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Landscape, Arboricultural & Ecological Solutions
for the Built Environment

Preliminary Ecological Appraisal

The land at Mold Road,
Gwersyllt, Wrexham

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Preliminary Ecological Appraisal

Of

The land at Mold Road, Gwersyllt, Wrexham

For

Castle Green Homes

30 March 2022

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EXECUTIVE SUMMARY

A Preliminary Ecological Appraisal has been carried out at The land at Mold Road, Gwersyllt, Wrexham on 7th March 2022 by Liz Kenyon. The assessment comprised a desk study and biological records search, as well as a site walkover survey in order to map habitat types. The survey was extended to assess the potential for protected species to use the site. The assessment provides baseline data as to current site conditions and where appropriate allows recommendations to be made in respect of further potential work in order to satisfy current wildlife legislation.

Assessed against the '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' 2nd edition (2018), the habitats range in ecological value from negligible to within the zone of influence of the site. All habitats are likely to be lost to the proposals. As the habitats to be lost to the proposals are small in area and not of high ecological value it is considered that their loss can be mitigated for and the proposals will not adversely affect the ecological value of the wider area, provided the recommendations detailed below are followed.

Bat surveys are conducted in accordance with the Bat Surveys for Professional Ecologists - Good Practice Guidelines, published 2016 (the Guidelines). Strict adherence to these is not necessary, but where practice deviates from them, clear reasons and rationale are required.

The site comprises a semi-improved grassland field that is bound by species poor hedgerows with scattered trees and pockets of bramble scrub. A wet ditch (D1 & D2) lines the southern and eastern boundaries and a single pond lies to the southern site boundary with three further ponds are adjacent to the eastern site boundary (P1 -P4).

If the recommendations below are followed these species will not be adversely affected by the proposals.

- Bat activity surveys to be carried out within the site between April and October in suitable weather conditions and the deployment of static bat detectors to assess the level of bat activity throughout the site;
- If works have not begun by March 2023, an updated site visit and preliminary bat roost assessment of trees that will be lost or pruned to accommodate the proposals will be required to determine the suitability of any features that may be present to support a bat roost and to inform further recommendations if required;
- Implementation of a hedgehog RAMS to avoid any harm to this species during the proposed works;
- Bottle trapping surveys for GCN to be carried out on all water bodies that will be impacted by the works;
- Surveys for water vole to be carried out on D1, D2 and ponds P1-P4 if they are to be impacted within the proposals. Ecological supervision will be required for all works within 5m of the water courses;
- Implementation of an amphibian RAMS to avoid any harm to this species during the proposed works;
- Production and implementation of a RAMS to avoid any harm to this species during the proposed works;
- Precautionary check for invasive species prior to works commencing;
- An updated survey for immediately prior to the start of works;
- Avoid vegetation removal/pruning and works to the building during the bird breeding season (March to August inclusive) or undertaking a survey for nesting birds and ensuring any active nests found are sectioned off and protected within a suitable buffer zone until they are no longer in use;
- Enhancing the site for species through appropriate landscape planting that includes native, species rich hedgerows, trees and areas of wildflowers plus provision of integrated bat and bird features within newly constructed buildings;
- Production of the Defra Metric Biodiversity Net Gain Calculations to minimise impacts on biodiversity and provide net gains in biodiversity; and
- Production of a Management Plan (such as a landscape Ecology Management Plan (LEMP)) to ensure the long-term commitments to manage the planting, protection and enhancement of biodiversity in and around a new development site.

The site provides habitat for nesting birds, , water vole, hedgehog, amphibians and bats. Habitats on site will be lost to the proposals. There are likely to be low impacts on the local ecology due to the proposals if the recommendations within section 6 are implemented.

1.0 Introduction

Ascerta has been instructed by Castle Green Homes to carry out a Preliminary Ecological Appraisal at The land at Mold Road, Gwersyllt, Wrexham (hereafter referred to as the site). The site OS grid reference is SJ 3221 5253 and the What3Words reference is things.full.resort. The extent of the site is displayed in photograph 1.1 below.



Photograph 1.1: Extent of site

The site was visited on 7th March 2022 by Liz Kenyon when a Preliminary Ecological Appraisal, which includes an assessment of the potential for protected species to be using the site or surroundings, was carried out in accordance with the *Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit* (JNCC, 2010). The report was prepared following methods detailed in the CIEEM 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (2018) and 'Guidelines for Ecological Report Writing' (2017). This report presents the results of the survey including evaluation of habitats on site and potential for protected species to be using the site. The report includes recommendations for further actions where applicable in order to satisfy current wildlife legislation and to achieve our client's objectives. Relevant legislation is detailed within Appendix 4.

The site comprises a semi-improved grassland field that is bound by species poor hedgerows with scattered trees and pockets of bramble scrub. A wet ditch lines the southern and eastern boundaries and a single pond lies to the southern site boundary with three further ponds are adjacent to the eastern site boundary.

Our client seeks planning consent to redevelop the site for 96 residential dwellings with associated access roads. The east of the site will comprise an area of public open space (POS) with attenuation pond.

2.0 Objectives

Our client's objectives are to assess the potential ecological constraints of the proposed development site.

Our objectives are as follows:

- Identify and evaluate any features of ecological value and the potential of the site to support protected species based on the walkover survey and biological records search;
- Identify designated sites within 2km of the site;
- Review protected species records within 1km of the site;
- Map the habitats within the site using JNCC (2010) methods;
- Provide recommendations for further species-specific surveys and mitigation measures where current legislation requires;
- Provide recommendations that seek to enhance the ecological value of the site;
- Provide recommendations to assist our clients in achieving their objectives whilst satisfying current wildlife legislation.

3.0 Survey Methods

The Preliminary Ecological Appraisal involved the collection and review of data from a desk study and field survey along with assessment of the value of the habitats following CIEEM guidelines.

3.1 Desk Study

A review of the designated sites and habitats within 2km of the site has been undertaken in March 2022 using the Multi-Agency Geographic Information for the Countryside (MAGIC) website.

A review of UK and Local priority species and habitats known to occur within 1km of the site has been undertaken in March 2022; using the Joint Nature Conservation Committee website, Multi-Agency Geographic Information for the Countryside (MAGIC) and local records from Cofnod - North Wales Environmental Information Service (Appendix 5).

3.2 Field Survey

A walkover survey of the site was conducted on 7th March 2022 by Liz Kenyon when the habitat types and features of ecological interest were identified and mapped in compliance with the Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit (*JNCC, 2010*). The survey methods involve the recording and mapping of all habitat types and ecological features present on site, including the identification of the main species present and examination of the potential for any protected species. Habitats were mapped and target notes made for any interesting features.

The surveys particularly focused on the following species and habitat features:

- Mammals (badgers, bats, water vole);
- Birds;
- Amphibians and reptiles;
- Invertebrates;
- Hedgerows and boundaries;
- Invasive plant species; and
- Plant communities and trees.

Weather conditions during the survey were cool (7°C), dry and sunny (1/8 cloud cover) with a F0 (Beaufort Scale) calm, therefore appropriate for this type of survey.

3.3 Bat Survey Methods

The survey methods followed the guidelines set out by the Bat Conservation Trust Bat Surveys for Professional Ecologists Good Practice Guidelines – 3rd Edition (2016). Habitats, buildings and trees were assessed for suitability for use by bats and categorised independently using table 4.1 page 35 within the Bat Conservation Trust Guidelines (Collins, 2016).

Preliminary Ecological Appraisal for Bats

Habitats on site were assessed for their suitability for bats to use them for roosting, commuting and foraging both on the site and surrounding area. Commuting and foraging habitat suitability was categorised **low** to **high**. Commuting and foraging habitat valued as **moderate** or above may need further survey effort if lost to the proposals.

Preliminary Roost Assessment Trees

All trees were inspected for Potential Roost Features (PRFs). Features searched for included: Natural or woodpecker holes, cracks/splits in major limbs, loose bark, hollows/cavities, dense epicormic growth, bird and bat boxes. Where such features were found they were investigated for scratches or staining, bat droppings and smoothing of surfaces around entry points. Trees assigned a suitability of **moderate** or above may require further inspection if they are to be lost to the development.

Table 4.1: Guidelines for assessing Potential Roost Features (PRFs), commuting and foraging habitat within a proposed development site. Guidelines taken from table 4.1 page 35 of the Bat Conservation Trust Bat Surveys for Professional Ecologists Good Practice Guidelines – 3rd Edition (2016).

Suitability	Roosting Habitats	Commuting and Foraging Habitats
<i>Negligible</i>	<i>Negligible habitat features on site likely to be used by roosting bats.</i>	<i>Negligible habitat features on site likely to be used by commuting or foraging bats.</i>
<i>Low</i>	<i>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^a and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation^b).</i> <i>A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. ^c</i>	<i>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.</i> <i>Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</i>
<i>Moderate</i>	<i>A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions^a and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).</i>	<i>Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.</i> <i>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</i>
<i>High</i>	<i>A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ^a and surrounding habitat.</i>	<i>Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</i> <i>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.</i> <i>Site is close to and connected to known roosts.</i>

^a For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

^b Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

^c This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI,2015).

3.5 Great Crested Newt Habitat Suitability Index (HSI)

The ditches (D1 & D2) were assessed for suitability as great crested newt breeding habitat. The HSI assessment followed the method described by Oldham et al. (2000) as updated by ARG UK (2010), involving an assessment of each water body against ten suitability indices:

- Location of the pond within the context of Britain;
- Total surface area of the pond;
- Pond drying (based on both local knowledge and field evidence);
- Water quality;
- Percentage perimeter shaded;
- Presence or absence of waterfowl;
- Presence or absence of fish;
- Number of water bodies situated within 1km;
- Suitability of terrestrial habitat; and
- Percentage macrophyte cover.

The HSI is calculated using an equation producing a single number between 0 and 1. The value provides an indication of whether the water body is likely to support a population of great crested newts. The lower the Index the less likely the location is to support a breeding population. Ponds are classed as Poor, Below Average, Average, Good or Excellent habitat suitability based on this value.

3.6 Water vole and Otter

The ditches (D1 and D2) were briefly assessed for use by otters and water vole from the northern bank that is within the site following methods outlined in *Chanin P (2003). Monitoring the Otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough* and Strachan, R., Moorhouse, T., Gelling, M. (2011). *Water Vole Conservation Handbook*, 3rd Edition. Wildlife Conservation Research Unit: Abingdon.

3.7 Evaluation

Habitats and species on the site were evaluated following the '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' 2018. A geographical frame of reference is assigned to each habitat and species, with International Value being most important, then National, Regional, County, District, Local and lastly, within the immediate Zone of Influence (Zoi) of the proposals only.

Value judgements are based on characteristics that can be used to identify ecological resources or features likely to be important in terms of biodiversity. These include site designations such as SSSIs. For undesignated features, the size, conservation status (locally, nationally or internationally), and the quality of the ecological resource are considered. Ecological resource quality can refer to habitats (for instance if they are particularly diverse, or a good example of a specific habitat type), other features (such as wildlife corridors or mosaics of habitats) or species populations or assemblages.

Although we cannot assess the survey findings fully in relation to the draft Environment Bill and Biodiversity Metric, the recommendations detailed within this report aim to meet requirements of the Environment Bill and Biodiversity Metric 3.0 as far as possible at this stage.

3.8 Limitations

The site visit was undertaken in March. Although this within the sub-optimal time of year for phase 1 habitat surveys, sufficient vegetation was present to enable habitat identification. It is not considered a limit to the conclusions of the report based on the habitats found within the site and the works proposed. All areas of the site were fully accessible, a pond (P5) lies approximately 195m from the southern site boundary, due to access restrictions the pond was assessed from outside the adjacent field boundary. The access limitation to the pond has been taken into account within this report.

The absence of biological records does not necessarily mean the absence of species. This has been taken into account within the report conclusions.

The site was visited on only one occasion. This produces a snapshot of habitats and species on the site and others may be present at different times of the day or year. This limitation has been taken into account within this report.

4.0 Survey Results

4.1 Desk Study

One statutory site, Gatewen March Site of Special Scientific Interest (SSSI) was identified 1km south of the site and eight non statutory sites were identified within 2km of the site.

The following non-statutory sites were identified within the vicinity of the proposals (with distance and direction from the site):

- Alyn Waters, Local Wildlife Site (LWS) (1.5km north);
- Bryn Alyn and Wormswood (LWS) (1.2km east);
- Moss Valley (LWS) (850m west);
- Woodlands and Fishpond Wood (LWS) (1km north);
- Berse Drelincourt (LWS) (2km south);
- New Broughton Meadow (LWS) (1.7km south-west);
- Wilderness Woods, Regionally Important Geodiversity Site (RIGS) (1km east); and
- The Wauns Esker (RIGS) (1.5km north).

Twenty-five records for Ancient semi natural woodland were also returned within 2 km of the site, with the closest area of woodland recorded 916m from the site boundary.

Following a review of records held by the Cofnod North Wales Environmental Information Services, several priority species that have the potential to occur within the vicinity of the proposed development have been identified. These include birds, bats, badger, reptile, hedgehog and amphibians. The species records are summarised below, and the detailed records held by Cofnod Data Request within 1km of the site are displayed within Appendix 5.

Birds

One hundred and fifty-three records were returned for bird species within 1km of the site. Species returned include barn owl, Canada goose, house sparrow, lapwing, kingfisher, starling, tawny owl, and whooper swan. All records were returned between 1996 and 2020. The closest records were for blue tit, located 196m south of the site in July 2010 and for a barn owl in November 2009 located approximately 200m west of the site, both records relate to adjacent farmland.

Bats

Thirty-three records of bats were returned within 1km of the site, including eighteen records of common pipistrelle and four records each for pipistrelle and soprano pipistrelle. Two records for each of noctule bat and pipistrelle and three records for brown long eared bats were returned within the search area. The closest record was in August 2003 for a pipistrelle bat species located approximately 514m north of the site within a residential area. The most recent record was for a noctule bat in 2016 for a noctule bat 1.9km southwest of the site.

Amphibians

Two hundred and seventy-one records for amphibians were returned within 1km of the site, including six records of common toad, thirty-one for palmate newt, seventy-three smooth newt, six records for common frog and one hundred and thirty-seven records of great crested newts (GCN). The most recent records date from 2021 for GCN, smooth newt and palmate newt. The closest records are from within the eastern sector of the site and the ponds adjacent to the eastern boundary from a previous survey effort between 2004 and 2019.

Reptiles

Thirteen records of reptiles were returned within 1km of the site, species present include ten records for grass snake, one record for adder and two records for common lizard. The closest record is for common lizard approximately 270m north of the site and the most recent record is for grass snake in May 2017, 1.5km north of the site.

Terrestrial mammals

Twenty-two records of badger were returned within 1km of the site between 1971 and 2019. The closest record is for a sett, recorded by Clwyd Badger Group and dates from February 2007, approximately 170m north of the site. A second sett is also recorded 241m north. The most recent record is from November 2019, approximately 725m north of the site on the A541.

Seventy-three records for hedgehog were returned within 1km of the site. The closest and most recent record is dated from May 2021, approximately 470m west of the site within The Meadows, Gwersyllt.

Twelve records for otter were returned between 1996 and 2019, all the records relate to areas adjacent to the River Alyn, with the closest record to the site at 1.5km north east of the site.

No European Protected Species Licence (EPSL) applications within 2km of the site since 2015 were identified using Magic Maps.

A list of key habitats is shown in table 5.1 below and a summary description of key habitats within the site is provided in Section 5.2. Notes on the presence or potential presence of protected species are provided in Section 5.3. The Phase 1 Habitat map can be found in Appendix 1. The lists of species recorded during survey are presented in Appendix 2.

4.2 Habitat Survey

The site is set between Wrexham and Gwersyllt and is bound by the A541 (Mold Road) to the west with residential dwellings to the north and agricultural land use to the south. The train line running between Wrexham and Gwersyllt is approximately 80m from the eastern site boundary with agricultural land beyond.

The site comprises a semi-improved grassland field that is bound by species poor hedgerows and pockets of bramble scrub, with scattered trees throughout the boundaries. Ditches (D1 & D2), that form part of a drain network line the southern and eastern boundaries. The ditch (D1) to the south feeds into a pond (P1) that lies adjacent to the site boundary. Three further ponds (P2 - P4) lie adjacent to the eastern site boundary. These habitats are presented on plan P.1626.22.03 (Appendix 1).

The habitat types identified within the site are detailed below and are displayed on drawing P.1626.22.03 *Phase One Habitat Survey* in Appendix 1 and on Photographs within Appendix 3. Species lists and target notes are displayed in Appendix 2.

Semi-improved grassland (B6)

The site is prominently semi-improved grassland that has been previously grazed. Due to recent rainfall, there was some ephemeral standing water throughout the site. Species present include Yorkshire fog, perennial ryegrass, creeping buttercup and fescue sp. This habitat is shown in photographs 1-2 within Appendix 3.

Dense/continuous scrub (A2.1)

Pockets of bramble scrub are present through the site boundaries, predominantly to the north and west, with the occasional strand encroaching the semi-improved grassland. This habitat is displayed in photograph 3 within Appendix 3.

Scattered trees (A3.1)

Scattered trees are present within the site boundaries, the dominant species are oak, ash and sycamore. Ornamental garden trees are also present to the north-western corner of the site. This habitat is displayed in photographs 4 within Appendix 3.

Species poor hedge (J2.2.2)

Gappy species poor hedgerows line the site boundaries and ditch network, species present include hawthorn and holly. An intact hedgerow, comprising blackthorn, hawthorn and cherry lines the northern boundary. This habitat is displayed in photograph 5 within Appendix 3

Standing water (G1)

A pond (P1) lies adjacent to the southern site boundary and is fed by the ditch network (D1) that runs along the boundary. Three further ponds (P2-P4) lie adjacent to the eastern site boundary. A further pond (P5) is within the neighbouring field approximately 195m to the south of the site. This habitat is displayed in photographs 6 within Appendix 3. The ponds are discussed further in section 4.3.

Running water (G2)

Two ditches line the southern (D1) and eastern site boundaries (D2). The ditches form of a wider drainage network and feeds into P1. The banks of the ditches have been encroached by the semi improved grassland and are lined by the species poor hedgerows. This habitat is displayed in photograph 7 within Appendix 3. The ditches are discussed further in section 4.3.

4.3 Great Crested Newt Suitability

Great Crested Newt Habitat Suitability Index (GCN HSI)

Table 4.1: Standing Water Description and GCN HSI with full details in Appendix 6.

Standing water description	Photograph
Pond P1: lies adjacent to the southern site boundary and is fed by D1. Willow sp trees are present within the water body and the species poor hedgerows meet the edges of the pond. The HSI score was 0.70 meaning it has average suitability for use by great crested newt for breeding.	
Pond P2: lies adjacent to the eastern site boundary. The water body contains a large amount of typha and canary reed grass was noted to the margin of the pond. The pond is also bound by the species poor hedgerow the eastern site boundary. The HSI score was 0.66 meaning it has Average suitability for use by great crested newt for breeding.	

Standing water description	Photograph
Pond P3: lies adjacent to the eastern site boundary. The water body contains a large amount of typha and canary reed grass was noted to the margin of the pond. The pond is also bound by the species poor hedgerow the eastern site boundary. Magic maps identified two individual ponds in the location, due to recent rainfall they have broken their banks to become one pond. The HSI score was 0.67 meaning it has Average suitability for use by great crested newt for breeding.	No photograph available
Pond P4: lies adjacent to the north-eastern corner of the site and the adjacent grassland has encroached the margins of the water body. The HSI score was 0.65 meaning it has Average suitability for use by great crested newt for breeding.	
Pond P5: is within an adjacent field approximately 195m to the south of the site. The water body is surrounded by semi-improved grassland with rush sp. present in the margins. The HSI score was 0.60 meaning it has Poor suitability for use by great crested newt for breeding.	
Pond P6: lies within a residential development 180m to the north of the site. The pond is bound by metal fencing with soil banks and scrub planting. Two moorhen were noted at the pond at the time of the survey. The HSI score was 0.58 meaning it has Below average suitability for use by great crested newt for breeding.	

Standing water description	Photograph
Ditch D1: runs along the southern site boundary, feeding into P1. The banks of the ditch are soil and have become encroached by the semi-improved grassland. The ditch forms part of the wider drainage network and is lined by species poor hedgerow and scattered trees. The HSI score was 0.82 meaning it has Excellent suitability for use by great crested newt for breeding.	
Ditch D2: runs along the eastern site boundary and feeds into the wider drainage network offsite to the east. The banks of the ditch are soil and have become encroached by the semi-improved grassland. The ditch forms part of the wider drainage network and is lined by species poor hedgerow and scattered trees. The HSI score was 0.83 meaning it has Excellent suitability for use by great crested newt for breeding.	

4.4 Protected and Notable Species

Birds

The habitats within the site provide suitable foraging and nesting opportunities for bird species. These habitats include scrub, semi-improved grassland, species poor hedgerows and scattered trees. The semi-improved grassland provides some foraging habitat for species including kestrel and barn owl. The semi-improved areas can also provide areas of forage or refuge for bird species including whooper swan and Canada goose.

Bats

The scrub, semi-improved grassland, species poor hedgerows and scattered trees within the site provides suitability for commuting and foraging bats, with good connectivity to the surrounding land use. The ditch network and ponds also provide areas of forage for bats, with commuting corridors along the hedgerow lined ditches. The trees on site provide some limited roosting potential for bat species.

Otter

The ditch network (D1 & D2) provides a commuting corridor for otter, however this is restricted due to the trainline that lies east of the site former a barrier to surrounding water bodies and the River Alyn. Otters do not require further consideration within this planning application and will not be discussed further within this report.

Amphibians

Four ponds (P1- P4) are present in areas adjacent to the site boundaries, with two further ponds (P5 – P6) present within immediate areas to the site. P6 lies within a residential development, approximately 180m north of the site. The dwellings and access roads will limit connectivity for amphibians to the onsite habitats and water bodies adjacent to the site bodies. No further ponds are present within 250m of the site; however, two offsite ponds and a drainage network lie within 500m of the site. The trainline to east of the site will form a barrier to amphibians accessing the habitats within and adjacent to the site. Records for great crested newt (GCN) have been returned from within the site and the in ponds (P2- P4). The habitats within the site (semi-improved grassland, bramble scrub, species poor hedgerows and scattered trees) provide good terrestrial habitats for amphibians with connectivity to the waterbodies that lie adjacent to the site boundaries.

Reptiles

The habitats within the site do not offer suitability to support reptiles. Ecotones are not present within the site and the habitats are scattered across the site with no suitable connectivity. The habitats within the site are prone to high human disturbance as the buildings are occupied and in use. Reptiles do not require further consideration within this planning application and will not be discussed further within this report.

Invasive species

No non-native invasive species were identified within the site or in the surround land use.

5.0 Evaluation and Recommendations

5.1 Designated Sites and Habitats

There are no statutory or non-statutory protected sites within the vicinity of the proposals that are likely to be directly influenced by the proposals. The closest non-statutory site, Moss Valley (LWS) lies approximately 850m west of the site. The proposals may indirectly influence the LWS due to increased recreation pressure in the area. The adjacent areas ancient woodland may also be impacted from the increase in recreational use from the proposed dwellings.

The site does not fall within a Natural England SSSI Impact Risk Zone. It is considered that there will be no impact on any SSSIs in the vicinity as a result of the proposals.

The habitats on site comprise semi-improved grassland, bramble scrub, species poor hedgerows and scattered trees with water bodies adjacent to the site boundaries. These habitats are considered to have an ecological value of **within the zone of influence** of the site or lower. The site contains no designated or priority habitats, however records for GCN have been returned within the eastern sector of the site from a previous survey effort.

The site lies approximately 80m west of the railway corridor that acts as an important area of connectivity to the surrounding habitat for commuting and foraging bats, along with providing a connectivity corridor for mammal species. The corridor will also provide good terrestrial connectivity to the ponds that hold the GCN records that lie adjacent to the site boundaries (P1-P4). It is recommended that boundary features, including the species poor hedgerows and scattered trees are retained and the areas enhanced along with an area of the grassland to the east of the site retained to form a buffer zone to the ponds and D2 that lie adjacent to the site boundary. The eastern sector of the site is an area of proposed POS with an attenuation pond, the area can be enhanced for species such as amphibians with suitable landscaping and long-term management.

It is recommended that minimal works are carried out adjacent to D1 that lines the southern site boundary and that the ditch network is protected during all stages of construction and following the works. If works are required within 5m of D1, ecological supervision may be required. Overall, with the production of the Defra Metric Biodiversity Net Gain Calculations and Management Plan, the proposals are unlikely to adversely affect the ecological value of the area and could protect and enhance biodiversity within the local area.

5.2 Protected and Notable Species

Birds

The semi-improved grassland, scattered trees, species poor hedgerows and scrub provide suitable habitat for nesting and foraging bird species. It is recommended that vegetation clearance and building roof works should be undertaken outside of the nesting bird season (1st March to 31st August Inclusive) to avoid any impact on breeding birds. If vegetation clearance cannot be undertaken outside of the breeding bird season, a nesting bird check undertaken by a suitably experienced ecologist should be undertaken immediately prior to works commencing. If an active birds' nest is identified a suitable buffer zone should be implemented where no works are to occur within until the young have fledged the nest.

The semi-improved grassland provides areas of forage for species such as kestrel and barn owl. However, the sward of the grassland was <5cm at the time of survey and a thatch layer was not present, limiting the foraging habitat for these species.

The semi-improved grassland can also provide an area of forage and refuge for wintering bird species, including Canada goose and whooper swan, however the site does not lie within a major feeding area for these species, and it is unlikely that large numbers of birds will flock to the area.

Bats

Bat records were returned within 2km of the site. The closest record was recorded 196m south of the site.

No buildings are present within the site. The habitats on site provide **moderate** suitability for commuting and foraging bats and will require bat activity surveys to be carried out once a month between April and October, along with the deployment of two static bat detectors for a minimum of five nights per month. The trees within the site boundaries were assessed to provide **negligible** to **low** potential for bats.

Group G1 (drawing P.1626.22.01, *Tree Survey, appendix 1*) provides **low** suitability for roosting bats, with ivy cladding present throughout the group. A single ash tree within the group has a single limb proposed for removal, the tree was assessed to provide **negligible** bat roost potential. The remaining trees within the site currently also offer **negligible** potential to support bats, as detailed in section 4.3. and will require no further works at this stage. If works have not begun by March 2023, a preliminary bat roost assessment of those trees to be removed or pruned for proposals should be undertaken to assess their potential to support a bat roost and to inform further recommendations if required.

Amphibians

Ponds (P1- P4) and the two ditches (D1 & D2) will require bottle trapping surveys, (between mid-March and June) to assess the population of GCN within the pond network. Further surveys may also be required for all ponds within 250m of the proposed development site for GCN. Previous survey efforts have identified GCN within the ponds and the proposed development site, if the proposals are to impact the waterbodies an application to Natural Resources Wales (NRW) may be required to ensure there is no harm to GCN throughout the works.

The site provides terrestrial habitat for GCN and amphibians. These habitats are likely to be impacted by the proposals and therefore, it is recommended that GCN Reasonable Avoidance Measures (RAMS) are implemented during the works to avoid harm to this species. The RAMS should include:

- Construction materials stored on pallets so as not to create an amphibian refuge area;
- Existing refuge areas should be removed by hand so amphibian within are not harmed during their removal;
- Throughout the works all trenches must be covered at night or ramps provided to prevent amphibian from getting stuck;
- Vegetation clearance applies to all habitats cleared in daytime air temperatures above 5°C. Works must be avoided in cold temperatures or if prior overnight temperatures have been less than 1°C; and
- The cut material is to be chipped and placed in discrete piles outside the working areas or removed from the site.

Hedgehog

The site provides habitat for hedgehog within the scrub, semi-improved grassland, scattered trees and species poor hedgerow. These habitats are likely to be impacted by the proposals and therefore, it is recommended that Hedgehog Reasonable Avoidance Measures (RAMS) are implemented during the works to avoid harm to this species. The RAMS should include:

- Construction materials stored on pallets so as not to create a hedgehog refuge area;
- Existing refuge areas should be removed by hand so hedgehog within are not harmed during their removal;
- Throughout the works all trenches must be covered at night or ramps provided to prevent hedgehog from getting stuck;
- Vegetation clearance applies to all habitats cleared in daytime air temperatures above 5°C. Works must be avoided in cold temperatures or if prior overnight temperatures have been less than 1°C; and
- The cut material is to be chipped and placed in discrete piles outside the working areas or removed from the site.

To enable hedgehog continued use of the site it is advised that gaps of at least 13cm by 13cm are left under any new garden fences to enable hedgehog to roam freely within the area following development.

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Water vole

The site provides suitable habitat for water vole. If works are to occur within 5m of the ponds (P1 – P4) and ditches (D1 – D2) that lie adjacent to the site boundaries, a survey for water voles should be undertaken to identify appropriate mitigation measures to avoid harms to water vole and further inform the planning application. If works are proposed within 5m of the water bodies ecological supervision may be required during the works.

Invasive species

No non-native invasive species were identified during the site visit. As invasive species can colonise very quickly it is recommended that an invasive species walkover survey is carried out immediately prior to the start of works.

5.3 Enhancements

In order to meet requirements for biodiversity protection and enhancement outlined within the NPPF, it is recommended that ecological enhancements are included. These could include:

1. Provision of 12 bird boxes (25mm and 32mm entrance hole box, house sparrow terrace, swift box), attached to or integrated within new buildings or retained trees on site;
2. Provision of 10 bat features (e.g. Vivara Pro WoodStone Bat box or similar) attached to a retained or new tree on site or provision of a bat box (e.g. Vivara bat bricks or '*bird brick houses*' bat boxes) integrated within new buildings or attached to retained trees on site;
3. Retention of the drainage network (D1 & D2) and ponds P1 – P4 to provide continued terrestrial habitat for amphibians; and
4. Retain and enhance the site boundaries and area to the east of the site with suitable landscaping incorporating species that provide a food or shelter resource to wildlife to include hawthorn, hazel, holly, blackthorn, field maple, dog rose and honeysuckle as hedgerow species and oak, alder, field maple, silver birch, crab apple, rowan and bird cherry as tree species together with implementing a relaxed mowing regime and establishing wildflowers in these areas.

6.0 Conclusions

The site was subject to an extended phase one habitat survey and a preliminary bat roost assessment of all buildings. During the survey and following review of historical species records, it is considered that impact on birds, bats, water vole, amphibians and hedgehog are likely to occur in relation to the proposals for the site. In summary, the following recommendations have been made to avoid impact on these species:

- Bat activity surveys to be carried out within the site between April and October in suitable weather conditions and the deployment of static bat detectors to access the level of bat activity throughout the site;
- If works have not begun by March 2023, an updated site visit and preliminary bat roost assessment of trees that will be lost or pruned to accommodate the proposals will be required to determine the suitability of any features that may be present to support a bat roost and to inform further recommendations if required;
- Implementation of a hedgehog RAMS to avoid any harm to this species during the proposed works;
- Bottle trapping surveys for GCN to be carried out on all water bodies that will be impacted by the works;
- Surveys for water vole to be carried out on D1, D2 and ponds P1-P4 if they are to be impacted within the proposals. Ecological supervision will be required for all works within 5m of the water courses;
- Implementation of an amphibian RAMS to avoid any harm to this species during the proposed works;
- Production and implementation of a RAMS to avoid any harm to this species during the proposed works;
- Precautionary check for invasive species prior to works commencing;
- An updated survey for immediately prior to the start of works;
- Avoid vegetation removal/pruning and works to the building during the bird breeding season (March to August inclusive) or undertaking a survey for nesting birds and ensuring any active nests found are sectioned off and protected within a suitable buffer zone until they are no longer in use;
- Enhancing the site for species through appropriate landscape planting that includes native, species rich hedgerows, trees and areas of wildflowers plus provision of integrated bat and bird features within newly constructed buildings;
- Production of the Defra Metric Biodiversity Net Gain Calculations to minimise impacts on biodiversity and provide net gains in biodiversity; and
- Production of a Management Plan (such as a landscape Ecology Management Plan (LEMP)) to ensure the long-term commitments to manage the planting, protection and enhancement of biodiversity in and around a new development site.

It is considered that there would be very limited impacts on the local ecology as a result of the proposals, provided the recommendations detailed within section 5.0 above are followed.

7.0 References

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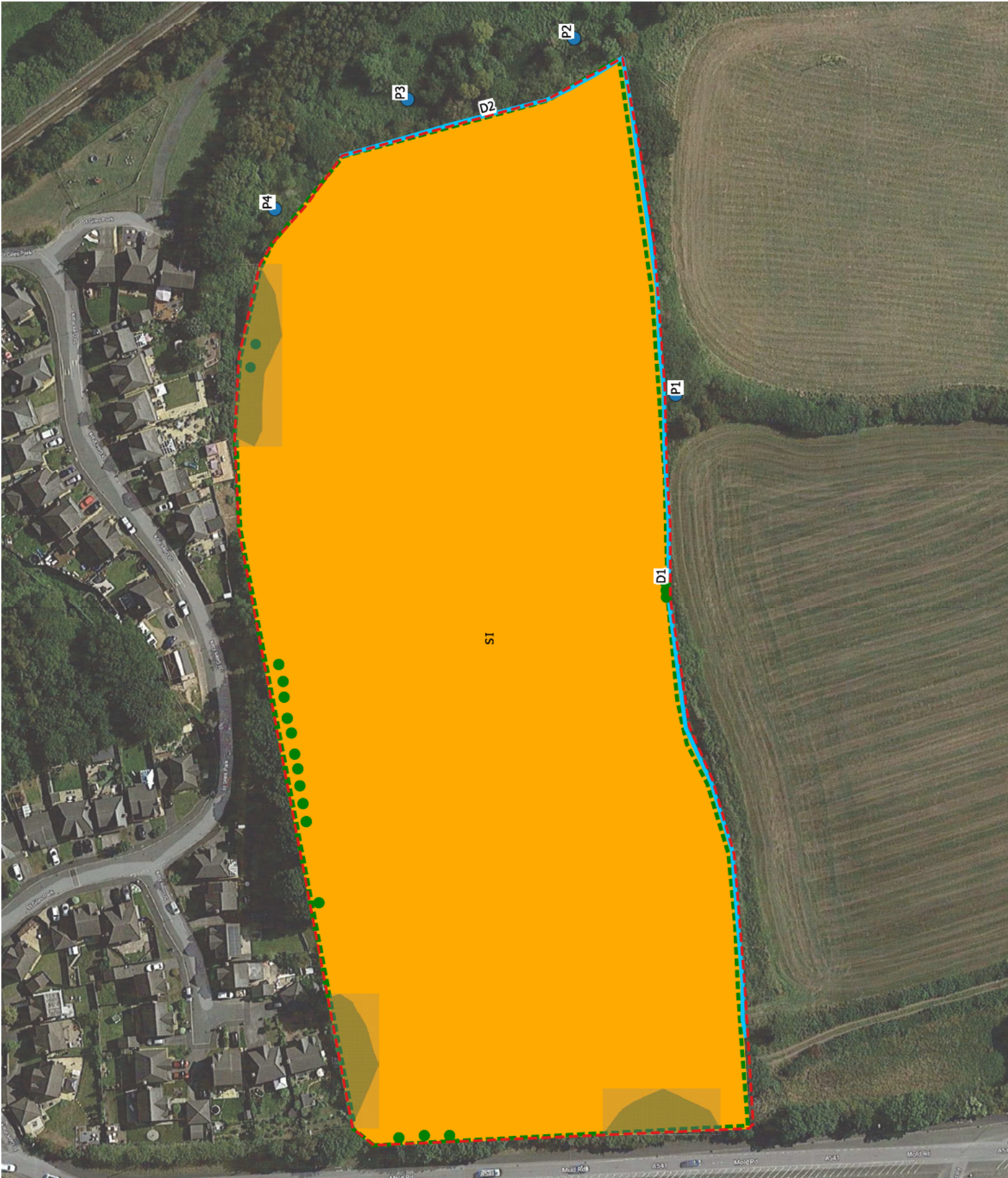
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Appendix 1

KEY

- Survey area
- Semi improved grassland (B2.2.2)
- Bramble scrub (A2.1)
- Scattered trees (A3.1)
- Species poor hedgerow (J2.2.2)
- Pond (G1)
- Wet ditch (G2)



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CLIENT:
Castle Green Homes

PROJECT:
The land at Mold Road

DRAWING TITLE:
Phase One habitat Survey

SCALE: NTS@A3	DRAWN BY: LK	DRAWING No: P-1626-22.03
DATE: 28/03/2022	CHKD BY: LA	REV: -

DO NOT SCALE

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KEY

 Existing tree to be retained

 Existing tree to be removed

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CLIENT: Castle Green Homes

PROJECT: Land at Mdd Road, Gwersyllt, Wrexham

DATE: 25/03/2021

DRAWN BY: KP

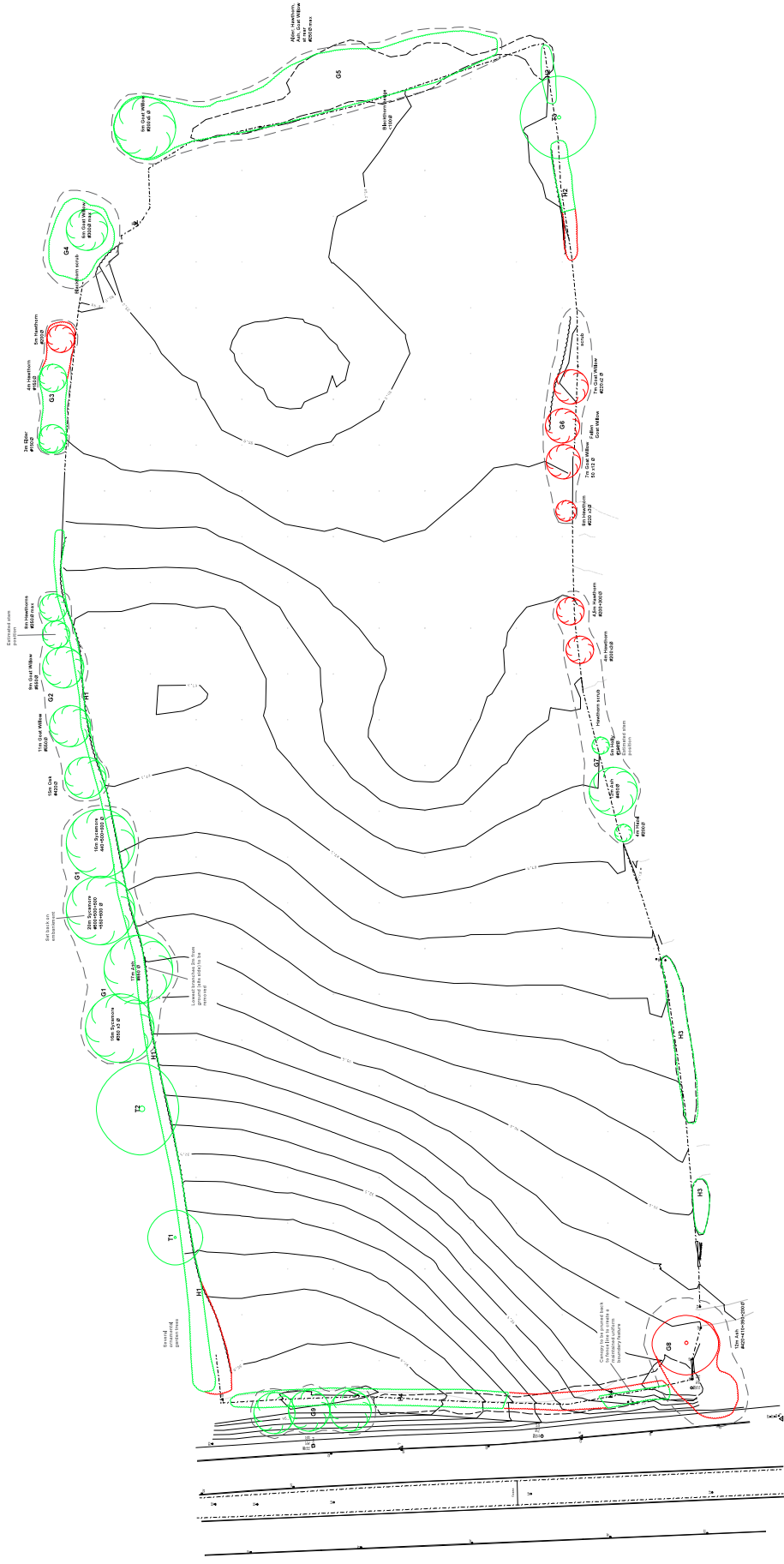
CHG BY: CP

SCALE: 1:500 @A1

DATE: 25/03/2021

REV

Tree Survey



Appendix 2

Species Lists and Target Notes

Table 1: Flora Species

English Name	Scientific Name
Alder	<i>Alnus</i>
Ash	<i>Fraxinus excelsior</i>
Bindweed	<i>Convolvulus arvensis</i>
Blackthorn	<i>Prunus spinosa</i>
Bracken	<i>Pteridium aquilinum</i>
Bramble	<i>Rubus fruticosus agg</i>
Broadleaved dock	<i>Rumex obtusifolius</i>
Cherry	<i>Prunus sp.</i>
Chickweed	<i>Stellaria media</i>
Cleavers	<i>Galium aparine</i>
Clover	<i>Trifolium repens</i>
Common groundsel	<i>Senecio vulgaris</i>
Creeping bent-grass	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping thistle	<i>Cirsium arvense</i>
Elder	<i>Sambucus</i>
Goat willow	<i>Salix caprea</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus</i>
Herb robert	<i>Geranium robertianum</i>
Holly	<i>Ilex aquifolium</i>
Ivy	<i>Hedera helix</i>
Meadow grass	<i>Poa sp.</i>
Moss	<i>Bryophyta</i>
Oak	<i>Quercus robur</i>
Red fescue	<i>Festuca rubra</i>
Red stemmed willow	<i>Salix alba</i>
Reed canary grass	<i>Phalaris arundinacea</i>
Rose	<i>Rosa sp.</i>
Silver birch	<i>Betula pendula</i>
Smooth sow thistle	<i>Sonchus oleraceus</i>
Soft rush	<i>Juncus effusus</i>
Stinging nettle	<i>Urtica dioica</i>
Sycamore	<i>Acer pseudoplatanus</i>
Timothy	<i>Phleum pratense</i>
Willowherb	<i>Epilobium sp.</i>
Yorkshire fog	<i>Holcus lanatus</i>

Appendix 3

Photographs

Table 3: Photographs of the site



Photograph 1: Semi improved grassland field.



Photograph 2: Semi improved grassland field.



Photograph 3: Bramble scrub.



Photograph 4: Scattered trees to the northern site boundary.



Photograph 5: Species poor hedge.



Photograph 6: Pond P1



Photograph 7: Ditch D1

Appendix 4

Relevant Legislation

European Legislation

The following Directives have been adopted by the European Union and provide protection for fauna and flora species of European importance and the habitats which support them:

- Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive);
- Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive).

UK Legislation

The Habitats Directive has been transposed into national legislation through the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (The Habitats Regulations). This provides for the designation and protection of 'European Sites' (SPAs, SACs and Ramsar Sites, including proposed or potential European Sites) and the protection of 'European Protected Species'.

The key UK legislation relating to nature conservation is the Wildlife and Countryside Act 1981 (as amended) (W&C Act). This Act is supplemented, *inter alia*, by provision in the Countryside and Rights of Way (CROW) Act 2000, and the Natural Environment and Rural Communities Act 2006 (NERC Act). Additional species and habitat specific UK legislation includes the Protection of Badgers Act 1992 and the Hedgerow Regulations 1997.

The UK legislation is due to be updated, with the publication of The Environment (Principles and Governance) Bill, which is due to be passed through parliament in the 2020. The draft Environment Bill sets out how the UK will maintain environmental standards following leaving of the EU. The Bill builds on the vision of the 25 Year Environment Plan, with the ambition from the government to leave the environment in a better state than it was when inherited.

The Defra Biodiversity Metric is being implemented to work alongside the Environment Bill. This tool calculates potential biodiversity impacts as a result of development and identifies mitigation and compensation requirements to ensure no net loss of biodiversity. In addition, it identifies measures that can be implemented in order to meet Biodiversity gain as a result of development. Defra released a beta version of the biodiversity metric in July 2019. This metric is likely to be the default metric used by councils once the Environment Bill comes into force.

The National Planning Policy Framework (NPPF) 2021 has been published to provide further planning guidance. Wildlife, biodiversity and ecological networks are referred to in Section 15 '*Conserving and enhancing the natural environment*'. The NPPF states that the planning system should contribute to and enhance the natural and local environment by: recognising the wider benefits of ecosystem services, minimising impacts on biodiversity and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future

pressures. Further guidance is provided within Government Circular *06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System*.

Species and Habitats of Principal Importance

Species and Habitats of Principal Importance are listed under section 41 of the NERC Act and are a material consideration in planning decisions. Planners require relevant, up to date information from ecological surveys in order to assess the effects of a proposed development on biodiversity as Councils have a statutory obligation under section 40 of the NERC Act to consider biodiversity conservation in the determination of planning applications.

Background information about the lists of priority habitats and species (Species and Habitats of Principal Importance) can be found within the UK Biodiversity Action Plan (UK BAP). Although this has been succeeded by the '*UK Post-2010 Biodiversity Framework*', many of UK BAP tools are still relevant. BAPs identify habitats and species of nature conservation priority on a UK (UK BAP) and Local (LBAP) scale. Most BAP priority habitats and species have Habitat Action Plans (HAP) and Species Action Plans (SAP) and there are also "grouped action plans" for groups of related species with similar conservation requirements. The LBAP relating to this Site is the Wrexham Biodiversity Action Plan.

Badgers

The legislation protecting badgers in Wales is the Protection of Badgers Act 1992.

Under the Protection of Badgers Act 1992 it is an offence *inter alia* to:

- Wilfully kill, injure or take a badger or to attempt to do so;
- Cruelly ill-treat a badger or
- Intentionally or recklessly interfere with a badger or any part of one; (b) intentionally or recklessly disturb a badger; (c) intentionally or recklessly disturb a dog to which a badger is attached; or (e) disturbing a badger

Welsh Government has authority under Section 10(2) and (3) of the Act to issue licences to interfere with

1. The purpose of any agricultural or forestry operation;
2. The purpose of any operation to maintain or improve any existing watercourse or drainage works, or to construct new works required for the drainage of land, including works of defense against seawater or tidal water, and
3. Controlling foxes in order to protect livestock and penned game

1. The purpose of preventing the spread of disease; and
2. The purpose of preventing serious damage to land, crops, poultry or any other form of property.

The Natural Resources Wales are also a licensing authority under the 1992 Act. In relation to disturbance of badgers, Natural Resources Wales (2018) gives guidelines on disturbance which will require a licence. These includes: *“using very heavy machinery (generally tracked vehicles) within 30 metres of any entrance to an active sett; using lighter machinery, particularly for any digging operation, within 20 metres; light work such as hand digging or scrub clearance within 10 metres. There are some activities which may cause disturbance at greater distances (such as using explosives or pile driving) and these should be given individual consideration.”*

Bats

In England and Wales, all bats and their roosts are protected under the Conservation of Habitats and Species Regulations 2017 and the Wildlife & Countryside Act 1981 (as amended). Several species of bat are also highlighted as Priority Species under the UK Biodiversity Action Plan and within the Local BAP.

Under the current legislation as summarised on pages 8 and 9 of the Bat Surveys for Professional Ecologists Good Practice Guidelines – 3rd Edition (2016) it is a criminal offence to:

“To kill, capture, injure or take a wild bat;

- To damage or destroy a place used by a bat for breeding or resting. All offences of this nature are identified within the Habitats Regulations. This offence is unique in that it can be committed accidentally. No element of intentional, reckless or deliberate action needs to be evidenced;*
- To disturb bats anywhere (roosts, flight lines or foraging areas) if levels of disturbance can be shown to impair their ability to survive, to breed or reproduce, to rear or nurture their young, to hibernate or migrate or to affect significantly local distribution or abundance;*
- To intentionally or recklessly disturb a bat, whilst it is occupying a place of shelter or protection;*
- To intentionally or recklessly obstruct access to any place used by a bat for shelter or protection; and*
- To be in possession or control of a bat alive or dead (or any part of a bat or anything derived from a bat, although bat droppings are generally considered to be acceptable), or to transport a bat, to sell or exchange a bat or to offer to sell or exchange a bat taken from the wild.”*

Breeding Birds

Breeding Birds are protected under the Wildlife and Countryside Act which make it an offence to:

- intentionally kill, injure or take any wild bird or take, damage or destroy the nest of any wild bird whilst it is in use or being built;*
- intentionally take or destroy the egg of any wild bird;*
- have in one's possession or control any wild bird, dead or alive, or any part of a wild bird (including eggs), which has been taken in contravention of the Act or the Protection of Birds Act 1954;*
- intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.*

Invasive Species

It is an offence under Section 14(2) of the Wildlife and Countryside Act 1981 to ‘plant or otherwise cause to grow’ in the wild any plant in Schedule 9 Part II.

Other Aquatic Species

Water vole (*Arvicola amphibious*) are a Species of Principal Importance and also fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to:

- *intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection;*
- *intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose;*
- *intentionally kill, injure or take water voles;*
- *possess or control live or dead water voles or derivatives;*
- *sell water voles or offer or expose for sale or transport for sale; and*
- *publish or cause to be published any advertisement which conveys the buying or selling of water voles.*

Otter (*Lutra Lutra*) are similarly protected under the Wildlife and Countryside Act, 1981 (as amended) and have additional protection as a European Species under The Habitats Regulations 2017.

It is a criminal offence to intentionally, wilfully kill, injure or take any of the aforementioned protected species or to destroy or disturb its habitat.

Local Policy

The site lies within Wrexham and is covered Unitary Development Plan (Adopted in February 2005) and extracts policies within Environment and Conservation. The policies of relevance are EC1-EC17. It is due to be replaced by Wrexham Local Development Plan 2 (LDP2) 2013 to 2028 which is currently in preparation.