



Ecological Appraisal

of

Coventry Stadium
Rugby Road
Coventry
CV8 3GJ

For

Brandon Estates Ltd.

(Revision A – 13th October 2017)

2014-03(08)

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Summary

- An Ecological Appraisal of an area of land in current use as a dog racing and speedway track and its grounds at Coventry Stadium in Coventry was carried out on 24th April 2014, by suitably experienced ecologist, Rebecca Golder.
- The proposals were for a residential development; however, no plans were available at the time of writing this report.
- The majority of the Site was ecologically low value hardstanding in use as car parking, dog and speedway racing tracks. This habitat does not typically offer suitable habitat to species, and often acts as a dispersal barrier. The high disturbance levels of the Site would also result in species being deterred from entering the Site.
- A number of buildings were present on Site; these were surveyed for bats by *ECOLOLOCATION*, the results of which are available in an accompanying Initial Bat Assessment Report.
- The most ecologically valuable area of the Site was a mosaic of habitats on the northwestern boundary including semi-natural, broad-leaved woodland, an earth bank with scrub and tall ruderal vegetation, amenity grassland with spoil heaps and scattered trees. This area offered connectivity through the landscape as well as potential foraging and sheltering habitat for reptiles, bats, hedgehog, nesting birds and common amphibians. There was also an area suitable for reptile hibernation in the centre of the Site, however, reptiles would have to disperse over a wide area of hardstanding to reach these areas and its location adjacent to the speedway track would likely deter hibernation. In addition to this mosaic of habitats, the tree lines on the boundaries of the Site and the scattered trees also offered shelter, nesting and foraging opportunities for the aforementioned species.
- There were two ponds (ponds 1 & 2) within the semi-natural, broad-leaved woodland area of the Site, one of which was dry and the other holding little water at the time of survey. Pond 2 was subject to a Habitat Suitability Index (HSI) for great crested newts and the results were POOR indicating it was unlikely to offer suitable conditions for great crested newts.
- An additional two ponds outside of the Site boundary were subject to a HSI; these scored BELOW AVERAGE indicating they were unlikely to offer opportunities to great crested newts.
- A further reptile survey of the area of amenity grassland with spoil is recommended. It is also recommended that the western mosaic of habitats, tree lines and scattered trees are retained, where possible, for the connectivity it provides through the countryside as well as a buffer to the adjacent ancient woodland. The results of the reptile survey will inform the layout of the Site and further potential recommendations.
- The semi-natural, broadleaved woodland should be retained and protected due to its proximity and connection to New Close and Birchley Wood, which have been designated Local Wildlife Sites for their ancient woodland habitats.
- Further recommendations, sensitive working practices and potential ecological enhancements are outlined within the report.

1. Introduction

Instruction

ECOLOLOCATION were commissioned by Framptons on behalf of Brandon Estates Ltd to undertake an ecological assessment of land at Coventry Stadium in Coventry, Warwickshire which is understood will be subject to a future planning application for a residential development.

No plans were available at the time of writing this report.

Survey Aims

The aims of the survey were to:

- Provide a description of the habitats present on Site
- Identify the potential for the presence of protected species on Site
- Determine the need for further ecological surveys
- Assess the ecological impact of the proposals
- Identify any ecological constraints/opportunities on Site

Scope

The survey sought to identify the potential for protected species on Site including:

- **Badger** (*Meles meles*) - areas that might be used for foraging and sett building. Incidental foraging signs, tree scratching, paths, latrines and setts were recorded if found (Harris *et al.*, 1989). A 30m buffer of the whole Site was also surveyed, where practicable, most of which was viewed from the Site boundaries.
- **Reptiles** - areas that could be used for insolation, shelter, foraging and breeding.
- **Bats** – suitable trees and natural features for roosting together with suitable roosting opportunities within buildings on Site.
- **Birds** - areas of habitat/structures that may be used for constructing a nest or for foraging.
- **Hedgehog** (*Erinaceus europaeus*) – evidence including droppings and suitable foraging and sheltering habitat.
- **Polecat** (*Mustela putorius*) - evidence of the presence of suitable habitat such as woodland, riverbank and surrounding farmland mosaic.
- **Great crested newt** (*Triturus cristatus*) - waterbodies were scored for their suitability for use by breeding newts (assessed using the Habitat Suitability Index). Terrestrial habitat was also assessed for suitability to support newts
- **Dormice** (*Muscardinus avellanarius*) – suitable habitat such as scrub, hedgerows and woodland with fruiting and flowering species as well as any evidence such as possible nests or feeding remains.

The lack of suitable waterbodies, such as ditches within or adjacent to the Site resulted in the Site being unsuitable for water vole, otter, white-clawed crayfish and fish, therefore these species were not included in the survey.

The highly disturbed nature of the Site and lack of agricultural land within the boundaries of the Site, resulted in brown hare not being included in the scope of this survey.

2. Site

Site location

The Site (grid ref: SP 40713 77299), indicated by the red line boundary below, was situated some 4.5km to the east of the city of Coventry in the West Midlands. It was set in an agricultural landscape with urban and residential areas in close proximity.



3. Legislation

Herpetofauna

The following species are protected against sale under Section 9(5) of The Wildlife and Countryside Act 1981 which limits the animals being offered for sale, transported for sale or advertised for sale, however, capture, keeping or killing are not prohibited subject to other animal welfare regulations:

- smooth or common newt (*Triturus vulgaris*),
- palmate newt (*Triturus helveticus*),
- common frog (*Rana temporaria*), and
- common toad (*Bufo bufo*).

Grass snakes (*Natrix natrix*) are, however, protected from killing, injuring and sale under Sections 9(1) and 9(5) of the same legislation.

Bats, otter, white-clawed crayfish and great crested newts

All species of British bat and their roosts (places of shelter or rest), otter, white-clawed crayfish and great crested newts are protected by law from intentional and reckless disturbance under The Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Acts 2000, and the Conservation of Habitats and Species Regulations 2010 to incorporate the European Habitats directive.

Badger

Badgers and their setts are protected under the 1992 Badgers Act, and it is illegal to carry out work, which may disturb badgers without a licence from Natural England. Further information about species licensing and legislation can be obtained from the Species Licensing Service on 0117 3728000.

Water vole

The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Dormouse

The hazel dormouse is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats and Species Regulations 2010 (as amended) making it a European Protected Species. This species is also considered a priority under the UK BAP. The Hazel dormouse is protected under Article 12 of the Habitats Directive (as amended) which prohibits certain activities in relation to European Protected Species (EPS). Article 16 of the Habitats Directive contains derogations from Article 12. Article 16 is transposed into English law by regulation 53 of the Habitats regulations which allow licences to be issued under certain circumstances. The effect of these licences is to make an activity that would otherwise be an offence, lawful if carried out in accordance with the provisions of the licence.

Hedgehog, polecat and brown hare

UK Biodiversity Action Plan (BAP) Priority Species.

Birds

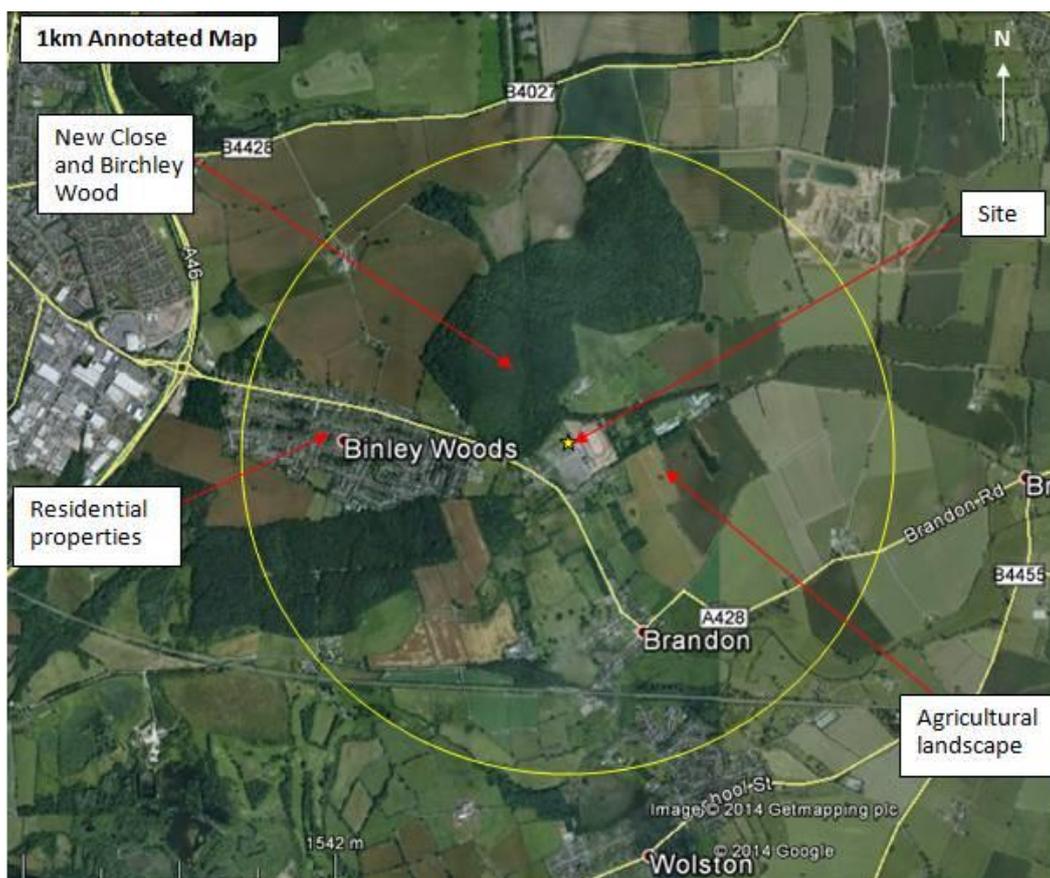
The majority of species of nesting bird are protected under the Wildlife & Countryside Act 1981 and as amended by the Countryside & Rights of Way Act 2000.

4. Desktop Study

Prior to the ecological survey of the Site, a desk-top data gathering exercise was undertaken. The Nature On The Map website was accessed and the Warwickshire Biological Records Centre were contacted for information on statutory and non-statutory sites and protected/notable species records within a 1km radius.

Habitat connectivity and barriers

- Overall the connectivity of this Site was considered average with a rural landscape of agricultural land and woodland to the north, south and west and residential properties of the suburb of Binley Woods to the east.
- Immediately adjacent the Site to the west was the A428 trunk road, which may have created a barrier to the free movement of species from this direction.
- Adjacent the Site to the north, beyond Gossett Lane, stretched New Close and Birchley Wood; both designated Local Wildlife Sites for their ancient woodland habitat. The habitats created by such woodlands may have provided good shelter and forage habitat for a number of species.
- The increased human influences, such as noise and light pollution, created by the Site's current use and its close proximity to residential properties and the A428 to the west may have deterred number of species.



Species

Warwickshire Biological Record Centre provided the following records within a 1km radius. Only species scoped *in* to the survey, where records exist, are commented on within the species section.

Terrestrial Mammals

Indeterminate bat (*Chiroptera*), badger (*Meles meles*).

Amphibians

Common frog (*Rana temporaria*)

Reptiles

Slow worm (*Anguis fragilis*)

5. Results and evaluation

Phase 1 habitat survey

On the 24th April 2014 a walkover survey of the Site was carried out in accordance with standard methodology for Phase 1 habitat assessment (Joint Nature Conservation Committee, 1993) by a suitably experienced surveyor, Rebecca Golder.

Timing and Conditions

The site was visited on Wednesday 24th April 2014

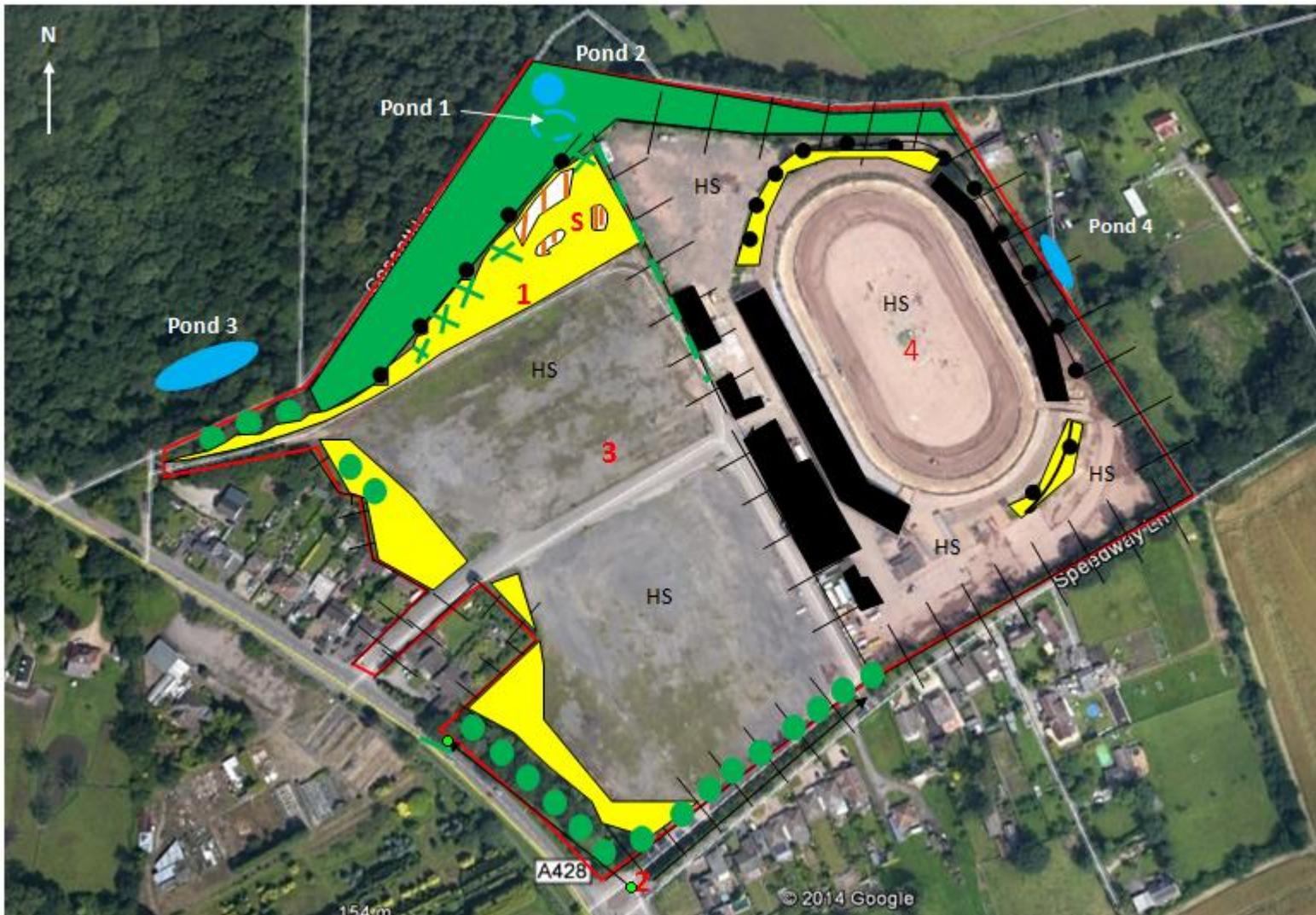
Parameter	Recorded Figure
Temperature	18.5°C
Cloud cover	0%
Precipitation	None
Wind speed (Beaufort Scale)	1 - Light air

An annotated Phase 1 habitat survey map is provided in this section. This illustrates the location of all habitat types recorded at the Site together with target notes depicting features of ecological interest. Habitats were classified using Phase 1 methodology (JNCC, 1993) and were then evaluated against the IEEM EIA evaluating habitats and species guidelines (2006) in order to give them a scale of importance. Such criteria included size, species diversity, presence of Local BAP or UK BAP habitats and species together with presence of other notable species.

Habitats

- Hardstanding
- Ponds
- Tall ruderal vegetation
- Semi-natural, broadleaved woodland
- Tree line
- Scattered trees
- Amenity grassland
- Scrub
- Hedgerow
- Boundaries

Phase 1 map



KEY			
	Boundary		Amenity grassland
	Fence line		Scattered scrub
	Hardstanding		spoil heaps
	Earth bank		Buildings
	Tall ruderal vegetation		Tree line
	Scattered trees		Pond
	Semi-natural, broadleaved woodland		Dry pond
			Target note

Target Notes

1. North western mosaic of habitats
2. Tree lines
3. Car park
4. Race track

Hardstanding

The Site comprised large areas of hardstanding, in current and frequent use for car parking, speedway racing and dog racing.

This habitat is typically low in ecological value, offering limited shelter and forage habitat as well as a dispersal barrier to species.

Ecological value: LOW



Hardstanding

Ponds

There were two ponds within the semi-natural, broadleaved woodland within the Site boundary. Pond 1 was dry at the time of survey and appeared to have been for some time. Pond 2 held some water, though no submerged aquatic vegetation was present and the water quality appeared poor. A Habitat Suitability Index was carried out on pond 2 for its suitability to support great crested newts.



Pond 1



Pond 2

Great Crested Newts are protected by European law and are a priority species under the UK BAP, as they have been in decline in recent years due to habitat loss and fragmentation. This species relies on suitable ponds for breeding in the spring as well as suitable terrestrial habitat for safe hibernation over the winter and before they reach maturity. Newts also migrate between ponds to ensure gene pool viability, so safe connecting habitat is also important.

HSI can be useful in:

- Evaluating the general suitability of a sample of ponds for Great Crested Newt
- Comparing general suitability of ponds across different areas
- Evaluating the suitability of receptor ponds in a proposed mitigation scheme

HSI is limited by being insufficiently precise to allow one to draw conclusions that a pond with a high score will support Great Crested Newts nor that a pond with a low score will not do so. Also, the results do not allow conclusions on newt populations to be reached.

HSI – pond 2		
Factor	Result	Suitability Index
SI ₁ Location	A	1
SI ₂ Pond Area	10m ²	0.01
SI ₃ Pond Drying	Annually	0.1
SI ₄ Water Quality	Poor	0.33
SI ₅ Shade	50%	1
SI ₆ Fowl	Absent	1
SI ₇ Fish	Absent	1
SI ₈ Ponds	9	0.81
SI ₉ Terrestrial	Moderate	0.67
SI ₁₀ Macrophytes	0%	0.3

SI₁ x SI₂ x SI₃ x SI₄ x SI₅ x SI₆ x SI₇ x SI₈ x SI₉ x SI₁₀

(1 x 0.01 x 0.1 x 0.33 x 1 x 1 x 1 x 0.81 x 0.67 x 0.3) 1/10 = 0.37

equates to “ POOR ” habitat suitability for Great Crested Newts

This result indicates pond 2 is unlikely to offer suitable conditions for great crested newts. It is possible that more tolerant and common species of amphibian including common toads and common frogs could use this pond.

Tall ruderal vegetation

Tall ruderal vegetation of abundant common nettle, occasional willowherb species and frequent rush species was present in and around the areas of amenity grassland with spoil. Abundant common nettle was recorded growing over the earthbank.

This type of habitat is typically described as “weedy” vegetation growing on disturbed soil. It is not an uncommon habitat, it is easily recreated and it is usually dominated by one or two common plant species. It may provide a moderately good habitat and food source for some invertebrates, more so when part of a habitat mosaic as it is within this western section of the Site.

Ecological value: LOW-MEDIUM



Tall ruderal vegetation within amenity grassland with spoil heaps habitat



Tall ruderal vegetation growing from earthbank

Semi-natural, broadleaved woodland

An area of semi-natural, broad-leaved woodland with species including frequent oak and ash was present in the west of the Site. This woodland was well connected to New Close and Birchley Wood, each designated as Local Wildlife Sites for their ancient woodland habitats. A track was present separating the Site's woodland from New Close and Birchley Wood. Ground flora included bluebell and cuckoo pint and a deep layer of leaf litter.

This woodland habitat mostly consists of deciduous species which lose their leaves over the winter and generally have a more open structure than that of coniferous woodland. This often allows for greater light penetration to ground level and therefore increased ground flora diversity, however, in this case ground flora diversity was low with just sparse bluebells and cuckoopint. Lowland deciduous woodland is a UK BAP priority habitat and can be important for a wide range of birds, mammal and invertebrate species.

Mature broadleaved woodland may take decades to establish and would take significant time to recreate.

Ecological value: MEDIUM-HIGH



View of semi-natural, broadleaved woodland from within the Site

Tree line

Semi-mature tree lines were present on the western and southeastern boundaries; species included frequent cherry and oak and occasional conifer species.

As with scattered trees this habitat offers opportunities to species such as nesting birds and a dispersal route for many species.

Ecological value: MEDIUM

Western boundary tree line



South eastern boundary tree line

Scattered trees

There were a small number of scattered trees in the westernmost corner of the north western boundary of the Site, these included oak and hawthorn. There were also some mature willows along the north western boundary of the Site.

Scattered trees may provide ideal nesting habitat for birds or roosting habitat for bats, which will exploit features such as rot holes, cracks or fissures. Many trees support a variety of invertebrates, which in turn attract other wildlife that rely on them as a food source. Trees also provide ideal perches for birds of prey, which can exploit them as a vantage point when hunting.

Ecological value: MEDIUM



Scattered trees in westernmost corner of the northwestern boundary



Willow on northwestern boundary

Amenity grassland

Along the northwestern and western boundaries were areas of amenity grassland. This habitat had a sward length of around 3-5cm but became more rough along the northwestern boundary. Species included white clover, perennial rye grass and meadow vetchling. The presence of a slightly higher density of botanical species than that of typical amenity grassland was likely due to a decrease in the intensive management regime. In the northwest of the Site the more rough area of amenity grassland included spoil heaps and frequent soft rush. An earth bank of amenity grassland was present in the centre of the Site; this was constructed with soil and tyres and was used as a barrier around the racing track.

This habitat is typically low in ecological value mainly due to its intense management regime of cutting, pesticide and fertiliser application. The short sward length and lack of botanical diversity doesn't typically offer many opportunities to species, however, the presence of the rougher amenity grassland on the northwestern boundary increases this habitats value for species, including reptiles.

Ecological value: MEDIUM



Amenity grassland along western boundary



Amenity grassland bank in the centre of the Site



*Rough amenity grassland with rush species
and spoil heaps*

Scrub

Bramble, elder and willow scrub was present growing from the earthbank on the northwestern boundary of the Site. This earthbank and scrub separated the amenity grassland and hardstanding in the south of the Site from the area of semi-natural, broad-leaved woodland.

This habitat type is generally widespread and common and is usually associated with areas of unmanaged/unmaintained land. Consisting of multi-stemmed shrubs and bushes between 0.5m and 5m in height this habitat can be an important component of a habitat mosaic. Scrub can provide good foraging and nesting habitat for many bird species as well as provide valued shelter and forage for many other species.

Ecological value: MEDIUM



Scrub on earthbank

Hedgerow

A defunct hedgerow was present in the west of the Site. Species included frequent hazel and rose.

Hedgerows are not only a UK BAP priority habitat but they can also provide valuable connectivity through the landscape and between other habitats, making them a valuable resource for a range of wildlife including bats and many invertebrates, however, in the case of this hedgerow its defunct nature and short length resulted in a low ecological value. Traditionally hedgerows were maintained as a means of containing livestock however as this need has in some cases been replaced by fencing, some hedgerows have been left unmanaged becoming outgrown or with frequent gaps. However, with corrective management such as laying, planting and/or coppicing, these can frequently be restored.

Ecological value: LOW



Defunct hedgerow

Boundaries

Please see Phase 1 map for locations of fencelines.

Ecological value: LOW

Species

The potential of protected species to be present on Site was given a value evaluated by the habitat suitability, records within the 1km radius and any evidence found on Site.

Bats

There are 18 species of bats found in the UK all of which are protected by European law and are considered priorities under the UK BAP, as they have been in decline over recent years. Bats use a range of different habitats depending on species and time of the year. However, all bats found in the UK are reliant on invertebrates as a food source, so therefore habitats that are known to be beneficial to invertebrates can be considered as beneficial to bats, such as pasture, woodland and water bodies.

Most bats rely on good connective habitat such as hedgerows to ensure they can travel safely between roosts and foraging areas.

A search to Warwickshire Biological Records Centre revealed four records for indeterminate bats within 1km of the Site between 1997 and 2008. The buildings were surveyed for bats by *ECOLOLOCATION*, the results of which are in an accompanying Initial Bat Assessment Report. The scattered trees on Site did not appear to offer suitable roosting features to bats in the form of rot holes, cracks or peeling bark, however, the western mosaic of habitats including woodland, amenity grassland and scrub would offer connectivity through the landscape as well as foraging habitat.

Likelihood of bat roosting in trees: LOW

Likelihood of bat foraging/commuting (using hedgerows): MEDIUM-HIGH

Badgers

European Badgers and their setts are protected in the UK, although they have become more common over recent years. Badgers use a range of habitats (rural or urban) however they are generally associated with agricultural land. A clan of badgers may have a number of setts which they may use at different frequencies at different times of the year.

The data search revealed a total of seven records for badger within the 1km search radius. However, no evidence of badger was recorded at the Site in the form of latrines, foraging signs or setts.

Likelihood of badger presence: LOW

Reptiles

There are a number of reptiles which are found in the UK including common lizard, sand lizard, slow worm, grass snake and adder. All reptiles native to the UK are priority species under the UK BAP. As cold blooded creatures, basking makes up a very important part of their life cycle, because of this all reptiles will use areas that are exposed to the sun in the morning and late afternoon to ensure they maintain a regulated body temperature.

There was 1 record of slow worm within a 1km radius of the Site recorded in 1981 within Brandon Wood to the south of the Site. The small area of rough amenity grassland, tall ruderal and scrub with areas of spoil was considered to offer suitable habitat to reptiles. To a lesser extent, sheltering opportunities were also available in the amenity grassland, soil and tyre earthbank in the centre of the Site, however, the presence of hardstanding and high levels of disturbance would likely deter shelter in this area whilst the Site is in use.

Likelihood of reptile presence: MEDIUM

Amphibians

Great crested newts and other amphibians

Two ponds were present adjacent to the Site but outside of its boundary. Pond 3 was a large woodland pond north of the Site; it was completely shaded, with limited aquatic vegetation. The water quality appeared poor and it was almost entirely covered by duckweed. A Habitat Suitability Index was carried out on this pond, the results of which are below:

HSI – pond 3		
Factor	Result	Suitability Index
SI ₁ Location	A	1
SI ₂ Pond Area	900 m ²	0.98
SI ₃ Pond Drying	Rarely	1
SI ₄ Water Quality	Poor	0.33
SI ₅ Shade	100 %	0.2
SI ₆ Fowl	minor	0.67
SI ₇ Fish	possible	0.67
SI ₈ Ponds	9	0.81
SI ₉ Terrestrial	Moderate	0.67
SI ₁₀ Macrophytes	0 %	0.3

$$SI_1 \times SI_2 \times SI_3 \times SI_4 \times SI_5 \times SI_6 \times SI_7 \times SI_8 \times SI_9 \times SI_{10}$$

$$(1 \times 0.98 \times 1 \times 0.33 \times 0.2 \times 0.67 \times 0.67 \times 0.81 \times 0.67 \times 0.3)^{1/10} = 0.58$$

equates to “ below average ” habitat suitability for Great Crested Newts

Pond 4 was present on the eastern boundary of the Site; this pond again, was completely shaded with no submerged aquatic vegetation.

HSI – pond 4		
Factor	Result	Suitability Index
SI ₁ Location	A	1
SI ₂ Pond Area	50 m ²	0.13
SI ₃ Pond Drying	Sometimes	0.5
SI ₄ Water Quality	Moderate	0.67
SI ₅ Shade	90 %	0.4
SI ₆ Fowl	minor	0.67
SI ₇ Fish	possible	0.67
SI ₈ Ponds	9	0.81
SI ₉ Terrestrial	Moderate	0.67
SI ₁₀ Macrophytes	0 %	0.3

$$SI_1 \times SI_2 \times SI_3 \times SI_4 \times SI_5 \times SI_6 \times SI_7 \times SI_8 \times SI_9 \times SI_{10}$$

$$(1 \times 0.13 \times 0.5 \times 0.67 \times 0.4 \times 0.67 \times 0.67 \times 0.81 \times 0.67 \times 0.3)^{1/10} = 0.51$$

equates to “ below average ” habitat suitability for Great Crested Newts

There was one record for common frog recorded in 1990 within the suburb of Binley Woods to the west of the Site. The ponds scored BELOW AVERAGE with regards to offering suitable habitat to great crested newts. In addition to this, the Site comprising hardstanding, offered limited opportunities to sheltering or

foraging great crested newts and was likely to also act as a dispersal barrier to this species. It is possible that more tolerant species of amphibians would be using these ponds and therefore could be present within the western area of the Site.

Likelihood of amphibian presence: MEDIUM

Likelihood of great crested newt presence: LOW

Birds

The Site as a whole did offer suitable nesting opportunities for birds within the tree lines and scattered trees.

Birds recorded on Site during survey:

Blackbird
Yellowhammer
Blue tit

Likelihood of nesting bird presence: MEDIUM-HIGH

Hedgehog

Hedgehogs have been in decline recently due to increased pressures from a number of factors possibly including increased pesticide use. They are now considered a priority species under the UK BAP. Hedgehogs rely on habitats that are high in invertebrate numbers and have safe areas for nesting and good connectivity.

There were no records for hedgehog within the 1km search radius. No evidence of this species was recorded during the Site visit, however, suitable foraging and sheltering habitat was present within the western area of woodland, scrub and amenity grassland.

Likelihood of hedgehog presence: MEDIUM

Polecat

Polecats are protected in the UK and have slightly increased in numbers recently however they are still scarce in England and are considered a priority under the UK BAP. Polecats inhabit a mosaic of habitat including woodland, grassland and riverbanks. They have large territories (though are not particularly territorial) and tend to move between habitats quite freely following seasonal food sources, with a main diet comprised of rabbits and rats.

There were no records of polecat within a 1km radius of the Site. It was considered this Site was too disturbed to offer a suitable habitat to polecat; however, they could potentially disperse along the western habitat of woodland, scrub and amenity grassland and use the adjacent ancient woodland habitat of New Close and Birchley Wood.

Likelihood of polecat presence: LOW-MEDIUM

Dormice

The hazel dormouse occurs in a wide range of woody habitats including woodland, hedgerows and scrub with adequate food source of fruit and invertebrates, though are considered rare in Britain

There were no records of dormice within a 1km radius of the Site; however, there was one record outside of this radius in Brandon Wood to the south of the Site. The woodland on Site lacked the structured understorey dormice favour, in addition to this there was a lack of fruiting and flowering species suitable for foraging.

Likelihood of presence: LOW

Limitations

There were no limitations at the time of survey.

6. Conclusion

The proposed development would likely impact areas of low ecological value hardstanding and the western boundary amenity grassland. It was considered these areas offered little habitat to protected or notable species and could be developed unconstrained (following the results of the Initial Bat Assessment of the buildings).

The most valuable habitat was that of the semi-natural, broad-leaved woodland. This habitat should be retained and protected for its connection to the Local Wildlife Sites of New Close and Birchley Wood and the opportunities it offers foraging and sheltering hedgehogs, common amphibians, polecat and bats. The northwestern mosaic of habitats including the semi-natural, broad-leaved woodland, earthbanks with scrub, scattered trees, tall ruderal vegetation and the rough amenity grassland with spoil heaps offered a potentially valuable habitat to a range of species including hedgehog, nesting birds, foraging bats, small mammals, common amphibians and reptiles. This western mosaic also offered a dispersal route to species through the landscape. The tree lines on the southern and western boundaries of the Site also offer a valuable habitat to nesting birds and small mammals. These valuable habitats should be retained and protected where possible.

The ponds did not appear to offer suitable habitat to great crested newts; however, those within the Site boundary (ponds 1 & 2) will likely be retained and protected as they fall within the woodland. A 3m area of land should be retained adjacent to the pond on the eastern Site boundary to avoid impacts from the development; this area could be soft landscaped to increase its ecological value.

A further reptile survey of the amenity grassland with spoil heaps is recommended in order to inform the layout of the development. Further recommendations, sensitive working practices and potential ecological enhancements are outlined within the report.

7. Recommendations

Avoidance, mitigation and legal obligation

In order to develop the Site, *ECOLOLOCATION* recommend the developer follow the advice set out in this "Avoidance, mitigation and legal obligations" section, to avoid harm or impact to legally protected and notable species and habitats on Site, as outlined within The National Planning Policy Framework:

The National Planning Policy Framework para 117 states that "To minimise impacts on biodiversity and geodiversity, planning policies should...promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations". In order to ensure no nett loss of biodiversity in accordance with NPPF & Circular 06/2005 recommendations are made below:

- It is recommended that **detailed reptile surveys** are undertaken of the Site following Froglife advice sheet 10. **Seven** surveys should be undertaken, initially, to establish presence or absence with additional surveying being necessary to determine population size and a suitable mitigation strategy, should evidence of reptiles be found. Further recommendations will follow the reptile surveys, dependent on their results.
 - **The tree lines and scattered trees should be retained and protected, where possible in accordance with BS5837:2012** 'Trees in relation to construction' for the purposes of ensuring that potential bird nesting habitat and a source of food and shelter for possible reptiles and amphibians is maintained as well as connectivity through the landscape.
 - **Retention of the northwestern mosaic of habitats**, where possible, for the opportunities they offer sheltering and foraging species including hedgehog and common amphibians and the possible presence of reptiles as well as a dispersal route for these species through the landscape.
 - **Retention of the semi-natural, broadleaved woodland as it is a UK BAP priority habitat** and it offers good connection to ancient woodlands as well as foraging and shelter opportunities to a number of species.
 - **Any deep excavations, which will be left open overnight, will need to have sloping wooden boards placed in them** to provide exit ramps for amphibians, small mammals and any other animals to escape.
 - **Works to scattered trees and the tree line should be conducted in order to avoid the bird nesting season, typically March-September inclusive, where possible. However, if timing of works in this way is not possible;**
 - The trees could *potentially* be netted, if practicable, outside of this time to deter nesting birds. Netting should be removed once works on Site are complete.
- OR
- A suitably experienced ecologist could carry out a nesting bird check immediately prior to works commencing on Site.
 - **A permanent 3m area of land should be retained adjacent to the pond on the eastern boundary;** this will reduce the likelihood of this habitat being impacted by the development. This retained land could form part of open green space and soft landscaped.
 - The builders' compound to be located at least **5m from vegetation and all storage must be on pallets to avoid the possibility of amphibians or reptiles using these areas for shelter.** Should any evidence of newts or reptiles be found on the Site before or during construction, works must stop and a suitably qualified ecologist should be contacted for advice on how best to proceed.

- Lighting during works and permanent lighting once the development has been completed should **be cowled to direct light towards the ground and away from bat foraging, commuting and roosting areas such as trees.**
- **All areas of grassland currently grazed or mown should be kept at their current length of 3-5cm prior to and during works** to deter species from moving onto the Site.
- Should any non-protected species be discovered on Site these should be carefully moved from the development Site, unharmed, to an area to be left undisturbed by the works.
- Should any protected species be discovered before or during the works, *ECOLOLOCATION* or the local office of Natural England should be contacted for advice.

Suggested enhancements and compensation

If avoidance and mitigation measures are not achievable within the scheme, then compensation should be sought and the Site could be enhanced post development as encouraged by The National Planning Policy Framework:

The National Planning Policy Framework para 118 states that "Opportunities to incorporate biodiversity in and around developments should be encouraged". Therefore, additional recommendations for biodiversity enhancements across the site are provided below:

- Any fences which form part of the gardens of new properties should contain a 13cm x 13cm gap in one or more place along the base or within the gravel boards to ensure good connectivity between gardens allowing for use and movement through the Site by foraging hedgehogs.
- Native trees and shrubs should be used within newly created hedgerows which may form part of residential gardens. The planting of native species which are appropriate to the landscape character may improve local species diversity as well as increase the potential for use of the Site by wildlife.
- **Nest boxes for swift and house sparrow (Amber listed species)** such as those illustrated below could be provided on Site to enhance the existing breeding possibilities. Such nesting facilities should be sited away from roads, erected within any suitable proposed buildings and facing away from prevailing wind and rain.



Schwegler No. 17A swift brick



Schwegler 1SP sparrow terrace

- **Pond 2 could be dredged of leaves during and the woodland canopy could be opened up to reduce shading of the Pond. Both these activities should be undertaken in the winter months.**
- Further enhancements to the Site are likely to be recommended following the results of the reptile surveys.

8. References

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- National Planning Policy Framework 2012
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- RSPB www.rspb.org.uk
- Birds of Conservation Concern 3: The Population Status of Birds in the UK, Channel Islands and the Isle of Man (Various, 2009)
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- Wildlife & Countryside Act (1981) HMSO (as amended)
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- Warwickshire Biological Record Centre
- Rose, Francis (2006) *The Wildflower Key – How to identify wild flowers trees and shrubs in Britain and Ireland*
- The Habitat Suitability Index (HSI) for the great crested newt* Oldham et al. (200)

9. Appendix

Species List

Common Name	Scientific Name
DAFOR scale. D – dominant, A – abundant, F – frequent, O – occasional, R - rare	
Trees/Shrubs	
Hazel	<i>Corylus avellana</i> O
Hawthorn	<i>Crataegus monogyna</i> F
Hornbeam	<i>Carpinus betulus</i> R
Rose	<i>Rosa</i> Spp. O
Field maple	<i>Acer campestre</i> O
Ash	<i>Fraxinus excelsior</i> O
Silver birch	<i>Betula pendula</i> O
Willow	<i>Salix</i> spp. O
Elder	<i>Sambucus nigra</i> F
Oak	<i>Quercus robur</i> R
Apple	<i>Malus</i> spp. R
Conifer	<i>Pinophyta</i> spp. R
Snowberry	<i>Symphoricarpos albus</i> O
Scotts pine	<i>Pinus sylvestris</i> R
Herbs	
Ivy	<i>Hedra helix</i> O
White dead nettle	<i>Epilobium angustifolium</i> F
Rose bay willowherb	<i>Lamium album</i> O
Dandelion	<i>Taraxacum</i> spp. F
Common nettle	<i>Urtica dioica</i> F
Ribwort plantain	<i>Plantago lanceolata</i> F
Creeping buttercup	<i>Ranunculus repens</i> A
Soft rush	<i>Juncus effuses</i> F
Broadleaved dock	<i>Rumex obtusifolius</i> F
Creeping thistle	<i>Cirsium arvense</i> F
Trefoil	<i>Lotus</i> spp. F
Forget-me-not	<i>Myosotis</i> spp. O
Bluebell	<i>Hyacinthoides</i> spp. R
Lawn daisy	<i>Bellis perennis</i> F
Common thistle	<i>Cirsium vulgare</i> R
Bramble	<i>Rubus fruticosus</i> O
Greater plantain	<i>Plantago major</i> F
Hedge bindweed	<i>Convolvulus arvensis</i> O
Crane's bill	<i>Geranium</i> spp. O
Common ragwort	<i>Jacobaea vulgaris</i> O
Yarrow	<i>Achillea millefolium</i> O
Silverweed	<i>Argentina anserine</i> R
Creeping cinquefoil	<i>Potentilla reptans</i> O
Honeysuckle	<i>Lonicera</i> spp O
Hedge garlic	<i>Alliaria petiolata</i> O
Cow parsley	<i>Anthriscus sylvestris</i> F
Cleavers	<i>Galium aparine</i> F
Ground ivy	<i>Glechoma hederacea</i> R
Self heal	<i>Prunella</i> O
Ground elder	<i>Aegopodium podagraria</i> F
Meadow vetchling	<i>Lathyrus pratensis</i>
Meadow buttercup	<i>Ranunculus acris</i> R
Lesser stitchwort	<i>Stellaria graminea</i>
Hogweed	<i>Heracleum sphondylim</i> O
Cuckoo pint	<i>Arum maculatum</i> R

