

# *Archaeology Wales*

## **Plot D7a, Langdon Road, Swansea**

Archaeological Watching Brief



By  
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Report No. 1678


# Archaeology Wales

## Plot D7a, Langdon Road, Swansea

### Archaeological Watching Brief

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## Contents

Non-Technical Summary	1
1. Introduction	2
1.1 Location and Scope of Work	2
1.2 Topography and Geology	3
1.3 Archaeological and Historical Background	3
2. Methodology	4
3. Results of the Watching Brief	5
3.1 Plots 6-11	5
3.2 Plots 1-5	6
3.3 Plots 12-19	7
3.4 Finds	8
3.5 Environmental Data	8
4. Discussion and Conclusions	8
4.1 Overall Conclusions	8
4.2 Storage and Curation	8
5. Bibliography and References	9

### List of Illustrations

Figure 1	General location map
Figure 2	Site location plan
Figure 3	Site sections

### List of Plates

Plate 1	View east across site prior to excavation
Plate 2	Minor reduction of ground within north east corner of site
Plate 3	Northern boundary of site after removal of surface soil deposit.
Plates 4-10	Excavation of plot 6-11
Plate 11	Excavation of plot 1-5
Plates 12-16	Excavation of plot 12-19

## **Appendices**

- Appendix I    Context Descriptions
- Appendix II    Written Scheme of Investigation
- Appendix III    Archive Cover Sheet

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## **Non-Technical Summary**

*This report results from work undertaken by Archaeology Wales Ltd (AW) for Davies Homes, on land at Plot D7A, Langdon Road, Swansea, centred on OS grid reference SS 67057 93046. The report details the results of an archaeological watching brief that took place during groundworks relating to the construction of 19 new dwellings along with associated works at. The work was undertaken as a condition of the planning permission for the development (planning application no. 2017/0146/FUL). The local planning authority is The City and County of Swansea.*

*This site lies in an area of important industrial development associated with the 19<sup>th</sup> century Prince of Wales Dock to the south. Earlier industrial development at the head of the Tennant Canal is also noted to the south, along with the potential for palaeo-environmental evidence in this former coastal area. Adjacent archaeological investigations have apparently uncovered structural remains associated with former land use. As a consequence, a programme of archaeological mitigation associated with the development had been recommended by Glamorgan-Gwent Archaeological Trust – Curatorial Division.*

*Throughout the excavated area natural estuarine deposits were encountered at depths of around 1.7m below the previous ground level. These were overlaid by a number of thick dumped deposits and a concrete and post structure, dateable to the 19<sup>th</sup> or 20<sup>th</sup> century, and potentially related to the numerous railway lines noted running through this area during much of that period. These in turn were overlaid by more modern deposits relating to the subsequent redevelopment of the site in the later 20<sup>th</sup> century. No finds, features or deposits of specific archaeological interest were encountered during the course of the groundworks.*

*All work was undertaken to the Standards and Guidance for an Archaeological Watching Brief as set by the Chartered Institute for Archaeologists (2014).*

# **1. Introduction**

## **1.1 Location and Scope of Work**

In September 2017 Archaeology Wales Ltd (AW) was commissioned by Davies Homes, to undertake an archaeological watching brief during groundworks associated with the construction of 19 new dwellings with associated works on land at Plot D7A, Langdon Road, Swansea (Figures 1 & 2). The site is centred on OS grid reference SS 67057 93046. The local planning authority is The City and County of Swansea (CCS). The planning application number is 2017/0146/FUL.

This site lies in an area of important industrial development associated with the 19<sup>th</sup> century Prince of Wales Dock to the south. Earlier industrial development at the head of the Tennant Canal is also noted to the south, along with the potential for palaeo-environmental evidence in this former coastal area. Adjacent archaeological investigations have apparently uncovered structural remains associated with former land use.

Glamorgan-Gwent Archaeological Trust – Curatorial Division (GGAT-CD), in its capacity as archaeological advisors to the local planning authority (CCS), recommended that a programme of archaeological mitigation of the area was undertaken during ground works associated with the development to mitigate the impact of the proposed development on the archaeological resource. The recommendations made by GGAT-CD are set out in a letter to the local planning authority dated 19th April 2017. The resulting Condition attached to the planning permission for the development reads:

- No development shall take place until the applicant, or their agents or successors in title, has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted to and approved in writing by the Local Planning Authority.
- Reason: To identify and record any features of archaeological interest discovered during the works, in order to mitigate the impact of the works on the archaeological resource.

Prior to works commencing an approved Written Scheme of Investigation for an archaeological watching brief was produced by AW in accordance with the Standard and Guidance for Archaeological Watching Briefs (ClfA 2014), which was designed to provide an approved scheme of archaeological investigation to be implemented during the groundworks.

The purpose of the watching brief is to provide the local planning authority with sufficient information regarding the nature of archaeological remains on the site of the development, the requirements for which are set out in Planning Policy (revised edition 9, 2016), Section 6.5 and Technical Advice Note (TAN) 24: The Historic Environment (2017). The work is to ensure that all buried artefacts and deposits are fully investigated and recorded if they are disturbed or revealed as a result of activities associated with the development.

The watching brief took place on the 15<sup>th</sup>, and 21<sup>st</sup> to the 25<sup>th</sup> of February 2018 under the supervision of Andrew Shobbrook. Subsequent visits were also undertaken on the 28<sup>th</sup> of February and the 5<sup>th</sup>, 7<sup>th</sup>, and 18<sup>th</sup> of March 2018 under the supervision of Jerry Bond.

The AW project number for the work is 2556 and the site code is DSS/17/WB. The project details are summarised on the Archive Cover Sheet (Appendix III).

## **1.2 *Topography and Geology***

The site lies on Landon Road, within the SA1 development area on the eastern side of Swansea, South Wales. Prior to development the site comprised an area of levelled ground bounded by Langdon Road to the south, a local road to the east, The Village Hotel and car park to the north, and ongoing development to the west.

The surrounding area is one of largely modern development in the SA1 area, including new residential areas, as well as commercial and office space, with some industrial, warehouse and storage areas surrounding Prince of Wales Dock, which lies a short distance to the south. The Prince of Wales Dock forms a series of docks on the eastern side of the mouth of the River Tawe as it opens out into Swansea Bay and the Bristol Channel to the south. To the north lies the residential areas of Port Tennant and St Thomas, with the area bisected by the A483 (Fabian Way).

The underlying geology of the area comprises a mix of mudstone, siltstone and sandstone of the South Wales Middle Coal Measures Formation. This is overlain by raised storm beach deposits of sand and gravel (BGS 2017).

## **1.3 *Archaeological and Historical Background***

The site lies on the edge of an area examined as part of an archaeological desk-based assessment undertaken on the Prince of Wales Dock Area (Bowen 2011), which contains a detailed historical background to the development of the area, the following is a brief summary.

19<sup>th</sup> century maps of the area would suggest that this site lay within enclosed agricultural land on the coastal fringes, with the mudflats of Fabians Bay to the southwest. To the south lay a small tidal inlet, and in 1824 the Tennant Canal, which ran from Aberdulais and Neath, was also completed alongside this inlet, accessing Fabians Bay and the mouth of the Tawe beyond. These waterways attracted industrial activity south of the site, largely in the form of coal wharves and the Port Tennant Copper Works between the canal and the coast beyond. This activity led to the gradual development of Port Tennant at the head of the tidal inlet, to the east of the site, otherwise the main settlement in the area was in St Thomas, to the northwest.

In the 1860s the Vale of Neath Railway was constructed through this area to access Swansea Docks. This would appear to have run in the immediate vicinity of the site. This area was transformed with the construction of the Prince of Wales Dock, incorporated in the Swansea Harbour Act of 1874. Works began in 1879, with the Docks officially opening in 1881, and opened to shipping the following year. This saw an explosion of industrial activity throughout the area, as a consequence of which the rail access to the area increased significantly. Ordnance Survey mapping from the late 19<sup>th</sup> century through to the mid 20<sup>th</sup> century show the development area being covered in multiple railway lines and embankments accessing the Dock and Swansea beyond.

These railway lines continued to access the docks until the 1960s and 1970s. In the early to mid-1970s some of these route began to be cleared and by the late 1970s Langdon Road had been laid out, and warehouses and sheds had been laid out along the north side, across the development site. These modern warehouses and sheds were subsequently cleared and the site levelled within the last 7 years.

Archaeological investigations in an adjacent plot did however uncover some structural remains relating to the previous land-use of the area, and deeper excavations to the east have also uncovered peat deposits of palaeo-environmental interest. There is considered therefore to be the potential for some archaeological remains to exist within the development site.

## **2. Methodology**

The archaeological watching brief followed the methodology set out within the approved WSI (Appendix II), and was undertaken during all intrusive ground work on the site.

The excavation was carried out using a 360° tracked excavator equipped, due to the nature of the ground deposits, with a toothed and toothless ditching bucket. Non-intrusive groundworks were carried out along the northern boundary of the site to remove a linear mound of deposited soil, which may relate to the demolition of the previous industrial sheds.

Intrusive groundworks commenced within the southwest corner of the site to excavate the foundation footprint for plots 6-11. The foundation cut excavated within this area measured 28m East - West by 15m North - South and in places continued to a maximum depth of 1.7m below existing ground level. This was then followed by the excavation of plots 1-5, which was located within the southeast corner of the site and encompassed a rectangular area measuring 22m East - West by 10.5m North - South and continued to a maximum finished depth of 2.2m below existing ground level. The final area of excavation was located within the northwest to mid northern area of the site within plot 12-19, which included the cutting of a rectangular shaped footprint measuring 60m East -West by 10m North - South and continuing to a maximum depth of 2m below existing ground level.

All areas of the site which contained building plots were excavated down to a firm base. This was then backfilled with the same excavated material which was then compressed into separate layers to establish a firm foundation.



The exposed deposits were subsequently recorded by measured sketch drawings, high resolution digital photographs (using a 10MP camera) and written records using AW recording systems. A register of all contexts and photographs was also made.

The on-site archaeological work was undertaken by Andrew Shobbrook and Jerry Bond. The overall management of the project was undertaken by Project Manager Philip Poucher.

All works were undertaken in accordance with the ClfA's *Standards and Guidance for an Archaeological Watching Brief* (2014) and current Health and Safety legislation.

### **3. Results of the Watching Brief (Figures 2 & 3; Plates 1-16)**

#### **3.1 Plots 6-11**

Within the southwest corner of the site groundworks included the excavation of a large rectangular area that was reduced down to the natural superficial geology and intended to accommodate building plots 6-11.

The natural soil horizon (**009**) was first viewed at 1.7 metres below existing ground level and was formed of a mid to light brownish-grey clay which was mottled with dark blue clay. It is possible the mottling may be the result of above industrial contamination seeping downwards into the superficial geology, but it is considered more likely that this represents the natural estuarine deposits in this area.

Four separate fragments of flint were recovered from the revealed surface of the natural soil horizon (009). These flints appear unworked however, and may represent natural beach deposited flint.

The remains of a sub-rectangular shaped feature [**019**], initially considered to be the possible remains of a pit, was cut into the superficial geology (009) within the eastern end of plot 6-11. Due to pit being located at around 2m below existing ground level and situated under a 2m deep vertical section the feature was unsafe to access and investigate. Therefore, under archaeological supervision, the onsite machine took a sample of the pit using a ditching bucket to assess the archaeological potential of the feature. The sample taken proved to be a mid to dark brown peat (**011**) containing probable industrial contamination due to both the smell of the deposit and small coal fragments contained within it, therefore it was not considered to represent a feature of antiquity. The feature also proved to be relatively shallow and was considered to probably represent the remains of a natural undulation within which a peat deposit had naturally formed.

Overlying the superficial geology (009) was a loosely compacted pale yellowish-white sandy clay (**008**), which contained frequent inclusions of small sub-angular sandstone and measured an average depth of around 0.19m. Clinker and fragments of brick were found throughout this deposit. This is considered to be the remains of a possible later post-medieval or early modern engineering foundation layer. A layer of fine pale yellow sand (**007**) was deposited over the previous foundation layer and contained inclusions of ocean mollusc, which may

suggest that this sand layer may have been locally sourced and then deposited as a second layer of foundation. This deposit measured a consistent depth of 0.09m and was found throughout the entire footprint of plots 6-11.

Formed over the two previous foundation layers was the remains of loose to moderately compacted blackish-grey sandy-silt clay **(006)**, which contained frequent inclusions of metal slag, burnt bricks, some burnt stone and the remains of a single wooden railway sleeper. This deposit measured around 0.28m in depth.

A moderate to firmly compacted mid greyish-brown silty-clay **(005)** was found deposited over the previous layer (006) and is assumed to be the remains of a modern landscaping layer due to the presence of plastic bags and other plastic objects found within this deposit.

Within the northeast end of the excavated area the remains of a modern rectangular brick-built inspection chamber **{020}** was discovered. When viewed in section it was recorded that the inspection chamber had cut **[021]** through previous deposits 005, 006, 007, 008 and 009.

The remains of a compacted coarse floor surface **(004)**, formed of compressed concrete, gravels and building rubble, was revealed throughout the footprint of the entire plot, measuring around 0.09m deep. This is considered to relate to former modern workshops and sheds which were present on site.

Deposit **(003)** comprised of mainly waste tarmac, coal and ash and is considered to be a modern landscaping layer which had been spread across the top of the underlying floor (004). This in turn was overlain by a second modern landscaping deposit **(002)**, which was formed of a moderately compacted light brownish to dark grey sandy gravel, which continued to a maximum depth of 0.10m.

A final layer of gravel **(001)** capped all of the previous layers and measured a constant depth of around 0.30m, containing modern material.

### **3.2 Plots 1-5**

Within the southeast corner of the site groundworks included the excavation of a large rectangular area reduced down to the natural subsoil and intended to accommodate building plots 1-5.

The earliest deposit recorded during ground reduction within this area was formed of a mid brown mixed sandy-clay with common cobble inclusions **(012)**, which was first viewed at 1.8m below existing ground level. This was assumed to be a natural soil horizon, and a continuation of deposit (009) which was encountered within plot 6-11, albeit with a noted increase in sand and stone inclusions. However, the sand and cobble inclusions may derive from a mixing of the natural soil horizon with overlying deposits (008) and (007) that had been identified during the excavation of plots 6 – 11.

Placed within deposit (012) was a structure **{013}** comprising a rectangular arrangement of eight separate machine-cut, squared wooden posts, which were evenly spaced 2.1m apart on

an East - West orientation and 1.2m apart on a North - South orientation. Each individual post measured roughly 0.25m square and varied in depth from between 1.5m to 2.2m below the existing round level. All of the posts had been submerged within a concrete deposit which was removed by machine.

Overlying the remains of structure {013} was a very dark greyish-black waste coal and ash deposit **(014)**, which measured around 0.7m deep and is considered to be the remains of a landscaping deposit and probable continuation of deposit (006) encountered within plots 6-11.

The latest deposit recorded sequentially within this area of the site comprised a mixed industrial waste deposit **(015)**, which included frequent fragments of brick , timber, ash and coal. A number of individual episodes of deposition were visible within this deposit, all however contain mixed modern material and it is assumed to be the remains of a period of modern landscaping and therefore recorded as a single context. In total these deposits measured up to 1.8m in depth, and likely continues into plots 6-11 as deposit (005). Given the mixed nature of this deposit, it is also assumed to be contemporary with deposits (001) to (004).

### **3.3 Plots 12-19**

Plot 12-19 ran across the northern half of the site and formed a similar sequence of deposits to that viewed within the previous excavations of plots 6-11 and 1-5.

Within this area the earliest deposit revealed was formed of a mid brown mixed sandy-clay and cobble deposit **(016)**. This would appear to represent a continuation of deposit (012) as seen in plots 1-5, and was first viewed at 1.8m below existing ground level in this area.

Overlying the basal deposit was a very dark greyish black coal-rich deposit **(017)** which measured 0.7m deep, and is assumed to be a continuation of deposit (014) as recorded in plots 1-5, and deposit (006) as recorded in plots 6-11.

The latest deposit recorded sequentially within plots 12-19 comprised a thick mixed deposit of very dark grey to black material, containing modern waste including bricks, wood, cinders and coal ash **(018)**. Fragments of concrete, metal slag and tarmac were visible throughout. This deposit measured up to 1.8m deep and is considered to be the same as deposit (015) which was recorded during the previous excavation of plot 1-5 and deposit (005) recorded in plots 6-11. As was evidenced in deposit (015) a number of individual episodes of deposition were visible, but they appeared to belong to the same period of modern tipping activity. The tip lines visible in section indicated the material had been deposited from the north and northeast, and had been spread across the site as a whole.

### **3.4 Finds**

A variety of modern materials were noted in all deposits overlying the natural soil horizon. These included general building material, along with metal items, broken glass and plastic. Once noted, these items were not retained.

Four fragments of flint were recovered from the surface of the natural soil horizon (009) in the southwest corner of the site. These fragments however appear unworked, and are likely to be the result of natural beach deposition. These fragments were collected, examined and subsequently discarded.

### **3.5 Environmental Data**

No deposits were encountered that were suitable for environmental sampling.

## **4. Discussion and Conclusions**

### **4.1 Overall Conclusions**

Natural estuarine deposits were encountered at a depth of 1.7m below current ground levels, represented by deposit (009) in the southwest corner of the site. This ground surface was encountered at similar levels as deposits (012) and (016) elsewhere on the site, although sandier and stonier in nature. This may be the result of mixing with overlying deposits, or it may indicate changing coastal deposition. One potential pit within this deposit and a spread of surface flint appeared on further investigation to be natural in origin.

A post and concrete structure {013} was revealed in the southeast corner of the site. Although clearly modern in origin, this structure seems likely to predate the former warehouses and sheds that were constructed on the site in the later 20<sup>th</sup> century, and may therefore be associated with the numerous railway lines that developed through this area from the late 19<sup>th</sup> to mid 20<sup>th</sup> centuries.

Across the site the natural soil horizon was covered in thick deposits containing 19<sup>th</sup> and 20<sup>th</sup> century material. The lower deposits (006), (007), (008), (014) and (017) may have formed foundation and levelling deposits for the former railway lines. The upper deposits appeared more modern in origin, relating to the clearance and subsequent redevelopment of the site in the later 20<sup>th</sup> century and beyond.

No finds, features or deposits of specific archaeological interest were encountered during the course of the watching brief.

### **4.2 Storage and Curation**

The project archive will be prepared in accordance with: *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives* (ClfA, 2014), the

requirements of the National Monuments Record (Wales) and the *Management of Research Projects in the Historic Environment, MoRPHE* (Historic England, 2006). The archive will be deposited with the RCAHMW.

## **5. Bibliography and References**

### ***Published / Unpublished***

Bowen, F. 2011, *Canolfan Glandwr, Prince of Wales Dock, Swansea: Archaeological Desk-Based Assessment*. GGAT report no.2011/058

Chartered Institute for Archaeologists. 2014, *Standards and Guidance for Archaeological Watching Briefs*.

### ***Cartographic***

Ordnance Survey. 1879, Glamorganshire 1:2500, 1<sup>st</sup> edition

Ordnance Survey. 1899, Glamorganshire 1:2500, 2<sup>nd</sup> edition

Ordnance Survey. 1919, Glamorganshire 1:2500

Ordnance Survey. 1948-9, Town plan 1:1250

Ordnance Survey. 1971-4, Town plan 1:1250

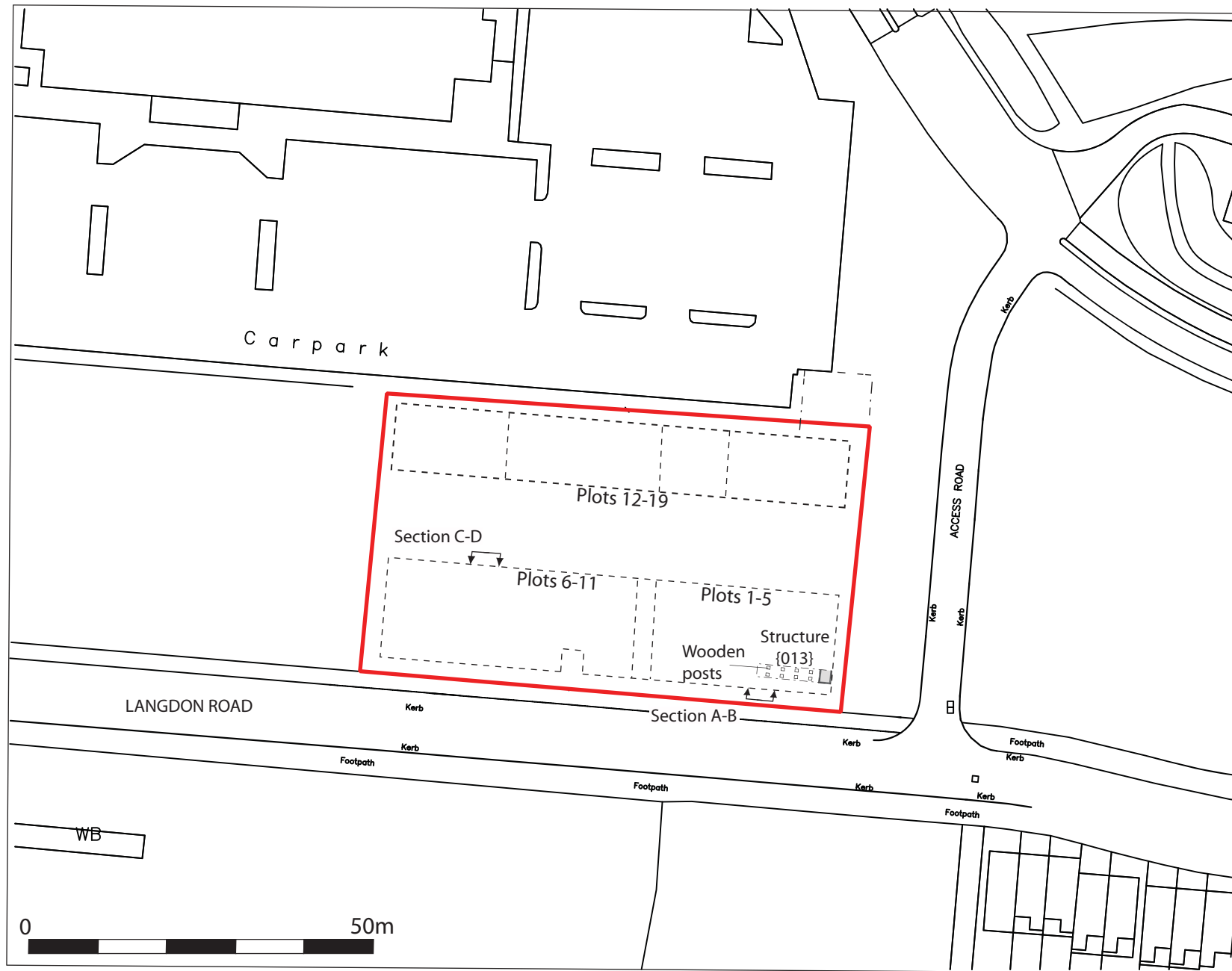
### ***Internet Sources***

British Geological Survey: Geology of Britain Viewer  
<http://mapapps.bgs.ac.uk/geologyofbritain/> (Accessed 28/02/18)



Figure 1: Location map, 1:25,000 @ A4

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Key

 Site boundary


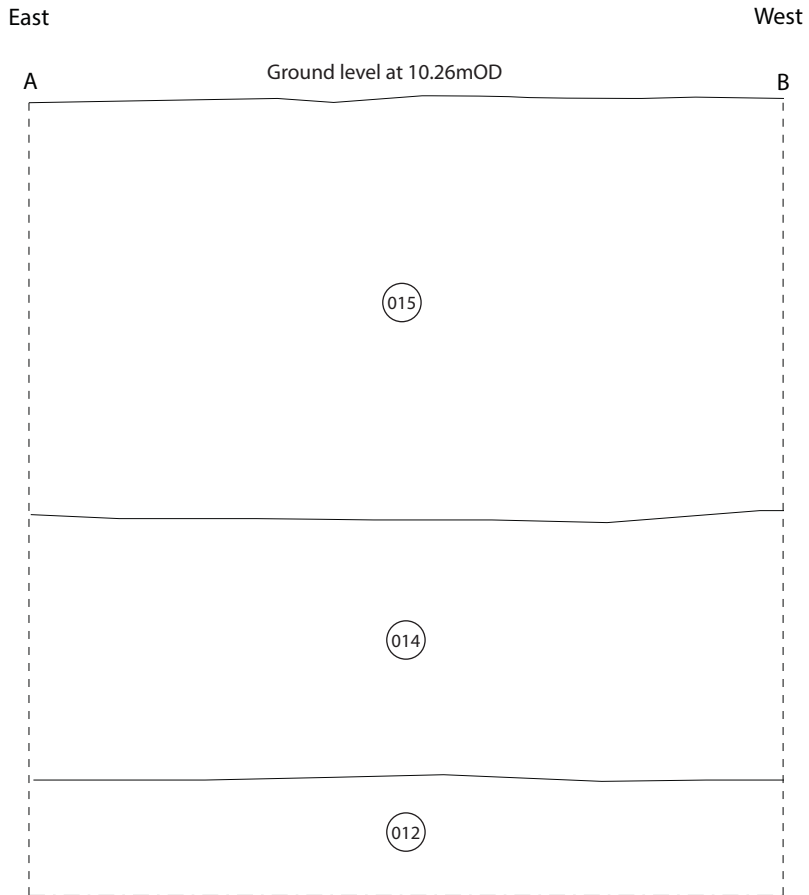
 Reduced ground level

Figure 2:  
Detailed site location  
plan, showing excavated  
areas and identified  
features

Representative section at south-east corner of site



Representative section at south-west corner of site

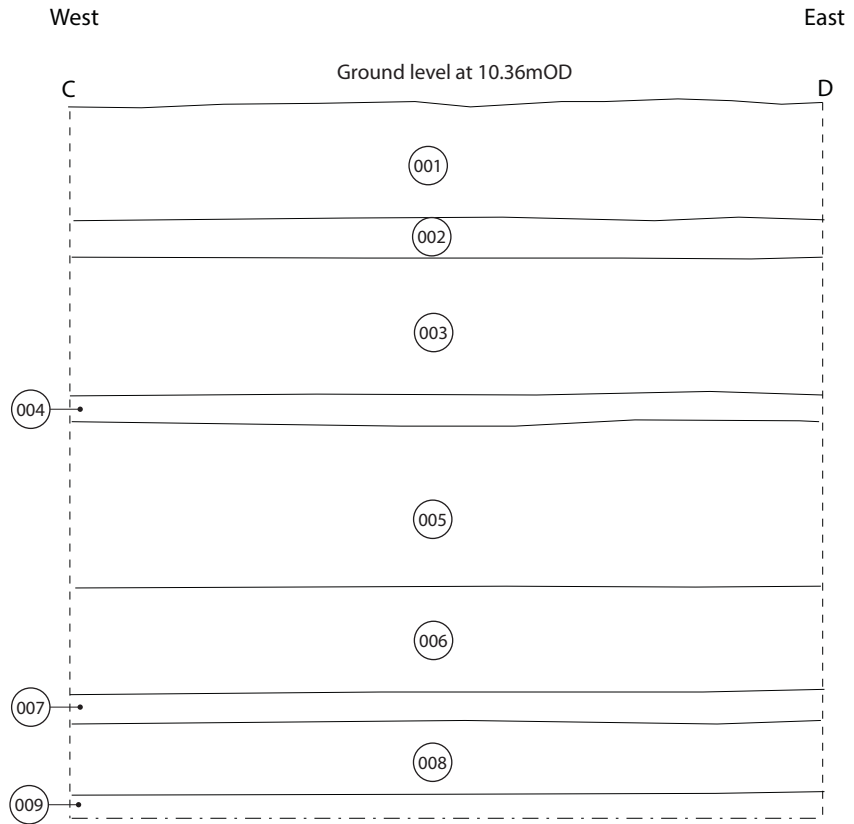


Figure 3:  
Representative sections





**Plate 1:** View east across the site prior to excavation works.



**Plate 2:** Minor reduction of ground within north east corner of site for site cabin. View north, 1m scales.



**Plate 3:** Northern boundary of site after removal of soil deposit and partial levelling. View northwest



**Plate 4:** View southeast of initial excavation of plot 6-11, through deposits 003, 002 & 001.



**Plate 5:** South facing section of plot 6-11, showing deposit 004 with overlying deposits 003, 002 & 001. 1m scales.



**Plate 6:** View east of plot 6-11 footprint reduced down onto deposit 004. 1m scales.



**Plate 7:** View east of western half of plot 6-11 footprint reduced down onto the superficial geology 009. 1m scales.



**Plate 8:** View north of south facing section plot 6-11, showing deposits 001-009.



**Plate 9:** View northwest of plot 6-11 stratigraphy and area containing preserved peat deposit 011.



**Plate 10:** View northwest of western half of plot 6-11 being backfilled and compressed.



**Plate 11:** View south of plot 1-5 being reduced. The remains of the concrete and wooden post structure 013 are visible to the left, with deposit 012 also becoming apparent, all overlaid with deposits 014 & 015. 2m scale.



**Plate 12:** View west of northwest corner of plot 12-19, deposit 016 visible at the base, overlaid by 017 and 018 with landscaped tip lines visible. 2m & 1m scales.



**Plate 13:** View north of western area of plot 12-19 fully excavated. 2m & 1m scales.



**Plate 14:** View north of central area of plot 12-19 fully excavated. 2m & 1m scales.



**Plate 15:** View north of eastern area of plot 12-19 fully excavated. 2m & 1m scales.



**Plate 16:** View northwest of plot 12-19 fully excavated and material being re-deposited and compressed.



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## **APPENDIX I: Context List**

## Appendix 1 – Context List

Context	Description	Relationship
001	Deposit Modern chipping hardcore surface Firm, mid to dark-grey gravel. 0.3m thick (plot 6-11)	Overlies 002
002	Deposit Landscaping. Moderate, light brown - dark grey sandy gravel. 0.1m thick Modern brick (plot 6-11)	Overlies 003 Under 001
003	Deposit Landscaping. Loose, tarmac rubble with inclusions of ash and coal waste. 0.36m thick (plot 6-11)	Overlies 004 Under 002
004	Deposit Surface. Firm, light grey mixed gravel and cement. 0.09m thick (plot 6-11)	Overlies 005 Under 003
005	Deposit Landscaping. Moderate, mid greyish brown silty clay. 0.38m thick. Modern plastics (plot 6-11)	Overlies 006 Under 004
006	Deposit Industrial ash/waste coal layer. Loose to moderate, black sandy-silty-clay. 0.28m thick Modern brick, metal slag, railway sleeper (plot 6-11)	Overlies 007 Under 005
007	Deposit Landscaped beach sand layer. Loose, light yellow sand 0.09m thick (plot 6-11)	Overlies 008 Under 006
008	Deposit Make-up. Loose, light white-yellow sandy clay, containing frequent inclusions of small sub angular sandstones. 0.19m thick 19 <sup>th</sup> /20 <sup>th</sup> century brick (plot 6-11)	Overlies 009 Under 007
009	Deposit Superficial geology. Firm, light brown-grey clay with dark blue mottling. Natural flint (plot 6-11)	Underlies 008
010	Deposit Modern inspection chamber. Brick chamber and concrete plinth 1.2m by 1.2m, 0.3m thick (plot 6-11)	Cut through 005, 006, 007, 008, 009

011	Deposit	Peat deposit formed within a natural hollow [019] in 009. Moderate, dark brown-black, peaty-silt (plot 6-11)	Underlies 008 Infills 019
012	Deposit	Superficial geology. Firm, mid-brown silty-clay. (plot 1-5)	Underlies 014
013	Structure	Arrangement of eight posts set in concrete base (plot 1-5)	Cuts 012 Under 014
014	Deposit	Levelling/landscaping. Moderate, very dark grey-black coal dust Iron slag 0.7m thick (plot 1-5)	Underlies 015 Overlies 013
015	Deposit	Overburden/make-up. Mixed layer of industrial waste. 1.8m thick Modern brick, timber, coal (plot 1-5)	Overlies 014
016	Deposit	Superficial geology. Firm, mid brown clay-sand, cobble inclusions No finds. (plot 12-19)	Underlies 017
017	Deposit	Levelling/landscaping. Moderate, dark grey-black coal deposit 0.7m thick (plot 12-19)	Overlies 016 Under 018
018	Deposit	Overburden/make-up. Moderate, dark grey-black industrial waste containing bricks, wood and coal ash 1.8m thick. Modern concrete, metal slag, tarmac (plot 12-19)	Overlies 017
019	Interface	Natural undulation in the subsoil 009. Sub-rectangular in plan (plots 6-11)	Within 009. Contains 011.
020	Structure	Modern brick-built inspection chamber (plots 6-11)	Within cut 021 Below 004

021	Cut	Cut for modern inspection chamber	Cuts 005, 006, 007, 008 & 009
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**APPENDIX II:**  
**Written Scheme of Investigation**

WRITTEN SCHEME OF INVESTIGATION  
FOR AN ARCHAEOLOGICAL  
WATCHING BRIEF  
ON PLOT D7A, LANGDON ROAD, SWANSEA

Prepared for:

Davies Homes

Planning Application Number: 2017/0146/FUL

Project No: 2556

September 2017



Contents	Page
<i>Summary</i> .....	<b>3</b>
1. Introduction and planning background.....	<b>3</b>
2. Site Description.....	<b>4</b>
3. Archaeological background.....	<b>5</b>
4. Objectives.....	<b>5</b>
4.1. Site Specific Research Aims.....	6
5. Timetable of works.....	<b>6</b>
5.1. Fieldwork.....	6
5.2. Report delivery.....	7
6. Fieldwork.....	<b>7</b>
6.1. Detail.....	7
6.2. Recording.....	7
6.3. Finds.....	8
6.4. Environmental sampling strategy.....	8
6.5. Human remains.....	8
6.6. Specialist advisers.....	9
7. Monitoring.....	<b>10</b>
8. Post-fieldwork programme.....	<b>10</b>
8.1. Archive assessment.....	10
8.2. Reports and archive deposition.....	11
9. Staff.....	<b>12</b>
Additional Considerations.....	12
10. Health and Safety.....	<b>12</b>
10.1. Risk assessment.....	12
10.2. Other guidelines.....	12
11. Community Engagement and Outreach.....	<b>12</b>
12. Insurance.....	<b>13</b>
13. Quality Control.....	<b>13</b>
13.1. Professional standards.....	13
13.2. Project tracking.....	13
14. Arbitration.....	<b>13</b>

Figure 1. Site location

Figure 2. Detailed plan of the site, showing areas of proposed investigation

## Summary

*This Written Scheme of Investigation (WSI) details a programme of archaeological mitigation to be undertaken by Archaeology Wales at the request of Davies Homes.*

*The archaeological mitigation will consist of a watching brief, and will be undertaken during ground works associated with the proposed development of 19 new dwellings with associated works at Plot D7A, Langdon Road, Swansea centred on SS 67057 93046. The associated Planning Application No. is 2017/0146/FUL.*

*This site lies in an area of important industrial development associated with the 19<sup>th</sup> century Prince of Wales Dock to the south. Earlier industrial development at the head of the Tennant Canal is also noted to the south, along with the potential for palaeo-environmental evidence in this former coastal area. Adjacent archaeological investigations have apparently uncovered structural remains associated with former land use.*

*Consequently Glamorgan-Gwent Archaeological Trust-Curatorial Division, in its capacity as archaeological advisors to the Local Planning Authority, recommended a programme of archaeological mitigation on the proposed development.*

*All work will be undertaken in accordance with the standards and guidelines of the Chartered Institute for Archaeologists (2014).*

## 1. Introduction and planning background

This WSI details the methodology for a programme of archaeological mitigation (watching brief) to be undertaken in association with the proposed development of 19 new dwellings with associated works at Plot D7A, Langdon Road, Swansea centred on SS 67057 93046. (Figure 1 and 2). The associated Planning Application No. is 2017/0146/FUL.

This site lies in an area of important industrial development associated with the 19<sup>th</sup> century Prince of Wales Dock to the south. Earlier industrial development at the head of the Tennant Canal is also noted to the south, along with the potential for palaeo-environmental evidence in this former coastal area. Adjacent archaeological investigations have apparently uncovered structural remains associated with former land use.

This WSI has been prepared by Philip Poucher, Project Manager, Archaeology Wales Ltd (henceforth - AW) at the request of Davies Homes.

The methodology set out in this WSI has been agreed with Glamorgan-Gwent Archaeological Trust – Curatorial Division (GGAT-CD) in its capacity as archaeological advisors to the local planning authority (The City and County of Swansea). GGAT-CD has recommended that a programme of archaeological mitigation of the development area is undertaken prior during ground works associated with the



development to mitigate the impact of the proposed development on the archaeological resource.

The recommendations made by GGAT-CD are set out in a letter to the local planning authority dated 19<sup>th</sup> April 2017. As a result a Condition has been attached to the planning permission for the development, which reads:

No development shall take place until the applicant, or their agents or successors in title, has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted to and approved in writing by the Local Planning Authority.

Reason: To identify and record any features of archaeological interest discovered during the works, in order to mitigate the impact of the works on the archaeological resource.

The purpose of the archaeological mitigation (watching brief) is to provide the local planning authority with sufficient information regarding the nature of archaeological remains on the site of the development, the requirements for which are set out in Planning Policy (revised edition 9, 2016), Section 6.5 and Technical Advice Note (TAN) 24: The Historic Environment (2017). The work is to ensure that all buried artefacts and deposits are fully investigated and recorded if they are disturbed or revealed as a result of activities associated with the development.

All work will be undertaken to the standards and guidance set by the Chartered Institute for Archaeologists (2014). AW is a Registered Organisation with the CIfA.

## 2. Site Description

The site lies on Landon Road, within the SA1 area on the eastern side of Swansea, South Wales. The site currently comprises an area of levelled ground bounded by Langdon Road to the south, a local road to the east, The Village Hotel and car park to the north, and further development land to the west.

The surrounding area is one of largely modern development in the SA1 area, including new residential areas, as well as commercial and office space, with some industrial, warehouse and storage areas surrounding Prince of Wales Dock, which lies a short distance to the south. The Prince of Wales Dock forms a series of docks on the eastern side of the mouth of the River Tawe as it opens out into Swansea Bay and the Bristol Channel to the south. To the north lies the residential areas of Port Tennant and St Thomas, with the area bisected by the A483.

The underlying geology of the area comprises a mix of mudstone, siltstone and sandstone of the South Wales Middle Coal Measures Formation. This is overlain by raised storm beach deposits of sand and gravel (BGS 2017).

### 3. Archaeological background

The site lies on the edge of an area examined as part of an archaeological desk-based assessment undertaken on the Prince of Wales Dock Area (Bowen 2011), which contains a detailed historical background to the development of the area.

19<sup>th</sup> century maps of the area would suggest that this site lay within enclosed agricultural land on the coastal fringes, with the mudflats of Fabians Bay to the southwest. To the south lay a small tidal inlet, and in 1824 the Tennant Canal, which ran from Aberdulais and Neath, was also completed alongside this inlet, accessing Fabians Bay and the mouth of the Tawe beyond. These waterways attracted industrial activity to the south of the site, largely in the form of coal wharves and the Port Tennant Copper Works between canal and coast beyond. This activity led to the gradual development of Port Tennant at the head of the tidal inlet, to the east of the site, otherwise the main settlement in the area was in St Thomas, to the northwest.

In the 1860s the Vale of Neath Railway was constructed through this area to access Swansea Docks. This would appear to have run in the immediate vicinity of the site. This area was transformed with the construction of the Prince of Wales Dock, incorporated in the Swansea Harbour Act of 1874. Works began in 1879, with the Docks officially opened in 1881, and opened to shipping the following year. This saw an explosion of industrial activity throughout the area, as a consequence of which the rail access to the area increased significantly. Ordnance Survey mapping from the late 19<sup>th</sup> century through to the mid 20<sup>th</sup> century show the development area being covered in multiple railway lines and embankments access the Dock and Swansea beyond.

These railway lines continued to access the docks until the 1960s and 1970s. In the early to mid-1970s some of these routes began to be cleared and by the late 1970s Langdon Road had been laid out, and warehouses and sheds had been laid out along the north side, across the development site. These modern warehouses and sheds were subsequently cleared and site levelled within the last 6 years.

Archaeological investigations in an adjacent plot did however uncover some structural remains relating to the previous land-use of the area, and deeper excavations to the east have also uncovered peat deposits of palaeo-environmental interest. There is considered therefore to be the potential for some archaeological remains to exist within the development site.

### 4. Objectives

This WSI sets out a program of works to ensure that the mitigation (watching brief) will meet the standard required by The Chartered **Institute for Archaeologist's Standard and Guidance for Archaeological Watching Briefs (2014)**.

The objective of the watching brief will be:

- to allow a rapid investigation and recording of any archaeological features that are uncovered during the proposed groundworks within the application area.
- to provide the 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 are not sufficient to support the treatment to a satisfactory or proper standard.

A written report will be compiled following the fieldwork. Sufficient desk-top research will be undertaken to ensure that the results of this work are properly understood, interpreted and reported.

The report will include a comprehensive assessment of the historic context within which the archaeological evidence rests and will aim to highlight any relevant research issues within regional, national and, if relevant, international research frameworks.

#### 4.1. Site Specific Research Aims

It is important to recognize that whilst primarily designed to mitigate impacts, developer-led archaeology is also regarded as research activity with an academic basis, the aim of which is to add to the sum of human knowledge. Curators recognize the desirability of incorporating agreed research priorities as a means of enhancing the credibility of the development control process, ensuring cost-effectiveness and legitimately maximizing intellectual return.

A research framework for the archaeology of Wales has been produced, which has been under review since 2009. The main archaeological potential of this area could contribute to the themes laid out in *A Research Framework for the Archaeology of Wales Version 01, Final Paper: Industrial and Modern Wales (2007)*. For example, in the theme of 'Wales and the Wider World' the archaeological potential of this area could contribute to a better understanding of the significance coal and copper industries, and how these shaped the present landscape. Similarly in 'Transport Corridors' the potential for remains of the extensive railway infrastructure in this area could contribute to an understanding of the significance of the railways, and the development of the major engineered ports at Swansea. The significance, form and archaeological survival of transport corridors and dock systems is also highlighted in the most recent review documents (2016).

## 5. Timetable of works

### 5.1. Fieldwork

The programme of mitigation will be undertaken during ground works associated with the proposed development. A proposed start date has not yet been established. Archaeology Wales will update GGAT-CD with the exact date.

## 5.2. Report delivery

The report will be submitted to the client and to GGAT-CD within three months of the completion of the fieldwork. A copy of the report will also be sent to the regional HER.

## 6. Fieldwork

### 6.1. Detail

The work will be undertaken to meet the standard required by The Chartered **Institute for Archaeologist's Standard** and Guidance for Watching Briefs (2014).

The watching brief will be carried out by a suitably qualified archaeologist on groundworks associated with the proposed development and associated works (stripping, levelling, foundation excavation, drainage and service excavation) where sub-surface deposits are likely to be exposed or cut into. Mechanical excavations will be undertaken by a tracked excavator using a toothless ditching bucket wherever possible.

The site archaeologist undertaking the watching brief will be afforded the required access by the main contractor in order to observe and where necessary to record any archaeological remains revealed. Groundwork will not be undertaken without the presence of the site archaeologist. The site archaeologist will record finds and less significant archaeological deposits and features without significant delay to the work program.

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, GGAT-CD and AW will be called at the earliest convenience.

To comply with professional guidelines, a contingency for approximately **three days'** uninterrupted access to each such area and for a team of up to two further archaeologists to be employed should be provided. Dependent on the extent and significance of the archaeological remains uncovered, it may be necessary to increase these contingency arrangements. Contingency costs will be agreed in advance before any extension to the programme commences and will follow a site meeting between Archaeology Wales, the client and GGAT-CD.

### 6.2. Recording

Recording will be carried out using AW recording systems (pro-forma context sheets etc) using a continuous number sequence for all contexts.

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.

All features identified will be tied in to the OS survey grid and fixed to local topographical boundaries.

Photographs will be taken in digital format with an appropriate scale, using a 12MP camera with photographs stored in Tiff format.

The archaeologist undertaking the watching brief will have access to the AW metal detector and be trained in its use.

### 6.3. Finds

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.

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

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

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).

### 6.4. Environmental sampling strategy

Deposits with a significant potential for the preservation of palaeoenvironmental material will be sampled, by means of the most appropriate method (bulk, column etc). 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 and will **follow English Heritage's Guidelines for Environmental Archaeology (2002)**.

### 6.5. Human remains

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)**.

A meeting with GGAT-CD, the client and AW will be called if the human remains uncovered are of such complexity or significance that the contingency arrangement (6.1 above) would not be of sufficient scope.

## 6.6. Specialist advisers

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 (Archaeology Wales)
Animal bone	Richard Madgwick (Cardiff University)
CBM, heat affected clay, Daub etc.	Rachael Hall (APS)
Clay pipe	Hilary Major (Freelance)
Glass	Rowena Hart (Archaeology Wales)
Cremated and non-cremated human bone	Malin Holst (University of York)/Richard Madgwick (Cardiff University)
Metalwork	Kevin Leahy (University of Leicester)/ Quita Mold (Freelance)
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)

### 6.6.1. Specialist reports

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

## 7. Monitoring

GGAT-CD will be contacted approximately five days prior to the commencement of archaeological site works, and subsequently once the work is underway.

Any changes to the WSI that AW may wish to make after approval will be communicated to GGAT-CD for approval on behalf of Planning Authority.

Representatives of GGAT-CD will be given access to the site so that they may monitor the progress of the field evaluation. No area will be back-filled, until GGAT-CD has had the opportunity to inspect it, unless permission has been given in advance. GGAT-CD will be kept regularly informed about developments, both during the site works and subsequently during post-excavation.

## 8. Post-fieldwork programme

### 8.1. Archive assessment

#### 8.1.1. Site archive

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.

The site archive (including artefacts and samples) will be prepared in accordance with the National Monuments Record (Wales) agreed structure and deposited with an appropriate receiving organisation, in compliance with ClFA Guidelines (*Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*, 2014). The legal landowners consent will be gained for deposition of finds.

#### 8.1.2. Analysis

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
- Location plan showing the area/s covered by the watching brief, 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.

## 8.2. Reports and archive deposition

### 8.2.1. Report to client

Copies of all reports associated with the mitigation (watching brief), together with inclusion of supporting evidence in appendices as appropriate, including photographs and illustrations, will be submitted to the client and GGAT-CD upon completion.

### 8.2.2. Additional reports

After an appropriate period has elapsed, copies of all reports will be deposited with the relevant county Historical Environment Record, the National Monuments Record and, if appropriate, Cadw.

### 8.2.3. Summary reports for publication

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.

### 8.2.4. Notification of important remains

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.

### 8.2.5. Archive deposition

The final archive (site and research) will, whenever appropriate, be deposited with a suitable receiving institution, usually the relevant Local Authority museums service. Arrangements will be made with the receiving institution before work starts.

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.

Copies of all reports, the digital archive and an archive index will be deposited with the *National Monuments Record*, RCAHMW, Aberystwyth.

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 GGAT-CD.

### 8.2.6. Finds deposition

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 land owners.



## 9. Staff

The project will be managed by Philip Poucher (AW Project Manager) and the fieldwork undertaken by suitably qualified and experienced AW staff. Any alteration to staffing before or during the work will be brought to the attention of GGAT-CD and the client.

## Additional Considerations

### 10. Health and Safety

#### 10.1. Risk assessment

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 1992*. 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.

#### 10.2. Other guidelines

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)*.

## 11. Community Engagement and Outreach

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.

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.

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.

## 12. Insurance

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.

## 13. Quality Control

### 13.1. Professional standards

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 watching briefs* 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.

### 13.2. Project tracking

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

## 14. Arbitration

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.

*Archaeology*  
*Wales*

**APPENDIX III:**  
**Archive Cover Sheet**

# ARCHIVE COVER SHEET

## D7a, SA1, Swansea

Site Name:	Plot D7a, Langdon Road, Swansea
Site Code:	DSS/17/WB
PRN:	-
NPRN:	-
SAM:	-
Other Ref No:	-
NGR:	NGR SS 67057 93046
Site Type:	Housing development on former industrial land/costal location.
Project Type:	Watching Brief
Project Manager:	Philip Poucher
Project Dates:	September 2017 - May 2018
Categories Present:	-
Location of Original Archive:	AW
Location of duplicate Archives:	RCAHMW, Aberystwyth
Number of Finds Boxes:	0
Location of Finds:	-
Museum Reference:	-
Copyright:	AW
Restrictions to access:	None

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