

**Overall Site
Risk Rating:
Medium**

Extended Phase 1 Habitat Survey

Baglan Industrial Estate

For

VINCI Facilities

Project No.: NVNF103/002

March 2019

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Figure 4	Ecological Risk Rating

1. Summary and Main Recommendations

1.1 Summary

- 1.1.1** VINCI Facilities, working on behalf of the Welsh Government, manage a 15.11ha site known as Baglan Industrial Estate, Baglan Moor as shown on Figure 1 and commissioned Thomson to undertake an extended Phase 1 habitat survey of the site.
- 1.1.2** The four principal objectives of the extended Phase 1 habitat survey are to (i) inform potential vegetation management at the asset to maintain the status quo, including the management of structures; (ii) to inform potential future development of the asset; (iii) inform potential enhancement of the asset for biodiversity and (iv) provide an ecological risk rating for the site. An extended Phase 1 habitat survey and associated reporting was undertaken to determine the ecological constraints that may apply to this site, or directly adjacent that may influence onsite ecology, with regards to these four objectives.
- 1.1.3** No formal desk study was undertaken as part of this report; however, it has been determined that the site is not covered by any statutory designations. Non-statutory sites could not be determined.
- 1.1.4** The extended Phase 1 habitat survey identified 10 habitat types some of which form mosaics within the site boundary. The dominant habitats are marshy grassland and ephemeral/short perennial mosaic and dense scrub/marshy grassland mosaic, as can be seen on Figure 2. Photographs are shown on Figure 3.
- 1.1.5** One priority habitat; lowland mixed deciduous woodland was identified during the field survey as occurring within the boundary that is listed by the Environment (Wales) Act 2016. In addition, one bird species was recorded that could potentially breed on the site; breeding birds are protected under the Wildlife and Countryside Act 1981 (as amended), protecting them from killing and injury, including damage or destruction of their eggs and nests. In addition, a small area of invasive wall cotoneaster was identified within the site boundary. This invasive species is listed under Schedule 9 of the Wildlife and Countryside Act 1981.
- 1.1.6** Furthermore, several habitats on the site were also determined to be suitable for; invertebrates, great crested newts, reptiles, birds (including those listed under Schedule 1 of the Wildlife and Countryside Act 1981) bats and European hedgehog.
- 1.1.7** Recommendations for management or future development are given below including further survey.

1.2 Main Recommendations for Management of the Site

- 1.2.1** The following measures are recommended for the vegetation management works to comply with relevant national legislation and good practice:
- As good practice, the like for like replacement of the priority habitat lowland mixed deciduous woodland (BW1-BW3) should any removal be required. In addition, management of the edges can be undertaken to prevent its spread.

- As good practice to ensure invertebrate populations are safeguarded, vegetation management within marshy grassland and ephemeral/short perennial mosaic and dense scrub/marshy grassland mosaic should be managed on a two-year cycle. Ideally November - December.
- To comply with the law, the management of habitat suitable for great crested newts should be undertaken between November to February, ensuring that areas with hibernation potential are avoided and buffered. The cutting of vegetation should not be below 200mm in height from the ground.
- As good practice, where toads are encountered during management they should be moved to adjacent thick vegetation or a log pile in an area which should be retained and protected during management;
- To comply with the law, the management of habitat suitable for reptiles should ideally be undertaken between October to March ensuring that areas with hibernation potential are avoided and buffered.
- To comply with the law, the management of vegetation that could support breeding birds should be undertaken between September - February. Outside of these times, a check for nesting birds should be undertaken prior to the works. Consideration should also be given to managing scrub in a 3-5 year cycle;
- As good practice, ensuring that when vegetation is cut back, overall connectivity of the vegetation/habitats is maintained for bats;
- As good practice, care should be taken during management for European hedgehog. In winter, works to brash piles or dense leaves at the base of scrub should be avoided;
- To comply with the law wall cotoneaster should be eradicated from the site.

1.2.2 Following best practice guidelines, further surveys for the following species are recommended to ensure compliance with the law during the ongoing management of the site;

- A great crested newt habitat suitability assessment and eDNA survey is advised for the waterbody close to the site boundary if vegetation needs to be cut below 200mm.
- If works are required to any trees following 24 months after this report is issued, it is advised that a Preliminary Ground Level Roost Assessment is undertaken to ensure that no features suitable for roosting bats have become available.

1.3 Main Recommendations for Future Development of the Site

1.3.1 The following additional measures are recommended for any future development to comply with relevant legislation and planning policy:

- A full ecological desk study for statutory and non-statutory designated sites and protected and priority species (which may highlight statutory or non-statutory sites, priority habitats or protected or priority species which require consideration).
- An updated extended Phase 1 habitat survey;
- A full arboricultural survey;
- A GCN habitat suitability index (HSI) assessment and eDNA survey of the waterbody close to the site.

- A full reptile survey of the site/or areas to be impacted;
- A breeding bird survey at the site concentrating on protected/ priority species;
- A Preliminary Ground Level Roost Assessment of trees within the boundary if 24 months elapses from the issue for this report, along with bat activity surveys; and
- Eradication of wall cotoneaster from the site.

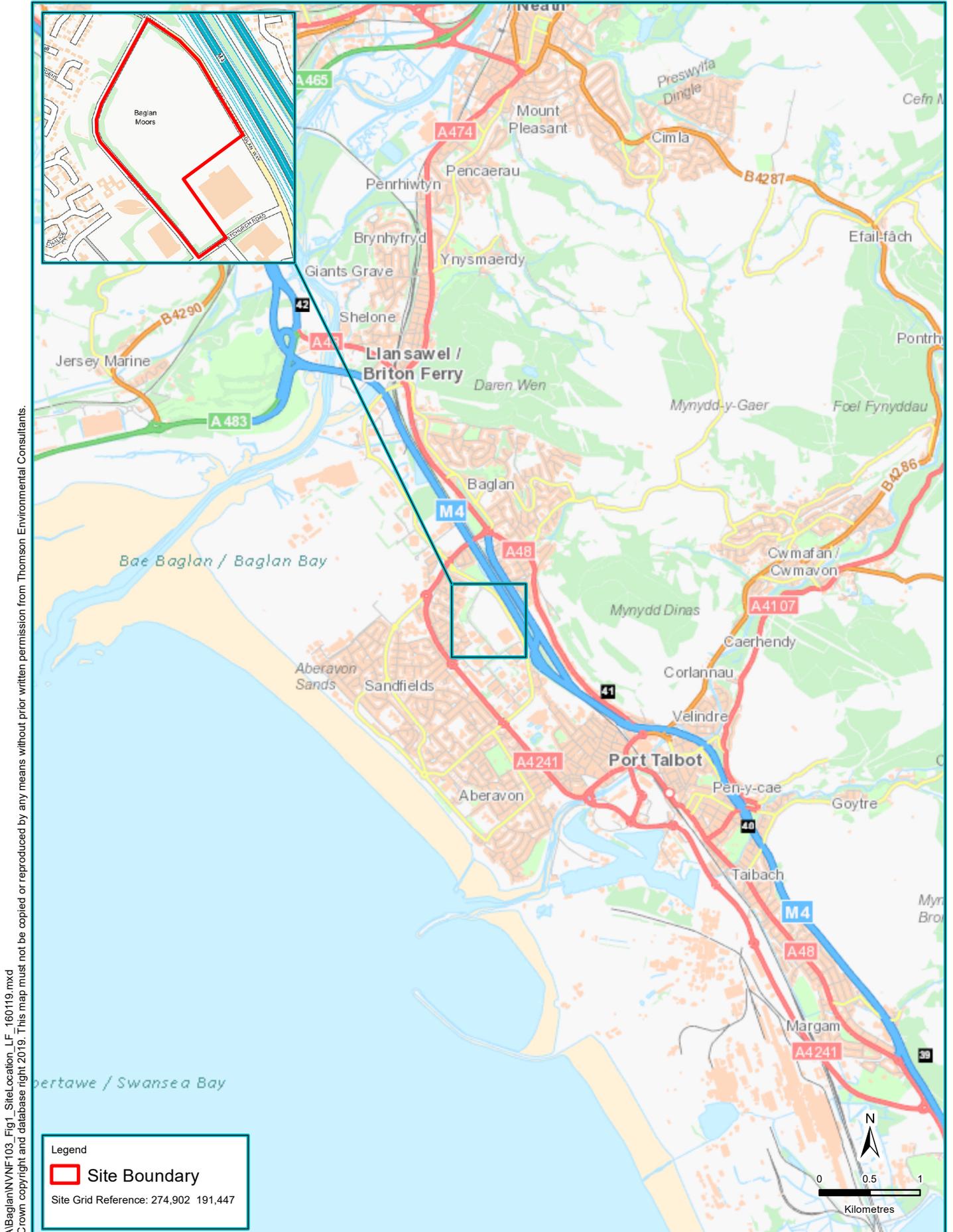
1.4 Ecological Enhancement

1.4.1 The following ecological enhancements are proposed that apply to the site, whether for management or future development:

- Allowing areas of marshy grassland and ephemeral/short perennial mosaic to mature into a priority habitat, rush pasture.
- Creating log or rubble piles close to or within dense scrub to provide hibernation sites for reptiles if present on the site.
- Digging several ponds close to the edges of the site to fill naturally and provide focal points for wildlife.

1.5 Ecological Risk Rating

1.5.1 Given the potential need to manage a priority habitat, and the potential for a number of protected or priority species, the site has been given a Medium (amber) overall risk rating, see Figure 4.



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- Legend
-  Photograph Location and Direction
 -  Scattered Broadleaved Tree
 -  Scattered Coniferous Tree
 -  Target Note
 -  Fence
 -  Semi-natural Broadleaved Woodland
 -  Dense Scrub
 -  Marshy Grassland
 -  Amenity Grassland (A)
 -  Building
 -  Hard Standing
 -  Site Boundary

This map has been drawn at a sufficient level of accuracy to fulfil the requirements of a Phase 1 baseline habitat survey. The level of accuracy depends on both the size of the area involved and the base mapping. Every effort has been made to create a map that is as accurate as possible. However, this map is not intended to represent a scaled landscape survey so should not be used to pin-point accurate engineering work or as a basis for detailed site planning.

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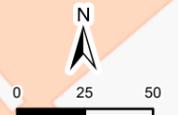
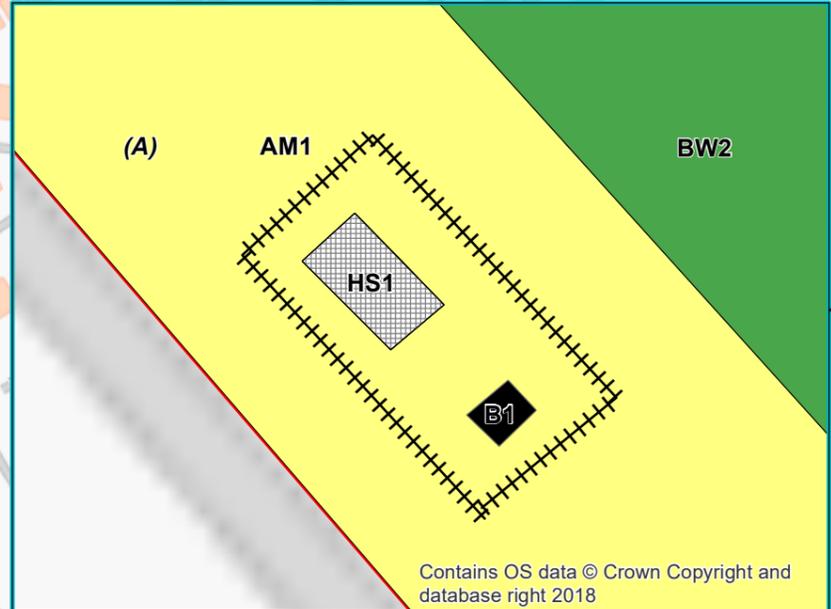
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Figure Number
2

Figure Title

**Extended Phase 1
Habitat Survey Results**



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Photograph 1:
Looking to the north west across an area of marshy grassland/ ephemeral/ short perennial mosaic (MG/ESP1) and at a thin strip of semi-natural broadleaved woodland (BW2).



Photograph 2:
Looking south towards an area of dense scrub (DS1).



Photograph 3:
A view of the site looking north across areas of marshy grassland/ ephemeral/ short perennial mosaic (MG/ESP2) and dense scrub/marshy grassland mosaic (DS/MG1).



Photograph 4:
Looking north west towards an area of dense scrub (DS3), a few larger trees are also found here.

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Figure Number	3a		Scale at A4	Not applicable	
Figure Title	Photographs of the Site		Drawn	LF	Checked
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Photograph 5:
A view north east across marshy grassland/ ephemeral/ short perennial mosaic (MG/ESP2) and towards dense scrub (DS3) and semi-natural broadleaved woodland (BW1).



Photograph 6:
Looking south alongside an area of semi-natural broadleaved woodland (BW2) that has been partially trimmed along the side.



Photograph 7:
A further view north east across the marshy grassland/ephemeral/ short perennial mosaic (MG/ESP1) and dense scrub/marshy grassland mosaic (DS/MG1).



Photograph 8:
Looking into a fenced and inaccessible area of the site, a further area of marshy grassland /ephemeral/ short perennial mosaic (MG/ESP1) with a slightly greater domination by common reed (*Phragmites australis*).

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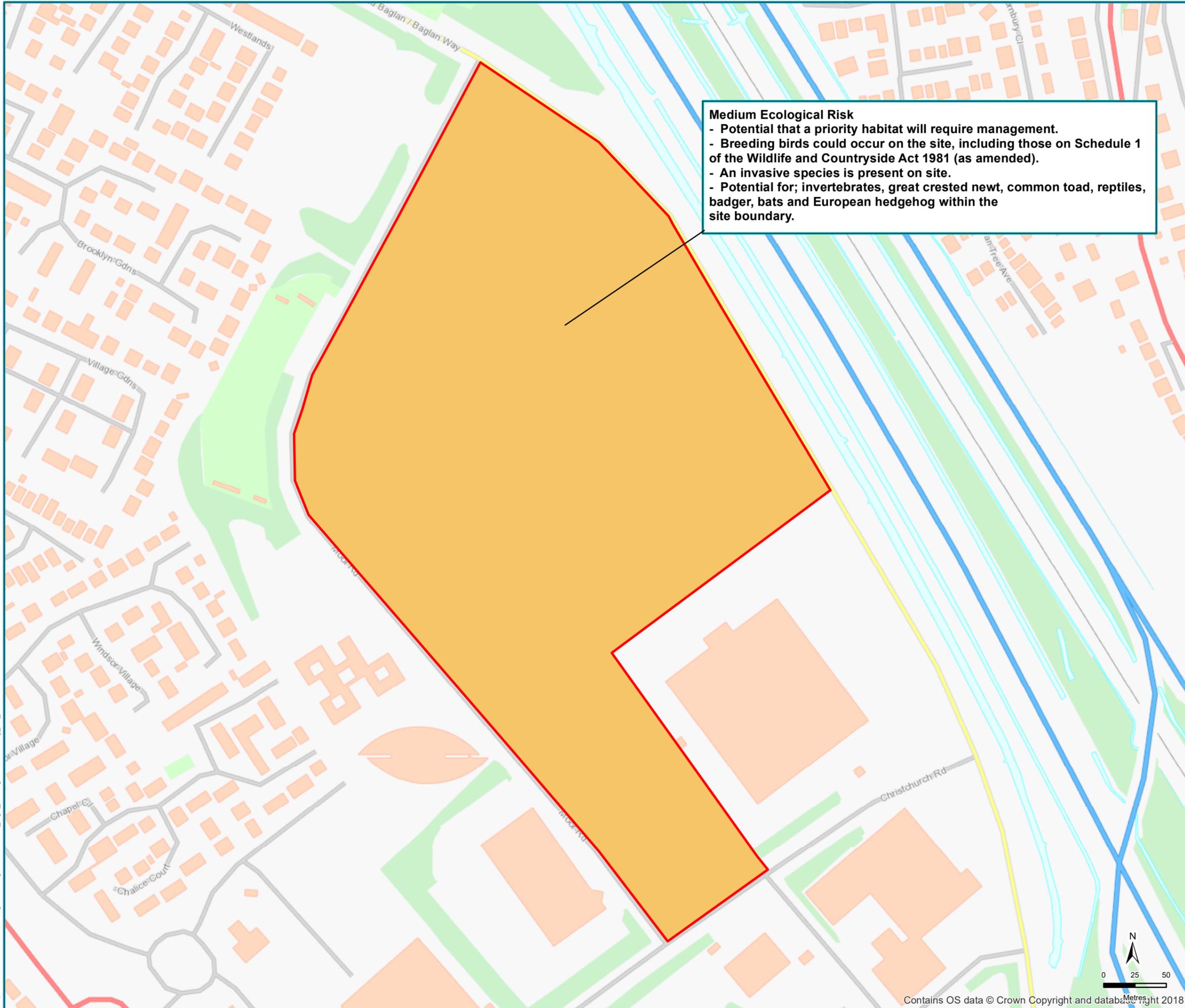
Legend

Ecological Risk Rating

- Medium
- Site Boundary

Medium Ecological Risk

- Potential that a priority habitat will require management.
- Breeding birds could occur on the site, including those on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).
- An invasive species is present on site.
- Potential for; invertebrates, great crested newt, common toad, reptiles, badger, bats and European hedgehog within the site boundary.



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Figure Number
4

Figure Title
Ecological Risk Rating

2. Introduction

2.1 Development Background

2.1.1 VINCI Facilities has taken over the five-year framework to manage a portfolio of Welsh Government owned sites (known as ‘assets’) across Wales. As part of this framework approximately 240 assets require an extended Phase 1 habitat survey to establish the baseline ecology at each site and identify ecological risks and opportunities relating to the management and potential development of each asset. For some assets, a separate Ecological Management Plan will also be written. The asset in this case is known as Baglan Industrial Estate.

2.1.2 The principal objectives of the survey and report are to inform:

1. Potential vegetation management, to maintain the status quo at the asset including the management of structures;
2. Potential future development of the asset;
3. Potential enhancement of the asset for biodiversity; and
4. Produce an ecological risk rating for the site.

2.1.3 The above is hereafter referred to as “the works”. Any future development plans for the asset are not known at this stage.

2.1.4 The works are located on a 15.11ha area of land adjacent to the M4 motorway located to the north east. The area is surrounded by roads; Baglan Way to the north east and east, Moor Road to the north west and south and Christchurch Road to the south east. There is a large warehouse unit to the south east and south. The area is found to the north east of Baglan Moor, a ward of Neath Port Talbot, the central grid reference for the works is SS7492 9147. The area affected by the works is hereafter referred to as “the site” and is shown on Figure 1.

2.2 The Brief and Objectives

2.2.1 VINCI Facilities commissioned Thomson Ecology Ltd on the 17th September 2018 to undertake an extended Phase 1 habitat survey of Baglan Industrial Estate. The brief was to:

- Carry out an extended Phase 1 habitat survey to include mapping all habitats present, recording the ten most dominant plant species within each habitat type, any additional plant species covered by national legislation, and target noting ecological constraints;
- Prepare a survey report, supported by appropriate digitised mapping, to include an introduction, methodology, the results of the survey, a discussion of any relevant legal or planning policy considerations, and our recommendations; and
- Provide a traffic light risk rating for the asset that considers both risk of harm to biodiversity, risks of further costs regarding ecology survey and potential constraints to developing an asset.

2.3 Limitations

- 2.3.1** A full desk study was not undertaken as it is outside the scope of this report; it is therefore likely that further ecological constraints maybe identified in the future should this be undertaken.
- 2.3.2** Non-statutory sites have not been considered in this report because this information is not included and freely available from the Neath Port Talbot Local Development Plan 2011-2026. Should a future planning application be required a desk study should be undertaken which involves the purchase of ecological records including statutory and non-statutory designated sites, within a specific radius of the site. This will ensure this limitation is addressed.
- 2.3.3** The extended Phase 1 habitat survey was undertaken in January, a sub-optimal time of year for this survey, and it is therefore possible that plants that are seasonal in nature will not be present. This is not seen as a significant limitation as it is still possible to identify most plant species from dead material and determine the appropriate Phase 1 habitat type.
- 2.3.4** One areas of the site, the southern area of marshy grassland (MG1) that is surrounded by an intruder proof fence could not be fully accessed during the survey. This was not seen as a significant limitation as the main habitat types could be identified.
- 2.3.5** In addition, an area of dense scrub (DS3) and an area of semi-natural broadleaved woodland (BW1) had limited access due to dense vegetation to determine whether further ecological constraints apply. Nonetheless, where appropriate, precautionary recommendations have been made.
- 2.3.6** This report is based on the site boundary shown on "7101 Baglan Industrial Estate.pdf" as provided on 10th January 2019. Subsequent changes may result in a requirement to reassess the potential impacts of the works and the requirements for avoidance, mitigation and enhancement.

2.4 Surveyors

- 2.4.1** The survey was undertaken by [REDACTED]

3. Methodology

3.1 Desk Study

3.1.1 A full desk study was not undertaken as it is outside the scope of this report, however a summary has been provided if protected sites are within 50m of the site boundary or within the site itself. In addition, a search has been made for priority habitats that are within the site boundary. The sources of this information are the Multi Agency Geographical Information for the Countryside (MAGIC) a free online tool that displays the boundaries of statutorily designated sites, and the Neath Port Talbot Local Development Plan 2011-2026.

3.2 Field Survey

3.2.1 A survey area was defined as an area that encompassed the site boundary. The survey area is shown on Figure 2.

3.2.2 A Phase 1 habitat survey (JNCC, 2010) was conducted throughout the survey area. Phase 1 habitat survey is a standard technique for rapidly obtaining baseline ecological information over a large area of land. It is primarily a mapping technique and uses a standard set of habitat definitions for classifying areas of land on the basis of the vegetation present. For this survey, the technique was modified (or extended) to provide more detail over a smaller area and give further consideration to fauna (IEA, 1995). The standard habitat definitions were used with an additional category of coarse grassland for unmanaged, secondary grasslands that are species poor.

3.2.3 The dominant and readily identified species of higher plant species from each habitat type within the survey area were recorded and their abundance was assessed on the DAFOR scale:

D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare

3.2.4 These scores represent the abundance within the defined area only and do not reflect national or regional abundances. Plant species nomenclature follows Stace (2010).

3.2.5 Target notes were made for any features which were too small to map or are of particular ecological interest.

3.2.6 Incidental records of fauna were also made during the survey and the habitats identified were evaluated for their potential to support protected species and other species of conservation concern, including priority species. However, no specific faunal surveys were undertaken.

3.2.7 The survey was conducted on 14th January 2019.

4. Results

4.1 Background

4.1.1 The contents of the results section are the factual results of the extended Phase 1 habitat survey and desk study. Excluded from this section is the assessment of the site to support species of conservation concern not recorded during the survey. Instead, potential further ecological issues are discussed in Section 6.

4.2 Desk Study

4.2.1 There were no statutory designated sites found on, or within 50m of the site boundary. Non-statutory designated sites on or within the site boundary could not be quantified see Section 2.3. No priority habitats were identified from the desk study as occurring on the site.

4.3 Field Survey

Habitats and Flora

4.3.1 The following Phase 1 habitat types were identified:

- Semi-natural broadleaved woodland;
- Scattered broadleaved trees;
- Scattered coniferous trees;
- Dense scrub;
- Dense scrub/ marshy grassland mosaic;
- Marshy grassland/ephemeral/short perennial mosaic;
- Amenity grassland;
- Fence;
- Building; and
- Hardstanding.

4.3.2 These habitats are described below and their distribution is given on Figure 2 and species lists given in Appendix 1.

Semi-natural Broadleaved Woodland

4.3.3 There are three areas of semi-natural broadleaved woodland (BW1-BW3) within the site boundary collectively covering 1.81ha, see Figure 2. BW1 is found in the northern corner of the site bordering dense scrub (DS3) and amenity grassland (AM1) with a height of 8-10m. The trees are young to semi-mature, see Figure 3, Photograph 5. The area has abundant alder (*Alnus glutinosa*) and frequent ash (*Fraxinus excelsior*) and bramble (*Rubus fruticosus agg.*). The occasional Austrian pine (*Pinus nigra*) was also present.

4.3.4 BW2 is more extensive following the western boundary, the canopy height is 6-10m, see Figure 3, Photograph 1. The external edges have been trimmed in many areas to appear as a hedge,

but this is just the woodland edge. The species composition is similar to BW1. The remaining area, BW3, is small in extent and is found on the southern boundary of the site, the species composition is similar to that of BW1 and BW2, the canopy is 8m high. Across BW1-BW3, the ground flora is sparse with few species and there may have been supplemental planting of these areas in the past, to increase the cover of the woodland or its species diversity. The woodlands are likely to be secondary in origin.

Scattered Broadleaved Trees

- 4.3.5 Two scattered broadleaved trees were found within the fenced area to the south of the site, see Figure 2. They are young alder 6m high, it is unlikely that the trees have any specific ecological constraints.

Scattered Coniferous Trees

- 4.3.6 Five scattered coniferous trees were found along the north eastern boundary of the site just within dense scrub (DS3), see Figure 2. These are all Austrian pine, 8-10m in height. They are semi-mature.

Dense Scrub

- 4.3.7 Three discreet areas of dense scrub (DS1-DS3) are found at the site see Figure 2. They cover 1.44ha collectively. DS1 is close to the southern boundary of the site and is the succession of marshy grassland that is diminishing beneath it see Figure 3, Photograph 2. The vegetation height is 50cm to 1.5m high. Dogwood (*Cornus sanguinea*) is abundant here, with frequent gorse (*Ulex europaeus*) and grey willow (*Salix cinerea*). Due to the low nutrients in these areas common feather moss (*Kindbergia praelonga*) occurred frequently in the shaded areas beneath, along with cock's-foot (*Dactylis glomerata*) abundantly in areas where scrub was yet to cover.
- 4.3.8 DS2, is an island of vegetation surrounded by marshy grassland (MG/ESP2), the area is waterlogged varying from 0.1-1.5m in height. There is abundant bramble, with frequent grey willow and cock's-foot and common feather moss beneath.
- 4.3.9 DS3, is a more extensive area against a marshy grassland and ephemeral/short perennial mosaic (MG/ESP2) and alongside BW1. The area is 2-4m in height with alder abundant throughout. Ash and bramble are frequent throughout. Wall cotoneaster (*Cotoneaster horizontalis*) target note TN1 is found here, an invasive species.

Dense Scrub/ Marshy Grassland Mosaic

- 4.3.10 One significant mosaic is found across the centre of the site. This is a dense scrub/marshy grassland mosaic (DS/MG1) which covers 3.00ha, see Figure 2, and Figure 3, Photograph 3 and 7. The vegetation is patchier, however dense scrub is the dominant habitat type here. The vegetation height varies from 0.25-1.5m. This area is in the process of succession from marshy grassland to woody vegetation. The most abundant woody species are bramble which was abundant, with frequent dogwood, gorse and grey willow. The marshy grassland element had frequent common reed in more waterlogged areas, with frequent soft rush (*Juncus effusus*), cock's-foot, creeping buttercup (*Ranunculus repens*) and Yorkshire fog (*Holcus lanatus*). Occasionally occurring species included wood small-reed (*Calamagrostis epigejos*), spear

thistle (*Cirsium vulgare*) and red clover (*Trifolium pratense*). Non-native pampus grass (*Cortaderia selloana*) occurs here rarely, as a naturalised species.

Marshy Grassland/Ephemeral/Short Perennial Mosaic

- 4.3.11** Two areas of marshy grassland/ephemeral/short perennial mosaic (MG/ESP1-MG/ESP2) occur on the site covering an expanse of 7.13ha, see Figure 2.
- 4.3.12** The first area MG/ESP1 is found to the south and west of the site, it is waterlogged, with thin poor soil beneath. The vegetation varies in height from 0.25-1.5m in height. The vegetation was patchy with some by-lines used by dogwalkers from the local housing estates, see Figure 3, Photograph 7. Creeping plants have formed clumps throughout such as common reed (*Phragmites australis*), which is abundant, along with soft rush. Common reed is extensive where it occurs behind the fenced area see Figure 3, photograph 8. Frequently occurring species included cock's-foot and common feather-moss. A large number of species were occasional including grey willow, ribwort plantain and Yorkshire fog. TN2, a reptile mat was found in this area, suggesting a previous survey has taken place.
- 4.3.13** The second area MG/ESP2 is found to the north and east of the site, with waterlogging occurring as a result of the poor draining soil, there is slight standing water to 5cm deep. The vegetation varies from 0.1-1.5m in height, see Figure 3, Photograph 5. As with MG/ESP1 vegetation is patchy forming clumps. Vegetation composition is almost identical to MG/ESP1, although common feather-moss is abundant and compact rush (*Juncus conglomeratus*) is occasional due to the waterlogging.
- 4.3.14** As with much of the site, both areas of MG/ESP1 and MG/ESP2 have had significant ground disturbance in the past and as a result the vegetation structure that has developed is highly variable throughout.

Amenity Grassland

- 4.3.15** One strip of amenity grassland (AM1) passes around the boundary of the site, except along the south eastern end, see Figure 2 and covers 1.74ha. Occasional mowing has taken place in this area keeping the sward around 100mm in height. The area is waterlogged with frequent common feather-moss, although perennial rye-grass (*Lolium perenne*) was the dominant species. Yorkshire fog is also frequent within the sward, along with occasional white clover (*Trifolium repens*).

Fence

- 4.3.16** An intruded fence occurred around an area of limited access to the south. In addition, an intruder fence surrounded building B1. No ecological constraints were observed for the fencing.

Building

- 4.3.17** Building B1 is a small plastic or fibre glass construction housing electrical apparatus. It is in effect a 2m cube, with a door facing north east. The building is well sealed on all aspects.

Hardstanding

- 4.3.18** A small area of hardstanding covering 11m² is found adjacent to Building B1 see Figure 2, in a fenced area, it has no ecological value.

Fauna

- 4.3.19** One species of bird was noted on the site, this was carrion crow (*Corvus carone*).

Target Notes

- 4.3.20** Two features on the site warranted further target noting (TN) these are:
- TN1 - This was a small area no greater than two square metres of wall cotoneaster an invasive species.
 - TN2 - A reptile mat (artificial refugia) that had (likely) been part of a reptile survey at the site.

5. Legislation and Planning Policy Considerations

5.1 Background

- 5.1.1** The content of the legislation and planning policy section is the legislation and planning policy considerations that we know are relevant based on this extended Phase 1 habitat survey for the objectives given in Section 2. The legislation and policy considerations that might arise following further surveys are excluded, further survey is discussed in Section 7. Potential further ecological considerations are discussed in Section 6. A detailed description of the method for this section is given in Appendix 2.
- 5.1.2** Protected sites, habitats and species are covered by a range of legislation and policy which is described below. In addition to specific legal protections, the Environment (Wales) Act 2016 places a 'duty' (the biodiversity and resilience of ecosystems duty) on public authorities (such as the Welsh Government) to "*seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions*", with regards to potential management, future development and enhancement of a site. Under Section 7 of the act, it lists a number of priority species and priority habitats which may need to be taken into consideration as part of management and future development.
- 5.1.3** For developments where planning permission is sought, Planning Policy Wales (2018) (PPW) states "*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*". PPW (2018) also states that "*planning authorities must have regard to the list of habitats and species of principal importance for Wales, published under Section 7 of the Environment (Wales) Act 2016*". This is reflected in Policy SP15 of the Neath Port Talbot Local Development Plan 2011-2026.
- 5.1.4** For clarity the below is broken into three subsections covering the first three objectives found in Section 2; management, future development and enhancement.

5.2 Legal Considerations and Constraints to Site Management

Priority Habitats

- 5.2.1** One priority habitat in Wales was identified during the extended Phase habitat survey within the site boundary; lowland mixed deciduous woodland BW1-BW3, see Figure 2. Based upon the plant community present in these areas and the low species diversity, the area is likely to be secondary woodland. In addition, areas may have also been supplement planted, as small numbers of Austrian pine are present.
- 5.2.2** This priority habitat has been determined based upon Section 7 of the Environment (Wales) Act 2016.
- 5.2.3** A further detailed desk study has not been completed (as it was outside the scope of this report) to detect further priority habitats that could be impacted by vegetation management outside the

site boundary. As damage could occur to a priority habitat during management recommendations are given in Section 7.

Birds

- 5.2.4** During the extended Phase 1 survey, one bird species was observed feeding at the site; this was the carrion crow. Suitable nesting habitat was observed for this species, along with other common breeding birds in the form of the broadleaved woodland (BW1-BW2), scattered trees, dense scrub (DS1-DS3), marshy grassland and ephemeral/short perennial mosaic (MG/ESP1-MG/ESP2) and dense scrub/marshy grassland mosaic (DS/MG1). These habitats are all shown on Figure 2. All bird species are protected under Part 1, Section 1 of the Wildlife and Countryside Act 1981 (as amended), protecting them from killing and injury, including damage or destruction of their eggs and nests. It is also possible that Schedule 1 bird species as listed by the Wildlife and Countryside Act 1981 (as amended), which includes intentionally or recklessly disturbing the species when nesting may also breed on the site. Furthermore, a number of priority species as listed under the Environment (Wales) Act 2016 such as the northern lapwing (*Vanellus vanellus*), song thrush (*Turdus philomelos*) and reed bunting (*Emberiza schoeniclus*) could also breed on the site. Recommendations are given in Section 7 to prevent damage to bird nests or the killing of birds.

Invasive Plant Species

- 5.2.5** A small area of wall cotoneaster occurs at TN1, see Figure 2 within DS3 along the north east boundary. Under the Wildlife and Countryside Act 1981 (as amended), it is an offence to plant or otherwise cause this species to grow in the wild, of which it propagates itself by seed, via the use of birds. Measures are therefore proposed in Section 7 for the control of this species at the site.

5.3 Legal and Planning Policy Considerations and Constraints to Future Development

Priority Habitats

- 5.3.1** In addition to Section 7 of the Environment (Wales) Act 2016, priority habitats are afforded further consideration during the planning process through PPW 2018 and Policy SP15 of the Neath Port Talbot Local Development Plan 2011-2026. Recommendations are given in Section 7 to prevent the loss of this habitat.

Birds

- 5.3.2** As per Section 5.2, with the addition that birds are afforded further consideration through PPW 2018 and Policy SP15 of the Neath Port Talbot Local Development Plan 2011-2026. Recommendations are given in Section 7 to prevent damage to birds nests or the killing of birds.

Invasive Plant Species

- 5.3.3** As discussed under Section 5.2, with the addition that the control of invasive species is given further consideration through the Neath Port Talbot Local Development Plan 2011-2026.

5.4 Opportunities for Enhancement

- 5.4.1 As described in Section 5.1, under the Environment (Wales) Act 2016 public bodies have the duty to enhance biodiversity in the exercise of their functions. This is also supported by PPW (2018) and Policy SP15 of the Neath Port Talbot Local Development Plan 2011-2026 and will be an important consideration regarding future development and to a lesser extent management of the site. Recommendations are given in Section 7 for enhancement of the site.

6. Potential Further Ecological Considerations

6.1 Background

6.1.1 The potential further ecological considerations section sets out our assessment of the potential of the site to support protected species and other species of conservation concern which were not detected during the extended Phase 1 habitat survey, either because their presence is seasonal or because specialist survey techniques are required. Further survey work or appropriate mitigation is likely to be required before these issues can be addressed as found in Section 7.

6.1.2 Further information on the methods of assessment is given in Appendix 2.

6.1.3 As per Section 5 the below is broken into three subsections covering each of the first three objectives found in Section 2; management, future development and enhancement.

6.2 Potential Further Ecological Considerations and Constraints to Management

Invertebrates

6.2.1 The marshy grassland mosaics at the site (MG/ESP1, MG/ESP2 and DS/MG1) provides suitable habitats for terrestrial invertebrates and those that require damp environments, as much of the site is a patch work of different vegetation heights, densities, clusters of plant species and is at an early successional stage. Such invertebrate species; particularly moths, spiders and beetles, could be priority species in Wales under Section 7 of the Environment (Wales) Act 2016. Although not strictly protected, recommendations are made in Section 7 to prevent the loss of such species from the site.

Great Crested Newt

6.2.2 A long waterbody is found outside of the site boundary running alongside the M4 motorway that may be potentially suitable to support the great crested newt (GCN) (*Triturus cristatus*). Additionally, suitable terrestrial habitat is found widely across the site.

6.2.3 GCN and their habitats are fully protected by the Conservation of Habitats and Species Regulations 2017 with further provision through the Wildlife and Countryside Act 1981 (as amended) see Appendix 1. The GCN is also a priority species under the Environment (Wales) Act 2016. Recommendations for further survey are given in Section 7 to ensure management does not damage habitat used by GCN or kill/injury GCN themselves.

Common Toad

6.2.4 The common toad (*Bufo bufo*) could occur widely on the site as there are suitable habitats in the form of marshy grassland mosaic, semi-natural broadleaved woodland and dense scrub is present. The common toad receives protection from sale only under the Wildlife and Countryside Act 1981 (as amended) which is unlikely to occur as part of works at the site. Nonetheless, common toad is also a priority species under Section 7 of the Environment

(Wales) Act 2016. Recommendations are given in Section 7 to prevent unnecessary harm to common toads.

Reptiles

- 6.2.5** There is suitable habitat for common reptile species, namely the common lizard (*Zootoca vivipara*) within the site boundary. Particular areas of interest are beneath semi-natural broadleaved woodland (BW1-BW3,) dense scrub (DS1-DS3) and dense scrub/marshy grassland mosaic (DS/MG1) and within marshy grassland and ephemeral/short perennial mosaics (MG/ESP1-MG/ESP2). Additionally, target note TN2 is a reptile mat, suggesting a previous survey has been undertaken at the site (although the results are not known). In general, the habitats are of moderate quality for reptiles due to the density of the vegetation and areas that are drier for hibernation. Nonetheless, habitat connections are poor to the wider environment. Common lizard and other common reptile species are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5 protecting them from killing or injury. They are also priority species in Wales under the Environment (Wales) Act 2016. Recommendations therefore are given in Section 7 to prevent the killing or injury of reptiles during management.

Badgers

- 6.2.1** An area of dense scrub (DS3) had limited access at the site and no access was possible to the fenced area of marshy grassland and ephemeral/short perennial mosaic (MG/ESP1), see Figure 2. Such areas have potential for badger setts and the habitat more widely for foraging. No other signs of badgers such as snuffle holes or latrines were noted within accessible areas of the site.
- 6.2.2** Badgers are protected under the Protection of Badgers Act 1992 which makes it an offence to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or attempt to do so; interfere with a sett by damaging or destroying it; obstructing access to, or any entrance of, a badger sett; and disturb a badger when it is occupying a sett. Recommendations are given in Section 7 to prevent damage to badger setts or disturbance.

Bats

- 6.2.3** The vegetation structure on the site particularly semi-natural broadleaved woodland (BW1-BW3,) dense scrub (DS1-D3), dense scrub/marshy grassland mosaic (DS/MG1) and marshy grassland and ephemeral/short perennial mosaics (MG/ESP1-MG/ESP2) see Figure 2, provides moderate - high quality foraging and commuting habitat for bats.
- 6.2.4** All bats and their habitats are fully protected by the Conservation of habitats and Species Regulations 2017 with further provision through the Wildlife and Countryside Act 1981 (as amended) see Appendix 1. Additionally, a number of bat species that could use the site, for instance, soprano pipistrelle (*Pipistrellus pygmaeus*), are priority species under Section 7 of the Environment (Wales) Act 2016. Recommendations are given in Section 7 to ensure the continuity of habitats and protection of bats themselves at the site.

European Hedgehog

- 6.2.5** Habitat suitable for the European hedgehog (*Erinaceus europaeus*) were observed within the site; this included semi-natural broadleaved woodland (BW1-BW3), dense scrub (DS1-DS3), dense scrub/marshy grassland mosaic (DS/MG1) and marshy grassland and ephemeral/short perennial mosaics (MG/ESP1-MG/ESP2). The woodland and dense scrub provide foraging and hibernation potential, whereas, the marshy grasslands just for foraging. The European hedgehog is a priority species in Wales under Section 7 of the Environment (Wales) Act 2016 and covered by the Wild Mammals (Protection) Act 1996. Recommendations are made in Section 7 to safeguard European hedgehogs during management.

6.3 Potential Further Ecological Considerations and Constraints to Future Development

Invertebrates

- 6.3.1** As per the legal constraints for management, with the additional consideration that the local authorities have with regards to the protection/enhancement of biodiversity (which includes invertebrates) through PPW 2018 and Policy SP15 of the Neath Port Talbot Local Development Plan 2011-2026. Recommendations are given in Section 7 to safeguard invertebrates at the site.

Great Crested Newt

- 6.3.2** As per the legal constraints for management, with the additional consideration that the local authorities should have with regards to the protection/enhancement of biodiversity (which includes GCN) through PPW 2018 and Policy SP15 of the Neath Port Talbot Local Development Plan 2011-2026. Recommendations are given in Section 7 to ensure GCN are not negatively affected by development if present.

Common toad

- 6.3.3** As per the legal constraints for management, with the additional consideration that the local authorities should have with regards to the protection/enhancement of biodiversity (which includes common toad) through PPW 2018 and Policy SP15 of the Neath Port Talbot Local Development Plan 2011-2026. Recommendations are given in Section 7 to safeguard any common toads at the site.

Reptiles

- 6.3.4** As per the legal constraints for management, with the additional consideration that the local authorities should have with regards to the protection/enhancement of biodiversity (which includes reptiles) through PPW 2018 and Policy SP15 of the Neath Port Talbot Local Development Plan 2011-2026. Recommendations are given in Section 7 to ensure reptiles are not impacted by future development.

Badger

- 6.3.5** As per the legal constraints for management, with the additional consideration that the local authorities should have with regards to the protection/enhancement of biodiversity (which includes badgers) through PPW 2018 and Policy SP15 of the Neath Port Talbot Local Development Plan 2011-2026. Recommendations are given in Section 7 to ensure badgers are protected during development.

Bats

- 6.3.6** As per the legal constraints for management, with the additional consideration that the local authorities should have with regards to the protection/enhancement of biodiversity (which includes bats) through PPW 2018 and Policy SP15 of the Neath Port Talbot Local Development Plan 2011-2026. Recommendations are given in Section 7 so ensure bat populations and individual bats are safeguarded.

European Hedgehog

- 6.3.7** As per the legal constraints for management, with the additional consideration that the local authorities should have with regards to the protection/enhancement of biodiversity (which includes European hedgehog) through PPW 2018 and Policy SP15 of the Neath Port Talbot Local Development Plan 2011-2026. Recommendations are given in Section 7 to safeguard European hedgehogs.

6.4 Potential Further Ecological Opportunities Regarding Enhancement

- 6.4.1** As described in Section 5.4. The following ecological features should be addressed through ecological enhancement:
- Few priority habitats;
 - Lack of refugia/hibernation sites; and
 - No waterbodies on site.

7. Recommendations

7.1 Background

7.1.1 The recommendations for mitigation (including avoidance, mitigation and compensation) measures given in this section are based on the findings of the extended Phase 1 habitat survey. It may include precautionary mitigation measures for some species which could occur on the site but excludes discussion of the mitigation measures that may be required following the results of the further surveys recommended below.

7.1.2 As per Section 6 the below is broken into four subsections covering the objectives found in Section 2; management, future development, enhancement and the ecological risk rating.

7.2 Recommendations for Management

Mitigation

Priority Habitats

7.2.1 One priority habitat is found at the site; lowland mixed deciduous woodland (BW1-BW3, see Figure 2). Although not strictly protected it would be good practice that these habitats are firstly left in-situ. Where woodland cannot be left in-situ or without further management, the following is advised:

- That as the areas are of poor quality, if felling is required, the area felled is replaced like for like by new planting within the site boundary set aside for this purpose and where possible adjacent to existing areas of woodland. It must also be advised that where more than 5 cubic metres of timber is extracted from woodland per quarter, permission will need to be sought from Natural Resources Wales.
- That where trimming is required, this is only undertaken to control further spread of the woodland such as where scrub is maturing into woodland at the boundaries. Managing the edges will in effect create valuable edge habitats grading from scrub to woodland.
- That pollution will be controlled during the management of this priority habitat in line with national legislation particularly run-off.

Invertebrates

7.2.2 It would be good practice to manage the vegetation at the dense scrub/marshy grassland mosaic (DS/MG1) and marshy grassland and ephemeral/short perennial mosaic (MG/ESP1-MG/ESP2) in a cycle covering two years. In effect one half of such vegetation should be cut each year between September - March. This will allow the regeneration of vegetation, the fruiting and flowering of plants and invertebrates time to recolonise the other half of the site. The rotational management will in this case prevent the site becoming overgrown, especially with scrub.

Great Crested Newt

- 7.2.3** Should the potential for GCN still occur and no further survey takes place, or they are identified on the site, habitats can still be managed. It is advised that during all management of vegetation with regards to dense scrub (DS1-DS3), dense scrub/marshy grassland mosaic (DS/MG1) and marshy grassland and ephemeral/short perennial mosaic (MG/ESP1-MG/ESP2) the areas are cut no lower than 200mm using low ground pressure tractors to operator followed and controlled brushcutters or strimmers. It is also advised that a detailed Precautionary Method of Works is in place to highlight how the favourable conservation status of GCN will be maintained, should they occur. This is under the proviso that works are for habitat management only and being cut back/down and not destroyed. Works should take place between November - February ensuring that areas with hibernation potential are avoided and buffered.
- 7.2.4** If management of such habitats is required between March - October, it is advised that an ecological watching brief is undertaken.
- 7.2.5** No works should be carried out at ground level or below 200mm, until an ecologist has been consulted. Further survey is discussed below.

Common Toad

- 7.2.6** Should any common toad be found during the management of the site, site operatives should move the common toad to a suitable refugia such as a log pile or rubble pile during the winter or released into areas of dense vegetation during the summer. Care should also be taken when excavating within the site boundary close to waterbodies. Excavations should not be left without an escape ramp for common toad to exit and should be checked for toads before works continue each day. To ensure the site operatives know how to identify toads from other amphibian species, a tool box talk should be given.

Reptiles

- 7.2.7** From the current proposals for management of the site; areas of semi-natural broadleaved woodland (BW1-BW3), dense scrub (DS1-DS3), dense scrub/marshy grassland mosaic (DS/MG1) and marshy grassland and ephemeral/short perennial mosaic (MG/ESP1-M/ESP2) may require management. It is advised that where management occurs during the hibernation season (October - March) that features used by hibernating common lizard are left in situ and buffered from cutting by 2m, this includes; log piles, rubble piles, and dumped rubbish if this is located. If such management is required between April - September, features that could be used as refugia should be buffered in the same way. It is advised that during all management of the site, vegetation is cut no lower than 200mm using low ground pressure tractors, operator followed and controlled brushcutters or strimmers. Given other ecological constraints the ideal time to carry out this work is November - December.
- 7.2.8** Management operations should enhance the site for reptiles as it will prevent succession to scrub or woodland which is darker with less prey availability.
- 7.2.9** No works should be carried out at ground level or below 200mm, until an ecologist has been consulted.

Birds

- 7.2.10** All vegetation management works at the site concerning semi-natural broadleaved woodland (BW1-BW3), dense scrub (DS1-DS3), dense scrub/marshy grassland mosaic (DS/MG1) and marshy grassland and ephemeral/short perennial mosaic (MG/ESP1-M/ESP2) should be undertaken outside the bird breeding season. This would mean works should take place between September to February to ensure legislative compliance. There is no restriction on the extent of management works as long as legislative compliance regarding priority habitats, other protected species and other priority species have been addressed. It is however advised that not all scrub is cleared at once on the site and it is cut back in a rotation of 3-5 years.
- 7.2.11** If vegetation management works are carried out between March and August, an ecologist should visit the site the day before vegetation management to identify nest locations (if present). If no nests are identified, works can proceed without further ecological supervision. If a nest is present, the nest should be protected with a suitable buffer until the young have fledged or the nest is no longer active.

Bats

- 7.2.12** From the current proposals for the management of the site, semi-natural broadleaved woodland (BW1-BW3), scattered trees, dense scrub (DS1-DS3) and marshy grassland mosaics may be managed. It is advised that where the vegetation types listed are cut back that connectivity of habitats remains at the site such as around the perimeter. The management of some of this habitat will not necessarily detrimentally impact upon bats as further edge habitats will be created and the increased light levels will allow a greater number of plant species to grow and therefore increase invertebrate populations. The scattered trees and trees within BW1 -BW3 are not currently of a suitable size or have features that could support bat roosts. Further survey is however discussed below.

European Hedgehog

- 7.2.13** It is advised that should habitats suitable for the European hedgehog that require management; semi-natural broadleaved woodland (BW1-BW3), dense scrub (DS1-DS3), dense scrub/marshy grassland mosaic (DS/MG1) and marshy grassland and ephemeral/short perennial mosaic (MG/ESP1-M/ESP2) where European hedgehogs may occur during the day or during hibernation that care is taken during management operations. During the hibernation period October to March, a 2m buffer should be implemented around potential hibernation sites, i.e. piles of dead brash/cut scrub or the base of brambles where material such as leaves has built up when these are located. If management is undertaken from April to September care should be taken for individual hedgehogs themselves. Given other ecological constraints, the ideal time to undertake management is November to December.

Invasive plant species

- 7.2.14** It is advised that the area of wall cotoneaster is cut down when not in fruit and left on site on an area of bare ground to die off. A follow up herbicide application should then be undertaken to kill any regenerating material.

Further Survey

Great Crested Newt

- 7.2.15** As there is a waterbody directly adjacent to the site with the potential to support GCN, it is recommended that a habitat suitability index (HSI) assessment and GCN eDNA survey should be undertaken prior to any vegetation management works below 200mm. This involves taking water samples around the waterbody to determine presence or likely absence of GCN.
- 7.2.16** Should GCN eDNA be detected, a further population size class assessment (six visits) may be required to determine the impacts upon GCN and to inform a future Natural Resources Wales licence application and mitigation as part of the licencing procedure if required to allow the management to take place legally at the site.

Bats

- 7.2.17** If works are required to any trees following 24 months after this report is issued, it is advised that a Preliminary Ground Level Roost Assessment is undertaken to ensure that no further features have become available that could support roosting bats.

7.3 Recommendations for Future Development

Mitigation

Invertebrates

- 7.3.1** Should development occur it is advised that areas of the marshy grassland mosaics (MG/ESP1-MG/ESP2 and DS/MG1) are retained at the site to benefit local invertebrate and plant populations. Further survey is discussed below.

Great crested newts

- 7.3.2** As the development layout is not known recommendation for great crested newt cannot be given. However, suggestions for further survey are given below.

Reptiles

- 7.3.3** As the development layout is not known recommendation for reptiles cannot be given. However, suggestions for further survey are given below.

Birds

- 7.3.4** Should management of some areas of vegetation at the site be required the timings given under Section 7.2 for birds should be followed. Further survey is discussed below.

Bats

- 7.3.5** It is advised that connectivity of semi-natural broadleaved woodland (BW1-BW3), scattered trees, dense scrub (DS1-DS3) and marshy grassland mosaics is maintained as part of any future development to enable bats to disperse throughout the site. Further survey is discussed below.

European Hedgehog

- 7.3.6** As per Section 7.2.

Invasive Plant Species

- 7.3.7** As per Section 7.2.

Further Survey

- 7.3.8** As the layout of any future development is not known for the site at this stage, the list of further survey below may be subject to future amendment:

- A full ecological desk study for statutory and non-statutory designated sites and protected and priority species (which may highlight statutory or non-statutory sites, priority habitats or protected or priority species which require consideration);
- An updated extended Phase 1 habitat survey;
- A full arboricultural survey of the site;
- An invertebrate survey at the site;
- A GCN habitat suitability index (HSI) assessment and eDNA survey should place. Should GCN eDNA be detected, a further population size class assessment (six visits) may be required to determine the impacts upon GCN and to inform a future Natural Resources Wales licence application and mitigation as part of the licencing procedure;
- A full reptile survey of the site/or areas to be impacted;
- A breeding bird survey at the site concentrating on Schedule 1/ priority species; and
- A Preliminary Ground Level Roost Assessment of trees within the boundary if 24 months elapses from the issue for this report. Bat activity surveys should also be undertaken. Following the former further surveys may be required and licensing for Natural Resources Wales.

7.4 Ecological Enhancement

- 7.4.1** In order for the Welsh Government to fulfil its biodiversity duty (see Section 5) it is recommended that ecological enhancements are implemented at the site for management or future development, this includes:

- Allowing areas of marshy grassland and ephemeral/short perennial mosaic (MG/ESP1-MG/ESP2) to mature into a priority habitat, rush pasture. In addition, the woodlands BW1-BW2, could be allowed to expand into DS2 and DS3.
- Creating log or rubble piles close to or within dense scrub to provide hibernation sites for reptiles if present on the site.
- Digging several ponds close to the edges of the site to fill naturally and provide focal points for wildlife.

7.5 Ecological Risk Rating

7.5.1 The site has been given an overall risk rating of Medium (amber) principally due to the presence of one priority habitat that may require management, an invasive species, the potential for Schedule 1 and priority bird species to breed and the potential for a number of other protected or priority species to occur. This risk rating, however, may change depending on future site management and the outcome of any further ecology surveys that are undertaken at the site.

7.5.2 An explanation of the risk ratings is given in Appendix 3. Please see Figure 4 for a further breakdown of the risk ratings at the site and the notes on why.

8. Conclusion

- 8.1.1** Following the extended Phase 1 habitat survey, partial desk study and reporting it has been determined that the overall ecological risk rating for the site is Medium (amber). This is principally due to the presence of one priority habitat that may require management, an invasive species, the potential for Schedule 1 and priority bird species to breed and the potential for a number of other protected or priority species to occur.

9. References

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- 9.1.2 HM Government (2017) The Conservation of Habitats and Species Regulations
<http://www.legislation.gov.uk/ukSI/2017/1012/contents/made>
- 9.1.3 HM Government (2016) The Environment (Wales) Act
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- 9.1.4 HM Government (2007) The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007
<http://www.legislation.gov.uk/ukSI/2007/1843/contents/made>
- 9.1.5 HM Government (2000) The Countryside Rights of Way Act
<http://www.legislation.gov.uk/ukpga/2000/37/introduction>
- 9.1.6 HM Government (1981) Wildlife and Countryside Act.
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- 9.1.8 Joint Nature Conservation Committee (2011) UK Biodiversity Action Plan Priority Habitat Descriptions. Peterborough, England
- 9.1.9 JNCC (2010) Handbook for Phase 1 habitat survey: A technique for environmental audit. Joint Nature Conservancy Committee, Peterborough, England.
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10. Appendix 1 - Plant Species and Abundance

Semi-natural broadleaved woodland BW1

Common Name	Scientific Name	Abundance
Alder	<i>Alnus glutinosa</i>	A
Ash	<i>Fraxinus excelsior</i>	F
Bramble	<i>Rubus fruticosus agg.</i>	F
Common ivy	<i>Hedera helix</i>	F
Grey willow	<i>Salix cinerea subsp. cinerea</i>	F
Austrian pine	<i>Pinus nigra</i>	O
Soft-rush	<i>Juncus effusus</i>	O
Spear thistle	<i>Cirsium vulgare</i>	O

Semi-natural broadleaved woodland BW2

Common Name	Scientific Name	Abundance
Alder	<i>Alnus glutinosa</i>	A
Bramble	<i>Rubus fruticosus agg.</i>	F
Common ivy	<i>Hedera helix</i>	F
Grey willow	<i>Salix cinerea subsp. cinerea</i>	F
Hawthorn	<i>Crataegus monogyna</i>	F
Hazel	<i>Corylus avellana</i>	O
Silver birch	<i>Betula pendula</i>	O
Sycamore	<i>Acer pseudoplatanus</i>	O
Black pine	<i>Pinus nigra</i>	R
Cleavers	<i>Galium aparine</i>	R
Holly	<i>Ilex aquifolium</i>	R

Semi-natural broadleaved woodland BW3

Common Name	Scientific Name	Abundance
Alder	<i>Alnus glutinosa</i>	A
Bramble	<i>Rubus fruticosus agg.</i>	F
Common ivy	<i>Hedera helix</i>	F
Grey willow	<i>Salix cinerea subsp. cinerea</i>	F

Hawthorn	<i>Crataegus monogyna</i>	F
Black pine	<i>Pinus nigra</i>	O
Cleavers	<i>Galium aparine</i>	O
Hazel	<i>Corylus avellana</i>	O
Snowberry	<i>Symphoricarpos albus</i>	O
Italian alder	<i>Alnus cordata</i>	R

Dense scrub (DS1)

Common Name	Scientific Name	Abundance
Cock's-foot	<i>Dactylis glomerata</i>	A
Dogwood	<i>Cornus sanguinea</i>	A
Common feather-moss	<i>Kindbergia praelonga</i>	F
Gorse	<i>Ulex europaeus</i>	F
Grey willow	<i>Salix cinerea subsp. cinerea</i>	F
Spear thistle	<i>Cirsium vulgare</i>	O
Yorkshire-fog	<i>Holcus lanatus</i>	O
Butterfly-bush	<i>Buddleja davidii</i>	R

Dense scrub (DS2)

Common Name	Scientific Name	Abundance
Bramble	<i>Rubus fruticosus agg.</i>	A
Cock's-foot	<i>Dactylis glomerata</i>	F
Common feather-moss	<i>kindbergia praelonga</i>	F
Grey willow	<i>Salix cinerea subsp. cinerea</i>	F
Crested dog's-tail	<i>Cynosurus cristatus</i>	O
Soft-rush	<i>Juncus effusus</i>	O
Ash	<i>Fraxinus excelsior</i>	R
Pampas-grass	<i>Cortaderia selloana</i>	R
Spear thistle	<i>Cirsium vulgare</i>	R

Dense scrub (DS3)

Common Name	Scientific Name	Abundance
Alder	<i>Alnus glutinosa</i>	A
Ash	<i>Fraxinus excelsior</i>	F
Bramble	<i>Rubus fruticosus agg.</i>	F
Common ivy	<i>Hedera helix</i>	F
Gorse	<i>Ulex europaeus</i>	F
Grey willow	<i>Salix cinerea subsp. cinerea</i>	F
Common reed	<i>Phragmites australis</i>	O
Wall cotoneaster	<i>Cotoneaster horizontalis</i>	O
Pampas-grass	<i>Cortaderia selloana</i>	O
Soft-rush	<i>Juncus effusus</i>	O
Butterfly-bush	<i>Buddleja davidii</i>	R
Pedunculate oak	<i>Quercus robur</i>	R

Dense scrub/ marshy grassland mosaic (DS/MG1)

Common Name	Scientific Name	Abundance
Bramble	<i>Rubus fruticosus agg.</i>	A
Cock's-foot	<i>Dactylis glomerata</i>	F
Common reed	<i>Phragmites australis</i>	F
Creeping buttercup	<i>Ranunculus repens</i>	F
Crested dog's-tail	<i>Cynosurus cristatus</i>	F
Dogwood	<i>Cornus sanguinea</i>	F
Gorse	<i>Ulex europaeus</i>	F
Grey willow	<i>Salix cinerea subsp. cinerea</i>	F
Soft-rush	<i>Juncus effusus</i>	F
Yorkshire-fog	<i>Holcus lanatus</i>	F
Creeping cinquefoil	<i>Potentilla reptans</i>	O
Dandelion	<i>Taraxacum officinale agg.</i>	O
Common feather-moss	<i>Kindbergia praelonga</i>	O
Perennial rye-grass	<i>Lolium perenne</i>	O
Red clover	<i>Trifolium pratense</i>	O
Red dead-nettle	<i>Lamium purpureum</i>	O

Ribwort plantain	<i>Plantago lanceolata</i>	O
Spear thistle	<i>Cirsium vulgare</i>	O
White clover	<i>Trifolium repens</i>	O
Wood small-reed	<i>Calamagrostis epigejos</i>	O
Butterfly-bush	<i>Buddleja davidii</i>	R
Pampas-grass	<i>Cortaderia selloana</i>	R

Marshy grassland/ephemeral/short perennial mosaic (MG/ESP1)

Common Name	Scientific Name	Abundance
Common reed	<i>Phragmites australis</i>	A
Soft-rush	<i>Juncus effusus</i>	A
Cock's-foot	<i>Dactylis glomerata</i>	F
Common feather-moss	<i>Kindbergia praelonga</i>	F
Crested dog's-tail	<i>Cynosurus cristatus</i>	F
Bramble	<i>Rubus fruticosus agg.</i>	O
Creeping cinquefoil	<i>Potentilla reptans</i>	O
Dandelion	<i>Taraxacum officinale agg.</i>	O
Creeping buttercup	<i>Ranunculus repens</i>	O
Dogwood	<i>Cornus sanguinea</i>	O
Grey willow	<i>Salix cinerea subsp. cinerea</i>	O
Perennial rye-grass	<i>Lolium perenne</i>	O
Red clover	<i>Trifolium pratense</i>	O
Red dead-nettle	<i>Lamium purpureum</i>	O
Ribwort plantain	<i>Plantago lanceolata</i>	O
White clover	<i>Trifolium repens</i>	O
Wood small-reed	<i>Calamagrostis epigejos</i>	O
Yorkshire-fog	<i>Holcus lanatus</i>	O
Pampas-grass	<i>Cortaderia selloana</i>	R

Marshy grassland/ephemeral/short perennial mosaic (MG/ESP2)

Common Name	Scientific Name	Abundance
Common feather-moss	<i>Kindbergia praelonga</i>	A
Common reed	<i>Phragmites australis</i>	A

Soft-rush	<i>Juncus effusus</i>	A
Cock's-foot	<i>Dactylis glomerata</i>	F
Crested dog's-tail	<i>Cynosurus cristatus</i>	F
Bramble	<i>Rubus fruticosus agg.</i>	O
Creeping cinquefoil	<i>Potentilla reptans</i>	O
Compact rush	<i>Juncus conglomeratus</i>	O
Creeping buttercup	<i>Ranunculus repens</i>	O
Dogwood	<i>Cornus sanguinea</i>	O
Grey willow	<i>Salix cinerea subsp. cinerea</i>	O
Pampas-grass	<i>Cortaderia selloana</i>	O
Perennial rye-grass	<i>Lolium perenne</i>	O
Red clover	<i>Trifolium pratense</i>	O
Red dead-nettle	<i>Lamium purpureum</i>	O
Ribwort plantain	<i>Plantago lanceolata</i>	O
White clover	<i>Trifolium repens</i>	O
Wood small-reed	<i>Calamagrostis epigejos</i>	O
Yorkshire-fog	<i>Holcus lanatus</i>	O
Bulrush	<i>Typha latifolia</i>	R
Dandelion	<i>Taraxacum officinale agg.</i>	R

Amenity grassland (AM1)

Common Name	Scientific Name	Abundance
Perennial rye-grass	<i>Lolium perenne</i>	D
Common feather-moss	<i>Kindbergia praelonga</i>	F
Yorkshire-fog	<i>Holcus lanatus</i>	F
Creeping cinquefoil	<i>Potentilla reptans</i>	O
Dandelion	<i>Taraxacum officinale agg.</i>	O
Daisy	<i>Bellis perennis</i>	O
Red fescue	<i>Festuca rubra</i>	O
White clover	<i>Trifolium repens</i>	O

11. Appendix 2 - Assessment Methodology

11.1 Identification of Legal and Planning Policy Issues

Scope of Assessment

- 11.1.1 The first step is to identify any biodiversity features found on the site that are subject to legal or policy controls, as follows:

Designated Sites

- 11.1.2 The location of the site is compared to the distribution of sites with a statutory or non-statutory nature conservation designation using information derived from the desk study. Consideration is given to designated sites that could be affected directly or indirectly by the proposed development.

Habitats outside Designated Sites

- 11.1.3 The habitats known to occur on the site are compared to those which receive some protection, in law or policy, outside of designated sites i.e. hedgerows, uncultivated land and semi-natural areas, habitats listed as priorities in the home nation biodiversity strategies, habitats listed as Habitats of Principal Importance for the Conservation of Biodiversity by the Secretary of State and local priority habitats listed as requiring action (formerly under the Local Biodiversity Action Plans).

Ancient Woodland

- 11.1.4 The ancient woodland inventory is checked to determine whether any known ancient woodland occurs either on the site or nearby.

Protected Species

- 11.1.5 The species known to occur on the site as a result of the desk study and Phase 1 habitat survey are compared with those listed in nature conservation legislation i.e. the Wildlife and Countryside Act 1981, as amended, the Conservation of Habitats and Species regulations 2017.
- 11.1.6 In addition, the species known to occur on the site as a result of the desk study and Phase 1 habitat survey are compared with those listed in animal welfare legislation, i.e. the Badgers Act 1992 and the Wild Mammals (Protection) Act 1996.

Priority Species

- 11.1.7 The species known to occur on the site are compared with those listed as priority species (i.e. Species of Principal Importance for the Conservation of Biodiversity in the country concerned) or those requiring action on the local priority species lists (Local Biodiversity Action Plans).

Other Species of Conservation Concern

- 11.1.8** The species known to occur on the site are compared with other nature conservation listings, such as red data books.

Invasive Plant Species

- 11.1.9** The species of plant present on the site are compared with those listed by government agencies as invasive non-natives, with particular attention given to those listed in the Wildlife and Countryside Act 1981, as amended.

Review of Legislation and Policy

- 11.1.10** If any of the above are found to occur on or near the site and are likely to be affected by the development in any way, the relevant legislation and planning policy (including national, regional, local policies) are examined to determine whether the proposed development is compliant.

Ecological Enhancement

- 11.1.11** Planning policy generally requires new developments to be enhanced for biodiversity. The existing proposals are considered to determine whether biodiversity enhancements are offered and whether they are adequate to meet the policy requirements. Again, national, regional and local policies are considered.

11.2 Identification of Potential Further Ecological Issues

- 11.2.1** Further ecological issues are those which cannot be resolved during the preliminary ecological appraisal for any reason, including the following:
- The development is near a designated site and consultation with the relevant regulator is required in order to determine whether further assessment is required;
 - Suitable habitat is present on or near the site for a protected species/species of conservation concern and specialist survey techniques are required for their detection;
 - Suitable habitat is present on or near the site for a protected species/species of conservation concern and the extended Phase 1 habitat survey was not undertaken at a suitable time of year for their detection;
 - A protected species/species of conservation concern was found on or near the site but further information on population size or distribution is required in order to resolve any legal and planning policy issues (such as obtaining licences).
- 11.2.2** Discussion of issues raised by 3rd parties, e.g. reports of protected species from the site by local people, may also be discussed under this heading.
- 11.2.3** The desk study is used as a guide to the protected species/species of conservation in the local area, however, the list is not taken to be exhaustive and it is borne in mind that some species may no longer occur in the locality.

- 11.2.4** No attempt is made to evaluate the importance of the site for species not yet confirmed to be on or near the site, nor to discuss the implications for the development if the species were to be found on the site.

12. Appendix 3 - Assessment of Ecological Risk Rating

Low (green)

- 12.1.1 No statutory or non-statutory designated sites within the site boundary or directly adjacent within 50m. No protected species within the site boundary. No priority habitats or priority species within the site boundary. No invasive species within the site boundary.
- 12.1.2 The ecological risk rating will be green where ecological constraints are related to priority species where mitigation is simple with minimal cost and/or there is the potential for breeding birds at the site which are not listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

Medium (amber)

- 12.1.3 Statutory designated sites within the site boundary but these will not be impacted by the management/development. Non-statutory designated sites within the site boundary that may or may not be impacted by the management/development, but where like for like compensation is possible at minimal cost. There are priority habitats that will be impacted by the management/development, but compensation is straightforward and has minimal cost such as like for like replacement. Potential for, or confirmed presence of, protected species within the site boundary that require further survey and where mitigation can be completed at minimal cost and mitigation can be incorporated within the site boundary, for example habitat enhancement for reptiles. Potential for or confirmed presence of priority species within the site boundary but where mitigation may be more complex. Invasive species are present within the site boundary, but don't require significant invasive management/removal.

High (red)

- 12.1.4 Statutory designated sites within the site boundary that will be impacted by the management/development. Non-statutory designated sites within the site boundary that will be impacted by the management/development and where their compensation would be complex. Priority habitats will be lost that require more complex compensation due to the complexity/rarity of the habitat involved. Potential for, or confirmed presence of, protected species within the site boundary that require significant mitigation to complete the management/development such as offsite mitigation. Potential for or confirmed presence of priority species within the site boundary where mitigation is more complex. Invasive species are present within the site boundary that require significant remediation to complete the works.
- 12.1.5 Due to multiple factors involved, the suitably qualified ecologist will provide the final judgement on the ecological risk rating categorisation, as guided by the above.