18: Bronze memorial plaque on southern wall of churchyard

### Non-Designated Heritage Assets



Photo 19: View southwest across the reconstructed buildings within the deserted medieval village of Cosmeston north of the Site



Photo 20: View southeast across the reconstructed buildings within the deserted medieval village of Cosmeston north of the Site, including the dome shaped medieval dovecote

- 5.14** Directly to the northwest of the Site lies the site of the deserted medieval village of Cosmeston, which now has a number of reconstructed buildings, as well as surviving post medieval buildings, and is a tourist attraction and museum (Photos 19 & 20). The site has been subject to a number of excavations in the past. The elements of the village are recorded on the GGAT HER, the NMRW and is a Vale of Glamorgan County Treasure (GGAT01596s, NPRN414312, NPRN406400, NPRN414312; County Treasures 864 and 853). The village is separated from the Site by the B4267. The proposed school development will have intervisibility with the medieval village, although this will not have any impact on its significance: access to the reconstructions and museum will not be affected by the proposals.
- 5.15** The post medieval Lower Cosmeston Farm (NPRN414346) is located immediately northeast of the Site (Photo 4). The farm is recorded on the NMRW but has no other designation. It comprises older buildings with a mix of modern sheds and storage tanks. The farm will not be directly impacted upon by the school development. Access to the farm will not be altered. Although there will be a change in the field from what is presently agricultural land to a school, there will be no change to the significance of the farm.
- 5.16** During the site visit a number of other features were also noted relating to the former Taff Vale Railway Cadoxton Branch (GGAT02430.5s). These are the former station building (Photo 21); former railway workers cottages (Photo 22); and the

bridge over Fort Road (Photos 23 & 24). None of these features will be impacted upon by the proposed development.



Photo 21: View west from Fort Road of the former Lavernock Station buildings



Photo 22: View northwest from Fort Road across the railway cottages



Photo 23: View north along Fort Road to the railway bridge



Photo 24: View south of skewed brick arch of railway bridge over Fort Road

## 6. Conclusions

**6.1** Based on the information within the HER, supplemented by historic mapping, the Site is considered to have the following potential for archaeological remains by period as indicated in Table 10. The likely archaeological importance of such remains by period, are also indicated in the table.

Table 10: Archaeological Potential and Importance

Period	Archaeological Potential	Archaeological Importance
Prehistoric	Palaeolithic - Low Mesolithic and Neolithic - Moderate Bronze Age and Iron Age - Low	Local
Roman	Low	Local (minimum)
Early Medieval	Low	Local
Medieval	Low (settlement), Moderate to High (agricultural)	Local (minimum, settlement) Local (agricultural)
Post medieval / Modern	Post medieval – Low Modern – Negligible	Local

**6.2** The Site has not been subject to previous development and appears to have been used as agricultural land since the medieval period. Two former field boundaries were present within the Site as shown on the 1845 Tithe map, but had been removed by the later 19<sup>th</sup> century. The construction of the railway embankment to the southeast in the early 20<sup>th</sup> century and the road realignment of the B4267 to the northwest in the mid-20<sup>th</sup> century defined those boundaries of the Site but would have had very limited impact, if any, within it.

**6.3** The development proposals will include the construction of new buildings on the site, landscaping, MUGA playing field, roads and parking areas. All of these will require groundworks to some extent which could impact any underlying archaeological remains that may survive within the site.

**6.4** Overall the archaeological potential of the Site is considered quite low, although moderate for stray finds of Mesolithic and Neolithic date as well as for medieval agricultural activity (including former field boundaries and remains of strip fields). No designated historic assets will be impacted upon by the development proposals, although for conclusions on Lower Cosmeston Farmhouse, please refer to the separate Heritage Impact Assessment in Wales report (HCUK 2021).

**6.5** The scope of any further archaeological works that would be needed in advance or during development of the Site would need to be discussed **and agreed** with GGAT Planning Services who are the archaeological advisors to Vale of Glamorgan council.



## Sources Consulted

Glamorgan Gwent Historic Environment Record, Glamorgan Gwent Archaeological Trust, Swansea

National Monument Record of Wales, Royal Commission on the Ancient and Historical Monuments of Wales, Aberystwyth

## Primary Sources

1845 Tithe Map Plan of Lavernock

1879, 1900, 1920, 1940, 1969, 1970, 1988, 1989 and 1993 1:2500 scale OS Maps

2003 1:1250 scale OS Map

## Secondary Sources

Chartered Institute for Archaeologists (2017) Standard and guidance for the preparation of Heritage Desk-Based Assessments

WAT 2018, Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs), Welsh Archaeological Trusts July 2018 (reviewed 2019)

## Internet Sources

Cadw: <https://www.cadw.gov.wales>

British Geological Society online viewer: [www.bgs.ac.uk/data/mapViewers/home.html](http://www.bgs.ac.uk/data/mapViewers/home.html)

Google Earth: [www.googleearth.co.uk](http://www.googleearth.co.uk)

Lle Geoportal: <http://lle.gov.wales/home>

Welsh Tithe Maps: <https://places.library.wales/>

## 7. Figures