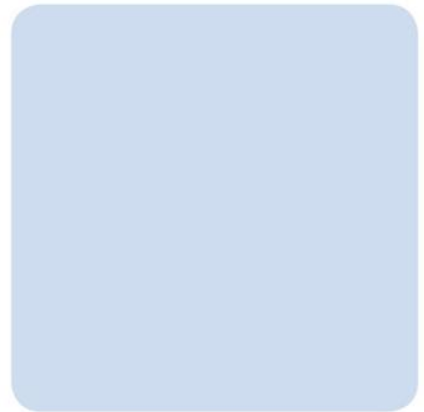


Ecological Appraisal Report

Dragon Parc, Merthyr Tydfil

On behalf of Huntley Wood Investments Ltd



Date: May 2016

Our Ref: JER6710

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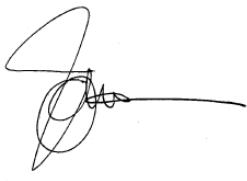
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Quality Management

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Amendment Record

Revision No.	Date	Reason for Change	Authors Initials

Contents

Quality Management	i
Amendment Record	ii
Contents	iii
Tables, Drawings & Appendices	iv
1 Introduction	1
1.1 Scope of Works	1
1.2 Site Context	1
2 Methods	2
2.1 Desk Study.....	2
2.2 Field Survey.....	2
3 Results	4
3.1 Desk Study.....	4
3.2 Site Walkover Survey.....	7
4 Discussion	13
4.1 Flora.....	13
4.2 Designated Sites	13
4.3 Bats.....	13
4.4 Otter and Water Vole.....	14
4.5 Nesting Birds.....	15
4.6 Reptiles	15
4.7 Great Crested Newts.....	15
5 Conclusions and Recommendations.....	16
5.1 Habitats	16
5.2 Designated Sites	16
5.3 Bats.....	16
5.4 Otter and Water Vole.....	16
5.5 Nesting Birds.....	16
5.6 Reptiles	17
5.7 Great Crested Newts.....	17
References	20
Drawings.....	21
Appendices	22

Tables, Drawings & Appendices

Table

Table 2-1: HSI Assessment Numerical Scores and Equivalent Qualitative descriptions.....	3
Table 3-1: Abbreviations for Species Legal and Conservation Status	5
Table 3-2: Summary of Relevant Mammal and Herptile Records within 2km of the Site	6

Plates

Plate 3-1: Regenerating neutral grassland.....	7
Plate 3-2: Marshy grassland in the north of the site	8
Plate 3-3: Retaining wall on the eastern site boundary treeline	9
Plate 3-4: Small pond close to western border	10
Plate 3-5: Former office building, northern elevation	11
Plate 3-6: Japanese knotweed at site entrance	11
Plate 3-7: River Taff and bank.....	12

Drawings

JER6710-ECO-001 Habitat Plan

Appendices

Appendix 1	Non-statutory Designated Sites within 2km of the Development Site
Appendix 2	Target Notes
Appendix 3	Pond Habitat Suitability Index (HSI) Assessment Results

1 Introduction

1.1 Scope of Works

- 1.1.1 RPS Planning and Development were commissioned by Huntley Wood Investments Ltd to undertake an Ecological Appraisal of land within the Dragon Parc Industrial Park, located in Abercanaid south of Merthyr Tydfil.
- 1.1.2 Huntley Wood Investments Ltd proposes to submit a planning application to develop the site a residential area and public open space in the north of the site, and an employment area in the south.
- 1.1.3 This Ecological Appraisal Report has been produced to help define the baseline ecological conditions at the site.

1.2 Site Context

- 1.2.1 The Dragon Parc site is approximately 8.2ha, comprising a large area of hardstanding where several industrial buildings have been demolished in the centre and south of the site, and an area to the north consisting of regenerating and marshy grassland, with patches of willow scrub. A former office and gatehouse are located at the southern end of the site. Rank grassland with semi-mature trees, woodland and dense scrub border the site.
- 1.2.2 The site is located in the small settlement of Abercanaid to the south of Merthyr Tydfil, characterised by industrial development alongside the River Taff. The River Taff (designated a Site of Importance for Nature Conservation SINC) adjoins the eastern boundary separating the site from further industrial areas while a residential area (Stanfield Close) and broad-leaved woodland park (lie to the west).
- 1.2.3 In the wider landscape context, the town of Merthyr Tydfil extends north surrounded by otherwise rural areas consisting of plantation coniferous woodland, pasture, semi natural scrub woodland, grassland and quarries.

2 Methods

2.1 Desk Study

- 2.1.1 Information was obtained from South East Wales Biodiversity Records Centre (SEWBReC¹) on non-statutory designated nature conservation sites within 2km of the survey site and for records of protected or otherwise notable species (e.g. species listed under the local or UK BAP) within 2km of the survey site.
- 2.1.2 Information on nationally and internationally designated sites within 2km of the site was obtained from the Multi-Agency Geographic Information for the Countryside² and the Joint Nature Conservation Committee website³.

2.2 Field Survey

- 2.2.1 The site walkover survey, undertaken on 12th April 2016, was conducted in accordance with The Handbook for Phase I Habitat Survey (JNCC, 2010) and guidelines on Ecological Appraisal (IEEM 2012).
- 2.2.2 Habitats within the site were classified, mapped and described in terms of their structure and broad floristic composition. Consideration was also given to adjacent habitats to understand the sites ecological context. Searches were made for invasive non-native plant species focussing on those species currently listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended in 2010). Botanical nomenclature in this report follows that of Stace (1997).
- 2.2.3 The habitats within the site were assessed for their potential to support legally protected or otherwise notable flora and fauna. Where species are not specifically mentioned, this indicates that no habitat of potential value for these species was identified during the survey.

2.3 Habitat Suitability Index (HSI) Assessment of On-site Pond

- 2.3.1 The on-site pond was assessed using the HSI methodology devised by Oldham *et al* (2000) for assessing the potential suitability of a water body to support great crested newts. The HSI assessment followed the revised version of the Oldham methodology as described in The Amphibian and Reptile Group (ARG) for the UK Advice Note 5, with the final HSI score being ascribed a qualitative value for the suitability of the water body to support GCN on the scale shown in Table 2-1.

¹ <http://www.sewbrec.org.uk/>

² <http://www.magic.gov.uk>

³ <http://www.jncc.gov.uk/>

Table 2-1. HSI Assessment Numerical Scores and Equivalent Qualitative descriptions

HSI score	Qualitative assessment of suitability
<0.5	Poor
0.5 – 0.59	Below Average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.79	Excellent

3 Results

3.1 Desk Study

Statutory Designated Sites

Cwm Cadlan - National Nature Reserve (NNR) and Special Area of Conservation (SAC)

- 3.1.1 Located 9.8km north-west of the site, Cwm Cadlan NNR and SAC comprises the largest area of *Molinia* meadows in Wales. The NNR designation covers 33ha while the SAC extends to 84ha.
- 3.1.2 *Molinia caerulea* – *Cirsium dissectum* fen-meadow is extensively developed within the designations, with clearly-displayed transitions to a range of associated habitats, including base-rich flush and neutral grassland. The meadows support globe-flower *Trollius europaeus* at the southern limit of its British distribution.
- 3.1.3 In addition to the *Molinia* meadows, the site is designated for its alkaline fens, including widely occurring *Carex dioica* – *Pinguicula vulgaris* mire. Characteristic flora include common butterwort *Pinguicula vulgaris*, bog pimpernel *Anagallis tenella*, marsh arrowgrass *Triglochin palustris* and the moss *Campyllum stellatum*. Other sedge-rich swards are also present supporting basophilous species such as tawny sedge *Carex hostiana*, flea sedge *Carex pulicaris* and quaking-grass *Briza media*.

Cwm Glo a Glyndyrys – Site of Special Scientific Interest (SSSI)

- 3.1.4 Covering 181ha Cwm Glo a Glyndyrys SSSI is located 0.3km north-west of the site. The designation comprises a mosaic of dry and wet acidic grassland, species-rich neutral grassland and ancient woodland.
- 3.1.5 Great crested newt *Triturus cristatus*, nightjar *Caprimulgus europaeus* and marsh fritillary *Euphydryas aurinia* have been recorded within the site. In addition to supporting a range of uncommon plant species, the site has a diverse assemblage of grassland fungi for which it is considered one of the best sites in Britain.

Non-statutory Designated Sites

- 3.1.6 There are fifteen non-statutory designated sites within 2km of the site, all of which are designated as SINC. Full details of which are provided in Appendix 1.

Afon (River) Taff SINC

- 3.1.7 The Afon (River) Taff SINC adjoins the site to the west. Habitats associated with the SINC are chiefly semi-natural woodland (including areas of ancient semi-natural oak woodland and linear wet woodlands dominated by alder), neutral and marshy grasslands, bracken and scrub.

Notable features of the river course include shingle banks which support plant species with localised populations such as water chickweed, bearded couch and giant fescue.

- 3.1.8 Otter occurs throughout the length of the SINC, and the river is known to be of value to a wide variety of birds of interest, including kingfisher, grey wagtail, sand martin and dipper, as well as fish species including salmon, brown trout and bullhead and a range of foraging bat species.

Species Records

- 3.1.9 For each species an abbreviated reference is given to their legal and conservation status (see Table 3-1). Table 3-2 provides a summary of records of legally protected species from within 2km of the proposed development, and for which there is suitable habitat on or adjacent to the site.

Table 3-1: Abbreviations for Species Legal and Conservation Status

Abbreviation	Legal/Conservation Status
EPS	European Protected Species. Fully protected under the Conservation of Habitats and Species Regulations 2012
WCA	Fully protected under the Wildlife and Countryside Act 1981 – as amended
WCA5 Part	Protected from killing and injuring under the Wildlife and Countryside Act 1981 – as amended
WCA1	Bird species subject to special protection - listed on Schedule 1 Wildlife & Countryside Act 1981 as amended
S42	Listed under Section 42 of the Natural Environment and Rural Communities Act 2006 as species of principal importance of conservation in Wales
WRed	RSPB Wales Red List - Birds of high conservation concern in the Wales
WAm	RSPB Wales Amber List - Birds of high conservation concern in the Wales
PBA	Protection of Badgers Act

Table 3-2: Summary of Relevant Mammal and Herptile Records within 2km of the Site

Species	Scientific Name	Species Status	No. of Records	Location of Closest Record
Bats				
Brown long-eared Bat	<i>Plecotus auritus</i>	EPS, WCA full S42, UK BAP, LBAP	2	390m south-east
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>		18	70m west
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>		2, one roost	3820m north
Noctule	<i>Nyctalus noctula</i>	EPS, WCA full, LBAP	4	<10m west
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	EPS, WCA full	40, two of roosts	35m south
Unidentified pipistrelle bat	<i>Pipistrellus</i> sp.		2	360m south
Unidentified bat	<i>Chiroptera</i> sp.		5, four roosts	680m south
Mammals				
Otter	<i>Lutra lutra</i>	WCA full, S42, LBAP	3	320m north-west (roadkill)
Herptiles				
Great crested newt	<i>Triturus cristatus</i>	EPS, WCA full S42, UK BAP, LBAP	1	1800m west
Slow-worm	<i>Anguis fragilis</i>	WCA part, S42, UK BAP	2	1070m east
Grass snake	<i>Natrix natrix</i>		1	50m east
Common lizard	<i>Zootoca vivipara</i>		5	820m south

3.1.10 The following RSPB red and amber list bird species for which potentially suitable habitats occur within the site, have been recorded within 2km of the site:

- **RSPB Red List:** Common grasshopper warbler *Locustella naevia* (WRed, S42, UKBAP), starling *Sturnus vulgaris* (WRed, S42, UKBAP), bullfinch *Pyrrhula pyrrhula* (WRed, S42, UKBAP)

- **RSPB Amber List:** Black headed gull *Chroicocephalus ridibundus* (WAm, S42), kingfisher *Alcedo atthis* (WAm), reed bunting *Emberiza schoeniclus* (WAm, S42, UKBAP), house sparrow *Passer domesticus* (WAm, S42, UKBAP), peregrine falcon *Falco peregrinus* (WAm), song thrush *Turdus philomelos* (WAm, S42, UKBAP), skylark *Alauda arvensis* (WAm, S42, UKBAP), spotted flycatcher *Muscicapa striata* (WAm, S42, UKBAP), barn owl *Tyto alba* (WAm), common kestrel *Falco tinnunculus* (WAm, S42)

3.2 Site Walkover Survey

On-site Habitats

Neutral Grassland

- 3.2.1 The northern section of the site comprises an area of approximately 2ha that has developed into a mosaic of regenerating grassland, marshy grassland, and scrub (Plate 3-1).
- 3.2.2 Regenerating grassland comprises approximately half of the area and consists of an assemblage of grasses, mosses and other herbaceous species. Grasses present include Yorkshire fog *Holcus lanatus*, red fescue *Festuca rubra*, bent grasses *Agrostis* sp., crested dog's-tail *Cynosurus cristatus* and cock's-foot *Dactylis glomerata*. Other species occasionally present throughout the grassland include marsh bedstraw *Galium palustre*, purple toadflax *Linaria purpurea*, marsh thistle *Cirsium palustre* and glaucous sedge *Carex flacca* (TN1).

Plate 3-1: Regenerating neutral grassland



- 3.2.3 Marshy grassland has developed in more waterlogged areas, dominated by soft rush *Juncus effusus* and hard rush *Juncus inflexus*, with frequent bulrush *Typha latifolia*. Lesser water plantain *Baldellia ranunculoides* and water mint *Mentha citrata* are occasionally present.
- 3.2.4 A dense patch of immature willow *Salix* sp. scrub has developed at the west of the field. Elsewhere, willow and hawthorn *Crataegus monogyna* scrub is scattered in localised areas throughout.

- 3.2.5 An area of mature broadleaved woodland in the northeast of the site has been recently felled leaving bare ground with cut logs and stumps.

Plate 3-2: Marshy grassland in the north of the site



Amenity Grassland

- 3.2.6 The northern, western and eastern site boundaries support narrow strips of rank amenity grassland, comprising annual meadow-grass, Yorkshire fog, cock's-foot and bent grasses. On the western boundary an embankment (typically 3-4m wide), supports a variety of common rank grassland species (TN2). Frequently present species were knapweed *Centaurea nigra*, meadow buttercup *Ranunculus acris*, ivy *Helix heder*a, barren strawberry *Potentilla sterilis*, and lesser celandine *Ficaria verna*. Rare and occasional species include cuckooflower *Cardamine pratensis*, soft rush, and field wood-rush *Luzula campestris*.
- 3.2.7 To the east the amenity grassland strip is approximately 1.5m wide and comprises annual meadow-grass *Poa annua*, bent grass *Agrostis* sp., mosses and forbs such as barren strawberry and herb Robert *Geranium robertianum*.

Woodland and trees

- 3.2.8 The site is bordered to the west by a treeline comprising immature and semi-mature shrubs and trees including hawthorn, elder *Sambucus nigra*, alder *Alnus glutinosa*, silver birch *Betula pendula*, beech *Fagus sylvatica*, hazel *Corylus avellana* and larch *Larix* sp. (Plate 3-2).

Plate 3-3: Retaining wall on the eastern site boundary treeline



Dense Scrub and Bramble Thicket

- 3.2.9 In addition to the scrub in the north of the site, localised areas of dense bramble are also present along the western border and around the office building at the south of the site.

Scattered Scrub and Trees

- 3.2.10 Small patches of hawthorn, rose, butterfly bush *Buddleja davidii* and gorse *Ulex europaeus* are scattered through the site. Immature silver birch and alder trees are also planted in small beds in the centre and south of the site.

Ornamental Scrub

- 3.2.11 Several beds of ornamental scrub are located at the south of the site around the former office building. The scrub is dominated by large woody species such as butterfly bush, Oregon grape *Mahonia* sp. and firethorn *Pyracantha* sp. Left unmanaged, these areas have developed into dense thickets over 1m in height.

Short Ephemeral / Perennial

- 3.2.12 Concrete pathways at the south of the site have been colonised by short ephemeral / perennial vegetation. Shaded by tall beds of ornamental scrub and trees, the area is dominated by mosses with occasional small herbaceous plants including common mouse-ear *Cerastium fontanum*, daisy *Bellis perennis* and wavy bitter-cress *Cardamine flexuosa*.

Pond

- 3.2.13 A small, shaded pond is situated in the western side of the site (Plate 3-3). The pond is roughly triangular and approximately 40-50m² and with an estimated maximum depth of 25cm. The pond has very poor water quality, containing disposed material from around the site. Lesser duckweed *Lemna minor* was the only vegetation present during the walkover survey. A Habitat

Suitability Index (HSI) assessment of the pond was undertaken, the results of which indicate that the pond has very poor suitability for great crested newts (HSI score of 0.414). The full HSI results are provided in Appendix 3.

Plate 3-4: Small pond close to western border



Hardstanding and Rubble

- 3.2.14 Three buildings have been demolished within the site, the first two located to the west of the site and the third covering approximately 3ha at the sites centre. Following demolition, hardstanding and large rubble piles are left throughout the site. The rubble comprises piles of brick, breezeblocks and concrete devoid of soil or vegetation.

Former Office Building and Gatehouse

- 3.2.15 A disused, three storey flat roofed former office building is located in the south of the site (Plate 3-4). The building comprises rows of windows along each floor, with brick sections between floors. The windows and doors of the building have been mostly broken, making the interior easily accessible. Jackdaws *Corvus monedula* and herring gulls *Larus argentatus* were observed nesting within the building during the survey walkover.
- 3.2.16 At the sites entranceway is a small, single storey gatehouse of similar construction to the former office building.

Plate 3-5: Former office building, northern elevation



Invasive Species

- 3.2.17 A small area of dead Japanese knotweed *Fallopia japonica* is present along the fence at the sites entranceway (Plate 3-6). The amount of Japanese knotweed present within the site is relatively small, with extensive patches outside the site along the river banks.

Plate 3-6: Japanese knotweed at site entrance



Off-site Habitats

- 3.2.18 The Afon (River) Taff SINC, adjoins the site to the east. The river banks adjoining the eastern boundary are steep leading down to a relatively fast-flowing section of the river approximately 15m in width. The steep sloping bank largely comprise bare coarse ballast topped with a narrow strip 1-2m wide of hawthorn, bramble and rose scrub. Scattered immature trees and shrubs are present on the slope including silver birch *Betula pendula* and dogwood *Cornus sanguinea*. The toe of the bank river bank is reinforced with a crenelated concrete revetment.

Plate 3-7: River Taff and bank



4 Discussion

4.1 Designated Sites

- 4.1.1 In the absence of mitigation, there is the potential for activities associated with the redevelopment of the site to result in surface water flows from the construction site into the river channel due to its proximity to the site boundary. Good environmental working practices creating separation between the working areas, machinery and potential pollutants would help protect the watercourse from the any adverse effects.
- 4.1.2 The Cwn Glo a Glyndyrys SSSI located 0.3km north-west of the site comprises a mosaic of semi-natural grassland habitats and ancient woodland as well as grassland fungi that would be potentially sensitive to changes in air quality.
- 4.1.3 Other nearby SINCs between 0.3km and 2km from the site also support potentially sensitive semi-natural habitats.
- 4.1.4 Designated sites located several hundred metres from the site will not be directly impacted by the redevelopment of the site. Residential or light industrial development would not be expected to have a significant indirect impact on any designations but potential impact pathways would need to be considered for other industrial redevelopment.

4.2 Habitats/Flora

- 4.2.1 The majority of the site has negligible botanical diversity supporting a low diversity of species that are common within the surrounding landscape and are of significance within the site only.
- 4.2.2 In the northern part of the site, there is an area of regenerating neutral grassland and rank marshy grassland with scattered scrub and trees. A moderate diversity of relatively widespread plant species was recorded in the habitats. The partially rank grasslands occur as a mosaic and have features that would classify as a low quality example of an “Open Mosaic Habitats on Previously Developed Land”, a UK BAP priority habitat. Overall the mosaic is likely to have value in the local context.

4.3 Bats

- 4.3.1 All species of bats occurring in the UK receive full protection under The Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981 (as amended). In addition the following eight species are listed in Section 42 of the NERC Act (2006) as species of principal importance for conservation in Wales: common pipistrelle soprano pipistrelle, lesser horseshoe bat, greater horseshoe bat *Rhinolophus ferrumequinum*, Barbastelle *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule and brown long-eared bats. All the above species are also UK BAP priority species.

Buildings

- 4.3.2 A brief external inspection of the former office building during the Phase 1 survey identified a section on the northern elevation where the outer brick skin had collapsed exposing the wall cavity. Due to the north facing aspect and degree of exposure of the feature, it is considered that there is a low likelihood that the feature would be used by bats.
- 4.3.3 A more detailed internal and external inspection of the former office building was undertaken in August / September 2015 (The Countryman: Wildlife Consultancy, 2015). The aim of the survey was to assess the potential of the building to be used by bats and included detailed searches for signs of use by bats both internally and externally. No evidence of use by bats was found and it was concluded that the potential for bat use and the likelihood of use by bats was low.

Trees

- 4.3.4 None of the trees within the site had features that could be used by roosting bats.

Foraging and Commuting

- 4.3.5 The scrub / grassland mosaic in the northern area and trees and scrub along the western and eastern boundaries of the site provide potential foraging habitat for bat and have the potential to be used as bat flight lines. Extensive broadleaved woodland to the west and the River Taff river corridor to the east are likely to increase the likelihood that bats will utilise the site although the river bank habitats adjacent to the site are sub-optimal comprising patchy scrub. Overall the site is considered to be of low to moderate potential value for foraging bats.

4.4 Otter and Water Vole

- 4.4.1 Otter is fully protected under both the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. Otter is a Section 42 and UK BAP priority species. Water vole is fully protected under the under both the Wildlife and Countryside Act 1981 (as amended) and is a Section 42 and UK BAP priority species.
- 4.4.2 Outside the site boundary the concrete revetment along the bank footing severely limits the availability of burrowing locations for water vole. Further more the character of the bank is sub optimal with very limited herbaceous vegetation cover. It is considered very unlikely that water vole are present along the river bank adjoining the site.
- 4.4.3 The margin of the river adjoining the site is also unsuitable for otter due to the concrete revetment and the very steep bank with gravel substrate and patchy scrub provides limited shelter and minimal opportunities for otter to rest up.
- 4.4.4 The section of the site adjoining the river, comprises a hardstanding road with a chain-link fence along the boundary with no suitable habitats within the site for otter or water vole.

- 4.4.5 Overall the bank of the River Taff adjoining the site provides very poor quality habitats for both otter and water vole and it is considered very unlikely that either species would utilise bankside habitats adjacent to the site.

4.5 Nesting Birds

- 4.5.1 All nesting birds are protected by the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to intentionally kill, injure or take the birds or their eggs, or to intentionally destroy or disturb a nest, when it is in use or being built.
- 4.5.2 There are several areas of the site that offer suitable habitat for nesting birds. Jackdaws and gulls were recorded nesting on the former office building, and a few of the patches of bramble, dense scrub and the marshy grassland create localised areas of cover with the potential for them to be used by nesting birds.

4.6 Reptiles

- 4.6.1 All native British reptiles are protected under the WCA 1981 (as amended). The four most widespread reptile species (grass snake, slow worm, common lizard and adder) are protected from intentional killing or injury.
- 4.6.2 The rubble piles are surrounded by unvegetated hardstanding and have no soil or vegetation cover. The structure of the pile provides cover and refuge from predators but are all separated from the northern grassland area which provides basking and foraging opportunities.
- 4.6.3 There are few if any shelter / hibernation features in the northern grassland and the likelihood of reptile species in the isolated area of habitat is low.

4.7 Great Crested Newts

- 4.7.1 The pond at the west of the site is very small and has very poor water quality with little aquatic vegetation. Based on the HSI, the likelihood of the pond being used as breeding habitat by great crested newts is very low.
- 4.7.2 The site lies within a developed landscape corridor with the River Taff and the A470 dual carriage way creating significant barriers to the movement of amphibians. Overall it is considered that the pond is unlikely to support great crested newts.

4.8 Invasive Species

- 4.8.1 The stand of Japanese knotweed close to the site entrance has the potential to be spread through ground disturbance as a result of development. Japanese knotweed is listed on Schedule 9 of the wildlife and Countryside Act 1981 (as amended). It is an offence to allow or cause the plant to grow in the wild.

5 Conclusions

5.1 Habitats

- 5.1.1 The majority of the site comprising hardstanding, amenity grassland, scattered scrub and young planted trees do not have ecological value at a level beyond the boundaries of the site.
- 5.1.2 The habitat mosaic in the northern area has higher value and potentially qualifies as low quality example the UK BAP priority Habitat “Open Mosaic Habitats on Previously Developed Land”.

5.2 Designated Sites

- 5.2.1 Cwm Cadlan SAC is located just under 10km north-west of the site. Potential impact pathways between the redeveloped site and the SAC will need to be formally considered once the nature of the development is known. Given the geographic separation no likely significant effects are expected.
- 5.2.2 The only SSSI within 2km lies 300m of the site on the opposite side of the A470. No potential for adverse impacts has been identified as a result of site activities.
- 5.2.3 The Avon (River) Taff SINC adjoins the site. Due to its proximity the potential exists for surface water flows into the river during demolition and construction. Impacts on the river bank and watercourse should be avoided through appropriate control mechanisms. It is unlikely that the redevelopment of the site will have any adverse impact on any of other designated nature conservation site.

5.3 Bats

- 5.3.1 The office building is considered to be of low potential value for roosting bats with a low likelihood of use by bats. None of the trees within the site had suitable features to be used by roosting bats.
- 5.3.2 Overall the features within the site boundary are considered to be of low potential value for foraging bats but the river and adjoining vegetation are likely to be frequently used as a flight line.

5.4 Otter and Water Vole

- 5.4.1 The section of river bank adjoining the site is considered to be of very poor quality for water vole and otter, while the onsite habitats have negligible value for these species.

5.5 Nesting Birds

- 5.5.1 Jackdaws and gulls nest within the former office building. Dense bramble thicket provides high value bird nesting habitat. The young trees and scattered scrub are more open features with limited cover and have lower value for nesting birds.

5.6 Reptiles

- 5.6.1 Although the rubble piles provide shelter and potential hibernation opportunities and the northern grassland is suitable foraging habitat, these features have minimal connection. Reptiles using rubble for cover would have to frequently move across unvegetated hardstanding. These factors couple with the presence of significant barriers to movement to the east and west means that the likelihood of a reptile population at the site is low.

5.7 Great Crested Newts

- 5.7.1 The pond at the west of the site is considered very unlikely to support great crested newts with the HSI assessment indicating very poor suitability as a breeding habitat for this species.

5.8 Invasive Species

- 5.8.1 The stand of Japanese knotweed occurs in one part of the site near the site entrance, as well as occurring in offsite locations alongside the river. Control measures and an eradication programme will be required to avoid Japanese knotweed being spread within the site or onto adjoining land as a result of development activities.

6 Recommendations

6.1 Designated Sites

- 6.1.1 If the proposed development will significantly increase local emissions to air, an assessment of potential impacts on nearby Nature Conservation Designations should be undertaken.

6.2 Bats

- 6.2.1 Following the recommendation of the detailed building inspection survey in 2015, a licensed bat ecologists should be present to supervise soft stripping / soft demolition of features on the office building and connecting foot bridges where there is potential for bats to roost.
- 6.2.2 Bat activity transect surveys should be undertaken to assess the level of use of the site by a foraging / commuting bats and to determine which specie utilise the site. In accordance with the best practice guidance 3 to 5 surveys would be needed between May and October, evenly spaced through the period.

6.3 Nesting Birds

- 6.3.1 Where bramble thicket, scrub and trees are to be removed, or buildings demolished, this should be carried out outside of the main bird nesting season typically considered to be March to August inclusive. Where this is not possible, a search should be made for active bird nests or nesting activity in all areas to be removed / demolished no more than 48hrs prior to removal / demolition. Any active nests would need to be protected from disturbance until all the young have fledged.

6.4 Reptiles

- 6.4.1 Although, the likelihood of reptile populations is low, if present the development of the site would be very likely to result in the unlawful injury or killing of individuals. Following the precautionary principle it is recommended that a reptile survey is undertaken in suitable weather between late August and the beginning of September to assess whether the site is used by any species of reptiles. The survey would entail the placement of artificial refuges in suitable locations alongside the rubble piles, and across the northern grassland.

6.5 Invasive Species

- 6.5.1 Any development potentially disturbing the stand of Japanese knotweed or disturbing ground in the vicinity of the stand should be undertaken with a method statement in place for the prevention of spread and if necessary the removal / eradication of the plant within the site.

- 6.5.2 Prior to the commencement of development a Japanese knotweed method statement should be prepared defining the measures that will be employed in advance of and alongside development activities to avoid the plant being unlawfully spread.

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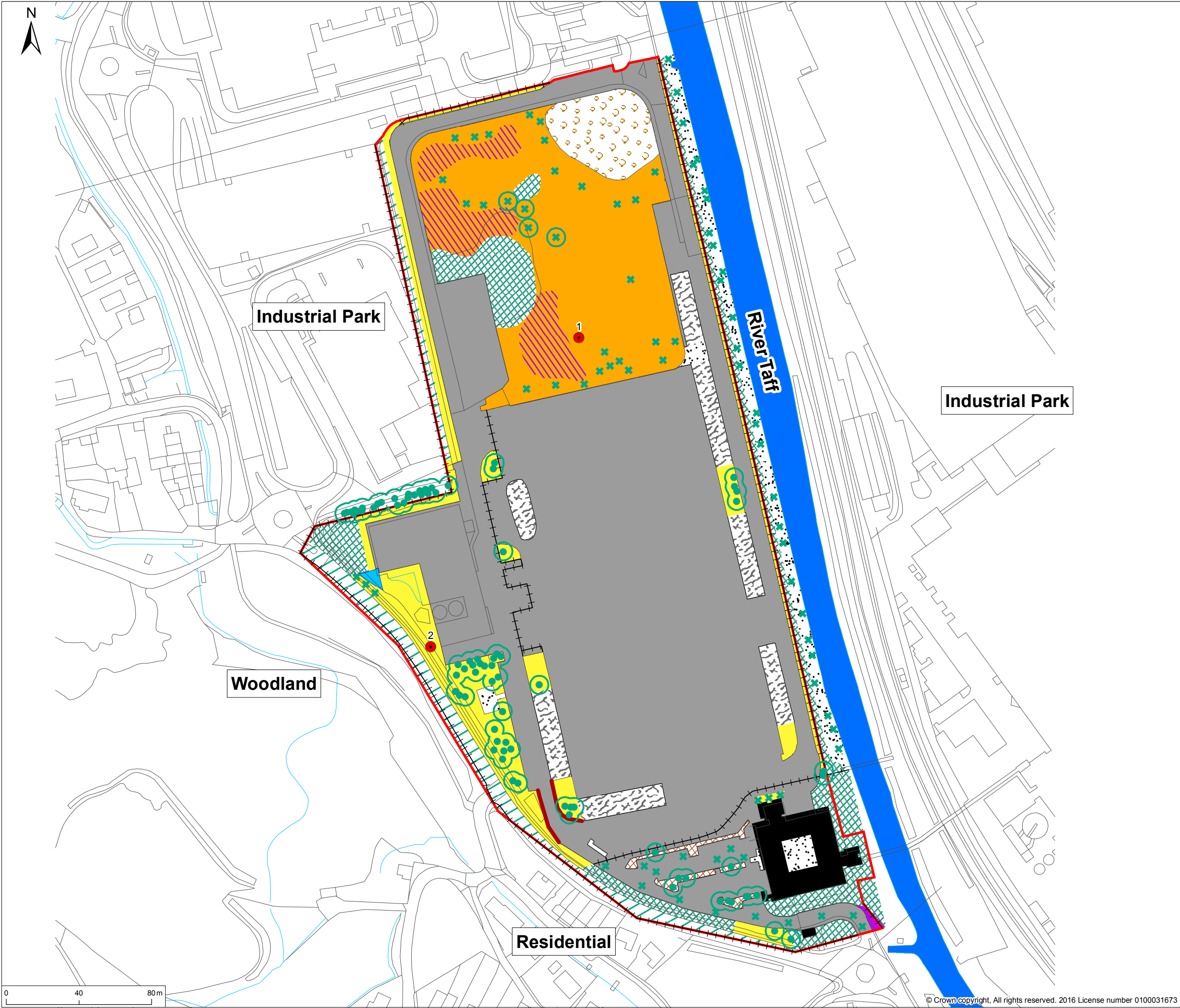
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Drawings



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Legend

- Site Boundary
- Amenity Grassland
- Bare Ground
- Broadleaved Tree Line
- Building
- Dense Scrub
- Felled Woodland
- Hardstanding
- Introduced/Ornamental Scrub
- Japanese Knotweed
- Marshy Grassland
- Neutral Grassland
- Rubble
- Running Water
- Standing Water
- Fence
- Wall
- Broadleaved Tree
- Scattered Scrub
- Target Note

Rev	Description	Date	Initial	Checked



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Client **RPS SW PLANNING CARDIFF**
Project **DRAGON PARC**
Title **HABITATS PLAN**

Status FINAL	Drawn By JGB	PM/Checked By GK
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Appendices

Appendix 1

Non-statutory Designated Sites within 2km of the Development Site

Designation	Site Name	Approximate Distance at Closest Point	Description
SINC	Cwmbach Slopes	1.8km	A large mosaic of species-rich grasslands. Includes expansive areas of semi-improved neutral grassland, with acid grassland. Localised flushing is present in some areas, and the north-western boundary is marked by a wooded stream. The lowland areas grade into scrub and woodland while higher slopes support acid grassland and a patch of wet and dry heath at Penwaun Lago. The SINC offers habitat for many species and a green hairstreak butterfly colony has been recorded.
SINC	Mynydd Merthyr	1.8km	Part of the continuous corridor of semi-natural habitat along the upper eastern flanks of the Cynon Valley Divided into coniferous plantation with associated upland heath and upland marshy grassland; and upland bilberry heath and acid grassland mosaic. The site supports nightjars, large raven and woodcock roosts and dark green fritillary have been recorded.
SINC	Abercanaid Fields	0.2km south	Mainly species-rich semi-improved grasslands and marshy grasslands, with some small areas of semi-natural oak/birch woodland, scattered scrub and trees. Site also includes Webber's pond, a private nature reserve with well-developed marginal emergent vegetation, a section of the Glamorganshire Canal and an adjacent disused railway embankment which supports unimproved and semi-improved acid grassland, bracken slopes and trees. Species of interest include devil's-bit scabious, saw-wort, great burnet, heath spotted-orchid and whorled caraway.
SINC	Afon (River) Taf	Adjoins site to east	The major river in the county borough. cSINC includes areas of bankside and floodplain habitats, particularly towards the south of the county borough where the river corridor is less urbanised than further north. Associated habitats are chiefly semi-natural woodland (including areas of ancient semi-natural oak woodland and linear wet woodlands dominated by alder), neutral and marshy grasslands, bracken and scrub. Notable features of the river

			course include shingle banks which support localised plant species such as water chickweed, bearded couch and giant fescue. Otter occurs throughout the length of the cSINC, and the river is known to be of value to a wide variety of birds of interest, including kingfisher, grey wagtail, sand martin and dipper, as well as fish species including salmon, brown trout and bullhead and a range of foraging bat species.
SINC	Blaen-canaid	1.5km west	Series of species-rich semi-improved neutral grassland enclosures within large conifer plantation. Also contains small areas of acid and marshy grassland and some scattered scrub and hedges. Species of interest include wood horsetail, meadow thistle, saw-wort, great burnet, eyebright and marsh violet.
SINC	Buarth-waunydd	1.7km south	Mosaic of acid and marshy grasslands, wet heaths, acid flushes, bracken slopes and semi-natural woodland. Purple moor-grass dominates the wetter parts of the site, with cross-leaved heath also prominent in the wet heaths. The site also includes a section of the Nant Cwm-du, which is wooded with oak and alder. Badger has been recorded in the past.
SINC	Cwm Glo	0.8km north-west	A complex mosaic of semi-upland and lowland vegetation. Mainly unimproved acid grasslands but with extensive areas of wet and dry heathland. Other habitats of note include marshy grasslands with acid flushes, bracken slopes, small ponds and streams, the latter typically lined by semi-natural broadleaved woodlands mostly of oak and alder. The SINC contains the Cwm-glo SSSI. Great crested newt occurs in small ponds together with a range of other common amphibians and reptiles. Otter is thought to occur along the watercourses, and water vole has been recorded in the past. The site contains at least one known bat roost, and there is a good nesting bird fauna which includes redstart, wood warbler, reed bunting and linnet. Supports several uncommon invertebrate species.
SINC	Cwm Woods	0.5km west	Large area of ancient semi-natural woodland within a much larger conifer plantation. Dominated by sessile oak with smaller amounts of birch, in a semi-upland situation. The grassy field layer has locally abundant bluebell. Also includes some associated areas of bracken, dry heathland, scrub and acid grassland, the latter habitat supporting pignut and heath milkwort. The woodland supports wood warbler and probably other uncommon bird species.
SINC	Glynmil	1.0km east	Mosaic of semi-upland 'ffridd' (valley side) habitats at the western edge of Merthyr Common, partly on old colliery spoil tips. Comprises mainly acid grasslands, with smaller areas of marshy grassland, acid flush, dry heath, bracken slopes and scrub. Also includes an area of ancient semi-natural oak woodland, and numerous smaller

			areas of wet woodland. Several ponds are present on the site. The site is likely to support a diverse range of breeding bird species, and the ancient woodland areas afford roosting opportunities for bats.
SINC	Graig Gethin	0.7km south-west	Wooded 'ffridd' slopes, supporting extensive ancient semi-natural oak woodland and bracken slopes, together with some scree areas supporting scattered patches of bilberry and lichen heath. Areas of birch and alder woodland also occur, the latter particularly along the course of small streams. Also includes an area of acidic flush which extends along a ride within a conifer plantation and supports plant species of interest including cross-leaved heath and crowberry. The site supports several localised bird species including redstart and tree pipit.
SINC	Merthyr Common South	2.0km east	Very extensive upland / semi-upland common along the hill ridge between two major rivers. A mosaic of habitats occurs across the site, comprising mainly marshy grassland, acid grassland and wet heath to the north, and dry heath and bracken slopes to the south. There are also areas of acid flush, broad-leaved woodland (mainly of silver birch) and dense and scattered gorse scrub. Small pockets of silver birch woodland and scattered trees occur on 'ffridd' slopes in the south-west. Valuable because of its large size, especially the extent of the heathland habitats. Includes numerous ponds and streams (including a section of the Nant Bargod), extensive outcrops of rock and some disused quarries.
SINC	Pentrebach Fields	0.6km east	Linear series of species-rich semi-improved neutral grassland fields alongside disused railway embankment. Also contains scattered and dense scrub, bracken slopes and large mature oak trees. An area of dry heathland, dominated by ling heather, is developing in the north of the site, occurring in a mosaic with acid grassland. Species of interest include viper's-bugloss, small cudweed, heath-grass and musk thistle.
SINC	Pentrebach Tip	1.0km east	Large colliery spoil tip that has revegetated mainly with dry heathland, along with adjacent areas of valley-side 'ffridd' comprising mainly acid grasslands and bracken slopes, with areas of marshy grassland, gorse scrub and semi-natural oak and beech woodland. The rare Dartford warbler has been recorded from the site, along with brown hare and the scarce olive earthtongue fungus.
SINC	Rhydicar West	0.3km west	Very extensive mosaic of 'ffridd' habitats and former mine spoil supporting a complex mosaic of semi-upland and lowland habitats. Main components are ancient semi-natural woodland fragments, other semi-natural woodlands (mainly upland oak) together with wet woodlands of alder, wet heathland, dry heathland, marshy grassland and semi-improved acid and neutral grasslands. The site supports several unusual plant species and a known 'waxcap grassland' which is of regional significance.

			Great crested newt occurs in small pools within the site. Nationally Scarce invertebrates have been recorded from the area and are thought to occur on the site, There is a good nesting bird fauna which includes reed bunting, linnet, marsh tit, redstart, wood warbler and pied flycatcher.
SINC	Troed-y-rhiw	1.3km south-east	Large area of valley-side 'ffridd', comprising mainly dry heathlands dominated by ling heather and bracken slopes with scattered trees, and acid grasslands to the north. Also small areas of semi-natural broadleaved woodland, marshy grassland and scrub. Two large old quarries are situated in the south of the site; these have ledge communities dominated by heathland and acid grassland species. A small wooded pond is present and several drainage ditches cross the site. The heathlands are likely to support a range of characteristic invertebrate species, in addition to uncommon flora.

Target Notes

TN1

Waterlogged, regenerating grassland comprises approximately half of the field. Grasses present include Yorkshire fog, bent grasses, crested dogtail and cocksfoot. Mosses and herbaceous species are frequently throughout the grassland and include marsh bedstraw, purple toadflax, marsh thistle and glaucous sedge (TN1).

Other species present: mouse-ear hawkbit, coltsfoot, common mouse-ear, ragwort sp., red clover, willowherb, knapweed, meadow buttercup, ivy, sorrel, barren strawberry, and lesser celandine. Rare and occasional species include cuckooflower, soft rush, and field wood-rush, glaucous sedge.

TN2

Frequently present are knapweed, meadow buttercup, creeping buttercup herb Robert, daisy, dandelion, broadleaved dock, sorrel, bent grasses, Yorkshire fog, fescue, cocksfoot, ivy, barren strawberry, and lesser celandine. Rare and occasional species included cuckooflower, daffodil, soft rush, and field wood-rush.

Pond Habitat Suitability Index (HSI) Assessment Results

Criterion	Field Score	HSI Score
Location	South Wales (Marginal)	0.5
Area	<50m ²	0.05
Permanence	Permanent or rarely dries	0.9
Water Quality	Poor	0.1
Shade	50%	1
Water Fowl	None	1
Fish	Very Unlikely	1
Pond dispersion	No accessible ponds within 1km	0.1
Terrestrial habitat	Moderate	0.67
Macrophyte cover	0%	0.3
HSI Score		0.414