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SOILS TRANSFER FROM HENDREFOILAN TO SWANSEA BAY CAMPUS

ECOLOGICAL CONSTRAINTS REPORT

Prepared for: St Modwen Developments Limited

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APPENDICES

APPENDIX 1 – SWANSEA BAY EAST SITE – PROPOSED LEVELS

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1. INTRODUCTION

Background

- 1.1 SK Environmental Solutions Limited was commissioned by St Modwen Developments Limited to produce an ecological constraints report in order to understand the potential impact of the importation of up to 32,900m³ net of clean, naturally occurring soils from the Hendrefoilan development in Swansea to the Swansea Bay Campus site, which is located approximately 5km to the east (see Figure 1, below).
- 1.2 In order to understand the current situation with regard to sensitive ecological receptors at the Swansea Bay Campus, an ecological walkover survey was undertaken by Barry Stewart, on behalf of SK Environmental Solutions Limited.

Aims and Objectives

- 1.3 The aim of the survey was to identify key areas and ecological receptors that could potentially be deleteriously impacted by the importation of up to 32,900m³ net of soil and to identify any mitigation that would be required in order to safeguard any existing ecological receptors from detrimental impacts.

Definition of Terms

- 1.4 For the purpose of this report, the term 'site' refers to the areas shown within the red line boundary on Figure 1(below) Ecological Constraints Plan.

Description of Survey Area

- 1.5 The Swansea University Bay Campus is located approximately 3.5km east of Swansea city centre in south Wales. The development of the campus is ongoing and has been since 2013. The campus borders Swansea Bay immediately to the south, a factor that heavily influences the surrounding habitats. Adjacent to the eastern boundary of the campus lies Crymlyn Burrows SSSI, which is designated for its dune grassland and carr woodland habitats, as well as the rare fen orchid *Liparis loeselii*.

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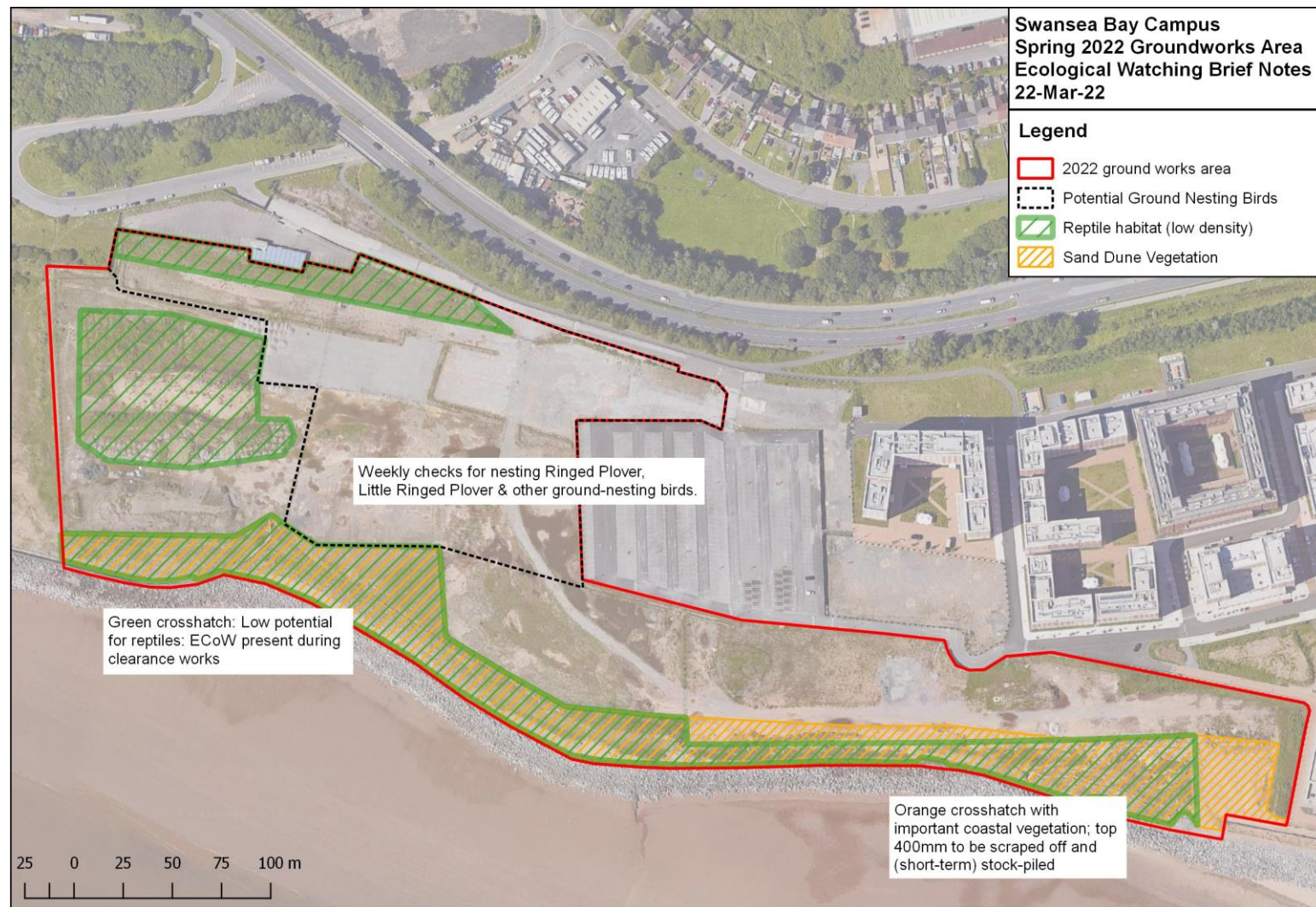


Proposal

- 1.6 A surplus of clean, naturally occurring soil has been identified within the Hendrefoilan development site to the west of the bay campus. As such, a planning application is being prepared in order for the material to be transferred by road to the Swansea Bay Campus site and laid down within set areas, which will subsequently result in raising ground levels within the Bay Campus; so that any future development at the Bay Campus would have extra protection from the effects of the tides in the area.
- 1.7 **N.B.** This mitigation strategy has been prepared to outline the ecological receptors present within the site that require careful consideration, with regard to the potential impacts the proposed soils transfer onto the site could have, without mitigation in place.

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Figure 1 – Ecological Constraints Plan



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2. ECOLOGICAL CONSTRAINTS

2.1 During the walkover undertaken by Barry Stewart during the summer of 2021, the following potential ecological constraints were identified that could be detrimentally impacted by the proposed material transfer:

- Ground Nesting Birds;
- Coastal Vegetation; and
- Reptiles.

Ground Nesting Birds

2.2 The site has been subjected to a number of breeding bird surveys over recent years to inform and provide mitigation for the previous development works associated with the Swansea Bay Campus. During these surveys a number of ground nesting bird species have been identified, opportunistically utilising the bare ground areas that have been created as part of the previous development works, these include:

- Little ringed plover *Charadrius dubius*;
- Ringed plover *Charadrius hiaticula*; and
- Lapwing *Vanellus vanellus*.

2.3 These species are known to forage and nest within the areas outlined in black on Figure 1.

Coastal Vegetation

2.4 The orange hatching on Figure 1 indicates areas where floristically interesting coastal flora have been identified during the walkover survey in summer 2021 by Barry Stewart.

2.5 Species here include a diverse suite of species associated with sand dune, a significant number of which are used for selecting Sites of Importance for Nature

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Conservation (SINCs). Species noted at the site that are listed either 'Primary Vascular Plant Species [PS] and Contributory Vascular Plant Species [CS]' including:

- *Ammophila arenaria* Marram Grass
- *Anthyllis vulneraria* Kidney Vetch
- *Arenaria serpyllifolia* Thyme-leaved Sandwort
- *Atriplex glabriuscula* Babington's Orache CS
- *Beta vulgaris subsp. maritima* Sea Beet
- *Blackstonia perfoliata* Yellow-wort CS
- *Calystegia soldanella* Sea Bindweed CS
- *Carex arenaria* Sand Sedge
- *Catapodium marinum* Sea Fern-grass
- *Catapodium rigidum* Fern-grass
- *Cerastium diffusum* Sea Mouse-ear
- *Chenopodium rubrum* Red Goosefoot
- *Cochlearia officinalis* Common Scurvygrass
- *Crithmum maritimum* Rock Samphire
- *Cynoglossum officinale* Hound's-tongue NT
- *Echium vulgare* Viper's-bugloss CS
- *Elytrigia atherica* Sea Couch CS
- *Erodium lebelii* Sticky Stork's-bill NS / PS
- *Eryngium maritimum* Sea-holly CS

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- *Euphorbia paralias* Sea spurge CS
- *Euphrasia confusa* Eyebright CS
- *Euphrasia tetraquetra* eyebright PS
- *Glaucium flavum* Yellow horned-poppy CS
- *Glaux maritima* Sea-milkwort
- *Hippophae rhamnoides* Sea-buckthorn NS / Invasive
- *Honckenya peploides* Sea Sandwort CS
- *Lotus corniculatus* Common Bird's-foot-trefoil
- *Myosotis ramosissima* Early Forget-me-not
- *Oenothera glazioviana* Large-flowered Evening-primrose
- *Oenothera x fallax* Hybrid Evening-primrose
- *Ononis repens* Common Restharrow
- *Orobanche minor* Common Broomrape CS
- *Phleum arenarium* Sand Cat's-tail CS
- *Picris hieracioides* Hawkweed Oxtongue CS
- *Pilosella praealta* Tall Mouse-ear-hawkweed
- *Poa infirma* Early Meadow-grass NS
- *Polypogon monspeliensis* Annual Beard-grass NS
- *Raphanus raphanistrum subsp. maritimus* Sea Radish
- *Rorippa islandica* Northern Yellow-cress NS

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- *Sagina maritima* Sea Pearlwort CS
- *Sedum acre* Biting Stonecrop
- *Senecio viscosus* Sticky Groundsel
- *Silene vulgaris* Bladder Campion
- *Stellaria pallida* Lesser Chickweed
- *Trifolium arvense* Hare's-foot Clover
- *Trifolium campestre* Hop Trefoil
- *Trifolium scabrum* Rough Clover CS
- *Tripleurospermum maritimum* Sea Mayweed
- *Vulpia fasciculata* Dune Fescue NS / CS

Reptiles

- 2.6 Over the last ten years, various elements of survey work have been undertaken at the site for reptiles. SK Environmental Solutions Limited have worked with Neath Port Talbot local authority ecologist Becky Sharp on a number of mitigation strategies / translocations of common lizard *Zootoca vivipara* over recent years.
- 2.7 As such, it is considered that a sufficient amount of knowledge of the species range within the site has been established and that no further survey work is required.
- 2.8 The green hatched areas shown on Figure 1 identify locations where common lizard may pose a constraint to the laying down of the imported soils without mitigation.

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3. LEGISLATION

UK Legislation

- 3.1 All British reptiles are protected from intentional killing, injuring and sale under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). These are as follows:
- Adder *Vipera berus*;
 - Grass snake *Natrix natrix*;
 - Slow worm *Anguis fragilis*; and
 - Common lizard *Lacerta vivipara*.
- 3.2 This legislation aims to protect them from persecution and also exploitation in the pet trade.
- 3.3 Our rarest terrestrial reptile, the sand lizard (*Lacerta agilis*), and all our marine turtles also receive protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) from the following:
- disturbing whilst occupying a place of shelter or protection;
 - obstructing access to a place of shelter or protection; and / or
 - sale / offering for sale.
- 3.4 Common lizard are listed on Section 7 of the Environment (Wales) Act 2016 (list of the living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales) as a species of principal importance in Wales.
- 3.5 Furthermore, all reptile species are designated as Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act (2006). This sets out a duty for decision makers to contribute towards maintaining, and where possible enhancing, the conservation status of any Section 41 Species of Principal Importance found on a site.

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European Legislation

- 3.6 Sand lizard and marine turtles are protected under the Conservation of Habitats and Species Regulations 2017). This is because they have declined throughout Europe in recent decades.
- 3.7 Under the Habitats Regulations, it is an offence if you:
- Deliberately capture, injure or kill any wild animal of an EPS;
 - Deliberately disturb wild animals of any such species;
 - Deliberately take or destroy the eggs of such an animal; or
 - Damage or destroy a breeding site or resting place of such an animal
 - Disturbance is defined as that which is likely:
 - to impair their ability –
 - To survive, to breed or reproduce, or to rear or nurture their young, or
 - In the case of animals of a hibernating or migratory species, to hibernate or migrate; or
 - To affect significantly the local distribution or abundance of the species to which they belong

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4. MITIGATION REQUIRED

Breeding Birds

- 4.1 Breeding bird species, in particularly ground nesting species (such as little ringed plover, ringed plover, lapwing etc) within the area denoted by the black line on Figure 1, have the potential of being disturbed, displaced or even harmed as a result of the proposed material transfer from Hendrofoilan.
- 4.2 As such, it is proposed that weekly checks of all potential nesting habitat for the above species are undertaken in areas identified as potential receptor sites for the imported material. If any active nests or nests under construction are identified, then these areas will be avoided and a suitable stand off implemented (overseen by an Ecological Clerk of Works) to ensure that the breeding birds are allowed to continue their nesting attempt undisturbed by works on going around them.
- 4.3 SK Environmental Solutions Limited have worked with Barry Stewart and his colleague Paul Roberts over recent years undertaking such mitigation. During these previous works, gabion basket cages have been used to guard the ground nesting birds from predation during egg laying / hatching / fledging etc by foxes, corvid species and other predators.
- 4.4 This has proven to be a very successful method of ensuring the birds have a successful breeding attempt first time, which means that the constraint posed by the birds attempting to breed is removed sooner, as these species only make attempts at repeat breeding if their clutch fails; once a successful brood is reared, these species move on from the nesting area relatively quickly.
- 4.5 It is suggested that this approach is used should any areas with suitability to support ground nesting species are likely to be impacted by the proposed material transfer.

Coastal Vegetation and Reptiles

- 4.6 As detailed above, habitats of floristically interesting coastal vegetation have been identified within the hatched orange areas on Figure 1.

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4.7 If any lay down of imported soils is to be undertaken in these areas, then the following mitigation strategy, aimed at conserving the areas of botanical interest, whilst ensuring no harm occurs to the common lizard in the areas, will be adhered to:

- Vegetation will be cut down using hand tools (strimmers etc) to a height of 10cm). Arisings will be removed and the area will be left for 24 hours;
- A destructive hand search of any potential refugia will be undertaken to identify / capture / encourage to move on any common lizard present;
- A further vegetation strip will then be undertaken using small machinery in the presence of an experienced Ecological Clerk of Works;
- The top 400mm will be stripped from these areas and stored in windrow style mounds;
- Imported materials will be laid down within the stripped areas;
- Within 48 – 72 hours the stripped vegetation / soils will be carefully laid back in the original area; and
- These areas will be watered in and monitored over the following twelve months to ensure regrowth has begun to occur.

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5. DISCUSSION

- 5.1 As discussed at the beginning of this mitigation strategy, no impact from the importation of up to 32,900m³ of clean soils from Hendrofoilan are anticipated on the ecological receptors present within the Swansea Bay Campus area.
- 5.2 However, the mitigation presented for ground nesting birds will need to be adhered to when moving through the site with vehicles and during any laying down of imported soils within areas considered suitable for supporting ground nesting bird species.
- 5.3 Areas where floristically interesting coastal vegetation is present and areas suitable for supporting reptiles are anticipated to be avoided during the importation of these soils, however if the areas identified on (Appendix 1 – Swansea Bay East Site – Proposed Levels) are to change, then the mitigation strategy outlined above should be followed to ensure no harm occurs to the reptile species present and that the coastal vegetation seed bank is safeguarded and able to re-establish once the soils importation process is completed.

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6. REFERENCES

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