



**Land at Hillside,
Neath**

Preliminary Ecological Appraisal

October 2022

REPORT CONTENTS

1.	INTRODUCTION	1
1.1.	BRIEF AND SITE LOCATION	1
1.2.	SITE DESCRIPTION	1
1.3.	PROPOSED WORKS	1
1.4.	SCOPE OF THE STUDY	1
1.5.	REPORTING.....	2
2.	METHODS.....	3
2.1.	DESK STUDY	3
2.2.	FIELD STUDY.....	5
3.	BASELINE ECOLOGICAL CONDITIONS, EVALUATION AND DEVELOPMENT IMPACTS	10
3.1.	STATUTORY NATURE CONSERVATION DESIGNATED SITES	10
3.2.	NON-STATUTORY NATURE CONSERVATION DESIGNATED SITES.....	10
3.3.	HABITATS AND VEGETATION.....	12
3.4.	INVASIVE PLANT SPECIES	17
3.5.	PROTECTED AND NOTABLE SPECIES.....	18
4.	RECOMMENDATIONS AND CONCLUSIONS	25
4.1.	BIODIVERSITY ENHANCEMENT.....	25
4.2.	FURTHER WORK.....	25
4.3.	PRECAUTIONARY MEASURES	27
4.4.	MITIGATION MEASURES	28
4.5.	COMPENSATION AND ENHANCEMENT MEASURES	29
4.6.	LONGEVITY OF REPORT	29
4.7.	CONCLUSIONS	29
5.	REFERENCES AND BIBLIOGRAPHY	30

PLANS AND DRAWINGS

PLAN 1: SITE LOCATION	32
PLAN 2: SITE LOCATION AND PROTECTED SITES (2KM BUFFER)	33
PLAN 3: SITE LOCATION AND SINCS (0.5KM BUFFER)	34
PLAN 4: HABITATS AND VEGETATION.....	35
PLAN 5: LOCATION OF WATER BODIES WITHIN 0.5KM OF SITE	35

APPENDICES

APPENDIX 1: PROPOSED DEVELOPMENT WORKS	37
APPENDIX 2: LEGISLATION AND POLICY RELATING TO STATUTORY AND NON-STATUTORY DESIGNATED SITES AND PLANNING POLICY RELEVANT TO SITE	39
APPENDIX 3: PROTECTED AND INVASIVE SPECIES LEGISLATION RELEVANT TO SITE.....	42
APPENDIX 4: SPECIES RECORDED	44
APPENDIX 5: DEFINITIONS OF SITE VALUE.....	47
APPENDIX 6: GUIDELINES FOR ASSESSING POTENTIAL SUITABILITY OF PROPOSED DEVELOPMENT SITE FOR BATS.....	49
APPENDIX 7: MINIMUM NUMBER OF DUSK EMERGENCE AND DAWN RE-ENTRY SURVEYS REQUIRED	50
APPENDIX 8: EXAMPLES OF SUITABLE WALL LIGHT FITTINGS.....	51
APPENDIX 9: EXAMPLES OF SUITABLE BOLLARD LIGHTING	52
APPENDIX 10: GENERAL MANAGEMENT OPTIONS FOR JAPANESE KNOTWEED.....	53

Acer Ecology

Document Verification Table

Land at Hillside, Neath Preliminary Ecological Appraisal				
Revision	Date	Prepared by	Checked by	Verified by
1.0	14 October 2022	Ffion Jones Assistant Ecologist 	Daisy Evans Assistant Ecologist 	Paul Hudson MCIEEM Principal Ecologist 

Acer Ecology Ltd accepts no responsibility or liability for the use for which this document is made, other than by the client for the purpose for which it was originally commissioned and prepared.

Acer Ecology

Summary

Brief and Site Location	Acer Ecology Ltd. were commissioned by S&J Properties (Wales) Ltd. to conduct a preliminary ecological appraisal of land at Hillside, Neath, SA11 1TG within the boundary Neath Port Talbot County Borough Council (Ordnance Survey Grid Reference centred at: SS75609664). The assessment documents the baseline ecological condition of the survey area, which is shown by the red line boundary on Plan 1. Designated sites, habitats, protected and notable species of conservation interest that could be affected by the proposed works are identified, and subsequent recommendations provided.
Development Proposals	The preliminary works proposal includes the development of eight residential dwellings within the site boundary shown in Plan 1 and the proposed development plan is provided in Appendix 1. Precise details of work are not available at the time of writing and no planning application has been submitted yet.
Impacts to Key Receptors	The development is not considered to have any adverse impacts to statutory or non-statutory nature conservation sites.
Invasive Species	The development may result in the spread of Montbretia, Japanese knotweed and Rhododendron which are invasive plant species. Measures to prevent this are set out in Section 4.
Further Surveys	Further surveys are recommended so that the potential for further impacts can be established: • Reptile surveys; and • Bat activity surveys.
Recommendations	The following provisional recommendations have been developed based on the development proposals available at the time of writing. They may be subject to change upon receipt of the final design: • Further Survey: • Reptile surveys; • Bat activity surveys (one activity transect each season between April to October inclusive, supplemented by the deployment of one static detector, left to record for five consecutive nights each season). • Precautionary measures – Timing of Vegetation Clearance for Birds; Good Construction Practices for Badgers and Hedgehogs; Sustainable Urban Drainage Systems (SuDS). • Mitigation measures – Sensitive Lighting Strategy for Bats; and • Compensation and enhancement measures – Hedgehog Holes.
Licensing Requirements	Awaiting further information from further surveys.
Conclusions	The full extent of ecological impacts and potential constraints of the proposed development cannot be fully determined, based on the results of the preliminary ecological appraisal survey alone. Further survey work will be required before such assessments can be comprehensively made. At this stage, the site's ecological value is not considered to represent a fundamental in-principal constraint to the proposed development. If development works do not begin within eighteen months to two years of the date of this report of this report, an update survey is likely to be required in accordance with guidance from Natural Resources Wales (NRW), (CIEEM, 2019) and BS 42020:2013, to determine if conditions have changed since those described in this report.

1. Introduction

1.1. Brief and Site Location

Acer Ecology Ltd. were commissioned by S&J Properties (Wales) Ltd to conduct a preliminary ecological appraisal of land at Hillside, Neath, SA11 1TG within the boundary Neath Port Talbot County Borough Council (Ordnance Survey Grid Reference centred at: SS75609664)¹. The assessment documents the baseline ecological condition of the survey area, which is shown by the red line boundary on Plan 1. Designated sites, habitats, protected and notable species of conservation interest that could be affected by the proposed works are identified, and subsequent recommendations provided.

This assessment will provide initial recommendations based on the development proposals available at the time of writing. They should be revised upon finalisation of the design.

1.2. Site Description

The site proposed for development measures approximately 0.59 ha, and mainly comprises of derelict brownfield site that has been cleared of vegetation except for a plot of broadleaf trees and shrub to the south-west of the site. The site is situated in a highly developed residential area in central Neath, with an inroad (Hillside Road) running along the northern border of the property. Residential buildings typify the surrounding environs and connect wider landscape - forming natural, broken corridors with back-to-back gardens and scattered clusters of trees and amenity grassland. Large broadleaf woodland lies 0.4km to the north-east of the site, whilst the Gnoll Brooke watercourse runs 0.5km north-east as well as two large bodies of water situated in Gnoll Country Park.

1.3. Proposed Works

Preliminary works proposal includes the development of eight residential dwellings within the site boundary shown in Plan 1 and the proposed development plan is provided in Appendix 1. Precise details of work are not available at the time of writing and no planning application has been submitted yet.

1.4. Scope of the Study

The study comprised the following:

- A desk study to identify existing information on statutory and non-statutory sites of nature conservation interest, and records of notable or protected habitats or species within the site and its environs;
- A Phase 1 Habitat Survey of the site, extended to search for evidence of, and potential for, protected fauna; and

¹ Latitude and Longitude: 51.654742 , -3.7996874 / what3words: noisy.match.harp

- Identification of potential ecological constraints to the proposed works at the site and assessments of impacts including appropriate mitigation measures where necessary.

1.5. Reporting

This report aims to:

- Outline the methodology used during the survey;
- Present the baseline ecological information;
- Provide an ecological evaluation of on-site habitats, including an assessment of the potential for protected species;
- Assess the potential impacts of the development proposals on ecological receptors;
- Assess the potential ecological constraints to the proposals; and
- Provide recommendations for further survey, avoidance, mitigation and enhancement where appropriate.

2. Methods

The survey was undertaken following standard methods as detailed in the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal 2017 guidelines, and the Phase 1 Habitat Survey manual (Joint Nature Conservation Committee, 2010). The methodology utilised for the survey work comprised a desk study, habitat survey and a survey of protected and notable species.

2.1. Desk Study

2.1.1. Protected Sites, Habitats and Species

Information on designated sites and protected species was obtained from the sources detailed in Table 2. The legislation and policy relating to statutory and non-statutory designated sites can be found in Appendix 2. Plans 2 and 3 show the protected sites in relation to the proposed development site.

Table 1: Summary of Designated Sites and Other Abbreviations

Abbreviations	
Special Areas of Conservation	SAC
Special Protected Area	SPA
Site of Special Scientific Interest	SSSI
National Nature Reserve	NNR
Local Nature Reserve	LNR
Area of Outstanding Natural Beauty	AONB
Site of Importance for Nature Conservation	SINC
Ancient Semi-Natural Woodland	ASNW
Restored Ancient Woodland Site	RAWS
Plantation on Ancient Woodland Site	PAWS
Natural Resources Wales	NRW
South East Wales Biological Records Centre OR	SEWBRcC

Table 2: Sources of Data

Source	Data	Radius of Search
NRW Geographical Information Systems (GIS) Layers	Statutory and non-statutory nature conservation designated sites ASNW, RAWS and PAWS	Ramsar/SACs/SPAs/SSSIs/NNRs/LNRs – 2km ² SACs (designated for bats) - 10km. 1km.
SEWBRcC	Protected species records (SEWBRcC unique reference: 0223-410) SINCs	1km. 1km.

² The citations of all the SSSIs and SACs within 2km of the site were consulted to determine if any of them had features or species which could be affected by the development proposals.

All available records of bat roosts, badger, dormouse, amphibians and reptiles were considered. For other species, only records collected within the last 10 years were considered relevant.

The protected species search of 1km is considered appropriate. Page 15 of CIEEM's Guidelines for Preliminary Ecological Appraisals states that 'Existing ecological information for the site and adjacent areas should extend to at least 1km from the site boundaries (or 0.5 km for sites of approximately 1 ha or less). The search for desk study information will need to extend further beyond the site boundaries to ensure that all information of relevance to the assessment has been collected. In this instance a 1km data search for protected species is considered appropriate.

2.1.2. Landscape Context

The site and wider landscape were assessed and characterised using aerial images, Ordnance Survey maps and SEWBRc data. The presence of off-site features and habitats, which add to the ecological value within the wider area (for example, ponds within 0.5km of the site) were identified. Where appropriate, such features were scoped into the detailed assessment of impacts presented in Section 3.

2.1.3. Ancient Woodland

Although ancient woodland is not a designated site as such, it is often listed as a designated site due to its ecological significance and associated protection. Ancient woodland has therefore been included within the non-statutory designated site section of this report.

2.1.4. Planning Authority

The Neath Port Talbot County Borough Council Planning portal³ was consulted to determine if any previous survey information was available for the site, or immediate surroundings. An internet-based search of the Newport Local Biodiversity Action Plan (LBAP) ⁴ was undertaken.

2.1.5. Site History

An NRW GIS Phase 1 habitat survey of Wales layer was searched containing survey information obtained by the former Nature Conservancy Council (NCC) during the period 1992-96. This information was reviewed to identify any change in habitat or management of the site and the surrounding area – none changes to the marked sites could be found (see Image 1).

³ <https://planningonline.npt.gov.uk/online-applications/>

⁴ <https://www.newport.gov.uk/documents/Leisure-and-Tourism/Countryside/Newport-Local-Biodiversity-Action-Plan.pdf>

2.2. Field Study

2.2.1. Personnel

The field survey was undertaken in fair weather on the 6th September 2022 by Ffion Jones⁵.

2.2.2. Vegetation and Habitats

The vegetation and habitat types present within the survey area were categorised and mapped in accordance with the standard⁶ Phase 1 Habitat assessment methodology (Joint Nature Conservation Committee, 2010), dominant and conspicuous plant species were recorded for each habitat. Target notes were used to record information on features of ecological interest, such as evidence of, or habitats with potential to support protected species or where any features of interest too small to map were recorded. Following the completion of the survey, a colour-coded habitat plan was digitised using Corel Draw to show the extent and distribution of the different habitat types present within the site (see Plan 4).

Section 7 habitats (Environment Wales Act 2016), Priority Habitats of the UK Biodiversity Action Plan (BAP) (Biodiversity Reporting & Information Group, 2007) were identified and assessed to determine if the site meets the non-statutory designated site criteria (SINC).

Invasive plant species listed on Schedule 9⁷ of the Wildlife and Countryside Act 1981 (as amended), such as Himalayan balsam (*Impatiens glandulifera*), giant hogweed (*Heracleum mantegazzianum*) and Japanese knotweed (*Fallopia japonica*) were also noted during the survey, if present.

2.2.3. Protected and Notable Species

Evidence of, and habitats with, potential to support protected or notable species were noted, especially species meeting any of the following criteria:

- Listed under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species (Amendment) (EU Exit) [‘CHSAEU’] Regulations 2019;
- Listed under Section 7 of the Environment (Wales) Act 2016 as being of principal importance for maintaining and enhancing biodiversity in Wales;
- Listed as a local priority for conservation, for example in the relevant Local Biodiversity Action Plan (LBAP);
- Red Listed using International Union for the Conservation of Nature (IUCN) criteria (e.g. in one of the UK Species Status Project⁸ reviews, in the Species of Conservation Concern Red, Amber or

⁵ Ffion graduated with a degree in Ecology and Conservation from the University of Exeter during which she studied modules on biodiversity, ecological consultancy, and conservation. She is an Assistant Ecologist with Acer Ecology working and has two seasons experience of bat survey work. She is listed as an accredited agent on Paul Hudson’s bat (S088190/8) and dormouse (S089818/1) licences and has undergone training with Acer Ecology in habitat and protected species surveying. Further details of her qualifications and experience can be found at <https://www.linkedin.com/in/ffion-jones-17ab63197>.

⁶ Some additional categories were also used if applicable e.g. hard standing and Japanese knotweed.

⁷ Schedule 9 species of plants and animals are ones that do not naturally occur in Great Britain but have become established in the wild and represent a threat to the natural fauna and flora.

⁸ The Species Status project is the successor to the JNCC’s Species Status Assessment project, providing up-to-date assessments of the threat status of various taxa using the internationally accepted Red List guidelines (<http://jncc.defra.gov.uk/page-1773>).

Near Threatened List⁹, Birds of Conservation Concern in Wales¹⁰, or, where a more recent assessment of the taxonomic group has not yet been undertaken, listed in a Red Data Book);

- Listed as a Nationally Rare or Nationally Scarce species (e.g. in one of the Species Status Project reviews) or listed as a Nationally Notable species where a more recent assessment of the taxonomic group has not yet been undertaken; and/or
- Endemic to a country or geographic location (it is appropriate to recognise endemic sub-species, phenotypes, or cultural behaviours of a population that are unique to a particular place).

Only those species with potential to be present on-site are mentioned within this report. The methodologies used were as follows:

Birds

Any birds observed during the field survey were recorded, in addition to features capable of supporting nesting birds (e.g. trees, hedgerows, buildings, bramble, ruderal vegetation and rough grassland etc.). The site was also assessed for its actual and potential suitability to support Wildlife and Countryside Act 1981 (as amended) Schedule 1 species.

A comprehensive bird survey, such as a breeding bird survey, was not undertaken as this was beyond the scope of the assessment.

Bats

Preliminary Ground-level Roost Assessment

A preliminary ground-level roost assessment of the trees within the survey area was undertaken, looking for features that bats could use for roosting (Potential Roost Features¹¹ (PRF) and evidence of bats (i.e. droppings in, around or below a PRF; odour emanating from a PRF; audible squeaking at dusk or during warm weather; or staining below the PRF). A systematic inspection was carried out around all accessible aspects of the tree, from both close to the trunk and further away.

The trees were assessed for their suitability to support roosting and hibernating bats in accordance with Table 4.1 of the Bat Conservation Trusts Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) (See Appendix 6). A high-powered torch (Clulite), an endoscope (Snake vision), binoculars and a ladder were used as appropriate during the survey.

Buildings Assessment

There are no buildings present within the survey area therefore a building assessment was not carried out.

⁹ Eaton *et al.* (2015) Birds of conservation concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. British Birds 108: 708-746.

¹⁰ Johnstone, I. and Bladwell, S. (2016) Birds of Conservation Concern in Wales 3: the population status of birds in Wales. Birds in Wales 13 (1).

¹¹ Potential Roost Features that bats may use identified by Andrews include: woodpecker-holes; squirrel-holes; knot-holes; pruning-cuts; tear-outs; wounds; cankers; compression-forks; butt-rots; lightning strikes; hazard-beams; subsidence-cracks; shearing cracks; transverse cracks; welds; lifting bark; frost-cracks; fluting and ivy.

Acer Ecology

Terrestrial Habitat Assessment

A preliminary assessment of the value of the site for bats (and any potential roost sites therein) was made in accordance with Table 4.1 of the Bat Surveys for Professional Ecologists (Collins, 2016) (see Appendix 7). The assessment was based on the relative abundance and quality of habitat features within the site, and surrounding landscape, suitable for roosting, foraging and commuting bats.

Dormice

The scrub was assessed for their suitability to support dormice (*Muscardinus avellanarius*). The structure and composition of these habitats within the site were assessed with respect to the presence of flower, fruit or nut-bearing food-plants such as hazel (*Corylus avellana*) (a favoured food-plant of dormice), oak (*Quercus* sp.), honeysuckle (*Lonicera periclymenum*), bramble (*Rubus fruticosus* agg.) and sycamore (*Acer pseudoplatanus*), as well as other trees and shrubs listed in the Dormouse Conservation Handbook (Bright, Morris & Mitchell-Jones, 2006) as being of value to dormice. In addition, connectivity to other areas of suitable habitat in the wider landscape, such as hedgerows and woodland, was assessed.

Very limited hazel was present on site, therefore, it was not possible to undertake a search for hazelnut shells to determine if they had been opened by dormice.

A full nest tube/box/footprint tunnel survey was not undertaken as this was beyond the scope of the assessment. However, the habitats on site provide little suitable structure for dormice and is ecologically isolated from wider suitable habitats such as continuous woodland. In addition, no records of dormice within 1km of the site were provided by SEWBRc. Therefore, no adverse impacts to this species are envisaged to occur. This species is therefore not mentioned further in this report.

Great Crested Newts

The survey area was appraised for its suitability to support great crested newts (*Triturus cristatus*) (GCN). The assessment was based on guidance outlined in the Herpetofauna Workers' Manual (Joint Nature Conservation Committee, 2003) and the Great Crested Newt Conservation Handbook (Langton, Beckett & Foster, 2001).

Ordnance Survey maps and aerial images of the land surrounding the site were consulted to determine if any water bodies were present within the site or within 0.5km of it. No potentially suitable water bodies were identified within the study area (see Plan 6).

Considered in addition to the absence of records of GCN within 1km of the site, the likelihood of GCN being present on site is considered to be negligible. No adverse impacts to GCN are therefore anticipated and this species is not mentioned further in this report.

Otters

A preliminary assessment for signs of otter (*Lutra lutra*) was undertaken following the advice provided by Strachan & Jefferies (1996) and Chanin (2003). Field signs of otter were recorded if present including

spraints (faeces showing food remains), footprints, feeding remains and couches (above ground resting sites normally in thick vegetation cover), as well as potential or actual breeding sites and resting places (i.e. holts or natal dens) which are usually found under roots of bank side trees or in rock piles.

The nearest suitable water body for otters lies approximately 479m north-east of the proposed development site and is separated by hard barriers such as housing estates and main roads for otters. The likelihood of otters being present within the site, therefore, is considered negligible and they are not mentioned any further in this report.

Badgers

Earth embankments, wooded copses, hedgerows and dense bramble beds are habitat features that often contain evidence of badger (*Meles meles*). Where present on-site these and other suitable habitat features were searched for such evidence. Where present, the location of badger signs such as setts, runs, dung pits or latrines, prints, hair and foraging snuffle holes were recorded.

A full badger survey was not undertaken as it was beyond the scope of this assessment.

Reptiles

An assessment of the suitability of on-site habitats to support reptiles was made. Reptiles require a diverse range of habitats to meet their needs such as hedgerows, scrub, rough grassland, woodpiles, rubble, banks and compost heaps. The potential of the site to provide hibernation opportunities and spring/summer/autumn habitat was also assessed, with reference to guidance provided in the Herpetofauna Workers' Manual (Joint Nature Conservation Committee, 2003), the Reptile Management Handbook (Edgar, Foster & Baker, 2011) and the Reptile Mitigation Guidelines Technical Note TIN 102 (Natural England, 2013). The following factors were considered: vegetation type and structure; insolation (sun exposure); slope aspect; topography; surface geology; habitat connectivity; habitat size; prey abundance; refuge opportunity; hibernation opportunity; egg-laying potential for grass snake (*Natrix helvetica*); public pressure; percentage of shade; levels of disturbance and management regime.

A targeted presence/likely absence reptile survey was not undertaken as it was beyond the scope of this assessment.

Hedgehogs

The sites potential to support hedgehog was assessed using guidance on habitats of importance in Hedgehogs and Development (unknown year) with the following habitats particularly favoured: dense scrub to build hibernation nests in during the winter; short grass to forage in for invertebrate prey; longer grass to forage in and to make nests in during the summer; areas of leaf litter to collect and use for hibernation nests; log piles and decaying vegetation to forage in and hibernate in; and hedgerows and boundary vegetation are important corridors for travel and nesting sites.

Other Species

General habitat suitability and incidental sightings of other animal species were also noted.

2.2.4. Assessment of Ecological Value

The value of the habitats and features of the site have been provisionally evaluated and graded in accordance with a geographical frame of reference as detailed in Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland (CIEEM, 2018). The level of value of specific ecological receptors is assigned using a geographic frame of reference, i.e. international value being most important, then national, regional, county, district, local and, lastly, within the immediate zone of influence of the site only. Brief descriptions of how Acer Ecology interprets these categories are set out in Appendix 5.

2.2.5. Constraints and Limitations

General Temporal Constraints

Any ecological survey can only identify what was present on-site at the time the survey was conducted and habitat usage by species can change over time.

Incomplete Survey Information

Full surveys for the protected species listed previously have not yet been carried out. For some species of fauna for which evidence has been found or which are considered likely to occur on site, further targeted survey is advisable at a more appropriate time of year (see Section 4).

Access

Certain sections of the scrub habitats on site could not be inspected due to the dense nature of them. However, a visual search from a distance of these habitats means that this is not considered a significant restraint.

3. Baseline Ecological Conditions, Evaluation and Development Impacts

The baseline conditions and evaluation of the *in-situ* habitats and the actual/ potential presence of protected species are discussed in this section. Potential impacts on protected sites, *in-situ* habitats and protected or notable species arising from the proposed development are identified, including both direct and indirect impacts, and those associated with construction and operational stages.

A summary of relevant legislation and planning policies relating to protected sites, habitats and species is provided in Appendices 2 and 3.

3.1. Statutory Nature Conservation Designated Sites

Statutory Sites (SACs or SSSIs) Designated for Bats within 10km of Site

No SACs or SSSIs specially designated for bats lie within 10km of the site.

LNRs within 2km of Site

The proposed development site lies within 2km of the following statutory sites:

Table 3: Statutory Sites Designated Within 2km

Site Name	Designation	Description	Distance and Direction from Development Site	Development Impacts
Eaglesbush Valley ¹²	LNR	Eaglesbush Valley is a steep-sided wooded valley located in the Melincryddan area of Neath. The site, declared a Local Nature Reserve (LNR) in 2008, is a mix of ancient semi-natural woodland habitats dissected by the Crythan brook. The 11 hectare site is protected in recognition of its importance for biodiversity and to the local community.	0.6km to the south-west	No adverse impacts are envisioned due to the distance and lack of connectivity of the protected sites from the development site.

3.2. Non-statutory Nature Conservation Designated Sites

SINCs

The proposed development site lies within 2km of the following non-statutory sites:

¹² <https://www.opengreenmap.org/greenmap/green-map-neath-port-talbot/eaglesbush-valley-local-nature-reserve-3461>

Acer Ecology

Table 4: Non-Statutory Sites Designated Within 2km

Site Name	Designation	Description	Distance and Direction from Development Site	Development Impacts
Gnoll Country Park ¹³	SINC	An area of ancient broadleaf and coniferous woodland ecologically connected to each other and provide good dispersal potential in and around the Neath, Cimla and Tonna areas.	0.3km to the north-east	No adverse impacts are envisioned due to the distance and lack of connectivity of the protected sites from the development site.
The Waun, Cimla ¹⁴	SINC	Y Waun comprises an extensive mosaic of enclosed land. The underlying geology in this area is the South Wales Upper Coal Measures Formation. The land supports unimproved and semi-improved wet grasslands and valley mires that flank Crythan Brook. Recorded taxa include 258 vascular plants, 65 bryophytes, 73 bird species and 70 invertebrate	0.5km to the south-west	
Preswylfa Dingle ¹⁵	SINC	Na3ve coniferous woodland with flora and fauna of note including: Badger, Bluebell, Hard fern, Pendulous sedge, Scaly male fern, Yellow pimpernel	0.9km to the direction east	
Neath Canal ¹⁶	SINC	The site is adjacent to Red	0.9km to the north-west	

¹³ <http://citations.lercwales.org.uk/sinc/npt/NPTSINC036.pdf>

¹⁴ <http://citations.lercwales.org.uk/sinc/npt/NPTSINC031.pdf>

¹⁵ <http://citations.lercwales.org.uk/sinc/npt/NPTSINC108.pdf>

¹⁶ <http://citations.lercwales.org.uk/sinc/npt/NPTSINC027.pdf>

Acer Ecology

		Jacket Fen and links to saltmarsh and the Neath Estuary. Areas of wet grassland and Carr woodland form adjacent habitat, together with brownfield and industrial sites. Bankside vegetation includes numerous Orchid species, as well as typical emergent plants such as Yellow Flag Iris and Greater Spearwort. Otters are also regularly seen on the canal's riparian zone.		
--	--	---	--	--

Ancient Woodland Sites

The following table shows the ancient woodland sites within 2km of the site:

Table 5: Ancient Woodland Sites Within 2km

Ancient Woodland Site	Number within 2km of Site
Ancient Semi-Natural Woodland (ASNW) ⁷³	38
Restored Ancient Woodland Sites (RAWS) ⁷⁴	15
Plantations on Ancient Woodland Sites (PAWS) ⁷⁵	six
Ancient Woodland Sites of Unknown Category ⁷⁶	None
Nearest Area of Ancient Woodland	An unnamed ASNW is the closest woodland to the site lying 0.4km to the north-east.

Considering the distances between these woodlands and the proposed development site, together with the small scale of the works, none of these woodlands are anticipated to be affected by proposals. They are therefore not mentioned further in this report.

3.3. Habitats and Vegetation

The results of the general survey of habitats and vegetation are shown on Plan 4. A botanical species list is provided in Appendix 4.

The site consists of nine elements which are described in detail overleaf. These comprise:

Acer Ecology

Table 6: Habitats Recorded on Site

Phase 1 Habitat	Habitat UK Habitats	Description	Ecological Value	Development Impacts
Dense Scrub (A2.1) and Scattered scrub (A2.2)	Heathland and shrub - Mixed scrub (h3)	The whole site is dominated by a mosaic of scrub habitats comprising dense bramble beds and scattered shrubs predominantly made up of pussy willow (<i>Salix caprea</i>). The dense bramble beds comprise mainly of bramble (<i>Rubus fruticosus</i> agg.) however other species included nettle (<i>Urtica dioica</i>), willowherb sp. (<i>Epilobium</i>), hedge bind weed (<i>Calystegia sepium</i>), Pendulous sedge (<i>Carex pendula</i>), St. John's wort (<i>Hypericum maculatum</i>) and broadleaved dock (<i>Rumex obtusifolius</i>) (Photo 1). The scattered scrub was dominated by willow and included other species such as buddleja, Italian alder (<i>Alnus cordata</i>) sapling, silver birch sapling (<i>Betula pendula</i>), Holly (<i>Ilex aquifolium</i>), white willow (<i>Salix alba</i>), sycamore (<i>Acer pseudoplatanus</i>) sapling, Cotoneaster sp. (<i>Cotoneaster</i>), Rowan (<i>Sorbus aucuparia</i>) sapling, cypress sp. (<i>cypressus</i>) sapling, dogwood (<i>Cornus sanguinea</i>) and elm (<i>Ulmus</i> sp.) sapling (Photo 2). The field layer comprised of semi-improved grassland described in detail below.	Site value UK Habs medium distinctiveness.	Clearance of the site to facilitate the new development will result in the permanent loss of areas of these habitats; thereby resulting in the loss of potential refugia for sheltering wildlife, such as reptiles, nesting birds and mammals (see Section 3).
Semi-Improved Neutral Grassland (B2.2)	Neutral grassland (g3)	The site is dominated by a scrub mosaic with semi-improved grassland in between the areas of dense scrub and within the field layer of the willow scrub. The area of grassland is dominated by Yorkshire fog (<i>Holcus lanatus</i>), creeping bent (<i>Agrostis stolonifera</i>), false oat grass (<i>Arrhenatherum elatius</i>) and cock's foot (<i>Dactylis glomerata</i>). Forbs included frequent black medick (<i>Medicago lupulina</i>), St. John's wort, tutsan (<i>Hypericum androsaemum</i>), honeysuckle (<i>Lonicera periclymenum</i>), hemp (<i>Cannabis sativa</i>), field-horse tail (<i>Equisetum arvense</i>), ribwort plantain (<i>Plantago lanceolata</i>), greater plantain (<i>Plantago major</i>), bramble, meadow	Local value. UK Habs medium distinctiveness	Clearance of the site to facilitate the new development will result in the permanent loss of areas of these habitats; thereby resulting in the loss of potential refugia for sheltering wildlife, such as reptiles (see Sections 3.5.6).

Acer Ecology

		vetchling (<i>Lathyrus pratensis</i>), common cat's ear (<i>Hypochaeris radicata</i>), red clover (<i>Trifolium pratense</i>), soft rush (<i>Juncus effusus</i>), hard rush (<i>Juncus inflexus</i>), field wood-rush (<i>Luzula campestris</i>), creeping buttercup (<i>Ranunculus repens</i>), meadow buttercup (<i>Ranunculus acris</i>), willowherb sp., wild strawberry (<i>Fragaria vesca</i>), hedge bind weed, dogrose (<i>Rosa canina</i> agg), teasel (<i>Dipsacus fullonum</i>), broadleaved dock, creeping thistle (<i>Cirsium arvense</i>), common spotted orchid (<i>Dactylorhiza fuchsii</i>), polypody sp. (<i>Polypodium</i> sp), pedunculous sedge, wild carrot (<i>Daucus carota</i>), common fleabane (<i>Pulicaria dysenterica</i>), self-heal (<i>Prunella vulgaris</i>), figwort sp. (<i>Scrophularia</i>), bamboo (<i>Bambusoideae</i>), pheasant berry (<i>Leycesteria formosa</i>), hedge woundwort (<i>Stachys sylvatica</i>) and lady's mantle (<i>Alchemilla</i> sp) (Photos 3 and 4). This habitat conforms to Other neutral grassland with medium distinctiveness of the UK Habs.		
Tall Ruderal Vegetation (C3.1)	Tall herb (w16)	There is a small area of tall ruderal vegetation to the west of the site which comprises dogwood, willowherb sp., hedgebind weed, giant sedge, St.John's wort and broadleaved dock (Photo 5).	Site value UK Habs low distinctiveness	Clearance of the site to facilitate the new development will result in the permanent loss of areas of this habitat.
Japanese Knotweed stand ¹⁷	Tall herb (w16)	A large stand of Japanese Knotweed (<i>Fallopia japonica</i>) was located on the southern boundary of the site amongst the willow scrub (Photo 6).	Negligible value. See Section 3.3	Japanese knotweed will require eradication from the site. Detailed recommendations are provided in Section 4.
Montbretia ¹⁸	N/A	A small area of Montbretia (<i>Crocsmia</i> sp) was located within the willow scrub within the central regions of the site (Photo 7).	See Section 3.3	Montbretia will require eradication from the site. Detailed recommendations are provided in Section 4.
Rhododendron	N/A	A stand of Rhododendron (<i>Rhododendron ponticum</i>) is present to the north-east of the site (Photo 8).	See Section 3.3	Rhododendron will require eradication from the site. Detailed recommendations are provided in Section 4.

¹⁷ Habitat not included within the Phase 1 Handbook (JNCC 2010)

¹⁸ Habitat not included within the Phase 1 Handbook (JNCC 2010)

Acer Ecology

Hard Standing ¹³	Urban - Developed land; sealed surface (u1b)	A small area of hard standing is located at the northern entrance of the site.	Negligible value. UK Habs very low distinctiveness.	Could largely be retained as part of the development.
Rubble Pile	N/A	Waste material was present in the central areas of the willow scrub, comprising metal material (Photo 9).	Site Value.	Removal of the rubble could have impacts on protected species, such as reptiles (3.5.5), recommendations are set out in Section 4 of the report to mitigate against any adverse impacts.
Log Pile	N/A	Four substantial log piles are present throughout the site, two within the northern semi-improved grassland and two within the willow scrub to the south of the site (Photo 10).	Site Value.	Removal of the log piles could have impacts on protected species, such as reptiles (3.5.5), recommendations are set out in Section 4 of the report to mitigate against any adverse impacts.

As the impact of the proposals are to be confined to the development footprint it is not anticipated that there will be any adverse impact to the habitats off site.

Acer Ecology

Photo 1: Dense Bramble Scrub



Photo 2: Scattered Willow Scrub



Photo 3: Semi-Improved Grassland



Photo 4: Semi-Improved Grassland



Photo 5: Tall Ruderal



Photo 6: Japanese Knotweed Stand



Acer Ecology

Photo 7: Montbretia



Photo 8: Rhododendron



Photo 9: Rubble Pile



Photo 10: Example of Log Pile



3.4. Invasive Plant Species

Details of the invasive species on site are described in detail below:

Species	Occurrence on Site	Legislation	Assessment of Potential Development Impacts
Japanese knotweed	On the southern boundary of the site.	Schedule 9 invasive plant. A non-native species that poses a conservation threat to native biodiversity and habitats, such that further releases should be regulated. This species has a negative effect on the	Japanese knotweed will require eradication from the site. Detailed recommendations are provided in Section 4.

Acer Ecology

		biodiversity of the site.	
Montbretia	There is a stand of Montbretia present in the understory of the bramble scrub in the central regions of the site.	Schedule 9 invasive plant.	Montbretia will require eradication from the site. Detailed recommendations are provided in Section 4.
Rhododendron	There is a stand of Rhododendron present in the understory of the willow scrub in the north-eastern regions of the site.	Schedule 9 invasive plant.	Rhododendron will require eradication from the site. Detailed recommendations are provided in Section 4.

3.5. Protected and Notable Species

3.5.1. Notable Plant Species

Data Trawl Results

SEWBRc returned a large number of records of rare and/ or 'notable' plants (including species regarded as 'Locally Important', LBAP species and UK Red Data Book-listed species) from within 1km of the development footprint comprising:

- wild mignonette (*Reseda lutea*)
- charlock (*Sinapis arvensis*)
- yellow archangel (*Lamium galeobdolon subsp. Montanum*)
- grey field-speedwell (*Veronica polita*)
- annual mercury (*Mercurialis annua*)
- pale flax (*Linum bienne*)
- white water-lily (*Nymphaea alba*)
- unbranched bur-reed (*Sparganium emersum*)

However, none of the records provided relate to the proposed development site.

Field Survey Results

Two common spotted orchid was located within the grassland field layer of the willow scrub in the central areas of the site.

3.5.2. Birds

Desk Study Results

The following table shows nesting birds and wintering birds of note recorded within 1km of the site, that are also associated with the habitats present on-site and their conservation status:

Acer Ecology

Species		Schedule 1	Section 7 list – Environment Act Wales	UK BAP	Red list ¹⁹	Amber list ²⁰
Black-headed gull	<i>Chroicocephalus ridibundus</i>					Yes
Bullfinch	<i>Pyrrhula pyrrhula</i>		Yes	Yes		
Dipper	<i>Cinclus cinclus</i>					Yes
Dunnock	<i>Prunella modularis</i>		Yes	Yes		Yes
Fieldfare	<i>Turdus pilaris</i>	Yes			Yes	
Goldcrest	<i>Regulus regulus</i>					
Green woodpecker	<i>Picus viridis</i>					Yes
Herring gull	<i>Larus argentatus</i>		Yes		Yes	
House sparrow	<i>Passer domesticus</i>		Yes	Yes	Yes	
Lesser Black-backed Gull	<i>Larus fuscus</i>					Yes
Lesser redpoll	<i>Acanthis cabaret</i>				Yes	
Linnet	<i>Linaria cannabina</i>		Yes	Yes	Yes	
Long-tailed tit	<i>Aegithalos caudatus</i>					
Mallard	<i>Anas platyrhynchos</i>					Yes
Peregrine	<i>Falco peregrinus</i>	Yes				
Red kite	<i>Milvus milvus</i>	Yes				
Redwing	<i>Turdus iliacus</i>	Yes			Yes	
Song thrush	<i>Turdus philomelos</i>		Yes	Yes	Yes	
Starling	<i>Sturnus vulgaris</i>		Yes	Yes	Yes	
Swallow	<i>Hirundo rustica</i>					
Swift	<i>Apus apus</i>					Yes
Teal	<i>Anas crecca</i>					Yes
Willow warbler	<i>Phylloscopus trochilus</i>					Yes

¹⁹ Bird species of high conservation concern, such as those whose population or range is rapidly declining, recently or historically, and those of global conservation concern.

²⁰ Bird species of medium conservation concern, such as those whose population is in moderate decline, rare breeders, internationally important and localised species and those of unfavourable conservation status in Europe.

Acer Ecology

Field Survey Results

A low number of birds were recorded on site, including blackbird (*Turdus merula*), house sparrow (*Passer domesticus*), robin (*Erithacus rubecula*) and wood pigeon (*Columba palumbus*).

Evaluation of Ecological Value of Site for Birds

The whole of the site is largely made up of dense and scattered scrub and tall ruderal vegetation. All of the trees within the site are young in age, with diameters of 5mm-15mm. The whole site is suitable for nesting and foraging birds and is considered to be of local value for birds. It contains numerous features that offer suitable habitats for birds, but all these features are widespread in the surrounding landscape.

Impact Assessment of Proposed Development on Birds

Large portions of the scrub, tall ruderal and semi-improved grassland habitats will be removed. Therefore, the impact upon scrub nesting birds is anticipated to be moderate at the site level. However, the wider landscape contains other examples of dense scrub and semi-improved grassland and so any negative impacts are unlikely to extend beyond the site.

Recommendations to avoid destruction or disturbance of nests and to enhance restrained areas of the site for birds are included in Section 4.

3.5.3. Bats

Desk Study Results

SEWBrEC returned a total of records of bat roosts within 2km of the site. The roost records are summarised in the table below.

Table 9: Bat Roost Records

Species	Total Number of Records	Distance to Nearest Record	Most Recent Record	Maximum Count
Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)	Two	0.7km	2017	15+
Pipistrelle bat species (<i>Pipistrellus sp.</i>)	Four	0.7km	2016	Two
Noctule (<i>Nyctalus noctula</i>)	12	0.7km	2022	Five
Natterer's bat (<i>Myotis nattereri</i>)	One	0.8km	2019	28
Unidentified bats	One	1.4km	2002	NA
Lesser horseshoe (<i>Rhinolophus hipposideros</i>)	One	1.6km	2012	Two

In addition to the roost records, SEWBrEC returned many records of bats foraging or commuting within 1km of the site. These included:

- Daubenton's bat (*Myotis daubentonii*)
- Whiskered Bat (*Myotis mystacinus*)
- Natterer's Bat

- Noctule Bat
- Pipistrelle
- Common Pipistrelle (*Pipistrellus pipistrellus*)
- Soprano Pipistrelle
- Brown Long-eared Bat (*Plecotus auritus*)
- Lesser Horseshoe Bat

Field Survey Results and Evaluation of Ecological Value of Site for Bats

Many trees within the site are young with simple growth forms and an absence of associated potential bat roost features. The scrub and more rank grassland habitats within the site are likely to support foraging bats and may contribute to linear commuting features. The bat habitat quality of the site was assessed against tables 4.2 of the Bat Survey Guidance (Collins, 2016, Table 4.1) which would suggest that the site is of 'medium' habitat quality for bats. However, the surrounding residential areas and likely high lighting levels in the immediate vicinity of the site reduce the habitat quality to 'low' for bats. Further recommendations are set out in section 4.

Trees

The majority of the scattered trees were young in age, with Diameters at Breast height (DBH) ranging from 5-10mm, with no PRFs. They were therefore assessed as having negligible bat roost potential and were scoped out of the assessment. They are therefore not mentioned further in this context in the report.

Potential Foraging and Commuting Habitat

The site is collectively considered to provide low quality foraging and commuting habitat for bats. There are dense areas of bramble scrub and scattered willow scrub and tall ruderal vegetation on site that form a continuous habitat on the site that is connected to the wider landscape that could be used by bats for commuting. However, the lighting levels surrounding the site likely reduce the quality somewhat.

Impact Assessment of Proposed Development on Bats

No direct impacts to roosting bats are envisaged to arise as a result of the development as all of the trees surveyed have been assessed as having negligible potential to support roosting bats. The anticipated clearance and development of the site for residential development would result in a loss of moderate lengths of foraging and commuting habitat for bats, although it is not currently possible to accurately gauge the level of bat activity in the immediate vicinity of the site. The site is surrounded by residential areas on all sides which likely reduces the suitability of the site somewhat. Nevertheless, the development of the site into a residential area will increase lighting onto the surrounding off-site habitats, such as woodland, to the south-east of the site which could disturb foraging and commuting bats. Any new artificial lighting, if not appropriately controlled, has potential to alter bat behaviour. If the lighting is not installed with appropriate consideration this could be disruptive to foraging and commuting bats. A sensitive lighting strategy must therefore be developed, as detailed in Section 4.

3.5.4. Badgers

Desk Study Results

SEWBRc returned three badger records within 1km of the site. This included:

- A visual recorded distance 75m to east of the site in 2005;
- A sett recorded 0.7km from the proposed site to the direction south in 2007-2012; and
- An observation of a dead individual some 1.2km north-west from the proposed development site.

The nearest record was made in 2005 approximately 75m way towards the east of the site.

Field Survey Results

No direct evidence of badger was noted during the survey.

Evaluation of Ecological Value of Site for Badgers

Although no evidence of badgers was recorded on site, there is considered to be some limited potential for them to venture onto the site from the surrounding landscape to forage sporadically due to the somewhat recent records of badgers within the vicinity.

The likelihood of badgers sett building on site is considered to be very low due to the recent clearance of the site, however, cannot be completely ruled out as the site has been left to become revegetated. Additionally, due to the site being walled off from all sides, besides the open entrance, there is considered to be a very low risk of badgers foraging or commuting across the site. Nevertheless, precautionary measures for badgers are set out in Section 4.

3.5.5. Reptiles

Desk Study Results

SEWBRc returned four records of reptiles within 1km of the site. These included:

- Two records of slow-worm (*Anguis fragilis*), one red-eared terrapin (*Trachemys scripta*) and one grass snake (*Natrix helvetica*). The nearest record is of a slow worm approximately 0.3km away towards the east of the site.

Field Survey Results and Evaluation of Ecological Value of Site for Reptiles

Most of the vegetated parts of the site are suitable for reptiles. They provide a range of ecotones, basking opportunities, shelter and foraging opportunities. It is the physical structure and thermal properties that are significant factors in determining a site's suitability to reptiles (Edgar *et al.*, 2011). There are various piles of refuse and wood piles (TN1) on site that reptiles could use for hibernation sites during the winter. The interfaces between the semi-improved grassland and the scrub and tall ruderal habitats across the whole of the site are considered to potentially be important to reptiles, as the varying sward heights within the vegetation could potentially offer refuge and basking opportunities. Furthermore, these areas extend over moderate lengths and could therefore feasibly support viable reptile populations.

Impact Assessment of Proposed Development on Reptiles

The proposed works will result in the complete loss of potential reptile habitat. Clearance of the vegetation may therefore result in the accidental killing or injury of reptiles. Recommendations for further survey work are set out in Section 4.

3.5.6. Other Mammals

Desk Study Results

SEWBRc returned 11 records of common hedgehog (*Erinaceus europaeus*) within 1km of the site. The nearest of which was recorded 0.1km to the east of the site in 2012.

Field Survey Results and Evaluation of Ecological Value of Site for Other Mammals

No evidence of hedgehog was recorded during the current survey on site however, the data trawl returned numerous recordings of hedgehog within 1km of the site. Additionally, the scrub, tall ruderal and semi-improved grassland habitats on site allow for foraging and day-time resting for hedgehogs. Furthermore, the log piles on site may provide suitable hibernation habitat for hedgehogs during the winter.

Impact Assessment of Proposed Development on Other Mammals

Hedgehogs are considered likely to forage within the site and could potentially nest and hibernate within the rank semi-improved grassland, scrub and hedgerow habitats. The loss of these habitats could lead to direct impacts upon this species, if present. Precautionary and enhancement measures for hedgehogs are set out in section 4.

3.5.7. Invertebrates

Desk Study Results

SEWBRc returned a large number of notable invertebrate records from within the study area, comprising:

- august thorn (*Ennomos quercinaria*);
- bright neb (*Argolamprotes micella*);
- buff ermine (*Spilosoma lutea*);
- buff-tailed bumblebee (*Bombus terrestris*);
- cinnabar (*Tyria jacobaeae*);
- dark-barred twin-spot carpet (*Xanthorhoe ferrugata*);
- dusky thorn (*Ennomos fuscantaria*);
- flounced chestnut (*Agrochola helvola*);
- ghost moth (*Hepialus humuli*);

Acer Ecology

- green-brindled crescent (*Allophyes oxyacanthae*);
- grey dagger (*Acronicta psi*);
- large ranunculus (*Polymixis flavicincta*);
- small phoenix (*Ecliptopera silaceata*);
- white ermine (*Spilosoma lubricipeda*) and;
- white-spotted sable (*Anania funebris*).

However, none of these were recorded within the proposed development site.

Field Survey Results

During the survey four large white (*Pieris brassicae*), two comma (*Polygonia c-album*) and two speckled wood (*Pararge aegeria*) butterflies were noted.

Evaluation of Ecological Value of Site for Invertebrates

Due to the habitats present it is assumed the site will support an assemblage of invertebrates but is unlikely to support notable or rare species.

Impact Assessment of Proposed Development on Invertebrates

While the site contains habitats which are suitable for a range of invertebrates (scrub, flowering plants etc.) these habitats are common and widespread in the surrounding landscape. None of the invertebrate records from SEWBRc relate directly to the site. Nevertheless, compensation measures will be recommended after the further survey work detailed in section 4.

4. Recommendations and Conclusions

The following recommendations have been developed based on the development proposals available at the time of writing. It should be noted that they may be subject to change upon receipt of the final design. The implementation of these recommendations will ensure compliance with the Planning Policy Wales version 11 (Welsh Government, 2021)²¹, TAN 5 *Nature Conservation and Planning* (2009), Section 6 and 7 of the Environment Wales Act, 2016, the Conservation of Habitats and Species Regulations 2017 which has been updated by the Conservation of Habitats and Species (Amendment) (EU Exit) [‘CHSAEU’] Regulations 2019 and Neath Port Talbot County Borough Council Local Development Plan (2011-2026)²².

The recommendations aim to avoid or minimise adverse impacts on the environment and protected species, mitigate and compensate for losses where damage is unavoidable and promote opportunities to enhance biodiversity. There is a requirement that developments must provide net benefit for biodiversity.

4.1. Biodiversity Enhancement

Local Authorities have a duty (known as the Biodiversity and resilience of ecosystems duty) under the Environment (Wales) Act 2016 to seek to maintain and enhance biodiversity in the exercise of their functions. Where possible the existing on-site habitat will be retained to ensure that species are not adversely affected by the development. Native species of local provenance and grown in the UK will be used for any new planting on the site.

4.2. Further Work

Further surveys will be required before the planning application can be determined. Targeted mitigation and any protected species derogation licenses will only be available following the completion of these surveys:

4.2.1. Reptile Surveys

Works should not commence until further surveys have been carried out to assess the potential impact to reptiles on site.

Surveys to determine the presence/likely absence of reptiles should be carried out between April and September – ideally in the months of April, May, June or September (Natural England Technical Information Note TIN 1021).

The survey will follow the advice provided by the Herpetofauna Workers’ Manual (Gent and Gibson, 2003), and comprise a ‘direct search’ and the monitoring of artificial and naturally occurring refugia placed in areas of the site assessed as being most attractive to reptiles (e.g. longer grass, scrub margins etc.).

²¹ Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions ... and in so doing promote the resilience of ecosystems. Development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity.

²² https://www.npt.gov.uk/media/7321/ldp_written_statement_jan16.pdf?v=20170727124344

A variety of different types of refugia should be used. Refugia will comprise primarily squares of roofing felt, carpet tiles and/ or corrugated metal tins of varying sizes but mainly 60 x 60cm. Naturally occurring refugia including discarded logs, timber and large rocks etc. will also be checked. Where possible, artificial refugia should be laid in south-facing positions in areas deemed least likely to be tampered with. Refugia will be left undisturbed on site for two weeks, prior to commencement of the survey to allow the reptiles on the site sufficient time to find and start utilising them. The refugia will then be checked on at least seven separate occasions, non-consecutively, in suitable weather conditions (warm, overcast periods with low wind speeds) in order to record any reptile species beneath or basking upon them. As a guideline, it is recommended that the optimal time to survey reptiles is between 08:30 and 11:00 or 16:30 and 19:00, and when the air temperature is between 9°C and 18°C (Froglife, 1999). Heavy rain and wind are deemed unsuitable for surveying reptiles (Froglife, 1999). Ideally, the survey will be spread out across the survey season.

The survey results will determine whether reptiles are present on the site, and if so, will provide the basis for designing and implementing a reptile mitigation strategy prior to the start of the development. Depending on the population present it may be possible for individuals to be encouraged to move offsite voluntarily via species deterrence measures and destructive searches.

4.2.2. Bat Activity Surveys

The site was considered suitable for foraging and commuting bats, due to the dense areas of scrub, tall ruderal and semi-improved grassland habitats on site. The site may be of value to the Annex II Habitats Directive bat species (lesser and greater horseshoe bats) that roost within 2km of the site. However, the site itself lacks any mature trees due to fairly recent disturbance/ clearance.

Table 8.3 of the Bat Survey Guidelines (2016) states that habitats with low suitability for bats' should be subject to a transect and remote detector survey.

In low suitability sites at least one survey visit should be undertaken in each season (spring: April/ May, summer: June/ July/ August, autumn: September/ October) in appropriate weather conditions for bats. Further surveys may be required if these survey visits reveal higher levels of bat activity than predicted by habitat alone.

In addition to a transect survey, low suitability sites should be subject to a remote/ static detector survey with one location per transect. Data should be collected on five consecutive nights per season (spring; April/May, summer; June/July/August, autumn; September/ October) in appropriate weather conditions for bats.

4.2.3. Eradication of Japanese Knotweed

Guidance should be sought from Natural Resources Wales or a Japanese knotweed specialist regarding the control of Japanese knotweed, in order to prevent further spreading. Measures should broadly follow advice given in the Environment Agency's²³ Japanese Knotweed Code of Practice² (2013) which include:

- Preparing a method statement, detailing how Japanese knotweed will be managed on site;
- A specialist INNS (Invasive Non-Native Species) contractor will be commissioned to produce a method statement and management plan dealing with the on-site Japanese Knotweed;
- Appointing an ecological clerk of works responsible for the management of Japanese knotweed on the site; and
- Ensuring that site workers are made aware of what the plant looks like via a toolbox talk and of the measures required of them as detailed within the site Japanese knotweed strategy.

The Japanese knotweed on site will need to be dealt with in an appropriate manner either by herbicide treatment or removal of the knotweed and soil from the site in a "dig and dump" method where the soil is then taken to an appropriate landfill site, or an appropriate method. See Appendix 10 for further details on Japanese Knotweed management options. An invasive species specialist should be employed to oversee management of Japanese Knotweed on the site.

4.2.4. Eradication of Montbretia

Montbretia will be eradicated from the site as far as possible and appropriate measures implemented to prevent the accidental spread of this species during the development. Invasive plant material is considered a 'controlled waste' and must be disposed of in accordance with, and environmental permit issued under, the Environmental Permitting (England and Wales) Regulations 2007.

4.2.5. Eradication of Rhododendron

Rhododendron will be eradicated from the site as far as possible and appropriate measures implemented to prevent the accidental spread of this species during the development.

4.3. Precautionary Measures

Full details of precautionary measures will be devised after completion of the further surveys detailed above and the finalisation of development proposals.

4.3.1. Timing of Vegetation Clearance for Birds

To avoid adverse impacts to nesting birds, the clearance of vegetation including young trees, dense scrub, bramble beds, and willow scrub will be undertaken from September to February outside of the bird breeding season (March to August inclusive). Alternatively, any works undertaken from March to August will be

²³ English guidance is used because no equivalent Welsh guidance has been produced by Natural Resources Wales.

subject to a check for nesting birds by a suitably qualified ecologist immediately prior to removal of such habitats. If any active nests are found these will be protected, along with an appropriate buffer zone of 5m, until the nesting is complete, and the young have fledged²⁴.

4.3.2. Good Construction Practices for Badgers and Hedgehogs

Any open trenches and excavations associated with the development will either be closed and covered at night or a means of escape provided (e.g. plank at no greater angle than 45° or gently graded site wall of the same angle or equivalent) to prevent any badgers and hedgehogs or other animals falling in and becoming trapped). Any exposed pipes and trenches must be checked for trapped wildlife each morning before starting construction activities.

4.3.3. Sustainable Urban Drainage Systems (SuDS)

As of 7th January 2019, all new developments of more than one dwelling house or where the construction area is 100m² or more are required to have SuDS to manage on-site surface water. These SuDS must be designed and constructed in accordance with the Welsh Government Standards for Sustainable Drainage²⁵.

There is scope to incorporate ecological enhancement measures into the design of the SuDS features, without compromising its core function.

4.4. Mitigation Measures

Full details of precautionary measures will be devised after completion of the further surveys detailed above and the finalisation of development proposals.

4.4.1. Sensitive Lighting Strategy

A sensitive lighting strategy will form part of the development plan during both the construction and operational phases. This will mitigate against any light disturbance to foraging/commuting bats using the peripheral hedgerows and trees on site. Where practicable, this will involve no external lighting projecting towards the hedgerows and trees along the southern, western and eastern boundaries. This will create a 'dark corridor', allowing bats to continue to forage and commute along these linear features.

The lighting will follow a 'bat friendly' specification:

External lighting will be minimised and installed at low-level only (i.e. no higher than eaves level and lower than 2.4m) and directed downward (i.e. below the horizontal plane with no upward tilt). Fully shielded lights with front and side hoods/shields or cowls will be installed to prevent upwards and horizontal light spill. The lighting source will not be visible. See Appendix 8 for examples.

²⁴ Some bird species, especially raptors and owls remain dependent upon the nesting site after fledging and so depending upon the species the nest site may need to be protected for a period of time after fledging.

²⁵ <https://gov.wales/sites/default/files/publications/2019-06/statutory-guidance.pdf>

Any security lights used will operate off a passive infrared (PIR) motion sensor sensitive to large objects only, to avoid constant triggers by bat passes and with timers set on a short duration (i.e. a maximum 'on' time of one minute) to reduce the amount of 'lit time'. The lights will either have an integrated LED light source or use LED bulbs. They will be low intensity (i.e. circa 11 watts) and have a warm white colour temperature of 3000K or less (ideally 2700K if commercially available). White, blue and green lighting sources, including mercury or metal halide, CPO and CDO (ceramic discharge metal-halide) bulbs, will be avoided as these have effects on bats.

If bollard-style lighting will be used this will similarly be downward facing. See Appendix 9 for examples.

4.5. Compensation and Enhancement Measures

Full details of compensation and enhancement measures will be devised after completion of the further surveys detailed above and the finalisation of development proposals.

4.5.1. Hedgehog Holes

Any new fencing or boundary features will include holes suitable for the safe passage of hedgehogs.

4.6. Longevity of Report

If development works do not begin within eighteen months to two years of the date of this report of this report, an update survey is likely to be required in accordance with guidance from NRW²⁶, (CIEEM, 2019) and BS 42020:2013²⁷, to determine if conditions have changed since those described in this report.

4.7. Conclusions

The full extent of ecological impacts and potential constraints of the proposed development cannot be fully determined based on the results of the preliminary ecological appraisal survey alone. Further survey work will be required before such assessments can be comprehensively made, as detailed in Section 4.2.

At this stage, the site's ecological value is not considered to represent a fundamental in-principal constraint to the proposed development.

²⁶ As set out in Point 5 of the NRW *Bat Surveys - Frequently Asked Questions* and Point 4 of the guidance included within the NRW European Protected Species Development Application Form.

²⁷ As set out in Section 6.2.1, point 7 which states that ecological information should not normally be more than two/three years old, or as stipulated in good practice guidance).

5. References and Bibliography

Amphibian & Reptile Group (2010) *Great Crested Newt Habitat Suitability Index*. ARG UK Advice Note 5. ARG.

Andrews H (2013). *Bat Tree Habitat Key*. AEcol, Bridgwater

Barn Owl Trust (2012) *Barn Owl Habitat Requirements in Pastoral Landscapes*.

<http://www.barnowltrust.org.uk/infopage.html?Id=200>

Biodiversity Reporting & Information Group (2007) *Report on the Habitats & Species Review: A Report to the UK Biodiversity Partnership*. Joint Nature Conservation Committee, Peterborough.

Bright, P, Morris, P A & Mitchell-Jones, T (2006) *The Dormouse Conservation Handbook*. Second Edition. English Nature. Peterborough.

British Standard Institute (2015) BS 8596:2015 *Surveying for Bats in Trees and Woodland*.

Chartered Institute of Ecology & Environmental Management (2017) *Guidelines for Preliminary Ecological Appraisal*. 2nd edition. CIEEM, Winchester. <https://bit.ly/2k0mhOH>.

Chartered Institute of Ecology & Environmental Management (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. CIEEM <https://bit.ly/2OjRny9>

Collins, J (ed) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London.

Countryside Council for Wales (2005) *Habitats of Wales. Phase I Data 1979-1997. Lowlands and Uplands*. CD ROM, Bangor.

Edgar, P, Foster, J & Baker, J (2011) *Reptile Habitat Management Handbook*. Amphibian Reptile Conservation and Natural England. Peterborough.

Kirby, J, Drewitt, A, Chivers, L, and Saunders, R (2000) *Key Habitat Attributes for Birds and Bird Assemblages in England-Pt 1 (ENRR359)*. English Nature Research Report. Peterborough.

English Nature (2001) *Great Crested Newt Mitigation Guidelines*, Peterborough.

Gent, T. & Gibson, S. (2003) *Herpetofauna Workers Manual*. Joint Nature Conservation Committee, Peterborough.

Harris, S, Cresswell, P & Jefferies, D J (1988) *Surveying Badgers*. Mammal Society Occasional Publication 9.

Jehle, R, Thiesmeier B, Foster, J (2011) *The Crested Newt: A Dwindling Pond Dweller*. Kock, Bielefeld, Germany.

Joint Nature Conservation Committee (2010) *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*.

Langton, T E S, Beckett, C L & Foster, J P (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

Morris P (2004) *Dormice*. Whittet Books.

Natural England (2011) *Reptile Mitigation Guidelines: Natural England Technical Information Note TIN 102*. Peterborough.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000) *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155

People's Trust for Endangered Species (2019) *The State of Britain's Dormice 2019*.

Peoples Trust for Endangered Species and British Hedgehog Preservation Society (Unknown year) *Hedgehogs and Development*. Hedgehog Street available online from <https://www.hedgehogstreet.org/wp-content/uploads/2019/03/Hedgehogs-and-developers-ZR.pdf>

South Wales Wildlife Sites Partnership (2004) *Guidelines for the Selection of Wildlife Sites in South Wales*. Gwent Wildlife Trust. <http://bit.ly/2gx1SBo>

Wales Biodiversity Partnership (WBP 2008) *Wildlife Sites Guidance Wales: A Guide to Develop Local Wildlife Systems in Wales*. Wales Biodiversity Partnership/Welsh Assembly Government. <https://www.biodiversitywales.org.uk/File/36/en-GB>.

Wales Biodiversity Partnership (2016) *Environment Wales Act 2016. Section 7 Habitats List*. Wales Biodiversity Partnership/Welsh Assembly Government. <http://bit.ly/2hFuEvO>

Wales Biodiversity Partnership (2016) *Environment Wales Act 2016. Section 7: Interim List of Living Organisms & Habitats of Principal Importance for the Purpose of Maintaining and Enhancing Biodiversity in Wales*. Wales Biodiversity Partnership/Welsh Government. <http://bit.ly/2hm4CRJ>.

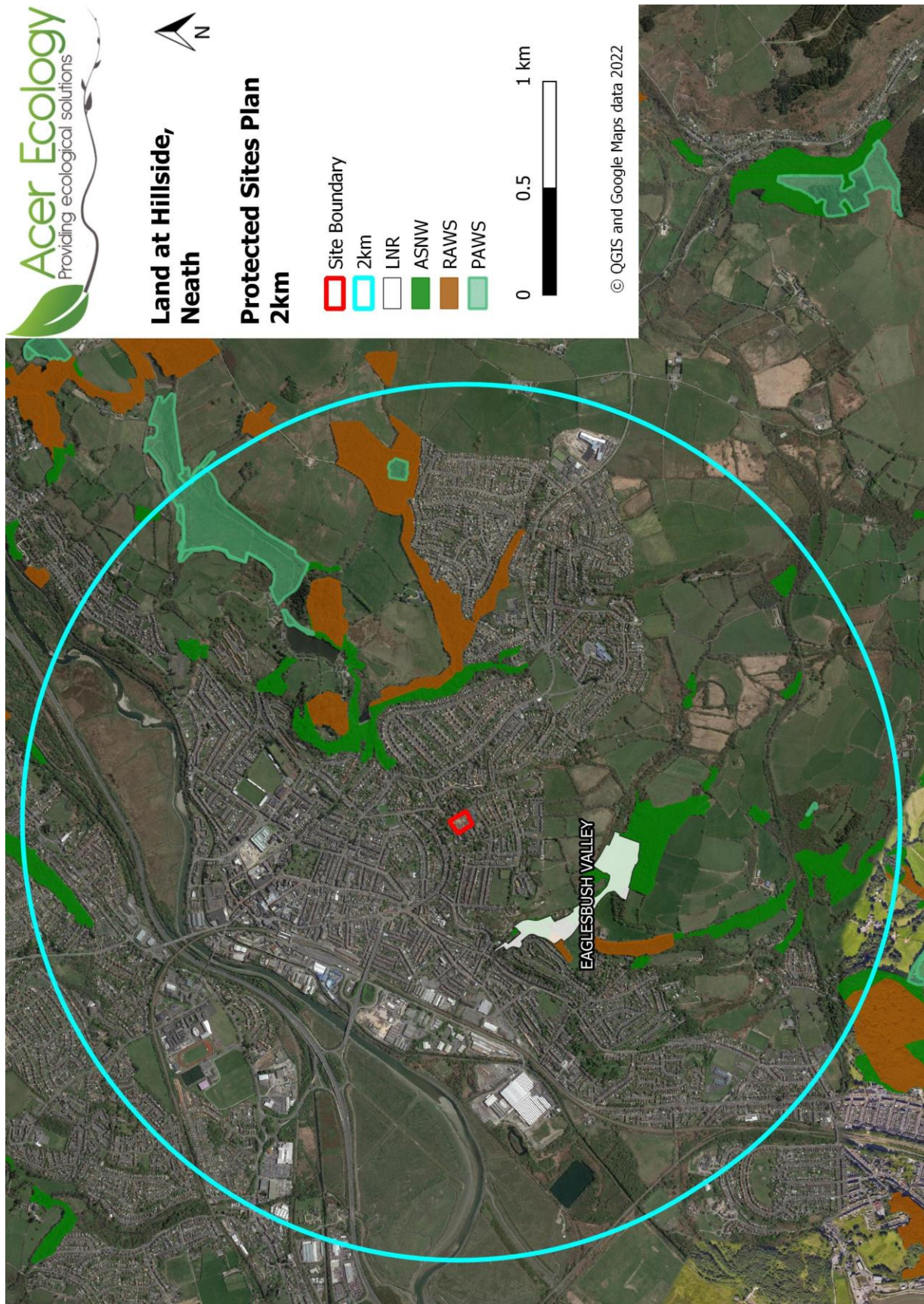
Welsh Government. (2021). *Planning Policy Wales*. 11th Edition. <https://bit.ly/3tgzi8M>

Welsh Government (2021) *Future Wales: The National Plan 2040*. <https://bit.ly/323w7p4>

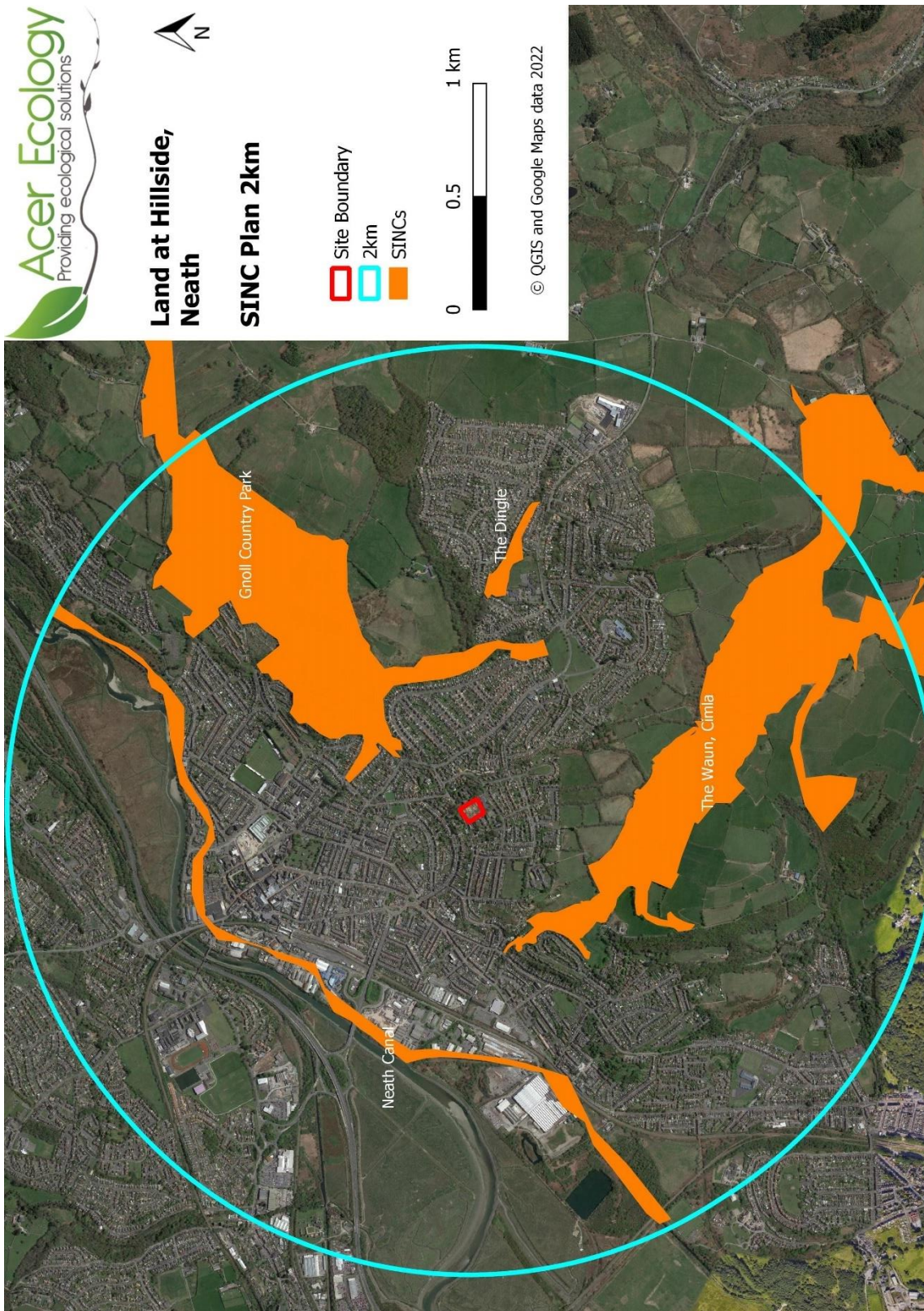
Plan 1: Site Location



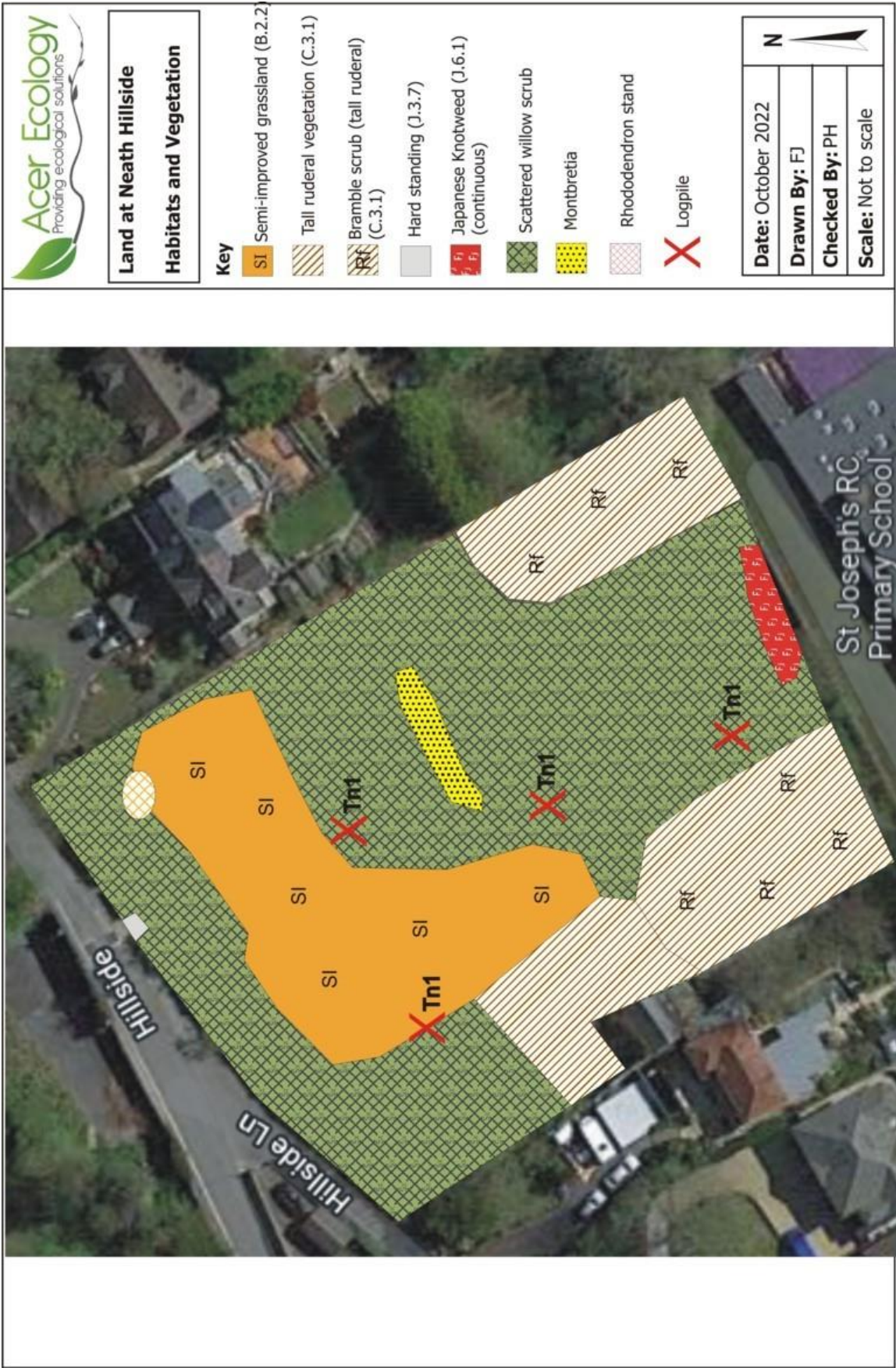
Plan 2: Site Location and Protected Sites (2km Buffer)



Plan 3: Site Location and SINCS (0.5km Buffer)



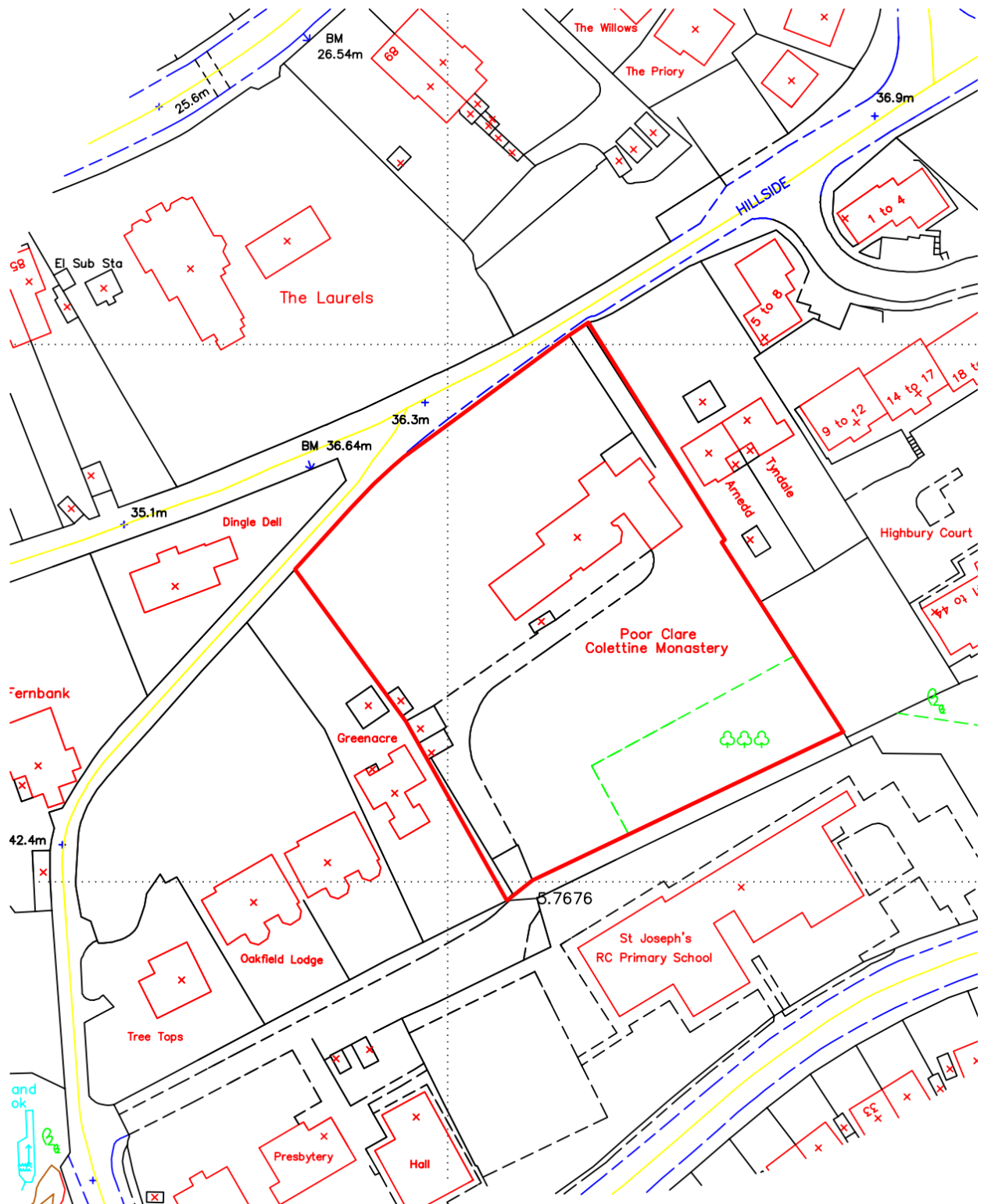
Plan 4: Habitats and Vegetation

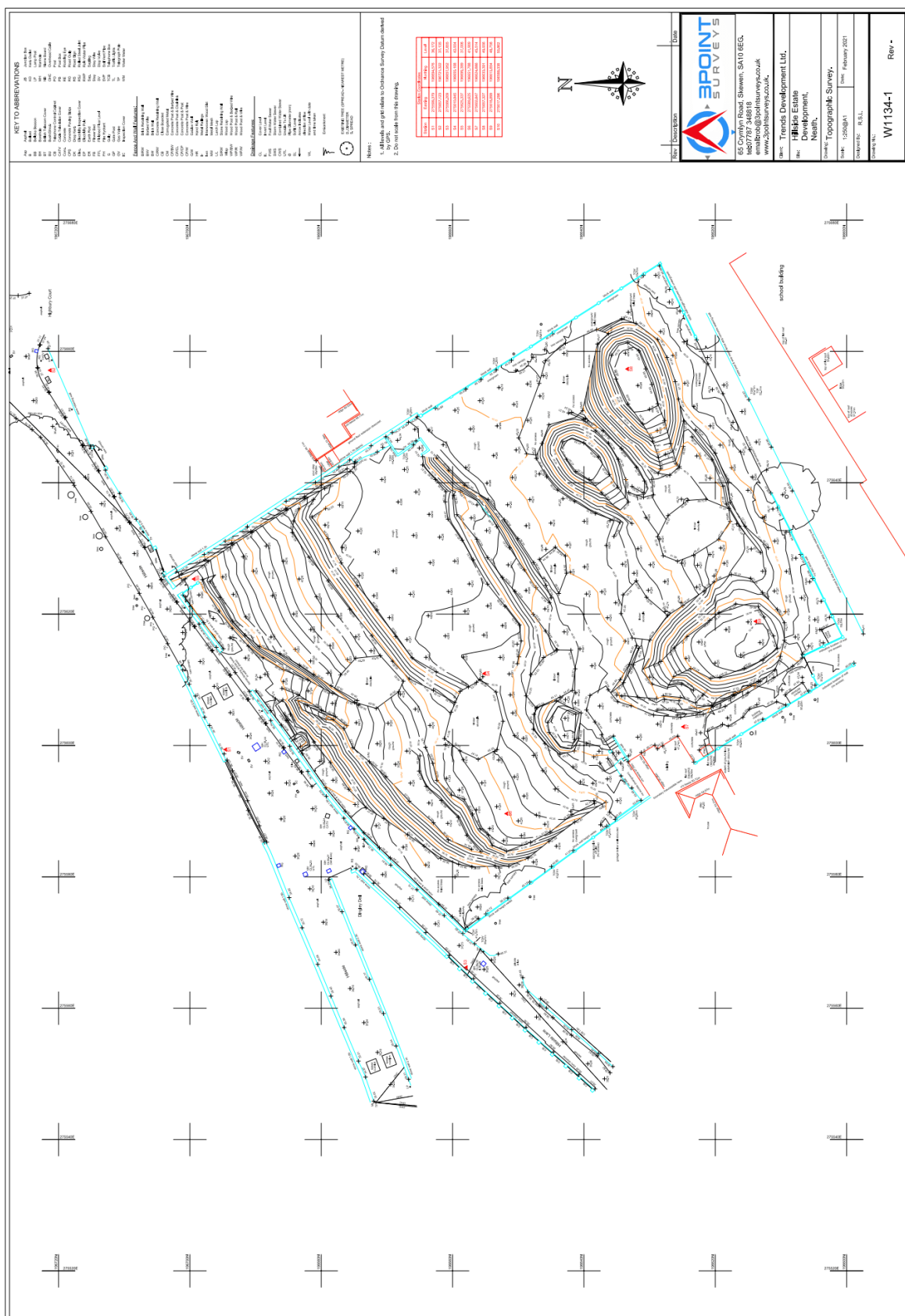


Plan 5: Location of Water Bodies within 0.5km of Site



Appendix 1: Proposed Development Works





Appendix 2: Legislation and Policy Relating to Statutory and Non-Statutory Designated Sites and Planning Policy Relevant to Site

LNRs

Under the National Parks and Access to the Countryside Act 1949, LNRs may be declared by local authorities after consultation with the relevant statutory nature conservation agency. LNRs are declared and managed for nature conservation, and provide opportunities for research and education, or simply enjoying and having contact with nature. LNRs must be controlled by the local authority through ownership, lease or agreement with the owner.

SINCs

SINCs are a class of nature conservation designations collectively referred to as 'Wildlife Sites'. Wildlife Sites are so-called 'third tier' sites, generally ranked below sites which are of international (first tier) or national (second tier) biodiversity significance, but which are considered to have '*substantive nature conservation value*' at the regional or district level. They are usually designated at the county or county borough level by the relevant local planning authority, and are recognised as a planning constraint in the relevant statutory development plan.

The framework for the identification and designation of 'Wildlife Sites' is set out in various Government documents, and is referred to in *Planning Policy Wales* (2021) and *Technical Advice Note (Wales) 5: Nature Conservation & Planning*. Defra published *Local Sites: Guidance on their identification, selection and management in 2006*²⁸.

Environment (Wales) Act 2016

The Environment (Wales) Act Section 6 duty, or the Biodiversity Duty, requires public authorities to seek to maintain and enhance biodiversity and in so doing promote the resilience of ecosystems. In fulfilling this duty, 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.

The Section 6 duty requires that developments should not be permitted which result in net loss of value to biodiversity, and must seek to achieve biodiversity net gain. Where net loss cannot be achieved through avoidance or mitigation, compensation is required.

Future Wales - the National Plan 2040

Future Wales is the national development framework, setting the direction for development in Wales to 2040. It is a development plan with a strategy for addressing key national priorities through the planning

28
<https://webarchive.nationalarchives.gov.uk/ukgwa/20111108175609/http://archive.defra.gov.uk/rural/documents/protected/localsites.pdf>

system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities. Future Wales - the national plan 2040 is the national development framework and it is the highest tier plan, setting the direction for development in Wales to 2040. It is a framework which will be built on by Strategic Development Plans at a regional level and Local Development Plans. Planning decisions at every level of the planning system in Wales must be taken in accordance with the development plan as a whole.

National Planning Policy Wales (2021)

The primary objective of PPW is to ensure the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation.

Planning Policy Wales (PPW) Edition 11 - 24th Feb 2021 states that planning authorities must follow a stepwise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for; enhancement must be secured wherever possible. The first priority for planning authorities is to avoid damage to biodiversity and ecosystem functioning. Where there may be harmful environmental effects, planning authorities will need to be satisfied that any reasonable alternative sites that would result in less harm, no harm or gain have been fully considered.

Local Development Plan

Neath Port Talbot County Borough Council Local Development Plan (2011-2026) was adopted in 2016. The Local Development Plan sets out Neath Council's policies and proposals to guide all development in the county and gives particular emphasis that policies must 'Conserve Neath Port Talbot's important landscapes, countryside, undeveloped coast, important wildlife, habitats and geodiversity sites, ensuring that developments throughout the County Borough respect all landscapes and minimise adverse impacts.' Objective 15, [KI 2, KI 11 and KI 12].

The following policies are of note regarding ecological issues and safeguarding biodiversity:

- SP3: Sustainable Communities, p35
- SP4: Infrastructure, p36
- Policy I1: Infrastructure Requirements, p36
- SP14: The Countryside and the Undeveloped Coast, p68
- Policy EN4: Replacement Dwellings in the Countryside, p69
- Policy EN5: Conversion and Extension of Existing Buildings in the Countryside, p70
- Policy EN7: Important Natural Features, p71

- Policy SP16 Environmental Protection, p72

Biodiversity Net Gain

Net benefit for biodiversity Planning Policy Wales (PPW) 11 sets out that “*planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means that development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity*” (para 6.4.5 refers). This policy and subsequent policies in Chapter 6 of PPW 11 respond to the Section 6 Duty of the Environment (Wales) Act 2016.

Appendix 3: Protected and Invasive Species Legislation Relevant to Site

Birds

All wild British birds (while nesting, building nests and sitting on eggs), their nests and eggs (with certain limited exceptions) are protected by law under Section 1 of the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000. Included in this protection are all nests (at whatever stage of construction or use) and all dependent young until the nest is abandoned and the young have fledged and become independent. Particularly rare species such as barn owl (*Tyto alba*) are listed on Schedule 1 which gives them additional protection from disturbance whilst nest building, whilst near a nest with eggs or young, or from disturbing the dependent young.

Section 10.8 of the Conservation of Habitats and Species Regulations 2017 state that Local authorities must use all reasonable endeavours to avoid any deterioration of habitats of wild birds.

Bats

All species of bats and their roosting sites are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 which continues to apply in UK law through the Conservation of Habitats and Species (Amendment) (EU Exit) ['CHSAEU'] Regulations 2019.

All species of UK bats are designated as 'European protected species'. Seven species of bat (soprano pipistrelle (*Pipistrellus pygmaeus*), barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteinii*), noctule (*Nyctalus noctula*), brown long-eared (*Plecotus auritus*), lesser horseshoe (*Rhinolophus hipposideros*) and greater horseshoe bats (*Rhinolophus ferrumequinum*)) are listed under Section 7 of the Environment (Wales) Act 2016 as being of principal importance for maintaining and enhancing biodiversity in Wales.

Badgers

Badgers are protected under the Protection of Badgers Act 1992. Protection applies both to the animal itself and to its nesting burrows (setts), and current interpretation of the Act also confers some protection to key foraging areas.

Reptiles

With the exception of smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) (which are afforded greater protection), common reptiles are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). They are given so-called 'partial protection', which prohibits the deliberate killing or injury of individuals. The habitats of common reptiles are not specifically protected. These species are listed as priority species in Wales under Section 7 of the Environment (Wales) Act 2016.

Hedgehogs

Hedgehogs are listed as a Red List mammal species in Britain and are protected under Schedule 6 of the Wildlife and Countryside Act (1981). They are “protected from being killed or taken by certain methods under Section 11(1) of the Wildlife and Countryside Act 1981. The methods listed are: self-locking snares, bows, crossbows, explosives (other than ammunition for a firearm), or live decoys. The species listed are also protected from the following activities: trap, snare or net, electrical device for killing or stunning, poisonous, poisoned or stupefying substances or any other gas or smoke, automatic or semi-automatic weapon, device for illuminating a target or sighting device for night shooting, artificial light, mirror or other dazzling device, sound recording, and mechanically propelled vehicle in immediate pursuit. They are also listed as priority species under Section 7 of the Environment (Wales) Act 2016.

Additionally, hedgehogs are listed a priority species listed under the UK Biodiversity Action Plan in light of dramatic population declines. The legislation afforded to hedgehogs in Section 7 of the Environment (Wales) Act 2016 means that every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity²⁹. In effect, ‘conserving biodiversity’ includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat. They are also listed in the Neath Port Talbot County Borough Council LBAP in light of dramatic population declines.

Japanese Knotweed

Japanese knotweed is listed under Schedule 9³⁰ of the Wildlife and Countryside Act (1981), as amended. This act specifically prohibits the reckless or deliberate spreading of this species. Japanese knotweed will require eradication from the site.

Montbretia

Montbretia is listed under Schedule 9³¹ of the Wildlife and Countryside Act (1981), as amended. This act specifically prohibits the reckless or deliberate spreading of this species. Montbretia will require eradication from the site.

²⁹ Biodiversity conservation in respect to hedgehogs is interpreted as a commitment to restoring or enhancing their population.

³⁰ <https://www.legislation.gov.uk/ukpga/1981/69/schedule/9/part/II>

³¹ <https://www.legislation.gov.uk/ukpga/1981/69/schedule/9/part/II>

Acer Ecology

Appendix 4: Species Recorded

All species recorded by Acer Ecology, 2022

Species	Common name	W	LM	CG	LDA	PMR	PIL	TF	Status
Trees and Shrubs									
<i>Acer pseudoplatanus</i>	Sycamore								Alien
<i>Betula pendula</i>	Silver birch								
<i>Buddleja davidii</i>	Buddleia								Alien
<i>Cornus sanguinea</i>	Dogwood								
<i>Cotoneaster divaricatus</i>	Spreading cotoneaster								Alien
<i>Fraxinus excelsior</i>	Ash								
<i>Hypericum androsaemum</i>	Tutsan	W							
<i>Ilex aquifolium</i>	Holly								
<i>Lonicera periclymenum</i>	Honeysuckle								
<i>Quercus sp</i>	Oak								
<i>Rosa canina agg</i>	Dog-rose								
<i>Rubus fruticosus agg.</i>	Bramble								
<i>Salix alba</i>	White willow								
<i>Salix caprea</i>	Goat willow								
<i>Salix spp.</i>	Willow sp								
<i>Sorbus aucuparia</i>	Rowan								
<i>Ulmus sp.</i>	Elm species								
<i>x Cupressocyparis leylandii</i>	Leyland cypress								Alien
Herbaceous Plants									
<i>Agrostis stolonifera</i>	Creeping bent								
<i>Alchemilla glabra</i>	Lady's mantle		LM						Cs, bgcbc & monmouthshire sap
<i>Arrhenatherum elatius</i>	False oat-grass								
<i>Calystegia sepium</i>	Hedge bindweed								
<i>Cannabis sativa</i>	Hemp								
<i>Carex pendula</i>	Pendulous sedge	W				PMR			
<i>Carex sp</i>	Sedge species								
<i>Cirsium arvense</i>	Creeping thistle								
<i>Dactylis glomerata</i>	Cock's-foot								
<i>Dactylorhiza fuchsii</i>	Common spotted-orchid		LM			PMR			Local, csap
<i>Daucus carota</i>	Wild carrot			CG					
<i>Dipsacus fullonum</i>	Teasel						PIL		
<i>Equisetum arvense</i>	Field horsetail								

Acer Ecology

<i>Fragaria vesca</i>	Wild strawberry								
<i>Hedera helix</i>	Ivy								
<i>Holcus lanatus</i>	Yorkshire fog								
<i>Hypericum maculatum</i>	Imperforate st john's-wort		LM						
<i>Hypochaeris radicata</i>	Common cat's-ear		LM						
<i>Juncus effusus</i>	Soft rush								
<i>Juncus inflexus</i>	Hard rush								
<i>Lathyrus pratensis</i>	Meadow vetchling		LM						
<i>Luzula campestris</i>	Field wood-rush		LM						
<i>Medicago lupulina</i>	Black medick			CG					
<i>Plantago lanceolata</i>	Ribwort plantain								
<i>Plantago major</i>	Greater plantain								
<i>Polypodium sp</i>	Polypody								
<i>Prunella vulgaris</i>	Self-heal								
<i>Pulicaria dysenterica</i>	Common fleabane					PMR			
<i>Ranunculus acris</i>	Meadow buttercup								
<i>Ranunculus repens</i>	Creeping buttercup								
<i>Rumex obtusifolius</i>	Broad-leaved dock								
<i>Scrophularia nodosa</i>	Common figwort	W				PMR	PIL		
<i>Stachys sylvatica</i>	Hedge woundwort								
<i>Trifolium pratense</i>	Red clover		LM						
<i>Urtica dioica</i>	Common nettle								
<i>Alnus cordata</i>	Italina alder								

'Habitat Indicator Species' Totals (Wales Biodiversity Partnership 2008 ³²)		3	7	2	0	4	2	0
		W	LM	CG	LDA	PMR	PIL	TF

Key to Indicator Species (Wales Biodiversity Partnership 2008³³)

W - Woodland, LM – Lowland meadow, CG - Calcareous Grassland, LDA – Lowland Dry Acid Grassland, PMR Purple moor-grass and rush pasture, PIL – Post Industrial Land, TF Species-rich Tillage Fields and Margins

³² Wales Biodiversity Partnership (2008) Wildlife Sites Guidance Wales: A Guide to Develop Local Wildlife Systems in Wales. Wales Biodiversity Partnership/Welsh Assembly Government.

SINC Selection

Sites which support one primary species or five contributory species; or habitats which support eight lowland meadow, eight calcareous grassland, seven lowland dry acid grassland, twelve purple moor-grass and rush pasture or eight tillage field and margins indicator species, should be considered for SINC selection. Post-industrial sites supporting 20 or more indicator species from the combined post-industrial land, acid, neutral, calcareous and marshy grassland lists should be also considered for selection.

WCA 5 – Species protected under Schedule 5 of the Wildlife and Countryside Act

WCA 9 – Species listed under Schedule 9 of the Wildlife and Countryside Act

Appendix 5: Definitions of Site Value

International Value

Internationally designated or proposed sites such as Ramsar Sites, Special Protection Areas, Biosphere Reserves and Special Areas of Conservation, or non-designated sites meeting criteria for international designation. Sites supporting populations of internationally important species or habitats.

National Value

Nationally designated sites such as Sites of Special Scientific Interest (SSSIs), or non-designated sites meeting SSSI selection criteria (NCC 1989), National Nature Reserves (NNRs) or Nature Conservancy Review (NCR) Grade 1 sites, viable areas of key habitats within the UK Biodiversity Action Plan. Sites supporting viable breeding populations of Red Data Book (RDB) species (excluding scarce species), or supplying critical elements of their habitat requirements.

Regional Value

Sites containing viable areas of threatened habitats listed in a regional Biodiversity Action Plan, comfortably exceeding Site of Importance for Nature Conservation (SINC) criteria, but not meeting SSSI selection criteria. Sites supporting regionally significant areas of BAP habitats or large and viable populations of Nationally Scarce species, or those included in the Regional Biodiversity Action Plan on account of their rarity, or supplying critical elements of their habitat requirements.

County Value/District Value

Site identified as a Site of Importance to Nature Conservation (SINC) at the district level; meeting South Wales Wildlife Sites Partnership (SWWSP) 2004 published designation criteria, but falling short of SSSI designation criteria, whether designated as a SINC or not. Ancient woodlands and sites supporting regionally significant areas of UK BAP habitat. Large scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/LBAP or threatened species (other than badger).

High Local

Habitats which just fail to meet Regional value criteria, but which appreciably enrich the ecological resource of the locality. Sites supporting species which are notable or uncommon in the county; or species which are uncommon, local or habitat-restricted nationally, and which might not otherwise be present in the area. Moderate scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/LBAP or threatened species.

Local Value

Old hedges, woodlands, ponds, significant areas of species-rich grassland, small scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/LBAP or threatened species. Undesignated sites or features which appreciably enrich the habitat resource in the context of their immediate surroundings, parish or neighbourhood (e.g. a species-rich hedgerow). Rare or uncommon species may occur but are not restricted to the site or critically dependent upon it for their survival in the area.

Site Value (within the immediate zone of influence)

Low-grade and widespread habitats. Woodland plantations, structured planting, small areas of species-rich grassland and other species-rich habitats not included in the UK or Local BAP.

Negligible

Acer Ecology

No apparent nature conservation value.

Appendix 6: Guidelines for Assessing Potential Suitability of Proposed Development Site for Bats

Suitability	Commuting and Foraging Habitat
Negligible	Negligible habitat features on-site likely to be used by commuting and foraging bats.
Low	<u>Commuting Habitat</u> Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. <u>Foraging Habitat</u> Suitable but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	<u>Commuting Habitat</u> Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. <u>Foraging Habitat</u> Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	<u>Commuting Habitat</u> Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. <u>Foraging Habitat</u> High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. <u>Proximity to Known Bat Roosts</u> Site is close to and connected to known roosts.

Appendix 7: Minimum Number of Dusk Emergence and Dawn Re-entry Surveys Required ³⁴

High Roost Suitability	Moderate Roost Suitability	Low Roost Suitability
Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. Surveys should be undertaken from May to September with at least two of the surveys from May to August.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey ³⁵ . Surveys should be undertaken from May to September with at least one of the survey between May and August.	One survey visit. One dusk emergence or dawn re-entry survey (Survey period is from May to August).

Note: Table is reproduced from Collins 2016

³⁴ Multiple survey should be spread out to sample as much of the survey period as possible; It is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk survey is considered only one visit.

Appendix 8: Examples of Suitable Wall Light Fittings

	Description Light fitting sourced from http://www.energylightbulbs.co.uk/products/single-outdoor-wall-with-pir-movement-sensor-stainless-steel?gclid=CLuf2c63hM4CFYVAGwod0sYPvg
	Light fitting sourced from https://www.kichler.com/kichler/products/outdoor-lighting/outdoor-wall-lights/outdoor-wall-lights-no-arms/outdoor-wall-1lt-led-azt/
	Lighting sourced from https://www.kichler.com/kichler/products/outdoor-lighting/outdoor-wall-lights/outdoor-wall-lights-no-arms/3000-k-led-outdoor-lantern-bkt/
	Light fitting sourced from https://hammertonstudio.com/products/arch-sconce-24-h/
	Lighting sourced from https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/#!/Aged-Bronze-Bell-Shaped-Dark-Sky-Outdoor-Wall-Lantern/p/116556105/category=12541418
	Lighting sourced from https://www.homedepot.com/p/Home-Decorators-Collection-1-Light-Champagne-Silver-Outdoor-Wall-Mount-Barn-Lantern-Sconce-22999/302006431
	Lighting sourced from https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/#!/Bronze-Outdoor-LED-Wall-Lantern-Sconce/p/50117847/category=12541418
	Lighting sourced from http://www.theopenboxshop.com/hampton-bay-lexington-collection-outdoor-rustic-bronze-led-medium-wall-lantern/

Appendix 9: Examples of Suitable Bollard Lighting

	Manufacturer	Model	Description
	DW Windsor	Pharola DS	Specifically designed as a 'dark sky compliant' light, this bollard produces zero light above the horizontal plane, and is available with 3000K warm white lighting. For more details, visit: https://www.dwwindsor.com/products/pharola/pharola-ds/
	GHM-Eclatec	Trek	Lighting head and module in die-cast aluminium; polyester powder coating, any colour available. Available in 3000k. For more details, visit: https://www.ghm-eclatec.com/products/lighting/bollards/trek-bollard
	GHM-Eclatec	Taiga	Lighting head and module in die-cast aluminium; polyester powder coating, any colour available. Available in 3000k. For more details, visit: https://www.ghm-eclatec.com/products/lighting/bollards/taiga-led-bollard
	BEGA	77237	Cast aluminium, LED 300k, directs beam downwards. For more details, visit: https://www.bega.com/en/products/led-garden-and-pathway-luminaires-for-the-private-sector-77237/

Appendix 10: General Management Options for Japanese Knotweed

General Japanese knotweed Control & Treatment Methods

Due to variations in soil type, topography, adjacent sensitivities, degree of Japanese knotweed infestation, and time and money available different control methods and combinations of various methods can be used.

Each method has advantages and disadvantages, but all controls require time and care and even after apparent control and there must be vigilant monitoring of the site for a period of time and care taken to not reinfect the site from other sources.

Currently there are four many by which Japanese knotweed can be controlled. These are:

- Chemical/ herbicide; long-term treatment with herbicides;
- Physical excavation and disposal at a licensed landfill site or
- Combined: Excavation, deep burial and/or bunding on site prior to treatment with herbicide.
- Biological controls – in the research phase for suitable and safe for release in the UK by the Centre for Agriculture and Biosciences International (CABI³),

Chemical/Herbicide Control

- The herbicide method used by Knotweed Control generally takes 3 years but this can vary due to many factors which are outlined in the introductory letter send on first contact with Knotweed Control.
- Knotweed Control uses in situ herbicide treatment of Japanese knotweed using a professional, aquatic approved glyphosate-based herbicide applied via stem injection or foliar spray
- Glyphosate is a systemic herbicide which is translocated into the rhizomes using the plants' own vascular system where it inhibits enzyme production weakening and over time kills the plant.
- Treatment can take place once the knotweed is large enough, green and actively growing, before the knotweed dies back in the autumn or is damaged by early frosts.
- Optimum treatment time for stem injection and foliar spray is late summer/ autumn avoiding flowering to protect pollinators.
- The herbicide will be fully active in about 7 days and continue to work for approximately up to 14 days therefore should be left undisturbed for this period
- There are many dormant nodes (growing points) on the rhizome which under suitable conditions can be activated. These nodes as well as deep, woody rhizomes can make knotweed treatment lengthy and unpredictable and whose dormancy can be broken by disturbance.

- If done incorrectly there is some evidence that shows herbicide treatment can deform subsequent years' growth, making future treatment harder, force knotweed rhizomes into dormancy for up to 20 years, or even make it can grow and spread more rapidly than if left undisturbed, all natural responses to the knotweed being "attacked".

Stem Injection Application

- Knotweed Control's preferred method is stem injection as it is very effective, highly targeted
- Stems need to be at least 8mm to stem inject therefore can only be used on larger plants.
- Injection can take place in a wide range of weather conditions but not when it is too wet or in slippery conditions underfoot.

Foliar Spray Application

- Foliar spray of herbicide is a good alternative where plants are small. It should take place in low wind conditions to reduce drift onto other plants and when there is no rain for 6 hours to make sure it is rainfast.
- People, pets and wildlife don't need be excluded from treated areas once the herbicide is dry but it is best keep out not to spread herbicide onto non target plants.

Factors Affecting the Success of Treatment

Treatment can only commence when:

- Japanese knotweed growing healthy, plants reach optimum size and weather conditions are suitable;
- Plants must be at least 1-1.5m height for foliar spray with full leaf cover and can only take place in dry calm conditions when there is no rain forecast for 6 hours to ensure absorption by the plant;
- Treatment must not take place when there is any frosts, drought conditions and before the plants die back in the autumn; and
- Stems need to be about 8mm for stem injection treatment and although less weather dependant, conditions must be safe for the operator.

The success of treatment is determined by a number of factors some of which are not always easy to predict or evident at the time of the survey. Variable factors include:

- The density, size of infestation and length of time site the is infected - established large plants can have large woody rhizomes which can extend horizontally 7m and vertically 3m. The larger the rhizome the longer the treatment required.
- The health of the plants - actively growing plants are more susceptible to the treatment. Stressed plants whether due to drought, poor soil or deep shade don't respond as well.

Acer Ecology

- The time of year - autumn is optimum treatment period when the plant growth is at its maximum growth
- Japanese knotweed has many dormant nodes (growing points) on the rhizome and if they are disturbed can be reactivated. These nodes make knotweed treatment lengthy and unpredictable.

Longer term success of Japanese knotweed control is also dependant on other factors:

- There is a high risk of re-infection if the original source of knotweed is left untreated e.g. on adjoining land. It is therefore highly recommended that clients consider liaising with adjacent landowners to ensure the whole area is brought under management.
- Fragments of rhizome as small as 0.7gram (pea sized) can grow into new plants so it must be ensured other site users follow a strict code of site hygiene with material, equipment and even footwear when moving around and on/ off site.

Explanation of the 7m Fencing and Herbicide Buffer Zone

- 7m is the average distance growth rhizomes underground from each plant therefore the standard distance used by both the Royal Institution of Chartered Surveyors (RICS) information paper on Japanese knotweed and in the Environment Agency's Managing Japanese knotweed on Development Sites: Code of Practice) and is used as an acceptable distance from which to not warrant risk.
- However, rhizomes generally extend less than 7m, but can also extend further depending on many factors including growing conditions, substrate, length on site on site etc.
- Vigilance and care is required when digging or disturbing during any ground works so not to spread any knotweed material therefore Knotweed Control suggests there should be no disturbance of the land within this buffer zone which could cause spread of the rhizome
- Where possible fencing should be erected with signage before any construction begins and throughout the treatment programme, and a herbicide treatment buffer zone can reduce the likelihood of spread.