

Preliminary Phase 1 Ecological Survey



CLIENT:	Cadnant Planning / Hatrick Property
SITE REFERENCE:	Wynnstay Technology Park, Ruabon, Wrexham LL14 6EN
REFERENCE:	ECO016.WAL.04JFG
CONSULTANT(S):	John Graham PhD BSc
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1.0 Introduction

Arbor Consultancy has been commissioned by Cadnant Planning on behalf of Hatrick Property to provide a Preliminary Phase 1 Ecological Survey to inform an Outline planning application Wynnstay Technology Park, Ruabon, Wrexham LL14 6EN.

The site is located at: SJ 29212 43570. The area of the whole site is approximately 19,800m² and consists mainly of an area of bare-ground colonised by tall ruderal herbs with a wooded strip to the north and west.

To the immediate north of the site there are arable/pasture fields, to the west there is a large residential estate, to the south an industrial unit and to the immediate east an industrial site with wooded/open area beyond.

The proposed development of the site involves the removal of a small area of the wooded strip and the building of approximately 40 residential properties, with gardens and parking, a retail unit and some small light industrial units.

2.0 Scope of Works

The scope of this ecological assessment includes:

- Walkover of site and assess the immediate surrounding area.
- Assessment of site for potential to support protected species.
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The objectives of this report are therefore to:

- Detail the methods and results of the above surveys.
- Identify features of ecological value within the site and potential constraints for development proposals.

3.0 Methodology

3.1 Desktop Study

A search of the MAGIC website was made to identify any Priority Habitats, and other important habitats, within a 2km radius of the site.

3.2 Habitat Walkover

The site habitats were mapped (See Appendix 1) and assessed for their ability to support protected species. The ecological survey comprised a field survey that followed the standard Habitat Survey Methodology given by JNCC.

A survey was undertaken in July 2016. On-site habitats were recorded (presented on the Habitat Map) and assessed for the possible presence of protected species and other species of conservation concern, including Biodiversity Action Plan Priority species.

It should be noted that Phase 1 habitat surveys cannot usually confirm species presence or absence; only the likelihood of presence can be assessed. The presence of invasive plant species was also assessed.

Habitats are described in easily-recognisable land-parcels defined by habitat type (e.g. hedge, grassland, watercourse, pond, field boundary etc.).

The dominant and readily identifiable higher plant species identified in each of the various habitat parcels are recorded in Table 1; see Appendix:

3.2 Weather

Weather during the survey was mild with 20% cloud cover and a slight breeze. The temperature was 17°C.

3.3 Constraints

No constraints were experienced during the survey.

4.0 Results

4.0 Results

4.1 Desktop Study (Habitats)

The Magic search highlights a number of potential notable habitats (BAP Priority Habitats) within the search area including; ~15 deciduous woodlands.

4.2 Habitat Survey

A.1.1.2 Deciduous woodland

To the north and west of the site there is an area of woodland that acts as a continuous boundary to these sides. The strip of woodland is approximately 10m deep. The wood stands on an embankment approximately 2-3m in height.

Containing a narrow species range the wood is dominated by sycamore (*Acer pseudoplatanus*) and ash (*Fraxinus excelsior*).

The upper canopy trees are early mature trees with the potential to grow taller however the wood is too dense for any significant lateral growth.

The under storey has been re-stocked in the last ten years with young trees and woody shrubs as part of the Landscape Planning Group management plan however, self-set sycamore, ivy, elder and willow have been more successful than the planting.

The wood is extremely dense due to the lack of thinning following the planting. As a result of the dense nature of the wood there is only a very poor ground layer dominated by ivy (*Hedra helix*).

In addition the wood is being used for dumping and there is evidence of fires. A large amount of failure is anticipated amongst mature and young trees and a management strategy may be necessary to enhance and guarantee the woods longevity.



View of wooded area to the north/west outside the site.



View of tipping inside the wood.

C.3 Tall ruderals

The site is dominated by the central open area. This is the location of an industrial unit that was cleared away to bare-ground some time ago. Since clearance the site has become colonised by tall ruderal herbs and grasses, see appendix 1 for species list. Bounding the wooded area there are areas of low scrub and bramble (*Rubus fruticosus*) with self set trees such as goat willow (*Salix caprea*) and birch (*Betula pendula*).

In addition there are occasional self set young trees scattered around this area.



View of the bare ground colonised by tall ruderal herbs.



View of open area with scattered self-set trees.

4.3 Species Assessment

Desktop Survey

The site was considered to offer no or negligible habitat opportunities for the following protected species based on; the nature of the site, surrounding land usage and the lack of suitable water bodies; Reptiles, Barn Owls, GCN, Water Voles, Otters, and White Crayfish.

The following species were given further consideration.

Bats

Due to the relative young nature of the trees there are very few defects that might offer roosting opportunities for bats. The area is however, likely to offer some foraging opportunities for occasional bats.

Badger

No signs of badgers were noted on the subject site. However, the area currently offers habitat opportunities for badgers. Although the site is effectively an island between two busy roads this would be no boundary to possible migration onto the site. Should possible signs of badger activity appear the advice of a suitably qualified ecologist should be sought.

Birds

The site is suitable for many bird species due to the broad range of habitats, several species were noted during our survey.

During our survey the birds noticed on site included; Blackbird (*Turdus merula*), Robin (*Erithacus rubecula*), Magpie (*Pica pica*) and Wood Pigeon (*Columba palumbus*).

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5.0 Summary

The immediate site was subjected to a thorough Extended Phase 1 survey and was found to be of moderate to low ecological value. However, as the main ecological value is associated with the wooded area and only a small section of this is to be removed the impact of the proposed development is therefore considered to be of negligible.

Additional surveys and recommendations:

Should any vegetation management be required during the bird nesting season (March-August) a bespoke bird activity survey would be required.

Enhancements

Within the site, to secure the necessary ecological enhancements, it is provisionally recommended that the development includes;

- Further native and wildlife friendly landscaping particularly the use of native tree and shrub species in the landscape should be implemented where possible. Open areas can be planted with a range of shrubs and occasional trees. Existing and new hedges could be enhanced or created using a broad range of species. Natives trees should be used only where there is appropriate space. Planting on site should also take account of owners requirements. Mulch could be applied to bedding areas following planting in order to improve soil structure and increase the micro fauna and flora diversity that in turn benefit the soil and plants.
- The provision of bat and bird boxes on trees and around the adjacent wooded area can offer new roosting and nesting opportunities. Using a variety of bird boxes and bat boxes is recommended and in the instance of bats – self clearing box designs should be used. Additionally wood piles can be created that could be secreted in denser areas of shrub beds in the open spaces in order to attract insects, reptiles, amphibians and small mammals. Also hedgehog boxes placed in similar locations are a useful enhancement. Where possible habitat stumps could be created from trees to be felled.
- Amenity grass in open areas could be maintained, at varying heights as this improves the habitat potential for insect diversity and subsequently provides food for foraging reptiles, amphibians and smaller mammals. Should there be appropriate space meadow mixes could be sown in place of lawns mixes, these areas can be small and would only require maintenance once or twice a year.

Appendices

Appendix 1 Phase 1 Site Plan & Main Species List

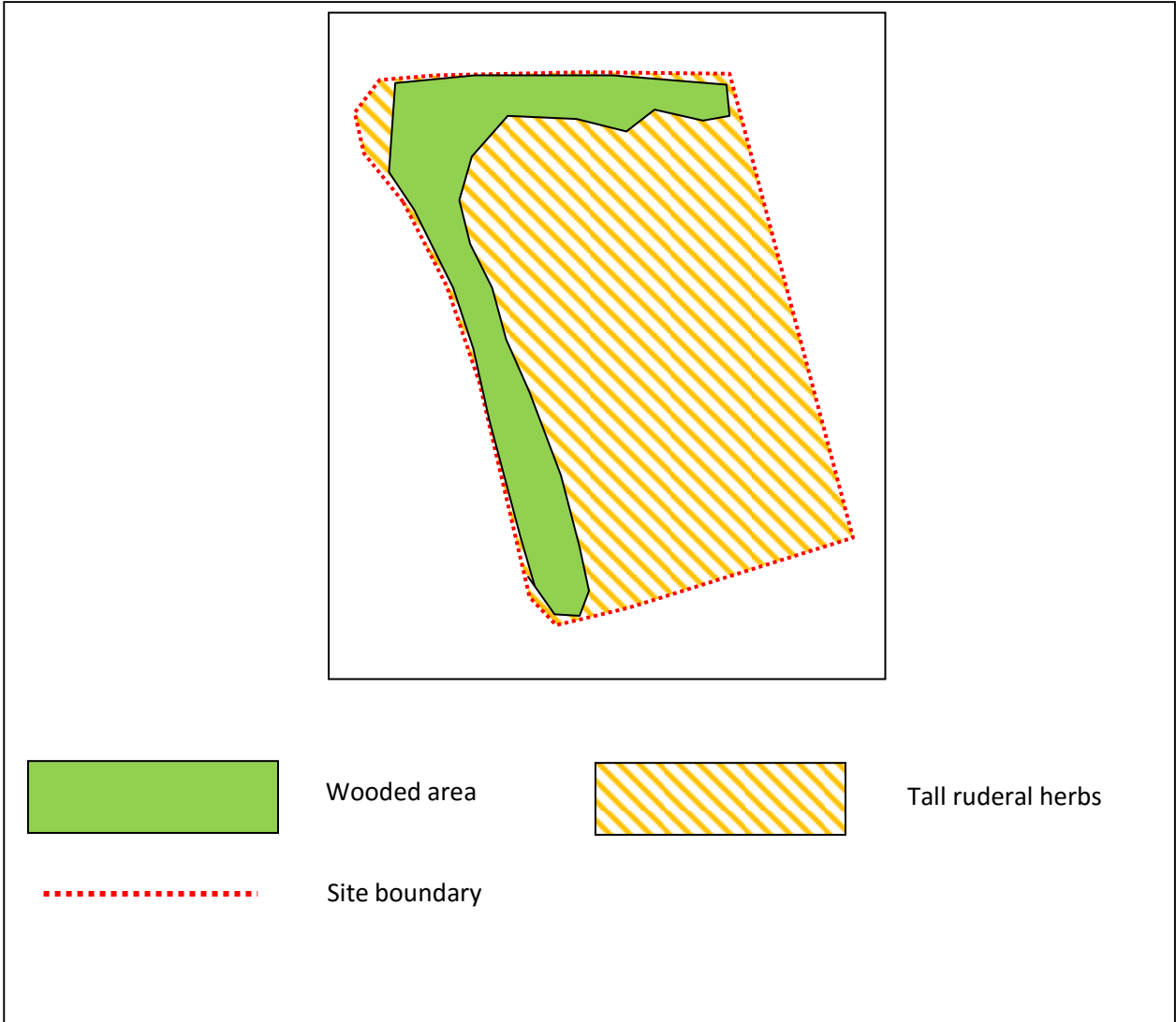
Appendix 2 Protected Species Legislation

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Appendix 4 References

Appendix 5 Dr John Graham Profile

Appendix 1 Phase 1 Site Plan



Plan not to scale

Main Species List

Habitat	English	Scientific
Trees	Sycamore Elder Hawthorn Ash Goat willow Field maple Hazel Elm Rowan	<i>Acer pseudoplatanus</i> <i>Sambucus nigra</i> <i>Crataegus monogyna</i> <i>Fraxinus excelsior</i> <i>Salix caprea</i> <i>Acer campestre</i> <i>Corylus avellana</i> <i>Ulmus sp.</i> <i>Sorbus aucuparia</i>
Shrubs and other	Ivy Bramble Laurel	<i>Hedra helix</i> <i>Rubus fruticosus</i> <i>Prunus laurocerasus</i>
Ruderals Herbs	Clover Dandelion Dock Creeping Buttercup Herb Robert Nettle Chickweed Ribwort plantain Hoary plantain Ribwort plantain Ragwort Creeping thistle Knapweed Rosebay Willowherb	<i>Trifolium repens</i> <i>Taraxacum sp</i> <i>Rumex obtusifolius</i> <i>Ranunculus repens</i> <i>Geranium robertianum</i> <i>Urtica dioica</i> <i>Stellaria media</i> <i>Plantago lanceolata</i> <i>Plantago media</i> <i>P. lanceolata</i> <i>Jacobaea vulgaris</i> <i>Cirsium arvense</i> <i>Centaurea nigra</i> <i>Chamerion angustifolium</i>
Grass	Perennial Rye Grass Yorkshire fog Cocksfoot False Oat Grass Annual meadow grass	<i>Lolium perenne</i> <i>Holcus lanatus</i> <i>Dactylis glomerata</i> <i>Arrhenatherum elatius</i> <i>Poa annua</i>

Appendix 2 Protected Species Legislation

Plants

All wild plants are protected against unauthorised removal or uprooting under Section 13 of the Wildlife and Countryside Act (WCA) 1981 (as amended). Plants listed on Schedule 8 of the Act (e.g. triangular club rush, Deptford pink etc.) are afforded additional protection against picking, uprooting, destruction and sale. Bluebell (*Hyacinthoides non-scripta*) is protected against sale only.

Amphibians (Common Species)

Common amphibian species (i.e. common frog, common toad, smooth newt and palmate newt) are afforded partial legal protection under UK legislation, i.e. Schedule 5, Section 9 (5) of the WCA 1981 (as amended). This legislation prohibits sale, transportation and advertising for sale.

Common toad is a Species of Conservation Concern under the UK Biodiversity Action Plan (BAP).

Badger

Badger is a widespread and generally common species. However, they are legally protected under The Protection of Badgers Act 1992, which is based primarily on the need to protect badgers from baiting and deliberate harm or injury. Under this legislation it is illegal to:

- Wilfully kill, injure, take, or cruelly ill-treat a badger, or attempt to do so;
- Possess any dead badger or any part of, or anything derived from, a dead badger; and
- Intentionally or recklessly interfere with a sett by disturbing badgers whilst they are occupying a sett, damaging or destroying a sett, causing a dog to enter a sett, or obstructing access to it.

A badger sett is defined in the legislation as “any structure or place, which displays signs indicating current use by a badger”.

Licences are granted by Natural England to interfere with badger setts for development purposes. Licences are not normally issued during the breeding season, which is between 30th November and 1st July, and cannot be issued retrospectively. Activities that necessarily involve disturbance (this may include work near a sett, even if there is no direct interference or damage to the sett) should therefore be programmed to take place outside of this period.

Bats

All bat species are afforded full protection under UK and European legislation, including the WCA 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010 (as amended). Together, this legislation makes it illegal to: deliberately take, kill or injure a bat; intentionally damage, destroy or obstruct access to bat roosts; and to intentionally or recklessly disturb bats.

A bat roost is defined in the legislation as any structure or place which a bat uses for shelter or protection¹. Roosts are protected whether or not bats are present at the time. If a development activity is likely to result in disturbance or killing of a bat, damage to its habitat or any of the other activities listed above, then a licence will usually be required from Natural England.

In addition, bats are also listed on Appendix II of the Bonn Convention and on Appendix II of the Bern Convention. Four bat species (lesser and greater horseshoe bats, Bechstein and Barbastelle bats) are also cited in Annex II of the EC Habitats and Species Directive, which includes animals and plant whose conservation requires the designation of Special Areas of Conservation (SACs).

Six bat species are identified as Priority Species in the UK BAP. These are: greater horseshoe and lesser horseshoe bats, and noctule, soprano pipistrelle, brown long-eared and barbastelle bats. In addition, three Priority Habitats are identified as being of particular importance to bats in the UK BAP. These are: ancient and / or species-rich hedgerows, all woodlands and all wetland habitats.

Birds

All wild birds are protected under the WCA 1981 (as amended), whilst they are actively nesting or roosting. Section 1 of this Act, makes it an offence to kill, injure or take any wild bird, and to intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built. It is also an offence to take or destroy any wild bird eggs.

In addition, bird species listed under Schedule 1 of the Act receive extra protection. The Act states that *'it is an offence to intentionally or recklessly disturb any wild bird listed in Schedule 1 while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of such a bird'*.

Great crested newt

Great crested newts and their habitat are afforded full protection under UK and European legislation, including the WCA 1981 (as amended), Schedule 5 (Section 9), and The Conservation of Habitats and Species Regulations 2010 (as amended). This makes it an offence to kill, injure or disturb great crested newts and to destroy any place used for rest or shelter by a newt. The great crested newt is also listed on Annexes II and IV of the EC Habitats Directive and Appendix II of the Bern Convention, as well as in the UK BAP as a Priority Species. If a development activity is likely to result in disturbance or killing of a great crested newt, damage to its habitat etc., then a licence will usually be required from Natural England prior to works proceeding.

Hazel dormouse

Dormice and their habitat are afforded full protection under UK and European legislation, including the WCA 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010 (as amended). This makes it an offence to kill, injure or disturb dormice and to destroy any place used for rest or shelter by a dormouse. The dormouse is also listed on Annexes II and IV of the EC Habitats Directive and Appendix III of the Bern Convention, as well as in the UK BAP as a Priority Species. If a development activity is likely to result in disturbance or killing of a dormouse, damage to its habitat etc, then a licence will usually be required from Natural England.

Otter

Otters are fully protected under the WCA 1981 (as amended) and are classified as a European protected species under The Conservation of Habitats and Species Regulations 2010 (as amended). It is illegal to kill, injure, capture, or disturb them, and the places they use for breeding and resting (e.g. otter holt) are protected from being damaged or destroyed.

In addition the otter is listed as a Priority Species in the UK BAP and a globally threatened species on the IUCN Red Data List.

Reptiles

There are six native species of reptiles in the UK, including slow worm, common lizard, grass snake and adder, smooth snake and sand lizard, which are afforded varying degrees of protection under UK and European legislation.

Slow worm, common lizard, adder and grass snake are protected under Schedule 5, Section 9 (1 and 5) of the WCA 1981 (as amended) against deliberate or reckless killing and injuring and sale.

The sand lizard and smooth snake and their respective habitats are fully protected under Schedule 5, Section 9 of the WCA 1981 (as amended) and under The Conservation of Habitats and Species Regulations 2010 (as amended). It is illegal to kill, injure, capture, handle or disturb them, and the places they use for breeding, resting, shelter and protection are protected from being damaged or destroyed. It is also illegal to obstruct these animals from using such areas.

Slow worm, smooth snake, sand lizard, grass snake, common lizard and adder are all listed in the UK BAP as Priority Species.

Water vole

The water vole is fully protected under Schedule 5, Section 9 of the WCA 1981 (as amended). This makes it an offence to intentionally kill, injure or take (capture) a water vole; and to intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection, or disturb water voles while they are using such a place.

Due to their rapid decline, water vole is also listed on the UK BAP as a Priority Species.

Appendix 3 Bats and Lighting

Bats and Lighting

- No Bat roost should ever be illuminated, including access points.
- The impact of lighting on commuting and foraging bats can be minimised by using low or high pressure sodium lamps rather than mercury or metal halide lamps.
- Lighting should be directed where needed and spill avoided by use of hoods, cowls and shields. In addition, planting can also be used to shield lighting as long as tree/shrub species and proximity/location are factored into any maintenance schedules.
- The height of lighting should be as low as possible although in some situations height can offer acute angles and thereby achieve more focused usage.
- Light levels should be as low as relevant guidelines permit.
- The duration of lighting should be limited so that there are intervals through the night without lighting and track ways and road lighting should be punctuated every 10m with sections of no light – which will help reduce colony isolation.
- Security lighting should be <2000 lumens and angled correctly. Also movement sensors and timers can be used to reduce the period of time that lights are on.

Guidance on Bat Box Positioning

Placing bat boxes in the fabric of the buildings is preferable to mounting boxes on trees as they are less vulnerable and designed to require minimal or no maintenance.

Bat boxes should be mounted to the exterior of buildings and placed as high as possible, not above windows and away from light sources. North-facing walls should also be avoided. The boxes should be placed clear of obstacles so the bats have easy access, though not in an overly exposed position.

Bat boxes should be placed on south-east facing walls neighbouring soft-landscaped areas e.g. trees could act as a commuting and foraging corridor for bats.

Bat boxes can be placed on semi-mature trees or mature trees. They should be affixed to the tree trunk as high as possible. Boxes at greater heights attract more species. The boxes should also be positioned clear of over-hanging branches.

A minimum of 2 bat boxes should be installed per tree. Each box should face a different direction (between south-west and south-east) so that if one box gets too hot or cold the bats can move to the other.

No paint or preservatives should be used on the boxes as this could discourage or even harm/kill bats and birds.

Appendix 4 References

REFERENCES

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Countryside Rights of Way Act (2000)

Appendix 5 Dr John Graham Profile

Dr John Graham is an Ecological Surveyor with over 10 years' experience in commercial ecology and 25 years of experience in Arboriculture and Woodland Management, under the guidance of several licensed and Chartered Ecologists. He has qualifications with the Open University that are equivalent to a BSc in Ecology and a BSc in Genetics, which consisted of several modules in Ecology taught by John Altringham. John also has a PhD in Plant Biology.

John Graham trained with Marishal Thompson Group carrying out a wide variety of Ecological surveys from 2005-2012, where necessary supervised by licensed ecologists.

John has also attended many professional Ecological courses including; Bat Handling Courses with Sandie Sowler. He has also attended GCN courses run by Paul Hiscocks (licensed ecologist for; Bats, GCN, Water Voles, Crayfish and Badgers).

In addition to these courses John has also attended the Phase 1 and NVC courses at Moelyci Environmental Centre when run by John Harold. He has also been on John Harold's Plant Identification courses including; Flowering Plant, Grasses, Sedges and Rushes.

John Graham is currently being mentored by experienced ecological consultants with several EPS licenses each who have sponsored John in his application to become a member of IEEM (Application yet to be submitted).

He is a member of BCT and his local bat group and is a member of the Arboricultural Association.