

PRELIMINARY ECOLOGICAL
APPRAISAL, CROSSFLOW ENERGY
DEMONSTRATION TURBINES,
MARGAM SANDS

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Summary

In October 2021, Chris F. Brown was commissioned by Crossflow Energy to undertake a Preliminary Ecological Appraisal (PEA) of an area at Margam Sands, within the Tata Steel Works, Port Talbot. The PEA was required in order to support a planning application for a proposal to establish two small wind turbines and supporting infrastructure on the site¹. The PEA also incorporates proposals for biodiversity net gain.

The survey covered a small area (c.0.2ha) on the periphery of the Tata Steel Works at Port Talbot. The site comprised revegetated spoil, and was adjacent to a road (lying to the east of the development area). As the site was close to the wider steel works, much of the surrounding area was dominated by operational steel works buildings, machinery and roads, the majority of which was of low ecological value. To the west of the site was Margam Sands and Swansea Bay. The site was assessed as being of local value for vascular plants and invertebrates. The biodiversity interest at the site was confined to the northernmost section, and running along the immediate western edge. These areas were at least 10m from the proposed location of the wind turbines and no impacts on existing biodiversity interest were predicted.

It is recommended that those parts of the site that are not built on, are kept open, conditions which will favour a similar range of plants to those currently present. This will provide suitable habitats for ruderal vascular plants, reptiles and, in particular, invertebrates. Biodiversity enhancement at the site will be in accordance with the Environment (Wales) Act 2016 and Neath Port Talbot County Borough Council Local Development Plan (2016).

No further surveys of the site are required apart from the supervision of vegetation clearance when reptiles are active.

Further Actions

The table below provides information on further surveys, mitigation measures and enhancement measures to be undertaken on site.

Action	Why	When
Enhancement: Areas of site that are not built on should be left as early successional habitat (i.e. open, sparsely vegetated). Consider introducing seed of kidney vetch <i>Anthyllis vulneraria</i>	To provide habitat for species of vascular plants, reptiles and invertebrates (kidney vetch is larval food plant of small blue butterfly, a S. 7 (Environment (Wales) Act) species	Pre-construction stage

¹ A single wind turbine is already present on the site and the proposal is to replace this.

1 Introduction

1.1 Background and Survey Objectives

In October 2021 Chris F. Brown was commissioned by Crossflow Energy to undertake a Preliminary Ecological Appraisal (PEA) of an area within the Port Talbot Steel Works. The PEA is required in order to support a planning application for a proposal to establish a small wind turbine on the site in addition to the existing demonstration turbine.

The aim of the PEA is to identify ecological constraints to the proposed works and make recommendations for ecological avoidance/mitigation/compensation measures and opportunities for biodiversity enhancement that can be incorporated into the proposals.

The report has been prepared in accordance with guidance produced by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017) and the British Standard 42020:2013.

The objectives of this report are:

- *To identify designated nature conservation sites within the vicinity of the site;*
- *To identify any records and/or populations of protected, notable or scarce species in the vicinity of the site;*
- *To record habitats or features of ecological interest within or in immediate proximity to the site;*
- *To record the presence of, or potential for, protected or notable species;*
- *To make an ecological assessment and highlight potential ecological constraints;*
- *To outline any further survey work and potential protected species requirements if relevant; and*
- *To make suggestions for avoidance, mitigation, compensation and enhancements in line with planning policies where appropriate.*

1.2 Site Description

The site was located at the periphery of the Port Talbot Steel Works (Grid reference: SS 759 874) and measured approximately 0.2ha (this includes area proposed for turbine, existing small offices and surrounding spoil). The site is entirely revegetated spoil. There is a minor road immediately adjacent to the eastern boundary of the site. Its proximity to the wider steel works site, means that it is close to operational steel works buildings, machinery and roads, see Figure 1 below.

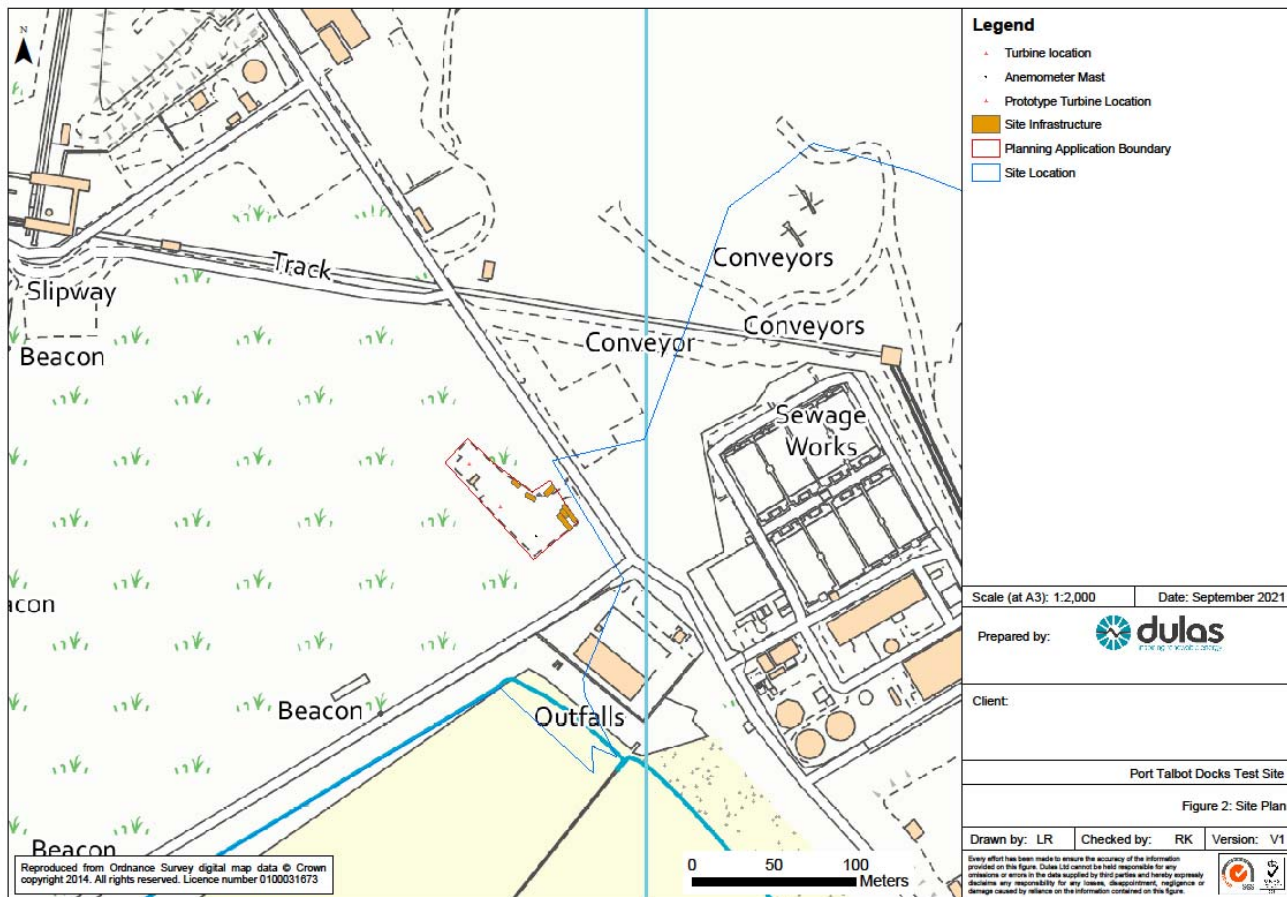


Figure 1. Site location and wider landscape (site indicated by red line boundary).

1.3 Description of the Proposed Development

Crossflow Energy are seeking to augment the existing demonstration wind turbine at their site at Margam Sands, Port Talbot with a further turbine. A small amount of associated infrastructure will also be required. The total site area is approximately 0.2ha, though the footprint of the proposed turbine and associated infrastructure is much smaller (approximately 100 m²).

2 Methodology

2.1 Desk Study

A desk study was carried out in October 2021 to identify statutory designated sites within a 10km (international sites) or a 5km radius (national sites). Non-statutory designated sites were searched for within a 2km radius and there was a search area of 1km radius for priority habitats of nature conservation importance. Records of protected and other notable species within a 2km radius of the site were also searched for.

Multi-Agency Geographic Information for the Countryside (MAGIC) and Natural Resources Wales' designated sites website were used to derive information relating to the location of statutory designated sites and priority habitats.

South East Wales Biodiversity Records Centre (SEWBReC) provided details of non-statutory designated sites of nature conservation importance and records of protected and other notable species.

It is important to note that most species are greatly under-recorded and therefore a lack of records for a location should not be taken as an absence of the species concerned. Furthermore, a record for a particular habitat or species does not necessarily confirm its current presence.

2.2 Field Survey

2.2.1 Extended Phase 1 Habitat Survey

A Phase 1 Habitat Survey was conducted on the 6th October 2021 by Ecology Consultant, Chris F. Brown MSc MCIEEM, based on the techniques and methodologies described in the Handbook for Phase 1 Habitat Survey (JNCC, 2010) and using standard nomenclature (Stace, 2019). The habitats present were recorded on to a field map with written target notes providing supplementary information on, for example, species composition, structure and management where relevant.

This was extended to include notes on fauna and habitats which could potentially support protected species, an approach commonly referred to as an Extended Phase 1 Habitat Survey. The presence of, or potential for, protected species was noted on the field map during the survey.

2.3 Assessment and Evaluation

The importance of the habitat features on site were assessed and defined in a geographical context (see Appendix 1). The frame of reference for the habitat features in terms of their geographical importance is in line with guidance set out in CIEEM, 2017.

Species are assessed, where appropriate, against best practice guidelines.

As part of the evaluation, further surveys may be recommended based on the suitability of habitats to support protected species, the habitats themselves and potential impacts posed by the proposed development and the legal protection afforded to both habitats and species.

2.4 Zone of Influence

The assessment conducted for this report has considered the area in which ecological features could be subject to significant effects from the proposed development. The area of the potential effects is often wider than the actual perimeter of the development site and is known as the Zone of Influence.

The Zone of Influence varies for different ecological features, and each designated site, habitat and species has been considered in relation to their sensitivity to the proposed development.

2.5 Limitations

The survey was carried out in October, a sub-optimal time of year to conduct botanical and habitat assessment. However, limitations imposed by this timing were not thought to be significant in gauging the value of the site. The weather was calm, warm and dry on the day of the survey and therefore, there are not considered to be any weather limitations.

3 Baseline Ecological Conditions

3.1 Designated sites

A total of five statutory designated sites were identified during the desk study. Three internationally designated sites were present within 10km of the site; one Ramsar Site and two Special Areas of Conservation (SAC). Two nationally designated sites were within 5km of the site; both Sites of Special Scientific Interest (SSSI).

See Table 3.1 below and Appendix 2 for further details.

Table 3.1: Statutory designated sites within 10km (international) and 5km (national), non-statutory designated sites within 2km and Habitats of Principal Importance within 1km of the survey site.

Site Name	Description*	Designations	Distance from site
Statutory Designated Site			
Margam Moors	The last remaining example of the once extensive coastal levels in West Glamorgan. Bounded to the seaward side by dunes and landward by high ground, the meadows provide an agriculturally-managed freshwater habitat which hosts many species of plant on the edge of their geographical range, and nationally important invertebrates. The nationally rare Crawling Water Beetle (<i>Haliphus mucronatus</i>), Ruddy Darter (<i>Sympetrum sanguineum</i>) and the regionally rare scavenger beetle (<i>Anacaena bipustulata</i>), have all been found in the ditches.	SSSI	3km S
Eglwys Nunydd Reservoir	The largest body of fresh water in the county. On the site of Margam Moors which, before being reclaimed for the Abbey Steel Works, were a notable site for wildfowl. The reservoir attracts large numbers of wintering waterfowl and passage migrants.	SSSI	3.5km SE
Kenfig	Kenfig is of special interest for its extensive sand dune habitats and standing waters together with a mixture of associated coastal habitats including saltmarsh, intertidal areas, swamp, woodland and scrub. In addition, the site is of special interest for the assemblages of plants, fungi and invertebrates that are associated with the sand dunes and standing waters. Designated an SAC for the presence of a number of Annex I habitats and Annex II species, namely: "Fixed Coastal Dunes with	SAC and SSSI (and NNR)	5km SE

	herbaceous vegetation (grey dunes), Dunes with Creeping Willow (<i>Salix repens</i> ssp.), var. <i>argentea</i> (<i>Salicion arenariae</i>), Humid Dune Slacks, Hard Oligo-mesotrophic waters with benthic vegetation of Common Stonewort (<i>Chara</i> ssp), Atlantic Salt Meadow and Petalwort (<i>Petalophyllum ralfsii</i>) & Fen Orchid (<i>Liparis loeselii</i>)".		
Crymlyn Bog	Crymlyn Bog comprises a floodplain-valley mire located within a lowland coastal context and is the most extensive wetland of its type in Wales. The mire features a complex mosaic of vegetation types, supporting examples of swamp communities. The site supports an exceptionally wide range of rich and poor fen communities, some of which bear a close floristic affinity to certain floodplain mires in East Anglia. The presence of significant areas of Great Fen-sedge (<i>Cladium mariscus</i>) swamp is notable in extensive stands of this uncommon vegetation type, occurring at only three other sites in Wales. Crymlyn Bog is part of a larger inter-estuarine complex which includes the adjacent Pant y Sais fen.	Ramsar Site	7.9km NW
Crymlyn Bog	Designated for the presence of a number of Annex I habitats, namely: "Transition Mires & Quaking Bogs", "Calcareous fens with Great Fen-sedge".	SAC	7.9km NW

*Citations taken from JNCC website, accessed 11/10/2021.

3.2 Habitats

The habitats identified within the Extended Phase 1 Habitat Survey are listed and described below. All habitats are marked on the Phase 1 Habitat map in Appendix 3, each habitat type is illustrated with a photograph in Appendix 4. DAFOR (Dominant, Abundant, Frequent, Occasional, Rare) values are provided for the vascular plant species present.

A single habitat was present on site:

- *Spoil (Ephemeral/short perennial)*

3.2.1 Spoil (ephemeral/short perennial)

The whole site comprised an area of spoil that had become thinly vegetated in places, particularly towards the northern end and the western edge. The area was marked as spoil (ephemeral/short perennial) and the Phase I Habitat map is provided in Appendix 3. The central area, including the proposed turbine location, was largely devoid of vegetation, apart from a very thin covering of common bryophytes (mosses).

Species present at the northern end and along the western edge included the non-native Canadian fleabane *Conyza canadensis* (frequent) and butterfly-bush *Buddleja davidii* (rare), alongside a range of native species characteristic of spoil habitats. A number of these species indicated a base-rich and sandy substrate. These included occasional wild carrot *Daucus carota* ssp. *carota*, frequent hare's-foot clover *Trifolium arvense*, frequent common restharrow *Ononis repens* and occasional common stork's-bill *Erodium cicutarium*. Thyme-leaved sandwort *Arenaria serpyllifolia* and buck's-horn plantain *Plantago coronopus* (both occasional) also indicated the sandy substrate. All these species are also typical of open 'waste' ground, with low nutrient status. Other species typical of these conditions that were present at the site included occasional great mullein *Verbascum thapsus*, occasional hop trefoil *Trifolium campestre*, frequent ribwort plantain *Plantago lanceolata*, occasional bristly oxtongue *Helminthotheca echioides*, occasional tufted vetch *Vicia cracca*, occasional annual wall-rocket *Diploxys muralis* and occasional hedge mustard *Sisymbrium officinale*. Grasses were sparsely represented and mainly comprised patchy Yorkshire-fog *Holcus lanatus* and very occasional cock's-foot *Dactylis glomerata*. Bryophytes were also extensive throughout most of the site. These comprised common species such as *Brachythecium rutabulum*, *Kindbergia praelonga*, *Schistidium crassipilum* and a range of common *Bryum*, *Barbula* and *Didymodon* species. Representative photos of the site area are provided as Photographs 1 – 5 (Appendix 4).

3.3 Species

3.3.1 Plants

There are records of two priority and protected species of vascular plants within 2km of the site. These are sea stock *Matthiola sinuata* and basil thyme *Clinopodium acinos*. Sea stock has been recorded widely, to the north of the site (approximately 1.5km north, north of the Afon Afan) whereas basil thyme has been recorded at the 1km square level (i.e. within SS 7587) and it is unclear where its exact location is. These species are listed under Section 7 of the Environment (Wales) Act 2016. The habitat surveyed is not suitable for these vascular species. The records did not contain any priority or protected species of bryophytes within 2km of the site.

3.3.2 Amphibians

SEWBRc returned 3 records of amphibians within 2km of the site. One of these was common frog *Rana temporaria*, one was common toad *Bufo bufo* and one was smooth newt *Lissotriton vulgaris*. There were no great crested newt *Triturus cristatus* records within 2km of the site.

There were no ponds within the site boundary. The nearest mapped pond is approximately 1.2km from site (though this is likely to be a settling pond or similar, and not suitable for newts). There were also no obvious ditches within the vicinity of the site. The site itself is very dry and isolated

from waterbodies and suitable terrestrial habitat by concrete areas and roads in all directions, and is therefore highly unlikely to be used by amphibians, particularly great crested newts.

3.3.3 Badgers

SEWBRc returned no records of badger *Meles meles* within 2km of the site.

3.3.4 Bats

SEWBRc returned 3 records of bats within 2km of the site; species comprised an unidentified species, 1.3km from the site, with two records of noctule *Nyctalus noctula*, one at 1.7km from the site and one at 2.2km from the site. The site itself was unsuitable for foraging bats, as it did not support features (e.g. hedgerows/trees) conducive to this behaviour.

3.3.5 Birds

The habitat on site provided suitable foraging conditions for a small variety of bird species, though was considered poor in terms of breeding potential. The site is highly unlikely to support Wildlife and Countryside Act Schedule 1-listed species, or any significant assemblages of Birds Directive Annex 1 birds or other rare or notable species.

SEWBRc provided records of birds within 2km of the site. Of these, the habitats on site were potentially suitable for dunnoek *Prunella modularis*, starling *Sturnus vulgaris* and linnet *Linaria cannabina*, though these are unlikely to be frequently present and there is no breeding habitat potential at the site.

There were records of peregrine (*Falco peregrinus*) and kestrel (*Falco tinnunculus*) nearby (single records within 200m). However, the area of the site is so small that it does not provide good conditions for prey species and therefore it would only provide very occasional hunting opportunities for these species.

There was a substantial number of records of birds associated with the sea or water bodies within 2km. However, the proposed site is entirely unsuitable for these species. The nearest Special Protection Area (SPA) is Burry Inlet, 20km from the site, on the far side of Swansea, and will not be impacted by the works. None of the qualifying species of the Burry Inlet SPA use the site, or will be disturbed by the proposed development. In addition, no species listed under the Birds Directive Annex 1 occur on, or near to the site in numbers significant to justify the protection of the site under this legislation.

3.3.6 Hazel Dormouse

SEWBRc returned no records of hazel dormouse *Muscardinus avellanarius* within 2km of the site. There is no suitable habitat for hazel dormouse on site and the site is completely isolated from any off site suitable hazel dormouse habitat. Given the site's isolation from other areas of

suitable habitat and the highly disturbed surrounding of the steel works, it is considered extremely unlikely that hazel dormouse would be present on site.

3.3.7 Invertebrates

The following priority and protected species of invertebrate have been recorded within 2km of the site: small blue *Cupido minimus* (butterfly), brown-banded carder bee *Bombus humilis*, moss carder bee *B. muscorum*, dingy skipper *Erynnis tages* (butterfly) and grass rivulet *Perizoma albulata* (moth).

Most of the invertebrate records are >1km from the site. However, brown-banded carder bee has been recorded within 300m of the site. Brown-banded carder bee requires fairly tall, open flower-rich grasslands with long-tubed flowers. It is considered that conditions at the site (open and relatively floristically rich in the north of the site) were suitable for species of carder bee.

Small blue has been recorded on at least ten occasions within 2km of the site. The closest records were 781m and 1118m from the site. The species has been recorded widely in the Port Talbot Steel Works area from suitable thinly vegetated, 'waste ground' conditions, analogous to the site itself. For example, large numbers were recorded in 2006 from an area of dockland on the peripheral distributor road. There are also records from Harbour Way, though these are > 2km distance. The conditions at the site were not currently suitable for this species (there was an absence of kidney vetch, the larval food plant). The site was also perhaps lacking in shelter and taller grass areas for male territories and roosting.

The site is considered to be of district value for its invertebrates due to its potential to support carder bee species. However, its small size and the presence of similar habitat in many places throughout the Port Talbot Steel Works site, reduces its relative importance.

3.3.8 Reptiles

SEWBRc returned single records of common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*, with two records of grass snake *Natrix helvetica*. All these records were > 1km from the site.

3.3.9 Non-native invasive plants

A single non-native invasive plant was recorded on-site; butterfly-bush. This was present in small quantity, away from the main proposed construction area. There is concern that this plant is causing problems by invading important wildlife habitats, particularly those important for invertebrates. However, this species is currently not listed among the wild invasive non-native plants listed on Schedule 9 of the Wildlife and Countryside Act and is not listed by Plantlife as a plant that should be added (Butterfly Conservation, 2015). Due to the small quantity that was recorded on site, this species will not be considered further.

4 Planning Policy and Legislation

4.1 Environment (Wales) Act

The Environment (Wales) Act 2016 requires public authorities to seek to maintain and enhance biodiversity in the exercise of their functions. Section 6 of this Act requires that public authorities must seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems. Section 7 of this Act requires Welsh Ministers to publish a list of organisms and habitats which are of principal importance for maintaining and enhancing biodiversity in Wales. At national level, Chapter 5 of Planning Policy Wales (which relates to conserving and enhancing the natural environment) requires Local Authorities to take measures to:

- *Promote the conservation of landscape and biodiversity, in particular the conservation of native wildlife and habitats;*
- *Ensure that action in Wales contributes to meeting international responsibilities and obligations for the natural environment;*
- *Ensure that statutorily designated sites are properly protected and managed;*
- *Safeguard protected species; and*
- *Promote the functions and benefits of soils, and in particular their function as a carbon store.*

Developers must ensure that they comply with the above legislation by fully assessing the potential impacts on protected species and habitats from the proposed development. Where planning permission is required, this assessment must be finalised prior to and included with the submission of the planning application and the proposals should also be in compliance with relevant planning policy. The Planning Authority can then ensure that the necessary protected species and habitats information has been provided to inform an assessment and that proposals are in full accordance with relevant legislation and policy.

4.2 Local Planning Policy

Table 4.2 details the policies within the Neath Port Talbot County Borough Council Local Development Plan (2011-2026), adopted January 2016, which are relevant to the ecological features on site.

Table 4.2: Summary of relevant local planning policy – Neath Port Talbot County Borough Council, Local Development Plan

Policy	Description
SP15 – Biodiversity and Geodiversity	Important habitats, species and sites of geological interest will be protected, conserved, enhanced and managed through the following measures: 1. The identification of the following Internationally and Nationally designated sites within the County Borough to enable their protection: (a) Special Areas of Conservation (SACs) and Ramsar Sites; (b) Sites of Special Scientific Interest (SSSIs); (c) National Nature Reserves (NNRs). 2. The identification and protection of sites of regional and local importance; 3. The protection of important natural heritage features.
EN6 – Important Biodiversity and Geodiversity Sites	Development proposals that would affect Regionally Important Geodiversity Sites (RIGS), Local Nature Reserves (LNRs), Sites of Interest for Nature Conservation (SINCs), sites meeting SINC criteria or sites supporting Local Biodiversity Action Plan (LBAP) or S42 habitats or species [now Section 7 habitats and species] will only be permitted where: 1. They conserve and where possible enhance the natural heritage importance of the site; Or 2. The development could not reasonably be located elsewhere, and the benefits of the development outweigh the natural heritage importance of the site. Mitigation and/or compensation measures will need to be agreed where adverse effects are unavoidable.
EN7 – Important Natural Features	Development proposals that would adversely affect ecologically or visually important natural features such as trees, woodlands, hedgerows/field boundaries, watercourses or ponds will only be permitted where: 1. Full account has been taken of the relevant features in the design of the development, with measures put in place to ensure that they are retained and protected wherever possible; or 2. The biodiversity value and role of the relevant feature has been taken into account and where removal is unavoidable, mitigation measures are agreed.
SP16 – Environmental Protection	Air, water and ground quality and the environment generally will be protected and where feasible improved through the following measures: 1. Ensuring that proposals have no significant adverse effects on water, ground or air quality and do not significantly increase pollution levels; 2. Giving preference to the development of brownfield sites over greenfield sites where appropriate and deliverable; 3. Ensuring that developments do not increase the number of people exposed to significant levels of pollution.

4.3 Relevant Legislation

4.3.1 National Legislation

4.3.1.1 *The Wildlife and Countryside Act 1981*

The Wildlife and Countryside Act 1981 (as amended) consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the conservation of wild birds (Birds Directive) in Great Britain.

4.3.1.2 *The Conservation of Habitats and Species Regulations 2017*

The Conservation of Habitats and Species Regulations 2017 transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law and transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations provide for the designation and protection of 'European sites' (Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)), the protection of 'European Protected Species', and the adaptation of planning and other controls for the protection of European Sites.

4.3.2 Species Specific Legislation

4.3.2.1 *Birds*

Breeding wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). Under the Wildlife and Countryside Act, a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild state. Game birds however are not included in this definition (except for limited parts of the Act). They are covered by the Game Acts, which fully protect them during the close season.

All birds, their nests and eggs are protected and it is thus an offence, with certain exceptions to:

- *intentionally kill, injure or take any wild bird;*
- *intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built;*
- *intentionally take or destroy the egg of any wild bird;*
- *have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954;*
have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954;
- *use traps or similar items to kill, injure or take wild birds; and*

- *have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations.*

Additionally, for some species listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) it is an offence to intentionally or recklessly disturb the adults while they are in and around their nest or intentionally or recklessly disturb their dependent young.

Under The Conservation of Habitats and Species Regulations 2017, sites with assemblages of birds listed on Annex 1 of the Birds Directive should have their habitats protected and be designated as a Special Protection Area.

4.3.2.2 Reptiles

Slow-worm, adder, grass snake and common lizard are protected under the Wildlife and Countryside Act 1981 (as amended). It is illegal to kill or injure them.

It is not illegal to capture, disturb or to damage their habitats. However, the reptiles themselves are protected so any works to damage their habitat could risk causing harm to reptiles and hence could be illegal.

4.3.2.3 Non-native Invasive Vascular Plants

Section 14(2) of the Wildlife and Countryside Act 1981 (WCA 1981) states that "if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence".

In addition, The Environmental Protection Act 1990 (EPA 1990) contains a number of legal provisions concerning "controlled waste", which are set out in Part II. Any Japanese knotweed contaminated soil or plant material that one discards, intends to discard or are required to discard is likely to be classified as controlled waste.

5 Evaluation of Ecological Features/Further Survey

Table 5.1 below provides an evaluation of the ecological features, identifying which are of sufficient value to be taken forward for further consideration. Any ecological feature that is identified as negligible value will not be considered further, unless there is a legal obligation to consider. Where there is insufficient evidence available to ascertain value, further surveys will be recommended to be able to assess the ecological value of that feature in relation to the site and the proposed development.

Table 5.1: Evaluation of Ecological Feature/Further Survey Required

Ecological Feature	Justification	Level of Importance
Designated sites	There are designated sites of nature conservation importance within 10km of the site, including sites of international value.	International value, though not associated with site. No further survey.
Vascular plant assemblage (spoil - short perennial/ephemeral)	Habitat is small in extent and similar habitat is widespread within the Port Talbot Steel Works site and surrounding area. However, the site supports a good range of vascular plant species and is potentially suitable for a range of invertebrates, including carder bee species.	Local value (district if take into consideration associated invertebrate value). No further survey.
Amphibians	Unlikely to be present on site.	Negligible value. No further survey.
Badgers	No evidence of presence on site.	Negligible value. No further survey.
Bats	Unlikely to be present on site.	Negligible value. No further survey.
Birds	The site has potential to support very limited number of birds, but no significant assemblages of birds are expected.	Site value and protected by legislation (if breeding, though thought unlikely)
Hazel Dormice	Unlikely to be present on site.	Negligible value. No further survey.
Invertebrates	Suitable habitat to potentially support invertebrates of local importance onsite.	District value. No further survey.
Non-native invasive plants	None on site	Negligible value. Not considered further.

5.1 Ecological Constraints, Opportunities and Recommendations

5.1.1 Designated sites

5.1.1.1 Statutory Designated Sites, Non-statutory Designated Sites and Habitats of Principal Importance

Due to the nature of the development and the distance from any designated sites, it is considered highly unlikely that any designated sites will be affected.

5.1.2 Habitats

5.1.2.1 Spoil (Ephemeral/short perennial)

The spoil habitat supports a good range of vascular plant species which are suitable for supporting a range of invertebrates, including carder bee species. Where possible, this habitat should be maintained, see section 5.1.3.1 below.

5.1.3 Species and Species Groups

5.1.3.1 Vascular Plants

The site supports a good range of species suited to open conditions. A number of these are suitable food plants for invertebrate species. In particular, species of vetch and clover are likely to be important species for foraging invertebrates e.g. carder bees. Kidney vetch, the larval food plant of small blue, is not present on site. It is proposed that kidney vetch could be introduced to the northern end of the site, thus producing suitable conditions for feeding small blue larvae. The remaining undeveloped area of the site should be kept open, as far as possible, through periodic disturbance. This will ensure a continuity of plant species associated with open, sparsely vegetated conditions. These would include the species detailed above, characteristic of spoil habitat (ephemeral/short perennial vegetation). This recommendation will be in accordance with Policy SP15 – Biodiversity and Geodiversity of the Neath Port Talbot County Borough Council Local Development Plan (2011-2026).

5.1.3.2 Birds

It is likely that very small numbers of common bird species may use habitats onsite. It is unlikely that any will be nesting on site (March to August inclusive). However, in accordance with Policy SP15 - Biodiversity and Geodiversity (Neath Port Talbot County Borough Council Local Development Plan (2011-2026)), it is recommended that to avoid damaging or destroying birds' nests, any vegetation or ground clearance required should be undertaken during the period September-February, outside of the main nesting season. If vegetation clearance is required during the main nesting season (March to August inclusive), clearance should be immediately preceded by a check for birds' nests, by a competent person. If any active bird nests are found, the nest, along with at least a 5m buffer of vegetation, will be retained until the nest is no longer in use.

5.2 Enhancement Opportunities

The Section 7 (Environment (Wales) Act 2016) priority species of invertebrate, namely small blue, and brown-banded carder bee, are known to occur nearby (in the case of the carder bee, potentially on the site itself). Areas of open ground with the potential to support flower-rich grasslands could be created/maintained on the site itself (through periodic disturbance) and in particular, at the northern end and peripheries of the site, away from the development area. These would provide enhancements for these species, and other species of invertebrate dependent on similar habitats. Target plants, suited to open conditions, should include kidney vetch and plants from the pea *Fabaceae*, figwort *Scrophulariaceae* and mint *Lamiaceae* families.

In particular, kidney vetch seed of local provenance could be distributed/planted at the site. The seed could either be collected from the Port Talbot steelworks area, though more likely derived from a seed sourcing company such as Flora Locale.

Monitoring of the receptor site should take place at regular intervals, to check the success of the translocation and also to confirm whether small blue has established.

6 Conclusions

The site comprises spoil vegetation, some of which is categorised as ephemeral/short perennial. This has been rated as of local value, though is potentially of district value if its associated invertebrate value is taken into consideration. The area, though small, supports a range of flowering species that provide good conditions for foraging/pollinating species, including carder bees. It is recommended that the vegetation at the north of the site and along the peripheries is kept open. This will provide suitable conditions for the continuation of ephemeral/short perennial vegetation and hence invertebrate species.

The site also has the potential to support kidney vetch. It is therefore potentially suitable for small blue, a Priority butterfly species. It is recommended that kidney vetch is introduced to the northern end and peripheries of the site.

Provided the recommendations outlined above are followed, the proposals will be in line with relevant legislation and local planning policy.

7 References

Butterfly Conservation (2015). *Position statement on Buddleia and its planting in the UK*, Butterfly Conservation, viewed 15 November 2019 <<https://butterfly-conservation.org/sites/default/files/1.bc-position-statement-on-buddleia-updated-2015.pdf>>

Chartered Institute of Ecology and Environmental Management (2017). *Guidelines for Ecological Preliminary Ecological Appraisal. Technical Guidance Series.* www.cieem.net

Chartered Institute of Ecology and Environmental Management (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal.* Technical Guidance Series www.cieem.net

JNCC (2010). *Handbook for Phase 1 Habitat Survey. A technique for environmental audit (reprint).* Joint Nature Conservation Committee, Peterborough.

Stace. C. (2019). *New British Flora of the British Isles.* 4th Edition. Cambridge University Press.

Appendix 1: Frame of Reference for Geographical Value

Geographical context	Examples
International and European value	Ramsar Sites, Special Protection Areas, Biosphere Reserves, Special Areas of Conservation. Sites supporting populations of internationally important species. Any regularly occurring population of an internationally important species, which is threatened or rare in the UK. i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10km squares in the UK (categories 1 and 2 in the UK BAP) or of uncertain conservation status or of global conservation concern in the UK BAP. A regularly occurring, nationally significant population/number of any internationally important species.
National value	SSSIs or non-designated Sites meeting SSSI selection criteria, NNRs, Marine Nature Reserves, NCR Grade 1 Sites. Sites containing viable areas of key habitats identified in the UK Biodiversity Action Plan. Any regularly occurring population of a nationally important species which is threatened or rare in the region or county (see local BAP). A regularly occurring, regionally or county significant population/number of any nationally important species.
Regional value	Sites containing viable areas of threatened habitats listed in a Regional BAP (or some Natural Areas), comfortably exceeding SINC criteria, but not exceeding SSSI criteria. Any regularly occurring, locally significant population of a species listed as being nationally scarce which occurs in 16-100 10km squares in the UK or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation; A regularly occurring, locally significant number of a regionally important species.
County / Metropolitan	Sites meeting the criteria for county or metropolitan designation (SINC, CWS, etc.). Ancient semi-natural woodland, LNRs or viable areas of key habitat types listed in county BAPs/Natural Areas. Any regularly occurring, locally significant population of a species which is listed in a County/Metropolitan “red data book” or BAP on account of its regional rarity or localisation; A regularly occurring, locally significant number of a County/Metropolitan important species.
Local	Undesignated Sites or features considered to appreciably enrich the habitat resource in the District or Borough or within a zone of influence. A population of a species that is listed in a District/Borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation; A regularly occurring, locally significant number of a District / Borough important species during a critical phase of its life cycle.

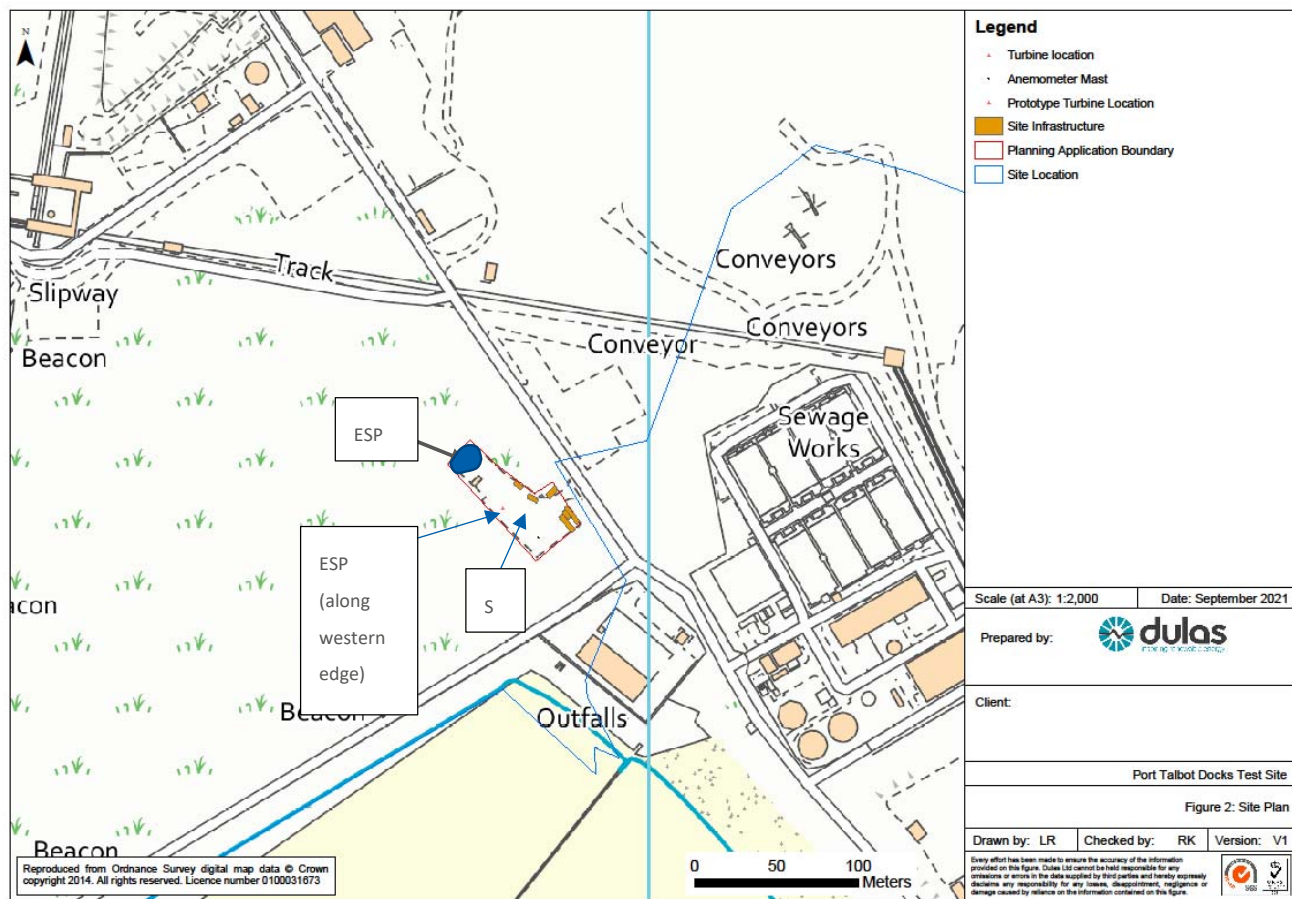
Appendix 2: Ecological Desk Study Maps

Please use the following link to access the ecological desk study data:

https://aderyn.lercwales.org.uk/commercial_enquiries/results/sbzatAXU9AwDEPtcylDCFCchg1Y4dF4IDyWUcbhTJofpxkgvke

Appendix 3: Phase 1 Habitat Survey Map

See following page



ESP = Ephemeral, short perennial; S = Spoil

Appendix 4: Photographs



Photo 1: Northern end of site showing ephemeral - short perennial vegetation



Photo 2: Ephemeral - short perennial vegetation at northern end of site



Photo 3: Hare's-foot clover – frequent at northern end of site



Photo 4: showing similar vegetation in area to west of development



Photo 5: showing spoil area comprising majority of site area (very thin layer of bryophytes present)



Photo 6: Southern end of site, showing similar vegetation to spoil area i.e. a thin layer of bryophytes with very little associated vegetation