

Preliminary Ecological Appraisal



**Tyler
Grange**

The Kilns, Llangwm,
Pembrokeshire

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Summary

- S.1. This report has been prepared by Tyler Grange Group Ltd on behalf of Powells Ltd. It sets out the findings of a Preliminary Ecological Appraisal of a parcel of land at The Kilns, Llangwm, Pembrokeshire, hereafter referred to as 'the site', to inform a planning application for residential development.
- S.2. The site comprises amenity grassland, a dry ditch and hardstanding of negligible ecological importance; scrub, poor semi-improved grassland and species-poor hedgerows, hedgerows with trees and scattered trees which are considered to be of local ecological importance.
- S.3. Four statutorily designated sites lie within 10km of the site, with the closest being Pembrokeshire Marine Special Area of Conservation (SAC) located approx. 0.56km south of the site. Due to nature of the site for residential housing and the distance to the SAC, it is expected that a Habitat Regulations Assessment (HRA) Stage 1 Screening Assessment and Stage 2 Shadow Appropriate Assessment will be required to inform a planning application on the site to determine if the development may have a likely significant effect on the SAC.
- S.4. The survey identified evidence of badger using the site for foraging and commuting, and limited potential for other protected and/or priority species, namely bats, birds, hedgehog and reptiles, which are mainly associated with the species-poor hedgerows and poor semi-improved grassland (particularly its margins).
- S.5. Further surveys are recommended for bats, badgers, wintering birds and reptiles to inform a planning application.
- S.6. By incorporating design principles to retain and enhance features of highest ecological importance, such as hedgerows and trees and by including native species and wildlife friendly planting, inclusion of a drainage pond designed with ecological benefits and features for protected/priority fauna including hibernacula, log piles, bat and bird boxes within the designs, the site should deliver biodiversity benefits and would be in conformity with relevant planning policy and legislation, as set out in Appendix 1.



Section 1: Introduction, Site Context and Methodology

Introduction

- 1.1. Tyler Grange Group Ltd was instructed by Powells Ltd in April 2021 to undertake a Preliminary Ecological Appraisal (PEA) of a parcel of land at The Kilns, Llangwm, Pembrokeshire, hereafter referred to as 'the site'. A planning application is to be submitted to Pembrokeshire County Council for the construction of 75 residential units with associated access and landscaping. The site is centred on National Grid Reference SM 98741 09839 and the extent of the site is shown in Figure 1 below.

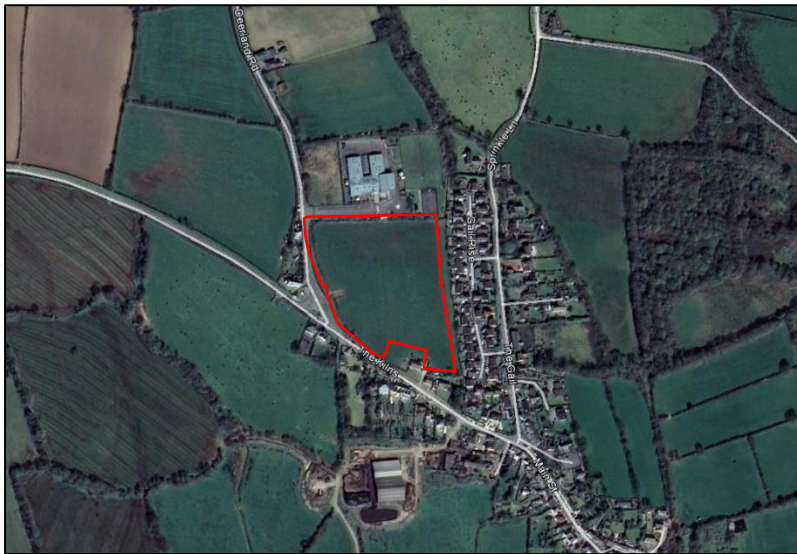


Figure 1: Site Context and Boundary
(Aerial Imagery © Google Earth, 2021)

- 1.2. The purpose of this report is to:
- Use available background data and results of a field survey to describe and evaluate the ecological resources present within the likely 'Zone of Influence' (Zoi)¹ of the proposed development;
 - Assess ecological issues and opportunities as a result of the development to ensure conformity with policy and legislation; and
 - Identify the need for further work to inform a planning application.

¹ Defined as the areas/resources that may be affected by the biophysical changes caused by activities associated with a project (CIEEM, 2018).



Site Context

- 1.3. The site is located approximately 0.5km to the north-west of the small village of Llangwm in Pembrokeshire and is currently assumed to being managed for silage production. Deerland Road lies adjacent to the western boundary and The Kilns road lies adjacent to the southern boundary. Cleddau Reach VC Primary School, with its associated playing field and hardstanding car park and playground lies adjacent to the north and residential properties, with associated driveways and gardens lies adjacent to the east.

Methodology

- 1.4. The scope of work has informed the description and assessment of importance of ecological features - in line with Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines (CIEEM, 2018) - the consideration of opportunities and constraints to development, and mitigation and enhancement requirements to ensure conformity with legislation and policy (see Appendix 1).
- 1.5. A desk-based study was conducted in May 2021 whereby records of designated sites and records of protected and priority species were purchased and interrogated for the site and the surrounding landscape. The following resources were consulted / contacted:
- Multi-Agency Geographic Information for the countryside (MAGIC) website;
 - West Wales Biodiversity Information Centre (WWBIC);
 - Pembrokeshire Council Planning website;
 - Joint Nature Conservation Committee (JNCC) website;
 - Natural England (NE) designated sites website;
 - UK Biodiversity Action Plan (UKBAP), now Biodiversity 2020: A strategy for England's wildlife and ecosystem services ;
 - The Local Biodiversity Action Plan (LBAP) known as 'The Pembrokeshire Local Biodiversity Action Plan';
 - Ordnance Survey mapping; and
 - Google Maps, including aerial photography.
- 1.6. The following areas of search around the boundary of the site boundary were applied:
- 2km for protected and priority species;
 - 2km for non-statutory and statutory designated sites; and
 - 10km for European statutory sites.
- 1.7. An 'extended' Phase I habitat survey was undertaken by Lee Bullingham-Taylor (an experienced field surveyor and Full member of CIEEM) on the 29th April 2021. This survey methodology was



based on guidance set out in the 'Handbook for Phase I habitat survey' (JNCC, 2010) and entailed recording the main plant species and classifying and mapping broad habitat types present.

- 1.8. On-site trees were also inspected from the ground for their potential to support bat roosts in line with Bat Conservation Trust good practice guidelines (BCT, 2016): A visual inspection was undertaken using binoculars, looking for features of potential value to bats such as holes, cracks / splits, loose bark, hollows / cavities, dense epicormic growth and common ivy (in which bats may roost) and bird and bat boxes. Other signs indicating possible use by bats were also recorded and can include scratches, staining, flies and smoothing of surfaces around entry points, bat droppings in and around, or below, entrances, distinctive smell of bats and audible squeaking in warm weather.
- 1.9. Evidence of badger on site, such as potential sett entrances, latrines, snuffle holes/diggings, individuals or hair caught on fencing or vegetation were also searched for during the Phase I.

Limitations

- 1.10. The survey was carried out when a number of plants would not have been apparent. However, it is considered that sufficient vegetation was identified during the survey to provide an understanding of the broad habitats within the site and any potential implications this may have on development proposals. However, as plants are not always obvious, depending on the time of year of the survey, Tyler Grange Group Ltd accepts no liability for the presence of any invasive or protected plant species present that were not recorded during the site survey.
- 1.11. The results of the ground level tree roost assessment of trees will depend on signs of bat activity being identified, as it is unlikely that bats will be visible. A number of bat species roost in very small crevices, consequently it is possible that individuals may be missed during the survey as not every crevice or void can be fully inspected from the ground. In addition, it is possible that bird nests may be situated in concealed locations which may not be visible to the surveyor.
- 1.12. Data sourced from biological record centres, or obtained using on-line databases is historical information, and datasets may be incomplete, inaccurate, potential unreliable or missing entirely. It is therefore important to note that even where data is held, a lack of records for a defined geographical area does not necessarily indicate that a given species is absent from that area; the area may simply be under-recorded.

Quality Assurance

- 1.13. All ecologists at Tyler Grange Group Ltd, or work on behalf of Tyler Grange Group Ltd are members of CIEEM and abide by the Institute's Code of Professional Conduct.



Section 2: Ecological Features

2.1 Ecological features within the site and wider Zol are described below, together with an assessment of their relative importance using a geographical frame of reference advocated by CIEEM (2018).

Protected Sites

2.2 The site is not covered by any statutory or non-statutory sites designated for nature conservation importance. Four internationally protected sites and one nationally protected site lie within the Zol (10km for international and 2km for national sites). Table 2.1 below outlines the reasons for designation.

Table 2.1: Statutorily designated sites within the study area.

Designation	Sites within Study Area	Ecological Importance
European Statutory	PEMBROKESHIRE MARINE/ SIR BENFRO FOROL Special Area of Conservation (SAC) - c. 0.56 km south The Pembrokeshire Marine SAC is the third largest marine SAC in the UK, covering an area of 138,069 ha. The site includes the ria estuary, Daugleddau estuary, Milford Haven and St Brides Bays with intertidal sandy/muddy areas and reefs. Habitats also present include sandbanks, mudflats, costal lagoons, Atlantic salt meadows and sea caves. The site is designated as it supports Grey seal <i>Halichoerus grypus</i> and Shore dock <i>Rumex rupestris</i> . Also present are sea lamprey <i>Petromyzon marinus</i> , river lamprey <i>Lampetra fluviatilis</i> , allis shad <i>Alosa alosa</i> , twaite shad <i>Alosa fallax</i> and European otter <i>Lutra lutra</i> .	International
	AFONYDD CLEDDAU / CLEDDAU RIVERS SAC - 5.76 km north west. The Cleddau rivers are a predominantly lowland catchment in the Pembrokeshire peninsula. The substrates consist mainly of sand, gravel and well-aerated silt, providing an excellent mosaic of lamprey spawning and nursery habitat. The site is designated due to the presence of brook lamprey <i>Lampetra planeri</i> , river lamprey, bullhead <i>Cottus gobio</i> and European otter.	International
	YERBESTON TOPS SAC - c. 6.66 km east This site comprises a number of separate blocks of land under different ownerships. These are divided into fourteen management units - areas of wet, rough land known locally as 'moors'. The Site is designated due to the isolated metapopulation in southern Pembrokeshire of over 1500 adult marsh fritillaries <i>Euphydryas aurinia</i> and is an important outlier for the conservation of the species in west Wales. <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils are also present.	International



	<p>PEMBROKESHIRE BAT SITES AND BOSHERTON LAKES / SAFLEOEDD YSTLUM SIR BENFRO A LLYNNOEDD BOSHERTON SAC - c. 7.96 km south east</p> <p>The site is designated due to the Bosherton Lakes habitat, providing an outstanding shallow marl lake system. As well for greater horseshoe bat <i>Rhinolophus ferrumequinum</i>. This site in south-west Wales supports approximately 9.5% of the UK population. It represents the species at the north-western extremity of its range. The site contains a mixture of maternity, transitory and hibernation sites and so demonstrates good conservation of features required for survival. Lesser horseshoe bat <i>Rhinolophus hipposideros</i> and European otter are also present.</p>	International
National Statutory	<p>MILFORD HAVEN WATERWAY Site of Specific Scientific Interest (SSSI) - c. 0.57 km south-east</p> <p>The site is designated for its geology, ancient woodland, marine biology, saltmarsh, swamp, saline lagoons, rare and scarce plants and invertebrates, nationally important numbers of migratory waterfowl, greater and lesser horseshoe bats and otter. The waterway is an exceptional example of a ria (a system of valleys drowned by post-glacial rise in sea level) that consists of a number of estuaries, embayments and inlets.</p>	National

Site Habitats

2.3 Habitats present within the site and adjacent to it, along with their ecological importance are detailed below. The site supports the following habitats:

- Amenity Grassland;
- Dry Ditch;
- Hardstanding;
- Scrub;
- Poor Semi-improved Grassland; and
- Hedgerow and Trees.

2.4 UK priority habitats are those subject to conservation action and referred to as Species of Principal Importance (SoPIs) or Habitats of Principal Importance (HoPIs). They are listed at Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the NERC Act states that local planning authorities must have regard for the conservation of SoPIs and HoPIs.



Amenity Grassland

- 2.5 Amenity grassland lies adjacent to site boundaries to the west and south. To the west is an area of short regularly mown roadside amenity grassland (Photograph 1). This habitat is also present along a bund forming the entire length of site's western boundary. This consists of a short regularly mown sward, with a longer unmown sward at the top of the bund, at the base of the site's hedgerows in these areas (Photograph 2). Unmown amenity grassland is also present along an older section of hedgerow further to the south of the western boundary, where a dry ditch is located (Photograph 3). The dominant grass species recorded is Yorkshire fog *Holcus lanatus* and perennial rye grass *Lolium perenne* with Timothy *Phleum pratense* and tall fescue *Festuca arundinacea* also present. Other plant species recorded within the sward include cleavers *Galium aparine*, common field speedwell *Veronica persica*, common nettle *Urtica dioica*, cow parsley *Anthriscus sylvestris*, dandelion *Taraxacum officinale*, ground ivy *Glechoma hederacea*, soft shield fern *Polystichum setiferum* and thistle sp. *Cirsium* species. Amenity grassland adjacent to the southern boundary is located within the rear garden of a residential property, which is un-fenced from the site's poor semi-improved grassland (Photograph 4).



Photograph 1: Amenity grassland adjacent to western boundary



Photograph 2: Amenity grassland - with a taller unmown sward on top of bund



Photograph 3: Amenity grassland with taller sward in location of dry ditch



Photograph 4: Amenity grassland with mown around offsite residential property to the south

- 2.6 The amenity grassland offers little to the local biodiversity resource, being species-poor and a common and widespread resource in the wider area and is considered to be of negligible ecological importance.

Dry Ditch

- 2.7 A dry ditch is present within an area of unmown roadside amenity grassland to the south (Photograph 3). This is a drainage ditch measuring approximately 0.5m wide and 0.5m deep. Bare earth and small stones formed its base, with unmown grass on either side. It was dry at the time



of the survey. The dry ditch is a common resource within the wider landscape being mainly associated with roads and arable fields. It is therefore considered to be of negligible ecological importance.

Hardstanding

- 2.8 Hardstanding in the form of pedestrian paths is present between amenity grassland to the west and south of the site (Photograph 1). Hardstanding is of negligible ecological importance.

Scrub

- 2.9 Dense scrub is present along site boundaries to the north and west. To the north this is largely dominated by bramble *Rubus fruticosus* agg., with blackthorn *Prunus spinosa*, gorse *Ulex europaeus* and a laurel sp. *Prunus* species (Photograph 5), and to the west, this is dominated by bramble. Patches of scattered scrub is present within hedgerows to the north of the site and to the rear of a garden to the east.



Photograph 5: Dense scrub along northern boundary



Photograph 6: Poor semi-improved grassland

- 2.10 Dense and scattered scrub provide a linear boundary feature around the site, with connectivity to offsite habitats. It is therefore considered to be of local ecological importance.

Poor Semi-improved Grassland

- 2.11 Poor semi-improved grassland dominates the site (Photograph 6). It is relatively species-poor and has an average sward height of approximately 15 to 20cm. Anecdotal evidence suggests that the grassland is in silage production with a single cut being taken each May. The dominant grass species recorded is Yorkshire fog, perennial rye grass and cock's-foot *Dactylus glomerata*, with frequent meadow foxtail *Alopecurus pratensis* also recorded. Other plant species present within the sward include abundant white clover *Trifolium repens*; frequent common daisy *Bellis perennis*, common mouse-ear *Cerastium fontanum*, creeping buttercup *Ranunculus repens*, cuckooflower *Cardamine pratensis*, dandelion, and wavy bittercress *Cardamine flexuosa*; occasional bluebell *Hyacinthoides non-scripta* (eastern margin), broadleaved dock *Rumex obtusifolius*, cleavers, cow parsley, field bindweed *Convolvulus arvensis*, ground ivy *Glechoma hederacea*, ribwort plantain *Plantago lanceolata*, self-heal *Prunella vulgaris*, soft rush *Juncus effusus* (to the north), speedwell sp.; and red campion *Silene dioica* and wild garlic *Allium ursinum* (both on the eastern margin) being rarely recorded.
- 2.12 The poor semi-improved grassland is relatively species-poor comprising common and widespread species. It is considered to be of local ecological importance.



Hedgerow and Trees

- 2.13 Species-poor (defunct) hedgerow is present along the site's western boundary. Most of its length it is situated on top of a bund and consists of planted trees and shrubs (many still within their protective tubing) which are heavily flailed. Dense bramble scrub is growing within the hedgerow and is becoming dominant. The southern part of the hedgerow has a shorter and older section, with an associated bank (approximately 1m in height) (Photograph 7). Tree species recorded include ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, holly *Ilex aquifolium* and sycamore *Acer pseudoplatanus* (including two more established sycamore which are not flailed, within the shorter, older, section of the hedgerow). Shrub species recorded include blackthorn, elder *Sambucus nigra*, guelder rose *Viburnum opulus* and privet *Ligustrum* sp. The associated ground flora includes bluebell, common nettle, common sorrel *Rumex acetosa*, cow parsley, hart's-tongue *Asplenium scolopendrium*, hedge bindweed *Calystegia sepium*, herb-Robert *Geranium robertianum*, hogweed *Heracleum sphondylium*, meadow fescue *Festuca pratensis*, lesser celandine *Ficaria verna*, red campion, ribwort plantain, ragwort, soft shield fern, speedwell sp., white clover, and a willowherb sp. *Epilobium* species.
- 2.14 This hedgerow type is also present along the site's northern boundary, where it consists of planted trees and shrubs, on an associated bank (approximately 0.5m in height). The dominant tree species recorded includes young silver birch *Betula pendula*, with young hornbeam *Carpinus betulus* also being recorded. Shrub species recorded includes blackthorn, guelder rose, hawthorn and holly. The associated ground flora includes broadleaved dock, creeping buttercup, ribwort plantain and soft-shield fern.
- 2.15 This hedgerow type also forms the boundaries to several of the rear gardens on the eastern site boundary, consisting of heavily flailed sycamore, hawthorn, buddleja *Buddleja davidii* and privet.
- 2.16 A short length of hedgerow with trees is present to the south (Photograph 8). It consists of heavily flailed sycamore with two standard trees (T3 and T4 - Photographs 13 and 16). The associated ground flora includes common nettle, cleavers and creeping buttercup.



Photograph 7: Species-poor (defunct) hedgerow - older section forming part of the site's western boundary.



Photograph 8: Hedgerow with trees - to the south of the site

- 2.17 Scattered semi-mature and mature broadleaved trees are present within hedgerows to the south, west and north and included semi-mature ash, oak *Quercus robur*, sycamore, and planted young silver birch. These trees were assessed for their potential to support bats; refer to Table 2.1 which describes those trees with potential roosting features for bats (also refer to Photographs 9 to 16).



2.18 Species-poor, defunct hedgerows are commonplace in the surrounding landscape and offer connectivity around the site and are therefore considered to be of local ecological importance. Meanwhile, the hedgerow with trees and scattered trees are considered to be of local ecological importance, given their species diversity, linear connectivity and overall contribution to the local biodiversity resource. Scattered broadleaved trees are not replaceable in the short to medium term. The mature trees are priority habitats and LBAP habitats.

Protected Species

2.19 For ease of reference, descriptions of the fauna have been described in Table 2.1 below.



Species	Data Search	Features	Ecological Importance
Amphibians	WWBIC returned eight records of common toad Bufo bufo, with the closest recorded 0.91km south east of the site.	<p>There is limited suitable habitat for amphibians on site, including great crested newt Triturus cristatus, with grassland margins and bases of hedgerows providing potentially suitable habitat during the terrestrial phase of their life-cycle.</p> <p>There are four ponds within 500m of the site boundary, three of which are located over The Kilns road, the main road through Llangwm with the closest located 240m west. The road is likely to act as a barrier to dispersal of amphibians between offsite ponds. One pond is located 220m east of the site behind residential housing and a school and adjacent to a woodland which is considered to be more favourable terrestrial habitat for amphibians.</p> <p>Great crested newt are not known within the local area. Due to the distance from the site and the known ponds within 500m, the barriers to dispersal between the ponds and site, it is unlikely that amphibians would utilise the site.</p>	<p>Negligible as unlikely to be present.</p> <p>Great crested newt are a European Protected Species and common toad are a Species of Principal Importance (SoPI).</p>
Badger Meles meles	Thirty-one records of Eurasian badger Meles meles have been returned from WWBIC with one record recorded within the site boundary from 2005	Evidence of badger found on site comprised a latrine containing two pits with recent and fresh dung located along the boundary to the south-west. Also, a badger path runs across the grassland in a north-easterly direction from the latrine. Mammal paths	<p>Negligible</p> <p>Badgers are protected under the</p>



		<p>were also recorded going through site boundaries to the north (into dense scrub) and west. No evidence of a sett was identified within the site boundary.</p> <p>Hedgerows along all site boundaries and grassland margins are suitable for foraging. Whilst the site is clearly within a clan's territory it is unlikely to be reliant solely upon resources within the site due to the abundance of suitable habitat in the wider area.</p>	Protection of Badgers Act 1992.
Bats	<p>WWBIC returned records of brown long-eared bat <i>Plecotus auritus</i> c. 0.1 km east of the site and Natterer's bat <i>Myotis nattereri</i> c. 0.17 km north east of the site.</p> <p>Within 2 km of the site WWBIC returned records of noctule <i>Nyctalus noctula</i>, greater horseshoe bat <i>Rhinolophus ferrumequinum</i>, common pipistrelle <i>Pipistrellus pipistrellus</i> and soprano pipistrelle <i>Pipistrellus pygmaeus</i>.</p> <p>Within 4 km of the site, WWBIC returned records of lesser horseshoe bat <i>Rhinolophus hipposideros</i>, Nathusius' pipistrelle <i>Pipistrellus nathusii</i> and western barbastelle <i>Barbastella barbastellus</i>.</p>	<p>The hedgerows and grassland habitats provide foraging and commuting opportunities for bats. The hedgerows have limited connectivity to foraging resources within the wider area to the north and west.</p> <p>Trees within the site (see Appendix 2 for photographs) with 'low' potential to support roosting bats were:</p> <ul style="list-style-type: none"> • T1 – Young sycamore with an ivy covering and peeling bark; • T2 – Young sycamore with a dense ivy covering; • T3 – Semi-mature sycamore along the southern boundary with an ivy-clad main trunk, two cavities and a small amount of loose bark; and • T4 – Semi-mature sycamore along the southern boundary with a split within a broken branch. 	<p>Local.</p> <p>All bat species in the UK are European Protected Species.</p>



		The site is likely to be part of a wider foraging resource for the local bat assemblage which includes a number of SoPI, although it is unlikely that any assemblage of bats in the area is reliant on the site alone.	
Birds	<p>WWBIC returned records of RSPB Red Listed Birds of Conservation Concern (BoCC)² including, black-tailed godwit <i>Limosa limosa</i>, cuckoo <i>Cuculus canorus</i>, curlew <i>Numenius arquata</i>, whimbrel <i>Numenius phaeopus</i>, herring gull <i>Larus argentatus</i>, house sparrow <i>Passer domesticus</i>, lapwing <i>Vanellus vanellus</i>, lesser redpoll <i>Acanthis cabaret</i>, linnet <i>Linaria cannabina</i>, marsh tit <i>Poecile palustris</i>, mistle thrush <i>Turdus viscivorus</i>, redwing <i>Turdus iliacus</i>, ringed plover <i>Charadrius hiaticula</i>, song thrush <i>Turdus philomelos</i>, spotted flycatcher <i>Muscicapa striata</i>, starling <i>Sturnus vulgaris</i>, tree sparrow <i>Passer montanus</i>, willow tit <i>Poecile montanus</i> and yellowhammer <i>Emberiza citronella</i>.</p> <p>WWBIC returned records of RSPB Amber Listed BoCC including, Avocet <i>Recurvirostra avosetta</i>, bar-tailed godwit <i>Limosa lapponica</i>, black-headed gull <i>Chroicocephalus ridibundus</i>, dunlin <i>Calidris alpina</i>, dunnock <i>Prunella modularis</i>, great black-backed gull, <i>Larus marinus</i>, green-shank <i>Tringa nebularia</i>, grey plover <i>Pluvi-</i></p>	<p>The trees and hedgerows provide some nesting opportunities for common and widespread garden bird species, including some declining species, such as dunnock and song thrush would be expected; however, it is unlikely that any assemblage utilising the site would be solely reliant upon resources within. There is also potential for ground nesting birds, such as skylark.</p> <p>The Pembrokeshire Marine SAC is located within 1km of the site. Although it is not designated for wading and wetland birds, the data search has records of these species within 2km of the site and the grassland has potential to be used for foraging and roosting of these species, although it is unlikely they would be entirely reliant on the site.</p>	Up to local

² Red listed bird species are those identified as having suffered major population declines over the last 25 years (Eaton et al., 2015)



	<p>alis squatarola, greylag goose <i>Anser anser</i>, kingfisher <i>Alcedo atthis</i>, knot <i>Calidris canutus</i>, lesser black-backed gull <i>Larus fuscus</i>, mallard <i>Anas platyrhynchos</i>, meadow pipit <i>Anthus pratensis</i>, Mediterranean gull <i>Ichthyaetus melanocephalus</i>, mute swan <i>Cygnus olor</i>, oystercatcher <i>Haematopus ostralegus</i>, pintail <i>Anas acuta</i>, redshank <i>Tringa tetanus</i>, shelduck <i>Tadorna tadorna</i>, shoveler <i>Spatula clypeata</i>, snipe <i>Gallinago gallinago</i>, spotted redshank <i>Tringa erythropus</i>, stock dove <i>Columba oenas</i>, swift <i>Apus apus</i>, tawny owl <i>Strix aluco</i>, teal <i>Anas crecca</i>, whooper swan <i>Cygnus cygnus</i>, wigeon <i>Mareca penelope</i> and yellow-legged gull <i>Larus michahellis</i>.</p>		
<p>West European Hedgehog <i>Erinaceus europaeus</i></p>	<p>WWBIC returned no records of hedgehog within 2km of the site.</p>	<p>The hedgerow bases and grassland provide suitable foraging habitat and hibernation potential for hedgehog. Due to the abundance of suitable habitat within the wider area, it is considered unlikely that any individuals utilising the site would be wholly reliant upon site resources.</p>	<p>Site, if present.</p> <p>Hedgehogs are SoPIs under the NERC Act 2006.</p>
<p>Reptiles</p>	<p>WWBIC returned:</p> <ul style="list-style-type: none"> - Nineteen records of slow worm <i>Aguis fragilis</i> with the closest c. 0.49 km south east of the site; - Two records of common lizard <i>Zootoca vivipara</i>; and - One record of grass snake <i>Natrix helvetica</i> from WWBIC c. 1.34 km north west of the site from 2005. 	<p>The hedgerow bases provide suitable habitat for common species of reptile. The margins of the grassland and the top of the bund to the west consist of unmown swards providing opportunities for reptiles. Due to the abundance of suitable habitat within the wider area, it is considered unlikely that any population utilising the site would be wholly reliant upon site resources</p>	<p>Site, if present.</p>



Other Fauna	<p>WWBIC returned ten records of Eurasian otter <i>Lutra lutra</i> with the closest being c. 1.28 km south west of the site.</p> <p>No records of water vole <i>Arvicola amphibius</i> within 2km of the site were returned from WWBIC.</p>	<p>The site is not likely to be used by the otters returned from the data search due to the presence of roads, residential and commercial buildings between the records and the site. The dry ditch appears unconnected to other ditches in the wider landscape. The site is also unsuitable for water vole. Both species will not be discussed further within this report.</p>	Negligible
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Table 2.1: Summary of potential for protected species on site.



Section 3: Ecological Opportunities and Constraints

- 3.1. Based on the ecological features present, or with potential to be present, as identified in Section 2, detailed below are the potential impacts as a result of development of the site, along with resulting constraints and opportunities, including those for delivery of net gain, in line with legislation and national and local planning policy (see Appendix 1).
- 3.2. The proposals for the site include the construction of 75 units with associated access and landscaping. The current proposals are still under review, however habitats of highest ecological importance such as hedgerows, scattered trees and scrub should be retained and enhanced onsite to continue to provide potential opportunities for protected/priority fauna.
- 3.3. In line with Planning Policy Wales, The Environment (Wales) Act, 2016 and local policies requirements and where appropriate, there are opportunities within the scheme to deliver biodiversity net gain through:
 - Incorporating and creating species rich grassland within open space, including areas with informal management;
 - Incorporating native species rich hedgerows and trees;
 - Enhancing retained hedgerow across the site;
 - Incorporating a drainage pond designed with ecological benefits including with wetland planting;
 - Incorporating landscape planting that is of benefit to wildlife; and
 - Incorporating hibernacula, log piles, bird and bat boxes within the site.

Protected Sites

- 3.4. Due to the site's close proximity to the Pembrokeshire Marine SAC and other statutory designated sites, Pembrokeshire County Council have developed a Habitats Regulations Assessment (HRA) Screening of Preferred Strategy (August 2009) to determine the likely significant effects of developments, alone and in combination with other plans. As the site is for residential housing, it is anticipated that the development will result in a likely significant effect on the SAC in the absence of any mitigation and therefore a HRA will be required. Initially, a Stage 1 Screening Assessment is likely to be required to determine which designated sites could be affected by the proposed development and what impact pathways are present. Following this, any sites/pathways screened in during the first stage will require a Stage 2 Shadow Appropriate Assessment to outline mitigation measures required to conclude that there will be no likely significant effects on any of the SACs nearby



Section 4: Recommended Further Work

- 4.1. In order to inform any future planning application for development of the site, the Phase II ecology survey works set out below would be required, however the scope will depend on the nature of the proposed development and potential impacts. Where potential impacts could be avoided through appropriate development design, the scope of surveys could be reduced. This would inform the nature and scope of any mitigation and enhancement required and inform the evolution of a masterplan for the site.
- Bats – Activity survey and static detector deployment, once a season during the active season for bats (April to October inclusive);
 - Bats – Potential tree climbing/emergence or re-entry surveys on trees with bat roosting potential which will be lost to the development. Tree climbing can be undertaken anytime of year, emergence/re-entry surveys – May – September inclusive;
 - Badgers – updated badger survey of the site and within 30m where access is possible;
 - Wintering birds – wintering bird surveys undertaken between September and April inclusive; and
 - Reptiles – Presence/likely absence surveys with set up and seven subsequent visits undertaken between April –September.
- 4.2. To inform a planning application, a Stage 1 Screening Assessment and potentially a Stage 2 Shadow Appropriate Assessment will be required to determine the likely significant effect of the development and the outline mitigation measures required.



References

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CIEEM, (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Marine and Coastal. Winchester. Version 1.1

Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708–746. Available online at [British birds. co.uk/wp-content/uploads/2014/07/BoCC4.pdf](http://Britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf)

JNCC (2010). Handbook for Phase I Habitat Survey – A technique for Environmental Audit



Appendix 1: Legislation and Planning Policy

Legislation

Specific habitats and species receive legal protection in the UK under various pieces of legislation, including:

- The Wildlife and Countryside Act (WCA) 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2018;
- The Countryside and Rights of Way (CROW) Act 2000;
- The Natural Environment and Rural Communities Act (NERC) 2006;
- The Hedgerows Regulations 1997; and The Protection of Badgers Act 1992.

The European Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, 1992, often referred to as the 'Habitats Directive', provides for the protection of key habitats and species considered of European importance. Annexes II and IV of the Directive list all species considered of community interest. The legal framework to protect the species covered by the Habitats Directive has been enacted under UK law through The Conservation of Habitats and Species Regulations 2018 (as amended).

In Britain, the WCA 1981 (as amended) is the primary legislation protecting habitats and species. SSSIs, representing the best examples of our natural heritage, are notified under the WCA 1981 (as amended) by reason of their flora, fauna, geology or other features. All breeding birds, their nests, eggs and young are protected under the Act, which makes it illegal to knowingly destroy or disturb the nest site during nesting season. Schedules 1, 5 and 8 afford protection to individual birds, other animals and plants.

The CROW Act 2000 strengthens the species enforcement provisions of the WCA 1981 (as amended) and makes it an offence to 'recklessly' disturb a protected animal whilst it is using a place of rest or shelter or breeding/nest site.

Species and Habitats of Principal Importance and the UK Biodiversity Action Plan

The UK Post 2010 Biodiversity Framework succeeded the UK BAP partnership in 2011 and covers the period 2011 to 2020. However, the lists of Priority Species and Habitats agreed under the UKBAP still form the basis of much biodiversity work in the UK. The current strategy for England is 'Biodiversity 2020: A Strategy for England's wildlife and ecosystem services' published under the UK Post2010 UK Biodiversity Framework. Although the UK BAP has been succeeded, Species Action Plans (SAPs) developed for the UK BAP remain valuable resources for background information on priority species under the UK Post 2010 Biodiversity Framework.

Priority Species and Habitats identified under the UKBAP are also referred to as Species and Habitats of Principal Importance for the conservation of biodiversity in England and Wales within Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006. The commitment to preserving, restoring, or enhancing biodiversity is further emphasised for England and Wales in Section 40 of the NERC Act 2006.



National Planning Policy

Planning Policy Wales (PPW) Edition 11

Chapter 6 of the PPW (Distinctive and Natural Places) includes the following commitments and what they relate to where they are applicable to this site:

- Biodiversity and Ecological Networks – Promoting biodiversity by enhanced biodiversity and resilience of ecosystems duty (as set out in The Environment (Wales) Act 2016. The Nature Recovery Action Plan supports this legislative requirement to reverse the decline in biodiversity, address the underlying causes of biodiversity loss and increase the resilience of ecosystems by taking specific action focused around the 6 objectives for habitats and species.

Development plan strategies, policies and development proposals must consider the need to:

- support the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- ensure statutorily and non-statutorily designated sites are properly protected and managed;
- safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and
- secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent, and connectivity of ecological networks.
- Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty) – Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity. In doing so planning authorities must also take account of and promote the resilience of ecosystems.
- Designated sites - Planning authorities must have regard to the relative significance of international, national, and local designations in considering the weight to be attached to nature conservation interests.
- Protection and Management of Designated Sites - Statutorily designated sites must be protected from damage and deterioration, with their important features conserved and enhanced by appropriate management.
- Protected species - The presence of a species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained. Planning authorities should advise anyone submitting a planning application that they must conform with any statutory species protection provisions affecting the site, and potentially the surrounding area, concerned. An ecological survey to confirm whether a protected species is present and an assessment of the likely impact of the development on a protected species may be required in order to inform the development management process. It is considered best practice that screening to determine the presence of protected species should be carried out by a competent ecologist on the basis of data provided by the relevant Local Environmental Record Centre.
- Developments are always subject to the legislation covering European protected species regardless of whether or not they are within a designated site.



Proposals for which development works would contravene the protection afforded to European protected species require derogations from the provisions of the Habitats Directive. A derogation may only be authorised if there is no satisfactory alternative and if the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.

- Trees, woodlands, and hedgerows - Planning authorities should protect trees, hedgerows, groups of trees/...woodland where they have ecological value, contribute to the character or amenity...or perform a beneficial...green infrastructure function.

Technical Advice Note 5 (TAN 5), Nature Conservation and Planning (2009)

The purpose of Technical Advice Note (Wales) 5 (TAN5) is to supplement the information provided in PPW. This provides advice for local planning authorities on:

- The key principles of positive planning for nature conservation;
- Nature conservation and Local Development Plans;
- Nature conservation in development management procedures;
- Development affecting protected internationally and nationally designated Sites and habitats; and
- Development affecting protected and priority habitats and species.

The Environment (Wales) Act 2016

This piece of legislation is to plan and manage Wales' natural resources. The key area that is relevant to the proposals relates to the sustainable management of the Welsh Natural Resources, the principles of which are outlined below:

- Building resilience - A resilient ecosystem is one that is healthy and functions in a way that is able to address pressures and demands placed on it and is able to deliver benefits over the long term to meet current social, economic, and environmental needs.
- Managing multiple benefits - Our ecosystems provide us with a wide range of services and benefits. We need to take all of these into account when we make decisions about how we use them, so that they provide multiple benefits for the long term. This includes taking into account their intrinsic value.
- Adaptive management - Ecosystem processes and functions are complex and variable, and our approach will be adaptive with a focus on active learning derived from monitoring and outcomes and taking into account the time lags and feedback times for ecosystems to respond to interventions. It is about 'learning by doing'.
- Long term - It is also important to take account of the short, medium, and long-term consequences of actions, and consider time lags and feedback times for ecosystems to respond to any interventions.
- Evidence - This means gathering information and considering all the social, economic, and environmental evidence (including evidence in respect of uncertainties) from a wide range of experts and stakeholders at the local, regional, and national level as appropriate, both to identify priorities and opportunities for their management and also in delivering the management actions.
- Collaboration and co-operation - It is about having a two-way communication across local, regional, national, and international levels and being interconnected between policy, process, and people to break down silo ways of working. This approach supports the development and implementation of the new, innovative solutions that are needed.
- Working at the right scale - An ecosystem is a functioning unit that can operate at any scale depending on the problem or issue being addressed.



Local Planning Policy

Local Development Plan for Pembrokeshire – Adopted 28th February 2013

Strategy policies

SP 1 Sustainable Development

All development proposals must demonstrate how positive economic, social and environmental impacts will be achieved and adverse impacts minimised.

General Policies

GN.1 General Development Policy

Development will be permitted where the following criteria are met:

1. The nature, location, siting and scale of the proposed development is compatible with the capacity and character of the site and the area within which it is located;
2. It would not result in a significant detrimental impact on local amenity in terms of visual impact, loss of light or privacy, odours, smoke, fumes, dust, air quality or an increase in noise or vibration levels;
3. It would not adversely affect landscape character, quality or diversity, including the special qualities of the Pembrokeshire Coast National Park and neighbouring authorities;
4. It respects and protects the natural environment including protected habitats and species;
5. It would take place in an accessible location, would incorporate sustainable transport and accessibility principles and would not result in a detrimental impact on highway safety or in traffic exceeding the capacity of the highway network;
6. Necessary and appropriate service infrastructure, access and parking can be provided;
7. It would not cause or result in unacceptable harm to health and safety;
8. It would not have a significant adverse impact on water quality; and
9. It would neither contribute to the coalescence of distinct settlements nor create or consolidate ribbon development.

GN.2 Sustainable Design

Development will be permitted where relevant criteria are met:

1. It is of a good design which pays due regard to local distinctiveness and contributes positively to the local context;
2. It is appropriate to the local character and landscape/townscape context in terms of layout, scale, form, siting, massing, height, density, mix, detailing, use of materials, landscaping and access arrangements / layout;
3. It incorporates a resource efficient and climate responsive design through location, orientation, density, layout, land use, materials, water conservation and the use of sustainable drainage systems and waste management solutions;
4. It achieves a flexible and adaptable design;
5. It creates an inclusive and accessible environment for users that addresses community safety;
6. It provides a good quality, vibrant public realm that integrates well with adjoining streets and spaces and
7. It contributes to delivering well designed outdoor space with good linkages to adjoining streets, spaces and other green infrastructure.



GN.3 Infrastructure and New Development

Where development generates a directly related need for new or improved infrastructure, services or community facilities and this is not already programmed by a service or infrastructure company, then this must be funded by the development, and:

1. Related in scale and kind to the development; and
2. Provided on site wherever appropriate. In exceptional circumstances contributions may be made to the provision of facilities elsewhere, provided their location can adequately service the development.

The timely provision of directly related infrastructure, services and community facilities shall be secured by planning condition(s), the seeking of planning obligation(s) by negotiation, and/or by any other agreement or undertaking. The viability of a development will be a key consideration when securing planning obligations and dispensation may be allowed where these requirements cannot be supported by land values. Measures necessary to physically deliver a development and ensure that it is acceptable in planning terms will be required in the first instance. Where appropriate contributions may be sought for a range of purposes, including:

- 1) Affordable housing
- 2) Recreational and Amenity Open Space
- 3) Sustainable Transport Facilities
- 4) Education
- 5) Community Facilities, including libraries,
- 6) Regeneration
- 7) Waste
- 8) Renewable and low carbon energy
- 9) Biodiversity

In the event that viability considerations indicate that not all the identified contributions can reasonably be required, priority contributions will be determined on the basis of the individual circumstances of each case. In the case of housing developments, priority will be given to affordable housing unless there is an overwhelming need for the available contribution, in whole or in part, to be allocated for some other appropriate purpose/s.

GN.35 Protection of Open Spaces with Amenity Value

Development which would adversely affect the appearance, character or local amenity value of areas of public and private open space will not normally be permitted. In exceptional circumstances, where the proposal will bring clear social and/or economic benefits to the local community and make a positive contribution to the built environment, development may be permitted where it can be demonstrated that no suitable alternative site is available.

GN.37 Protection and Enhancement of Biodiversity

All development should demonstrate a positive approach to maintaining and, wherever possible, enhancing biodiversity. Development that would disturb or otherwise harm protected species or their habitats, or the integrity of other habitats, sites or features of importance to wildlife and individual species, will only be permitted in exceptional circumstances where the effects are minimised or mitigated through careful design, work scheduling or other appropriate measures.

Supplementary Planning Guidance

BIODIVERSITY: How biodiversity can be protected and enhanced in the development process



Appendix 2: Trees with Bat Potential Photographs



Photograph 9: Sycamore (T1) - low bat roost potential within western hedgerow



Photograph 10: Sycamore (T1) - features with bat roosting potential



Photograph 11: Sycamore (T1) - features with bat roosting potential



Photograph 12: Sycamore (T2) - low bat roosting potential



Photograph 13: Sycamore (T3) - low bat roosting potential



Photograph 14: Sycamore (T3) - cavity feature - low bat roosting potential





Photograph 15: Sycamore (T4) - low bat roosting potential



Photograph 16: Sycamore (T4) - split branch feature - low bat roosting potential





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