

Preliminary Ecological Appraisal

**Gatewen Road,
Wrexham**

Day Architectural Ltd



**Report Reference:
OXF10388/02**

RPS Planning and Development Ltd

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1 Executive Summary

1.1 The Project and Commissioned Work

RPS Planning and Development Ltd (RPS) was instructed by Day Architectural Ltd on behalf of Glyndwr University Wrexham to carry out a preliminary ecological appraisal comprising an extended Phase 1 habitat survey of land off Gatewen Road, Wrexham.

It is our current understanding that the proposed development would involve the construction of residential units across the site, along with associated infrastructure.

The survey followed best practice methodology and was carried out in May 2017 by experienced ecologists.

1.2 Findings and Recommendations

Notable habitats within and adjacent to the site were tree lines, rubble piles and mature trees with bat boxes, although the majority of the site comprised grazed pasture which offered little habitat suitable for protected and notable species. An adjacent development site does, however, include existing Protected Species licenced mitigation for great crested newts and bats. On this basis, the following recommendations have been made.

Table 1: Summary of recommendations

Notable Ecological Feature	Consideration	Further Surveys Required ¹	Mitigation, Compensation and Enhancement	Optimal Timings
Great Crested Newt (GCN)	Potential presence of this species across the site	Yes; full presence/absence surveys of all ponds within 500m of the site	To be confirmed following results of surveys	Mid-March to Mid-June
Bats	Bat boxes present along northern boundary of site attributed to mitigation for adjacent colliery site, some of which are likely to be in place as part of a European Protected Species Mitigation Licence	Yes; monthly bat transect surveys if mitigation measures cannot be implemented in full	Retention of a 20m strip of wildlife corridor along northern boundary of site to protect roosting bats and also to retain value of site to foraging/commuting bats Introduction of bat boxes to enhance site to roosting bats	During and following works During works
Reptiles	Potential for small numbers to be present in some locations across the site	No	Sympathetic vegetation clearance methods (to be finalised following completion of GCN surveys) Retention of a 20m strip of wildlife corridor along northern boundary of site to allow reptile movement across site	During works During and following works

¹ Please note that all further surveys should be completed before a planning application is submitted / works commence on site

Notable Ecological Feature	Consideration	Further Surveys Required ¹	Mitigation, Compensation and Enhancement	Optimal Timings
Nesting birds	Potential for nesting birds to be present in areas of scrub and trees	No	Vegetation to be cleared outside of nesting season or any areas to be affected to be checked for active nests by the ecologist prior to removal Introduction of bird boxes and landscape features targeting birds of conservation concern to introduce biodiversity enhancements	October – February During works
Badgers	Potential for badgers to excavate a sett within site Potential for badgers to cross construction site	Yes; pre-commencement inspection No	To be confirmed following results of survey Best-practice working methodologies (i.e. mammal ladders etc.) Retention of 20m strip of wildlife corridor along northern boundary of site to allow continued movement of badgers across site	In the two months prior to work starting During works During and following works

It should be noted that the assessments, further surveys and proposed mitigation outlined in this report have been made in line with the development proposals supplied to RPS, which are at the outline/illustrative stage at the time of reporting. These recommendations should, therefore, be used to inform the finalised site layout and landscape scheme/management.

The assessments, recommendations for further surveys and mitigation/enhancement measures should, therefore, be re-visited upon completion of the final site layout.

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2 Introduction and Background

2.1 Purpose and Scope of this Report

RPS Planning and Development Ltd (RPS) was commissioned to carry out a preliminary ecological appraisal of land off Gatewen Road, Wrexham to inform planning prior to a proposed residential development. This appraisal is based on a review of the outline development proposals provided by the client, desk study data (third party information) and a survey of the site. This report pertains to these results only; recommendations included within this report are the professional opinion of an experienced ecologist, based on their personal interpretation of legislation and planning policy.

The study area is defined as shown in the enclosed site plan (Figure 1) and Phase 1 Habitat plan (Appendix C) plus a buffer zone extended to include the Zone of Influence (see below) of the proposals (hereafter referred to as the “site”).

2.2 Proposed Site Plans

No finalised plans for the site were available at the time of reporting but an outline concept masterplan was provided to base ecological impact assessments on; this has been reproduced at Appendix B. It is our current understanding that the proposed project would involve the construction of residential units across the site with associated infrastructure.

2.3 Zone of Influence

The term Zone of Influence is used to describe the geographic extent of potential impacts of a proposed development. The Zone is determined by the nature of the development and also in relation to individual species, depending on their habitat requirements, mobility and distances indicated in any best practice guidelines.

For this site, the Zone of Influence is considered to be land on and immediately adjacent to the site and, specifically in respect of great crested newts *Triturus cristatus*, land within 500m of the site boundary as illustrated on the location plan due to the scale and permanent nature of the proposed works.

2.4 Site Context and Location

The site comprises approximately 5.3ha of pasture located to the northwest of Wrexham, central grid reference SJ 31259 51578. At the time of survey, the site comprised horse-grazed pasture bound by tree lines. The adjacent land use is a mixture of residential development, pasture and woodland. The location in a local context is illustrated on Figure 1 overleaf.

Aerial imaging available via Google Earth Pro was also reviewed to assess the site in relation to its context in the wider landscape. As illustrated on Figure 2, the site forms part of a mosaic of habitats within a mixed-use landscape. Lines of trees and areas of woodland also provide connectivity to distant parcels of woodland and water features. An ongoing residential development site also sits to the immediate east of the site and has been subject to ecological surveys and mitigation.

The map shows the New Broughton area with a dashed blue circle indicating the community centre catchment area. A red outline marks the proposed site for the New Broughton Community Centre. Three water bodies are labeled WB01, WB02, and WB03. Surrounding roads include Highfield Road, Gatewen Road, Berse Road, and others. Landmarks such as the Education Facility, Pendine Farm, and White House are also shown.

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2.5 Legislation and Planning Policy

Articles of British wildlife and countryside legislation, policy guidance and both Local and National Biodiversity Action Plans (BAPs) are referred to throughout this report. Their context and application is explained in the relevant sections of this report. The relevant articles of legislation are:

- Under the National Planning Policy Framework 2012 the presence of any protected species is a material planning consideration. The Framework states that impacts arising from development proposals must be avoided where possible or adequately mitigated/ compensated for and that opportunities for ecological enhancement should be sought.

All UK species of British bats are fully protected under *The Conservation of Habitats and Species Regulations* 2010 (as amended). The Regulations prohibit:

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- The deliberate disturbance of any bat species in such a way as to be significantly likely to affect:
 - Their ability of to survive, hibernate, migrate, breed, or rear or nurture their young; or ;
 - The local distribution or abundance of that species.
- Damage or destruction of a breeding site or resting place (roost);
- The possession or transport of bats or any other part of.

Bats are also protected under the *Wildlife and Countryside Act 1981* (as amended) through their inclusion in Schedule 5. Under the Act, they are protected from:

- Intentional or reckless disturbance (at any level);
- Obstruction of access to any place of shelter, breeding or rest;
- Selling, bartering or exchange of these species, or parts of.

Seven British bat species are listed as Species of Principal Importance (SPI) under the *Natural Environment and Rural Communities (NERC) Act 2006*. These are barbastelle *Barbastella barbastellus*, Bechstein's *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared *Plecotus auritus*, greater horseshoe *Rhinolophus ferrumequinum* and lesser horseshoe *Rhinolophus hipposideros*.

2.5.3 Great Crested Newt (GCN)

GCN are fully protected under Schedule 5 of the Conservation of Species and Habitats Regulations (2010) and Schedule 8 of the Wildlife and Countryside Act 1981 (as amended).

Combined, these acts make it an offence to:

- Kill, injure or take a great crested newt (or attempt to);
- Destroy any place where they live or breed;
- Damage any one of the above places (or any part of it);
- Obstruct access to these places;
- Disturb a great crested newt in any place it uses for shelter;
- Disturb the species such that it affects its ability to hibernate or migrate;
- Sell/ exchange (or offer for sale/exchange) any part of a great crested newt, live or dead.

Offences can be deliberate, intentional or reckless and penalties for any of the above include fines of up to £5k and imprisonment of up to 6 months, per animal affected.

At the local level, the site falls within the area covered by the Wrexham Biodiversity Action Plan (BAP), in which GCN are identified as a Priority Species. GCN are also listed in Section 41 of the NERC Act 2006 as Species of Principal Importance; national objectives & targets include the maintenance of the geographical range and viability of existing great crested newt populations to ensure that it remains in favourable conservation status.

Under the NPPF the presence of a protected species such as GCN is a material planning consideration. The Framework states that impacts on protected species arising from development proposals must be avoided where possible or adequately mitigated for and that opportunities for ecological enhancement should be sought.

3 Methodology

3.1 Desk Based Assessment

Data regarding statutory and non-statutory designated sites, plus any records of protected or notable species and habitats was obtained from the local ecological records centre and online resources, details of which are provided in Table 2 below.

Table 2: Consulted resources

Consultee/ resource	Data sought	Search radius from boundary
COFNOD – North Wales Environmental Information Service	Site designations, protected/notable species records	2km
www.magic.gov.uk ²	Statutory Site Designations	2km
	NERC 2006 Habitats of Principal Importance	1km

The results of protected species surveys conducted as part of a large residential development³ adjacent to the site were also reviewed to make assessments regarding the potential presence of protected species within the site.

3.2 Extended Phase 1 Habitat Survey

An extended Phase 1 habitat survey of the site was carried out on 10th May 2017. Habitats were described and mapped following standard Phase 1 habitat survey methodology (JNCC, 2010), which categorises habitat type through the identification of individual plant species, botanical community and habitat conditions.

Nomenclature follows Stace (Stace, 2010) for vascular plant species and uses the DAFOR scale for relative abundance (D = dominant, A = abundant, F = frequent, O = occasional and R = rare/infrequent).

3.2.1 Hedgerow Assessments

Hedgerows on site were assessed using the Hedgerow Evaluation and Grading System (HEGS) (Clements & Tofts, 1992). This method of assessment includes noting canopy species composition, associated ground flora and climbers, structure of the hedgerow including height, width and gaps, associated features including number and species of mature trees, banks, ditches and grass verges.

Each hedgerow is given a grade using HEGS with the suffixes '+' and '-', representing the upper and lower limits of each grade respectively. These grades represent a continuum on a scale from 1+ (the highest score and denoting hedges of the greatest nature conservation priority) to 4- (representing the lowest score and hedges of the least nature conservation priority) as follows:

- Grade 1 – High to very high value
- Grade 2 – Moderately high to high value
- Grade 3 – Moderate value
- Grade 4 – Low value

Hedgerows graded 1 or 2 are considered to be a priority for nature conservation.

The hedgerows were also assessed against the Wildlife and Landscape criteria contained within The Hedgerow Regulations 1997 to determine whether they qualified as 'Important Hedgerows' under the Regulations. This was achieved using a methodology in accordance with both the Regulations and DEFRA guidance.

² Multi Agency Geographic Information for the Countryside Interactive GIS Map.

³ Development reference: BRO P/2008/1066 and BRO P/2007/0700

The habitat survey was carried out by Joseph Dance BSc (Hons) GradCIEEM and Michelle Cullimore-Pike MSc BSc (Hons). Both have been professional ecologists for over three years and are appropriately experienced to carry out this type of survey.

3.3 Protected / Notable Species Scoping

The habitats on site were assessed for their suitability to support any legally protected or notable species that may present constraints to the proposed development. This includes invasive non-native plant species such as Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera*.

Any incidental sightings of individual species or field signs such as footprints, latrines or feeding remains identified during the survey were noted.

3.3.1 Appraisal Methodology

The overall ecological appraisal is based on the standard best practice methodology provided by the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2013). The assessment identifies sites, habitats, species and other ecological features that are of value based on factors such as legal protection, statutory or local site designations such as Sites of Special Scientific Interest (SSSI) or Local Wildlife Sites (LWS) or inclusion on Red Data Book Lists or Biodiversity Action Plans. Ecological value is considered in the context of international, national, regional or local scale and potential constraints to development are identified on that basis, with recommendations for further more detailed surveys made as appropriate, for example to fully investigate botanical value or to confirm presence / likely absence of a protected species.

The assessment also refers to planning policy guidance (e.g. NPPF) where relevant to relate the value of the site and potential impacts of development to the planning process, identifying constraints and opportunities for ecological enhancement in line with both national and local policy.

3.4 Limitations

3.4.1 Desk Based Assessment

The desk study data is third party controlled data, purchased for the purposes of this report only. RPS cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

3.4.2 Survey

It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.

The protected/notable species assessment provides a preliminary view of the likelihood of these species occurring on the site, based on the suitability of the habitat, known distribution of the species in the local area provided in response to our enquiries and any direct evidence on the site. It should not be taken as providing a full and definitive survey of any protected/notable species group.

The entirety of the land within 30m of the site's boundaries could not be directly accessed to survey so a thorough visual inspection was made where views permitted.

3.4.3 Accurate Lifespan of Ecological Data

The majority of ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for 2 years.

4 Results

4.1 Desk Based Assessment

Only one statutorily designated site was recorded within the search area identified in Section 3.1, details of which are provided in Table 3 below.

Table 3: Statutory designated sites

Site name	Designation	Location	Brief description
Gatewen Marsh	SSSI ⁴	220m to E	Significant example of the “southern mesotrophic mires” wetland type

Another Special Area of Conservation (SAC), named Johnstown Newt Sites was identified 4.1km to the south of the site; this site is noted for its nationally significant Great Crested Newt (GCN) population. Whilst it has national importance for this species, the proposals would not impact upon this GCN population given the distance.

Five non-statutorily designated sites were also identified, details of which are provided in Table 4 below.

Table 4: Non-statutory designated sites

Site name	Designation	Location	Brief description
Moss Valley (site ref: W311)	LWS ⁵	50m to N	Well wooded valley slopes with adjoining grassland
New Broughton Meadow (site ref: W334)	LWS	280m to SW	Site with variety of semi-natural habitats, including pond and wet alder/willow carr
Berse Drelincourt (site ref: W335)	LWS	650m to S	Small site with mosaic of semi-natural habitats, including grassland and woodland with a stream
Higher Berse Marsh (site ref: W333)	LWS	680m to SW	Marsh and marshy grassland
Afon Gwenfro (site ref: W213)	LWS	1km to W	Reclaimed coal site with grasslands and scrub

The closest NERC (2006) Habitat of Principal Importance is deciduous woodland, located c. 50m from the survey area.

Protected species records were received from COFNOD. A summary of the records considered most relevant to the site are provided in Table 5.

Table 5: Summary of protected and notable species records

Species latin name	Species	Most recent record	Closest record to site	Total no. of records	National conservation status	Wrexham LBAP
Amphibians						
<i>Triturus cristatus</i>	Great crested newt	2017	270m to N	113	Fully protected EPS ⁶ , NERC 2006	✓
<i>Lissotriton helveticus</i>	Palmate newt	2017	270m to N	2	Partially protected under WCA 1981 ⁷	

⁴ SSSI – Site of Special Scientific Interest

⁵ LWS – Local Wildlife Site

⁶ European Protected Species (EPS), protected by the Conservation of Habitats and Species Regulations 2010 (as amended) and the wildlife and countryside act 1981

⁷ Protected from sale and advertising for sale under the Wildlife and Countryside Act 1981 (as amended)

Species latin name	Species	Most recent record	Closest record to site	Total no. of records	National conservation status	Wrexham LBAP
<i>Lissotriton vulgaris</i>	Smooth newt	2017	1.2km to NNE	47	Partially protected under WCA 1981	
Mammals						
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	2015	Adj to site ⁸	3	Fully protected EPS, NERC 2006	
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	2013	0.4km to NW	9	Fully protected EPS	
<i>Chiroptera spp.</i>	Unknown bat species	2002	0.5km to NW	5	Fully protected EPS	
<i>Nyctalus noctula</i>	Noctule	2015	0.6km to SSE	1	Fully protected EPS, NERC 2006	
<i>Plecotus auritus</i>	Brown long-eared bat	1999	1.1km to SSW	1	Fully protected EPS, NERC 2006	
<i>Meles meles</i>	Badger	2017	Over 600m from site	8	PBA ⁹	✓
Reptiles						
<i>Zootoca vivipara</i>	Common lizard	2010	1.6km to NE	1	Partially protected under WCA 1981 ¹⁰ , NERC 2006	
Birds						
<i>Pyrrhula pyrrhula</i>	Bullfinch	2017	450m to ESE	6	Amber List (BoCC ¹¹)	
<i>Turdus viscivorus</i>	Mistle thrush	2015	480m to NW	6	Red List (BoCC)	
<i>Turdus philomelos</i>	Song thrush	2015	480m to NW	9	Red List (BoCC)	✓
<i>Sturnus vulgaris</i>	Starling	2015	480m to NW	7	Red List (BoCC)	
<i>Apus apus</i>	Swift	2015	480m to NW	21	Amber List (BoCC)	
<i>Passer montanus</i>	Tree sparrow	2013	480m to NW	1	Red List (BoCC)	
<i>Prunella modularis</i>	Dunnock	2015	640m to SSW	10	Amber List (BoCC)	
<i>Passer domesticus</i>	House sparrow	2016	640m to SSW	13	Red List (BoCC)	
<i>Falco tinnunculus</i>	Kestrel	2016	640m to SSW	7	Amber List (BoCC)	
<i>Cuculus canorus</i>	Cuckoo	2013	1.8km to ENE	4	Red List (Birds of Conservation Concern – BoCC)	

It should be noted that records of hobby *Falco subbuteo* (listed under Schedule 1 of the Wildlife and Countryside Act) were identified just beyond the 2km search area. A large number of other

⁸ A small soprano pipistrelle roost was recorded in a disused railway bridge adjacent to the site in 2007; this roost was subsequently dismantled

⁹ Protection of Badgers Act 1992

¹⁰ Protected from killing and injury under the Wildlife and Countryside Act 1981 (as amended)

¹¹ Birds of Conservation Concern

bird records were also returned by desk study, including several species listed under Schedule 1 of the Wildlife and Countryside Act but these were considered not to be relevant to the site and were, therefore, omitted. A full species list can be provided upon request, however.

4.2 Habitat Survey Results

The site was dominated by species-poor pasture but also contained a narrow range of several different habitat types, as described under the individual sub-headings below. No protected, notable or invasive plant species were recorded.

4.2.1 Dense Scrub

Several patches of this habitat type were recorded around the boundaries of the site; most notably along the northern boundary where the marginal vegetation of the adjacent woodland had spilled over the fencing into the site; see Figure 3. These areas were largely dominated by hawthorn *Crataegus monogyna* but with some occasional blackthorn *Prunus spinosa*. Other occasional species within this compartment were elder *Sambucus nigra*, bramble *Rubus fruticosus* agg., holly *Ilex aquifolium*, hazel *Corylus avellana* with some sycamore *Acer pseudoplatanus* and hornbeam *Carpinus betulus* trees. The ground flora in this area was noted to comprise Spanish or hybrid bluebells *Hyacinthoides* sp., wild mustard *Sinapis arvensis*, hedge bindweed *Calystegia sepium*, common hogweed *Heracleum sphondylium*, cleavers *Galium aparine* and dog's mercury *Mercurialis perennis*. The woodland adjacent to the site was outside of the site's boundaries so was not surveyed.

A small strip of dense bramble scrub was also noted along the southern boundary of the site adjacent to Gatewen Road.

Figure 3: Dense scrub along northern boundary of site



4.2.2 Scattered Scrub

Small patches of loose hawthorn scrub were noted along the western boundary of the site adjacent to the fence line. Another patch of scattered scrub was noted in the centre of the site, growing on a west-facing bank. The species present in this area were hawthorn, elder, immature ash *Fraxinus excelsior* and sycamore trees and saplings and some blackthorn. The ground cover in this area varied between bare earth and grassland but with some dense patches of wild garlic *Allium ursinum* and native bluebells; see Figure 4 below for an overview of this area.

The remnants of a red brick building were also recorded within this area and this area is discussed, along with photographs, in Section 4.3 of this report. For location see Target Note 01 (TN01) in Appendix B.

Figure 4: Scattered scrub in centre of site



4.2.3 Scattered Broad-leaved Tree

A small copse of broad-leaved trees was recorded along the eastern boundary of the site and was an extension of the woodland which ran along the entirety of the eastern boundary; see Figure 5. The species present within were sycamore, ash and oak *Quercus sp.*, with a ground cover of sparse elder and hawthorn. The remnants of an old red brick circular structure were also recorded in this area; a photograph and discussion of this feature is provided in Section 4.3. For location see TN02 in Appendix B.

Figure 5: Scattered broad-leaved trees



4.2.4 Improved Grassland

This habitat type dominated the coverage of the site and the structure of the grassland was predominantly short-sward but with some unmanaged areas that had a richer diversity of species. The field was subject to apparently regular horse grazing. The species composition was dominated by meadow buttercup *Ranunculus acris*, and meadow foxtail *Alopecurus pratensis* with frequent cock's foot *Dactylis glomerata*, creeping buttercup *Ranunculus repens*, ribwort plantain *Plantago lanceolata* (locally abundant), greater plantain *Plantago major*, ragwort *Jacobaea vulgaris*, daisy *Bellis perennis*, red clover *Trifolium pratense* (locally abundant), common sorrel *Rumex acetosa*, Yorkshire fog *Holcus lanatus*, sweet vernal grass *Anthoxanthum odoratum* (locally abundant, most notably in the northwest), common mouse-ear *Cerastium fontanum*, chickweed *Stellaria media*, dandelion *Taraxacum officinale sp.*, yarrow *Achillea*

millefolium, forget-me-not *Myosotis sp.*, speedwell *Veronica sp.*, and some cow parsley *Anthriscus sylvestris* around the margins.

Figure 6: Improved Grassland Field



4.2.5 Tall Ruderal Vegetation

Narrow strips of this habitat type were noted along the southern boundary of the site and also around the perimeter of the scattered scrub in the centre of the site. The species present were common nettle *Urtica dioica*, broad-leaved dock *Rumex obtusifolius*, meadow buttercup, creeping thistle *Cirsium arvense* and common hogweed.

Figure 7: Tall ruderal vegetation along southern boundary of site



4.2.6 Wall / Fence

A combination of post-and-wire and post-and-rail fencing comprised the boundaries of the site and the walls of a partially-demolished brick structure were also recorded within the site; see Figures 8 and 9.

Figure 8: Post-and-wire fence along western boundary of site



Figure 9: Wall within site



4.3 Preliminary Protected / Notable Species Assessment

4.3.1 White-clawed Crayfish, Water Vole and Otter

No aquatic habitat with the potential to support any of these species was recorded either within or adjacent to the site and the likelihood of the presence of this species within the site is, therefore, considered to be negligible. There would be no adverse impacts on these species as a result of any development within the site and there is no recommendation for further survey, mitigation or licensing. They will not be considered further in this report.

4.3.2 Great Crested Newt (GCN)

A total of three standing bodies of water were identified within the 500m Zone of Influence. Of these waterbodies, WB02 had previously been subject to presence/absence surveys for GCN in 2007 in relation to an adjacent development¹². A single GCN was recorded in this waterbody across the survey visits and as a result, a GCN mitigation licence was acquired in order for the adjacent development at the former colliery site to proceed (development ref: BRO P/2008/1066 and BRO P/2007/0700). WB01 and WB03 were not previously surveyed. Desk study also highlighted the widespread presence of this species in the surrounding landscape. It should be noted that the mitigation package for the adjacent colliery development site includes details for the provision of waterbodies so the actual number of waterbodies identified within 500m may exceed the three reported.

The grassland across the site was considered to be of little value to this species due to the short-sward and open nature but the areas of dense scrub and woodland along the northern boundaries of the site were considered to provide suitable commuting corridors, along with providing suitable foraging habitat. In addition, the rubble piles and brick foundations associated with the brick structures within the site were also considered to provide suitable refugia and hibernacula sites; see Figure 10 below.

Figure 10: Rubble pile adjacent to brick structure (TN01)



4.3.3 Reptiles

The short-sward grassland within the site was considered to be sub-optimal for all species of reptile given the lack of cover from predators. The area of scattered scrub in the centre of the site was, however, considered to provide suitable habitat for basking (i.e. in association with rubble piles) and also refugia/hibernacula. The woodland edge along the northern boundary of

¹² Report ref: Hiremade Furbs and Fifers 11 Ltd – Gatewen Colliery, Wrexham: Great Crested Newt Mitigation Strategy – Background and Supporting Information – dated February 2009.

the site may also provide a commuting route for reptiles through the landscape. No reptiles were recorded during previous surveys of the adjacent colliery site¹³; however a single record of common lizard was identified in the desk study.

4.3.4 Birds

The majority of the site comprised short-sward grassland which was considered to be unsuitable for all species of nesting birds, although this grassland would provide suitable foraging habitat for a range of red-listed species such as song thrush, starling (a number of young fledglings were observed in trees on the northern boundary of the site), mistle thrush and over-wintering Schedule 1 species fieldfare *Turdus pilaris* and redwing *Turdus iliacus*.

The areas of scattered/dense scrub within the site and trees directly adjacent to it were, however, noted to provide suitable habitat for a range of nesting birds, including those listed under the Amber and Red List of Birds of Conservation Concern, i.e. bullfinch, dunnock, song thrush and mistle thrush. Cuckoo was also identified within 2km of the site by desk study and research¹⁴ has shown that this species utilises dunnock nests as a host for its own egg. The likelihood of the presence of this species within the site is considered to be very low, however, given the residential nature of the neighbouring landscape. Similarly, the likelihood of the presence of hobby within the site is considered to be very low.

4.3.5 Badgers

No badger setts or other evidence of badger activity was recorded either within or adjacent to the site, although suitable habitat for sett excavation was recorded with areas of scattered/dense scrub and also in the adjacent woodland. The grassland across the site was also considered to provide suitable foraging habitat for this species.

4.3.6 Bats

None of the built structures or trees within the site contained any features with the potential to support roosting bats and they were, therefore, considered to provide **Negligible** roosting potential. The mature trees outside of the southern and northern boundaries of the site were not fully inspected to ascertain their potential to support roosting bats so the presence of roosting bats within these trees cannot be ruled out.

A large number of bat boxes (both summer roost and hibernation roost boxes) were recorded on trees adjacent to the northern boundary of the site (for approximate location see TN03 in Appendix B); see Figure 11 below. Some of these boxes are very likely to have been installed in association with the mitigation package for the licence associated with the adjacent development site. A review of the documentation for the adjacent development revealed that this mitigation was for a small soprano pipistrelle roost which was present within a disused railway bridge adjacent to the site that was subsequently removed.

¹³ Report ref: Hiremade Furbs and Fifers 11 Ltd – Gatewen Colliery, Wrexham: Ecological Appraisal – dated February 2009.

¹⁴ Ferguson-Lees, J., Castell, R. & Leech, D. (2011) *A field guide to monitoring nests*. BTO

Figure 11: Bat boxes adjacent to site



Bat Foraging Habitat

The majority of the site was open, short-sward grassland which was considered to provide very low value for foraging and commuting bats. The northern and part of the southern boundary of the site was tree-lined and connected to adjacent woodland, thus providing suitable connectivity to adjacent land and a foraging resource in itself. The areas of trees and scrub within the site were also noted for their suitability for foraging/commuting bats.

Based on the presence of small amounts of suitable foraging habitat within the site and connectivity to adjacent land through strong linear features, the site was assessed as providing **Moderate** value for foraging bats but this was associated with the northern and southern boundaries.

4.3.7 Other Notable Fauna Species

A medium-sized population of palmate newts was recorded in WB02 through the presence/absence surveys conducted in 2007 and as with GCN, the site contained habitat with the potential to support this species but this was largely restricted to the northern boundary and areas of scattered trees and scrub within the site.

5 Evaluation

5.1 Habitats and Botanical Value

5.1.1 Designated Conservation Sites (Statutory and Non-Statutory)

The statutory and non-statutory sites identified within 2km of the site are considered to be sufficiently distant to avoid any indirect impacts as a result of the proposed development and there is no constraint to this regard. In addition, the SAC (Johnstown Newt Site) identified 4km distant is also considered to be sufficiently distant to avoid any adverse impacts on the integrity or status of the GCN population present.

It should be noted that the site is located within a SSSI Impact Risk Zone but does not fall into the criteria for developments which would require further consideration.

5.1.2 Semi-natural Broad-leaved Woodland

This habitat type was recorded outside of the site's boundaries so there would be no direct impacts on it as a result of the development. The lighting design for the construction and operational phase of the development must, however, avoid any light spill onto this habitat given its value for nocturnal species such as bats. This is discussed further in Section 5.2.3 of this report.

5.1.3 Scattered Trees

Although afforded no specific protection, the trees within the site provide important habitat structure for wildlife and should be retained where possible, as is currently proposed. Where this is not possible, it would be best-practice to replace any tree loss on a like-for-like basis to ensure there is no net loss in the biodiversity value of the site as a result of the proposed development; see Section 6.

5.2 Protected and Notable Species

5.2.1 Great Crested Newts

A small population of GCN was confirmed present in WB02, which is located c. 260m distant to the north and mitigation has been put in place in the adjacent former colliery site in an effort to elevate the conservation status of the species to a favourable level in the local area.

Although the majority of the site comprised habitat of little value to this species (i.e. short-sward grassland), there is potential for this species to cross this habitat in search of refugia/hibernacula sites (i.e. rubble piles and brick foundations identified at TN01 and TN02). Similarly, the woodland along the northern boundary of the site provides a suitable commuting corridor for this species through the local landscape and the proximity of the site to this woodland would increase the likelihood of GCN presence within the site.

At present, therefore, the presence of GCN within the site cannot be ruled out altogether, although the likelihood is considered to be low given the areas of woodland and mitigation habitat off-site which would provide more attractive habitat for this species. In the absence of any mitigation or appropriate licensing, therefore, the proposed development has the potential to; injure or kill a GCN, destroy a resting place used by this species, obstruct GCN from accessing a resting place and/or disturbing a GCN whilst it is using a resting place. Any of these offences would be a breach of current legislation and be liable to prosecution.

Further surveys for this species are, therefore, considered necessary to establish the presence/likely absence in the ponds within 500m of the site to subsequently inform any necessary mitigation/licensing requirements; see Section 6.

5.2.2 Reptiles

The site contained a small amount of habitat which was noted to be suitable for reptiles, most notably along the woodland edge along the northern boundary of the site and amongst the

areas of scattered scrub and rubble piles. The vast majority of the site (i.e. short sward grassland) was, however, considered to be unsuitable so any development within the site would not significantly reduce the amount of suitable habitat in the local area and the woodland adjacent to the site would continue to provide a suitable commuting corridor for all species of reptile, thus preventing habitat fragmentation.

As there is some potential for reptiles to be present within the central area of scattered scrub and dense scrub along the northern boundary, however, any vegetation clearance or removal of brick foundations/rubble piles in these areas should be conducted in a manner so as to eliminate the potential of killing or injuring any reptiles, which would be an offence under the Wildlife and Countryside Act; see Section 6.

If the mitigation measures outlined in Section 6 can be implemented in full, it is considered that there would be no overall adverse impacts on the local reptile population; however final mitigation for reptiles will also be informed by further investigation recommended for GCN.

5.2.3 Bats

No features with the potential to support roosting bats would be directly impacted as a result of the proposed development and there would be no constraints to this regard for any removal of trees or brick structures within the site.

However, it is likely that the bat boxes along the northern boundary of the site contain a bat roost and this assessment has been made on the assumption that one or more bat roosts are present within these boxes. The boxes are located in woodland edge habitat which faces into the site and from the outline proposals provided, the vast majority of the land within the site would be subject to development. Most notably, works are proposed within proximity (exact distance not confirmed) to the boundary which contains these bat boxes and during both the construction and operational phase, there is potential for roosting bats to be disturbed through increased levels of lighting, increased noise disturbance through nearby construction activity and for bats to be prevented from accessing a roost site if construction activity completely deters bats from roosting in these boxes. Any of these consequences would be an offence under current legislation. It is therefore recommended that the final site layout accounts for this constraint by ensuring a strip of undeveloped land (i.e. a 'wildlife buffer') is retained between all construction activity/development and the northern boundary of the site; see Section 6. The wildlife buffer should be designed to maximise its value to foraging bats and the relevant species discussed in the following sections.

A sympathetic lighting design must also be implemented throughout the construction and operational phase of the proposed development to ensure the value of the site to foraging/commuting bats is retained; see Section 6.

The retention of a suitable buffer around the woodland-edge boundaries of the site and implementation of a sympathetic lighting scheme would also ensure that the value of the site to foraging/commuting bats is also retained, thus incurring no adverse impacts. If this buffer cannot be implemented, bat transect surveys would be required across the site to determine the extent and location of bat activity within the site, which would then subsequently inform a suitable mitigation package to ensure the value of the site to foraging/commuting bats is not adversely impacted.

Development activity across the open, short-sward grassland of the site would not have any adverse impacts on foraging or commuting bats. Rather, the introduction of rows of residential units would provide a navigable linear feature for bats to utilise to cross the site and the introduction of rear gardens would also inevitably introduce a range of insect-attracting plants, which would increase the value of the site to foraging/commuting bats. Overall, therefore, if the mitigation measures outlined in Section 6 of this report can be followed in full, it is considered that there would be an increase in the value of the site for foraging/commuting bats.

There is also opportunity to enhance the site for roosting bats through the introduction of bat boxes on retained trees or incorporated into new residential units; see Section 6 for enhancement measures.

5.2.4 Nesting Birds

The vast majority of the site comprises short-sward grassland which offers negligible potential as nesting habitat. Development within this habitat would, therefore, have no impact on nesting birds and there is no recommendation for further mitigation to this regard.

The outline proposals supplied indicate the retention of the boundary features (i.e. dense scrub, trees) and habitats within the site (i.e. scattered scrub, trees) which offer suitable nesting habitat for a wide range of birds. Overall, therefore, there would be no residual adverse impact on nesting birds as a result of the proposed development but mitigation measures must be put in place for any necessary vegetation clearance to ensure all active nests are protected; see Section 6.

Rather, the proposed development provides an opportunity to enhance the site for nesting birds through the introduction of nest boxes targeting species of conservation concern, which would otherwise not nest within the site; see Section 6. Similarly, the implementation of a sympathetic landscape scheme for the site would also enhance the value of the site to nesting birds; see Section 6.

The introduction of rear gardens would also inevitably increase the value of the site to foraging birds through the introduction of insect-attracting plants and bird feeders; enhancement measures have also been recommended in Section 6 to further increase the value of the site to foraging birds wherever possible.

If the mitigation and enhancement measures outline in this report can be implemented in full, it is considered that there would be a net gain in the value of the site to both nesting and foraging birds.

5.2.5 Badgers

Although no evidence of badger activity was recorded during the survey, habitat with the potential to support sett excavation was recorded both within and adjacent to the boundaries of the site and this species is known to be present in the surrounding landscape. There is, therefore, potential for a sett to be excavated between the time of reporting and the commencement of development. A pre-commencement inspection for this species is, therefore, considered necessary to ensure no active setts are impacted as a result of any development within the site; see Section 6.

Although the site was not identified as supporting foraging activity, there is potential for this species to cross the site in search of distant foraging resources. The 'wildlife buffer' recommended for bats would also serve to provide a secure commuting route for this species through the site and would also decrease the likelihood of badger mortality through road traffic incidents. To be effective, however, the wildlife buffer must be secure from the adjacent development and sensitively managed; see Section 6.

5.2.6 Other Notable Faunal Species

A medium-sized population of palmate newts was recorded within WB02 and whilst this species is only partially protected under the Wildlife and Countryside Act, the habitats which are of value to this species (i.e. scrub, woodland, thick grassland) are also of value to a wide range of other fauna and any site enhancements for this species would also serve to enhance the site for wildlife in general. Recommendations have, therefore, been made for the design of the 'wildlife' buffer along the northern boundary of the site to maximise its value to palmate newt and other wildlife; see Section 6.

6 Recommendations

6.1 Further Investigations Required

6.1.1 Great Crested Newts

Full presence/absence surveys for GCN are recommended on all ponds within 500m of the site, including those which were not identified by desk study but are present as mitigation in the adjacent development site. These surveys must follow best-practice survey guidelines, which includes visiting each pond four times between mid-March and mid-June and using three of the four accepted survey methods; bottle traps, netting, egg searching and/or torching. At least two of the four visits must be conducted between mid-April and mid-May. If GCN are recorded within any pond, a further two visits (combining to six visits overall) may be required on that pond in order to assess population sizes and in this instance, three of the survey visits will be required between mid-April and mid-May. Given the confirmed presence of GCN in one of the ponds within 500m, however, it is considered very likely that GCN remain present and a mitigation licence would be required in order to proceed with the works lawfully. Although eDNA surveys are an alternative to identify if GCN are present within a pond, it is considered that they would be unnecessary in this instance given the high likelihood of GCN being present anyway.

6.1.2 Foraging Bats

If the mitigation measures for foraging/commuting bats outlined in Section 6.2.4 cannot be implemented, it is recommended that bat transect surveys are conducted to further establish the extent and distribution of bat activity across the site. For a site assessed as providing **Moderate** habitat quality for bats, one survey visit per month between April and October would be required, along with the placement of two static bat detectors per monthly visit to record bat activity for 5 consecutive nights.

6.2 Mitigation

It should be noted that the mitigation and enhancement measures outlined in this report are indicative at this stage and should be used to inform the finalised site layout and landscape scheme/management of the developed site. Once a final layout has been developed, these mitigation measures should be re-visited and made more specific where necessary to ensure that there are no residual adverse impacts on any species or species groups as a whole.

6.2.1 Reptiles/Other Amphibians (excluding GCN)

Construction Phase

Sympathetic vegetation and rubble clearance methods should be implemented during the construction phase of the proposed works within the site to protect any reptiles or other amphibians which may be present. It should be noted, however, that any works within the site would have constraints regarding GCN so a suitable method statement for the clearance of the site should be produced following the results of the recommended surveys for GCN. RPS can provide further advice in this instance.

Operational Phase

Aside from any specific mitigation required for GCN, consideration should also be given to the replacement of any thick scrub/shrub habitat to offset the loss of the suitable foraging/refugia habitat currently present.

Modified kerbs around gully pots should also be installed throughout the developed site to prevent the risk of herptiles becoming trapped. The ACO Wildlife Kerb is a suitable example of such a kerb.

Aside from any necessary mitigation required as part of a GCN mitigation licence, it is also recommended that a 'wildlife' corridor is retained along the northern boundary of the site to

ensure that reptiles and other amphibians still have a commuting route through and around the site and are not 'trapped' by the introduction of new residential development; see Section 6.2.5 below.

6.2.2 Nesting Birds

The proposed development would not incur a significant adverse impact on the value of the site to breeding birds but there is potential for nesting birds to be encountered during the clearance of any scrub or trees so mitigation is considered necessary to protect any active nests. To achieve this, it is recommended that all vegetation clearance is conducted outside of the nesting season (which runs from March – September) to avoid this constraint. Alternatively, if any clearance of trees/scrub is required within the nesting season, all areas to be affected must be checked for active nests by a suitably experienced ecologist. If an active nest is encountered, a suitable 'no-work' buffer zone must be implemented around the nest until all chicks have fledged; RPS can provide further advice in this instance. It should be noted that any tree/scrub clearance would have constraints regarding GCN so should not be completed until all recommended GCN surveys have been completed and a suitable mitigation strategy developed.

6.2.3 Badgers

Unless altered by any mitigation measures required within a GCN mitigation licence granted for the site (which would include the provision of Temporary Amphibian Fencing; thus eliminating any badger presence within the construction site), it is recommended that the following precautions are observed during site clearance;

- Mammal ladders (such as a plank) or earth ramps to be placed in any open excavations at the end of each day;
- Any open pipework to be capped overnight to prevent larger mammals such as badger from accessing the pipe work and becoming stuck;
- Night work should be avoided where possible, and any flood lighting should face away from the site boundaries; and
- Any chemicals or machinery are to be stored in a secure compound.

6.2.4 Bats

Roosting Bats

As it is likely that roosting bats are present within the bat boxes along the northern boundary of the site, it is recommended that a suitable 'wildlife corridor' is retained along this boundary to ensure any bat roosts present are not adversely impacted through increased levels of lighting/disturbance. This buffer zone should be designed to ensure there is a strip of retained land at least 20m in width along the entire northern boundary. This feature would also ensure that foraging/commuting bats are not deterred from using this boundary feature; see Section 6.2.5 below.

Foraging Bats

Bats are nocturnal and adapted to roost and forage in low light conditions therefore increases in artificial lighting can cause disturbance or disrupt existing flight paths. The points listed below will help to minimise potential impacts from lighting:

- Avoid illumination of retained woodland along the site boundaries;
- No direct illumination of any new or existing roost entrances, whether bat boxes or features on new buildings;
- Use light sources that emit minimal ultraviolet light and avoid white or blue wavelengths to avoid attracting lots of insects (attracting insects to lamps may reduce their abundance in darker foraging areas favoured by bats);

- Individual lamps should be hooded and directed where needed to avoid unnecessary light spillage;
- Use motion detectors to activate security lamps rather than continual flood lighting and if any CCTV security system is proposed, Infra-Red lighting would be preferential.

To avoid impacts to foraging bats night work should be avoided where possible.

If these mitigation measures cannot be implemented in full, the bat transect surveys recommended at Section 6.1.2 will need to be conducted to further inform the necessary mitigation requirements.

6.2.5 Habitats

Aside from any specific mitigation required for GCN, it is recommended that a wildlife corridor at least 20m in width is retained along the northern boundary of the site to ensure that wildlife (including mammals, herptiles and bats) has continued access through the site and is kept away from the disturbance of the adjacent development. The final details of the structure and management of this zone should be implemented within any Landscape Management Plan for the site but the key principles should include irregular management and introduction of a wildflower mix to increase floristic diversity.

6.3 General Recommendations for Enhancement

In addition to any specific mitigation required to compensate for impacts on protected species or habitats, both national and local planning policy encourages ecological enhancement in all development. Based on the existing ecological value of the site and information available about the proposed development, consideration should be given to the following options.

Table 6: Summary of recommendations for ecological enhancement

Recommendation	Rationale
Introduction of nest boxes targeting house sparrow, starling and swift on new residences/retained trees within the site	Birds of Conservation Concern – Red List and Amber List
Introduction of bat roost features on new residences/retained trees within the site	NPPF; all developments to provide net gains in biodiversity value wherever possible
Landscape scheme for the site to include climbers (e.g. ivy, honeysuckle) and thick shrubs to provide nesting and foraging habitat for birds, along with increases in invertebrate numbers to enhance site for foraging bats	NPPF; all developments to provide net gains in biodiversity value wherever possible

Appendix A: References

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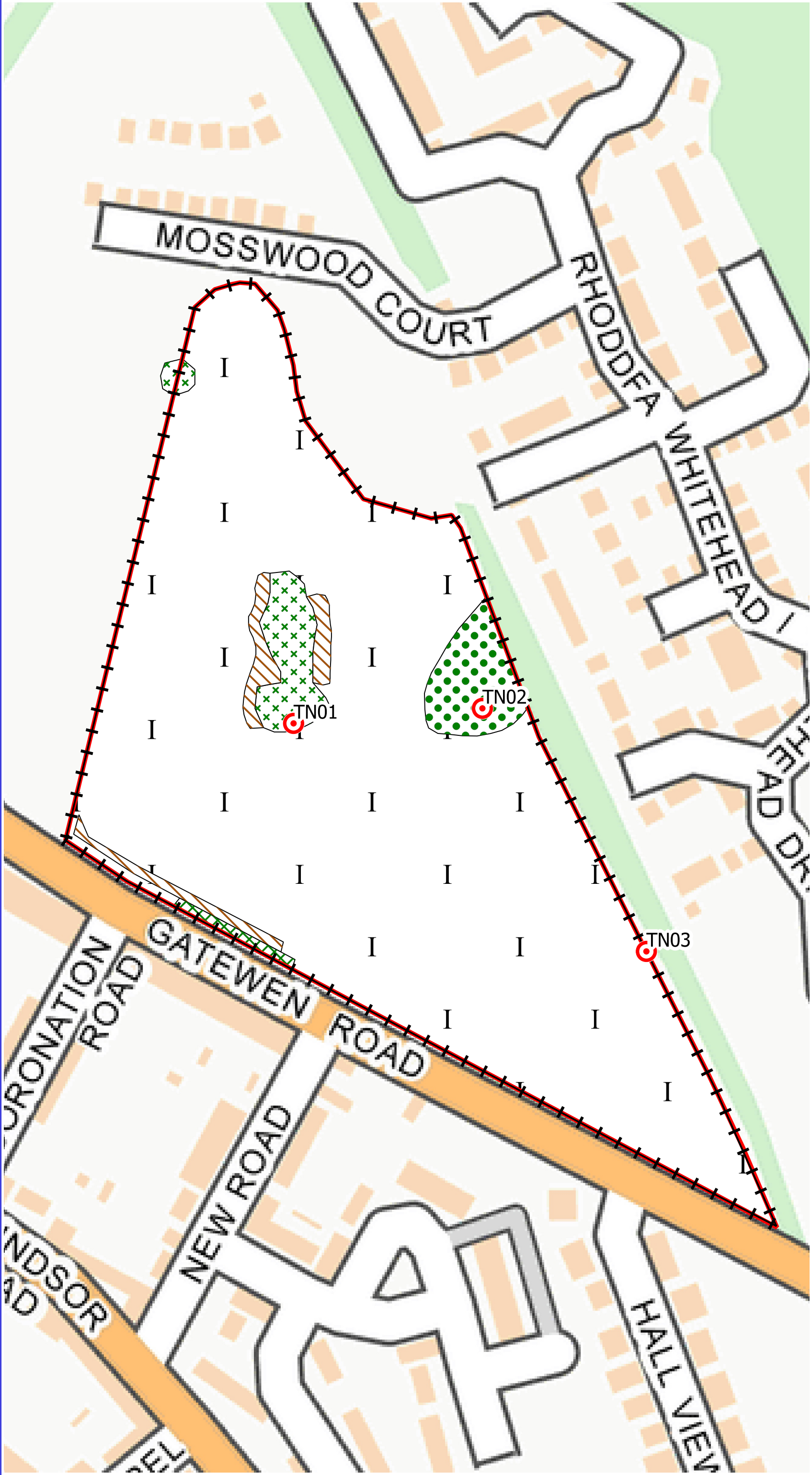
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Legend

- Site Boundary
- Phase 1 Habitat - Line
- J2.4 - Fence
- Phase 1 Habitat - Area
- A2.1 - Scrub - dense /continuous
- A2.2 - Scrub - scattered
- A3.1 - Broadleaved scattered trees
- B4 - Improved grassland
- C3.1 - Tall ruderal vegetation
- Target Note

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