



**Land Adjacent to Neath Abbey Business Park
Neath Abbey**

Preliminary Ecological Appraisal

April 2015

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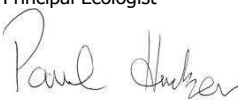
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Document Verification Table

Neath Abbey Business Park, Neath Abbey Preliminary Ecological Appraisal				
Revision	Date	Prepared by	Checked by	Verified by
1.0	07/04/2015	Daniel Seaward Ecologist 	Paul Hudson MCIEEM Principal Ecologist 	Rory Jones Ecologist 

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Executive Summary

Site Location	Acer Ecology Ltd were commissioned by Mr. Brian Calo to conduct a preliminary ecological appraisal of land adjacent to Neath Abbey Business Park, Neath Abbey, Neath-Port Talbot, SA10 7DR (Ordnance Survey Grid Reference centred at: SS 73344 97237). The site is located within the boundary of Neath Port Talbot Borough Council.
Development Proposals	All of the vegetation on site is proposed for clearance to facilitate the construction of an industrial site. No detailed plan of the proposed industrial site was available at the time of writing. A 7m ecological buffer zone will be retained between the site proposed for development and the Tennant canal.
Statutory and non-statutory nature designations	There are no statutory designated sites within 2km of the site. There are a number of non-statutory designated sites in the local area.
Impacts to habitats of value	No parts of the site are currently considered to be of international, national, regional, district, high local or local value for wildlife. No habitats on site are likely to be greater than site value. Whilst the loss of these habitats would be unlikely to have a significant impact outside of the local context of the site, it would nevertheless be desirable that the impacts be either minimised or appropriately mitigated where possible.
Impacts to protected and notable species	The proposed development could potentially have adverse impacts in varying degrees on a range of legally protected species including common reptiles, nesting birds, badger and bats. It is therefore considered essential that appropriate mitigation & compensation measures are set in place to avoid or minimise impacts to these species (see section 5.0).
Invasive Non-native Species	Japanese knotweed is present within the site.
Requirements for Additional Survey	None required.
Licensing Requirements	None required.
Recommendations	Appropriate mitigation and compensatory measures are recommended including: • Treatment of Japanese knotweed; • Timing of works for nesting birds, reptiles and common amphibians; • Compensatory planting of nesting habitat for nesting & foraging birds; • Installation of compensatory nest boxes; • Sensitive lighting strategy for foraging/ commuting bats; • Increase roosting habitat for bats; and • Good construction practice for badger. Details of mitigation are outlined in detail in Section 5.0.

1.0 Introduction

1.1 Brief

Acer Ecology Ltd were commissioned by Mr. Brian Calo to conduct a preliminary ecological appraisal of land adjacent to Neath Abbey Business Park, Neath Abbey, Neath-Port Talbot, SA10 7DR (Ordnance Survey Grid Reference centred at: SS 73344 97237). The site is located within the boundary of Neath Port Talbot County Borough Council. The location of the site is shown in Plan 1.

1.2 Site description

The site proposed for development lies immediately north of Neath Abbey Business Park, located on the southern fringe of the suburban area of Neath Abbey. The site predominantly comprises scrub-woodland with a scattering of semi-mature trees and an area of semi-improved grassland. In addition, stands of Japanese knotweed (*Fallopia japonica*) were recorded within the site. The site lies on flat land and is approximately 0.2ha in extent.

The southern and south-eastern boundaries of the site are formed by the neighbouring industrial unit, metal security fencing and a strip of dense scrub which continues on to the developed area of Neath Abbey Business Park. The north-eastern boundary is not demarcated by any such features and continues on to similar habitat to that recorded on site comprising dense scrub and unmanaged grassland. This habitat continues along the vegetated corridor of the Tennant canal which lies off-site, adjacent to the northern boundary of the site. A slip road leading from the A465 runs along the western boundary of the site.

1.3 Development proposals

All of the vegetation on site is proposed for clearance to facilitate the construction of an industrial site. No detailed plan of the proposed industrial site was available at the time of writing. It has been agreed prior to this current survey, with the Neath Port Talbot County Borough Council that a 7m ecological buffer zone be maintained between the site and the Tennant canal.

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;

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- A Phase 1 Habitat Survey of the site, extended to search for evidence of, and potential for, protected fauna; and
- 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 results of the survey;
- Provide an ecological evaluation of on-site habitats, including an assessment of the potential for protected species;
- Provide an assessment of the potential impacts of the development proposals on ecological receptors identified through the desk and field study;
- Provide an assessment of the potential ecological constraints to the proposals; and
- Provide recommendations for further survey, avoidance, mitigation and enhancement where appropriate.

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2.0 Methods

The survey was undertaken following standard methods as described in the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal 2012 guidelines and the Phase 1 Habitat Survey methodology (Joint Nature Conservation Committee, 2010). The methodology utilised for the survey work comprised a desk study, a habitat survey and a survey of protected of and notable species.

2.1 Desk study

Protected sites, habitats and species

Information on statutory nature conservation designated sites and protected species was obtained from the following sources:

Source	Data	Radius of search
South East Wales Biological Records Centre (SEWBRc)	Statutory and non-statutory nature conservation designated sites. Historic Phase 1 Habitat Survey Data JNCC (1992 – 96)	SSSI/ SAC/ SPA/ Ramsar – 2km. SAC (designated for bats) - 10km. SINCs - 1km. Phase 1 data - site boundary.
Local County Ecologist	SINCs	1km
NRW Map Info GIS Layer	Statutory nature conservation designated sites Ancient semi-natural woodland (ASNW)	SSSI/ SAC/ SPA/ Ramsar – 2km ¹ . SACs (designated for bats) – 10km. ASNW - 2km.

¹ The citations of all of the SSSIs 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

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Landscape context

The site and wider landscape was assessed and characterised through the use of aerial images, Ordnance Survey maps and SEWBRc habitat/ protected sites maps (see Appendix 5). The presence of off-site features and habitats which add to the ecological value within the wider area, for example ponds within 500m of the site, were identified. Where appropriate, such features were scoped into the detailed assessment of impacts presented in Section 4.0 below.

Planning authority

The Neath Port Talbot Planning portal² was consulted to determine if any previous survey information was available for the site or the immediate surroundings. The Neath Port Talbot County Borough Council Ecologist (Rebecca Sharp) was consulted for site-specific survey requirements, planning obligations relating to ecology and information for SINCs within 1km of the site.

Site History

A request was submitted to SEWBRc for access to the data collected from the Phase 1 habitat survey of Wales which was undertaken 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.

2.2 Field survey

2.2.1 Personnel

The field survey was undertaken in good weather on 19th March 2014 by Daniel Seaward³.

2.2.2 Vegetation and habitats

The vegetation and habitat types present within the predicted zone of influence⁴ were categorised and mapped in accordance with the standard 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. Following completion of the survey a colour coded habitat plan was digitised using Corel Draw 12 to show the extent and distribution of the different habitat types present within the site (Plan 2).

² <https://planning.npt.gov.uk/welcome.asp>

³ Daniel is employed with Acer Ecology and is an experienced botanical and protected species ecologist. He graduated with a degree in Zoology from Cardiff University and has 2 years postgraduate experience. He has undertaken extensive training in protected species assessment, phase 1 habitat surveys and botanical surveying.

⁴ Zone of influence: the area that may be affected by the activities associated with the development.

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The presence of invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act (1981), as amended, such as Himalayan balsam (*Impatiens glandulifera*) and Japanese knotweed was also noted during the survey.

2.2.3 Protected and notable species

During the survey, emphasis was placed on searching for evidence of, and habitats with potential to support protected or notable species, especially species meeting any of the following criteria:

- Listed under the Conservation of Habitats and Species Regulations 2010 (as amended), the Wildlife and Countryside Act 1981 (as amended);
- Listed under the Natural Environment and Rural Communities (NERC) Act 2006 Section 42 Habitats or Species of Principle Importance for Conservation of Biological Diversity in Wales;
- UK Biodiversity Action Plan (UK BAP) priority species or Local BAP (LBAP) priority species;
- Nationally rare or nationally scarce species; and
- Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber Lists)

Specific survey methods are described below as appropriate.

Birds

Habitats were assessed for their potential to support protected birds species, UK and Local Biodiversity Action Plan species, and breeding birds. All bird species were noted whether flying overhead, singing or feeding and the suitability of the habitat to support each species in terms of feeding, nesting and roosting was assessed.

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

Bats - inspection and assessment of tree roost potential

A ground-level visual inspection of the trees was undertaken on to search for bats and evidence of bats (i.e. droppings, feeding remains, urine staining, scratch marks). All aspects of the trees were observed with the intention of trying to detect the presence of any of the 17 'potential roost features'⁵ identified within the Bat Tree Habitat Key (Andrews 2013).

⁵ Woodpecker-holes; knot-holes; flush-cuts; tear-outs; double-leaders; wounds & cankers; butt-rot; hazard-beams; frost-cracks; subsidence, shearing and helical-splits; lightning strike; impact shatters; desiccation fissures; transverse snaps; lifting bark; unions; and ivy.

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The trees were subsequently appraised for their potential to support roosting and hibernating bats with reference to best practice guidance⁶. The trees were assigned to the following categories according to best practice guidance:

- Known or Confirmed Roost - signs of bats (droppings, feeding remains, urine staining, and scratch marks) or actual bats recorded; or previous records of bats in tree;
- High (Category 1*) – trees with multiple, highly suitable features capable of supporting large roosts;
- Medium (Category 1) – a tree with definite bat potential; fewer features than category 1* or potential for single bats;
- Low (Category 2) – No obvious potential, although tree of size and age that elevated surveys may result in cracks/ crevices being found; or tree has some features which have limited potential to support bats; or
- Nil (Category 3) – no potential to support bats.

Dormouse

The scrub woodland was assessed for its suitability to support dormice (*Muscardinus avellanarius*) with reference to guidance such as The Dormouse Conservation Handbook (Bright, Morris & Mitchell-Jones, 2006). The structure and composition of the scrub woodland within the site was 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) honeysuckle (*Lonicera periclymenum*), common hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), bramble (*Rubus fruticosus* agg.) and sycamore (*Acer pseudoplatanus*). In addition, connectivity to other areas of suitable habitat in the wider landscape, such as hedgerows and woodland, was also assessed.

A search for hazelnuts which had been opened by dormouse was undertaken to aid in the determination of their presence.

A full nest tube/ box survey was not undertaken as this was beyond the scope of the assessment.

Great crested newts

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

⁶ Hundt, L. (2012) Bat Surveys: Guide to Good Practice. 2nd Edition. Bat Conservation Trust

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Ordnance Survey maps and aerial images of the land surrounding the site were consulted to determine if any ponds are present in the vicinity of the site. There do not appear to be any ponds present within 500m of the site.

Otters

A preliminary assessment for signs of otter (*Lutra lutra*) was undertaken following the advice provided by Strachan & Jefferies (1996) and Chanin (2003). Tennant canal immediately to the north was searched for evidence of otter activity within 10m of the bank. Field signs of otter were recorded, if present, including spraints (faeces showing food remains), footprints, feeding remains, couches (above ground resting sites normally in thick vegetation cover), as well as potential or actual breeding sites and resting places (i.e. holts) which are usually found under roots of bank side trees or in rock piles. A full otter survey was not undertaken.

Water Voles

An assessment of the Tennant canal adjacent to the site was undertaken to determine their suitability to support water voles following methods set out in the Water Vole Conservation Handbook (Strachan & Moorhouse, 2006). In addition, a search for evidence of activity was undertaken, including droppings, latrines, burrows, footprints and feeding lawns, of any areas considered suitable. A full water vole survey was not undertaken as this was beyond the scope of this assessment.

Badgers

The site was searched for features likely to contain badger (*Meles meles*) setts (e.g. earth embankments, wooded copses etc). Where present the location of badger signs such as runs, dung pits, prints, hair and foraging snuffle holes were recorded. A full badger survey was not undertaken as this was beyond the scope of this assessment.

Reptiles

An assessment of the suitability of onsite habitats to support reptiles was made based upon the presence of suitable habitats such as structurally diverse habitats, hedgerows, scrub, rough grassland, wood piles, 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) and the Reptile Management Handbook (Edgar, Foster & Baker 2011). The following factors were taken in to account: insolation (sun exposure); slope (south facing) aspect; topography; habitat structure; surface geology; connectivity to good quality

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habitat; habitat size; prey abundance; refuge opportunity; hibernation potential; disturbance; egg-laying potential (grass snake); public pressure; % shade and grazing/ mowing regime.

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

Other species

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

2.3 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* (IEEM 2006). 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 3.

2.4 Constraints and limitations

The present survey was undertaken outside of the optimal survey period for certain species of flora and fauna, with many species having died back or having become inconspicuous at the time of survey. The survey can be considered as providing a reasonable, though not exhaustive or full plant list. This survey noted the habitat types on the site, and the dominant vegetation at the time of the survey which is likely to be constant and a fair reflection of the habitat quality present.

3.0 Results

3.1 Desk study

3.1.1 Statutory nature conservation designated sites

The protected species plan provided by SEWBrEC and the NRW Map Info GIS Layer shows that there are no statutory sites designated for their conservation value within a 2km search radius of the site.

No Special Areas of Conservation (SAC) that have been specially designated for bats lie within 10km of the site.

3.1.2 Non-statutory nature conservation designated sites

Neath Port Talbot County Borough Council have not yet adopted any Sites of Importance for Nature Conservation (SINCs), however are in the process of identifying them for their Local Development Plan. SEWBrEC have identified a number of sites which meet SINC criteria within 1km of the site proposed for development, however no specific information was provided for these sites. A request for detailed information from the Local County Ecologist has been submitted, although no response has been received at the time of writing. These include the following:

- The Tennant canal (meets SINC criteria) located approximately 7m to the north of the site proposed for development. No detailed information was provided about this site by SEWBrEC. However, after consultation with the Neath Port Talbot Biodiversity it is understood that the Tennant canal meets SINC criteria under H13 of the Wildlife Sites Guidance Wales (2008);
- Pentrefrynnon (meets SINC criteria) located approximately 100m to the south-west of the site;
- Neath estuary (meets SINC criteria) located approximately 264m to the south of the site;
- Gwlyptir mynachlof nedd (meets SINC criteria) located approximately 580m to the east of the site;
- Coed bach a'r cwm (meets SINC criteria) located approximately 980m to the north-east of the site; and
- Dyffryn Woods ASNW (meets SINC criteria) located approximately 980m to the north-west of the site.

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3.1.3 Ancient woodland

There are two areas of Ancient Semi-Natural Woodland (ASNW) located within 1km of the site. These are identified and described below:

- An unnamed area of ASNW lies approximately 400m to the north of the site;
- An unnamed area of ASNW lies approximately 580m to the north of the site; and
- An area of ASNW known as Dyffryn Woods (mentioned above) lies approximately 980m to the north-west of the site;

3.1.3 Landscape context

The site is situated adjacent to an industrial estate and the Tennant canal. The wider area lying beyond the western, southern and eastern boundaries comprise industrial units and urban conurbations. The wider area beyond the Tennant canal to the north comprises further urban conurbations and the suburban area of Neath Abbey. Although the site is somewhat isolated from natural habitat, the vegetated corridor of the Tennant canal connects the site with natural habitat in the wider area which features areas of ASNW and the River Neath. However, it should be noted that the vegetated corridor/ verges of the Tennant are interrupted by roads and bridges along its length.

3.1.4 Site history

The site proposed for development was unclassified during the previous Phase 1 habitat survey of Wales undertaken by the former Nature Conservancy Council (1992-1996).

3.2 Habitats and vegetation

The results of the general survey of the habitats and vegetation are shown on Plan 2. A botanical species list is given in Appendix 2.

3.2.1 Summary of habitats present within the site

The site consists of seven elements which are described in detail below. These comprise:

- Scattered broadleaved trees;
- Scrub woodland;
- Semi-improved grassland;
- Amenity grassland;
- Disturbed ground;
- Japanese knotweed; and
- Species-poor intact hedge.

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3.2.2 Notable plant species

Data trawl results

SEWBReC returned no records of protected or rare plants from within 2km of the site proposed for development.

No rare species present

No plant species were recorded on the site which individually by themselves are considered to be either of national, regional or local significance.

3.2.2 Scattered broadleaved trees (Target notes 1, 2, 3 & 4)

There are four stands of scattered semi-mature trees within the development boundary. These stands have been target noted on Plan 2: Habitats and vegetation and described below. All of the trees were individually assessed for their suitability to support roosting bats in section 3.3 below.

The first stand of trees (TN1) located towards the west of the site comprises six semi-mature trees with a diameter at breast height (DBH) of no more than 30cm. Species recorded included alder (*Alnus glutinosa*), sycamore (*Acer pseudoplatanus*) and an unidentified dead tree.

The second stand of trees (TN2) located towards the north of the site comprises five semi-mature trees with a DBH of no more than 20cm. Species recorded included sycamore and willow (*Salix sp.*).

The third stand of trees (TN3) located towards the south of the site comprises a line of eight semi-mature sycamore trees with a DBH of no more than 20cm.

The fourth stand of trees (TN4) located towards the south-east of the site comprises three semi mature trees with a DBH of no more than 20cm. Species recorded include sycamore and willow. The stand is situated on a bank, covered with ivy (*Hedera helix*) and bramble (*Rubus fruticosus* agg).

3.2.3 Scrub woodland (Target note 5)

The scrub woodland (TN5) forms the majority of the site proposed for clearance. The scrub canopy is dominated by young trees with a DBH of no more than 10cm. The composition of the scrub canopy is a fairly even mix of a number of species such as ash (*Fraxinus excelsior*), hazel, hawthorn, elder (*Sambucus nigra*), pedunculate oak (*Quercus robur*) and willow. The understorey is dominated by dense stands of bramble with lesser amounts of gorse (*Ulex europaeus*) and buddleia (*Buddleja davidii*). Other species recorded in the understorey include ivy, hart's tongue fern (*Asplenium scolopendrium*), wild strawberry (*Fragaria vesca*), cleavers

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(*Galium aparine*) and wood sedge (*Carex sylvatica*). In addition, there are multiple footpaths crossing through the scrub woodland.

3.2.4 Semi-improved grassland (Target note 6)

There is an area of semi-improved grassland (TN6) located towards the east of the site. The sward is unmanaged and dominated by Yorkshire fog (*Holcus lanatus*). Other herbaceous species recorded include common nettle (*Urtica dioica*), dandelion (*Taraxacum officinale* agg), ivy, bramble, ragwort (*Senecio jacobaea*), creeping buttercup (*Ranunculus repens*), cleavers, broad-leaved dock (*Rumex obtusifolius*), creeping cinquefoil (*Potentilla reptans*), hogweed (*Heracleum sphondylium*), ribwort plantain (*Plantago lanceolata*), wavy bitter-cress (*Cardamine flexuosa*), cow parsley (*Anthriscus sylvestris*), dovesfoot crane's-bill (*Geranium molle*), common field speedwell (*Veronica persica*), red dead nettle (*Lamium purpureum*), germander speedwell (*Veronica chamaedrys*) and creeping thistle (*Cirsium arvense*). In addition, the southern part of this habitat lies on an earthen bank around 1m in height.

3.2.5 Amenity grassland (Target note 7)

There is an area of amenity grassland (TN7) located towards the south-west of the site. The sward is dominated by perennial rye grass (*Lolium perenne*) along with Yorkshire fog and red fescue (*Festuca rubra*). The sward is regularly mown with a very short height of no more than 6cm. Other herbaceous species recorded include daisy (*Bellis perennis*), ribwort plantain, creeping buttercup, dandelion, common mouse ear (*Cerastium fontanum*), common chickweed (*Stellaria media*), white clover (*Trifolium repens*), dovesfoot cranes-bill, creeping thistle and broadleaved dock.

3.2.6 Disturbed ground (Target notes 8 & 9)

There is an area of disturbed ground (TN8) located to the south of the site. This habitat is mainly comprised of gravel with small patches of vegetation. Species recorded include perennial rye grass, rosebay willowherb (*Chamerion angustifolium*), ragwort, wavy bittercress, ribwort plantain, colts foot (*Tussilago farfara*), dandelion, dovesfoot cranes-bill and creeping thistle.

There is an area of cleared scrub within the site (TN9) comprising dead scrub material. Some ground vegetation was recorded such as broad-leaved dock and bramble.

3.2.7 Japanese knotweed (Target notes 10 & 11)

There are multiple stands of Japanese knotweed within the development boundary. These stands have been target noted on Plan 2: Habitats and vegetation and described below.

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There is a large, dense stand of Japanese knotweed following the northern boundary of the site (TN10). The stand had died back at the time of survey, due to the season when the survey was conducted, but was clearly identifiable. There is a smaller stand of knotweed (TN11) located towards the west of the site.

3.2.8 Species-poor intact hedge (Target note 12)

There is a hedgerow running along part of the western boundary of the site (TN12). The hedgerow is dominated by bramble with lesser amounts of garden privet (*Ligustrum ovalifolium*). Two young sycamore shrubs were also recorded within the hedgerow. The understorey of the hedge mainly comprised ivy along with creeping buttercup and dandelion.

3.2.9 Off-site habitats (Target notes 13, 14, 15 & 16)

A number of habitats were recorded off-site but due to the close proximity have been included in Plan 2: Habitats and vegetation.

There is a strip of dense scrub (TN13) lying between two metal security fences towards the south-east of the site. Species recorded include sycamore and willow.

The Tennant canal (TN14) is situated north of the site. Common reed (*Phragmites australis*) lines the banks of the canal. There is a wide strip of amenity grassland (TN15) which runs alongside the canal forming an informal footpath.

There is also a stand of three semi-mature sycamore trees (TN16) towards the north of the site.

3.3 Protected and Notable Species

3.3.1 Birds

Data trawl results

SEWBRc provided numerous records for birds within 2km of the site. The following table shows nesting birds associated with habitats present on site and their conservation status:

Species	Schedule 1	NERC S42	UK BAP	LBAP	Red list
Dunnoch <i>Prunella modularis</i>		Yes	Yes		
Linnet <i>Linaria cannabina</i>			Yes		Yes
Bullfinch <i>Pyrrhula pyrrhula</i>		Yes	Yes	Yes	

Field survey results

A moderate number of bird species were recorded on site such as, robin (*Erithacus rubecula*), blackbird (*Turdus merula*), magpie (*Pica pica*), crow (*Corvus corone*), greenfinch (*Chloris*

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chloris), wren (*Troglodytes troglodytes*), great tit (*Parus major*) and blue tit (*Cyanistes caeruleus*).

All bird activity on site was recorded in the scattered trees (TN1, 2, 3, 4) and scrub woodland (TN5). No nests or signs of nesting behaviour were recorded on site.

3.3.2 Bats

Data trawl results

The data search returned a total of three confirmed bat roosts within 2km of the site. These were as follows:

- A count of 28 unspecified chiroptera, recorded in 1993 at SS7297, approximately 882m to the north-west;
- An unspecified number of unspecified chiroptera, recorded in 2002 at SS729981, approximately 994m to the north; and
- An unspecified number of unspecified chiroptera, recorded in 2002 at SS7497, approximately 1.18km to the east.

In addition, the search returned a number of records of bats either foraging/ commuting, or specific details were not provided. Species recorded include noctule (*Nyctalus noctula*), common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*).

Field survey results

The majority of the scattered semi-mature trees recorded on site have negligible potential to support roosting bats due to an absence of roosting features such as holes, cracks, crevices or a dense coverage of mature ivy. An assessment was made of the semi-mature trees with potential roosting features which could be used by roosting bats. The trees are described briefly in the table below, together with any evidence of bat occupation observed, and an assessment of their likely use by roosting bats. The trees and their value for bats are shown on Plan 3: Tree Roost Potential.

No.	Description	Evidence of roosting bats	Potential Roost Features (PRF)	Potential for Roosting Bats
T1	Alder; Semi-Mature; 30cm DBH; Single stemmed and in good condition; Moderately dense coverage of ivy.	None	Moderately dense coverage of ivy	Low (Category 2)
T2	Alder; Semi-Mature; 24cm DBH; Single stemmed and in good condition; Moderately dense coverage of ivy.	None	Moderately dense coverage of ivy	Low (Category 2)
T3	Sycamore; Semi-Mature; 20cm DBH;	None	Moderate	Low

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No.	Description	Evidence of roosting bats	Potential Roost Features (PRF)	Potential for Roosting Bats
	Single stemmed with a moderate coverage of ivy		coverage of ivy	(Category 2)
DBH – Diameter at Breast Height				

Three of the trees within the stand (TN1) supported a moderately dense coverage of ivy, however the ivy was pressed to the bark of the tree. In addition, the stems of the ivy were no thicker than 30mm. Typically the stems should be a minimum of 50 mm diameter (ideally some even larger) and have sections that have formed pockets into which bats can squeeze into or crawl up and under to rest against the bark of the mature tree (G. Billington 2011, *pers comm.*, September). Therefore the trees are assessed as having low (Category 2) potential to support roosting bats.

The scattered tree and scrub woodland habitats provide potential foraging and commuting habitat for bats.

3.3.3 Dormouse

Data trawl results

SEWBrEC did not return any published records of dormouse from within 2km of the site.

Field survey results

No dormice or signs of their presence were recorded on site. A small amount of young hazel was recorded within the scrub woodland (TN5). A search for hazelnuts opened by dormice was undertaken but all of the hazelnuts were characteristic of being opened by either birds or field vole. The fairly dense structure of the scrub woodland and scattered trees, with a dense understorey of bramble is considered to be suitable for dormouse. In addition, the site supported a number of known food-plants of dormouse such as, sycamore, bramble, hazel and hawthorn.

However, the site is small in size, fairly young, and isolated from areas of mature woodland/hedgerows and other optimal habitat in the wider area. Also, there are no records of dormice within 2km of the site. Furthermore, the LBAP for Neath Port Talbot states the only known population of dormice in the county exists on the border with Bridgend to the east. Although the site appears superficially suitable for supporting dormice, their presence on site is considered to be highly unlikely. This species is not discussed further in this report.

3.3.4 Great Crested Newt

Data trawl results

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SEWBRc did not return any records of great crested newt from within 2km of the site. The only other amphibian records are of common frog (*Rana temporaria*), 551m to the south-west of the site. In addition, the Neath Port Talbot LBAP states that the only two confirmed sites for great crested newt are in Margam Park and Llandarcy, which lie over 2km from the site.

Field survey results

No direct observation or evidence of great crested newt was recorded on site although a targeted survey was not undertaken for this species. In addition, the current survey was undertaken outside of the active season for great crested newt.

There are no ponds within 500m of the site proposed for development. However, the Tennant canal is located immediately to the north of the site. A Habitat Suitability Index (HSI) was not performed as it is only suitable for ponds. The banks of the canal are vegetated, which are suitable for great crested newts to lay their eggs, however, the Tennant canal is considered to have low suitability to support breeding great crested newt for the following reasons:

- The canal is stocked with freshwater fish such as pike, bream, roach, carp and tench. In addition, the section of the canal adjacent to the site is particularly rich with fish (*Pers. comm.* Mike Doyle, Skewen Angling Club). Fish will predate adult and larval stage newt; and
- The canal supports waterfowl which will also predate adult great crested newt and larval stage newts directly or indirectly through grazing on vegetation.

The scrub woodland (TN5) and the unmanaged, semi-improved grassland (TN6) on site provide suitable habitat for active terrestrial-phase great crested newts as well as some hibernation potential. However, there are no records of great crested newt within 2km of the site and there are no suitable water bodies for breeding newts within 500m of the site. Furthermore, the site is isolated and surrounded by urban and industrial conurbations with the only connecting habitat, being the tenant canal to the north, which as discussed above is likely to be unsuitable for great crested newt. It should be noted that the vegetated verges of the canal are also isolated from the wider area, as they are intersected by bridges and roads to the east and west. The probability of great crested newts occurring on site is considered to be very low and so this species is not discussed further in this report.

3.3.5 **Reptiles**

Data trawl results

There are no records of reptiles within 2km of the site (SEWBRc data 2015).

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Field survey results

No incidental sightings of reptiles were recorded on site, although the survey was conducted during the hibernation period for reptiles. However, there are several habitats on site suitable for reptiles which are identified and described below:

- The unmanaged, semi-improved grassland (TN6) provides somewhat suitable foraging habitat for reptiles, although the vegetation was not very mature providing poor protective cover;
- The junction between the scrub (TN5) and disturbed ground (TN8) provides suitable reptile habitat. The scrub provides protective cover for reptiles whilst the disturbed ground provides basking opportunities;
- The junction between the scrub (TN5) and amenity grassland (TN7) provides suitable reptile habitat. The scrub provides protective cover for reptiles whilst the amenity grassland provides basking opportunities; and
- The junction around the clearing (TN9) and scrub (TN5) also provides suitable reptile habitat. The scrub provides protective cover whilst the clearing allows reptiles to bask.

The site is almost entirely surrounded by hardstanding and urban conurbations which are unsuitable for reptiles. However, the site lies adjacent to the vegetated verges of the Tennant canal comprising scrub and rough grassland located to the north-east of the site, which is considered to be suitable reptile habitat. It should be noted that the vegetated verges are isolated from the wider area as they are intersected by roads and bridges to the east and west.

3.3.6 **Badgers**

Data trawl results

The data search returned a total of one badger record within 2km of the site (SEWBRc data 2015). The record is of an individual recorded in 2003 at SS7296, approximately 1.19m to the south-west.

Field survey results

No setts or signs of badger were recorded on site although a targeted survey of this species was not undertaken. The scrub woodland (TN5) and semi-improved grassland (TN6) provides suitable foraging habitat for badger.

3.3.7 Otter

Data trawl results

SEWBRc returned numerous records of otter within 2km of the site, although there are no records in the immediate vicinity (i.e. within 500m) of the site itself. SEWBRc returned a total of 14 records of otter. 12 of the records are from the River Clydach, recorded during the 2002 Neath Port Talbot Otter & Watercourse Survey, the closest of which lies 545m to the east of the site. The remaining two records include:

- A spraint recorded on the River Neath in 2002 at SS74539695, approximately 1.22km to the east of the site; and
- An individual recorded in 2012 at SS7478397221, approximately 1.43km to the east of the site.

Field survey results

No evidence of otter was found on site although a targeted survey for this species was not undertaken. However, the site is small and was searched thoroughly. The Tennant canal, north of the site (TN14) provides potential foraging/ commuting habitat for otter, which are known to occur in the wider area (SEWBRc data 2015). The canal is stocked with fish (*Pers. comm.* Mike Doyle, Skewen Angling Club) providing prey for otter. The stretch of canal surveyed supports no mature overhanging trees which would be suitable for otters to construct their holts. Otter are unlikely to create their couches on site due to lack of suitable areas of dense vegetation or cavities amongst tree roots. Furthermore, the site is crossed by footpaths and is therefore open to high levels of disturbance by humans (e.g. dog walkers) and industrial activity from the adjacent industrial estate, which would deter otters from using the site. The probability of otter using the site proposed for development is considered to be very low and so this species is not discussed further in this report.

3.3.8 Water Vole

Data trawl results

SEWBRc did not return any records of water vole from within 2km of the site.

Field survey results

No water voles, or signs of water vole were recorded along the banks of the stretch of the Tennant canal surveyed. The banks appeared to be somewhat suitable for water vole due to the presence of common reed providing food and shelter. However, there are records of water vole in the wider area and Tennant canal, however as stated in the LBAP for Neath Port Talbot,

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the Tennant canal was formerly a key site for this species, but high predation by mink (*Mustela lutreola*) has resulted in no significant populations being recorded in recent years. Due to lack of evidence of water vole and the implementation of a 7m ecological buffer between the site and the canal, the proposed development is highly unlikely to have a significant effect on water vole. This species is not discussed further in this report.

4.0 Ecological evaluation, legislation and assessment of development impacts

The ecological value of the in-situ habitats and the potential presence of protected species is discussed in this section, along with a summary of relevant legislation and planning policy relating to habitats and species. Potential impacts arising from the proposed development upon protected sites, in-situ habitats and protected or notable species are identified including both direct and indirect impacts, and those associated with construction and operational stages.

4.1 Statutory and non-statutory designated sites

4.1.1 Statutory designated sites

There are no statutory designated sites within 2km of the site proposed for development.

4.1.2 Non-statutory designated sites – SINCs (meeting SINC criteria) & ASNW

Legislation & Policy

SINC's are one of 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 (2014)* and *Technical Advice Note (Wales) 5: Nature Conservation & Planning*.

Neath Port Talbot County Borough Council have not yet adopted any Sites of Importance for Nature Conservation (SINC's), however are in the process of identifying them for their Local Development Plan. SEWBRc have identified a number of sites which meet SINC criteria within 1km of the site proposed for development, however no specific information was provided for these sites. A request for detailed information from the Local County Ecologist has been submitted, no response has been received at the time of writing.

4.1.2.1 Tennant canal (meets SINC criteria)

Assessment of ecological value

The Tennant canal is designated under H13 of the Wildlife Sites Guidance Wales (2008). The canal has potential to support otter. In addition, the canal is known to support foraging and commuting common and soprano pipistrelle bats (SEWBRc data 2015).

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Assessment of potential development impacts

The proposed development will have no direct impact upon the Tennant canal. In addition, a 7m ecological buffer between the site and the canal has been agreed with the council to avoid negative impacts.

The probability of otter using the site proposed for development is considered to be very low. Negative impacts to otter are therefore unlikely to arise as a result of the proposed development.

The clearance of the site will involve the removal of highly invasive Japanese knotweed. If the Japanese knotweed is not cleared carefully and sensibly, it may spread on to the banks of the canal, and further downstream in to the wider landscape. Recommendations for appropriate removal of Japanese knotweed are provided in section 5.0 below.

Potential development impacts to bats are discussed in section 4.3 below.

4.1.2.2 Pentreffynnon (meets SINC criteria) & Neath Estuary (meets SINC criteria)

Assessment of ecological value

A request for site specific information has been submitted to the Local County Ecologist, a response has not been received at the time of writing. However, SEWBRc returned records of protected and priority species from these areas associated with habitats on site, including common frog (Pentreffynnon) and dunnoek (Neath estuary).

Assessment of potential development impacts

The proposed development will have no direct impact upon the sites themselves. However, the clearance of the site will involve the removal of highly invasive Japanese knotweed. If the Japanese knotweed is not cleared carefully and sensibly, it may spread on to the banks of the Tennant canal which connects to the Neath estuary and Pentreffynnon. Recommendations for appropriate removal of Japanese knotweed are provided in section 5.0 below.

The clearance of the vegetation on site will result in the loss of nesting and foraging habitat for dunnoek (S42; UKBAP) which may commute between the site and Neath Estuary. Recommendations to minimise the impacts to this species are included in section 5.0.

Direct negative impacts to common frog residing in Pentreffynnon are unlikely to occur. However, as the two sites are well connected by the Tennant canal, individuals from Pentreffynnon may disperse on to the site proposed for development. Therefore if the vegetation on site is not cleared under precautionary methods, works may result in the accidental killing or injury of common frogs and other common amphibians. Recommendations to minimise the impacts to amphibians are included in section 5.0.

4.1.2.3 **Dyffryn Woods ASNW (meets SINC criteria)**

Assessment of ecological value

A request for site specific information has been submitted to the Local County Ecologist, a response has not been received at the time of writing. SEWBRc did not return any records of priority or protected species from this site.

Assessment of potential development impacts

The development will have no direct negative impacts upon Dyffryn woods. Due to the distance and lack of ecological connectivity between the two sites, no indirect negative impacts upon the site or species residing within it are envisaged to occur.

4.1.2.4 **Gwlyptir mynachlog nedd (meets SINC criteria)**

Assessment of ecological value

A request for site specific information has been submitted to the Local County Ecologist, a response has not been received at the time of writing. In addition, SEWBRc did not return any records of priority or protected species from this site.

Assessment of potential development impacts

The development will have no direct negative impacts upon Gwlyptir mynachlog nedd. The Tennant canal is river fed and flows from east to west. Therefore the clearance of the Japanese knotweed on site is unlikely to result it spreading upstream to Gwlyptir mynachlog nedd.

4.1.2.5 **Coed bach a'r cwm (meets SINC criteria)**

Assessment of ecological value

A request for site specific information has been submitted to the Local County Ecologist, a response has not been received at the time of writing. SEWBRc returned records of otter and white throated dipper (*Cinclus cinclus*) from this area.

Assessment of potential development impacts

The development will have no direct impacts upon coed bach a'r cwm. The site proposed for development is not directly connected to coed bach a'r cwm via the Tennant canal and therefore for clearance of the Japanese knotweed on site will not spread to coed bach a'r cwm.

The site proposed for development and adjacent stretch of canal provides no suitable nesting habitat for white throated dipper. In addition, the probability of otter using the site proposed for development is considered to be very low. Negative impacts to otter potentially commuting

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from coed bach a'r cwm are therefore unlikely to arise as a result of the proposed development.

4.1.2.6 **Unnamed areas of ASNW**

Legislation/ Policy

The UK is a sparsely wooded country: 11.5% of Great Britain is covered with trees. Only 1.2% of GB is ancient semi-natural woodland, a valuable and irreplaceable natural resource. Ancient semi-natural woodland, and plantations on ancient woodland sites, are a priority for conservation.

Assessment of potential development impacts

Due to the distance and lack of ecological connectivity between the site proposed for development and the two areas of ASNW, located 400m and 580m to the north of the site. The proposed works are unlikely to result in negative impacts to the two areas of ASNW. In addition, SEWBRc did not return any records of protected or priority species from these areas.

4.2 **Assessment of ecological value of on-site habitats**

Priority habitats

None of the habitats of the site qualify as 'Priority Habitats' of the UK Biodiversity Action Plan (Biodiversity Reporting & Information Group, 2007) or listed in Section 42 as 'habitats of principal importance for conservation of biological diversity in Wales' (NERC Act, 2006; Wales Biodiversity Partnership 2007). In addition, none of the habitats on site are priority habitats on the Neath Port Talbot Local Biodiversity Action Plan (LBAP).

However, the habitats on site have varying degrees of potential to support protected and priority species such as nesting birds, reptiles, badger and foraging/ commuting bats. The habitats on site are therefore assessed as having site value for wildlife. The assessment of the ecological impact of the development upon each of these species is presented in section 4.4 below.

Invasive species

The stands of Japanese knotweed recorded on site (TN10 & 11) are listed under Schedule 9 of the Wildlife and Countryside Act (1981), as amended.

The proposed development could potentially result in the spread of Japanese knotweed through the accidental distribution of soils containing root fragments or rhizomes during earthworks and haulage etc. The Wildlife and Countryside Act 1981 specifically prohibits the reckless or deliberate spreading of this species, and appropriate measures are therefore

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required to minimise the risk of its spread during any works, and to achieve its eradication wherever possible. Recommendations are given in section 5.0 below.

4.3 Protected and notable species

4.3.1 Birds

Assessment of ecological value of site for birds

The stands of scattered semi-mature trees (TN1, 2, 3 & 4) and scrub woodland (TN5) recorded on site provide nesting and foraging opportunities for tree and scrub-nesting birds such as those recorded on site and in the wider area including linnet (NERC S42; UKBAP; Red list), dunnock (NERC S42; UKBAP), song thrush (NERC S42; UKBAP; Red list), bullfinch (NERC S42), crow, wood pigeon, great tit, goldfinch, robin and blackbird.

The scattered trees and scrub off-site, adjacent to the north-eastern and southern boundaries also provide nesting and foraging opportunities for scrub and tree nesting birds.

Legislation

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 such time as the nest is abandoned and the young have fledged and become independent. Particularly rare species such as barn owls are listed on Schedule 1, which gives them extra levels of protection to include protection from disturbance whilst nest building; or near a nest with eggs or young, or disturbing the dependant young of such a bird. Following recent revisions, fifty-nine species are listed on the UK BAP.

Assessment of potential development impacts on birds

The loss of the scattered semi-mature trees and scrub woodland will result in the loss of potential nesting habitat for a range of tree and scrub nesting species recorded on site and in the wider area (SEWBRc data 2015). Furthermore, linnet, dunnock, song thrush and bullfinch are considered to be priority species, which have been recorded in the local area. Recommendations to avoid destruction or disturbance of nests are included in Section 5.0. In addition, loss of the habitats on site should be compensated for to achieve no net loss of nesting/ foraging habitat for priority species.

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4.3.2 Bats

Potential tree roosts

The three semi-mature trees, labelled 'T1, T2 & T3' on Plan 3: Tree Roost Potential have been assessed as having low (Category 2) potential to support roosting bats.

Potential foraging/ commuting habitat

The scrub woodland edge and scattered trees within the site have potential to support foraging bats and contribute to linear habitat features, extending beyond the site boundary, which could be used by commuting bats.

Legislation

All species of bats and their roosting sites are afforded full protection under both UK and European legislation and are designated as 'European protected species'. Some species, such as pipistrelle bats (*Pipistrellus* sp) remain relatively common and widespread in the UK, while others, such as greater horseshoe bats (*Rhinolophus ferrumequinum*), have an extremely restricted distribution. Seven of the UK species of bat (soprano pipistrelle, barbastelle, Bechstein's, noctule, brown long-eared, lesser horseshoe and greater horseshoe bats) have been listed on the UK Biodiversity Action Plans (2007) as conservation priorities. These species, in addition to common pipistrelle are also listed as species of principal importance for the conservation of biodiversity in Wales under the Natural Environment and Rural Communities (NERC) Act 2006. In addition, the Neath Port Talbot LBAP aims to "*Protect all bat species from harm, disturbance or loss from sites in Neath Port Talbot*".

Assessment of development impacts of proposed development on bats

The felling of 'T1, T2 & T3' will result in the loss of potential roosting habitat for bats, and therefore carries a risk of committing an offence. Although, the trees are assessed as having low (Category 2) potential for roosting bats, recommendations to avoid impacts to roosting bats are presented in Section 5.0 below.

The clearing of the scrub woodland and scattered trees will result in the loss of potential foraging/ commuting habitat for bats. Clearance of this habitat can not be mitigated, however compensatory measures are recommended in Section 5.0 to minimise the loss of foraging/ commuting habitat for bats.

The construction of the industrial units may result in light spilling on to the adjacent habitats and disturbing foraging and commuting bats. A sensitive lighting strategy must be incorporated in to the design of the buildings and units, detailed recommendations are provided in section 5.0.

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4.3.3 Badgers

Assessment of ecological value of site for badgers

Badgers are highly mobile and will readily cross roads and therefore the site could be used occasionally by foraging or commuting badger. The scrub woodland (TN5) and semi-improved grassland (TN6) provides foraging opportunities for badger

Legislation

Badgers (*Meles meles*) are protected in Wales 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. Badgers remain comparatively widespread and common throughout South Wales.

Assessment of development impacts of proposed development on badgers

The clearance of the vegetation on site will result in the loss of foraging habitat for badger. The likelihood of encountering resident badger on site is considered highly unlikely however, they may pass through occasionally when foraging or commuting, as badgers are nocturnal, the risk of encountering badgers on site during the works (which will take place during daylight hours) is considered to be negligible. However certain construction methods are recommended in Section 5.0 to ensure no badgers moving through the site are injured during the construction phase of the development.

4.3.4 Reptiles

Assessment of ecological value of site for reptiles

The site has potential to support reptiles due to the presence of a mosaic of habitats, identified in section 3.3.5 above. However, the site is small in size and surrounded by urban conurbations and the developed area of Neath Abbey Business Park. The north-eastern boundary of the site is connected to suitable reptile habitat comprising scrub and grassland, running alongside the southern bank of the Tennant canal. However, this strip of vegetation is also isolated from the wider area due to the presence of an intersecting road to the east. Therefore, the site is only likely to support low numbers of reptiles.

Legislation

Reptiles are protected under the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000. 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 the UK Biodiversity Action

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Plan and as species of principal importance for the conservation of biological diversity in Wales under Section 74 of the Countryside and Rights of Way (CRoW) Act 2000.

Assessment of development impacts 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 to minimise potential impacts to reptiles are outlined in Section 5.0.

5.0 Recommendations for further survey, mitigation and enhancements

The following recommendations are made to avoid or minimise adverse impacts to wildlife features and protected species:

5.1 Further survey

No further survey work is required prior to the proposed development works.

5.2 Mitigation/ Compensation measures

Recommendations for mitigation and compensation are provided below. Consultation with the local authority ecologist is also recommended to agree the scope of mitigation and compensation measures.

Planning Policy Wales (Welsh Government, July 2014) recommends that new developments should enhance biodiversity and the natural environment by identifying opportunities to conserve important local habitats and species. It also states that development should, where possible, retain, and where practicable, enhance features of conservation importance.

5.2.1 Nesting birds & Reptiles

The following recommendations are provided to mitigate/ compensate potential negative impacts to nesting birds and reptiles:

- Clearance of semi-mature trees (TN1, TN2, TN3 & TN4), scrub woodland (TN5) and semi-improved grassland (TN6) is required for the development. Clearance works and site preparation must take place outside of the hibernation season for reptiles (October – March inclusive). Simultaneously, clearance of vegetation must take place out side of the bird nesting season (March-August inclusive). Leaving September as the only suitable month. Alternatively, if this is not possible, the vegetation on site must be searched by a suitably experienced ecologist immediately prior to clearance to check for nesting birds;
- A two staged approach to vegetation clearance and site preparation is therefore recommended to avoid impacts to nesting birds and reduce the risk of killing or injuring individual reptiles, which will also be suitable for individual terrestrial phase amphibians. The clearance of vegetation should also be conducted under the supervision of an experienced ecologist. The clearance of vegetation should be conducted by starting from the south-west of the site, moving north-east to allow individuals to migrate in to adjacent and retained habitats. During the first stage, all vegetation will be initially cut to a height of 100mm, preceding a check for nesting birds by a qualified ecologist (this check would not be required if clearance works are

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undertaken in September). All cutting must be done by hand (eg by strimmer or brush-cutter), rather than by tractor-drawn mowers. Cuttings should be removed from the development site immediately after cutting (if piled within the site nesting birds/reptiles may colonise preventing later removal). After this first stage is completed, all remaining vegetation can be removed and site preparation and ground works can begin as reptiles will have migrated on to adjacent habitats;

- To comply with Planning Policy Wales (Welsh Government, July 2014), nesting and foraging habitat lost to the development must be compensated for by planting an area of native trees and berry-producing scrub vegetation (e.g. hawthorn, rowan, holly, guelder rose, blackthorn etc). Planting will be done within the 7m ecological buffer zone; and
- As the compensatory planting recommended above will take time to establish. Compensatory nesting boxes should be provided upon the retained trees within the site, the scrub woodland within the 7m ecological buffer zone and also within the adjacent off-site habitats, such as the dense scrub (TN13) to the south-west of the site. It is recommended that at least 10 nest boxes are installed, in addition a variety of boxes should be used to provide a variety of nesting opportunities for a number of species.

5.2.2 Bats

The following recommendations are provided to mitigate/ compensate potential negative impacts to bats:

- Trees T1, T2 & T3 have been identified as having low (Category 2) potential to support roosting bats. In accordance with the bat survey protocol for trees affected by arboricultural work (Appendix 4), further surveys are not required and further ecologist involvement is unlikely. The trees should therefore be 'soft felled'. This is a generic term used to describe more cautious felling approaches, using lowering and cushioning techniques to reduce the impact of falling limbs, which may still have bats within the cavities between the ivy and bark. Limbs with cavities between the ivy and bark should be left at the base of the tree for 24 hours before removal from the site;
- If bats or a bat roost (or evidence of historical occupation by bats) are discovered during works, all work will stop in the immediate area and the advice from Natural Resources Wales will be sought on how best to proceed. This is likely to involve an application for a European Protected Species Licence to destroy a bat roost and the provision of alternative roosting opportunities nearby to mitigate for the loss of the roost site. Clearance of vegetation should not be undertaken within 15m of an identified active roost to ensure that disturbance levels are kept to a minimum;

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- Bat boxes must be installed on retained and off-site trees to enhance roosting habitat and compensate for the loss of potential (albeit low) roosting habitat for bats;
- Compensatory planting of native trees and shrubs (section 5.2.1) will aim to minimise the loss of bat foraging habitat;
- A sensitive lighting strategy must form part of the development both during construction and operation phases. This will mitigate against any light disturbance to foraging/ commuting bats using the habitats to the north of the site. This will involve no external lighting installed along the northern boundary of the site or upon the external elevations of the new buildings which face the northern boundary. This will create a 'dark corridor' allowing bats to continue to forage and commute along this linear feature. In addition, no works during the construction or operation phases will take place at night.

5.2.3 **Badger**

No setts or signs of badger activity were recorded within the site however, in accordance with good practice, any excavations associated with development should either be closed at night or fitted with escape ramps to help any animals such as badgers escape. It should be noted that patterns of badger activity and site use can be subject to sudden and dynamic changes over very short time periods. If there is a significant delay to development of the site (i.e more than 12 months) an updated badger survey should be undertaken to determine if any new active setts have been created within the site.

5.2.4 **Japanese knotweed**

The Wildlife and Countryside Act 1981 specifically prohibits the reckless or deliberate spreading of Japanese knotweed, and appropriate measures are therefore required to minimise the risk of its spread during any works, and to achieve its eradication wherever possible. It is recommended that guidance is sought from Natural Resources Wales regarding the control of Japanese knotweed in order to prevent further spreading. The Environment Agencies Japanese Knotweed Code of Practise (2013) advises that in order to prevent areas of the site currently unaffected by Japanese knotweed becoming contaminated, staff should be made aware of what the plant looks like and what their responsibilities are; there should be a clerk of works responsible for the management of Japanese knotweed; and that there is a Japanese knotweed management plan in place, a template for which can be found within the Japanese Knotweed Code of Practice document.

One of the methods for controlling invasive plants involves the use of herbicides, in which case permission should be sought from Natural Resources Wales as the invasive species was found growing near a watercourse.

6.0 References and bibliography

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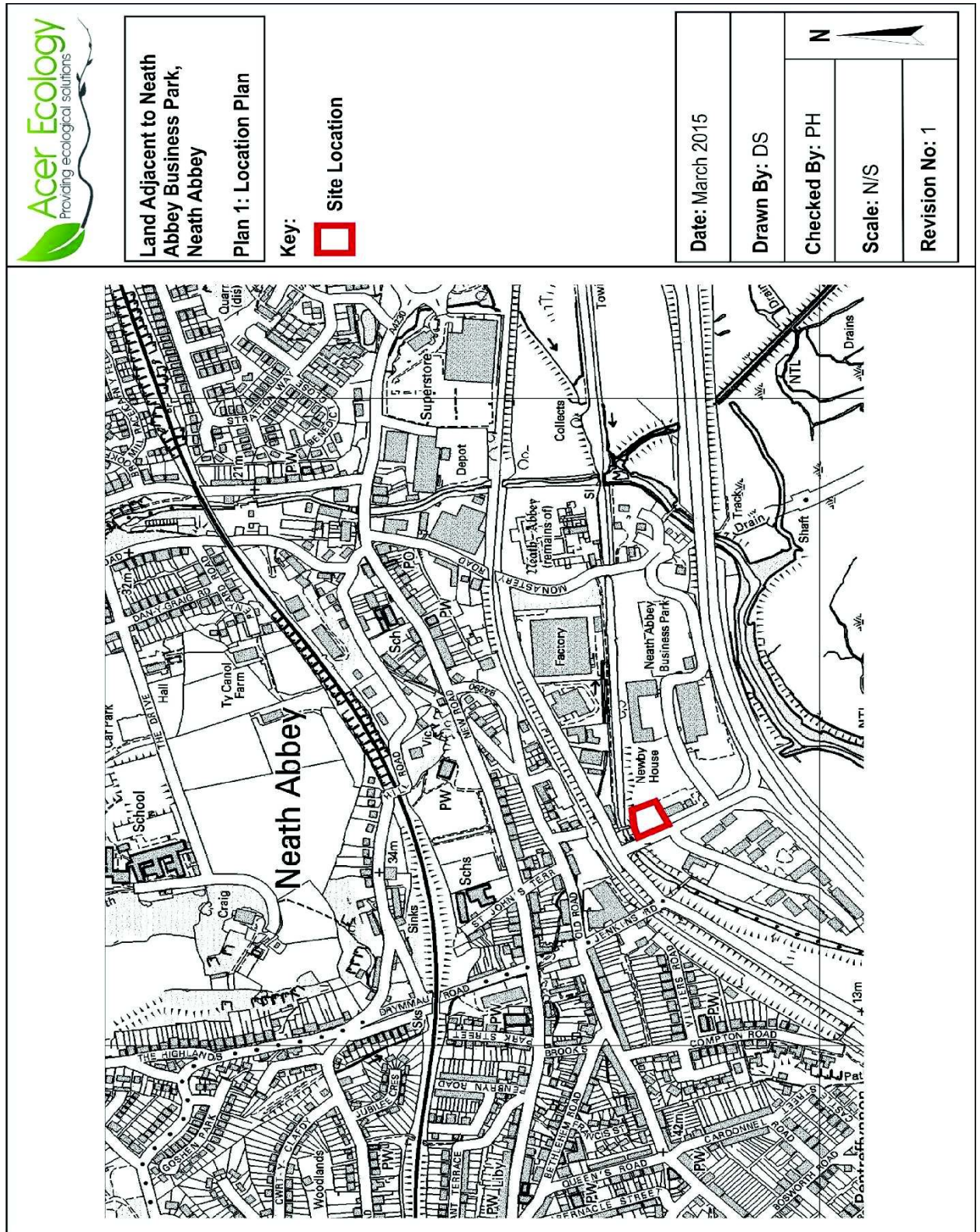
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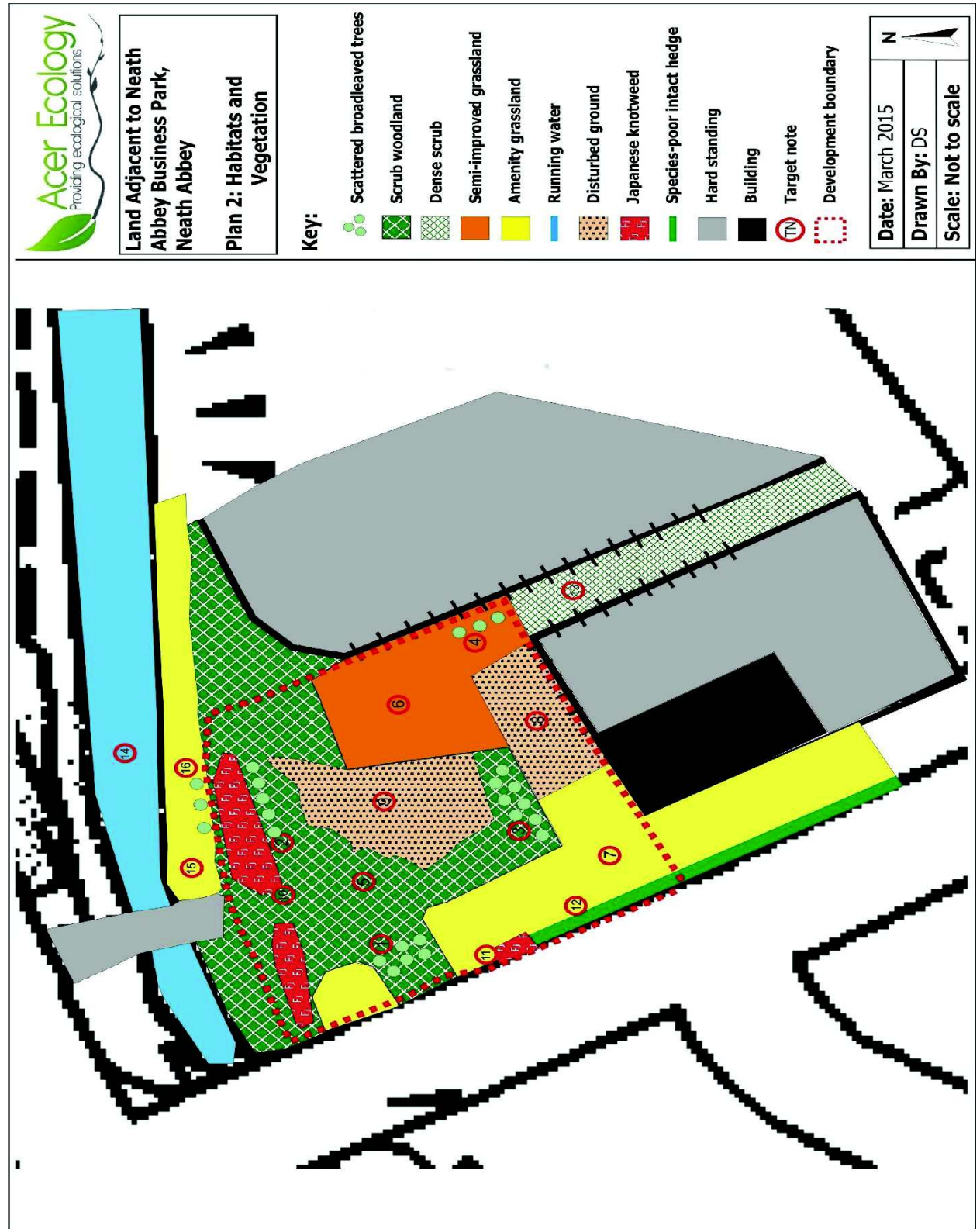
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Plan 1: Location plan

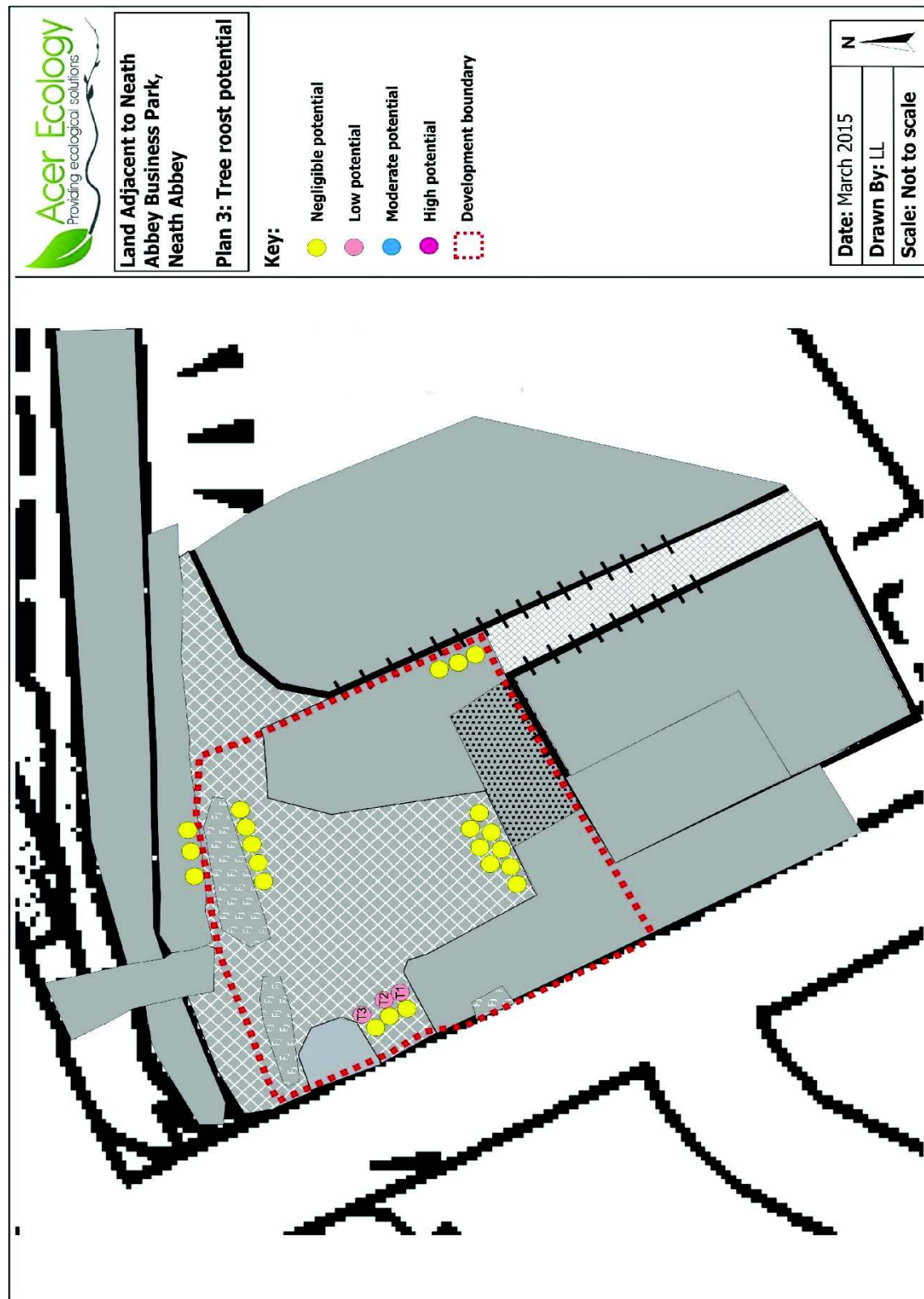


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Plan 2: Habitats and vegetation



Plan 3: Tree roost potential



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Appendix 1: Photographic record March 2015

Photo 1: Semi-mature trees (TN1)



Photo 2: Semi-mature trees (TN2)



Photo 3: Semi-mature trees (TN4)



Photo 4: Scrub woodland (TN5)



Photo 5: Semi-improved grassland (TN6)



Photo 6: Amenity grassland (TN7)



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Photo 7: Disturbed ground (TN8)



Photo 8: Disturbed ground (TN9)



Photo 9: Japanese knotweed (TN10)



Photo 10: Tennant canal and vegetated verge (TN14 & 15)



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Appendix 2: Species recorded

All species recorded by Acer Ecology 2015

Species	Common name	W	NG	CG	AG	MG	PIL	TF	Status
Trees and shrubs									
<i>Acer pseudoplatanus</i>	Sycamore								Alien
<i>Alnus glutinosa</i>	Common alder								
<i>Buddleja davidii</i>	Buddleia								Alien
<i>Corylus avellana</i>	Hazel								
<i>Crataegus monogyna</i>	Common hawthorn								
<i>Fraxinus excelsior</i>	Ash								
<i>Quercus robur</i>	Pedunculate oak								
<i>Rubus fruticosus agg</i>	Bramble								
<i>Salix sp.</i>	Willow sp								
<i>Sambucus nigra</i>	Elder								
<i>Ulex europaeus</i>	Common gorse								
<i>Anthriscus sylvestris</i>	Cow parsley								
<i>Bellis perennis</i>	Daisy								
<i>Cardamine flexuosa</i>	Wavy bitter-cress								
<i>Carex sylvatica</i>	Wood sedge	W							
<i>Cerastium fontanum</i>	Common mouse-ear								
<i>Chamerion angustifolium</i>	Rosebay willowherb								
<i>Cirsium arvense</i>	Creeping thistle								
<i>Fallopia japonica</i>	Japanese knotweed								Alien
<i>Fragaria vesca</i>	Wild strawberry								
<i>Galium aparine</i>	Cleavers								
<i>Geranium molle</i>	Dovesfoot cranesbill								
<i>Hedera helix</i>	Ivy								
<i>Heracleum sphondylium</i>	Hogweed								
<i>Lamium purpureum</i>	Red dead-nettle								
<i>Lolium perenne</i>	Perennial rye-grass								
<i>Asplenium scolopendrium</i> (<i>Phyllitis scolopendrium</i>)	Hart's-tongue fern								
<i>Plantago lanceolata</i>	Ribwort plantain								
<i>Potentilla reptans</i>	Creeping cinquefoil								
<i>Ranunculus repens</i>	Creeping buttercup								
<i>Rumex obtusifolius</i>	Broad-leaved dock								
<i>Senecio jacobaea</i>	Common ragwort								
<i>Stellaria media</i>	Common chickweed								
<i>Taraxacum officinale agg</i>	Dandelion								
<i>Trifolium repens</i>	White clover								
<i>Tussilago farfara</i>	Colt's-foot						PIL		
<i>Urtica dioica</i>	Common nettle								
<i>Veronica chamaedrys</i>	Germander speedwell								

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<i>Veronica persica</i>	Common field speedwell
<i>Holcus lanatus</i>	Yorkshire fog
<i>Festuca rubra</i>	Red Fescue
<i>Ligustrum ovalifolium</i>	Garden privet
<i>Phragmites australis</i>	Common reed

WBP 2008 'indicator species' totals

1

W NG CG AG MG PIL TF

Key to indicator species (WBP 2008)

W - Woodland, NG - Neutral Grassland, CG - Calcareous Grassland, AG – Acid Grassland, MG Marshy Grassland, PIL – Post Industrial Land, TF Species-rich Tillage Fields and Margins

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Appendix 3: 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 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.

District value

Site identified as a Site of Importance to Nature Conservation (SINC) at the district level; meeting SWWSP 2004 published designation criteria, but falling short of SSSI designation criteria, whether designated as a SINC or not. Large or strong populations or communities of nationally rare or protected species (other than badger), or of species which are rare in the county and uncommon nationally.

High local value

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.

Local value

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 dependant upon it for their survival in the area.

Site value (within the immediate zone of influence)

Low-grade and widespread habitats.

Negligible

No apparent value.

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Appendix 4: Bat Survey Protocol for Trees Affected by Arboricultural Work

Tree category and description	Stage 1 Survey requirements prior to determination	Stage 2 Further measures to inform mitigation	Stage 3 Likely mitigation
Known or Confirmed Confirmed bat roost tree with field evidence of the presence of bats, e.g. droppings, scratch marks, grease marks or urine staining.	Tree identified on a map and on the ground. Further assessment to provide a best expert judgement on the likely use of the roost, numbers and species of bat, by analysis of droppings or other field evidence. Ecologist involvement <u>will</u> be required.	Avoid disturbance to trees where possible ⁷ . Further dusk and dawn surveys to establish more accurately the presence, species, numbers and type of roost present, and to inform the requirements for mitigation if felling is required.	Felled under Habitats Regulations licence ⁸ following the installation of equivalent habitats as a replacement. Felling would be undertaken taking reasonable avoidance measures ⁹ such as 'soft felling' to minimise the risk of harm to individual bats.
Category 1* Trees with multiple highly suitable features capable of supporting larger roosts	Tree identified on a map and on the ground. Further assessed to provide a best expert judgement on the likely use of the roost, numbers and species of bat, by analysis of droppings and other field evidence. Ecologist involvement <u>will</u> be required.	Avoid disturbance to trees where possible ⁷ . More detailed, off-the-ground visual assessment. Further dusk and dawn surveys to establish the presence of bats and, if present, the species, numbers and type of roost to inform the requirements for mitigation if felling is required.	Trees with confirmed roosts following further survey would be upgraded to Confirmed category and felled under licence as above. Trees with no confirmed roosts would be downgraded to Category 2 and felled taking reasonable avoidance measures ⁹ .
Category 1 Trees with definite bat potential, supporting fewer suitable features than category 1* trees or with potential for use by single bats	Tree identified on a map and on the ground. Further assessed to provide a best expert judgement on the potential use of suitable cavities, based on the habitat preferences of bats. Ecologist involvement <u>will</u> be required.	Avoid disturbance to trees where possible ⁷ . More detailed, off-the-ground visual assessment. Further dusk and dawn surveys to establish the presence of bats and, if present, the species, numbers and type of roost to inform the requirements for mitigation if felling is required.	Trees with confirmed roosts following further survey would be upgraded to Confirmed category and felled under licence as above. Trees with no confirmed roosts would be downgraded to Category 2 and felled taking reasonable avoidance measures ⁹ .
Category 2 Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats	None. Ecologist involvement <u>unlikely</u> to be required.	Avoid disturbance to trees where possible ⁷ . No further surveys.	Trees may be felled taking reasonable avoidance measures ⁹ . Stop works and seek advice in the event bats are found.
Category 3 Trees with no potential to support bat roosts	None. Ecologist involvement <u>will not be required unless new evidence is found.</u>	No further surveys.	No mitigation for bats required.

Notes

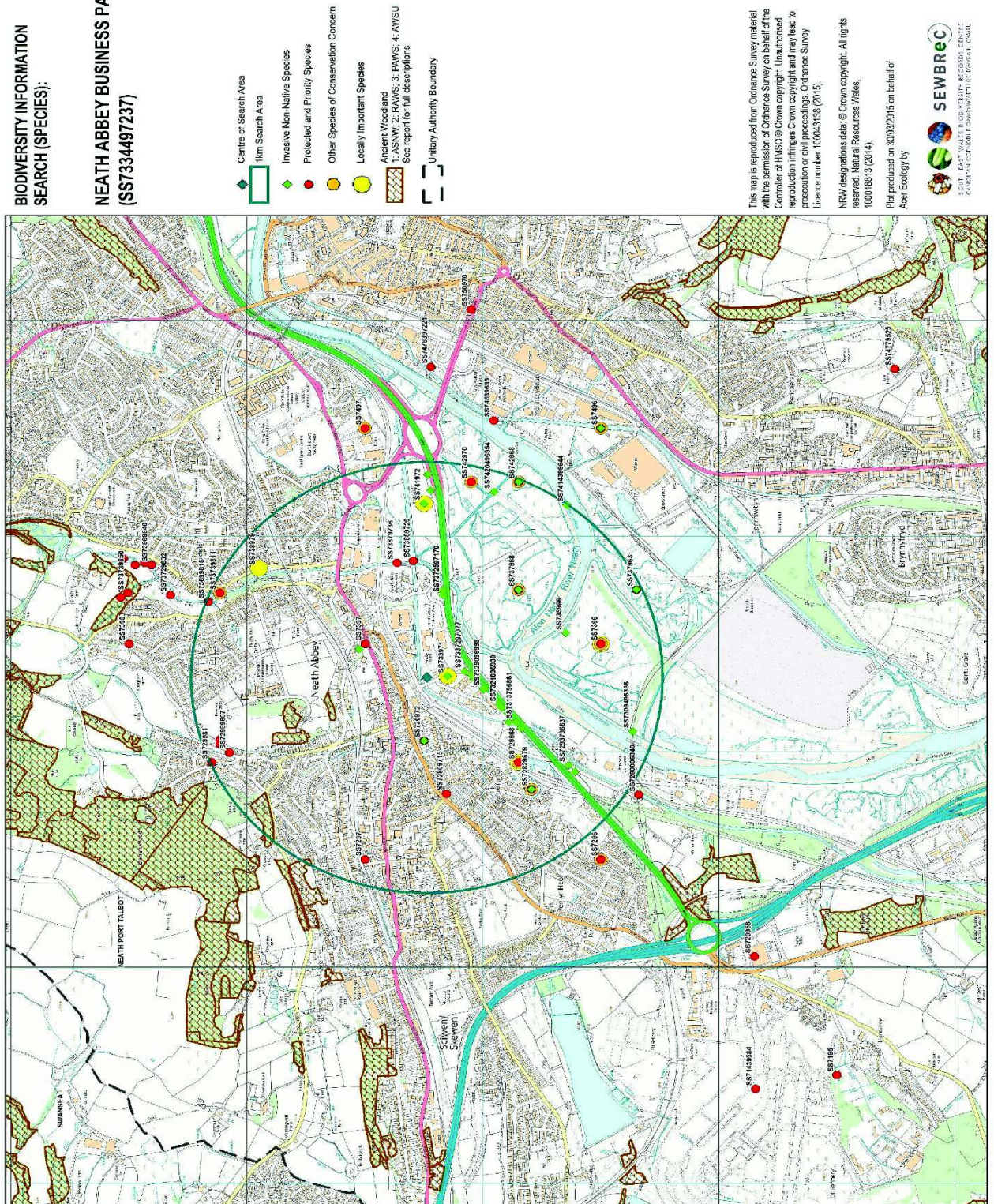
⁷ A general principle for those involved in advising on and undertaking tree works should be, wherever possible, to avoid disturbance and retain all features which offer some value to bats. For safety-related tree work, a balance should be sought between tree safety standards and the impact on wildlife

⁸ When a Habitats Regulations licence to undertake work on a tree roost is required, the licence will need to demonstrate that alternative approaches have been previously considered to try to avoid works to the tree. These may be options such as diverting paths away from hazardous trees and removing unsafe limbs, instead of felling an entire tree.

⁹ Reasonable avoidance measures are considered to be good practice. 'Soft felling' is a generic term used to describe more cautious felling approaches, using lowering and cushioning techniques to reduce the impact of felling limbs which may still have bats within cavities. Where proportionate to the impact, best practice approaches to felling may include methods such as additional dusk emergence or dawn re-entry surveys immediately prior to felling (during the active bat season) or the use of non-return valves to ensure that bats can leave but not return to a roost cavity before works begin.

**BIODIVERSITY INFORMATION
SEARCH (SPECIES):**

**NEATH ABBEY BUSINESS PARK
(SS7334497237)**



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