### **Emma Evans**

From:

Sent:

To:

10 December 2024 15:40 LDP - For Enquiries

Subject:

'Deposit 2 Plan' Representations - Land Between Longstone Court and 62 Station

Road, Letterston

**Attachments:** 

333101472\_A5\_LDP2 Deposit\_Dec 24\_FINAL w APS.pdf

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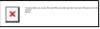
Good afternoon,

Please see attached our Pembrokeshire County Council Local Development Plan 2 'Deposit 2 Plan' Representations on behalf of atebGroup and Land Between Longstone Court and 62 Station Road, Letterston.

Could you confirm acceptance and receipt when convenient.

Many thanks Oli





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Pembrokeshire County Council Local Development Plan 2 2017-2033

'Deposit 2 Plan' Representations

Land Between Longstone Court and 62 Station Road, Letterston

December 2024



## **Document Control Sheet**

Project Name: Land Between Longstone Court and 62 Station Road, Letterston

Project Ref: 333101472

Report Title: Pembrokeshire County Council Local Development Plan 2 2017-2033 'Deposit 2

Plan' Representations

Date: December 2024

|              | Name           | Position  | Signature | Date       |
|--------------|----------------|-----------|-----------|------------|
| Prepared by: | Oli Haydon     | Associate | ОН        | 05.12.2024 |
| Reviewed by: | Stephan Siaw   | Planner   | SS        | 10.12.2024 |
| Approved by: | Robin Shepherd | Director  | RS        | 10.12.2024 |

#### For and on behalf of Stantec UK Limited

| Revision | Date       | Description | Prepared | Reviewed | Approved |
|----------|------------|-------------|----------|----------|----------|
| P1       | 05/12/2024 | DRAFT       | ОН       | SS       | RS       |
| P2       | 05/12/2024 | FINAL       | ОН       | SS       | RS       |

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Appendix A – Site Concept and Vision

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# 1 Executive Summary

- 1.1.1 These representations are submitted on behalf of the ateb Group Limited (the 'Promoters') in response to Pembrokeshire County Council's LDP2 Deposit Plan 2 (the 'Plan') consultation which runs from 21 October 2024 and 16 December 2024.
- 1.1.2 They relate solely to the Promoters land interests for land between Longstone Court and 62 Station Road, Letterston (the 'Site'), as shown in Appendix 1. The site is draft allocated in the emerging LDP2 for a minimum of 38 dwellings under reference HSG/053/LDP2/1.
- 1.1.3 The Promoters are currently constructing the residential development adjacent to this Site, at Parc Maen Hir, which will provide 26 dwellings (19/1098/PA) upon completion. Phase 1 of the Parc Maen Hir development delivered 31 (100%) Affordable Housing units and additionally, adjacent to Parc Maen Hir, the Promoters delivered a further 12 market sales units, through their wholly owned market housing subsidiary Mill Bay Homes, known as Longstone Court.
- 1.1.4 Ateb is committed to providing much needed homes for Letterston and Pembrokeshire and the build-out of the sites demonstrate the Promoters track record for delivery of schemes that are both contributing to the short to long term stable residential growth at a scale commensurate with the requirements of the settlement.
- 1.1.5 This report responds to the Pembrokeshire County Council's LDP2 and associated evidence published to date as part of the Council's Deposit Plan consultation requirements.
- 1.1.6 We support the Council's objective of supporting both communities and business growth in Pembrokeshire, during the period to 2033, whilst protecting the special qualities of the county, in particular its landscape, habitats, species and open spaces, both in recognition of their own very special value and because it underpins many aspects of economic and social life in Pembrokeshire.
- 1.1.7 Overall, our site continues to be suitable, available, and deliverable for residential use to come forward as part of the emerging Local Plan process.



# 2 Introduction

- 2.1.1 It is a statutory requirement that every development plan document must be submitted for independent examination to assess when it is "sound", as well as whether other statutory requirements have been satisfied (Section 64 of the Planning and Compulsory Purchase Act 2004). Consideration has been given to the guidance in Planning Policy Wales (PPW) and the associated Technical Advice Notes (TANs) in relation to preparing and examining plans.
- 2.1.2 This current deposit consultation represents the final opportunity to comment ahead of submission for Examination. In testing the soundness of a local development plan, the following tests are applied:
  - a. Positively prepared the plan should be prepared based on a strategy which seeks to meet objectively assessed development and infrastructure requirements, including unmet requirements from neighbouring authorities where it is practical to do so and consistent with achieving sustainable development;
  - b. Justified the plan should be the most appropriate strategy, when considered against the reasonable alternatives, based on proportionate evidence;
  - c. **Effective** the plan should be deliverable over its period and based on effective joint working on cross-boundary strategic priorities; and
  - d. Consistent with national policy the plan should enable the delivery of sustainable development in accordance with the policies in Planning Policy Wales.
- 2.1.3 The preparation of the new Local Development Plan has clearly been prepared in the context of the current version of Planning Policy Wales (Edition 12, 2024) which reaffirms that local authorities should be positive in preparing their Local Development Plans, putting forward a strategy that seeks as a minimum to meet objectively assessed needs in full.
- 2.1.4 These representations are submitted on behalf of the Promoters in response to Pembrokeshire County Council's LDP2 Deposit Plan 2 (the 'Plan') consultation which runs from 21 October 2024 and 16 December 2024. Subject to competing the remaining stages of preparing this Plan PCC expect to adopt the new plan in May 2026.
- 2.1.5 The LDP2 sets out the Council's ambition for its overarching Plan objectives, housing numbers and strategy for growth. The LDP objectives deliver the 5 Key Principles identified in Planning Policy Wales which represent a guiding vision for all development plans to ensure that planning



facilitates the right development in the right place and delivers the goals and five ways of working set out in the Well-being of Future Generations Act.

- 2.1.6 The principles, reflected within the LDP2 are:
  - a. Maximising Environmental Protection and Limiting Environmental Impact
  - b. Facilitating Accessible and Healthy Environments
  - c. Making Best Use of Resources
  - d. Growing our Economy in a Sustainable Manner
  - e. Creating and Sustaining Communities

This current emerging plan (LDP2) allocates the development site for 38 dwellings as part of the wider LP goal for 6,245 new homes, including a 10% flexibility allowance, an approach which is supported as it represents good practice. As part of previous consultations and Candidate Site submissions, the site has been subject to a number of technical assessments which have informed both these representations and the evolving Vision for the site. The emerging masterplanning exercise has found that the site continues to be capable of delivering a minimum of 38 dwellings effectively and sensitively.

2.1.7 The Promoters welcome the opportunity to continue to work collaboratively with the Council and local stakeholders to develop the Vision Document further as the plan progresses.



# 3 Site Opportunity

# 3.1 Locational Background

- 3.1.1 Land between Longstone Court & 62 Station Road (Candidate Site Ref: 213) comprises a 1.6ha plot of agricultural land adjacent to Station Road, the main east-west thoroughfare through the village. The Site is bordered by residential dwellings to the east and west, with agricultural fields beyond to the south.
- 3.1.2 Letterston has developed around the crossroads that is formed by the A40 trunk road, St. David's Road and Station Road. The candidate site is located to the south of Station Road and approximately 600m to the east of the crossroads at Letterston's centre. The A40 travels northwards to Fishguard on the St George's Channel coast, and south to Haverfordwest, a primary urban settlement within Pembrokeshire County.
- 3.1.3 The land is flat and featureless with minimal prominence within the wider area. A hedgerow and earth bank visually separates the Site from Station Road. The appended concept plan demonstrates how this border could be retained and enhanced, with access via the existing and committed development to the west, and that of Longstone Court immediately adjacent to the Site's northwestern corner.

# 3.2 Technical Background

- 3.2.1 In order to provide a robust evidence base to inform the preparation of an updated vision document and Masterplan. A range of technical exercises have been undertaken or commissioned for completion.
- 3.2.2 The relevant technical background for the promotion of the site is summarised in this section.

#### Heritage and Archaeology

- 3.2.3 Since August 2024, Stantec's in-house heritage and archaeological team have been providing specialist advice regarding archaeology to support the continued promotion of the Site.
- 3.2.4 The Site lies within an Area of Archaeological Priority with the surrounding landscape comprising a prehistoric standing stone, Neolithic henge, at least three Bronze Age burial monuments and an Iron Age defended enclosure.
- 3.2.5 A Historic Environment Desk-Based Assessment (HEDBA) was produced by Dyfed Archaeological Trust (DAT) Archaeological Services in 2020 for forthcoming phased development (Appendix B and C). The HEDBA concluded that there was a high potential for



Neolithic to Bronze Age remains, primarily due to proximity to known archaeological remains (PRN 2393; PE069), to survive and low potential for all other periods.

- 3.2.6 The history of archaeological investigation has covered phasing of the three built, committed or promoted sites off Station Road. The Parc Maen Hir land has been the subject of previous archaeological investigation (field evaluation), undertaken to inform an earlier planning application (07/01287/PA). These works comprised geophysical survey and subsequent trial trenching (archaeological evaluation), the latter of which tested the results of the former. Three trenches are understood to have been excavated in this area; the only feature recorded represented a former hedge boundary. Whilst the geophysical survey suggested the presence of Bronze Age activity within this area, the trenching determined that the remains were of geological, rather than archaeological, origin. It is understood through consultation with the Dyfed Archaeological Services and the Local Planning Authority (LPA) that no copy of the geophysical report was submitted to the Historic Environment Record (HER) and only an unfinished report relating to the trial trenching is available in the National Monuments Record (NMR).
- 3.2.7 No intrusive archaeological investigations have been previously recorded within the promoted Site. To inform understanding about the potential archaeological resource, a geophysical survey was commissioned by Stantec on behalf of the Promoter. The purpose of the geophysical survey was to provide a better indication of the archaeological potential through the identification of subsurface features which could be indicative of archaeology. This would allow for an informed decision on whether any further archaeological mitigation is required in this area before or during the development programme. Prior to commencement, a Written Scheme of Investigation (WSI) for the geophysical survey was produced and approved by the LPA Archaeologist.
- 3.2.8 The geophysical survey was undertaken within the Site by Dyfed Archaeological Services. The survey commenced on Wednesday 11th September 2024, with survey report finalised in October 2024. The survey identified no definite archaeological anomalies of significance, with features recorded in the Site comprising a pair of modern field boundaries and several linear and pit-like anomalies. Combining the results of the geophysical survey with a review of desk-based sources, LiDAR and aerial analysis concluded that the linear and pit-line anomalies are more likely to be associated with recent ground disturbance or geological variations rather than archaeological activity. This correlated with the results of previous investigations undertaken on the Parc Maen Hir land.
- 3.2.9 Following completion of the geophysical survey, Stantec engaged with the LPA Archaeologist (Mike Ings, Joint Head of Region (Dyfed) and Archaeological Planning Manager) for further discussion. Whilst it is recognised that the Site has been subject to a level of disturbance



associated with the for the neighbouring modern development to the west (Longstone Court) as well as the original section of Parc Maen Hir 12-15 years ago, the full extent and impact of these works on any below ground resource is not fully known.

3.2.10 At a more advanced stage in the promotion of the Site and prior to any fieldwork commencing, a WSI will need to be submitted for approval by the LPA Archaeologist. The WSI will set out the scope and methodology of the fieldwork proposed. All further fieldwork can be undertaken post-determination of a planning application, in accordance with a suitably worked condition.

#### **Utilities**

3.2.11 A utilities search has been completed for the site, with no constraints identified.

### **Biodiversity and Ecology**

3.2.12 Initial ecological work has been considered and accounted for in the Site Concept Plan. further site studies will be undertaken in the appropriate season to further refine any mitigation requirements. No constraints that would prevent the site coming forward as part of the LDP2 have been identified.

#### **Transport Assessment**

3.2.13 A Transport Assessment has been completed for the Site (Appendix D) by Acstro Ltd. The report considers the transport implications of the development of the candidate site. In particular, the Transport Statement demonstrates that the candidate site is in a sustainable location that is closely related to existing facilities and services and is accessible to pedestrians, cyclists and public transport users. It is also demonstrated that safe vehicular access to the site can be provided.



# 4 LDP2 Deposit 2 Plan

## 4.1 Strategic Growth

- 4.1.1 The growth strategy proposed within **Policy SP2 Housing Requirement** of the LDP2 seeks to deliver 5,840 new homes over the Plan period 2017 to 2033. A 10% flexibility allowance has been applied, increasing the total provision to 6,425 dwellings in order to deliver the requirement.
- 4.1.2 The growth scenario has been identified by taking the average of the following three scenarios:
  - WG 2018 based Long Term Population Projection which forecasts a need for 295 dwellings per annum;
  - Dwelling-led, 5 year average completion rate from 2014/15 to 2018/19 of 413 dwellings per annum;
  - Dwelling-led, 10 year average completion rate from 2009/10 to 2018/19 of 378 dwellings per annum.
- 4.1.3 In previous representations we raised issues with the soundness of the approach adopted in the Deposit 1 Plan and planning policy dictates that the Welsh Government projections should form only one element of the 'key evidence' in respect of assessing housing requirements, and that there are a number of specific contextual, policy and economic considerations which need to be accounted for in the context of Pembrokeshire.
- 4.1.4 We recognise the impact that Natural Resources Wales' phosphate guidance (published 2021 and subsequently updated) has had on development in parts of Pembrokeshire. It is welcomed that the growth projections complement the anticipated provision of new jobs during the Plan period, as referenced in policy SP 5 on Supporting Prosperity. This growth scenario reflects recent success of the Celtic Freeport bid and accounts for further job growth over and above that based on previous economic forecasting.
- 4.1.5 In the Plan period, it is anticipated that a further 1,000 jobs (over and above the 1,970 already forecast) might be delivered. We would welcome a single-issue review on the employment forecast as the Freeport proposals are currently at too early a stage in their development to provide a more accurate estimate.
- 4.1.6 A varied housing supply results in a resilient housing supply, and we support that growth has been distributed across the Plan area in accordance with a spatial strategy which promotes sustainable development.
- 4.1.7 Future Wales the National Plan 2040, sets out a number of strategic placemaking principles.

  One of these is to increase the population density of towns and cities. For Pembrokeshire, a



largely rural County, LDP2, Deposit Plan 2, sets out minimum site densities for gross site areas, which are generally lower because they make allowance for matters such as highways, amenity open space, recreational open space, garden spaces, sustainable drainage systems, landscaping, planting and boundary treatments and other green infrastructure, including where necessary green buffer zones. For the towns, a gross figure of 30 dwellings per hectare minimum is generally used, reducing to 23 dwellings per hectare for Service Centres and Service Villages. The masterplanning exercise that has been undertaken for the Site has demonstrated that a density of 30 dwellings per hectare can account for public open space, biodiversity enhancements and a layout appropriate for the location.

- 4.1.8 Policy SP6 Settlement Hierarchy continues to designate Letterston as a service centre. We support Letterston's identification as a Service Centre within the settlement hierarchy. Land 'Between Longstone Court & 62 Station Road' occupies a sustainable location being within walking distance of a wide range of facilities.
- 4.1.9 The current LDP classifies Letterston as one of the County's four Service Centres that benefit from 'excellent public transport connections'. The closest bus stops to the candidate site are located at Letterston Square, approximately 400m to the east of the site. These provide access to the No. 645 (weekly) and T5 Traws Cymru bus services (hourly, Monday to Saturday between Aberystwyth and Haverfordwest).
- 4.1.10 The Transport Assessment (Appendix D) provides a selection of Letterstone's services and facilities with approximate walking distances from the Site and is shown in Table 1 below.

Table 1 - Walking distances from the Site to local facilities

| Facility   | Walk Distance from Site |
|--|-------------------------|
| Clynderwen & Cardiganshire Farmers                       | 200m                    |
| Letterston Memorial Hall / Playing Field / Tennis Courts | 200m                    |
| Letterston Square:                                       |                         |
| Restaurant / Take-Away                                   | 400m                    |
| Butchers / Post Office                                   |                         |
| Newsagent  | 650m                    |
| Restaurant / Public House (Harp Inn)                     | 1.1km                   |
| Public House (The Jubilee)                               | 1.2km                   |
| Saint Giles Church                                       | 1.2km                   |
| Ysgol Ger y Llan (Primary School)                        | 1.2km                   |

4.1.11 Providing growth in Letterston will assist in offering sufficient demand to support the retention of services and facilities within the settlement. Directing growth towards settlements with strong service provision also reduces the need for residents to travel.



- 4.1.12 In the first LDP (Adopted 2013) Crymych, Johnston, Kilgetty and Letterston were all identified as Service Centres. Based on the information provided by the 2019 survey, these centres remained the most vibrant in terms of service provision within the rural area, with the addition of Cilgerran, Lamphey, Llangwm and St Dogmaels which also have a range of facilities and services and/or have had improvements to sewerage and WwTW since 2010.
- 4.1.13 The Autumn 2020 review of settlements has made no change to the Service Centres identified in Pembrokeshire, however following Deposit Plan consultation PCC have identified additional areas adjacent to Letterston settlement boundary at Letterston Filling Station and Station Road which have been added to the Letterston boundary map. We support the position that Letterston remains as a key service village.
- 4.1.14 Without the positive allocation of land at settlements such as Letterston, there would be no further 'planned' housebuilding within the next plan period running up to 2033. We reiterate our support for the proposed residential allocation on land between Longstone Court and 62 Station Road for a minimum of 38 dwellings.
- 4.1.15 **Policy SP9 Service Centres and Service Villages** supports development in these critical settlements, we are supportive of the aspirations of this policy and have accounted for these requirements as part of the emerging masterplanning exercise. The proposal, which is appended to these representations is of a scale and nature that is appropriate to the settlement and commensurate with the rate of growth seen to date. The tenure mix, to be discussed within this report, has been based on the assessment carried out by PCC and is deemed to be most appropriate for Letterston. The open space proposed will be accessible and serve all residents of the local community.

# 4.2 **Development Management**

- 4.2.1 This section of our response will focus on the draft place-making policies GN1 GN60 where relevant to the continue promotion and delivery of the land between Longstone Court and Station Road, Letterston.
- 4.2.2 We endorse the principles of GN2 Sustainable Design and Placemaking, emphasising the importance of design proposals that arise from a thorough understanding of the site and its context, rather than relying on generic site layouts and building types. The emerging concept plan considers the development on neighbouring land and integrates its broad design and layout principles to create attractive and functional spaces that blend seamlessly with recent developments adjacent. The current promoter, ateb Group, will also serve as the delivery partner, ensuring early involvement in the layout and design preparation to meet their high standards of quality, ateb Group properties are constructed to the Welsh Government's



Development Quality Requirements, which include the Welsh Housing Quality Standard and Secured by Design, all part of Lifetime Homes.

- 4.2.3 Draft Policy **GN15 Housing Mix** seeks to balance maximising the delivery of affordable housing in accordance with *Policy GN 20 Local Needs Affordable Housing* and provide an appropriate mix of housing types, tenures and bedroom numbers, to meet the identified needs of the Plan's current and future communities. The Policy requires all new build residential development on sites of 5 or more units to provide a minimum of 20% of properties built to Lifetime Homes Standards and in addition, wheelchair user dwellings will be supported. Further, all residential development is to be built in accordance with identified space standards. The emerging layout for the Site ensures these space standards would be met, and whilst we support the provision of 20% Lifetime Homes Standard, we propose that 100% of the Site would be delivered to this standard, in line with ateb Group's commitments.
- 4.2.4 The Policy recommends that development sites use the latest data within the Local Housing Market Assessment (LHMA) as a baseline for 'appropriate' mixes. The 2021 Pembrokeshire Local Housing Market Assessment proposes the below distribution (Table 1) of accommodation sizes over the next 13 years.

Table 2 - 2021 Pembrokeshire LHMA excerpt for Letterston, showing the accommodation sizes required over the next 13 years.

|            | New Market housing |       |       | Market housing New Affordable Housing |       |       |         |       |
|------------|--------------------|-------|-------|---------------------------------------|-------|-------|---------|-------|
|            | 1/2 bed            | 3 bed | 4 bed | Total                                 | 1 bed | 2 bed | 3/4 bed | Total |
| Letterston | 5                  | 3     | 8     | 16                                    | 5     | 1     | 3       | 9     |

(When taken as a proportion, this is: 30% 1-2 bed, 20% 3-bed, 50% 4-bed (market) and 55% 1-2 bed, 10% 3-bed, 35% 4-bed (affordable)).

- 4.2.5 It is noted that Phase 2, consented but yet to be constructed will deliver beyond the above total of affordable homes in the next 13-year period. Focusing on new market housing, the draft allocation for the Site for 38 dwellings can achieve and will exceed the above new market housing requirement. Our Site delivers the above tenure mix and the remainder will respond to market conditions and site characteristics, whilst acknowledging the broad proportions calculated above.
- 4.2.6 The project future needs for owner-occupier housing in Pembrokeshire over the next 13 years has been derived from the LHNA demand model which suggests that: 40.4% of new owner-occupied homes should have three bedrooms, 29.3% should have two bedrooms,



- 19.4% should have four or more bedrooms and 10.9% should be one-bedroom units. Our Site is well positioned to adapt to his potentially dynamic housing mix within the Plan period by utilising the short, medium and longer-term delivery timescales of both this land and the neighbouring Phase 2 land.
- 4.2.7 We support the emerging policy GN16 Residential Allocations which seeks to allocate the 1.69ha Site for 38 dwellings under reference HSG/053/LDP2/1. The Policy recommends an 'Off-Site Contribution' for the affordable housing provision, which will be discussed in a later section.
- 4.2.8 **GN17 Residential Commitments** reflects the allocation on the neighbouring land to the west at Parc Maen Hir, providing 100% affordable housing (26no units), which has been referred to as Phase 2. We would welcome clarification as to whether this development is taken into account within the LHMA need for 9 affordable housing units within the plan-period.
- 4.2.9 We previously raised objections to the to the allocation of Court Meadow (HSG/053/00009) for residential development; which is now shown within the GN17 policy table. The site was allocated in the Joint Unitary Development Plan (053/00009), is allocated in the adopted LDP (HSG/053/00009) and Phase 2 is shown to be a commitment to 27 dwellings, with no affordable dwellings within the emerging Plan.
- 4.2.10 Court Meadow has an extensive planning history, with a series of outline planning permissions for residential development granted in the past. These were granted on 13th December 1989 (Ref: D2/89/1088), 17th December 1992 (Ref: D2/92/1117) and 12th December 1995 (Ref: D2/95/749). A renewal of outline planning permission was granted for residential development on 3rd February 1999 (Ref: 98/0628/PA). An application was then made to extend the time for submission of reserved matters (Ref: 10/0267/PA) and this was approved in September 2010. The latest reserved matters application (Ref: 10/0924/PA) was approved on 9th May 2011 with Condition 1 requiring the development to commence within five years from the date of the permission. An application (Ref: 15/0867/PA) requesting an extension of time was withdrawn. A further variation of condition to a non-material amendment was approved in 2024 that further seeks to amend the layout and appearance of the dwellings.

#### 4.2.11 PPW Edition 10 states:

"The supply of land to meet the housing requirement proposed in a development plan must be deliverable." (Para. 4.2.10) and "The de-allocation of under-used and underperforming sites must be considered through the development plan process... and could make a contribution to the housing supply if it can be demonstrated that they are deliverable for housing." (Para.4.2.17)



- 4.2.12 In our opinion, the long and convoluted planning history, spanning over 30 years and the site's allocation in consecutive development plans as well as a complete lack of information demonstrating the site is fully deliverable, means the site should be reconsidered as a 'residential commitment' for Letterston, allowing more deliverable sites to come forward and provide additional housing supply for the village.
- 4.2.13 Linked to the above allocation, Policy **GN20 Local Needs Affordable Housing** has derived local needs affordable housing based on identified housing market areas.
- 4.2.14 The Policy would require this Site, with a quantum of development of "33-49 units" within either Band 1 or 2 to pay a commuted sum as opposed to an on-site provision. The sum is to be related to the contribution rates set out above and charged on the basis of floorspace (per sq. metre). Should the Site be deemed to be in Band 3 or 4, then the on-site provision is 20% and 35% respectively. For clarify, this Site would fall within the Policy range of a quantum of development between "33-49 units".
- 4.2.15 The supporting text associated with GN20 designates Letterston as Band 1, as such an off-site contribution would be required. It is noted that within the adopted Local Plan, Policy GN27 Residential Allocations required the 90 units at Letterston Court Meadow to deliver 5% affordable units on-site.
- 4.2.16 The requirements of GN20 have been derived from the Council's 2024 Financial Viability Report and the Pembrokeshire Study. This involved high-level viability assessments being undertaken across the range of site typologies, for each of the 4 Housing Market Areas that were identified from an updated study of house prices throughout the County. The results from these high-level viability assessments were used to inform the target percentages of affordable housing that it should be viable to deliver on sites across the County, encapsulated in Policies GN 16 and GN 20 of the Deposit Plan. These findings are reflected in the table below (Table 2), which forms the basis of the table within GN20. The percentages below relate to the expected on-site provision of affordable homes that the high-level assessments show to be viable. The table shows that 0% contributions on-site are viable across all development sizes within Band 1 settlements.



Table 3 - Target percentages of affordable housing that it should be viable to deliver on sites across the County (FVR 2024)

| Housing I | Market Area | Site Size (N° of Dwellings) & AH %age on site |         |         |         |         |       |  |
|-----------|-------------|---|---------|---------|---------|---------|-------|--|
| Band      | £ psm       | 6 - 9   | 10 - 19 | 20 - 32 | 33 - 49 | 50 - 99 | 100+  |  |
| 1         | £2,300      | 0.0%  | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%  |  |
| 2         | £2,600      | 0.0%  | 0.0%    | 0.0%    | 0.0%    | 5.0%    | 17.5% |  |
| 3         | £2,900      | 0.0%  | 12.5%   | 15.0%   | 20.0%   | 25.0%   | 25.0% |  |
| 4         | £3,200      | 25.0%   | 25.0%   | 30.0%   | 35.0%   | 40.0%   | N/A   |  |

- 4.2.17 We find there is an issue within the degree to which GN20 expands upon the calculation of the community sum considered necessary. It is not clear what Band 1 developments are expected to provide financially in housing contributions on-site or off-site via commuted sum. The Affordable Housing SPG (2015) provides commuted sum calculations for corresponding affordable housing requirements but from the point of 5% upwards, with no sum equivalent provided for those areas where 0% is the target affordable housing.
- 4.2.18 Further, the policy allows for adjustments based on local circumstances and financial viability, which could lead to uncertainty around future contributions and requirements. It is recommended that the structure of the policy be simplified and a commitment be made to a robust monitoring and review process to track the policy's impact and effectiveness as well as reflecting market conditions. Should the mechanism not be altered, a simplified way of calculated the commuted sum would benefit smaller developer enterprises.
- 4.2.19 We acknowledge that the Site was previously located within a mineral safeguarding area and as such could be impacted by draft Policy GN 38 Safeguarding and Prior Extraction of the Mineral Resource. The LP proposals map shows the area as being outside of the safeguarding area and within the proposed development boundary for Letterston. The supporting text of GN38 states that there are very few LDP allocations within the safeguarded mineral resource. In the rare instances in which they do occur, they will take precedence over the safeguarding requirement. In these cases, prior extraction of the mineral resource will be required where it is appropriate for this to happen. We will undertake further study to established whether it is practicable or viable for extraction to occur.
- 4.2.20 We support the draft Policy **GN 43 Protection of Trees, Woodlands and Hedgerows** and have aimed to maximise retention, protection and integration of existing trees, woodlands and hedgerows through the emerging concept plan. The frontage to Station Road, which is lined with an earthen bank (which could be removed to allow for the footpath extension) and a hedgerow (which will broadly be retained subject to dwelling pedestrian access). Vehicular access will pass through the Phase 2 site and Longstone Court, a solution that would be more sensitive to the existing green infrastructure. The emerging concept plan for the Site also shows



- a large area of public open green space, with retained hedgerows along the southern and eastern boundaries.
- 4.2.21 Whilst supporting the aims of the Policy, we question why GN 49 Landscape is included in the Plan considering the wider strategic policy SP12 and the more specific policies such as GN43 discussed above. The policy does not provide specific criteria or guidelines for what constitutes acceptable integration or mitigation and terms such as "well integrated," "acceptable visual impact," and "acceptably mitigate" are overly subjective without reference to specific SPDs or landscape studies. Whilst we maintain the importance of balancing development and landscape impact, this surplus policy could lead to inconsistencies in its application, when considered alongside strategic policy SP12 (Maintaining and Enhancing the Environment)
- 4.2.22 In terms of parking standards in relation to the emerging concept plan, The LDP2 will continue to refer to current adopted SPG on Parking Standards (June 2013) and be updated following adoption with provision for ULEV added.
- 4.2.23 The current LDP classifies Letterston as one of the County's four Service Centres that benefit from 'excellent public transport connections'. PPW recommends (4.1.51) that "a design-led approach to the provision of car parking should be taken, which ensures an appropriate level of car parking is integrated in a way which does not dominate the development. Parking provision should be informed by the local context, including public transport accessibility, urban design principles and the objective of reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Planning authorities must support schemes which keep parking levels down, especially off-street parking, when well designed".
- 4.2.24 The emerging proposals align the standards for the adjacent development (Phase 2), other recent planning applications, the frequency of bus services etc. and the service provision within Letterston and transport connections on offer beyond.



# 5 Conclusion

- 5.1.1 Land Between Longstone Court and 62 Station Road, Letterston presents the opportunity for a sensitively designed and appropriately scaled development of around 38 new homes comprising a mix of sizes and tenures, ample public open space, a flexible and permeable layout and retained green infrastructure.
- 5.1.2 The land in question has been the subject of ongoing and emerging technical analysis culminating in an evolving concept plan for the site that considers how Letterston can grow sustainable throughout the new local plan period.
- 5.1.3 Land 'Between Longstone Court & 62 Station Road' is sustainable, deliverable and appropriate for residential development. The site is not within or near any statutory cultural heritage, landscape or ecological designations. There are no technical constraints on the site that cannot be overcome or would preclude residential development.
- 5.1.4 The emerging Plan expects the Site to begin delivery of housing in 2029, with a steady rate of growth to allow for completion by 2033. The provision of full market housing will likely lead to an earlier rate of delivery within the Plan period, to the benefit of the Council's assurances of the fulfilment of their housing requirement. Furthermore, once the LDP2 is adopted, planning will progress for the site, giving the potential to have a submission ready before the end of 2026. Depending upon the timescales to achieve an approval, there is an opportunity to start construction as early as 2027.
- 5.1.5 Pembrokeshire Council has faced a number of challenges in the preparation of this emerging Plan but is moving ahead in accommodating the level of growth commensurate with the future opportunities within the region.
- 5.1.6 The promoters are committed to continuing their legacy of delivering high-quality, sensitively designed affordable and market homes for the residents of Letterston. The Promoters are also keen to continue working with the Council and local stakeholders to bring forward development that is tailored to the needs of the community ensuring benefits are derived for existing and new residents.



# **Appendix A: Emerging Concept Plan**



# **Appendix B: Historic Environment Desk-Based Assessment**



# **Appendix C: Geophysical Survey 2024**



# **Appendix D: Transport Statement**

# Land at Station Road, Letterston

# ateb

Our vision is to deliver a new residential extension by Ateb, in the east of Letterston, Wales. Our site will provide 40 new homes, a public space, and a play area, creating a neighbourhood that not only meets the housing needs of Letterston, but provides amenity to the local community. We have focused our design around contextual placemaking, responding to Station Road on the northern boundary, the neighbouring residential development in the west, and the scenic open countryside to the south.



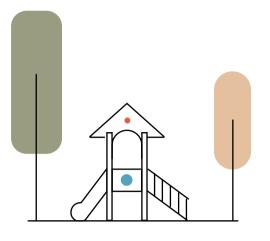
# HOUSING

40 new homes will be provided by Ateb, who also developed the neighbouring residential parcels to the west, ensuring continuity and visual cohesion with the surrounding area.



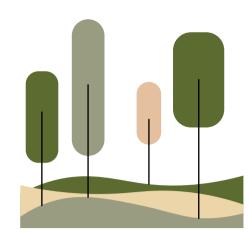
# CONNECTIVITY

With pedestrian connections to Station Road and main access routes emerging from the neighbouring development, our site will be well integrated into Letterston, without disrupting the flow of traffic.



# **LOCAL AMENITIES**

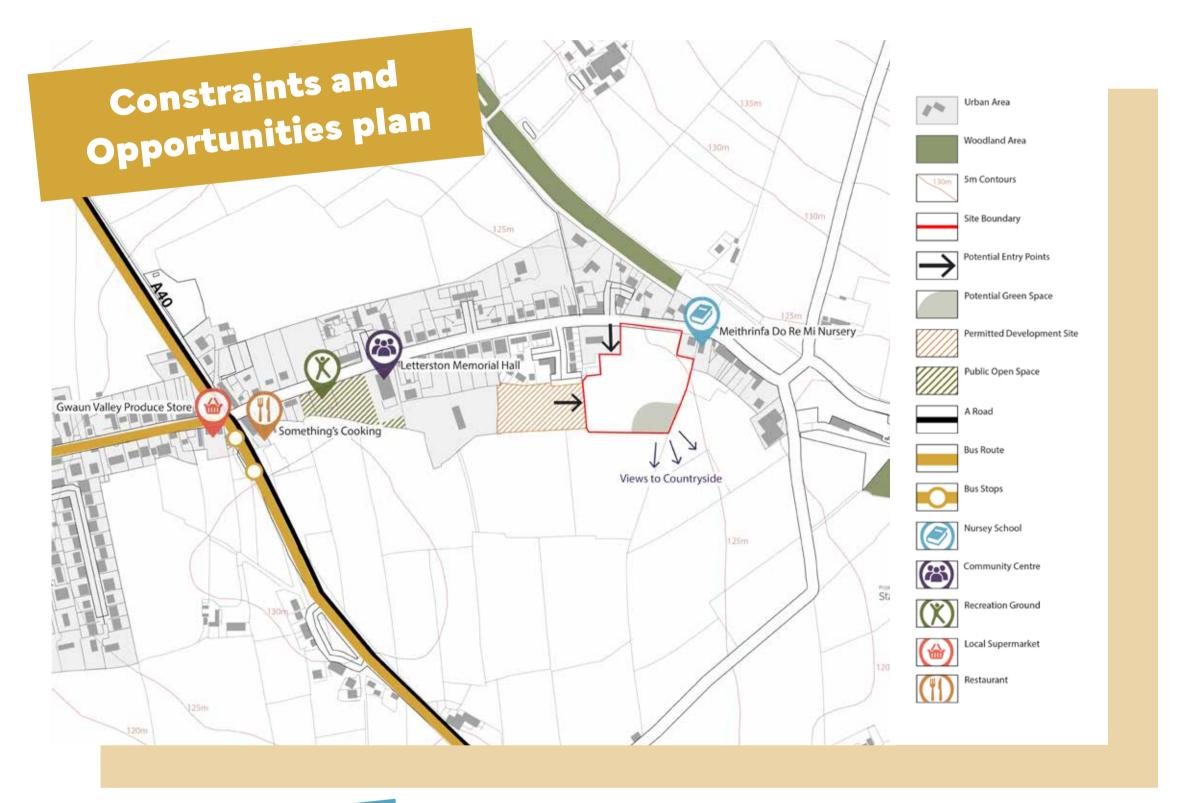
The large green open space and play area creates a family friendly environment and is strategically located on the southern part of the site, offering views of the countryside.



# **VIEWS**

Frontage to the south of the site provides strong views to the scenic countryside, emphasising the natural beauty of Letterston and creating a village feel.







# LAND AT STATION ROAD, LETTERSTON, PEMBROKESHIRE:

# HISTORIC ENVIRONMENT DESK-BASED ASSESSMENT





Prepared by DAT Archaeological Services For: Ateb Group





### DYFED ARCHAEOLOGICAL TRUST

REPORT NO. 2020-14 PROJECT NO. 121693

March 2020

# LAND AT STATION ROAD, LETTERSTON, PEMBROKESHIRE: HISTORIC ENVIRONMENT DESK-BASED ASSESSMENT

Ву

## **Luke Jenkins**



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Ymddiriedolaeth Archaeolegol Dyfed Cyf

Corner House, 6 Stryd Caerfyrddin, Llandeilo, Sir Gaerfyrddin SA19 6AE

Ffon: Ymholiadau Cyffredinol 01558 823121 Adran Rheoli Treftadaeth 01558 823131

Ebost: info@dyfedarchaeology.org.uk

Dyfed Archaeological Trust Limited

Corner House, 6 Carmarthen Street, Llandeilo, Carmarthenshire SA19 6AE

Tel: General Enquiries 01558 823121 Heritage Management Section 01558 823131

Email: info@dyfedarchaeology.org.uk

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# LAND AT STATION ROAD, LETTERSTON, PEMBROKESHIRE:

# HISTORIC ENVIRONMENT DESK BASED ASSESSMENT

| Client                  | Ateb Group   |
|-------------------------|--------------|
| Event Record No         | 121693       |
| Report No               | 2020-14      |
| Project Code            | FS19-082     |
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# LAND AT STATION ROAD, LETTERSTON, PEMBROKESHIRE: HISTORIC ENVIRONMENT DESK-BASED ASSESSMENT

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# LAND AT STATION ROAD, LETTERSTON, PEMBROKESHIRE: HISTORIC ENVIRONMENT DESK-BASED ASSESSMENT

#### **EXECUTIVE SUMMARY**

DAT Archaeological Services were commissioned to prepare a Historic Environment (Archaeological) Desk-Based Assessment for proposed housing development on land at Station Road, Letterston, Pembrokeshire (roughly centred on SM 95021 29762).

### **CRYNODEB GWEITHREDOL**

Comisiynwyd Gwasanaethau Archeolegol YAD i baratoi Asesiad Ddesg yr Amgylchedd Hanesyddol (Archeolegol) ar gyfer y safle datblygu arfaethedig ar gyfer tai ar dir yn Heol Gorsaf, Treletert, Sir Benfro (wedi'i ganoli'n fras ar SM 95021 29762).

#### 1. INTRODUCTION

## 1.1 Project Proposals and Commission

- 1.1.1 DAT Archaeological Services were commissioned by Ateb Group to prepare a Historic Environment Desk-Based Assessment for the proposed construction of residential development in the Local Plan process.
- 1.1.2 The development area is located in the eastern part of Letterston village in northern Pembrokeshire (roughly centred on NGR SM 95021 29762). This area formerly formed part of Letterston Common. The land was used for agricultural purposes from the medieval period until recent times.
- 1.1.3 This Historic Environment Desk-Based Assessment provides an indication of the archaeological potential of the development area and highlights possible issues in relation to the impact of the development on the historic environment.
- 1.1.4 The development site lies in an area of archaeological significance with the site of a possible Neolithic henge (PRN 2393) and at least three Bronze Age burial mounds to the northwest (PRNs 2379, 2380, 2381), one of which is a Scheduled Monument (PE 062), and a prehistoric standing stone situated to the east (PRN 2398).
- 1.1.5 There are two scheduled monuments in the surrounding area; the previously mentioned Pen Dre Round Barrow (PE 062) a Bronze Age burial mound located 0.3km to the west, and Bucket Camp (PE 231) an Iron Age defended enclosure located 1.3km to the north.
- 1.1.6 One Grade II listed building, Saron Baptist Chapel (LB 22761), is located 0.8km to the west.
- 1.1.7 The assessment shows a multitude of non-designated heritage assets in the surrounding area including known archaeological sites of Neolithic, Bronze Age, Iron Age, medieval and post-medieval date.
- 1.1.8 There is considered to be high potential for archaeological remains of Neolithic and Bronze Age date to survive within the development area. There is considered to be a low potential for archaeological remains of other periods to survive within the development area.
- 1.1.9 In the western part of the development area there have been several phases of archaeological investigations in association with a previous planning application (07/1287/PA). This included a phase of geophysical survey, followed by archaeological trial trench evaluation. This revealed a field boundary running northwest/south east through the area. No other significant archaeological remains were recorded.
- 1.1.10 The eastern part of the development area has not been subjected to archaeological investigation.
- 1.1.11 There are no known historic assets recorded in the eastern part of the development area.
- 1.1.12 The archaeological potential of the western part of the development area is considered negligible. No further archaeological work is considered necessary in this part of the development area.
- 1.1.13 Further archaeological investigation may be required in the eastern part of the development area to assess the survival of any below ground archaeology and determine whether further archaeological mitigation is required.

### 1.2 Scope of the Project and Methodology

1.2.1 The scope of the assessment follows the Standard And Guidance For Historic Environment Desk-Based Assessment as laid down by the Chartered Institute for Archaeologists (CIfA 2014). It should be noted that a Historic Environment Appraisal is a more rapid exercise than a full desk-based assessment as defined by CIfA, but the basic principles are the same. 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 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.

1.2.2 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.

- 1.2.3 The desk-based study of the area identifies known archaeological sites within the site and its environs, and assesses the potential for hitherto unknown remains to be present within the proposed development area. An indication is also given of what further archaeological works might be required in advance of or during the proposed school development.
- 1.2.4 The scope of the report also includes an assessment of the impact on the settings of surrounding designated heritage assets, including scheduled monuments, listed buildings, historic landscape character areas and undesignated archaeological sites.
- 1.2.5 The report presents relevant information from a number of sources including:
  - Dyfed Archaeological Trust Historic Environment Record data;
  - On-line National Monuments Record of Wales data held by the Royal Commission on the Ancient and Historic Monuments of Wales in Aberystwyth (Coflein);
  - Map regression exercise using earlier cartographic sources;
  - Identification of any Scheduled Monuments, Listed Buildings, Registered Parks and Gardens, Registered Historic Landscapes, Historic Landscape Character Areas or Conservation Areas within or in the vicinity of the site area (Cadw, DAT, NRW);

- Site visit and walkover survey;
- Rapid assessment of the archaeological potential of the area;
- Rapid assessment of the likely impact upon the settings of surrounding features of the historic environment; and
- Rapid 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.
- 1.2.6 The report uses a 2km radius search area centred on the middle of the development area to identify known designated heritage assets and a 1km radius search area for non-designated heritage assets in order to provide a sufficient overview of the nature of the area's heritage.
- 1.2.7 For the purposes of planning policy in Wales, 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 (Welsh Government 2017).

#### 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 (ibid).

1.2.8 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. 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).

#### 1.3 Abbreviations

1.3.1 All 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). Sites recorded on the National Monument Record (NMR) held by the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) are identified by their National Primary Record Number (NPRN). Scheduled Monument (SM). Altitude is expressed to a height above Ordnance Datum (aOD). References to cartographic and documentary evidence and published sources will be given in brackets throughout the text, with full details listed in the sources section at the rear of the report.

#### 1.4 Illustrations

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

North is towards the top of the page unless otherwise indicated.

# 1.5 Timeline

1.5.1 The following timeline gives date ranges for the various archaeological periods that may be mentioned within this report.

Table 1: Archaeological and Historical Timeline for Wales

|             | Approximate date         | Period                               |
|-------------|--------------------------|--------------------------------------|
|             | c.450,000 - 10,000 BC    | Palaeolithic –                       |
| Prel        | c. 10,000 – 4400 BC      | Mesolithic -                         |
| Prehistoric | <i>c</i> .4400 – 2300 BC | Neolithic –                          |
| oric        | c.2300 - 700 BC          | Bronze Age –                         |
|             | c.700 BC - AD 43         | Iron Age –                           |
|             | AD 43 - c. AD 410        | Roman (Romano-British) Period –      |
|             | c. AD 410 - AD 1086      | Post-Roman / Early Medieval Period – |
| Hist        | 1086 - 1536              | Medieval Period –                    |
| Historic    | 1536 - 1750              | Post-Medieval Period <sup>1</sup> –  |
|             | 1750 - 1899              | Industrial Period –                  |
|             | 20th century onwards     | Modern –                             |

-

 $<sup>^{1}</sup>$  The post-medieval and Industrial periods are combined as the post-medieval period on the Regional Historic Environment Record as held by Dyfed Archaeological Trust

# 2. NATIONAL POLICIES AND GUIDANCE

# 2.1 The Historic Environment (Wales) Act

- 2.1.1 The Ancient Monuments and Archaeological Areas Act 1979 was previously the primary legislation for protecting archaeological remains and Scheduled Monuments. This has recently been superseded by the The Historic Environment (Wales) Act 2016 which has three main aims as defined by Cadw:
  - to give more effective protection to Listed Buildings and scheduled monuments;
  - to improve the sustainable management of the historic environment;
     and
  - to introduce greater transparency and accountability into decisions taken on the historic environment.
- 2.1.2 The New Act amends 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.

# 2.2 Planning Policy Wales

- 2.2.1 Planning Policy Wales sets out the Welsh Government's land use planning policies. Its primary objective is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation.
- 2.1.2 Chapter 6, 'Distinctive and Natural Places', explains how planning system must take into account the Welsh Government's objectives to protect, conserve, promote and enhance the historic environment as a resource for the general well-being of present and future generations. It also sets out the planning policies for the sustainable management of specific categories of historic assets.

# 2.3 Technical Advice Note 24: The Historic Environment

- 2.3.1 This technical advice note provides guidance on how the planning system considers the historic environment during development plan preparation and decision making on planning and Listed Building consent applications. It also provides specific guidance on how the following historic assets should be considered:
  - scheduled monuments
  - archaeological remains
  - listed buildings
  - conservation areas
  - historic parks and gardens
  - historic landscapes
  - historic assets of special local interest
  - World Heritage Sites
- 2.3.2 The technical advice note usefully gathers together the selection criteria employed in the designation of scheduled monuments and listed buildings and the registration of historic parks and gardens and historic landscapes.

- 2.3.3. 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.
- 2.3.4 This report will also make reference to other guidance documents published by Cadw, namely: Conservation Principles (March 2011); Heritage Impact Assessment in Wales (May 2017); Managing Historic Character in Wales (May 2017); and Setting of Historic Assets in Wales (May 2017).

#### 3. LOCAL PLANNING POLICIES

# 3.1 Pembrokeshire County Council Policies

- 3.1.1 The Historic Environment is subject to the relevant policies and procedures as laid out in the Pembrokeshire County Council (PCC) Local Development Plan (LDP) (up to 2021) (adopted February 2013). The PCC LDP is also presently under review.
- 3.1.2 The historic environment is referenced throughout the document in numerous policies, emphasising its significance to the county. The main policy references to the Historic Environment are outlined in policy GN.38:

#### GN.38 Protection and Enhancement of the Historic Environment:

Development that affects sites and landscapes of architectural and/or historical merit or archaeological importance, or their setting, will only be permitted where it can be demonstrated that it would protect or enhance their character and integrity

- 6.154 Pembrokeshire has a rich and varied historic environment made up of architectural, historical and archaeological features that are integral to its quality and distinctiveness. The historic environment enhances quality of life, forging cultural identity and community cohesion and is a major asset to Pembrokeshire's visitor economy. This policy builds on national policy, to draw attention to the scale and significance of these assets within Pembrokeshire and to protect, preserve and enhance these features and designations. It ensures that Pembrokeshire's historic environment including formally designated sites together with buildings and features of local importance and interest, and their setting, are appropriately protected and enhanced. Development that may detrimentally affect the character or integrity of such areas will not be permitted.
- 6.155 The special qualities of the historic environment can be derived from numerous other factors, in addition to those listed in formal designations, such as the form, scale or grouping of buildings; vistas and visual composition of the townscape/landscape; architectural detailing; building materials; trees and other landscape features. Many of these features make an important contribution to the character and appearance of local communities.

Pembrokeshire's towns and villages contain many buildings that are of local importance and which make a significant contribution to the character and quality of the local area.

The Council will seek to ensure that necessary change is accommodated without sacrificing the essential integrity, coherence and character of the landscape and will have particular regard to potential developments that, alone or in combination, would have a

significant impact on landscapes included in the Register of Landscapes of Historic Interest in Wales:

- 6.156 In assessing development that may affect archaeological remains the Council will take into account:
  - 1. Information (including from the Historic Environment Record (HER), held by Dyfed Archaeological Trust) on the character, extent and importance of the remains,
  - 2. The extent to which the proposed development is likely to impact upon them,
  - 3. The means of mitigating the effect of the proposed development by redesign to achieve physical preservation in situ.
- 6.157 Areas and sites of national significance are protected by national policy including Listed Buildings, Conservation Areas, Scheduled Monuments, Landscapes of Historic Interest and Historic Parks and Gardens. In addition to national policy adopted Conservation Area Character Appraisals will also be a material consideration when determining planning applications.
- 3.1.4 The PCC LDP defines cultural heritage (within which it defines the historic environment) as follows:

This encompasses the historic environment, cultural legacy and linguistic heritage. The historic environment includes archaeology, ancient monuments, Listed Buildings, conservation areas, historic parks, gardens and landscapes and the broad social history that has helped to shape local distinctiveness. Linguistic heritage includes the Welsh language and different dialects, recognising that the linguistic heritage of Pembrokeshire includes both Welsh and English languages, with the Landsker line representing the broad divide between these two traditions. Together the historic, cultural and linguistic heritage form cultural heritage which contributes towards a sense of cultural identity

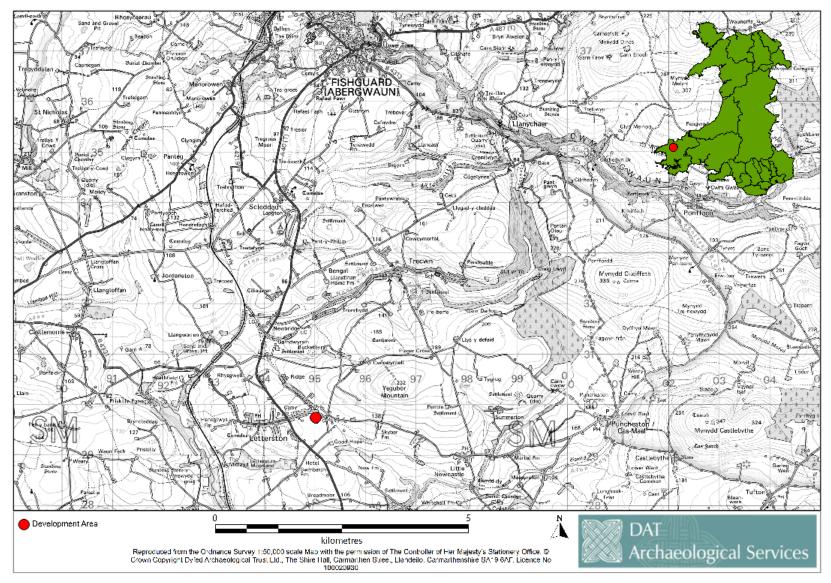


Figure 1: Location of development area.

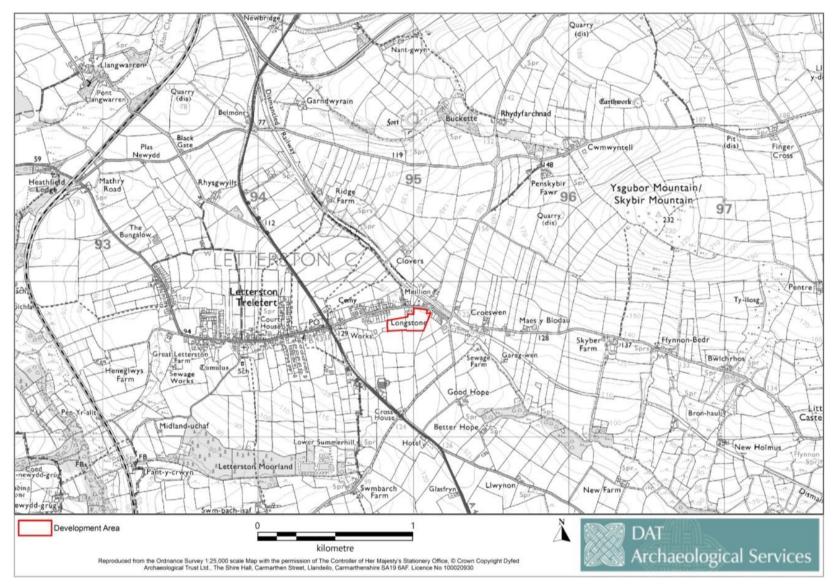


Figure 2: Location of development area in Letterston village.



**Figure 3:** Aerial photograph showing boundaries of the western part (A) of the development area (outlined with a red dashed line) and the eastern part (B) outlined with a continuous red line (supplied by client).

#### 4 LOCATION, TOPOGRAPHY AND GEOLOGY

- 4.1 The development area is located in the north Pembrokeshire centred roughly on NGR SM 95029 29759 (Figure 1). It is located on Station Road in the eastern part of the village of Letterston (Figure 2). The nearest Town is Fishguard located 7.3km to the north (Figure 1).
- 4.2 The development area lies on the 125m contour on ground that slopes gently down from the southwest to the northeast. Ysgubor Mountain, a 232m high western outlier of the Preseli hills, overlooks the site from the northeast.
- 4.3 The development area is situated in the Parish of Dewisland and at local level jurisdiction lies with Pembrokeshire County Council.
- 4.4 The site occupies c.2.6ha of land to the south of Station Road which forms a backwards L shape (Figure 3). At its eastern end the development area is immediately adjacent to the road whilst its western end lies to the south of a modern residential development situated on Parc Maen Hir Road and Longstone Court (Figure 3).
- 4.5 The development area appears until recently to have been utilized as farmland. The western part of the development has been used for the storage of spoil from the construction of the modern residential development.
- The bedrock geology of the study area is represented by Ordovician grey mudstone sediments of the Llanvirn Series which are occasionally interrupted by fine-grained dolerite igneous intrusions. The geology becomes even more complex because Station Road follows exactly an underlying interface between older Arenig Series mudstone sediments and the younger sediments of the Llanvirn Series (British Geological Survey 1994). Deposits of sand, clay, gravel and erratic boulders characterise the glacial drift geology of the area where these deposits have survived the ravages of erosion and quarrying: however, no detailed geological drift maps of the area are available to be more specific about their locations. The only available soil survey maps of the area indicate that generally the soils in the Letterston area are typical acidic brown earths.

**Table 2:** Designated Heritage Assets within 2km of the development area.

| Reference<br>Number | Туре                          | Period          | Site Name                        | Description  | Grid<br>Reference          |
|---------------------|-------------------------------|-----------------|----------------------------------|--|----------------------------|
| PE 062              | Scheduled<br>Monument         | Bronze Age      | Pen Dre<br>Round Barrow          | The monument comprises the remains of an earthen built round barrow, which probably dates to the Bronze Age (c. 2300 - 800 BC). The barrow consists of traces of a low mound and buried archaeology within the rear gardens of two houses. The kerbed barrow that originally measured c 33m in diameter and was 1.5m high was excavated in 1961. This had been raised over an embanked stone circle 12m in diameter which remains in situ. An early Bronze Age urn and cremation and a shallow pit containing charcoal were associated with the embanked circle. | SM9482996<br>0.3km west    |
| PE 231              | Scheduled<br>Monument         | Iron Age        | Castle<br>Bucket;<br>Bucket Camp | Castle Bucket is a sub-circular embanked and possibly ditched enclosure, 68-72m in diameter. There are entrances to the west and east, the former having an annex, c.26m by 32m, before it; a possible outer circuit, taking advantage of steep natural scarps, springs from the south of this.  | SM94983104<br>1.3km north  |
| LB 22761            | Listed Building<br>(Grade II) | 19th<br>Century | Saron Baptist<br>Chapel          | Baptist chapel of 1869, one of a group of similar chapels in North Pembrokeshire distinguished by such features as open pediment gables and slightly Gothic tracery to the arched windows. Included for its architectural interest as a small mid-Victorian chapel with good interior woodwork, including timber columns to gallery.   | SM9428129635<br>0.8km west |

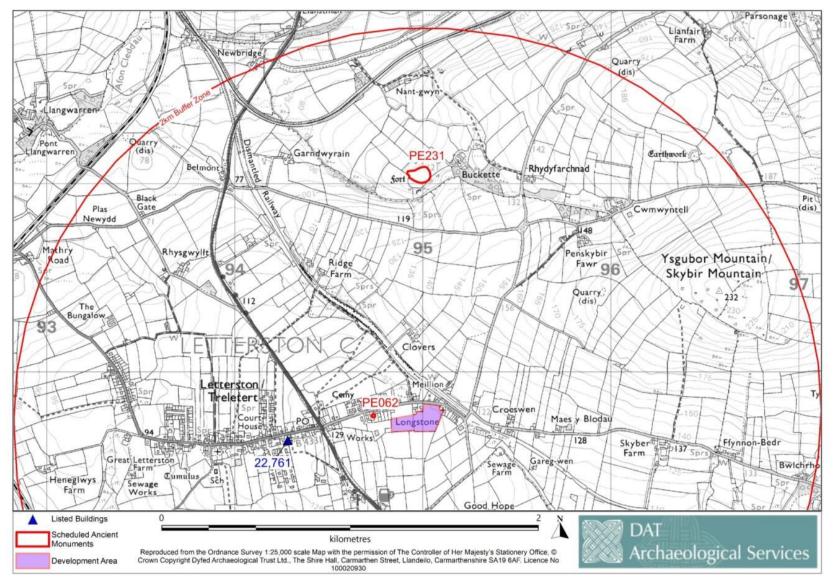


Figure 4: Designated Heritage Assets within 2km of the development area.



Photo 1: Bucket Camp (PE 062). Looking south (DAT Images/AP93-13.51.jpg).



**Photo 2:** View from Saron Baptist Chapel (LB 22761) towards development area. Looking east.

# 5 DESIGNATED HERITAGE ASSETS (Table 2 and Figure 4)

# **5.1** Scheduled Monuments

5.1.1 There are two scheduled monuments within 2km of the development area, including Pen Dre Round Barrow (PE 062) and Bucket Camp (PE 231). The locations of these monuments are shown in Figure 4 with brief descriptions in Table 2.

# Pen Dre Round Barrow (PE 062)

- 5.1.2 Pen Dre Round Barrow (PE 062) is located 0.3km west of the development area. It is one of three round barrows located in a possible linear cemetery orientated north east/south west.
- 5.1.3 Pen Dre Bound Barrow was excavated in 1961 (Savoury 1963) which revealed a monument 33m in diameter and 1.5m high which appeared to have several phases. Originally it is thought that this monument was a stone circle/henge before being reused as a barrow site. Finds included an early Bronze Age Urn, a cremation and a small pit containing charcoal. The construction was of stone and earth with a slight kerb around the outer edge.
- 5.1.4 Henges are simply defined as:

"A distinctive class of late Neolithic ceremonial enclosure found throughout the British Isles, dating mainly to the middle and later 3rd millennium (Darvill 2008)"

Round barrows are defined as:

"simply a roughly hemispherical mound of soil, stone, and re deposited bedrock heaped over a central burial (Darvill 2008)". They are amongst the most common monuments in Britain and are typically attributed to the Bronze Age (2300 – 700 BC) (Darvill 2008).

- 5.1.5 In 1966 the RCHMW reported that the monument was "so mutilated that it is virtually destroyed (RCAHMW 1966)" and at a later date that "No trace of the monument was seen during aerial photography in 2003" (RCAHMW AP965043/51).
- 5.1.6 A site visit 2019 (Meek 2019) to the part of the development area closest to the Pendre Dre Round Barrow concluded that:

"there is limited inter-visibility between the scheduled barrow site and the development area, with vegetation, built environment, fences etc blocking any clear views. Additional screening through vegetation planting and appropriate fencing boundaries would mitigate for any further negative impacts on the setting of the monument" (Meek 2019).

5.1.7 Overgrowth prevented a site visit as part of this assessment however, its limited indivisibility is considered to remain.

# Bucket Camp (PE 231)

- 5.1.8 Bucket Camp (PE 231) is located 1.3km to north of the development area on a nearby ridge (Photo 1).
- 5.1.9 It is a sub circular defended enclosure thought to be Iron Age in date that measures approximately 70m in diameter. It has entrances to the north and west and unusually it has a small annex attached to the western entrance. The enclosure may have an outer circuit of defences which take

- advantage of a natural scarp which wraps around the southern and eastern flanks of the site.
- 5.1.10 Sitting on a ridge this monument is inter-visible with the development area. However, it is located considerably further away than Pen Dre Round Barrow (PE 062) and its views towards the development area are already compromised by the existing residential housing that lies between them.

# 5.2 Listed Buildings

- 5.2.1 There is one listed building within 2km of the development area; Grade II Listed Building of Saron Baptist Chapel (LB 22761). It is located 0.8km west of the development area on the western side of the A40 (Figure 4).
- 5.2.2 Saron Baptist Chapel is a Grade II listed building which dates to 1869 and still functions as an active Chapel.
  - It is listed as a good example of a:
    - "small mid-Victorian chapel with good interior woodwork, including timber columns to gallery."
- 5.2.3 There is no intervisibility between the listed building and the development site as demonstrated in Photo 2.

# **5.3** Historic Landscape Areas

# Registered Historic Landscapes

5.3.1 The development area does not lie within the boundary of any Registered Historic Landscape.

# Conservation Areas

5.3.2 There are no conservation areas within 2km of the centre point of the development area.

#### 5.4 Historic Parks and Gardens

5.4.1 There are no Registered Historic Parks and Gardens within 2km of the centre point of the development area.

**Table 3:** HER and NMR Entries within 1km of the development area.

| PRN /<br>NPRN           | Site Name  | Period     | Description   | Grid<br>Reference |
|-------------------------|--|------------|---|-------------------|
| 2379 /<br><b>305219</b> | Letterston I; Pendre<br>Tumuli round<br>barrow   | Bronze Age | One of three tumuli, the central tumulus appears to have been dug into. (See also PRNs 2380 and 2381).  The middle mound of three round barrows arranged in a NE-SW linear fashion on what was once a common on the eastern outskirts of Letterston village, but which has now given way to housing. This barrow was excavated by Savory in 1946 but had previously been investigated by Fenton in 1806, who had found nothing but did note that an urn had been discovered in the mound in the latter part of the 18th century by a villager paring turf from the top of the barrow. Prior to excavation the barrow was c.23m in diameter and stood c.1.2m high. During excavations Savory discovered the post-holes of a palisade c.18m in diameter: interestingly, a similar feature was found beneath adjacent barrow PRN 2380.   | SM 9476<br>2981   |
| 2380                    | Letterston II;<br>Pendre Tumuli<br>round barrow  | Bronze Age | One of three barrows near Letterston, (See 2379 & 2381) excavated by Savory in 1946 and now destroyed by the building of houses on Station Road.  The most northerly mound of three barrows arranged in a linear fashion on the eastern outskirts of Letterston village. Originally the three barrows were located on common land but have since been excavted and destroyed by the construction of housing along Station Road. This barrow, originally 20m in diameter and 1.8m high, was excavated by Savory in 1946. There was a central summit depression, c.5m in diameter, whilst underneath the mound was found a palisade 16m in diameter and a primary cist burial sunk below ground level. There is now no trace of this site.  | SM 9479<br>2987   |
| 2381 /<br><b>300421</b> | Letterston III;<br>Pendre Tumuli<br>round barrow | Bronze Age | A round barrow excavated by HN Savory in 1961 and now under lawns and boundary wall of two adjoining gardens. JH based on Cadw 1997. One of three barrows see also PRNs 2380 & 2379. Scheduled Monument PE062  his barrow was the most southerly of the three barrows here at Letterston, which were arranged in a NE-SW linear fashion, and is the only one of the three with any surviving remains, the others having been destroyed by the houses built on Station Road. This barrow was excavated by Savory in 1961, at which time it measured c.35m in diameter and 1.5m in height. The mound was found to have a drystone kerb 32m in diameter and an inner cairn ring, within which there was a circle of stone slabs 12m in diameter. The site was considered to consist of two main structural elements: "a stone circle of definite Irish Channel type, embanked, with a single entrance and an external ritual pit on the east side, | SM 9473<br>2976   |

|                         |                        |                          | over whicha turf mound with a kerb but without a ditch was erected to cover a cremated burial which had been deposited in the entrance" (Savory 1963 BBCS 20). The primary embanked stone circle phase of the monument has a separate PRN as 9036. Today there are some surviving vestiges of the round barrow, which lies within the gardens of 18 and 20 Station Road and is overlain by a concrete wall. The western side of the barrow appears to have been landscaped beneath the lawn of no.18, with the eastern side also beneath a lawn but with its curvature and slope more apparent.  Scheduled Monument (PE062)   |                 |
|-------------------------|------------------------|--------------------------|---|-----------------|
| 2393 /<br><b>413086</b> | Gwaun Terrace<br>Henge | Neolithic,<br>Bronze Age | Cropmark of unknown significance. RPS August 2001. Crop mark visited by CAP in 1999. It is described as a low circular earthwork some 60m in diameter. The eastern side comprise a grassed bank c. 0.5m high, and there is possibly an external ditch. Potentially, this may be a Neolithic henge site. Reference in Fenton to three stones which may have been associated with this feature  | SM 9482<br>2996 |
|                         |                        |                          | A possible Neolithic henge monument. Noted in the SMR and by the Ordnance Survey as a circular cropmark with a dark patch at its centre. The site is located c.100m to the NNE of round barrow PRN 2381, the most northerly barrow of a linear arrangement of three barrows forming barrow cemetery PRN 48335. This site was briefly looked at by CAP in 1999 as part of a desk-based assessment and archaeological evaluation of a proposed development at 47 Station Road, Letterston located just to the south of the site. Within their report (37104) CAP noted that the site survives as a standing earthwork in recently improved pasture land. It appears that the site was viewed from the lane to the east, and therefore was not fully assessed, but the eastern side of the monument was described as comprising a grassed bank, 0.5m high, with the monument itself predicted to have a diameter of c.60m (CAP report 1999: 14). Interesting re-interpretations of Fenton's original description of the location suggest that Fenton's 'trilithon' (PRN 2414), which the RCAHM suggested to be 600 yards east of the three round barrows on Letterston common, might actually be in the same field as this earthwork enclosure (ibid: 15), and thus it is possible that this trilithon, described by Fenton as 'three upright stones, placed triangularly, and bedded in a pavement' might have been a feature at the centre of this circular bank, thus rendering this site a possible henge. The paving mentioned by Fenton has parallels with the paving found beneath barrow PRN 2381, which constituted part of an earlier phase of the monument as an embanked stone circle (PRN 9036) prior to the round barrow being erected over the top of it. This suggests that this area of Letterston Common was a long-used ritual landscape and monument complex, perhaps beginning with the henge and embanked stone circle in the late Neolithic, to which were added two barrows (PRNs 2379 and 2780) in between the two earlier monuments followed by the 'closure' of PRN 9036 by the addition of the mound |                 |

|      |                                     |            | arrangement is also interesting. To the SW the high ground on which these monuments are located runs down to the Western Cleddau, whilst the alignment of these monuments is also on a direct line of intervisibility with Plumstone and Dudwell Mountains where there are also a further concentration of Bronze Age round barrows.  |                 |
|------|-------------------------------------|------------|---|-----------------|
| 2396 | Ffynnon Shan Shilin<br>Holy Well    | Medieval   | A well possibly dedicated to Saint Silin and located near to Letterston Church. It was originally roofed but this had been removed by the time of the 1907 2nd edition Ordnance Survey map and the well covered over, with a pump erected on the site. The pump has now gone and the site is a shop forecourt.  | SM 9384<br>2961 |
|      |                                     |            | A well near St. Giles's Church (PRN 4552) in Letterston was identified by J. Trier and J.Bord (2010) and suggested as the possible site of Ffynnon Shan Shilin. The site was visited during the Holy Wells 2012: additional sites project. It was heavily overgrown and the owners were away so clearance wasn't an option. Water appeared to rise in a chamber adjacent to the northeastern property wall (adjoining a depot) and the overflow forms a stream through the front garden and across the churchyard. The site of another spring across the road from the church, marked on the historical and modern maps at NGR SM93852962, was seen to now be concreted over. No evidence was found for the site of the well, and later pump, shown on the historical Ordnance Survey maps.   |                 |
| 2398 | Letterston Common<br>Standing Stone | Bronze Age | Standing Stone currently at present NGR. Possibly in wrong position as the description to locate it was based on Fenton, and actually lay where the station is now.  Fenton (1811) noted the existence of a large upright stone on the southeast extremity of Letterston Common, which gave the name 'Longstone' to the adjoining farm. He records this separately from the three standing stones or 'trilithon' (PRN 2414) supposedly associated with the nearby Letterston barrows (PRNs 2379-81). On the basis of the given grid reference this stone was located c.125m to the east of barrow PRN 2380. The stone fell within the area of a proposed land development at 47 Station Road, and a desk-based assessment and field evaluation was carried out in 1999 by CAP. No stone was found at the above location, but there was a spread of quartz laying on the subsoil, which might have been the result of human agency (see CAP report 37104, p.6) in the eastern part of the proposed development area where the standing stone possibly once stood. There is no doubt that this stone was associated with the barrow complex at Letterston, and there is no doubt as to its authenticity, despite the arguments of CAP to the contrary. They suggested that this stone was fictitious and had been confused with another standing stone, PRN 2414 (ibid., p.5). However, PRN 2414 is the record for the trilithon which the RCAHM suggested to be 600 yards east of the Letterston barrows (PRNs 2379-81), but which may instead have been part of earthwork PRN 2393 to the NE of PRN 2380. | SM 9493<br>2985 |

| 2414                    | The Ketch Stone<br>Row                           | Bronze Age                 | The site was described by Fenton in 1811 as 'on the left [i.e. N] side of [Letterston] common there were, till within these few years, in an enclosed field, three upright stones (meini hirion) placed triangularly, and bedded in a pavement, perhaps with reference to the three neighbouring tumuli [2379-81]One of the stones has been removed as a gatepost, and the other two overturned, the largest about 10 feet [3m] long' (Fenton, 1811, p.187). The RCAHM thought that this triple stone feature was about 600 yards east of the Letterston barrows, which puts the stones at SM95232975. However, Fenton's description clearly puts the stones within an enclosed field on the left hand side of the Common, i.e. to the N of the tumuli, not to the east. The enclosed field to which Fenton refers also contains the circular 60m diameter bank (PRN 2393), and it is possible that these stones stood bedded in their pavement, and enclosed within this earthwork henge. As a result, their true grid reference should probably be SM94812996 and thus the RCAHM may have recorded them in the wrong location.  Possible funerary or ritual monument site. | SM 9481<br>2996 |
|-------------------------|--|----------------------------|--|-----------------|
| 4550                    | Dinas (place name)                               | Unknown                    | Dinas place-name.  | SM 942 290      |
| 4560                    | Parc Longstone<br>Standing stone                 | Bronze Age                 | Parc Longstone, a field name which is recorded on St Dogwells tithe award, (p. 5, no.203.) part of Good Hope Farm. A place name which suggests the former existence of a Bronze Age standing stone site, or possibly a boundary feature, (being situated adjacent to the parish boundary between Letterston and St. Dogwell's parishes).  A "stone" place-name on the parish tithe map that may have indicated the former presence of a standing stone. Not visited during the PFRS project in 2003.   | SM 9507<br>2910 |
| 4552 /<br><b>421023</b> | Letterston Parish<br>Church; St Giles'<br>Church | Post Medieval,<br>Medieval | Parish church, mentioned in c.1130 when granted to Slebech Commandery (Davies 1946, 362-4). Square churchyard, nuclear to early 12th century 'toft-&-croft' settlement and green. Probable chronological association with an earlier church at 'Heneglwys' (PRN 2395), c.800m to the WSW, which was replaced by the present church in the early 12th century (Kissock 1997, 127-8). Associated with Ffynnon Shan Shilin curative well site (PRN 2396)?. 'St Giles' is a corruption of 'Celtic' dedication to St Sulien, possibly taken from the dedication of Heneglwys.   | SM 9391<br>2958 |
| 9036                    | Pen-Dre; Letterston<br>III Henge                 | Neolithic,<br>Bronze Age   | This PRN reflects the initial phase of what later became round barrow PRN 2381. Excavation of PRN 2381 by Savory in 1963 revealed an inner cairn ring within which there was a circle of stones 12m in diameter, with an entrance and external ritual pit on its east side. Savory interpreted this as an embanked stone circle over which a turf mound with a kerb 32m in diameter was erected to cover a cremated burial placed in the entrance, thus changing the site from a late Neolithic 'open' ritual site to a 'closed' early Bronze Age  | SM 9473<br>2976 |

|                         |                             |               | funerary round barrow. The site now lies within the gardens of 18-20 Station Road,<br>Letterston, with a garden wall running over the top of the mound. Nothing of the<br>embanked stone circle can be seen. Scheduled Monument PE062  |                 |
|-------------------------|-----------------------------|---------------|--|-----------------|
| 10465                   | Garreg Wen standing stone   | Bronze Age    | A "Carreg" place-name on the 1964 1:10000 Ordnance Survey map that may have indicated a standing stone existed here. Not visited during the PFRS project in 2003.  | SM 956 294      |
| 10472                   | Good Hope<br>boundary ditch | Medieval      | Boundary Stone, Boundary Ditch. The water treatment plant now occupies the corner of the field called Parc Borandum - once the site of a farm called Belrandum. The parish boundary runs a right angle at this point. The boundary ditch runs for several hundred yards in each direction from the corner. A fairly large white Quartzite stone marks the angle? BOUNDARY MARKER. The ditch is about 12 ft wide with substantial walls either side.  | SM 9541<br>2960 |
| 10473                   | Swmbarch boundary ditch     | Medieval      | Parish boundary feature separating St Dogwells and Letterston Parishes; probably dating from the Medieval period although the feature itself may have been in existence earlier, coterminous with an estate or property holding boundary. It consists of a substantial ditch about 12 feet wide. The parish boundary leaves the road at about this point and precedes westward for about a mile. The ditch is very overgrown but can be clearly seen - about 12' wide with substantial walls on either side. | SM 9465<br>2879 |
| 12377                   | Nant-Y-Gof                  | Medieval      | Settlement   | SM 95 30        |
| 17620                   | Letterston Old<br>School    | Post Medieval | School   | SM 939 295      |
| 17622 /<br><b>11200</b> | Saron Chapel                | Post Medieval | Grade II Listed chapel   | SM 9428<br>2965 |
| 17655 /<br><b>11199</b> | Horeb Chapel                | Post Medieval | Chapel   | SM 9510<br>2980 |
| 17656                   | Letterston Railway station  | Post Medieval | Railway station  | SM 9535<br>2965 |
| 45397                   | Swmbach Uchaf<br>farmstead  | Post Medieval | Farm and holding shown on 1806 estate map of the Lord Bishop of St Davids LRW October 2002   | SM 9461<br>2886 |
| 46478                   | Deserted Rural              | Post Medieval | A small settlement consisting of a single rectangular building in a rectangular enclosure on the 2nd edition 1:10560 map (Pembrokeshire sheet XVI.NE), but abandoned sometime  | SM 94663        |

|                           | Settlement                                    |                          | during the first half of the 20th century and no longer marked on maps.  | 30538             |
|---------------------------|---|--------------------------|--|-------------------|
| 46482                     | Milestone                                     | Post Medieval            | Milestone. Inscription reads, "Fishguard 5 miles 170 yards - Haverfordwest 9 miles".   | SM 9432<br>2994   |
| 46484                     | Letterston cemetery                           | Post Medieval            | Post-medieval cemetery   | SM 9457<br>2979   |
| 48335                     | Pendre Tumuli /<br>Round Barrow<br>Cemetery   | Bronze Age               | Group PRN for the three round barrows at Letterston (PRNs 2379-81), excavated by Savory in 1946 and 1961.  The initial phase of barrow PRNs 2381 was found through excavation to have been an embanked stone circle which was later covered with a round mound. This earlier phase has its own PRN, 9036.  | SM 9475<br>2982   |
| 48336                     | Letterston<br>Prehistoric<br>Monument Complex | Neolithic,<br>Bronze Age | Group PRN for the complex of monuments on Letterston common, which originally consisted of three round barrows (PRNs 2379-81), one of which was originally an embanked stone circle (PRN 9036), plus a standing stone (PRN 2398), a 'trilithon' triangular arrangement of stones (PRN 2414) and circular earthwork (PRN 2393). The circular earthwork and the three barrows were built on a northeast-southwest alignment. The three barrows were excavated by Savory in 1946 and 1961, and an archaeological evaluation made of the site of standing stone PRN 2398 in 1999 by CAP, during which time it was suggested that the trilithon of stones (PRN 2414) may have been part of a now-destroyed stone circle within circular earthwork PRN 2393. | SM 9483<br>2990   |
| 59723 /<br><b>11200</b>   | Saron Baptist<br>Chapel                       | Post Medieval            | Grade II listed chapel in Letterston (reference 22761)   | SM 94281<br>29635 |
| 112754 /<br><b>419829</b> | Letterston War<br>Memorial                    | Modern                   | War memorial to the 12 men for Letterston who fell in the First World War. It is a grey granite pillar located outside the graveyard of the parish church. Names of six men who died have been added to the memorial. A marble tablet records the names of the four men from the parishes of Llanfair-Nant-y-Gof and Llanstinan who died in the First World War.   | SM 93882<br>29605 |
|                           |   |                          | This war memorial consists of a grey granite pillar c.2m high located in a small quarter-circle paved area flanked by a white-washed wall, carved out of a corner of the graveyard of Letterston parish church. The names of 12 men from the parish who died in the First World War are inscribed on the front of the memorial and the names of six men who died in the Second World War have been added to one side. A white marble tablet mounted on the wall records the names of the four men from the parishes of Llanfair-Nant-y-Gof and Llanstinan who died in the First World War. This was moved from Mamre Chapel, Trecwn  |                   |

|        |   |             | in2009 when the chapel was closed.   |                   |
|--------|---|-------------|--|-------------------|
| 268012 | Pendre                                    | General     | Civil village of Pendre on eastern side of A40   | SM948299          |
| 404189 | Letterston<br>(Treletert) Field<br>System | Medieval    | Well preserved, fossilised, Medieval open-field strips to north, south and east of village.  Recorded on RCAHMW aerial photographs.  | SM 9400<br>2981   |
| 409457 | Letterston or<br>Treletert, Village       | Multiperiod | ite Description Strip village, aligned generally east-west, home to a number of sites including Parc Moat barrow (NPRN 305216), Pen Dre barrow (NPRN 300421) and Saron Chapel (NPRN 11200). The village sits within an extensive surviving open field (strip) system with probable medieval origins (NPRN 404189). | SM 94464<br>29707 |

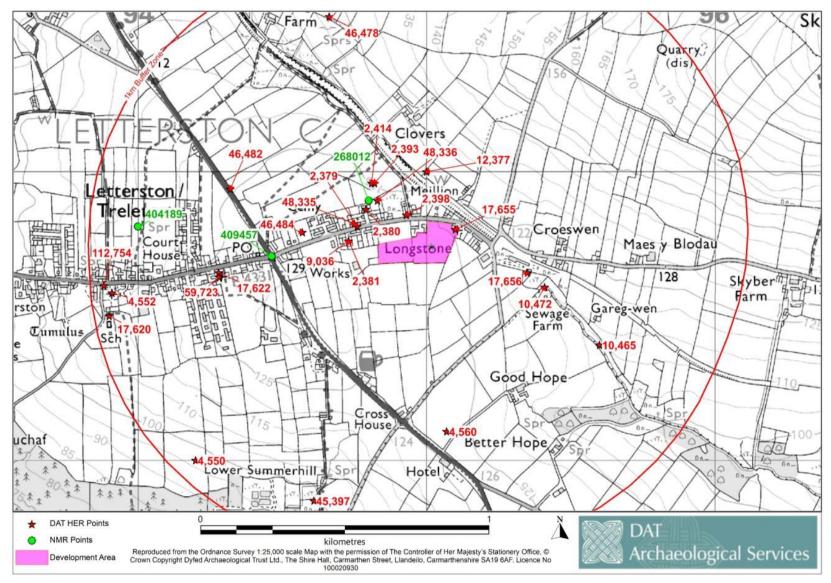


Figure 5: HER and NMR entries within 1km of the development area.

# 6 NON-DESIGNATED HERITAGE ASSETS (Table 3 and Figure 5)

- 6.1 A search of data held by the Dyfed Archaeological Trust Historic Environment Record (DAT HER) was made within a 1km radius area around the development area. A search of the same area was made of the National Monuments Record held by the Royal Commission on the Ancient and Historic Monuments of Wales and the Portable Antiquities Scheme. The locations of these entries are shown in Figure 5 with brief descriptions in Table 3.
- 6.2 The Dyfed Historic Environment Record (HER) records thirty one heritage assets within 1km of the development area, many of which are also recorded on the National Monuments Record (NMR). A further three sites are recorded only in the NMR. There were no records recorded by the Portable Antiquities scheme within the 1km study area.
- 6.3 The information supplied by the DAT HER has been summarised for this report, full details can be obtained from the DAT HER or through the Archwilio website. A short description of NMR information is also given where needed. Any information included on multiple databases are only mentioned in their first instance and where a site is recorded on both the DAT HER and NMR, only the DAT HER reference is given in the text.
- 6.4 The following information is laid our chronologically to provide a brief archaeological and historical background for the development area and its environs for each period, along with a list of the relevant HER entries pertaining to that period. A number of sites on the HER are ascribed an 'unknown' date (herewith named 'uncertain date'). Where possible, these 'uncertain date' sites have been listed within the probable period from which they are likely to date (as considered by the author of this report).

# 6.5 Palaeolithic and Mesolithic

- 6.5.1 Northern Pembrokeshire is known to contain archaeological resources relating to the Palaeolithic and Mesolithic, although these are mostly stray finds or finds located in cave sites, which were protected from the effects of glacier movements at the end of the last Ice Age.
- 6.5.2 Although no known sites from these periods are located within the search area, the potential remains for remains of Palaeolithic date to be present within the development area cannot be completely discounted.

# 6.6 Neolithic and Bronze Age

- 6.6.1 There are several Neolithic and Bronze Age monuments within 1km of the site area. The earliest of these are a possible Neolithic henge monument (PRN 2393; NPRN 413086) at SM 9482 2998 and a late Neolithic embanked stone circle (PRN 9036) at SM 9473 2976. These monuments probably date from around 2500 BC, and suggest that this area, formerly Letterston Common, was seen as an important ritual landscape at that time.
- 6.6.2 A Bronze Age round barrow cemetery (PRN 48335) comprising three barrows arranged in a linear fashion lies to the northwest of the study area. These are a common type of prehistoric funerary monument and date to around 2000 BC. The most southerly of the barrows (PRN 2381; NPRN 305219) is a Scheduled Monument (PE062); discussed above. Excavations in 1961 (Savory 1963) showed that it was constructed directly over the embanked stone circle (PRN 9036). The re-use of this monument in the Bronze Age would appear to indicate that the area continued to be seen as an important ritual landscape at this later date.

- 6.6.3 Vestiges of the scheduled barrow still remain in the gardens of numbers 18 and 20 Station Road. The remaining two barrows (PRNs 2379 and 2380; NPRN 300421), now destroyed, lay on a fairly good alignment with the henge monument PRN 2393, again emphasising significance attached to this landscape during the Bronze Age (Cook 2004).
- 6.6.4 There is documentary evidence (Fenton 1811) for the presence of a Bronze Age standing stone (PRN 2398) at NGR SM 9493 2985, directly opposite the study area on the north side of Station Road. During an archaeological evaluation undertaken prior to building development in 1999 the site was excavated but no evidence of a stone was revealed. However, a spread of possibly intentionally laid quartz was found at the location, which may represent a pavement associated with the former standing stone (Tavener 1999).
- 6.6.5 It is possible that the Longstone farm place name is derived from the site of the former standing stone (PRN 4560). Fenton (1811) also records a further stone row called the Ketch Stone Row (PRN 2414), although this is located near henge monument PRN 2393 and thus may be a duplication of this site. The location of a further possible standing stone is recorded on the HER again based on place name evidence, with the name Garreg Wen (PRN 10465).
- 6.6.6 The Neolithic and Bronze Age monuments all form part of PRN 48336, the Letterston Prehistoric Monument Complex.

#### 6.7 Iron Age

6.7.1 There are no known Iron Age or Romano British sites listed in the HER within 1km of the development area. The nearest recorded site being Bucket Camp defended enclosure (PE 231); discussed above. This is not surprising given that Iron Age occupation sites are typically associated with highland the closest upon which Bucket Camp is situated.

# 6.8 Roman Period

6.8.1 There are no Roman/Romano British sites listed in the HER as being within 1km of the development area. Although no known sites from this period are located within the search area, the potential remains for remains of Roman date to be present within the development area cannot be completely discounted.

#### 6.9 Medieval Period

- 6.9.1 Generally, the typical early medieval land settlement pattern in north Pembrokeshire tended to consist of small dispersed farmsteads. No sites of this type are recorded in the HER as being in or close to the study area although a study on village origins (Kissock 1997) argues that the area at the western edge of Letterston village, close to Great Letterston Farm, could be part of an original Celtic settlement pattern (NGR SM 9365 2960).
- 6.9.2 The village of Letterston itself has its origins in the early 12<sup>th</sup> century when the area to the west of Pendre crossroads was taken over by immigrant Flemings who were granted west Pembrokeshire by Henry II, forcing the local population out. The strip field system (NPRN 404189) and formal village layout from that time (NPRN 409457) are readily detectable in the landscape to this day. It seems that the carefully planned and laid out settlement, consisting of two rows of properties facing each other, was made possible via the agency of facilitators known as 'locatores' (Kissock 1997) who were employed by the conquering Normans to establish settlements in order to colonise their newly acquired Welsh territory. The

facilitator for Letterston was a Fleming named Letard from whom the village took its name. Other 'locatores' active in Pembrokeshire at this time were Wizo and Tancred who set up the villages of Wiston and Tancredston, respectively. Normally in such a settlement the Normans would initially build a motte and bailey castle as a defence against Welsh incursions, but in the case of Letterston there is some doubt as to whether the earthwork on the village green (PRN 2394, SM 9375 2948 – not illustrated) represents such a monument.

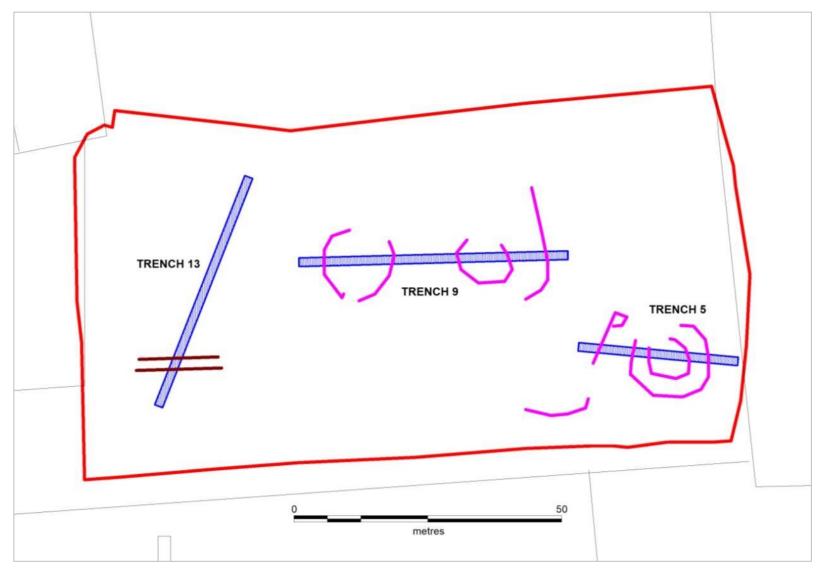
- 6.9.3 The parish church of St Giles (PRN 4552; NPRN 421023) is first mentioned in c.1130 although potentially may have earlier origins. The site of the former Fynnon Shan Shilin Holy Well lies within the search area (PRN 2396) which may also suggest an earlier medieval date for the church.
- 6.9.4 There is no evidence of medieval settlement within the study area itself but cartographic evidence appears to indicate a relict medieval strip field system (PRN 6421) some 400m to 600m east and northeast of Longstone farm centred on SM 9570 3010. A boundary ditch and boundary stone (PRN 10472) discovered at SM 9541 2960, some 500m southeast of the study area and a further parish boundary ditch known as Swmbarch (PRN 10473) located at SM 9465 2879) may both be of medieval date. The possible site of the former medieval settlement of Nant-Y-Gof is likely to lie to the northeast of the development area, outside of the centre of Letterston, although its location is only approximated (PRN 12377).

#### 6.10 Post Medieval Period

- 6.10.1 The HER and NMR record numerous sites of post-medieval date within 1km of the site area, mostly associated with the development of the village during this later period. The sites recorded include the school (PRN 17620), Saron Chapel (PRNs 17622 & 59723; NPRN 11200); Swmbach Isaf farmstead (PRN 45397); a milestone (PRN 46482); and Letterston cemetery (PRN 46484). A former farmstead shown on early 20<sup>th</sup> century ordnance survey maps is recorded within the study area (PRN 46478).
- 6.10.2 The expansion of Letterston eastwards across the A40 trunk road from Pendre crossroads along Station Road occurred largely in the 20th century. However, map evidence from 1814 (Ordnance Survey original surveyor's drawings) shows that there was an enclosed field, at least, marked in the position of the study area. The map does not show clearly that there are any buildings in the study area but the name Longstone does appear below the enclosure. The Letterston parish tithe map of 1844 shows quite clearly the study area with the same enclosed fields, complete with buildings, more or less as they appeared prior to the modern residential development. The area across the road from the site is still unenclosed common land on the tithe map, but an Enclosure Act award map of 1865 shows further enclosure of Letterston Common at that time. The first edition 6" Ordnance Survey map of 1890 shows Longstone named and enclosed as it was before development. By the time of publication of the second edition 6" Ordnance Survey map in 1906 the railway station, and a whole new community, had been built some 300m from the site area. The Fishquard and North Pembrokeshire railway was opened in 1895 and with it Letterston Station (PRN 17656), Coronation Terrace, Station Terrace and eventually the building of Horeb Chapel in 1901 (PRN 17655).

#### 6.11 Modern

6.11.1 A single site of modern date is recorded on the HER, that of the Letterston War Memorial (PRN 112754) commemorating the 12 men of the parish who fell in the First World War and the six from the Second World War.



**Figure 6:** Approximation of the trenches opened by BARAS in 2009 evaluation within western end of development area (after Meek 2019).

#### 7 PREVIOUS ARCHAEOLOGICAL WORK

- 7.1 There have been 6 phases of archaeological work undertaken within the development area and surrounding area.
- 7.2 There have been four phases of work within the development area itself. These have all focussed on the western part of the development area (Figure 3).
- 7.3 There have been two previous phases of work adjacent to the development area. These were in areas to the north and west of the development area.
- 7.4 This section represents a brief summary of each phase of archaeological investigation presented chronologically. In some cases sources of previous investigations were not available for consultation. In these cases all known information about the work has been included.

# 7.5. Previous Archaeological Works within Development Area Longstone Farm Archaeological Appraisal

- 7.5.1 The first piece of archaeological work was undertaken by Cambria Archaeology (now Dyfed Archaeological Trust) in 2007 (ERN 63195). This report was an archaeological appraisal on behalf of Eatonfield Developments Limited.
- 7.5.2 This report focused on what is now the western portion of the development area as well as the area to the north which has now subsequently been built upon.
- 7.5.3 An archaeological appraisal is designed to assess the likelihood of the potential for archaeological remains to survive below ground within the study area, and whether archaeological mitigation works are required.
- 7.5.4 The appraisal advised that there were no known sites within the study area but that within the surrounding area were known important prehistoric remain (mainly of Bronze Age date) and suggested that further archaeological mitigation works be undertaken.

# Longstone Farm Geophysical Surveys

- 7.5.5 Following the appraisal by Cambria Archaeology a geophysical survey was carried out of the area to the west of Longstone Farm by Stratascan Limited in 2008.
- 7.5.6 The purpose of a geophysical survey is to provide a better indication of the archaeological potential of the site through the identification of subsurface features which could be indicative of archaeology. This allows for an informed decision on whether any further archaeological mitigation is required or not before or during the development programme.
- 7.5.7 Two stages of geophysical were undertaken, the first using gradiometry and the second soil resistivity (Stratscan 2008 and 2009). The Historic Environment Record has a single Event Record Number for the surveys (ERN 62976).
- 7.5.8 No copy of the geophysical report was submitted to the HER or NMR and the results and interpretation are not available for inspection. However, as Dyfed Archaeological Trust (previously Cambria Archaeology) within their role as planning advisors to the council suggested further archaeological works should be undertaken to assess anomalies detected during the geophysical survey we can be sure that the geophysical survey revealed possible archaeological remains.

# Longstone Farm Trial Trench Evaluation

- 7.5.9 As a result of the geophysical survey an archaeological trial trench evaluation was undertaken by Bristol and Region Archaeological Services in 2009.
- 7.5.10 The purpose of a trial trench evaluation is to provide information on the character and significance of the potential below ground archaeological remains identified through geophysical survey. Using this information an informed decision can be made regarding any further required mitigation and the nature and importance of any archaeological remains.
- 7.5.11 A copy of this possibly unfinished report was deposited in the NMR but not in the DAT HER. The report was viewed during a visit to the NMR during the preparation of the Desk-Based Assessment for Parc Maen Hir by DAT Archaeological Services (Meek 2019) and the findings of the report are summarised below:
- 7.5.12 The summary of the report reads:

The geophysical survey anomalies, which were considered as potentially representing the remains of round barrow ring ditches, were not visible in the trenches.

- 7.5.13 Trenches 5, 9 and 13 were positioned within the western part of the current development area (Figure 6). Trenches 6 and 8 were located immediately to the north of this western part.
- 7.5.14 There is no record of where trenches 1, 2, 3, 4, 7, 11 and 12 were to be located or even if they were ever actually opened. A trench plan is included in the report which is roughly sketched in Figure 6; showing the trench locations and possible geophysical survey anomalies. The circular anomalies were presumably considered to be possible Bronze Age round barrows.

# Trench 5

7.5.15 Trench 5 (Figure 6) was oriented east/west and was approximately 30m long 1.8m wide and targeted a possible double concentric ringed feature and a further linear anomaly (Figure 6). No sign of the geophysical anomalies were noted in the trench.

#### Trench 9

7.5.16 Trench 9 was aligned east to west 50m long and 1.8m in width. It targeted two possible circular anomalies and a further linear feature seen on the geophysical survey (Figure 6). One of the possible curvilinear features was observed as a change in the natural geology which was confirmed on excavation.

#### Trench 13

7.5.17 Trench 13 ran roughly north east by south west and measured 46m long by 1.8m wide. Two parallel linear features were observed, roughly orientated east to west crossing the trench. The first was 1.23m wide, 2.15m length visible and 0.12m deep and the second 1m wide, 2.2m long and 0.08m deep. They were positioned 1.9m apart separated by bare clay subsoil and were thought to represent a former hedge boundary. These were the only features confirmed within the evaluation.

# Archaeological Desk-Based Assessment-Parc Maen Hir

7.5.18 In 2019 DAT Archaeological Services were commissioned by Ateb Group to provide an update to the Archaeological Appraisal undertaken by Cambria

Archaeology (now DAT) in 2009. This report focussed exclusively on the western part of the current development area.

# 7.5.19 The findings can be summarized as:

The development site lies in an area of archaeological significance with the site of a possible Neolithic Henge to the northwest, which was incorporated into a burial mound in the Bronze Age period. Two further round barrows are present to the northwest and the former sites of standing stones exist to the east. This area formerly formed part of Letterston Common. The land was used for agricultural purposes from the medieval period until the development of Parc Maen Hir.

During development of the Parc Maen Hir site area was used for spoil storage and also for vehicle movement. This has resulted in spoil heaps still being present, wheel ruts still being visible and a number of other trenches cut into the ground causing significant disturbance to any underlying archaeology that may have been present.

The negative results of the previous archaeological evaluation, tied in with the disturbance caused by the previous development, the archaeological potential of the site area is considered negligible. No further archaeological work is considered necessary at the site.

The previous appraisal indicated the archaeological potential of the site and subsequently two phases of geophysical survey and a trial trench evaluation were carried at the site, including the Phase. Possible ring ditches were identified on the geophysical survey possibly representing more Bronze Age barrows. The trial trench evaluation determined that these were in fact changes in the natural geology.

# 7.6 Previous Archaeological Works Adjacent to the Development Area \*Archaeological Desk-Based Assessment 47 Station Road\*\*

- 7.6.1 An Archaeological Desk-Based Assessment was undertaken by Dyfed Archaeological Trust in 1998 of a site directly to the north of the current development area. A subsequent trial trench evaluation by Cambrian Archaeological Projects (ERN 37104) was undertaken in 1999 (Taverner, 1999).
- 7.6.2 The report on the archaeological works is summarised on the Dyfed HER as follows:

....Dyfed Archaeological Trust (Planning Section) issued a detailed project brief for the proposed archaeological works. The project brief called for an initial phase of research followed by field evaluation excavation. ..... The development area lies close to the (original) sites of three round barrows of Bronze Age date (PRN'S 2379, 2380, 2381). It is the proximity of the proposed development to these barrows that necessitated this archaeological evaluation. In general, the desk-based assessment turned up no new information regarding the three barrows. A provisional agreement was reached that 6 trenches, each measuring 2m by 20m, would be excavated, representing approximately 5% of the total development area. The excavation indicated that the only area of any possible archaeological interest in the study area lies around trench 9 where a spread of quartz, lying on the subsoil,

could either have resulted from human activity or have been of entirely natural origin.

# Archaeological Watching Brief: Windy Ridge, 7 Station Road

- 7.6.3 An archaeological watching brief was undertaken by Trysor 2012 on Land Adjacent to Windy Ridge, 7 Station Road, Letterston 0.5km west of the development area (ERN 111451).
- 7.6.4 The report is summarised on the HER as follows:

In 2012, Trysor undertook a watching brief for a single dwelling in the garden behind Windy Ridge, 7 Station Road, Letterston, Pembrokeshire. The features that were identified were all believed to be recent relating to the plot being used as a garden in the 20th Century. The development has no impact on the archaeological resource.

# 7.7 Other Archaeological Finds

#### National Monuments Record

7.7.1 A number of archaeological finds are recorded in the search area by the National Museum of Wales, of Neolithic and Bronze Age date, mostly fragments of pottery with a flint knife and cremated bone also recorded. These all relate to the excavations of the scheduled Pen Dre Round Barrow site (PE062).

# Portable Antiquities Scheme

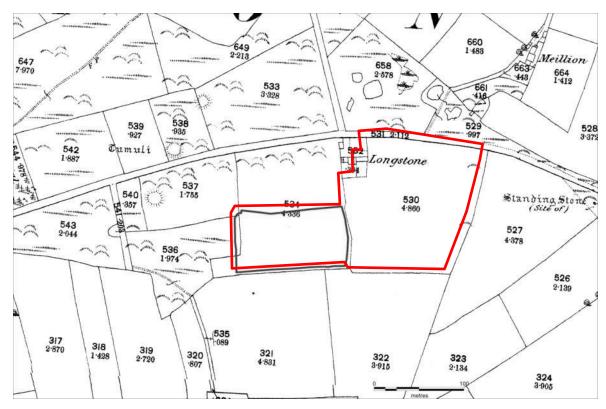
7.72 No finds are recorded by the Portable Antiquities Scheme in the search area.



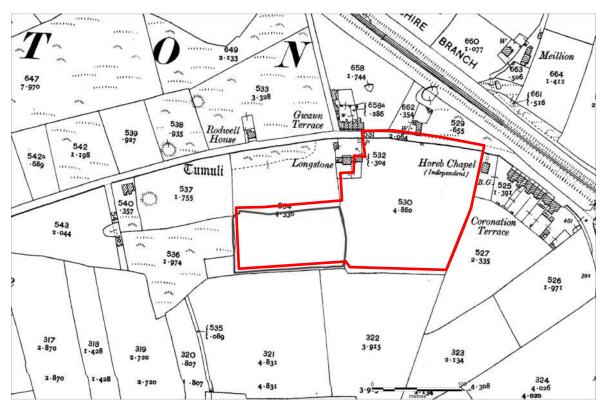
**Figure 7:** Extract of the 1811 original survey drawing (Fishguard) of Letterston, with the approximate position of development area circled in red.



**Figure 8:** Extract of the 1841 Letterston Tithe Map, with the approximate position of the proposed development site outlined in red.



**Figure 9:** Extract of the 1889 Ordnance Survey 6 inch to 1 mile map, with the proposed development site outlined in red.



**Figure 10:** Extract of the 1907 Ordnance Survey 6 inch to 1 mile map, with the proposed development site outlined in red.

#### 8 HISTORIC MAPPING, AERIAL PHOTOGRAPHY and LiDAR

# 8.1 Historic Mapping

- 8.1.1 The original Ordnance Survey (OS) drawing of 1811 of the Fishguard area is the earliest available map for Letterston to show any great detail of the village and its surroundings (Figure 7). The proposed development site is shown simply as farmland on the eastern side of the main road through the village. It is labelled as Longstone but no further detail is visible. Station road at this time is indicated as a track.
- 8.1.2 The Letterston Tithe Map of 1841 (Figure 8) shows more detail than the 1811 OS map, and includes the former Longstone Farm house and outbuildings immediately adjacent to Letterston Common. To the south of the farm buildings are two enclosed fields. The eastern field and the southern part of the western field now form the development area. The western fields name is recorded as Parc y Ffynt (possibly translated as Stream Park). The eastern field is recorded as Park yr Ydlan (possible translated stackyard park). The centre of Letterston lies to the west of the main north south road. Station Road is not shown.
- 8.1.3 Detailed maps of the site were surveyed by the OS in around 1889, and published in 6 inch to 1 mile form. The map (Figure 9) shows little change to that of the Tithe Map, although more detail is provided and by this time Station Road has been clearly laid out. Longstone Farm is clearly shown. The three round barrows are shown on the map to the west/northwest of the site area, labelled as Tumuli and in a linear arrangement. No other properties are present along Station Road.
- 8.1.4 The 1907 1: 2500 scale map of Letterston (Figure 10) shows the start of development on the northern side of the road, but otherwise is almost identical to that of the 1889 map.
- 8.1.5 Later OS maps show no change in the development area, although more and more buildings are constructed along both sides of Station Road around the site area.

# 8.2 Aerial Photography

8.2.1 Modern aerial photography was looked at as part of this appraisal. No photographs indicated any archaeological remains within the area, but they did show disturbance in the western part of the development area. It appeared as if some spoil storage had occurred in the area as suggested by Meek in 2019.

# 8.3 LiDAR

8.3.1 Online LiDAR mapping was examined via the Lle website which predates the adjacent development. The resolution is quite poor, but there do appear to be east to west aligned low ridges across the fields. These most likely relate to medieval strip fields and potentially the east to west field boundary seen in Trench 13 of the 2009 evaluation.

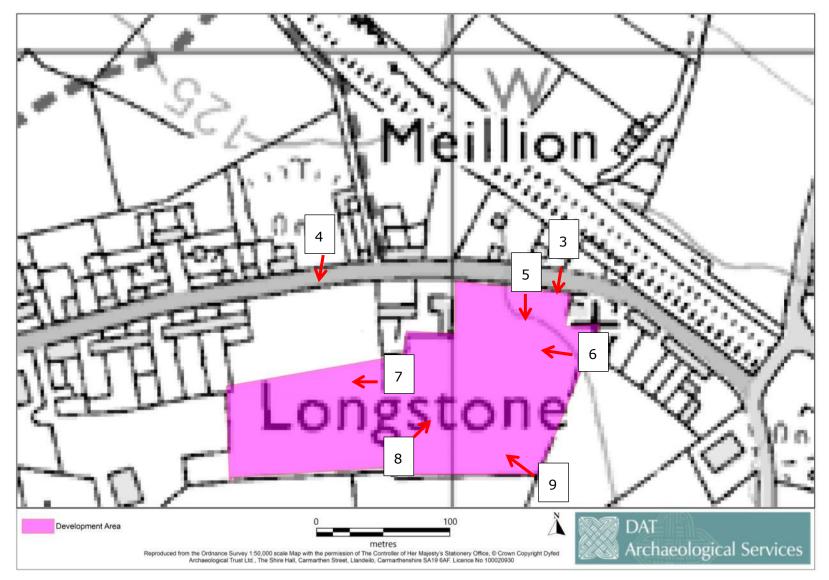


Figure 11: Locations of Photographs 3-8 taken during site walkover.



**Photo 3:** Entrance to development area from Station Road. Looking south.



**Photo 4:** Western part of development area beyond Park Maen Hir housing. Looking south.



**Photo 5:** Eastern end of the development area showing ground gently sloping to south. Looking south



**Photo 6:** Western end of the development area. Looking west. Parc Maen Hir housing to right of photograph.



**Photo 7:** Eastern end of the development. Looking north east towards the Scheduled Monument of Bucket Camp (PE231).



**Photo 8:** North west corner of development with Longstone Court and Parc Maen Hir housing beyond. Looking north west in direction of Scheduled Monument Pen Dre Round Barrow (PE062).

## 9 SITE WALKOVER SURVEY

- 9.1 A site visit was undertaken on the 3<sup>rd</sup> of March 2020. The visit comprised a walkover of the development area and the surrounding neighbourhood.
- 9.2 The aim of this visit was to assess the character of any known and previously unrecorded features of archaeological potential within the development area and to evaluate the inter-visibility (or lack thereof) between surrounding historic assets and the development area.
- 9.3 Photographs were taken using a DSLR camera and field observations were recorded in note form. Currently the development area is scrubland with more dense foliage around the perimeter of the site. The locations from which each photograph was taken are shown in Figure 11.
- 9.4 The most westerly corner of the development area was not accessed due to the extent of the overgrowth.
- 9.5 The site is a backwards L shape with a larger expanse of ground to the east and a narrower corridor of ground to the west (Figure 11). The western part of the development area was previously assessed by DAT Archaeological Services in 2019 (Meek 2019).
- 9.6 The site is accessible from the eastern end of the development area which lies immediately adjacent to Station Road running east/west along the northern boundary of the site (Photo 3). The western end of the development can also be accessed through the housing of Park Maen Hir (Photo 4). The site is surrounded by what appears to be the original field boundaries. However, the central division between the two fields (see historic mapping) has been removed.
- 9.7 The whole development slopes gently to the south obscuring any of the land to the south of the development area (Photo 5). The western part of the development area is used for spoil storage (Photo 6) and was for the most part inaccessible due to overgrowth.
- 9.8 Bucket Camp Scheduled Monument (PE231) is inter-visible with the development area, although views are compromised by existing housing lying between them (Photo 7). Existing housing development near completely obscures views between the development area and the scheduled site of Pen Dre Round Barrow (PE 062) (Photo 8). The Saron Baptist Chapel (LB 22761) is not inter-visible with the development area.
- 9.9 No previously unrecorded earthwork features or other indications of archaeological remains within or in near vicinity of the development area were identified during the walkover survey.

**Table 4:** Site potential definitions

| Archaeological<br>Potential | Definition  |  |
|-----------------------------|---|--|
| High                        | Known archaeological remains of the period within the site area, or an abundance of remains of the period within the near vicinity  |  |
| Medium                      | A number of archaeological remains of the period are present in the vicinity or wider area, and/or the topography or location of the site would be typical for remains of that period   |  |
| Low                         | Few sites of a specific period are known in the wider area, or where the topography of the site is unlikely to contain remains of that period. Or where no archaeological records of a certain period are present, but the location of the site is one that would be considered suitable or typical for remains of that period to exist |  |
| Negligible                  | Where there is no evidence for archaeological remains of a certain period to be present and the location/topography is most unlikely to contain remains of that period, or where a site area has already been totally disturbed   |  |

**Table 5:** Site importance definitions

| Site<br>Importance<br>(SI) | Definition of Site Category   |
|----------------------------|---|
| High                       | Features of national importance - Scheduled Monuments, Listed buildings Grade I and II*, well preserved historic landscapes, registered parks and gardens and historic battlefields |
| Medium                     | Non-scheduled sites of regional or county importance. Listed Buildings<br>Grade II, reasonably preserved historic landscapes  |
| Medium /<br>Low            | Features of district or local importance but generally common features at a national or regional level  |
| Low                        | Minor sites or sites so badly damaged that too little now remains to justify their inclusion in a higher grade  |
| Uncertain                  | Features about which insufficient is known to attribute them to a higher rank, or which cannot be sufficiently accurately located to justify their consideration                    |
| Negligible                 | Where a site area has already been totally disturbed by previous development or natural processes   |

## 10 ASSESSMENT OF ARCHAEOLOGICAL POTENTIAL AND IMPORTANCE

## 10.1 Overview

- 10.1.1 The site walkover did not identify any unrecorded upstanding archaeological remains within the boundary of the development area.
- 10.1.2 The site walkover did identify that the western part of the development area has been previously disturbed. It had a number of spoil heaps still present upon it and evidence of wheel rutting and excavated channels (possibly drainage) within it.
- 10.1.3 This Archaeological Desk-Based Assessment has shown that there are no recorded historic assets within the development area.
- 10.1.4 The western part of the development area has been subject to two phases of geophysical survey, which indicated possible archaeological anomalies. Subsequent archaeological trial trenching of the area indicated that the anomalies seen in the geophysical survey results were associated with changes in the natural geology. The trial trenching did record evidence of a former single hedgerow boundary running northeast-southwest across the area.
- 10.1.5 There are no known archaeological remains of national significance within the development area. However, there is one Scheduled Monument in close proximity to the development area; Pen Dre Round Barrow (PE 062) lying 0.3km to the west. Two monuments of national significance lie within 2km of the development area; Bucket Camp Iron Age defended enclosure (PE 231) lies 1.3km to the north and the Grade II Listed Building Saron Chapel (LB 22761) lies 0.8km to the west.
- 10.1.6 There are no known Registered Historic Landscapes, Conservation Areas, Historic Parks and Gardens within 2km of the development area.
- 10.1.7 The upstanding remains of Pen Dre Round Barrow (PE 062) are described as severely degraded. Views from the barrow into the development area are obstructed by existing housing development.
- 10.1.8 Saron Chapel Listed Building (LB 22761) is not inter-visible with the development area.
- 10.1.9 Bucket Camp Scheduled Monument (PE 231) is inter-visible with the development area but is located at a considerable distance from the development area.
- 10.1.10 This assessment considers there is very little potential for archaeological remains of any period to survive within the western part of the development area.
- 10.1.11 The potential for archaeological remains to survive within the eastern part of the development area is discussed below in chronological order of period.
- 10.1.12 Archaeological potential is defined in Table 4. Archaeological and Historical Importance is ascribed to the sites according to the criteria in Table 5

## 10.2 Period Summaries

## Palaeolithic and Mesolithic

10.2.1 No sites of Palaeolithic or Mesolithic date are recorded within 1km of the proposed development area. It is difficult to be certain of the archaeological potential for these periods as such remains can be difficult

to identify, but it is considered **low** due to the absence of known sites in the vicinity, although topographically the site could be suitable for remains of these periods to be present. Such remains are quite rare so if present would considered to be of **medium importance**.

## Neolithic and Bronze Age

- 10.2.2 This report has shown that the eastern development area lies within an area containing significant archaeological remains dating back to the Neolithic and Bronze Age periods. These include the possible henge site (PRN 2393) and the Scheduled Monument of Pen Dre Round Barrow (PE 069), one of at least 3 round barrows running north-east by south west to the west of the development area. Additionally there is a possible standing stone within the 'Longstone farm' area. Combined these monuments suggest that this area, formerly Letterston Common, was seen as an important ritual landscape at that time.
- 10.2.3 The potential for remains of Neolithic or Bronze Age to be present in the eastern part of the development is considered **high** due to the proximity of known archaeological remains dating to this period in close proximity. If remains of Neolithic and Bronze Age date are present these remains are considered to be considered to be of **medium** importance due to their rarity and possible association with a ritual landscape.

## Iron Age

- 10.2.4 There is no known Iron Age activity within the eastern development area however there is Iron Age activity known in the wider area of the proposed development. Both sites lie within 1.5km of the development area and one is a Scheduled Monument; Bucket Camp (PE069). Both sites are defended enclosures located on high points of land and comprise large monuments which are highly visible in the surrounding area.
- 10.2.5 The archaeological potential is thus considered **low** for archaeology of the Iron Age to be present, but if it were it would likely be **medium** importance.

## Roman Period

10.2.6 The potential for Roman remains to be present is considered **low**, as there are no known remains within 1km of the site area and very few within northern Pembrokeshire. If present such remains would be considered of **high/medium** importance.

## Medieval Period

- 10.2.7 There is no known archaeological evidence of medieval activity within the development area itself. However, there are multiple recorded medieval sites within 1km of the eastern development area. These include remnants of agricultural field systems, as well as ecclesiastical and cartographic evidence of early occupation. The settlement pattern of scattered hamlets and farmsteads seen in northern Pembrokeshire today may have their origins in this period.
- 10.2.8 If utilized at all, the location of the development area was likely used as agricultural land during the medieval period which indicates a **low** archaeological potential for archaeological remains of this period to survive. The significance of the archaeological evidence would also be **low** if associated with agricultural practices.

## Post-Medieval Period

- 10.2.9 The trial trench evaluation in the western part of the development area detected ditches which are thought to represent a post-medieval field boundary. These are thought to be of low archaeological significance. There is no known post-medieval activity within the eastern development area except that in relatively recent times the area has been used as agricultural land. Most other surrounding post-medieval activity has been associated with the development of the town.
- 10.2.10 The archaeological potential of post-medieval remains to survive in the development area is considered to be **low** and the significance of any archaeological remains would also be **low**.

## Modern Period

10.2.11 The site area and its vicinity shows no significant activity during the modern period and so its archaeological potential can be considered **low** and the archaeological importance of such remains would be considered **low or uncertain.** 

**Table 6**: Visual /Setting Impact Scale of Impact (based on TAG 3.3.9).

| Significance           | Criteria   |
|------------------------|--|
| Major<br>Beneficial    | The proposals would remove or successfully mitigate existing visual intrusion, such that the integrity, understanding and sense of place of a highly valued area, a group of sites, structures or features of national or regional significance is re-established  |
| Moderate<br>Beneficial | The proposals would enhance existing historic landscape / townscape character through beneficial landscaping/mitigation and good design or remove discordant elements of the landscape to enhance the setting of national or regional significant buildings or monuments   |
| Minor<br>Beneficial    | The proposals restore or enhance the form, scale, pattern or sense of place of the heritage resource through good design and mitigation or remove or mitigate visual intrusion (or other indirect impacts) into the context of locally or regionally significant heritage features, such that appreciation and understanding of them is improved   |
| Negligible             | The proposals do not result in severance or loss of integrity, context or understanding within a Historic landscape <i>or</i> maintain existing historic character in a landscape/townscape  |
| Minor Adverse          | The proposals have a detrimental impact on the context of regionally or locally significant assets, such that their integrity is compromised and appreciation and understanding of them is diminished <i>or</i> would not fit well with the form, scale, pattern and character of a historic landscape/townscape/area  |
| Moderate<br>Adverse    | The proposals would be out of scale with, or at odds with the scale, pattern or form of the heritage resource <i>or</i> be intrusive in the setting (context), and will adversely affect the appreciation and understanding of the characteristic heritage resource  |
| Major Adverse          | The proposals would compromise the wider setting of multiple nationally or regionally significant heritage assets, such that the cumulative impact would seriously compromise the integrity of a related group or historic landscape/townscape <i>or</i> be highly intrusive and would seriously damage the setting of the heritage resource, such that its context is seriously compromised and can no longer be appreciated or understood <i>or</i> be strongly at variance with the form, scale and pattern of a historic landscape/townscape |

## 11 PREVIOUS IMPACTS TO THE PROPOSED DEVELOPMENT AREA AND FURTHER PREDICTED IMPACTS ON THE HISTORIC ENVIRONMENT

## 11.1 Previous Impacts to Development Area

- 11.1.1 It is clear that the western part of the development area has been highly disturbed. It appears to have been used for spoil storage, possibly materials storage and also for vehicle movement during the development of Park Maen Hir housing directly to the north. The western area was further disturbed by the evaluation by Bristol and Region Archaeological Services in 2009 (Longman in 2009).
- 11.1.2 The development area would appear to have been used as agricultural land in the past and will certainly have been ploughed to some extent, as indicated by the possible medieval strip fields seen on Lidar and by the enclosed fields on the tithe map.
- 11.1.3 The former field boundary recorded during the previous trial trench evaluation (Longman 2009) also points to agricultural activity. This activity may have levelled any earthworks that may have been present in the area and disturbed the top of any buried archaeological features if present.

## 11.2 Potential Direct Impacts from the Proposed Development

- 11.2.1 Full details of the construction design for the development have not yet been produced. The following construction activities are all likely to be undertaken to some extent, all of which have the potential to expose, damage or destroy archaeological remains if present at the site. These activities include:
  - Enabling works, such as installation of contractor's compound, construction of access roads, parking areas, storage areas, borrow pits or retention ponds if required;
  - Topsoil stripping;
  - Landscaping and terracing works;
  - Foundation excavation;
  - Construction of roads, parking areas and infrastructure; and
  - Service installation.

## 11.3 Impacts to the Settings of Surrounding Designated Features

11.3.1 The definition of setting, how it contributes to the significance of a historic asset, and why it is important are outlined in *Setting of Historic Assets in Wales* (Welsh Government 2017a; available online) as follows:

The setting of a 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, negative or neutral contribution to the significance of an asset.

11.3.2 Table 6 outlines the criteria for the assessment of impacts to the settings of heritage assets. It is based on The Department for Transport 'Transport Analysis Guidance' (TAG) section 3.3.9 'The Heritage of Historic Resources Sub-Objective' of June 2003 (Updated 2009) with additional information based on professional judgement.

## Scheduled Monuments

- 11.3.3 There are two Scheduled Monuments within the search area; Pen Dre Round Barrow (PE 062) and Bucket Camp (PE 231).
- 11.3.4 Pen Dre Round Barrow is located 0.3km to the west of the development area. The remains of this monument are thought to be heavily degraded and existing development obscures views between the monument and the development area. Due to this the impact that the proposed development will have on the setting of this monument is considered to be **negligible.**
- 11.3.5 Bucket Camp (PE 231) is located 1.3km to the north of the development area. This monument is considerably further away than the previous monument. It is situated on a ridge well above the proposed development and views between it and the development area are already compromised by existing housing development lying between them. The impact upon the setting of this monument is therefore considered **slight/negligible.**

## **Listed Buildings**

11.3.6 There is a single Listed Building within 2km of the development area; Saron Baptist Chapel Grade II Listed Building (LB 22761) that lies 0.8km to the west. This building is not inter-visible with the development area. Therefore the impact upon the setting of this monument is considered negligible.

## 12 CONCLUSIONS

- 12.1 This Historic Environment Desk-Based Assessment has shown that the proposed development lies within an area of archaeological and historical significance and potential, with significant archaeological remains to the west dating back to the Neolithic and Bronze Age periods. This is clearly of significance with the possible henge site, the three round barrow sites to the west/northwest, and sites of possible standing stones to the east and within the 'Longstone farm' area.
- 12.2 Mapping from 1811 shows that from at least this date the development area has been used exclusively as agricultural land. It may have been farmed in the medieval period, forming part of the open field system surrounding the medieval village of Letterston.
- 12.3 There are several designated heritage assets surrounding the development area. These include the Listed Building of Saron Baptist Chapel (LB 22761), the scheduled monument of Bucket Camp (PE 231) and Pen Dre Round Barrow (PE 062).
- 12.4 There have been several archaeological investigations in the western part of the development area including two archaeological appraisals; by Cambria Archaeology (now DAT Archaeological Services) in 2007 and 2019. Two phases of geophysical survey (Stratscan 2008 & 2009) and a trial trench evaluation (Longman 2009) to test the anomalies identified in the geophysical survey.
- 12.5 The geophysical survey suggested that a number of further ring ditches, possibly representing more Bronze Age barrows, lay in the western part of the development area (the Phase 2 part). The trial trench evaluation determined that these were in fact due to changes in the natural geology and not archaeological features. The only significant archaeological feature was a former probably double ditched field boundary crossing the site from east to west.
- 12.6 Based on the almost entirely negative results of the previous archaeological geophysical survey and evaluation, along with the disturbance caused by the development to the north, the archaeological potential of the western part of the development area is considered **negligible.**
- 12.7 This report has highlighted that the reports on the two phases of geophysical survey and the trial trench valuation were not submitted to the Dyfed Historic Environment Record. Only the evaluation was submitted to the National Monuments Record. It would be most useful to try and track down copies of these reports to place on the historic Environment Record.
- 12.8 There has been no archaeological investigation within the eastern part of the development area, nor are there any known archaeological remains. In the eastern part of the development area there is a **high potential** for Neolithic and Bronze Age remains due to the development area's proximity to known important archaeological remains of this date. If Neolithic of Bronze Age remains were present they would be highly significant. The potential for other archaeological remains of other periods to survive in the development area is considered to be **low.**
- 12.9 Saron Baptist chapel is not intervisible with the development area and therefore the development area has a **negligible** impact upon it setting.
- 12.10 The Pen Dre Round Barrow is now heavily degraded and is partially obscured by earlier housing developments. Therefore the impact upon the

monument can also be thought to be **negligible.** Bucket Camp (PE 062) is located considerably further away and is also located behind a previous development and therefore the impact on its setting can be thought to be **slight/negligible.** 

- 12.11 No further archaeological work is considered necessary in the western part of the development area due the archaeological geophysical survey and evaluation, and later disturbance making the archaeological potential of the area **low/negligible**.
- 12.12 From the results of this assessment it is considered likely that some form of archaeological investigation should be carried out within the eastern part of the development area. This would ideally be in the form of a archaeological geophysical survey to inform whether any further archaeological mitigation may be required.
- 12.13 The scope of any further mitigation in terms of the historic environment either prior to a decision being made on the planning application, or as a condition imposed on any future planning application, will be determined by the Planning Services section of Dyfed Archaeological Trust in their capacity as archaeological advisors to the planning authority. Such archaeological conditions do not generally preclude future development at the site.

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# LAND AT STATION ROAD, LETTERSTON, PEMBROKESHIRE: GEOPHYSICAL SURVEY 2024



**Photo 1:** Looking southwest across the proposed development area.

Prepared by Dyfed Archaeological Services For: Stantec Ltd on behalf of the Ateb Group





## **HENEB - DYFED ARCHAEOLOGICAL SERVICES**

REPORT NO: 2024-49 EVENT RECORD NO: 131118

September 2024

## LAND AT STATION ROAD, LETTERSTON, PEMBROKESHIRE: GEOPHYSICAL SURVEY 2024

## **Luke Jenkins and Jessica Domiczew**

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Ymddiriedolaeth Archaeolegol Cymru Corner House, 6 Stryd Caerfyrddin, Llandeilo, Sir Gaerfyrddin SA19 6AE Ffon: Ymholiadau Cyffredinol 01558 823121 Ebost: info@heneb.org.uk

Ebost: info@heneb.org.uk Gwefan: www.heneb.org.uk Heneb: The Trust for Welsh Archaeology Corner House, 6 Carmarthen Street, Llandeilo, Carmarthenshire SA19 6AE Tel: General Enquiries 01558 823121 Email: info@heneb.org.uk Website: www.heneb.org.uk

CADEIRYDD CHAIR: DR CAROL BELL, CYFARWYDDWR DIRECTOR: R NICHOLLS

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## LAND AT STATION ROAD, LETTERSTON, PEMBROKESHIRE: GEOPHYSICAL SURVEY 2024

| Client | Stantec Ltd on behalf of the Ateb<br>Group |
|--------|--|
|        | Group                                      |

Event Record No 131118

**Report No** 2024-49

Project Code fs24-027

Report Prepared By

Luke Jenkins

Fieldwork Directed By

Luke Jenkins and Jessica Domiczew

Illustrated By Luke Jenkins

Report Approved By Fran Murphy

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## LAND AT STATION ROAD, LETTERSTON, PEMBROKESHIRE: GEOPHYSICAL SURVEY 2024

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## LAND AT STATION ROAD, LETTERSTON, PEMBROKESHIRE: GEOPHYSICAL SURVEY 2024

## **EXECUTIVE SUMMARY**

Heneb – Dyfed Archaeological Services were commissioned to undertake a geophysical survey on land at Station Road, Letterston, Pembrokeshire (ERN 131118).

The purpose of the survey was to provide a better indication of the archaeological potential of the site and if required, enable targeting of any further archaeological mitigation requirements before or during the development.

No definitive significant archaeological anomalies were recorded during the survey.

## CRYNODEB GWEITHREDOL

Comisiynwyd Heneb -Gwasanaethau Archaeolegol Dyfed i gynnal arolwg geoffisegol ar dir yn Heol yr Orsaf, Treletert, Sir Benfro (ERN 131118).

Pwrpas yr arolwg oedd rhoi gwell syniad o botensial archaeolegol y safle ac os oedd angen, galluogi targedu unrhyw lliniaru archeolegol pellach cyn neu yn ystod y datblygiad.

Cafodd y safle ei aflonyddu'n fawr. Ni chofnodwyd unrhyw anomaleddau archaeolegol arwyddocaol diffiniol yn ystod yr arolwg.

## 1. INTRODUCTION

## 1.1 Project Commission

- 1.1.1 Dyfed Archaeological Services (a contracting arm of Heneb the Trust for Welsh Archaeology) was commissioned by Stantec Ltd on behalf of the Ateb Group to undertake a geophysical survey ahead of a proposed residential development on land at Station Road, Letterston Pembrokeshire (centred on SM 95024 29756; Figs 1 and 2).
- 1.1.2 The proposed development area was subject to a historic environment desk-based study (Jenkins 2020), which found significant archaeological remains dating to the Neolithic and Bronze Age periods just to the west/northwest of the proposed development area. These include the possible henge site (PRN 2393) and the Scheduled Monument of Pen Dre Round Barrow (PE 069), one of at least three round barrows running northeast by southwest to the west of the development area.
- 1.1.3 This study concluded that there was a high potential for significant archaeological remains from the Neolithic and Bronze Age periods to be present within the proposed development area. A geophysical survey was recommended to determine whether further archaeological mitigation would be necessary.
- 1.1.4 Several archaeological investigations have been conducted immediately to the west of the proposed development area, including two archaeological appraisals by Cambria Archaeology (now Dyfed Archaeological Services) in 2007 and 2019. These investigations included two phases of geophysical survey (Stratascan 2008 & 2009) and a trial trench evaluation (Longman 2009). While the geophysical survey indicated the presence of several ring ditches, the anomalies were found to be geological in nature. No significant archaeological remains were identified.
- 1.1.5 The geophysical survey was undertaken using a fluxgate gradiometer which detects subtle variations in the earth's magnetic field (magnetometry), which can indicate the presence of buried features such as ditches, pits, walls, or postholes that are not visible on the ground surface.
- 1.1.6 The purpose of the geophysical survey was to provide a better indication of the archaeological potential of the site through the identification of subsurface features which could be indicative of archaeology. This would allow for an informed decision on whether any further archaeological mitigation is required in this area before or during the development programme.
- 1.1.7 A Written Scheme of Investigation (WSI) was produced prior to the work commencing, outlining the methodology for the survey. This WSI was submitted to and approved by the development management section at Heneb (Heneb DM), in their role as archaeological advisors to the local planning authority. A copy of the WSI is available on request from the client.
- 1.1.8 Due to the presence of protected species in the south-eastern corner of the development area a 30m exclusion zone was established in the southeastern part of the proposed development area. Details on this consideration were supplied to the development Heneb DM prior to the commencement of works.

## 1.2. Scope of the Project

1.2.1 The aim of the project was:

- To identify the presence/absence of any potential archaeological deposits through an initial gradiometer survey;
- To establish the character and extent of any potential archaeological remains within the site area that could be affected by the proposed works;
- To prepare a report and archive on the results of the geophysical survey.

## 1.3 Report Outline

1.3.1 This report provides a summary and discussion of the geophysical survey and its results and puts those results within their regional and national context.

## 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). Altitude is expressed to Ordnance Datum (OD). References to cartographic and documentary evidence and published sources will be given in brackets throughout the text, with full details listed in the sources section at the rear of the report.

## 1.5 Illustrations

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

## 1.6 Timeline

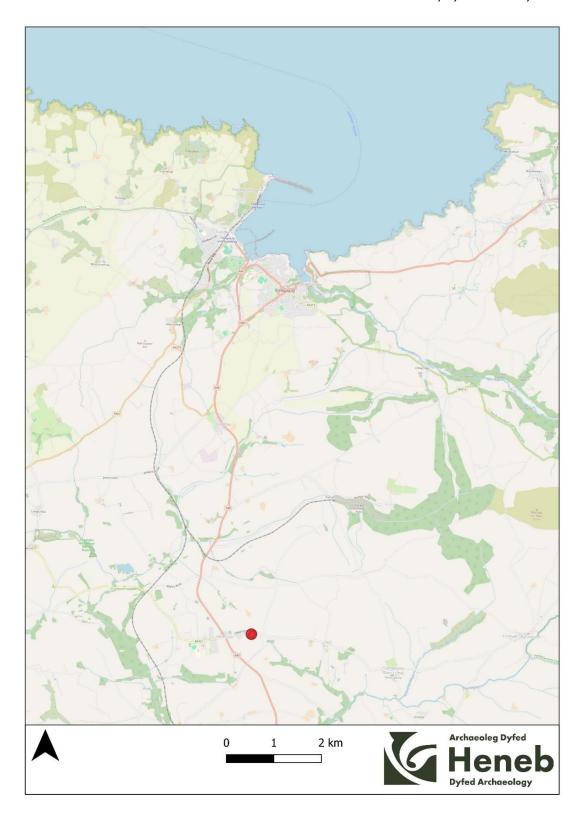
1.6.1 The following timeline (Table 1) is used within this report to give date ranges for the various archaeological periods that may be mentioned within the text.

**Table 1**: Archaeological and Historical Timeline for Wales.

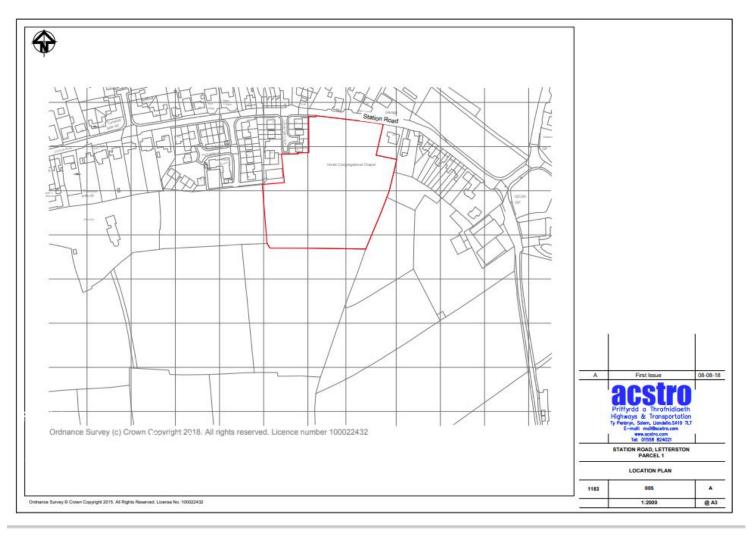
| Period                               | Approximate date                 |             |
|--------------------------------------|----------------------------------|-------------|
| Palaeolithic –                       | c.450,000 - 10,000 BC            |             |
| Mesolithic –                         | c. 10,000 – 4400 BC              | Pre         |
| Neolithic –                          | c.4400 – 2300 BC                 | hist        |
| Bronze Age –                         | c.2300 - 700 BC                  | Prehistoric |
| Iron Age –                           | <i>c</i> .700 BC – AD 43         | n           |
| Roman (Romano-British) Period –      | AD 43 – c. AD 410                |             |
| Post-Roman / Early Medieval Period – | c. AD 410 – AD 1086              |             |
| Medieval Period –                    | 1086 - 1536                      | Hist        |
| Post-Medieval Period¹ –              | 1536 - 1750                      | Historic    |
| Industrial Period –                  | 1750 - 1899                      | C           |
| Modern –                             | 20 <sup>th</sup> century onwards |             |

Dyfed Archaeological Services

 $<sup>^{1}</sup>$  The post-medieval and industrial periods are combined as the post-medieval period on the Regional Historic Environment Record as held by Heneb.



**Figure 1**: Location map. Development area shown in red (Background mapping ©OSM 2024).



**Figure 2:** Proposed development area at Station Road, Letterston, Pembrokeshire. Plan supplied by client, not necessarily reproduced to scale.



**Figure 3:** Photograph locations.

## 2. THE SITE

- 2.1. The proposed development area lies on the eastern edge of the small village of Letterston in northern Pembrokeshire, approximately 5km to the south of the small town of Fishguard (Figure 1). The area is currently laid to rough pasture, which had been cut in order to conduct the survey (Photos 1, 3-4). The site is bounded to the south and east by established traditional Pembrokeshire earthen banks. The area immediately to the west of the proposed development has already been developed into residential dwellings.
- 2.2 The proposed development area is relatively flat. However, during the survey it was noted that the ground was extremely bumpy with three large spoil heaps dotted across the proposed development area which could not be surveyed.
- 2.3 A historic environment desk-based study (Jenkins 2020) has been produced for the proposed development area which details the archaeological and historical background to the area and outlines the archaeological potential of the site. In summary this study revealed substantial archaeological remains from the Neolithic and Bronze Age periods located to the west and northwest of the site. These findings include a possible henge site (PRN 2393) and the Scheduled Monument of Pen Dre Round Barrow (PE 069), which is one of at least three round barrows aligned in a northeast-southwest orientation to the west of the proposed development area.
- 2.4 The study concluded that there is a high likelihood of significant archaeological remains from the Neolithic and Bronze Age being present within the proposed development area.
- 2.5 No archaeological investigations have been undertaken within the proposed development area. However, several archaeological investigations have been conducted immediately to the west, including two archaeological appraisals by Cambria Archaeology (now Dyfed Archaeological Services) in 2007 and 2019. These investigations included two phases of geophysical survey (Stratascan 2008 & 2009) and a trial trench evaluation (Longman 2009). While the geophysical survey indicated the presence of several ring ditches, the anomalies were found to be geological in nature. No significant archaeological remains were identified.
- A review of the historic mapping for the site showed that the survey area has been agricultural land, mostly pasture, since at least the 18<sup>th</sup> century. A review of aerial photography for the area showed that the survey area had previously been disturbed during the development of the area immediately to the west (Photo 2). This appeared to show the spreading of large amounts of soil across the northwestern part of the site which may affect the results of the geophysical survey.
- 2.7 The British Geological Survey records the bedrock beneath the development in the northern part of the proposed development area was mudstone of the Penmaen Dewi Shale Formation. This is sedimentary bedrock formed between 477.7 and 465.5 million years ago during the Ordovician period. The southern part of the survey area is recorded as being mudstone of the Aber Mawr Shale Formation, sedimentary bedrock formed between 477.7 and 460.5 million years ago during the Ordovician period. No superficial deposits are noted (BGS 2024).



**Photograph 2:** Aerial photograph of the proposed development area (outlined in red) from 2013 showing significant amounts of soil deposited in the northwestern part of the proposed development area. Copyright: Maxar Technologies 2013.



**Photograph 3:** Looking southwest across proposed development area. Note the vegetation-covered spoil heaps in centre of development area.



**Photograph 4:** Looking northeast across the proposed development area.

## 3. METHODOLOGY

Data Collection

3.1 The geophysical survey was conducted utilising a fluxgate gradiometer equipped with two sensors at a 1m spacing, accompanied by a DL601 data logger. The gradiometer's sensitivity was configured to identify magnetic variations with a precision of 0.1 nanoTesla. The data was collected within a regulated grid, demarcated to a precision of 0.1 meters. With the aid of a Trimble R8's integrated GNSS system and a TSC5 controller, the grid was aligned with the local Ordnance Survey (OS) grid.

## Ground Coverage

3.2 Geophysical techniques rely on discerning disparities in physical properties between the buried archaeological remains and the surrounding soil. To effectively characterise these features, it is necessary to conduct a comprehensive survey that not only captures all possible targets but also includes a sizeable portion of natural background response. Typically, the size of the survey area is constrained by external factors that could potentially undermine the survey data, such as chain-linked fences, telegraph poles and modern field boundaries, as these features affect the magnetic readings collected by the gradiometer. To mitigate the impact of these factors, a minimum distance of up to 5m from field boundaries is maintained. For larger modern ferrous objects such as pylons, a greater distance may be required.

## Resolution

3.3 Data was collected using the zigzag traverse method in 30m x 30m grids, with a sample interval of 0.25m (four readings per meter) along the x-axis and a line separation of 1m along the y-axis.

## Data Processing

3.4 The collected data underwent processing utilising *Terrasurveyor 3.0.36.1* and is presented with minimal processing. Typically, the data is subjected to "de-striping" to eliminate any striping effect produced by imbalances between the two sensors. It is then "clipped" to eliminate high values attributed to ferrous objects, which tend to obscure archaeological features and finer details. Additional processing functions may include "destaggering" the data to correct line displacement errors caused by variations in traversal rate. The gradiometer readings were collected every 0.25m along the transect (x-axis) and 1.0m (or 0.25m in the higher resolution surveys) along the y-axis, resulting in an imbalanced grid. Therefore, by interpolating the data and adjusting the x and y-axes by an increased factor, the grid is better balanced. Finally, the "low pass filter" can be used to smooth the data without removing any archaeology.

## Data Presentation and Interpretation

3.5 The data is presented in the form of a grey-scale plot, overlaid on topographical features, with minimal processing. The main magnetic anomalies were identified through a combination of the grey-scale plots at different processing stages, and XY traces enabled interpretation by visualising the magnitude and form of a geophysical anomaly. The results were compared with available sources such as satellite imagery, aerial photographs, and historic maps; an increased confidence in the interpretation of geophysical anomalies is gained when their character or form is well-documented, their existence was previously known, or corroborative evidence is available. However, a broader categorisation of

interpretation is sometimes required, as outlined in Table 2. Examining the results, including the surrounding environment, often provides greater context and aids in the interpretation of individual features.

## Quality of Results

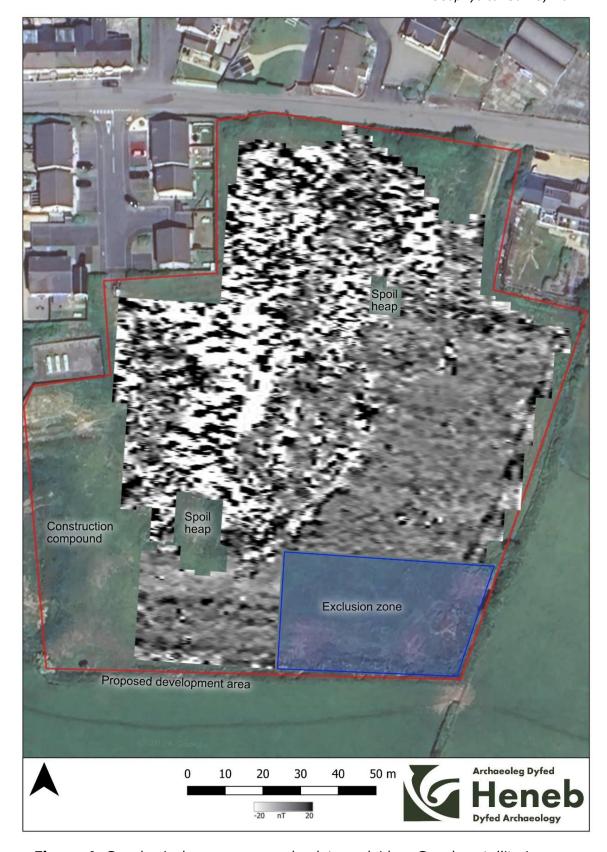
- 3.6 It is important to note that survey results and interpretation diagrams should not be considered as a conclusive representation of archaeological remains. Not all buried features will produce a detectable magnetic response that can be identified by the gradiometer. In assessing these recorded features, the shape serves as the primary diagnostic tool, alongside comparison with known features from other surveys. The magnitude of the magnetic response can also yield supplementary insights; for instance, a strongly recorded response may indicate burning, high ferric content, or geological thermoremanent magnetisation. While the context may provide additional indications, the interpretation of numerous features is still largely subjective.
- 3.7 All measurements provided are approximations, as determining precise measurements from fluxgate gradiometer surveys is challenging. The breadth and length of identified features may be influenced by their depth and magnetic strength.

**Table 2**: Categories of interpretation for geophysical anomalies.

| Archaeological features    |   |  |
|----------------------------|---|--|
| Archaeology                | Archaeological origins can be clearly determined in cases where the response's character and form are evident, or supporting evidence exists (e.g., historical sources, excavation, etc.). These features typically comprise linear, curvilinear or rectilinear anomalies and may include pits with a recognisable arrangement, grouping, or association with an archaeological feature to suggest an archaeological origin.  |  |
| Industrial/area of burning | In instances where an abnormality exhibits a robust magnetic reaction indicative of kilns or hearths, among other features, an interpretation aided by the shape, form, and context may be feasible. It is prudent to exercise circumspection, as contemporary ferrous materials may often produce a comparable response  |  |
| Possible archaeolog        | ical feature/uncertain origin   |  |
| Possible archaeology       | In cases where an archaeological response is preferred, yet the resulting findings are insufficient and do not exhibit any unique attributes comparable to an archaeological feature, this classification encompasses potential pits lacking identifiable organization, clustering, or correlation with archaeological features. Although they could potentially be of archaeological provenance, it is equally probable that they constitute natural formations, such as |  |

|                                    | the remnants of tree throws (the former root boles of trees or shrubs).  |
|------------------------------------|--|
| Area of enhanced magnetic activity | This refers to a region characterized by elevated magnetic fluctuations lacking any perceptible structure or aetiology. Such phenomena may be attributable to archaeological factors or geological anomalies.  |
| Agricultural features              |  |
| Former field<br>boundary           | Generally, a linear anomaly, frequently manifesting as a positive response resembling a bank and flanked on either side by negative response ditches, can typically be ascribed to former boundaries depicted on historical maps.  |
| Ridge and furrow                   | A sequence of regular, linear anomalies displaying a uniform, broad distance between them. It may indicate recent activity if their orientation parallels that of extant field boundaries.   |
| Plough lines                       | A series of regular linear anomalies exhibiting a uniform narrow spacing. It may indicate recent activity if their orientation parallels that of extant field boundaries.  |
| Field drains                       | A series of regularly spaced linear anomalies.   |
| Non-archaeological                 | features   |
| Magnetic interference              | An extraneous influence that impacts survey data, typically transpires at the periphery of surveys proximate to fences containing ferrous materials, around pylons, and subsurface utilities.  |
| Ferrous                            | While these anomalies might be linked to an archaeological artifact of interest, they are typically deemed insignificant unless they form a pattern or constitute part of a larger feature. These anomalies are usually attributed to miscellaneous, contemporary ferrous-rich debris, including fragments of brick and tile, as well as objects such as horseshoes or broken ploughshares, which are situated within the topsoil and yield a dipole response. |
| Natural / Geology                  | These natural variations can yield substantial magnetic discrepancies in readings.   |

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**Figure 4:** Geophysical survey greyscale plot overlaid on Google satellite imagery (Map data ©2024 Google).



**Figure 5:** Geophysical survey greyscale plot overlaid with an interpretive layer as discussed in section 4 overlain on google satellite imagery.

## 4. RESULTS

- 4.1 The geophysical survey was conducted on Wednesday, September 11, 2024.
- 4.2 The total surveyed area measured 1.52 hectares and included all areas suitable for geophysical surveying within the proposed development site (Figs 4 and 5). The areas not surveyed included two spoil heaps, a 30m exclusion zone (see above), and the far western part of the proposed development area, which is currently being used as a compound for an adjacent development (Figs 4 and 5).
- 4.3 A variety of anomalies were identified in the survey results, including field boundaries, possible pits, and linear features. The northwestern half of the site showed significant disturbance.
- 4.4 The survey results were "clipped" to +/- 20nT and are presented as a greyscale plot overlaid on satellite mapping in Figure 4. Figure 5 shows an interpretation of the survey results, which are categorized and discussed below. Additionally, a trace plot and a gridded greyscale plot are included in APPENDIX 1.
- 4.5 As with all geophysical surveys, the possibility of further archaeological remains cannot be dismissed. Significant archaeological remains may survive but fail to produce a magnetic response, especially given the magnetic disturbance in the northwestern part of the survey area.

Area of Disturbance (dashed orange)

4.6 The northwestern of the survey area showed significant magnetic disturbance. A review of aerial photography of the proposed development area revealed that, during previous development projects, the site had been used for soil dumping (Photo 2) which is represented by the magnetic disturbance in the survey results.

This disturbance is not considered to be of archaeological interest, but it may hinder the identification of any archaeological remains present in the northwestern part of the site.

Field Boundaries (pink)

4.7 Two linear anomalies, almost certainly associated with former field boundaries, ran northeast-southwest along the eastern edge of the survey area. These are thought to be the predecessors of, or drainage features associated with, the modern field boundaries, which run parallel to the geophysical anomalies. These anomalies are not considered archaeologically significant.

Possible Linear Features (green)

4.8 In the southeastern part of the survey area, two weak linear anomalies were identified, which could potentially be archaeological. However, these anomalies lack a coherent form, and due to their weak signals and lack of context, it is difficult to determine if they are anthropogenic. A more likely explanation is that these anomalies represent minor variations in the underlying geology.

Possible Pits (yellow)

4.9 Several isolated pit-like anomalies were found in the southeastern part of the survey area, where the ground had not been heavily disturbed. These anomalies are not dipolar, indicating they are not caused by ferrous materials in the topsoil. However, they are just as likely the result of further ground disturbance, rock removal, or geological variations.

Geological Banding (dashed blue)

4.10 Geological banding was observed in the southern part of the survey area. These faint anomalies are common and result from differences in the composition of the bedrock or superficial geology. They are highly unlikely to be related to archaeological activity.

Ferrous Material (not marked)

4.11 In gradiometer surveys, dipole anomalies are commonly observed across various sites and appear as small discrete points with strong dark and light responses on the greyscale plot. Unless they form a distinct pattern or are part of a larger feature, they are not thought to be of archaeological significance. These anomalies are usually caused by modern ferrous-rich debris, often agricultural in nature, such as machinery parts, horseshoes, ploughshares, or highly fired materials like brick and tile fragments found in the topsoil. In rare cases, isolated dipole anomalies may reflect features of archaeological interest, but only further intrusive investigation can confirm this.

## 5. CONCLUSIONS

- 5.1 A Historic Environment Desk-Based Assessment of the development area as it was in 2020 (Jenkins 2020) identified that no known archaeological assets were located within the development area but acknowledged that significant archaeological assets were recorded in the surrounding area.
- 5.2 Non-intrusive methods of archaeological investigation such as geophysical survey are often recommended to better understand the archaeological potential that buried archaeological remains survive within a development area where desk-based assessments identify that little is known.
- 5.3 Therefore, a magnetometer survey was commissioned to provide a better indication of the archaeological potential of the site and if required, enable targeting of any further archaeological mitigation requirements before or during the development. A WSI for this work was approved by Heneb -DM prior to the survey commencing.
- 5.4 The underlying geological layers appeared conducive to gradiometer surveying. However, the northwestern part of the site was significantly magnetically disturbed. This appears to be a likely consequence of the recent deposition of soil across the site during nearby housing development. If archaeological remains were present in this area, it is probable they would be undetectable by magnetometer survey.
- 5.5 One definitive feature was detected within the survey area: a pair of field boundaries along the eastern edge of the site. This anomaly is most likely modern in date and likely to be of low archaeological significance.
- 5.6 Several possible linear and pit-like anomalies were present in the southeastern part of the survey area that could be archaeological in origin, although they are unlikely to be highly archaeologically significant. However, it is also possible that they are the result of variations in the underlying geology or further ground disturbance.
- 5.7 No other clear features of potential archaeological interest or significance were noted within the survey results. However, the presence of potential archaeological features in the area of magnetic disturbance cannot be completely ruled out.

## 6. SOURCES

## **Published**

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Cook, N. 2004. Prehistoric Funerary and Ritual Sites Project: Pembrokeshire. Cambria Archaeology Report No. 2004/85.

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Darvill, T. (2008). The Concise Oxford Dictionary of Archaeology. Oxford University Press.

Edwards, N. 1997. Landscape and Settlement in Mediaeval Wales. Oxbow.

Longman, T. 2009. Archaeological Evaluation of Land at Longstone Farm. Station Road, Letterston for Eatonfield Developments. Bristol and Region Archaeological Services Report Number: 2191/2009.

Savory, H.N. 1963. Excavations at a Third Round Barrow at Pen-Dre, Letterston.

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## **Online resources**

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### 7. **GLOSSARY**

**Fluxgate Gradiometer** 

An instrument used to measure magnetism to search for areas of disturbed ground that may be subsurface associated with archaeological features.

nanoTesla (nT)

A unit of measurement of a magnetic field.

Ferrous object

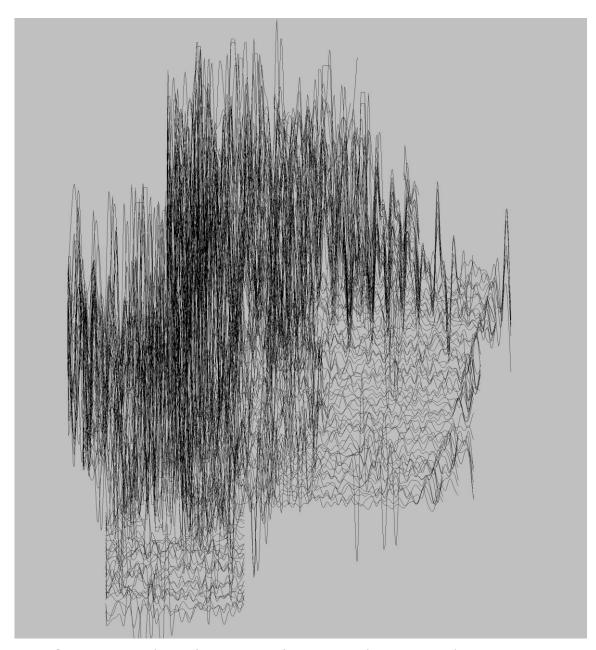
Metals and alloys that contain iron.

**Dipole** 

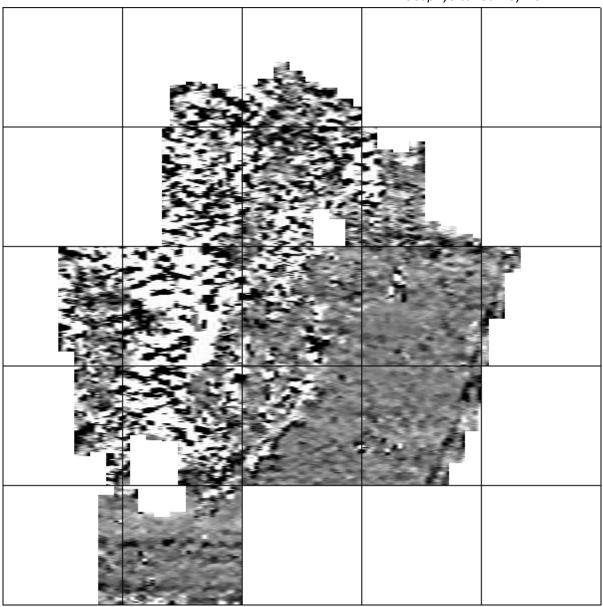
An anomaly consisting of a single positive response with an associated negative response forming a 'halo effect'. The negative and positive response is of equal magnitude but opposite polarity and are caused by the same feature. Dipole anomalies are very commonly observed across a range of sites, particularly agricultural land. Generally, unless the dipoles form part of a larger pattern or feature they are regarded as not significant. They are usually the result of modern ferrous rich debris such as brick and tile fragments as well as objects such as horseshoes or broken ploughshares, which lie within the topsoil.

Land at Station Road, Letterston, Pembrokeshire: Geophysical Survey 2024

### **APPENDIX 1**



**Figure 6:** Geophysical survey results presented as a trace plot giving an indication of the strength of responses. North is up the page.



**Figure 7:** Geophysical survey results presented as a minimally processed greyscale plot.

Each square is represented a 30m² grid, north is up the p



# LAND AT STATION ROAD, LETTERSTON, PEMBROKESHIRE: WRITTEN SCHEME OF INVESTIGATION FOR GEOPHYSICAL SURVEY

#### 1 INTRODUCTION

- 1.1 Dyfed Archaeological Services, a contracting arm of Heneb the Trust for Welsh Archaeology, was commissioned by Stantec Ltd on behalf of the Ateb Group to provide a methodology for a geophysical survey at land at Station Road, Letterston, Pembrokeshire (centred on SM 95024 29756; Figure 1).
- 1.2 The proposed development area was subject to a historic environment desk-based study (Jenkins 2020), which found that significant archaeological remains dating to the Neolithic and Bronze Age periods are located just to the west/northwest of the proposed development area. These include the possible henge site (PRN 2393) and the Scheduled Monument of Pen Dre Round Barrow (PE 069), one of at least three round barrows running northeast by southwest to the west of the development area.
- 1.3 This study concluded that there was a high potential for significant archaeological remains dating to the Neolithic and Bronze Age to be present within the proposed development area. A geophysical survey was suggested to determine whether further archaeological mitigation might be required.
- 1.4 Several archaeological investigations have been conducted immediately to the west of the proposed development area, including two archaeological appraisals by Cambria Archaeology (now Dyfed Archaeological Services) in 2007 and 2019. These investigations included two phases of geophysical survey (Stratascan 2008 & 2009) and a trial trench evaluation (Longman 2009). While the geophysical survey suggested that several ring ditches might be present, the evaluation found the anomalies to be geological in nature. No significant archaeological remains were identified.
- 1.5 The results of the geophysical survey should provide further information on the archaeological potential of the site by identifying subsurface features that could be indicative of archaeology.
- The geophysical survey will involve using a fluxgate gradiometer to conduct a rapid scan of the site area. This instrument measures tiny variations in the earth's magnetic field, which can indicate the presence of buried features such as ditches, pits, walls, or postholes that are not visible on the ground surface. Readings will be taken at medium resolution on traverses 1.0m wide and every 0.25m within a 30m x 30m grid across the field. A Trimble GNSS system will be used to tie the survey grid into the British coordinate system. This resolution allows for a relatively speedy survey (using a single gradiometer and a team of two) while providing good results, assuming that the area's geology is conducive to gradiometer survey and that the site does not contain obstructions that would hinder an even walking pace.
- 1.7 The proposed development area contains an artificial badger sett in its southeastern corner (Figure 2). Additionally, there are two known active badger setts to the southwest of the proposed development area (Figure 2: Setts A + B). These were subject to a badger survey in 2023 (Walters) which recommended a 30m exclusion zone. No works will be permitted in these areas.
- 1.8 This Written Scheme of Investigation adheres to the Chartered Institute for Archaeologists (CIfA) Standard and Guidance for archaeological geophysical surveys (2014).

- 1.9 Dyfed Archaeological Services operates according to best professional practice. The organization has its own Health and Safety Policy, and all works are covered by appropriate Employer's Liability and Public Liability Insurances. Copies of these documents are available upon request.
- 1.10 Heneb- The Trust for Welsh Archaeology is a CIfA Registered Organisation.

#### 2 AIM AND OBJECTIVES OF THE PROJECT

2.1 This document provides a scheme of works for:

The implementation of a geophysical survey by Dyfed Archaeological Services within the area proposed for residential development at land west of Station Road, Letterston, Pembrokeshire SM 95024 29756;. A report and archive of the results will be prepared.

- 2.2 The general aims of the overall archaeological investigations are:
  - To determine the presence or absence of archaeological deposits or remains,
  - To record the character, date location and preservation of any archaeological remains
  - on site that are affected by the proposed new works,
  - To record the nature and extent of any previous damage to archaeological deposits or
  - remains on site in the area of the new works.
- 2.3 The specific aims of the investigation are:
  - To undertake a geophysical survey using gradiometer of the entire development area,
  - To determine the likely presence or absence of any archaeological remains within the proposed development area,
  - To establish the character and extent of any potential archaeological remains within the
  - site area that could be affected by the proposed works;
  - To inform the need (or otherwise) for any future archaeological works on the site by
  - means of an illustrated report on the geophysical survey.
- 2.4 The objectives of the project are:
  - to undertake work in accordance with national best practice and quidelines,
  - to archaeologically record through geophysical survey, any deposits, features or
  - structures of significance,
  - to analyse any remains with reference to the existing documentary evidence for
  - historical development and land use,
  - to produce a written account to include: summary; site description; anomaly
  - descriptions, possible interpretation and conclusions,
  - Provide an ordered archive.
- 2.5 The following tasks will be completed:
  - Provision of a Written Scheme of Investigation to outline the methodology for the geophysical survey which Dyfed Archaeological Services will undertake (this document).

- To identify the presence/absence of any potential archaeological deposits through gradiometer survey;
- To use the information obtained to design a specification for future mitigation at the site, which will enable any identified remains to be appropriately investigated and recorded where they will be affected by the proposed development.

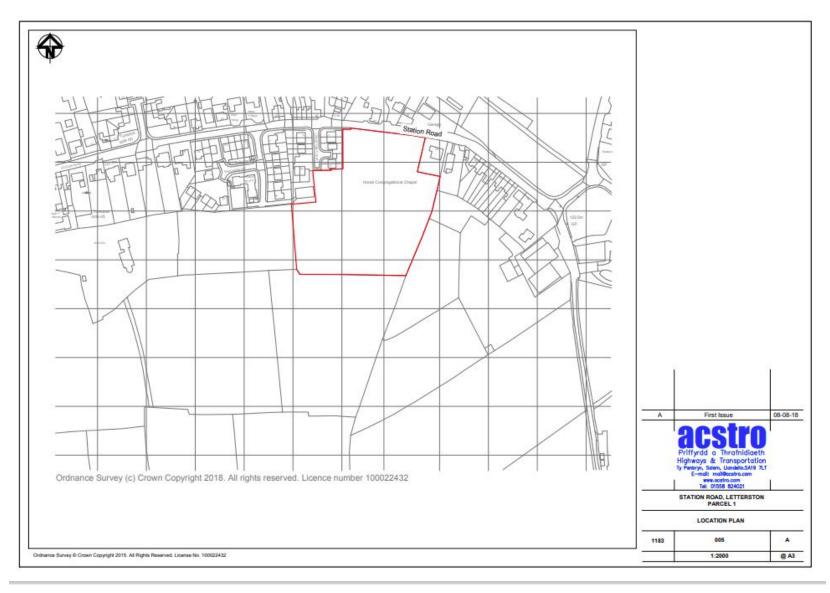


Figure 1: Location map of proposed development area at Station Road, Letterston, Pembrokeshire. Plan supplied by client.



Figure 2: Showing badger setts located in 2023 Badger Survey (Walters). Supplied by client, not necessarily to scale.

#### 3 GEOPHYSICAL SURVEY METHODOLOGY

- 3.1 The results of the geophysical survey should provide further information of the archaeological potential of the site through the identification of subsurface features which could be indicative of archaeology. The aim of the survey is to assess, characterise and locate surviving below ground archaeology.
- 3.2 A localised site grid using 20m x 20m or 30m x 30m grids will be established and marked out physically on the ground to within 0.1m+/- accuracy. The survey grid will be tied into the Ordnance Survey (OS) grid using a Trimble R8s integrated GNSS system with TC3 controller.
- 3.3 A fluxgate gradiometer will be used for the survey, which detects subtle variations in the earth's magnetic field. Technical information is given in Appendix I at the end of this document.
- 3.4 Data is collected using the zigzag traverse method within each grid with a sample interval (x-axis) of 0.25m (four readings per meter) and a line separation (y-axis) of 1.0m. The line separation is reduced to 0.5m traverses if greater resolution is required.
- 3.5 Ground coverage is important to aid with interpretation and as large of a survey area as practicable possible will be surveyed. But efforts will be made to keep a suitable distance from external ferrous sources that could impact adversely upon the results.
- 3.6 The data will be processed using *Terrasurveyor 3.0.36.1* and presented with a minimum of processing as a grey-scale plot. The main magnetic anomalies will be identified and plotted onto the local topographical features.
- 3.7 The survey results and interpretation diagrams should not be seen as a definitive model of what lies beneath the ground surface, not all buried features will provide a magnetic response that can be identified by the gradiometer. In interpreting those features that are recorded the shape is the principal diagnostic tool, along with comparison with known features from other surveys. The intensity of the magnetic response could provide further information, a strong response for example indicates burning, high ferric content or thermoremnancy in geology. The context may provide further clues but the interpretation of many of these features is still largely subjective.
- 3.8 All measurements given will be approximate as accurate measurements are difficult to determine from fluxgate gradiometer surveys. The width and length of identified features can be affected by its relative depth and magnetic strength.
- 3.9 The interpretation diagrams will be used to identify the presence/absence of any potential archaeological deposits and features and will help decide whether further archaeological investigation is necessary in this area.
- 3.10 The interpretation diagrams will be used to identify the presence/absence of any potential archaeological deposits and features and will help decide whether further archaeological mitigation is necessary in this area, following discussions with the archaeological advisor to the planning authority.

#### 4 POST-FIELDWORK REPORTING AND ARCHIVING

- An archive will be prepared if it meets the requirements of the Dyfed Archaeological Services archive retention policy (2018). If it does, then data recovered during the evaluation 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 2011), and the procedures recommended by the National Monuments Record, Aberystwyth. The National Standards for Wales for Collecting and Depositing Archaeological Archives produced by the Federation of Museums and Art Galleries of Wales will also be adhered to. Digital archives will be collated using the Royal Commission on the Ancient and Historical Monuments of Wales systems (2015) and deposited with the RCAHMW. The Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) shall be followed.
- 4.2 A Data Management Plan (DMP) (Appendix II) for this project has been produced in accordance with the Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives (CIfA 2014, updated 2020).
- 4.3 The results of the fieldwork will be assessed in local, regional and wider contexts.
- 4.4 The results will be used to inform subsequent design considerations of the proposed development so that they can aim to avoid impacts upon any archaeological remains or that further archaeological mitigation can be implemented before such remains are disturbed.
- 4.5 A summary of the project results, excluding any confidential information, may be prepared for wider dissemination (e.g. Archaeology in Wales and special interest and period-specific journals).
- 4.6 The report will be prepared to follow the Standard and Guidance for Archaeological Geophysical Survey (CIfA S&G: AWB 2014).
- 4.7 Digital copies of the report will be provided to the client, as well as the Heneb Development Management (Dyfed Region).

#### 5 STAFF

- 5.1 The project will be managed by Fran Murphy, Head of Dyfed Archaeological Services.
- 5.2 The on-site works will be undertaken by experienced geophysicists from Dyfed Archaeological Services.

#### **6 QUALITY ASSURANCE**

- 6.1 Dyfed Archaeological Services has considerable experience of undertaking all categories of archaeological fieldwork and always operates to best professional practice; adhering to CIfA guidelines where appropriate. The Trust is a Registered Organisation with CIfA, and all staff abide by their code of conduct and adhere to their relevant standards and guidance.
- 6.2 Dyfed Archaeological Services operate robust internal monitoring procedures that ensure that the standard of each project is maintained from commencement to completion.

#### 7 MONITORING

7.1 The fieldwork may require monitoring by the archaeological advisor to the planning authority, Heneb – Development Management (Dyfed Region), who should be told of the commencement of the works. The fieldwork may also need to be monitored by the Head of Dyfed Archaeological Services.

#### 8 HEALTH AND SAFETY

- 8.1 All permanent members of staff should be CSCS registered.
- 8.2 Service information should be obtained prior to the start of the works.
- 8.3 A health and safety risk assessment must be prepared prior to the works commencing to ensure that all potential risks are minimised.
- 8.4 The site staff will go through the health and safety risk assessment prior to works commencing and all site staff must sign the document to confirm that they have read, understood and will comply with the document.
- 8.5 All site inductions, H&S procedures, H&S constraints and site rules of the client or any on-site contractor should be made known to the archaeological staff at the start of the works.
- 8.6 All relevant health and safety regulations must be followed, including compliance with Welsh Government guidelines on working practices and guidance issued by CIfA.
- 8.7 Safety helmets, high visibility vests and boots are to be used by all site personnel as necessary. The developer will make all site staff aware of any other PPE that may be required.
- 8.8 Working with machinery: all staff must ensure that their presence on site is communicated to all relevant site contractor staff, especially the machine operator. The archaeologist observing the topsoil stripping by machine will establish a safe working procedure with the machine operator at the start of work. This will include explaining the purpose of the works itself and the method by which the trenches shall be machined. This will include ensuring that the machine driver is aware that topsoil is stripped carefully to avoid disturbing archaeology. This will also include discussing the methodology for safe working, ensuring that no machining is done without an archaeologist being present.

#### 9 ARBITRATIONS

9.1 Any dispute or disagreement arising out of a contract in relation to this work shall be referred for a decision to the Chartered Institute of Archaeologist's arbitration scheme.

#### 10. SOURCES

Jenkins, L, 2020 Land at Station Road, Letterston, Pembrokeshire: Historic Environment Desk-Based Assessment. Report Number: 2020-14

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Walters, G, 2023 Badger Survey at Parc Maen Hir (phase 2). Badger Ecology Ltd

#### **APPENDIX I - TECHNICAL INFORMATION**

The survey will be carried out using a Bartington Grad601-2 dual Fluxgate Gradiometer, which uses a pair of Grad-01-100 sensors. These are high stability fluxgate gradient sensors with a 1.0m separation between the sensing elements, giving a strong response to deeper anomalies.

The instrument detects variations in the earth's magnetic field caused by the presence of iron in the sub-surface material. This is usually in the form of weakly magnetised iron oxides, which tend to be concentrated in the topsoil. Features cut into the subsoil and backfilled or silted with topsoil therefore contain greater amounts of iron and can therefore be detected with the gradiometer. There are also other processes and materials that can produce detectable anomalies. The most obvious is the presence of pieces of iron in the soil or immediate environs, which usually produce very high readings. Features such as hearths or kilns also produce strong readings because fired clay acquires a permanent thermo-remnant magnetic field upon cooling.

The Bartington Grad601 is a hand-held instrument, and readings are taken automatically as the operator walks at a constant speed along a series of fixed length traverses. The sensor consists of two vertically aligned fluxgates set 1.0m apart. Their Mumetal cores are driven in and out of magnetic saturation by an alternating current passing through two opposing driver coils. As the cores come out of saturation, the external magnetic field can enter them producing an electrical pulse proportional to the field strength in a sensor coil. The high frequency of the detection cycle produces what is in effect a continuous output (Clark 1996).

The gradiometer can detect anomalies down to a depth of approximately one metre. The magnetic variations are measured in nanoTeslas (nT). The earth's magnetic field strength is about 48,000 nT; typical archaeological features produce readings of below 15nT although burnt features and iron objects can result in changes of several hundred nT. The instrument is capable of detecting changes as low as 0.1nT.

The gradiometer includes an on-board data-logger. Readings in the surveys will be taken along parallel traverses of one axis of a grid made up of 30m x 30m squares. The traverse intervals will be set 0.5m apart. Readings are logged at intervals of 0.25m along each traverse giving 3200 readings per grid square (medium resolution on 0.5m traverses),

A Trimble GPS will be used to set out the survey grid and to tie the survey grid into the local Ordnance Survey grid. The grid will be marked out with the use of temporary bamboo canes and small plastic pegs. All markers will be removed from site once the surveys are complete.

Processing will be performed using *TerraSurveyor 3.0*. The data will be presented with a minimum of processing. The presence of high values caused by ferrous objects, which tend to hide fine details and obscure archaeological features, will be 'clipped' to remove the extreme values allowing the finer details to show through.

The processed data will be presented as grey-scale plots overlaid on local topographical features. Raw data and trace plots (x-y) will also be provided. The main magnetic anomalies will be identified and plotted onto the local topographical features as a level of interpretation.

The resulting survey results and interpretation diagrams should not be seen as a definitive model of what lies beneath the ground surface, not all buried features will provide a magnetic response that can be identified by the

gradiometer. In interpreting those features that are recorded the shape is the principal diagnostic tool, along with comparison with known features from other surveys. The intensity of the magnetic response could provide further information, a strong response for example indicates burning, high ferric content or thermoremnancy in geology. The context may provide further clues but the interpretation of many of these features is still largely subjective.

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The interpretation diagrams will be used to identify the presence/absence of any potential archaeological deposits and features and will help decide whether further archaeological mitigation is necessary in this area, following discussions with the archaeological advisor to the planning authority.

#### **APPENDIX II:**

#### **DATA MANAGEMENT PLAN**

This Data Management Plan (DMP) is produced in accordance with the *Standard* and guidance for the creation, compilation, transfer and deposition of archaeological archives (Chartered Institute for Archaeologists 2014, updated 2020). The table below is based on the Work Digital / Think Archive guidance for digital archives prepared by DigVentures, on behalf of Archaeological Archives Forum and in partnership with the Chartered Institute for Archaeologists. The project was funded by Historic England (Project No. 7796).

Section 1: Project Administration

FS24-027- Land at Station Road, Letterston, Pembrokeshire:

ERN (if known)

TBC

Project Type

Geophysical Survey

Client

Stantec on behalf of the Ateb Group

Project Manager / Data Contact

Fran Murphy

Principal Archaeologist on site

Luke Jenkins

Date DMP created

19/08/2024

Date DMP last updated

19/08/2024

#### Related data management policies

Written Scheme of Investigation

Chartered Institute for Archaeologists (CIfA) Standards & Guidance

Heneb - Dyfed Archaeology archive retention policy

Brown 2011, Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation

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

RCAHMW, 2015, RCAHMW guidelines for Digital Archives, Version 1

WAT, 2018, Guidance for the Submission of Data to the Welsh Historic Environment

Records (HERs)

#### Section 2: Data Collection

#### Data Type (Delete as appropriate)

#### **Documents**

Written Scheme of Investigation, Risk Assessment - Word doc & PDFs

Site notes - paper copies, scanned and saved as PDFs.

Final report - Word doc & PDF

Illustrations - Adobe Illustrator/Affinity Designer files, PDFs

#### **Images**

Site photographs – Jpeg & Tiff (for archive)

Other collected data (scans, archive material, social media images etc) - Jpegs

#### **Geophysical Survey**

In house survey - XGD files, XCP files

#### Survey

In house surveys - .dxf files, GIS files (see below)

#### GIS

Mapinfo files, Esri Shapefiles.

#### Data acquisition

All data will be collected as per the methodologies and guidance stated in the WSI (Fieldwork / Methodology).

#### Section 3: Documentation and metadata

#### Documentation and metadata accompanying the data

All data recovered will be archived in accordance with the guidance stated in the WSI (Post Fieldwork Reporting & Archiving)

#### Section 4: Ethics and legal compliance

#### Management of any ethical, copyright and Intellectual Property Rights (IPR) issues

All personal data collected during the course of the project will be handled in accordance with Heneb-Dyfed Archaeology *Personal Data Protection Policy* (2018, revised 2020) and current *Code of Practice*.

Licence agreements will be established, and Copyright permissions will be sought as appropriate (eg reproduced mapping extracts, archive material, specialist reports) prior to the submission of the data and/or inclusion in the publication of the project results.

#### Section 5: Data Security: Storage and Backup

#### Data storage, accessibility, and safety during research

All site-produced data will be stored digitally at the first available opportunity. All digital information is stored on the Heneb-Dyfed Archaeology server, accessible by members of the staff. This will be checked regularly by the Project Manager. All digital data on the server is backed-up at regular intervals. The server contains ample capacity for all anticipated site data, and appropriate protocols are in place to manage any potential digital malfunction or cyber-attack.

#### Section 6: Selection and Preservation

#### Data retention, sharing, and preservation

Data will be retained as per Heneb-Dyfed Archaeology Archive Retention Policy (2018).

#### Long-term preservation plan for the dataset

The digital archive relating to the project will be deposited with the NMR, held and maintained by the RCAHMW, Aberystwyth and will be created in accordance with their practices.

The final report will be submitted to the regional Historic Environment Record in PDF format, along with any additional information they require.

If a different digital repository to the NMR is used, their own procedures will be established at the outset of a project and followed.

If a project includes artefacts to be deposited at a museum, arrangements will be made prior to the commencement of the project, and a copy of the digital archive will be sent with the artefacts. Archiving costs are included within the project budget.

#### Section 7: Data Sharing

#### Sharing and accessibility

The dissemination of data is detailed in the WSI (Post-Fieldwork Report and Archiving).

#### Section 8: Responsibilities

#### Responsibilities

Data collection, storage and manipulation will be carried out by the site team. The Project Manager will be responsible for the implementation of the data management plan.

# acstro

# Transport Statement

Land Between
Langstone Court & 62 Station Road
(Phase 3 Land)
Letterston
Pembrokeshire

September 2024

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#### **Appendices**

Appendix 1 Location Plan

Appendix 2 Site Context

Appendix 3 Indicative Access Arrangement

Appendix 4 TRICS Trip Rate Data

#### **Revision History**

| Α | 30 <sup>th</sup> August 2024    | First Issue  |
|---|---------------------------------|--------------|
| В | 16 <sup>th</sup> September 2024 | Second Issue |
|   |                                 |              |
|   |                                 |              |

1183-ACS-ZZ-XX-RP-T-241-B Transport Statement.docx

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#### 1 Introduction

- 1.1 Acstro has been appointed to prepare a Transport Statement to support the promotion of land between Langstone Court and 62 Station Road, Letterston as a candidate site for inclusion, as suitable for residential development, in Pembrokeshire County Council's Replacement Local Development Plan (LDP2).
- 1.2 The candidate site's location is shown in Appendix 1.

#### Appendix 1 Location Plan

- 1.3 The site is currently undeveloped. It is considered that the candidate site has the potential to deliver up to 42 dwellings. There are two possible access points from Parc Maen Hir and from Langstone Court, existing cul-de-sac developments that are accessed from Station Road. These two access options have been discussed and agreed with Pembrokeshire County Council's Highways Department.
- 1.4 This document considers the transport implications of the development of the candidate site. In particular, this Transport Statement demonstrates that the candidate site is in a sustainable location that is closely related to existing facilities and services and is accessible to pedestrians, cyclists and public transport users. It is also demonstrated that safe vehicular access to the site can be provided.
- 1.5 The structure of the Transport Statement is as follows:
  - Section 2 describes the relevant planning policy context that is relevant in terms of transport issues;
  - Section 3 describes the site's location, its proximity to services and facilities and its accessibility by all forms of transport.
  - Section 4 describes the proposed development and its access arrangements. An
    estimate of the likely trip generation of the proposed development of the land is
    also provided.
  - Section 5 provides a summary and conclusion.



#### 2 Policy Context

#### Future Wales - The National Plan 2040

- 2.1 This is the national development framework that sets out the direction for development in Wales to 2040.
- 2.2 Policies 11 and 12 relate to national and regional connectivity, respectively. These seek to encourage longer-distance trips to be made by public transport, while also making longer journeys possible by electric vehicles. In urban areas, to support sustainable growth and regeneration, the priorities are improving and integrating active travel and public transport. In rural areas the priorities are supporting the uptake of ultra-low emission vehicles and diversifying and sustaining local bus services. Active travel must be an essential and integral component of all new developments.
- 2.3 Planning authorities must act to reduce levels of car parking in urban areas, including supporting car-free developments in accessible locations and developments with car parking spaces that allow them to be converted to other uses over time. Where car parking is provided for new non-residential development, planning authorities should seek a minimum of 10% of car parking spaces to have electric vehicle charging points.

#### Planning Policy Wales (12th Edition)

- 2.4 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales.
- 2.5 In terms of transport related policies paragraph 4.1.1 states that "the planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport".
- 2.6 Paragraph 4.1.10 states that "the planning system has a key role to play in reducing the need to travel and supporting sustainable transport, by facilitating developments which:
  - are sited in the right locations, where they can be easily accessed by sustainable modes of travel and without the need for a car;
  - are designed in a way which integrates them with existing land uses and neighbourhoods; and
  - make it possible for all short journeys within and beyond the development to be easily made by walking and cycling."
- 2.7 PPW advocates a sustainable transport hierarchy for planning, the hierarchy being, from top to bottom:
  - Walking and Cycling
  - Public Transport
  - Ultra Low Emission Vehicles
  - Other Private Motor Vehicles
- 2.8 It is Welsh Government policy to require the use of a sustainable transport hierarchy in relation to new development, which prioritises walking, cycling and public transport ahead of the private motor vehicles.
- 2.9 The transport hierarchy recognises that Ultra Low Emission Vehicles (ULEV) also have an important role to play in the decarbonisation of transport, particularly in rural areas with limited public transport services. To this end the provision of ULEV charging points is encouraged within new developments.



2.10 PPW recommends (4.1.51) that "a design-led approach to the provision of car parking should be taken, which ensures an appropriate level of car parking is integrated in a way which does not dominate the development. Parking provision should be informed by the local context, including public transport accessibility, urban design principles and the objective of reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Planning authorities must support schemes which keep parking levels down, especially off-street parking, when well designed".

#### Llwybr Newydd - The Wales Transport Strategy 2021

- 2.11 This document sets out the Welsh Government's vision for how the country's transport system can help deliver on a pathway to creating a more prosperous, green and equal society. It lists its priorities as being:
  - 1. Bringing services to people in order to reduce the need to travel. To this end a target has been set that of 30% of the workforce works remotely on a regular basis.
  - 2. Allow people and goods to move easily from door to door by accessible, sustainable and efficient transport services and infrastructure.
  - 3. Encourage people to make the change to more sustainable transport.
- 2.12 Modal shift is at the heart of Llwybr Newydd. This means the proportion of trips made by sustainable modes increases and fewer trips are made by private cars.
- 2.13 The Welsh Government has set a target of 45% of journeys to be made by public transport, walking and cycling by 2040. This represents an increase of 13 percentage points on the estimated baseline (2021) mode share of 32%.

#### **TAN18 Transportation**

- 2.14 Planning Policy Wales Technical Advice Note 18 (TAN18) details the Welsh Government Government's policies in terms of transportation and repeats the general principles advocated in PPW i.e. that development is encouraged in sustainable, accessible, locations that will reduce the need to travel by car. Its aim is to promote an efficient and sustainable transport system and to counter the negative impacts associated with road traffic growth, for example increased air pollution, green house gases and congestion (2.1). It sees the integration of transport and land use planning as key (2.3) in achieving the Welsh Government Governments' sustainable development policy objectives by:
  - · promoting travel efficient settlement patterns;
  - ensuring new development is located where there is good access by public transport, walking and cycling thereby minimizing the need for travel and fostering social inclusion;
  - managing parking provision;
  - ensuring that new development includes appropriate provision for pedestrians, cycling, public transport, and traffic management and parking/servicing;
  - encouraging the location of development near other related uses to encourage multi-purpose trips; and
  - ensuring that transport infrastructure necessary to serve new development allows existing transport networks to continue to perform their identified functions.



- 2.15 The needs of walkers and cyclists must be taken into consideration and the use of these most sustainable forms of transport encouraged in all developments (TAN18 Chapter 6). Similarly, all development should be accessible by public transport (Chapter 7).
  - The Active Travel (Wales) Act 2013
- 2.16 The Active Travel (Wales) Act 2013 is Welsh Government legislation aimed to support an increase in the level of walking and cycling in Wales; to encourage a shift in travel behaviour to active travel modes, and to facilitate the building of walking and cycling infrastructure.
- 2.17 The Active Travel (Wales) Act 2013 makes it a legal requirement for local authorities in Wales to map and plan for suitable routes for active travel, and to build and improve infrastructure for walking and cycling every year. It creates new duties to consider the needs of walkers and cyclists and make better provision for them. It also requires the consideration of walking and cycling as a mode of transport and the Act focuses on the promotion of walking and cycling for purposeful journeys, rather than as a purely recreational activity.
- 2.18 The Act is supported by the Active Travel Action Plan Wales (2014), and many of the actions of the Active Travel Action Plan Wales document also benefit recreational or competitive walking and cycling. 'Walking' in the Active Travel Action Plan for Wales includes the use of wheelchairs and mobility scooters and 'cycling' includes the use of electric bikes, but not motorcycles.
  - Pembrokeshire Local Development Plan (LDP) 2006 -2021
- 2.19 Letterston is classified as a Service Centre in policy SP 12, which sets out the County's settlement hierarchy. It is one of four Service Centres in Pembrokeshire. Paragraph 5.78 of the LDP states that:

The Vision for Service Centres is that they consolidate and develop their roles as places where a good range and choice of services are provided, are accessible to their own population and a wider rural hinterland, and reduce the need for the rural population to travel to towns for retail, leisure and employment purposes. The four Service Centres have excellent public transport connections and are sustainable locations for development in rural Pembrokeshire.



#### 3 Location & Accessibility

#### Location

3.1 The site is shown in the context of nearby facilities and the surrounding transport network in Appendix 2.

#### Appendix 2 Site Context

- 3.2 The site is located immediately south of Station Road. To the east of the site there are residential properties along Station Road with undeveloped land to their rears. Langstone Court and Parc Maen Hir are located on the western side of the site. These are both residential cul-de-sac developments. Planning permission for a 26-dwelling extension to the Parc Maen Hir development was granted in 2020 under planning reference 19/1098/PA. To the south of the candidate site there is open countryside.
- 3.3 Letterston is located approximately 16km north of Haverfordwest and 9km south of Fishguard. Letterston is identified as a Service Centre in the current LDP in recognition of the good range of services and facilities that it provides to its residents and the surrounding rural hinterland.
- 3.4 Letterston has developed around the crossroads that is formed by the A40 trunk road, St. David's Road and Station Road. The candidate site is located to the south of Station Road and approximately 600m to the east of the crossroads at Letterstone's centre.
- 3.5 A selection of Letterstone's services and facilities together with approximate walk distances from the site is provided in the table below.

| Facility   | Walk Distance from Site |
|--|-------------------------|
| Clynderwen & Cardiganshire Farmers                       | 200m                    |
| Letterston Memorial Hall / Playing Field / Tennis Courts | 200m                    |
| Letterston Square:                                       |                         |
| Restaurant / Take-Away                                   | 400m                    |
| Butchers / Post Office                                   |                         |
| Newsagent  | 650m                    |
| Restaurant / Public House (Harp Inn)                     | 1.1km                   |
| Public House (The Jubilee)                               | 1.2km                   |
| Saint Giles Church                                       | 1.2km                   |
| Ysgol Ger y Llan (Primary School)                        | 1.2km                   |

#### Table 1 Walk Distances from the Site to Local Facilities

- 3.6 The walk distances quoted above are measured from the proposed site entrance and assume a route along the public highway network.
- 3.7 A wider range of services and facilities can be accessed in Haverfordwest, which is linked to Letterston by good public transport services (described later).
- 3.8 In summary therefore, the site is in an appropriate location where there is a wide range of services and facilities nearby. This will minimise the distance travelled by residents of the site to access services and increase the possibility that sustainable modes of travel are used to make those trips.



#### **Active Travel**

- 3.9 The Chartered Institution of Highways and Transportation's (CIHT) 'Planning for Walking' (2015) states that "Across Britain about 80 per cent of journeys shorter than 1 mile (1.6km) are made wholly on foot something that has changed little in thirty years. In 2012 walkers accounted for 79 per cent of all journeys shorter than 1 mile, but beyond that distance cars are the dominant mode (DfT, annual)". It is considered that 2km, a distance that can be walked in around 25 to 30 minutes, represents a reasonable distance to expect that walking can be a viable option.
- 3.10 As described above there are a number of facilities available within 2km walking distance to the candidate site.
- 3.11 The site is accessible to pedestrians via the existing footways that run along Station Road.
- 3.12 The Chartered Institution of Highways and Transportation's 'Planning for Cycling' (2014) states that 'cycle use is more seasonal than for other modes, with up to twice as many cyclists in summer compared with winter. The majority of cycling trips are for short distances, with 80% being less than five miles (8km) and with 40% being less than two miles (3km). However, the majority of trips by all modes are also short distances (67% are less than five miles, and 38% are less than two miles); therefore, the bicycle is a potential mode for many of these trips (National Travel Survey, 2013, Department for Transport).'
- 3.13 There are no signposted cycle routes in the vicinity of the site although National Cycle Network Route 47 can be accesses at Puncheston approximately 7km to the east

#### **Public Transport**

- 3.14 The current LDP classifies Letterston as one of the County's four Service Centres that benefit from 'excellent public transport connections'.
- 3.15 The closest bus stops to the candidate site are located at Letterston Square, approximately 400m to the east of the site. These provide access to the No. 645 and T5 Traws Cymru bus services.
- 3.16 The 645 Maenclochog Letterston

| Service | Route                                     | Details   |
|---------|---|---|
| 645     | Maenclochog –<br>Letterston               | 1 Journey, Thursdays Only   |
| T5      | Aberystwyth – Cardigan -<br>Haverfordwest | Generally hourly services Monday to<br>Saturday. Three journeys on Sundays / Bank<br>Holidays |

#### **Table 2 Local Bus Services**

3.17 The bus services provide links to Haverfordwest bus and railway stations, which provide connecting services to other destinations.

#### **Highway Network**

3.18 The site is located to the south of Station Road. Station Road is subject to a 20mph speed limit and benefits from street lighting.



- 3.19 Station Road links to the A40 trunk road at Letterston Square. The A40 continues south to Haverfordwest and north to Fishguard.
- 3.20 At the north-western corner of the site is the Langstone Court residential development. This is a recently constructed cul-de-sac that meets current estate road standards and serves around 12 existing properties. The extension of this cul-de-sac southwards is one of the access options for the candidate site.
- 3.21 To the west of Langstone Court is the Parc Maen Hir residential development. Again, this is a recent development that is served by an estate road that meets current design standards. A planning application has been submitted for the extension of this development, into the existing field that lies immediately south of Parc Maen Hir and immediately west of the candidate site. This provides a second access option for the candidate site.
- 3.22 A review of injury collision records (STATS19 records) for the latest 5-year period (2018 2022) has been undertaken. There have been no injury collisions recorded on Station Road during that period. The same is true of Station Road's junction with the A40. The absence of any recorded incidents demonstrate that Station Road and its A40 junction operate safely There is a slight severity incident recorded on St David's Road, to the west of the A40.



Figure 1 Injury Collision Records 2018 - 2022 (www.crashmap.co.uk)

#### 4 Proposed Development

4.1 It is considered that the candidate site is capable of delivering up to 42 dwellings.

#### Access

4.2 Indicative access arrangements are shown as Appendix 3.

#### Appendix 3 Indicative Access Arrangement

- 4.3 There are two possible means of accessing the candidate site that have been agreed with the Highway Authority.
- 4.4 The first is by extending the existing Langstone Court estate road southwards into the candidate site. The second option is to access the site through the Parc Maen Hir development to the west. The candidate site could be accessed by one or other of these access points or by a combination of both.
- 4.5 Each access option can provide accesses that meet adoptable highway standards, providing a 5.5m wide carriageway with 2m wide footways.
- 4.6 Both access options comply with current design standards and provide safe means of access to the site for walkers, cyclists and vehicle users.

#### **Trip Generation**

- 4.7 The potential trip generation of the proposed development of the site has been estimated by reference to the TRICS trip rate database, a database of over 7,100 traffic surveys of various types of development throughout the UK and Ireland.
- 4.8 From the TRICS database evidence of the trip rates of developments of privately owned houses (development of up to 100 units) in urban locations (but not town/city centres) in mainland Britain (excluding Greater London) have been analysed. Full details are provided as Appendix 5 and summarised below.

#### Appendix 4 TRICS Trip Rate Data

|                             | Trip Rate per House |            |       | Trip Generation (42 Houses) |            |       |  |
|-----------------------------|---------------------|------------|-------|-----------------------------|------------|-------|--|
| Time Range                  | Arrivals            | Departures | Total | Arrivals                    | Departures | Total |  |
| am peak Hour<br>08:00-09:00 | 0.177               | 0.383      | 0.56  | 7                           | 16         | 24    |  |
| pm Peak Hour<br>16:00-17:00 | 0.307               | 0.177      | 0.484 | 13                          | 7          | 20    |  |

#### Table 3 Vehicle Trip Rates & Proposed Development Trip Generation

- 4.9 The TRICS data suggests that the proposed development will generate around 20 to 24 peak hour vehicle movements.
- 4.10 A detailed Transport Assessment will be undertaken at the time of the planning application to investigate the impact of the development on the operation of the surrounding highway network.

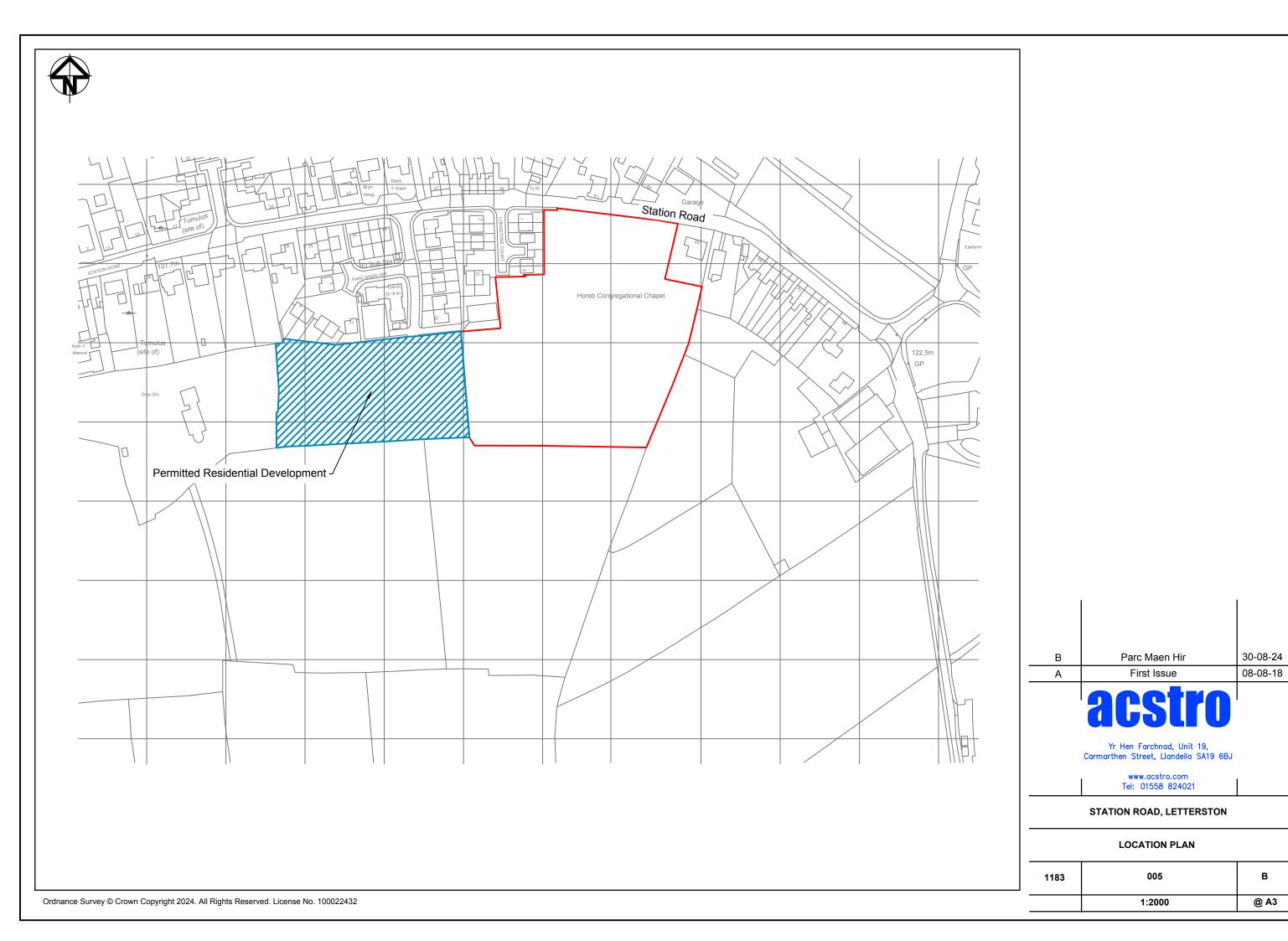
acstro

#### 5 Summary & Conclusion

- 5.1 In summary this Transport Statement has demonstrated that:
  - The candidate site's location is closely related to Letterston's existing settlement and the facilities that it provides;
  - There are a good range of services and facilities near to the site offering education, shopping, employment, leisure and social opportunities. These can be accessed from the site by walking, cycling or by public transport.
  - The site is accessible to pedestrians and can be connected to the existing footway network.
  - There are two potential access points, that have been agreed with the Highway Authority, from Langstone Court and / or Parc Maen Hir.
- 5.2 As such it is considered that the candidate site meets planning policy requirements in terms of being in an appropriate location that is safely accessible by all forms of transport and that the impacts of the development on the continued operation and safety of the surrounding highway network would be acceptable or can be suitably mitigated.
- 5.3 It is concluded therefore that there are no transport related issues that should prevent the inclusion of this candidate site in Pembrokeshire County Council's LDP2.

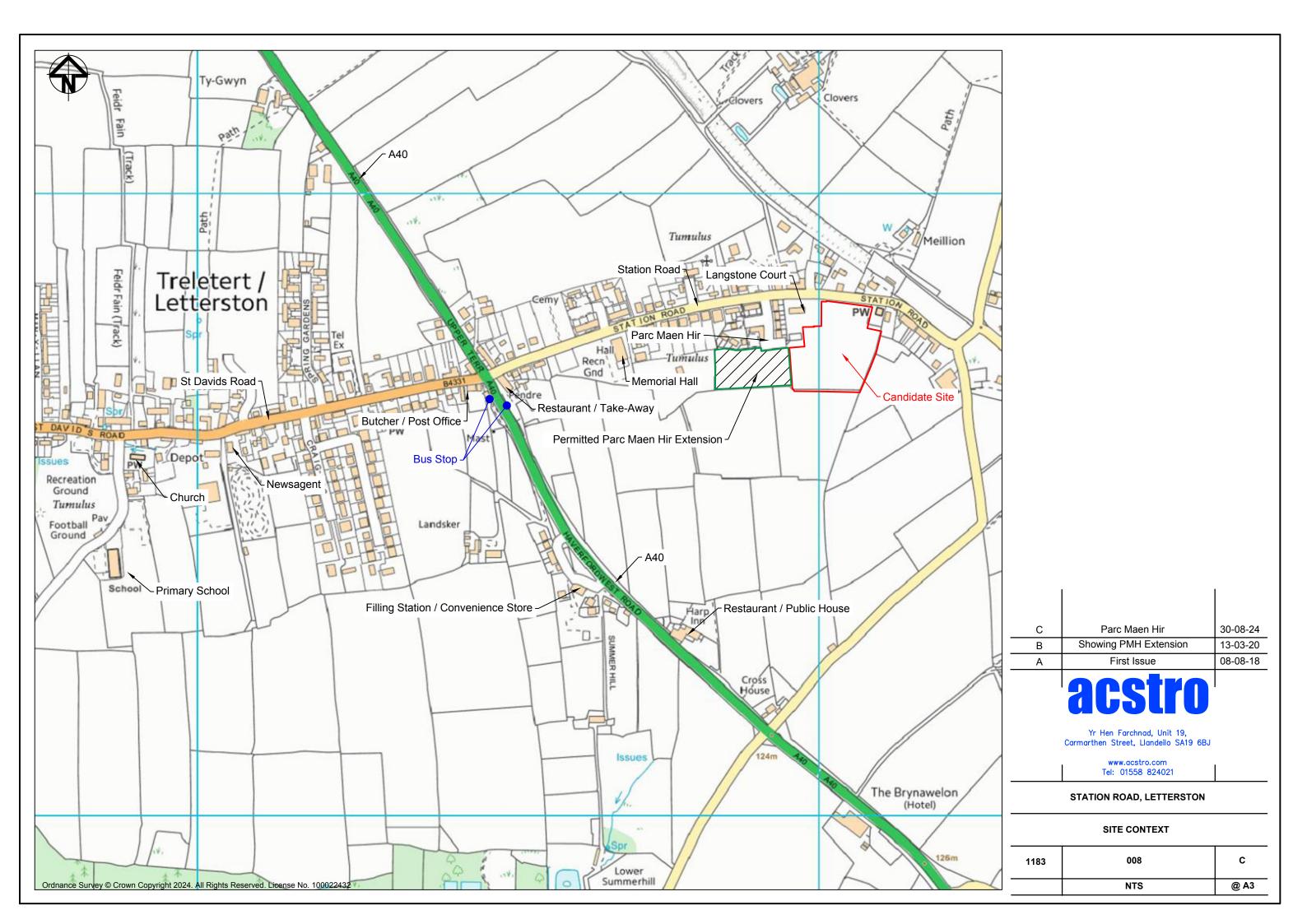


# Appendix 1 Location Plan

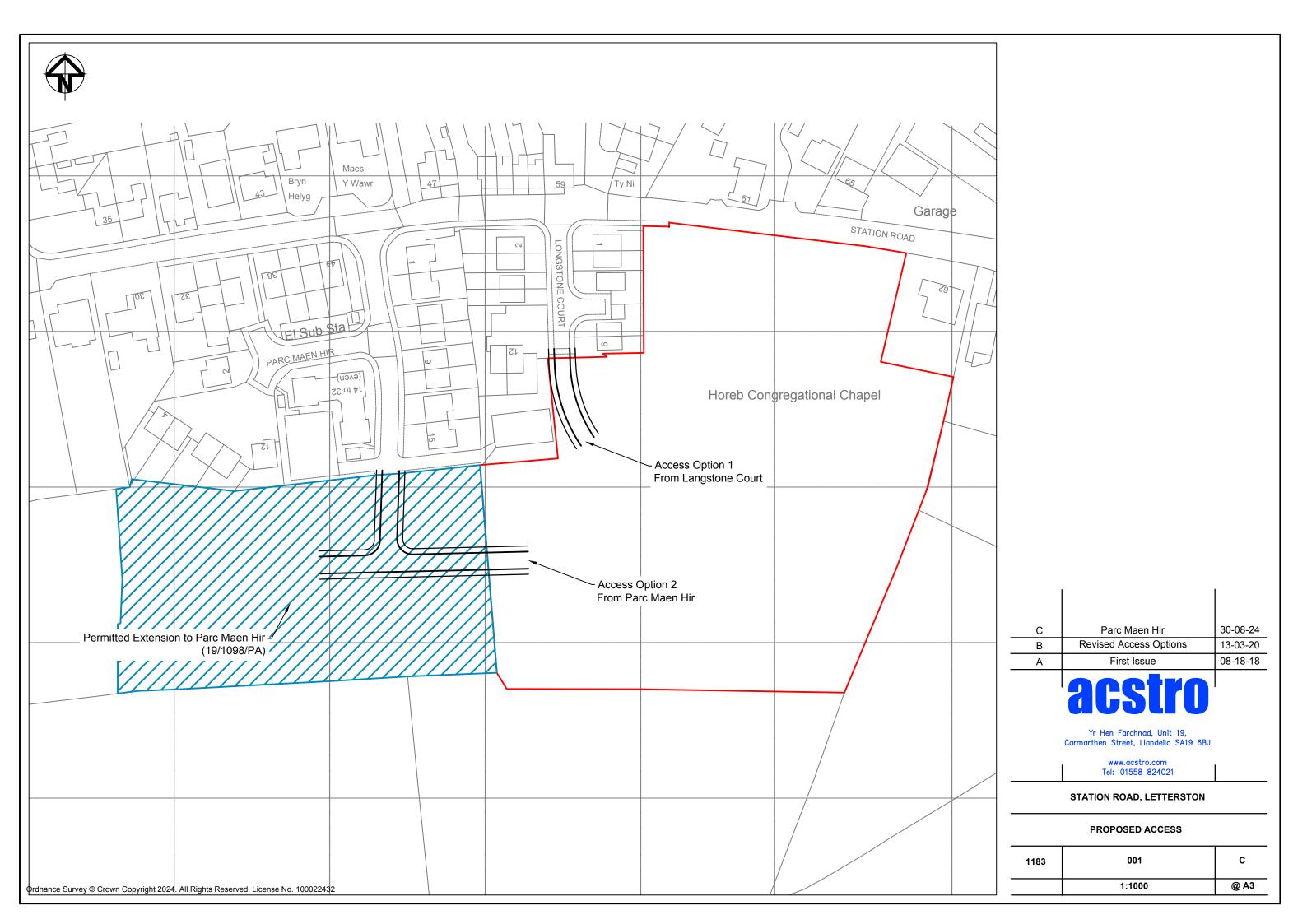


В

# **Appendix 2 Site Context**



## Appendix 3 Indicative Access Arrangement



## Appendix 4 TRICS Trip Rate Data

Acstro Ltd Salem Llandeilo Licence No: 648801

Calculation Reference: AUDIT-648801-180426-0401

#### TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL

Category : A - HOUSES PRIVATELY OWNED

Category : VEHICLES

Selected regions and areas:

|    |      | 9                           |        |
|----|------|-----------------------------|--------|
| 02 | SOUT | TH EAST                     |        |
|    | HC   | HAMPSHIRE                   | 1 days |
|    | WS   | WEST SUSSEX                 | 1 days |
| 03 | SOUT | TH WEST                     |        |
|    | DV   | DEVON                       | 1 days |
|    | SM   | SOMERSET                    | 1 days |
| 04 | EAST | ANGLIA                      |        |
|    | NF   | NORFOLK                     | 2 days |
|    | SF   | SUFFOLK                     | 2 days |
| 06 | WES. | T MI DLANDS                 |        |
|    | SH   | SHROPSHIRE                  | 1 days |
|    | WK   | WARWICKSHIRE                | 1 days |
| 07 | YORk | KSHIRE & NORTH LINCOLNSHIRE |        |
|    | NY   | NORTH YORKSHIRE             | 3 days |
| 10 | WAL  | ES                          |        |
|    | PS   | POWYS                       | 1 days |
| 11 | SCOT | ΓLAND                       |        |
|    | AG   | ANGUS                       | 1 days |
|    | HI   | HIGHLAND                    | 1 days |
|    | PK   | PERTH & KINROSS             | 1 days |
|    |      |                             |        |

This section displays the number of survey days per TRICS® sub-region in the selected set

#### Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings Actual Range: 7 to 70 (units: ) Range Selected by User: 5 to 100 (units: )

#### Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 27/11/17

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

#### Selected survey days:

 Monday
 3 days

 Tuesday
 3 days

 Wednesday
 6 days

 Thursday
 4 days

 Friday
 1 days

This data displays the number of selected surveys by day of the week.

#### Selected survey types:

Manual count 17 days
Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

#### Selected Locations:

Suburban Area (PPS6 Out of Centre) 8
Edge of Town 7
Neighbourhood Centre (PPS6 Local Centre) 2

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

#### Selected Location Sub Categories:

| Residential Zone | 14 |
|------------------|----|
| Village          | 2  |
| No Sub Category  | 1  |

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village,

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Secondary Filtering selection:

#### Use Class:

C3 17 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

#### Population within 1 mile:

| 1,000 or Less    | 1 days |
|------------------|--------|
| 1,001 to 5,000   | 3 days |
| 5,001 to 10,000  | 5 days |
| 10,001 to 15,000 | 3 days |
| 15,001 to 20,000 | 4 days |
| 20,001 to 25,000 | 1 days |

This data displays the number of selected surveys within stated 1-mile radii of population.

#### Population within 5 miles:

| 5,001  | to 25,000 | 4 days |
|--------|-----------|--------|
| 25,001 | to 50,000 | 8 days |
| 50,001 | to 75,000 | 5 days |

This data displays the number of selected surveys within stated 5-mile radii of population.

#### Car ownership within 5 miles:

| 0.6 to 1.0 | 5 days  |
|------------|---------|
| 1.1 to 1.5 | 11 days |
| 1.6 to 2.0 | 1 days  |

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

#### Travel Plan:

Yes 1 days No 16 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

#### PTAL Rating:

No PTAL Present 17 days

This data displays the number of selected surveys with PTAL Ratings.

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LIST OF SITES relevant to selection parameters

AG-03-A-01 BUNGALOWS/DET. **ANGUS** 

KEPTIE ROAD

ARBROATH

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings:

Survey date: TÜESDAY 22/05/12 Survey Type: MANUAL

DV-03-A-03 TERRACED & SEMI DETACHED

LOWER BRAND LANE

**HONITON** 

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 70

Survey date: MÖNDAY 28/09/15 Survey Type: MANUAL

HC-03-A-19 HOUSES & FLATS **HAMPSHIRE** 

CANADA WAY

LIPHOOK

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 62

Survey date: MONDAY 27/11/17 Survey Type: MANUAL

HI-03-A-14 SEMI-DETACHED & TERRACED **HIGHLAND** 

KING BRUDE ROAD SCORGUIE

**INVERNESS** 

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 40

Survey date: WEDNESDAY 23/03/16 Survey Type: MANUAL

NF-03-A-01 SEMI DET. & BUNGALOWS NORFOLK

YARMOUTH ROAD

CAISTER-ON-SEA

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 27

Survey date: TUESDAY 16/10/12 Survey Type: MANUAL

NF-03-A-03 **DETACHED HOUSES** NORFOLK

HALING WAY

THETFORD Edge of Town

Residential Zone

Total Number of dwellings: 10

Survey date: WEDNESDAY 16/09/15 Survey Type: MANUAL

NY-03-A-07 NORTH ÝOŘKSHIRE DETACHED & SEMI DET.

**CRAVEN WAY** 

BOROUGHBRIDGE

Edge of Town No Sub Category

Total Number of dwellings:

23

Survey date: TUESDAY 18/10/11 Survey Type: MANUAL

NY-03-A-11 PRIVATE HOUSING NORTH YORKSHIRE

**HORSEFAIR** 

BOROUGHBRIDGE

Edge of Town

Residential Zone

Total Number of dwellings: 23

Survey date: WEDNESDAY 18/09/13 Survey Type: MANUAL Acstro Ltd Salem Llandeilo Licence No: 648801

LIST OF SITES relevant to selection parameters (Cont.)

9 NY-03-A-13 TERRACED HOUSES NORTH YORKSHIRE

CATTERICK ROAD

OLD HOSPITAL COMPOUND CATTERICK GARRISON

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 10

Survey date: WEDNESDAY 10/05/17 Survey Type: MANUAL 3-A-01 DETAC. & BUNGALOWS PERTH & KINROSS

10 PK-03-A-01 DETAC. & BUNGATULLYLUMB TERRACE

GORNHILL PERTH

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 36

Survey date: WEDNESDAY 11/05/11 Survey Type: MANUAL

11 PS-03-A-02 DETACHED/SEMI-DETACHED POWYS

GUNROG ROAD

WELSHPOOL

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 28

Survey date: MONDAY 11/05/15 Survey Type: MANUAL

12 SF-03-A-05 DETACHED HOUSES SUFFOLK

VALE LANE

BURY ST EDMUNDS Edge of Town

Residential Zone

Total Number of dwellings: 18

Survey date: WEDNESDAY 09/09/15 Survey Type: MANUAL

13 SF-03-A-06 DETACHED & SEMI-DETACHED SUFFOLK

**BURY ROAD** 

KENTFORD

Neighbourhood Centre (PPS6 Local Centre)

Village

Total Number of dwellings: 38

Survey date: FRIDAY 22/09/17 Survey Type: MANUAL

14 SH-03-A-05 SEMI-DETACHED/TERRACED SHROPSHIRE

SANDCROFT SUTTON HILL TELFORD Edge of Town Residential Zone

Total Number of dwellings: 54

Survey date: THURSDAY 24/10/13 Survey Type: MANUAL

15 SM-03-A-01 DETACHED & SEMI SOMERSET

WEMBDON ROAD NORTHFIELD BRIDGWATER Edge of Town Residential Zone

Total Number of dwellings: 33

Survey date: THURSDAY 24/09/15 Survey Type: MANUAL

16 WK-03-A-02 BUNGALOWS WARWICKSHIRE

NARBERTH WAY POTTERS GREEN COVENTRY Edge of Town Residential Zone

Total Number of dwellings: 17

Survey date: THURSDAY 17/10/13 Survey Type: MANUAL

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#### LIST OF SITES relevant to selection parameters (Cont.)

17 WS-03-A-07 BUNGALOWS WEST SUSSEX

EMMS LANE BROOKS GREEN NEAR HORSHAM Neighbourhood Centre (PPS6 Local Centre)

Total Number of dwellings: 57

Survey date: THURSDAY 19/10/17 Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED **VEHICLES** 

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

|                                | ARRIVALS |        |       | DEPARTURES |        |       | TOTALS |        |       |
|--------------------------------|----------|--------|-------|------------|--------|-------|--------|--------|-------|
|                                | No.      | Ave.   | Trip  | No.        | Ave.   | Trip  | No.    | Ave.   | Trip  |
| Time Range                     | Days     | DWELLS | Rate  | Days       | DWELLS | Rate  | Days   | DWELLS | Rate  |
| 00:00 - 01:00                  |          |        |       |            |        |       |        |        |       |
| 01:00 - 02:00                  |          |        |       |            |        |       |        |        |       |
| 02:00 - 03:00                  |          |        |       |            |        |       |        |        |       |
| 03:00 - 04:00                  |          |        |       |            |        |       |        |        |       |
| 04:00 - 05:00                  |          |        |       |            |        |       |        |        |       |
| 05:00 - 06:00                  |          |        |       |            |        |       |        |        |       |
| 06:00 - 07:00                  |          |        |       |            |        |       |        |        |       |
| 07:00 - 08:00                  | 17       | 33     | 0.092 | 17         | 33     | 0.286 | 17     | 33     | 0.378 |
| 08:00 - 09:00                  | 17       | 33     | 0.177 | 17         | 33     | 0.383 | 17     | 33     | 0.560 |
| 09:00 - 10:00                  | 17       | 33     | 0.161 | 17         | 33     | 0.174 | 17     | 33     | 0.335 |
| 10:00 - 11:00                  | 17       | 33     | 0.136 | 17         | 33     | 0.136 | 17     | 33     | 0.272 |
| 11:00 - 12:00                  | 17       | 33     | 0.130 | 17         | 33     | 0.161 | 17     | 33     | 0.291 |
| 12:00 - 13:00                  | 17       | 33     | 0.168 | 17         | 33     | 0.165 | 17     | 33     | 0.333 |
| 13:00 - 14:00                  | 17       | 33     | 0.148 | 17         | 33     | 0.150 | 17     | 33     | 0.298 |
| 14:00 - 15:00                  | 17       | 33     | 0.186 | 17         | 33     | 0.213 | 17     | 33     | 0.399 |
| 15:00 - 16:00                  | 17       | 33     | 0.237 | 17         | 33     | 0.184 | 17     | 33     | 0.421 |
| 16:00 - 17:00                  | 17       | 33     | 0.307 | 17         | 33     | 0.177 | 17     | 33     | 0.484 |
| 17:00 - 18:00                  | 17       | 33     | 0.320 | 17         | 33     | 0.159 | 17     | 33     | 0.479 |
| 18:00 - 19:00                  | 17       | 33     | 0.253 | 17         | 33     | 0.139 | 17     | 33     | 0.392 |
| 19:00 - 20:00                  |          |        |       |            |        |       |        |        |       |
| 20:00 - 21:00                  |          |        |       |            |        |       |        |        |       |
| 21:00 - 22:00                  |          |        |       |            |        |       |        |        |       |
| 22:00 - 23:00                  |          |        |       |            |        |       |        |        |       |
| 23:00 - 24:00                  |          |        |       |            |        |       |        |        |       |
| Total Rates: 2.315 2.327 4.642 |          |        |       |            | 4.642  |       |        |        |       |

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

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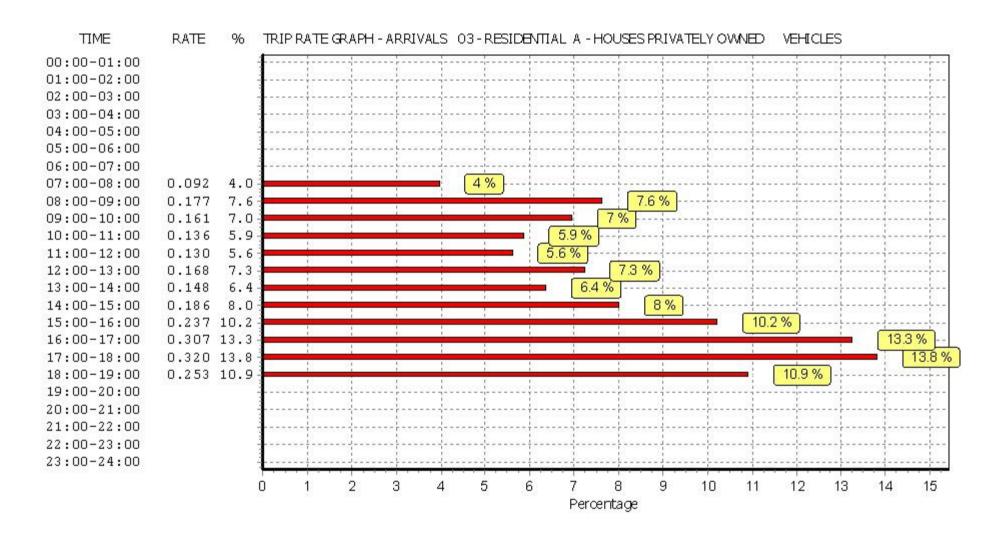
#### Parameter summary

Trip rate parameter range selected: 7 - 70 (units: )
Survey date date range: 01/01/10 - 27/11/17

Number of weekdays (Monday-Friday): 17
Number of Saturdays: 0
Number of Sundays: 0
Surveys automatically removed from selection: 2
Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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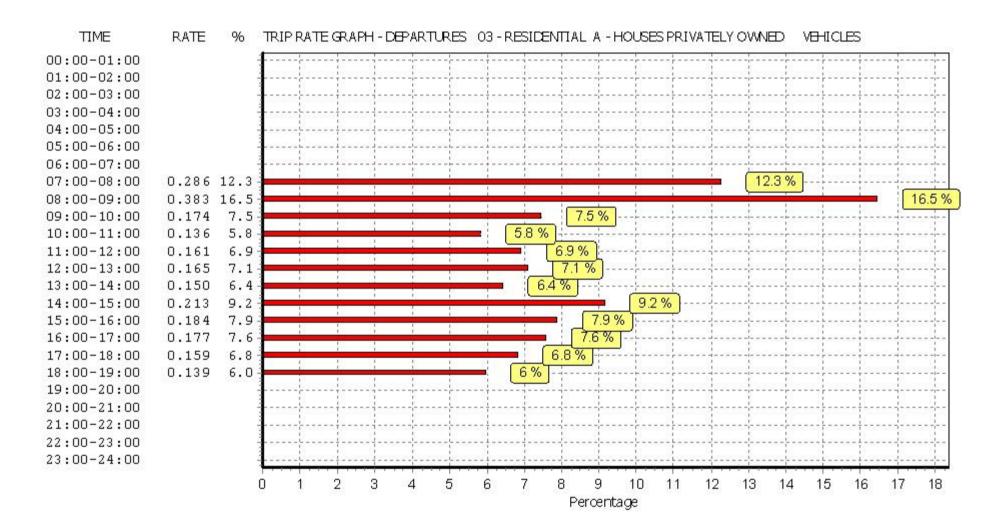


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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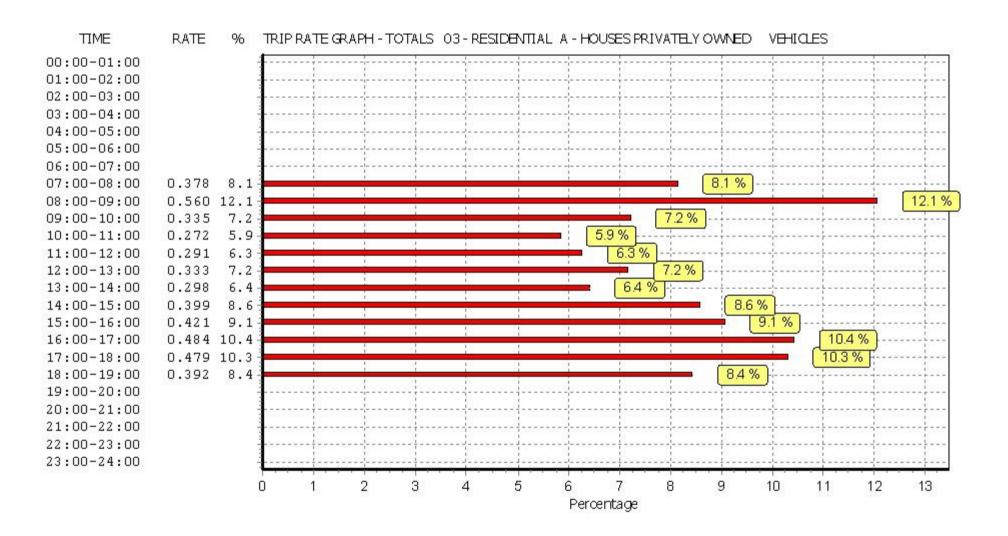
Salem Llandeilo

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# acstro

Acstro Ltd., Yr Hen Farchnad, Unit 19, Carmarthen Street, Llandeilo, Carmarthenshire SA19 6BJ