

DELTASTREAM DEMONSTRATION PROJECT, ST JUSTINIANS, PEMBROKESHIRE – TEMPORARY POWER CONVERSION COMPOUND: ARCHAEOLOGICAL WATCHING BRIEF (NGR SM7245 2519)



Prepared by Dyfed Archaeological Trust
For: Tidal Energy Ltd.

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Gan / By

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DELTASTREAM DEMONSTRATION PROJECT, ST JUSTINIANS, PEMBROKESHIRE –

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TEMPORARY POWER CONVERSION COMPOUND: ARCHAEOLOGICAL WATCHING BRIEF

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SUMMARY

A planning application (Planning Application NP/13/0407) was submitted to Pembrokeshire Coast National Parks Authority for the construction of a temporary power conversion compound on land close to St Justinian's lifeboat station, Pembrokeshire (NGR SM 7245 2519). The compound forms part of the onshore development associated with the installation of a one-year trial of the DeltaStream tidal energy device in Ramsey Sound, Pembrokeshire. Previous archaeological work (Pearson 2009) recommended that the onshore works, including the construction of the compound could impact upon archaeological deposits.

The development lies in close proximity to several sites of historical and archaeological interest. These include the medieval St Justinian's Chapel, a scheduled ancient monument, an associated burial ground and St Justinian's Holy Well that lies just to the west of the development area. Mesolithic flint scatters are also known in the vicinity of the works.

Due to the archaeological potential of the site a condition was placed upon planning permission requiring the attendance of an archaeologist during groundworks to undertake an archaeological watching brief.

Tidal Energy Limited commissioned Dyfed Archaeological Trust Field Services to undertake the archaeological watching brief during groundworks. This took place on the 12th November 2013.

The watching brief confirms that the works have not impacted upon significant archaeological deposits but the potential for the survival of archaeological deposits elsewhere in the vicinity of the development still remains.

1. INTRODUCTION

1.1 Project Commission

- 1.1.1 Planning permission has been granted by Pembrokeshire Coast National Parks Authority for the construction of a Temporary Power Conversion Compound (TPCC) (Planning Application NP/13/0407) within a field adjacent to St Justinian's Lifeboat Station, Pembrokeshire (Figure 1; centred on NGR SM 7245 2519).
- 1.1.2 The compound forms part of the onshore development associated with the installation of a one-year trial of the DeltaStream tidal energy device in Ramsey Sound, Pembrokeshire. Previous archaeological work (Pearson 2009) advised that the project's onshore works, including the construction of the TPCC could impact upon archaeological deposits.
- 1.1.3 A recommendation for an archaeological watching brief was placed on the development by the archaeological advisors to the planning authority as the site lies in close proximity to the medieval St Justinian's Chapel (PRN 2639), a Scheduled Ancient Monument (PE 014). An earlier associated burial ground is also present around the chapel site. St Justinian's Holy Well (PRN 7502) lies to the west of the TPCC field. Mesolithic flint scatters are known in proximity of the works.
- 1.1.4 There was thus the possibility that the proposed ground works could expose, damage or destroy below ground archaeological remains associated with the medieval chapel or from other periods, that may exist in the area.
- 1.1.5 Dyfed Archaeological Trust Field Services were commissioned by Tidal Energy Ltd. to undertake the archaeological watching brief.

1.2 Scope of the Project

- 1.2.1 A written scheme of investigation (WSI) was prepared by Dyfed Archaeological Trust Field Services prior to the commencement of the works, which was sent for approval to the planning authority. The project objectives were:
 - Provision of a written scheme of investigation to outline the methodology by which Dyfed Archaeological Trust Field Services will undertake the watching brief.
 - To identify the presence/absence of any archaeological deposits.
 - To establish the character, extent and date range for any archaeological deposits to be affected by the proposed ground works.
 - To appropriately investigate and record any archaeological deposits to be affected by the ground works.
 - Should archaeological deposits of high significance be encountered, mitigation through changes in design was to be considered.
 - To produce an archive and report of any results.

1.3 Report Outline

- 1.3.1 This report describes the location of the development works along with its summary archaeological background, and provides a summary and discussion of the archaeological watching brief and its results.

1.4 Abbreviations

- 1.4.1 Sites recorded on the Regional Historic Environment Record (HER) are identified by their Primary Record Number (PRN) and located by their National Grid Reference (NGR). Dyfed Archaeological Trust Field Services – DAT-FS; Dyfed Archaeological Trust Heritage Management – DAT-HM; Scheduled Ancient Monument – SAM; Written Scheme of Investigation – WSI.

1.5 Illustrations

- 1.5.1 Printed map extracts are not necessarily reproduced to their original scale.

1.6 Timeline

- 1.6.1 The timeline shown in Table 1 below is used within this report to give date ranges for the various archaeological periods that may be mentioned within the text.

Period	Approximate date	
Palaeolithic –	c.450,000 – 10,000 BC	Prehistoric
Mesolithic –	c. 10,000 – 4400 BC	
Neolithic –	c.4400 – 2300 BC	
Bronze Age –	c.2300 – 700 BC	
Iron Age –	c.700 BC – AD 43	
Roman (Romano-British) Period –	AD 43 – c. AD 410	Historic
Post-Roman / Early Medieval Period –	c. AD 410 – AD 1086	
Medieval Period –	1086 – 1536	
Post-Medieval Period –	1536 – 1750	
Industrial Period –	1750 – 1899	
Modern –	20th century onwards	

Table 1: Archaeological and historical timeline

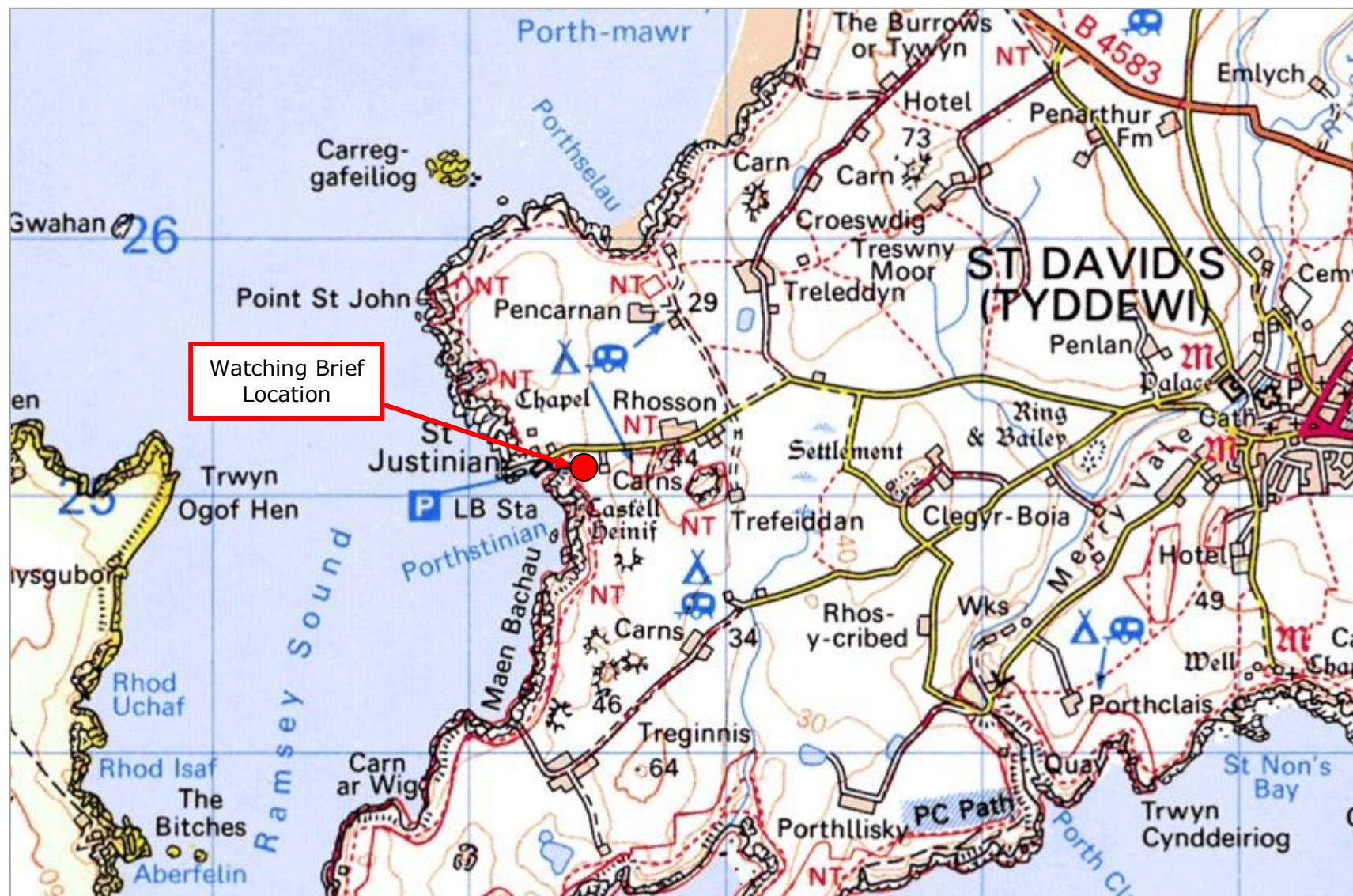
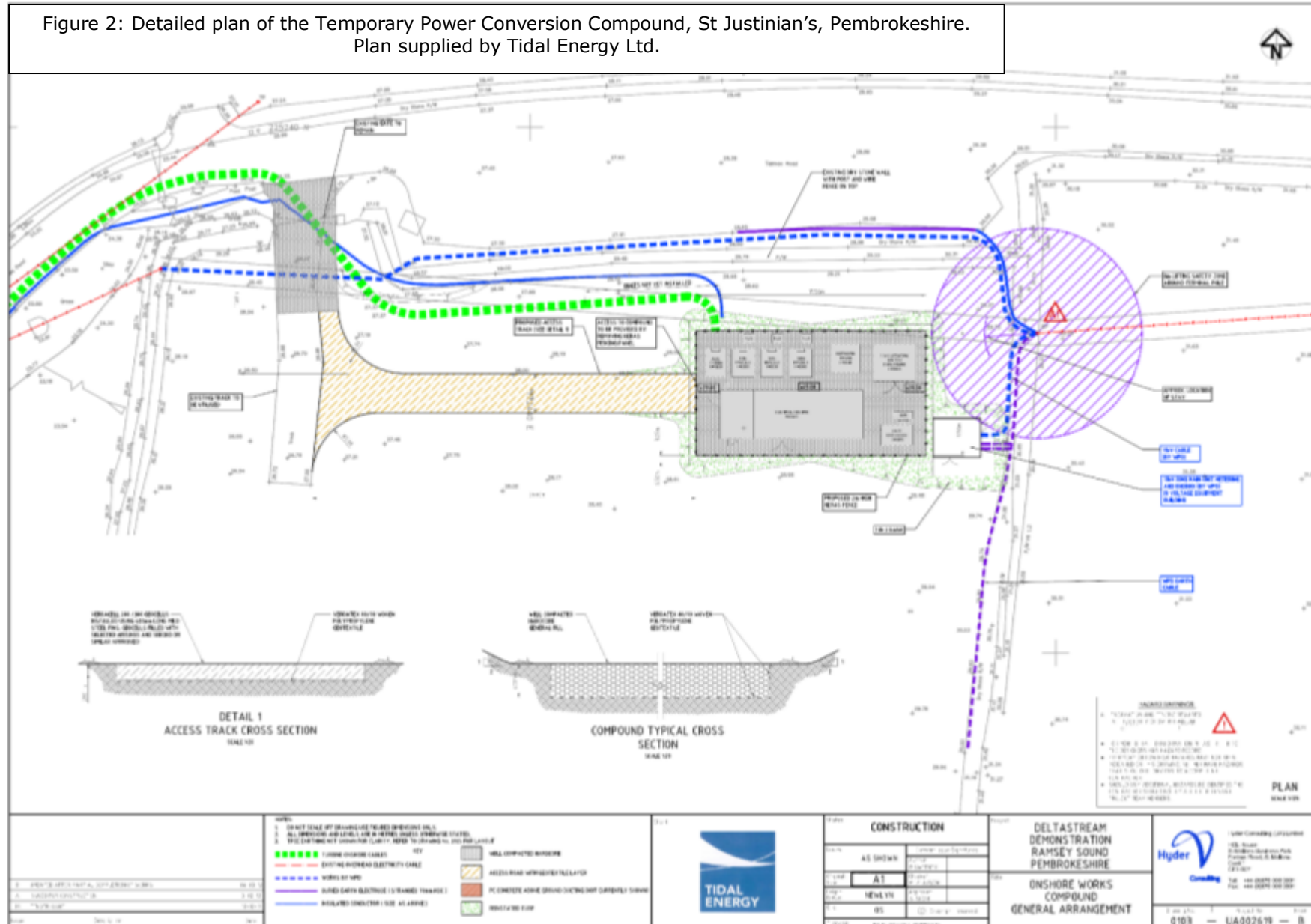


Figure 1: Site location map based upon the Ordnance Survey, with the red circle showing the position of the watching brief

Reproduced from the 2003 Ordnance Survey 1:50,000 scale Landranger Map with the permission of The Controller of Her Majesty's Stationery Office, © Crown Copyright
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Figure 2: Detailed plan of the Temporary Power Conversion Compound, St Justinian's, Pembrokeshire.
Plan supplied by Tidal Energy Ltd.



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2. THE SITE

2.1 Location

- 2.1.1 The proposed development site is centred on NGR (SM 7245 2519). It is situated less than 100m east of St Justinian's RNLI lifeboat station on the west coast of Pembrokeshire, approximately 3.0km west of the city of St Davids.
- 2.1.2 The development site is located within a small fairly level field of rough pasture; the west side of which is used by the RNLI for parking.
- 2.1.3 On the north side a minor road that leads down to the lifeboat station skirts the proposed development site, and it is from this road that access is gained into the field in the northwest corner.
- 2.1.4 The underlying geology of the area is the Caerbwdy Sandstone Formation, sedimentary bedrock that formed approximately 502 to 528 million years ago in the Cambrian Period. These rocks were formed in shallow seas with mainly siliciclastic sediments deposited as mud, silt, sand and gravel.

2.2 Archaeological and Historical Background

- 2.2.1 A search of the Regional Historic Environment Record (HER – held by Dyfed Archaeological Trust) records twelve known archaeological sites within close proximity of the development area. These are shown in Table 2.
- 2.2.2 The main sites of archaeological interest are the medieval chapel of St Justinian (PRN 2639) and an associated medieval holy well (PRN 7502) that lie 80m west northwest and 45m west respectively of the proposed development.
- 2.2.3 To the west of St Davids, overlooking Ramsey Sound and the St Davids Lifeboat Station, are the substantial remains of St Justinian's Chapel; designated as a Scheduled Ancient Monument (PE 014) and Grade I Listed Building (Ref No 12692). This was a place of pilgrimage for medieval travellers to St Davids and gathered donations which were passed to the cathedral. The present stone building may obscure an earlier structure many centuries older, possibly dating to the early medieval period.
- 2.2.4 The following summary is based on a description by Sian Rees (Rees 1992).

The ruins of St Justinian's chapel lie on the coast, overlooking the harbour. The rubble stone walls stand almost to full height and form a rectangular plan measuring 12m x 5m. There are three windows in each side, two doors in the north wall and one in the west.

The building of the present chapel is attributed to Bishop Vaughan, bishop of St David's from 1509 to 1522. There are, however, references to a chapel here in 1492, which mention the income it generated for the cathedral. The foundation of the first chapel on the site must date back many centuries before that. Excavations on the site in 1926 revealed the foundations of an earlier, probably 12th century building and several burials some of which may belong to the early medieval period. The dedication to St Stinan, a little known Celtic saint, may indicate a pre-Norman establishment.

The harbour at Porth Stinian was used as a landing place for travellers to and from Ireland and the chapel may have served as a place of worship for those embarking on or returning from the sea voyage.



Photo 1: The medieval St Justinians's chapel (PRN 2639).

2.2.5 St Justinian's Well (PRN 7502) lies about 40m to the south-east. It is now used to supply St Justinian's bungalow. It is a Grade II listed building (Ref No 12693). The well is now housed in a stone built structure, 1.3m square and 1.4m high, set into a bank and is thought to be of 19th century construction.



Photo 2: The medieval well (PRN 7502) associated with St Justinian's chapel, now housed in a 19th century structure.

Primary Record No. (PRN)	Description	Grid Reference	Period
2639	Standing medieval pilgrimage chapel to St Davids (PRN 2639), disused and ruinous by c.1600 (RCAHM 1925, 328). It is associated with a pilgrimage well PRN 7502. Both are located on an exposed coastal cliff top. See possible early medieval predecessor PRN 7470 for site description. Scheduled Ancient Monument PE014 Grade I listed building (Ref No 12692)	SM72362525	Medieval
7470	Buried earthworks of an earlier St Justinian's Chapel were observed during a field visit by Cambrian Archaeological Projects as part of the Archaeological Impact Assessment for the new St Justinian's Lifeboat Station.	SM72362525	Early medieval
7500	Findspot for fragments of pottery and glass found during excavation of the site in 1923. Reported date range of finds from the medieval period to 19th century. RJ 2003 taken from EJ Boake Arch. Camb. (1926) p.393-394.	SM72362525	Medieval/ post medieval
7501	Findspot for fragments of an inhumation burial, including ring found during excavation of the site in 1923. Reported date range of finds from the early to the medieval period. RJ 2003 taken from EJ Boake Arch. Camb. (1926) p.393-394.	SM72362525	Early medieval/ medieval
7502	A well located to the southeast of St. Justinian's chapel and now housed within a rubble stone enclosure of possible 19th century date. Grade II listed building (Ref No 12693)	SM7240325225	Medieval
9842	Nine Mesolithic flint blades and flakes found on the cliff top path just south of St. Justinian's Chapel.	SM723252	Mesolithic
14046	References to this area being common land in the medieval and post medieval periods.	SM726252	Medieval
26669	Earlier 20 th century circular look-out tower. Said to have been built as look-out by owner of Saint Justinian's bungalow which dates from 1909. Grade II listed building (Ref No 12696)	SM7228225298	Post medieval
26670	1911 Lifeboat house designed by WT Douglas of London engineer and architect to the RNLI. Grade II listed building (Ref No 12695)	SM7233625181	Post medieval
26671	The first Saint David's lifeboat The Augusta donated in 1869 was kept here until replaced by a larger boat the Gem in 1885 for which the building was enlarged. The building became disused in 1911 when the replacement of the Gem by a motor lifeboat necessitated a new building. Stone built structure, slate roof and still in use as storage. The 20th Century building is constructed on top of the original 19th Century slipway. Grade II listed building (Ref No 12696)	SM7236225206	Post medieval
48149	Field boundary stone observed during field visit by Cambrian Archaeological Projects as part of the Archaeological Impact Assessment for the new St Justinian's Lifeboat Station	SM7236225206	Unknown
48150	Coastal field wall observed during field visit by Cambrian Archaeological Projects as part of the Archaeological Impact Assessment for the new St Justinian's Lifeboat Station	SM72412516	

Table 2: Sites recorded on the Regional Historic Environment Record within close proximity to the proposed development area and shown in Figure 3.

- 2.2.6 St Justinian and its surroundings are situated within the *Treleddyn – Treginnis* Historic Landscape Characterisation Area. This is an area of modern Pembrokeshire at the southwest end of St David's Peninsula and according to the description

'... lay within the medieval Cantref Pebidiog, or 'Dewisland', which was held directly by the Bishops of St David's, having represented the core of the bishopric from 1082. The character area lies within the parish of St David's, which had a number of subordinate chapels, and even today preserves a remarkable ecclesiastical topography. However, there is evidence of an underlying, earlier landscape at the southwest tip of the promontory with clearance cairns and a putative field system, possibly from the Bronze Age. The early medieval significance of the area is confirmed by the archaeology; the late medieval St Justinian's Chapel has produced evidence of a probable early medieval cemetery.'

- 2.2.7 In February 2012 a watching brief was carried out during works to lay on-shore cables running from the cliff top by the RNLI building to the TPCC (Woodget 2012). A trench, approximately 100m in length, 0.75m deep and 0.45m wide, was excavated to hold the cables. It was proposed that the trench would run through the southern grass verge of the road. Hand excavation in the area around the well (PRN 7502) revealed stone paving slabs probably associated with the well. These were preserved *in situ* by changing the route of the cable trench so that it ran through the road rather than the verge.
- 2.2.8 No archaeological features or deposits were observed in the remaining trenches subjected to archaeological monitoring in 2012.

3. WATCHING BRIEF METHODOLOGY

The detailed methodology for the watching brief was laid out within the WSI. The relevant methodology can be summarised as follows.

3.1 Fieldwork

- 3.1.1 A 'watching brief' was undertaken during ground reductions across the footprint of the proposed track way and associated compound that had the potential to expose, damage or destroy underlying archaeological remains. This involved initial topsoil clearance followed by the reduction of ground levels down to the top of the natural, in order to create a level and compact platform for the construction of the compound.
- 3.1.2 The curved track leading to the compound building footprint (Figure 2) measured approximately 30.0m long and 5.0m wide. The compound area was approximately 20.0m E-W by 5.0m N-S.
- 3.1.3 The footprint was excavated by a large tracked 360 degree excavator using a toothless grading bucket. A maximum depth of approximately 0.40m deep was excavated at the western end of the track way and 0.70m at the eastern end of the compound.
- 3.1.4 All archaeological deposits revealed during the groundworks were examined and recorded to an appropriate level. Recording of all archaeological features or deposits conformed to best current professional practice and was carried out in accordance with the Recording Manual¹ used by Dyfed Archaeological Trust Field Services.

3.2 Post-Fieldwork Reporting and Archiving

- 3.2.1 All data recovered during the fieldwork will be collated into a site archive structured in accordance with the specifications in *Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation* (Brown 2007), and the procedures recommended by the National Monuments Record, Aberystwyth.
- 3.2.2 The results of the fieldwork have been assessed in local, regional and wider contexts. The report includes a desk-based research element to ensure that the site is placed within its wider archaeological context.
- 3.2.3 A report fully representative of the results of the fieldwork has been prepared.

3.3 Timetabling of Fieldwork

- 3.3.1 The watching brief involved one site visit on 12th November to monitor the excavation works in the area of archaeological interest.

¹ Dyfed Archaeological Trust Field Services have adopted the Recording Manual developed by English Heritage Centre for Archaeology. A copy will be available on-site for inspection if required.

4. RESULTS

- 4.1 Following the removal of the topsoil and subsoil the top of the underlying natural geological levels was exposed. Towards the west end of the field in the area of the trackway a reddish grey shale was exposed but towards the east in the area of the compound the shale gave way to a fine grey brown silt with pockets of gravel.
- 4.2 The ground reduction works for the track way removed a maximum of 0.40m of topsoil and subsoil down to the underlying natural shale bedrock. No archaeological features or finds were recorded during this process.
- 4.3 The ground reduction works for the trackway removed a maximum of 0.40m of topsoil and subsoil down to the underlying natural shale bedrock. No archaeological features or finds were recorded during this process.
- 4.4 At the eastern end of the development in the area of the compound to level the construction platform approximately 0.40m of topsoil and subsoil was removed, as well as a further 0.40m of underlying silt deposit.
- 4.5 The extensive silt deposit appeared to have filled a depression within the shale bedrock and had the gleyed appearance of a saturated soil; being grey/brown in colour interspersed with orange and rusty brown streaks. No archaeological features or finds were recorded during this process.

5. CONCLUSIONS

- 5.1 The archaeological watching brief has demonstrated that the ground reduction works for the proposed temporary compound have not impacted upon any archaeologically significant deposits or features.
- 5.2 Although no significant archaeological features or remains were observed during the watching brief it is still possible that significant archaeological remains could be present in the surrounding area.

PHOTOGRAPHS



Photo 3: The northeast corner of the field, site of the proposed compound, before works have commenced.



Photo 4: The northwest corner of the field at the start of ground works for the trackway.



*Photo 5: The trackway during ground reduction works.
Looking roughly northeast.*



*Photo 6: The trackway after completion of ground reduction works.
Looking approximately southwest*



*Photo 7: The area of the compound during ground reduction works.
Looking northwest.*



*Photo 8: The east end of the compound area after completion of ground
reductions works. Looking east.*

6. SOURCES

Regional Historic Environment Record held by the Dyfed Archaeological Trust.

Ordnance Survey 1889 1st edition 1:2500 map of Pembrokeshire

Pearson, A, 2009, *DeltaStream Demonstrator Project, St Justinians, Pembrokeshire. Written Scheme of Investigation*. Commissioning Client: Tidal Energy Limited. Unpublished report.

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Woodget, S, 2012, *Tidal Energy Limited DeltaStream Demonstation Project, St Justinians, Pembrokeshire. Archaeological Watching Brief*. Commissioning Client: Tidal Energy Limited. Unpublished report.

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Tachwedd 2013
November 2013

Paratowyd yr adroddiad hwn gan / This report has been prepared by
FRANCES MURPHY

Swydd / Position: PROJECT MANAGER

Llofnod / Signature  Date 25/11/2013

Mae'r adroddiad hwn wedi ei gael yn gywir a derbyn sêl bendith
This report has been checked and approved by
KEN MURPHY

ar ran Ymddiriedolaeth Archaeolegol Dyfed Cyf.
on behalf of Dyfed Archaeological Trust Ltd.

Swydd / Position: TRUST DIRECTOR

Llofnod / Signature  Date 28/11/2013

*Yn unol â'n nôd i roddi gwasanaeth o ansawdd uchel, croesawn unrhyw sylwadau
sydd gennych ar gynnwys neu strwythur yr adroddiad hwn*

*As part of our desire to provide a quality service we would welcome any
comments you may have on the content or presentation of this report.*

