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PRELIMINARY ECOLOGICAL APPRAISAL

Royd Moor Farm, Royd Moor Road
Thurlstone, Sheffield
South Yorkshire
Report Reference: BG22.227
January 2023

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1 Summary

1.1 Brindle & Green Ltd were commissioned by Kingsman Homes to undertake a Preliminary Ecological Appraisal incorporating a Phase 1 Habitat Survey and Protected Species Assessment at Royd Moor Farm, Royd Moor Road, Thurlstone, Sheffield, South Yorkshire. This report summarises the potential ecological constraints to the full planning application for site clearance to facilitate the development of residential dwellings. Design plans have not yet been provided. The survey was carried out on the 16th of August 2022.

1.2 The red line boundary is approximately 1.1 ha in extent and comprises of 16 farm buildings and associated hard standing with areas of improved grassland to the south and west. The site was bordered by stone walls and a mature treeline along the north and eastern boundaries. The site was evaluated to support site value on a regional scale.

1.3 The habitats described within this report have the potential to support protected and/or notable species. As such, this report outlines important measures to protect species during site clearance, and recommendations to improve the biodiversity status of the site post development.

A full description of the recommendations can be found within Chapter 7, the table below is a summary of the ecological issues recommended for further consideration as a result of our initial investigations:

Ecological Consideration	**Recommendations (e.g. further survey, mitigation)**	**Timing**
Habitats	A Biodiversity Impact Assessment should be undertaken to influence the design of the master plan. It should be used to inform the native planting and landscaping scheme to be incorporated into the overall design of the scheme.	Design stage
Breeding birds	Reasonable Avoidance Measures (RAMs) are recommended during any clearance, outlined in Chapter 7.	During Site Clearance (Optimal timing between October -March outside of breeding bird season)
Barn Owl	Further survey to confirm presence/likely absence of occupation by Barn Owl within suitable buildings.	Single visit – June - March

Ecological Consideration	Recommendations (e.g. further survey, mitigation)	Timing
Roosting bats	Building 1 was assessed to hold 'Moderate' suitability, as such two further presence/likely absence surveys required. Building 13 was assessed to hold 'Low' suitability. A minimum of one further presence/likely absence survey required If evidence of roosting bats are found then surveys increased to three to allow roost characterisation.	May – September May – August (For low suitability buildings) in suitable weather conditions **All survey work required prior to determination of planning application.**
Hibernating bats	Building 1 supported suitable features for hibernating individual bats, further survey works recommended during hibernation period, with survey effort to be determined on first endoscope survey.	December- February **Survey work should be undertaken prior to determination of the application.**
Foraging and commuting bats	Works should be sympathetic to this group of species, sensitive lighting outline in Chapter 7.	During and post development
Badgers	Reasonable avoidance measures are recommended during site clearance, including a pre-works check, outlined in Chapter 7.	Pre and during development
Great crested newts	Reasonable avoidance measures are recommended during site clearance, outlined in Chapter 7.	Pre and during development
Reptiles	Reasonable avoidance measures are recommended during site clearance, outlined in Chapter 7.	Pre and during development
Mammals of Principle Importance	Reasonable avoidance measures are recommended during site clearance, outlined in Chapter 7.	Pre and during development

2 Introduction

2.1 The purpose of this assessment was to provide a Preliminary Ecological Appraisal of the site incorporating a Phase 1 Habitat Survey and Protected Species Assessment to establish the likelihood of the site supporting protected species. The survey provides detail on the need for any additional, more detailed protected species surveys, likely mitigation and any opportunities for enhancement.

2.2 The red line boundary is approximately 1.1 ha in extent and is dominated by 16 agricultural buildings and associated hard standing as well as areas of semi-improved grassland with dry walls forming the sites boundaries. The site is located approximately 1km west of the rural village of Thurlstone and is bordered by extensive agricultural land with Royd Moor Road running along the northern boundary. The site is the subject of a full planning application for site clearance to facilitate the development of residential dwellings. Design plans have not yet been provided.

2.3 The legislation relevant to protected species within the United Kingdom is summarised within Appendix 4.

2.4 Results and recommendations contained within this report have been prepared by an experienced ecologist and are therefore the view of Brindle & Green Limited. The survey is based on information provided by our client, the development proposals, results of the desk study, and our survey of the site. This report pertains to this information only.

3 Methodology

3.1 Desk Study

Table 1 below lists organisations and/or resources used as part of the desk study process. Data regarding any known statutory or non-statutory sites. The client has not requested a data search from the local records centre, however information has been sourced from publicly available online sources where possible.

Table 1. Ecological Data Resources

Consultant	Requested Data	Search Radius	Date Requested
MAGIC Maps	National and International Site Designations Granted EPS Development Licences	2km	22/11/2022
Barnsley Biodiversity Trust, 2022	Local Wildlife Sites	2km	08/12/2022

3.2 Surveyors

Survey carried out by Kerry Baker MSc, QualCIEEM, Consultant Ecologist and Matthew Norris BSc (Hons.) MRSB, Consultant Ecologist. Natural England Great Crested Newt Licence (2020-44812-CLS-CLS).

The survey was overseen by Lucinda Sweet PhD, MCIEEM, Natural England Bat Licence Class 2 (2019-39122-CLS-CLS), Great Crested Newt licence (2016-22852-CLS-CLS), Director.

3.3 Survey Conditions

The survey was undertaken at 11:30 on the 16/08/2022. The outside temperature was recorded as 22°C, with dry, sunny conditions, and 1/8 cloud cover.

3.4 Extended Phase 1 Habitat Survey

3.4.1 A Phase 1 habitat survey was undertaken following survey guidance (JNCC 2007) to establish the presence and distribution of habitat types within the site and potential ecological constraints to development. A Phase 1 Habitat Map was produced (Appendix 1) and where additional details were required Target Notes have been provided (Appendix 2). A plant species list (Appendix 2) summarising all plants identified on site was produced during the survey and all scientific nomenclature was produced according to Stace (2010).

3.4.2 This survey was extended to note the potential for habitats on site to support protected and/or notable species and for evidence of any such species. The habitats on site were assessed for their suitability to support protected species in relation to the habitat type found at the site. Any incidental sightings or field signs were noted at the time of survey. Where evidence of, or the confirmed presence of a protected species was identified, further species specific surveys may be recommended to ensure that the presence or otherwise of a legally protected species is fully considered prior to the determination of any planning approval or to guide an EPS development licence.

3.4.3 Legislation, guidance and methodology for species relevant to this site are presented in full within Appendices 4 and 5 of this report.

3.4.4 **Site Evaluation**

Following the ecological appraisal the site was classified into one of six groups (Table 2), to indicate whether the site is considered to hold ecological value on a local, national or international scale. This evaluation is intended as a guide and only targeted survey work can establish the significance of protected species populations onsite.

Table 2. Definitions of each of the six evaluation brackets, indicating the importance of each habitat type and an example of their possible habitat status. (Table constructed following The CIEEM EcIA Guidelines, Terrestrial, Freshwater and Coastal (2016) pages 16-17).

Evaluation Value	Comparable example
International	An internationally designated site or candidate site, including habitat or species included within Special Protection Areas (SPA) / Special Areas of Conservation (SAC), Ramsar Sites, listed under Annex 1 of the Habitats Directive.
National	Sites designated at UK level, e.g. Sites of Special Scientific Interest (SSSI), supporting species considered nationally threatened or rare. A regularly occurring regionally or county significant population/number of any nationally important species A feature identified as of critical importance within Section 41 of the NERC Act (2006).
Regional	Key Habitat type included within the National Biodiversity Action Plan (BAP) /NERC Habitat of Principle Importance (HPI). A regularly occurring, locally significant number of a regionally important species.
County	Designated sites, such as Sites of Biological Importance (SBIs) or viable habitat / species populations of value at a county level (LBAP).
District	District level designated sites, such as Local Wildlife Sites (LWS) or habitats / species populations of value at a district (Which have features qualifying for LWS status). Sites/features that are scarce within the district or which appreciably enrich the district habitat resource.
Local / Site	Habitats or species populations of value in a local (i.e. within ~ 5km of the site) context. Habitats of poor to moderate biological diversity e.g. established conifer plantations, species poor hedgerows and un-intensively managed grassland which supports species which are common to the local area and whose loss can be easily mitigated.

3.5 Limitations

3.5.1 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 and notable species assessment provides a preliminary view of the likelihood of these species occurring on site, based upon the suitability of the habitats, known distribution of the species in the local area and any direct

evidence on site. It should not be taken as providing a full and definitive survey of any protected species group.

3.5.2 Buildings 14, 15 and 16 and there surrounding hard standing were not included within survey effort as they were locked at the time of the survey. However, these buildings were visible from a vantage point and noted to be of modern metal construction, similar to other buildings on site and are in current use as pigeon sheds making the presence of protected species there unlikely. Additionally an internal inspection of these three buildings will be conducted alongside planned phase 2 works.

3.6 Report Lifespan

Given the transient nature of the subject we would consider the survey results contained to be accurate for 2 years.

4 Site Context

4.1 Site Description

The application site can be found at SE 22135 04084, accessed off Royd Moor Road which borders the north of the site. The site is dominated by agricultural buildings, their associated hardstanding and boundary features with an area of semi-improved grassland to the south. The site is located 1km west of the rural village of Thurlstone, South Yorkshire, the areas surrounding the site are dominated by extensive arable and pastoral land supporting mainly dry-stone walls with occasional hedgerows and trees. Beyond Royd Moor Road, approximately 500m north of the site is Royd Moor Reservoir supporting associated woodland, no direct linear connectivity was noted between the site and this habitat.

Figure 1. OS map of the project site red line boundary depicts application site.

4.2 Zone of Influence

The zone of influence describes the geographic extent of potential impacts of a proposed development. The small scale of the proposed development reduces the likelihood of impact to the surrounding area, however suitable

connective vegetation could influence the presence of protected species within the application boundary. The zone of influence was considered to be 250 metres from the application boundary for amphibians and reptiles, 150 metres for barn owl, 30 metres for terrestrial mammals such as badgers, and within the area of impact for breeding birds and bats.

5 Results

5.1 Desk Study

5.1.1 Designated Sites

The site was subjected to a search for designated sites within a 2km radius of the site using data supplied by the online desk-based resource MAGIC. A local records search was not requested by the client.

5.1.2 A search of the online resource Magic Maps found no sites with statutory designations within the 2km radius search. The search returned no priority habitats on or adjacent the site. A search of public online resources returned three non-statutory designated Local Wildlife Sites (LWS) within 2km

Table 3. Summary of Designated Sites within a 2km radius of the application site

Site Name	Grid Ref	Status	Reason for Designation	Distance from site
Royd Moor Reservoir	SE 22200 04800	LWS	Lowland Heathland, unimproved acid grassland, Lowland Mixed Deciduous Woodland	0.7km
Scout Dike Reservoir	SE 23164 04925	LWS	Lowland Heathland, Purple Moor Grass and Rush Pasture, River	1.25km
Ingbirchworth Reservoir	SE 21482 05819	LWS	Lowland Heathland, unimproved acid grassland, River	1.7km

5.1.3 Protected Species Assessment

Magic maps revealed two granted EPS licence within 2km of the site:

- For the destruction of a Common pipistrelle (*Pipistrellus pipistrellus*) roost 1.2 km east in Thurlstone village, which expired in 2014.
- For the destruction of a Great Crested Newt (*Triturus cristatus*) breeding 0.7km northeast of the site within Royd Moor Reservoir which expired in 2009.

5.2 Habitats

5.2.1 The habitat types recorded on site are summarised below, and the frequency and distribution of habitat types is displayed within a Phase 1 Habitat Survey Map (Appendix 1 and 2).

5.2.2 Table 4 provides a list of habitat types present on site along with their inclusion (or otherwise) as a National and / or Local Habitat of Principle Importance (HPI) (Previously referred to as Biodiversity Action Plan (BAP)) (It should be noted that additional information is included within the text where a classification under Phase 1 survey methodology does not mirror habitat types considered to be conservation priorities).

Table 4. JNCC Habitat Types found on site and inclusion within UK BAP/HPI habitats.

Habitat Type	N HPI	L HPI	N/A
Semi–improved Grassland			✔
Buildings and Hardstanding			✔
Tall Ruderal Herbs			✔
Bare Ground			✔
Scattered Trees			✔

5.2.3 **Species Poor Semi-improved Grassland**

The south of site compromised species poor semi-improved grassland covering 0.15ha of the redline boundary (Figure 2). The sward was heavily grazed by sheep with a sward height of 5-10cm. Species composition was dominated by, cocks-foot (*Dactylis glomerata*), with abundant perennial rye grass (*Loilium perenne)* and Yorkshire fog (*Holcus lanatus*). Occasional herb species such as dandelion (*Taraxacum officinale agg.*), creeping buttercup (*Ranunculus repens*), common daisy (*Bellis perennis*) were also recorded. Other areas of grassland with similar composition was recorded to the north-west of the site and around the buildings. These areas were recorded to have a sward height of approximately 20-30cm. A full species list can be found at Appendix 2.

5.2.4 **Buildings and Hardstanding**

5.2.4.1 The site was dominated by 16 agricultural buildings set upon hardstanding (Figure 3). Detailed building descriptions and their suitability to support protected species are discussed below in section 5.3.

5.2.4.2 The hardstanding within the site comprised concrete and ranged from good to moderate condition, with colonising vegetation such as dandelion and broadleaf plantain (*Plantago major*) present at the periphery and within cracks.

Figure 2. Area of semi-improved grassland located to the south of the application boundary.

Figure 3. Area of hardstanding adjacent to building 6.

5.2.5 **Tall Ruderal Herbs**

Two small areas of unmanaged tall ruderal herbs were recorded within the application site, to the north of building 1 (Figure 4) and between buildings 3 and 4. The species composition was dominated by American willowherb (*Epilobium ciliatum),* with occasional cleavers (*Galium aparine*), common nettle (*Urtica dioica*), spear thistle (*Cirsium vulgare*) and broad-leaved dock (*Rumex obtusifolius*).

Figure 4. Area of tall ruderal herbs north of building 1.

5.2.6 **Scattered Trees**

5.2.6.1 The north-western boundary supported a line of trees approximately 90m in length. The species composition was dominated by two species, field maple (*Acer campestre*) and Leyland cypress (*Cupressus × leylandii*). (Figure 5a).

5.2.6.2 The area between building 10 and 12 supported a small 30m^2 stand of semi-mature field maples and a mature apple tree (*Malus sp.*) (Figure 5b). The understorey was well shaded by the dense canopy cover forming an area of bare ground with minimal ground flora recorded.

5.2.9 **Invasive Weeds Assessment**

An assessment of the site was made to establish the presence of invasive weeds included on schedule 9 of the Wildlife and Countryside Act 1981 (as amended). No recordings of invasive weed species were found within the application area.

Figure 5.

a) - Line of semi mature trees along northwestern boundary.

b) Scattered trees between building 10 and 12.

5.3 Fauna

5.3.1 **Breeding Birds**

5.3.1.1 The survey was undertaken towards the end of the breeding bird season. Although no active breeding bird activity was recorded during the survey. The buildings, trees, and grassland on site provide suitable nesting habitat for common bird species. Three species of bird were recorded onsite during the survey, including, robin (*Erithacus rubecula*), wood pigeon (*Columba palumbus*) and magpie (*Pica pica*).

5.3.1.2 The buildings on site were considered suitable for nesting barn swallow (*Hirundo rustica*) and house martin (*Delichon urbicum*) due to the presence of available shelter and suitable ledges within the roof structures.

5.3.1.3 Based on a review of the habitat types on site and the list of bird species recorded onsite during the survey, the site is considered to support an assemblage of bird species including some species considered to be of high conservation concern that are either legally protected or UK BAP species, such as house sparrow (*Passer domesticus*), bullfinch (*Pyrrhula pyrrhula*) and greenfinch (*Chloris chloris*).

5.3.2 **Barn owl** (*Tyto alba*)

The Buildings 1, 5 and 8 held suitability to support roosting and / or breeding barn owl due to features such as stacked hay bales which provide sufficient habitat and shelter for breeding. Buildings 2, 3, 4, 9 and 10 supported access with potential for roosting barn own through small ledges being present. No evidence was recorded during the survey however the site is positioned within an area of suitable foraging habitat in the surrounding agricultural landscape.

5.3.3 **Bats**

5.3.3.1 *Roosting bats*

Scattered trees were recorded across the site and form linear boundary features. All visible trees were assessed and categorised based upon Bat Conservation Trust guidance (see Appendix 5). The trees along the sites north-western boundary assessed to have negligible suitability to support roosting bats. One tree (T1) adjacent to building 11 (see Appendix 1) was assessed to hold low roosting suitability due the presence of a large upward facing crack in

the stem. The remainder of the scattered trees within the site were of negligible suitability as they did not support suitable cracks, fissures or holes to support roosting bats.

5.3.3.2 Of the 13 buildings surveyed on site Buildings 1 was assessed to have moderate suitability to support roosting bats. The extent of the suitability pertained to the internal and external features where gaps in the brick work and missing mortar provided crevices for bats to use on an intermittent basis. Building 13 was assessed to have low roosting suitability as a result of gaps in the external stonework. All other buildings were assessed to support negligible suitability to support roosting bats. The main structural features of all the buildings, and their suitability for supporting roosting bats are summarised below (Table 5), and associated figures can be found with Appendix 10.

5.3.3.3 *Hibernating Bats*

The buildings and trees on site were assessed for features that may have potential to support hibernating bats. Building 1, supported internal cervices providing suitable shelter, coupled with suitable access points into the building, as such was considered suitable to support individual hibernating bats.

Table 5. Summary of Bat Roost potential and evidence found within each of the buildings/structures on site (Supporting Figures within Appendix 9 and 10).

High	Moderate	Low	Negligible	None

Building Number	Description	Bat evidence / Potential Roosting Features (PRFs)	Roost Suitability
B1	Two storey stone and breeze block agricultural building with a single storey section to the NE. The roof contained a pitched section of unlined corrugated metal panels and sloped sections of corrugated asbestos panels, both were unlined and supported by a timber frame. Internally the building featured two separate levels with a disused milking parlour to the lower floor and the upper floor used for storage. The upper floor was open to the apex, with an unlined corrugated metal roof supported by timber.	• Gaps in the external brick work of northern and eastern elevations • Cavities in internal stonework with roosting and hibernation suitability • Gaps between interior wall top roof • Gaps between interior and exterior roof lining on ground floor. **No evidence of previous bat activity was recorded during the assessment.**	Moderate & Hibernation suitability

B2	Single storey timber and breeze block riding menage with a pitched roof open to the apex comprising corrugated asbestos panels supported by a steel frame.	• No PRF's observed **No evidence of previous bat activity was recorded during the assessment.**	Negligible
B3	Single storey breeze block and corrugated metal stable block with a curved corrugated asbestos roof.	• No PRF's observed **No evidence of previous bat activity was recorded during the assessment.**	Negligible
B4	Single storey breeze block and corrugated metal stable block with a curved corrugated asbestos roof.	• No PRF's observed **No evidence of previous bat activity was recorded during the assessment.**	Negligible
B5	Single storey agricultural shed of mixed breeze block, corrugated asbestos and metal construction with a pitched open apex corrugated metal roof supported by a timber frame.	• No PRF's observed **No evidence of previous bat activity was recorded during the assessment.**	Negligible
B6	Single storey breeze block and corrugated metal workshop with a pitched open apex corrugated metal roof supported by a steel frame.	• No PRF's observed **No evidence of previous bat activity was recorded during the assessment.**	Negligible
B7	Single storey breeze block and corrugated well maintained workshop with a pitched open apex corrugated metal roof supported by a steel frame.	• No PRF's observed **No evidence of previous bat activity was recorded during the assessment.**	Negligible
B8	Single storey L shaped timber framed agricultural storage building with corrugated metal cladding and a sloped corrugated metal roof.	**No evidence of previous bat activity was recorded during the assessment.**	Negligible
B9	Single storey breeze block and corrugated metal stable block with a curved corrugated asbestos roof.	• No PRF's observed **No evidence of previous bat activity was recorded during the assessment.**	Negligible
B10	Single storey agricultural and livestock shed with timber and corrugated asbestos cladding. A timber frame supported a pitched open apex asbestos panel roof.	• No PRF's observed **No evidence of previous bat activity was recorded during the assessment.**	Negligible
B11	Two storey breeze block and corrugated metal workshop. A timber frame supports a plywood lined corrugated metal pitched roof.	• No PRF's observed **No evidence of previous bat activity was recorded during the assessment.**	Negligible
B12	Single storey breeze block and corrugated metal storage shed with a curved corrugated asbestos roof.	• No PRF's observed **No evidence of previous bat activity was recorded during the assessment.**	Negligible
B13	Single storey brick shed supporting a sloped corrugated metal roof. A stone wall is attached to the NE elevation	• Crevices in exterior stonework on eastern elevation going through into the interior.	Low

		No evidence of previous bat activity was recorded during the assessment.	

5.3.3.4 *Foraging and Commuting Bats*

The site supported vegetative features such as linear trees on the northern boundary considered suitable to support commuting and foraging bats. The scattered trees and grassland within the site boundary also provide foraging opportunities for bats. However, the linear tree line is considered fragmented from the wider environment and no connectivity was noted to any core habitat for bats. The site is considered to provide low suitability habitat for foraging and commuting bats, with linear features onsite connecting the site to the agricultural landscape beyond.

5.3.4 **Badgers** (*Meles meles*)

No evidence of badger setts, or activity such as mammal runs, snuffle holes and latrines were found during the ecological appraisal of the site. However, the site supported habitat features such as grassland and scattered trees which were considered conducive to supporting foraging badger. The extent of the site, and the location within an agricultural dominated landscape suggest that this transient species could forage or commute within the surrounding environment, but are not likely dependant on habitats within the redline boundary.

5.3.5 **Great Crested Newts** (*Triturus cristatus*)

The data search found a granted EPS license over 500m from the site. The site supported a mixture of hard standing and heavily grazed semi-improved grassland which are considered sub optimal to support the terrestrial phase for this species, restricting suitability to isolated patches of ruderals. There were no ponds within or adjoining the application boundary, however, three ponds were within 500metres of the site (Figures 7), with the closest 225m to the northeast. Additionally these ponds were separated from the site by Royd Moor Road and a series of dry-stone walls. Pond 2 was assessed and assigned a GCN Habitat Suitability Index (HSI) score (Oldham et al, 2000) displayed within Table 6.

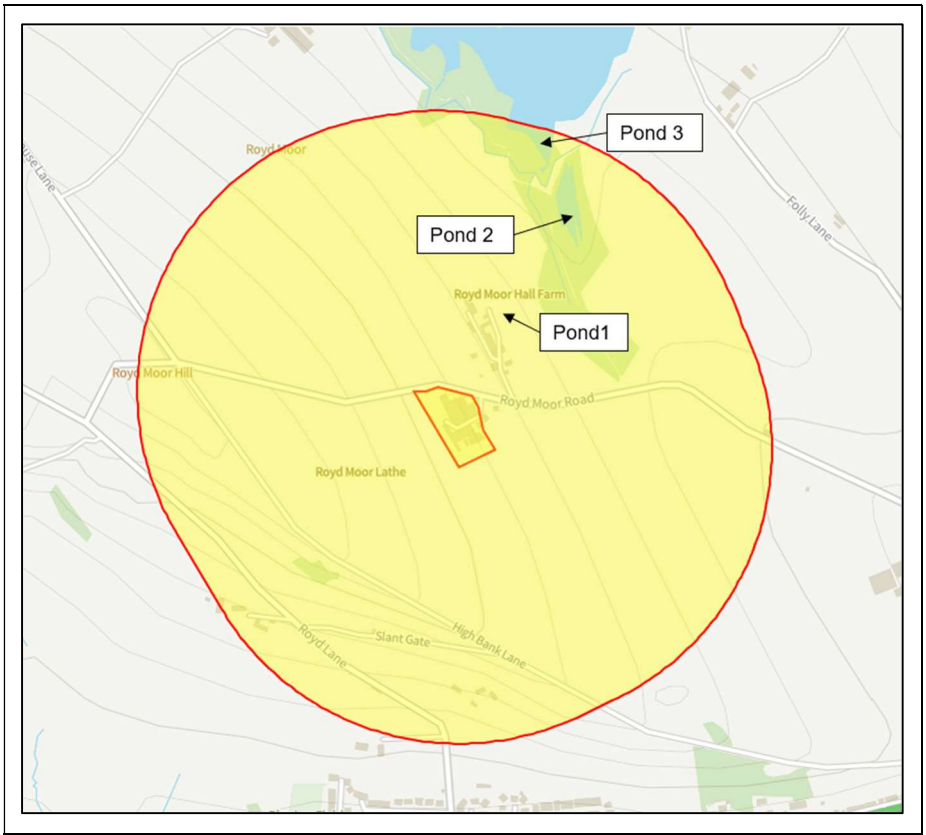


Figure 7. OS Map showing pond locations within a 500m radius of the site.

Table 6. Pond Locations and Suitability for Great crested newts

Pond No.	Grid Ref.	Habitat Suitability Index Score (See Appendix 9)	Distance from Site
1	SE 22259 04274	No access	225m NE
2	SE 22319 04479	Average – 0.69	450m NE
3	SE 22283 04600	Private land – no access	500m NE

5.3.6 Reptiles

No evidence of reptiles was recorded during the survey. Limited suitable habitat was located within the northern area of the site where the grassland vegetation provided a variable structure and suitable basking spots on rubble heaps for reptiles, with connective linear features to the surrounding landscape. However the overall suitability of the site was considered unlikely to support a core population.

5.3.7 Mammal Species of Principal Importance

The habitats on site such as grassland and tree understorey, were considered suitable to support foraging Western European Hedgehog (*Erinaceus europaeus*) and Brown Hare (*Lepus europaeus*). Additionally the ruderals provided suitable shelter for these species.

6 Evaluation

6.1 Development Proposals

The site is the subject of a full application for site clearance to facilitate the development of residential dwellings. Design have not yet been provided.

6.2 Desk Study Impacts

Direct impacts on designated sites as a result of the proposed development are considered unlikely. The application site is positioned 0.7km southwest of Royd Moor Reservoir (the nearest LWS), with no direct connectivity via linear features to this site. It is expected the initial proposals set out for the site (Appendix 6) will show that the extent of the development proposals are contained within the site boundary and the boundary trees retained, further limiting any potential impacts to the surrounding environment.

6.3 Habitats

The habitats on site have been evaluated as having site value in relation to the immediate surroundings and a regional context. The site was dominated by developed areas comprising buildings and hardstanding, which provide little to no ecological value. The grassland, scattered trees and tall ruderal herbs on site are not considered to be of high conservation significance due to a lack of notable flora assemblages. A biodiversity net gain assessment will be required to determine the post construction impacts to habitats within the redline boundary. Chapter 7 provides recommendations relating to the habitats on site to ensure appropriate mitigation is provided to provide the opportunity for biodiversity net gain.

6.4 Breeding Birds

6.4.1 All wild birds, their eggs and nests are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure, or take any wild bird whilst nesting, or take, damage or destroy the nest of any such bird while in use or being built. In addition, species listed on Schedule 1 of the Wildlife and Countryside Act 1981 or their dependant young are afforded additional protection from disturbance whilst they are at their nests.

6.4.2 The vegetation and buildings on site were considered to provide suitable nesting habitat. As such vegetation clearance and building demolition have the potential to impact individual birds, their young, eggs and habitats through direct injury and harm or through disturbance causing nest abandonment. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.5 **Barn Owl**

6.5.1 Barn owl is protected under Schedule 1 the Wildlife and countryside Act 1981 (as amended). It is an offence to kill, injure, capture or possess a barn owl, take or destroy their eggs, nest sites and to disturb the dependent young.

6.5.2 No evidence was recorded during the appraisal, however Buildings 1, 5 and 8 held suitability to support roosting and / or breeding barn owl and Buildings 2, 3, 4, 9 and 10 supported access with potential for roosting barn own. The proposals therefore have the potential to disturb any potentially nesting barn owl and result in a loss of potential roosting and breeding habitat. It is therefore recommended that a barn owl survey is conducted to ascertain the value of the site for local populations, as detailed in Chapter 7 below.

6.6 **Bats**

All bats in the United Kingdom and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to damage or destroy any bat roost, intentionally or recklessly obstruct a bat roost, deliberately, intentionally or recklessly disturb a bat or intentionally kill, injure or take any bat.

6.6.1 *Roosting bats*

One tree adjacent to building 11 was assessed to hold 'Low' suitability to support roosting bats (Appendix 1). The removal of this tree could result in disturbance or injury to roosting bats, and the loss of suitable roosting habitat. The recommendations section (Chapter 7) of this report sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.6.2 Building 1 was identified as having 'Moderate' suitability and building 13 identified as having 'Low' suitability to support roosting bats due to the presence of features within the building's internal and external walls. To confidently determine if bat species are present, further activity surveys will be required. If the development was to continue as planned, it may lead to the destruction of a roosting site of a protected species, and increased disturbance, injury or harm to individual bats and/or their young. Chapter 7 sets out important guidance relating to further survey work to understand the importance of the features and development of appropriate mitigation.

6.6.3 *Hibernating Bats*

Features present inside Building 1 including gaps in the stonework have been identified as holding potential to support individual hibernating bats. To confidently determine if bat species are present, further surveys will be required. If the development was to continue as planned, it may lead to the destruction of a hibernation site of a protected species, and increased disturbance, injury or harm to individual bats and/or their young. Chapter 7 sets out important guidance relating to further survey work to understand the importance of the features and development of appropriate mitigation.

6.6.4 *Foraging and Commuting Bats*

The site was assessed to support 'Low' suitability for foraging and commuting bats due to the presence of suitable foraging habitat and connecting linear features. Indirect impacts by the development works could cause disturbance to these features and vegetation removal could cause loss of foraging habitat. However, the value of the features may be elevated subject to the presence of roosting or hibernating bats resulting from follow-up survey work. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.7 **Badgers**

Under the Protection of Badgers Act 1992, in England and Wales it is an offence to wilfully kill, injure, disturb or take any badger, or intentionally or recklessly damage, destroy, or obstruct access to any part of a badger sett. There was no evidence of badger activity within zone of influence, however the rural location of the site and data records suggest that badgers may be present in the wider environment and could forage and commute through the red line

boundary on an intermittent basis. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.8 **Great Crested Newts**

Great crested newts and their eggs, breeding sites and resting places are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017 (as amended). Habitats on site were considered to be overall sub-optimal for terrestrial GCN with no suitable breeding habitat onsite. Despite ponds being recorded within a 500m radius of the site, connectivity to these ponds was considered to be limited due to a lack of linear connective habitat. In addition available more optimal is habitat in the wider environment. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.9 **Reptiles**

Reptiles are protected under the Wildlife and Countryside Act 1981 (as amended) making it illegal to intentionally kill or injure reptiles. No evidence of reptiles was recorded during the survey; however, the site supported small areas of suitable habitat around the site such as stone piles and dry-stone wall refugia. These habitats could provide suitability for transient reptiles within the wider environment. It is therefore likely that harm or injury could be sustained to this group of species during the redevelopment phase of the site if these areas are to be impacted by the works. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.10 **Mammal Species of Principal Importance (MSPI)**

Section 41 of the NERC Act (2006) highlights seventeen species of principal importance in England. From this list, the habitats on site were considered conducive to supporting Western European Hedgehog and Brown Hare. There is a risk of harm to individuals of this species that may be using the site, during any site clearance, as such, Chapter 7 set outs precautionary measures to minimise the risk of harm to these species during site clearance.

7 Recommendations

The site should be the subject of further ecological survey works, where the following indices should be assessed and evaluated further to establish the extent of impact to the ecological value of the application site.

This survey can be used to guide the Master Plan to ensure that mitigation is employed to retain and enhance local biodiversity. As with all development sites; efforts should be made to support National and Local Biodiversity Action Plans, and seek opportunities to incorporate ecological enhancement schemes within the proposed development. Such site enhancements are viewed positively in light of the NPPF (2021) which seeks biodiversity enhancements and net gain through the planning process.

7.1 Habitats

Habitats / Botanical	Timing
Recommendations	
A Biodiversity Impact Assessment should be undertaken to influence the design of the master plan. It should be used to inform the native planting and landscaping scheme to be incorporated into the overall design of the scheme.	Design stage.
Retention of linear vegetive features and scattered trees where possible, replacement planting should be species rich and comprise native and locally prevalent species.	Design stage.

7.2 Breeding Birds

Breeding Birds	Timing
Recommendations	
Given their protection, development must be sympathetic to the value of habitats / features and potential impacts on breeding birds, their eggs, nests and young. The breeding bird season is generally accepted as being between March and September. Developers should consider and implement the options appropriate to their scheme;	During site clearance and demolition. (Optimal timing between October and February)

a) Undertake clearance works between the months of October and February where possible. b) In the consequence of development works between the months of March and September, scattered trees should be subjected to a search for active birds' nests 24 hours prior to commencement of works. If birds are found to be nesting, the nest should be cordoned off and works ceased within the immediate area to prevent nest abandonment or harm to individuals and there young. Once the birds have successfully fledged works can continue in the area. The nest should be checked by an ecologist prior to works restarting.	
Enhancement Prescriptions	
During construction, WoodStone Sparrow Nest boxes or similar approved should be incorporated into the north/north-eastern elevation of 25% of new buildings, positioned at least 3 metres from the ground. Woodstone swallow nest bowls and Vivara Pro Woodstone House Martin Nests (or similar approved) should be installed post-construction under sheltered eaves of 25% of the new dwellings on an north/north-eastern elevation.	Post development

7.3 Barn Owl

Barn Owl	Timing
Recommendations	
A Barn Owl inspection survey should be carried out to determine presence/likely absence of Barn Owl. Inspection to be targeted towards suitable breeding habitat such as hay bales, ledges and voids.	Single survey visit which can be undertaken all year round, but preferably avoiding the peak breeding season March – June. **Survey work should be undertaken prior to determination of the application.**
Enhancement Prescriptions	
Design proposals may require amendment following the results of further survey work.	

7.4 Roosting Bats

Roosting Bats	Timing
Recommendations	
Building 1 was assessed as holding 'moderate' suitability for roosting bats. Therefore, a minimum of two presence / likely absence surveys are required on the building in accordance with BCT guidelines. Building 13 was assessed as holding 'low' suitability to support roosting bats. In accordance with BCT guidelines, it will require a single presence / likely absence survey is required to confidently determine if bats are utilising the building. A tree within the east of the site (T1) was assessed as 'low' suitability for roosting bats due to the presence of potential roost feature within the central trunk of the tree. During site clearance works, the tree should be soft felled whereby the limbs of the tree are removed and lowered to the ground under the supervision of a qualified ecologist to avoid impacts to roosting bat species. Should roosting bats be identified during the presence / likely absence surveys, then additional roost characterisation surveys may be required to determine the type of roost(s) within the buildings and their conservation significance to allow an application for a mitigation licence from Natural England	**Moderate Suitability Buildings:** Two separate Presence / Likely Absent Nocturnal surveys, with one dusk emergence survey and one dawn re-entry survey. **Low Suitability Buildings:** One single nocturnal dusk emergence or dawn re-entry survey. All visits should be undertaken between May – August, spaced a minimum of two weeks apart. Surveys to be conducted in suitable weather conditions conducive of finding bats. **Low Suitability Trees**: Soft felling can be undertaken year round **Survey work should be undertaken prior to determination of the application.**
Enhancement Prescriptions	
Design proposals may require amendment following the results of further survey work.	

7.5 Hibernating Bats

Foraging & Commuting Bats	Timing
Recommendations	
Building 1 was assessed as holding suitability to support hibernating bats. Therefore, a hibernation survey is recommended to determine extent of internal features as well as for presence/likely absence of hibernating bats .	December-February, survey effort to be determined during first visit. **Survey work should be undertaken prior to determination of the application.**
Enhancement Prescriptions	
Suitable and specific enhancement and mitigation measures will be detailed following the recommended further survey work.	During / post-development

7.6 Foraging & Commuting Bats

Foraging & Commuting Bats	Timing
Recommendations	
The habitats on site provide low suitability to support foraging and commuting bats. The extent of disturbance to foraging and commuting bats within the site should be reduced where possible by employing a sensitive lighting scheme during construction works, and artificial security lighting should not be installed in a way which directs lighting at these boundary features and potential commuting lines. Post-development lighting proposals should consider potential impacts of an increase in artificial lighting on foraging and commuting bat species. Site lighting design should follow the principles set out in 'Bats and artificial lighting in the UK' (ILP & BCT, 2018). This should include avoidance of artificial lighting of the orchard north of the site.	During and post development
Enhancement Prescriptions	
Soft landscaping proposals should seek to incorporate native tree and shrub species wherever possible, which are beneficial to native invertebrate species, the	Post-development

primary component of UK bat species' diets. Planting should consider species that attract night-flying insects such as night-scented stock (*Matthiola longipetala*) and evening primrose (*Oenothera biennis*).	

7.7 Badgers

Badgers	Timing
Recommendations	
Reasonable Avoidance Measures should be employed before and during construction works to prevent harm to this protected species. a) If works are not commencing within 12 months of the initial survey a follow-up survey will be required to ensure badgers are still absent from the site. b) Any exposed excavations to be left overnight are to be covered at the end of each working day or include a means of escape for any fallen animals (e.g., a scaffolding plank). Any temporarily exposed open pipes are to be capped to prevent badgers gaining access. c) Should badgers or any evidence of badgers be encountered during the construction phase, all works should cease, and the advice of a suitably qualified ecologist should be sought	Pre and during development

7.8 Great Crested Newts

Great Crested Newts (GCN)	Timing
Recommendations	
The following reasonable avoidance measures should be implemented during the construction phase to prevent GCN colonising any potential habitat incidentally created by spoil, open trenches, or arisings. • Clearance work should be conducted outside of hibernation period (October to February). • Prework clearance of log and rubble piles should be conducted by hand to facilitate the escape of GCN form the area. • All materials to be stored off the ground (for example on pallets) to minimise the likelihood of GCN accessing them for refugia. • All spoil/waste materials to be removed from site at the end of each working day (or stored in a skip).	During construction.

• If within the active season for GCN. Vegetation removal should be completed directionally, i.e., working from one side of the site to the other cut the vegetation in lengths down to 150mm until completed across the site. Once complete over the whole site to 150mm, vegetation can be cut to ground level, again directionally to facilitate the escape of GCN form the working area. Once completed the area should be maintained until works commence on the site, to maintain unsuitability for GCN. If any evidence of GCN presence is uncovered during development works, then works should cease and the advice of an ecologist sought.	

7.9 Reptiles

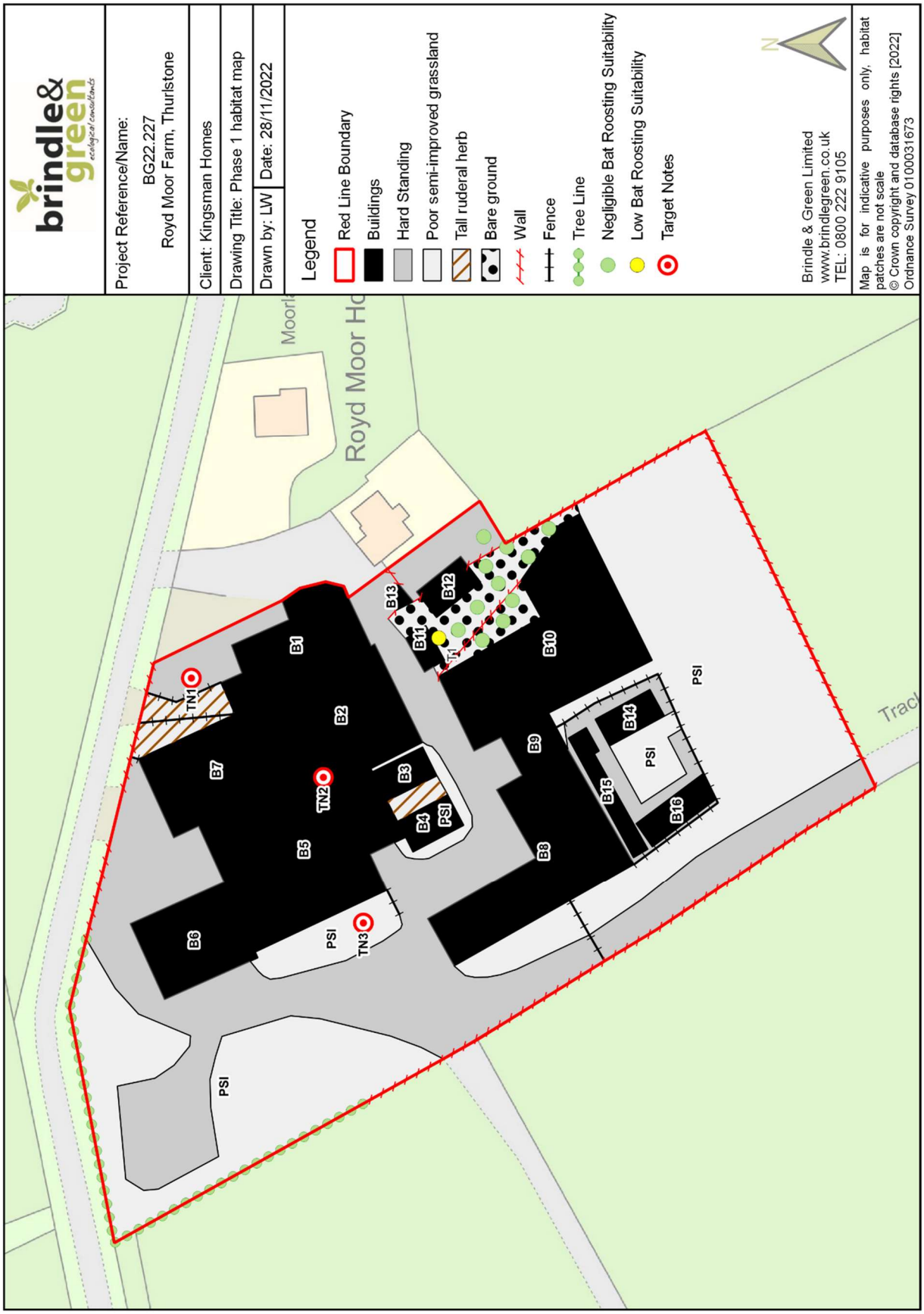
Reptiles	Timing
Recommendations	
The site holds suitability for the species with, semi-improved grassland and dry-stone walls present. it is also possible that small numbers could traverse through the site to better habitats present to the wider landscape. Therefore, reptiles could be impacted by the development during the construction phase. Works should seek to follow Reasonable Avoidance Measures (RAMs) during the active season (April to October) for reptiles such as; • Dry stone walls present on the site should be dismantled (if applicable) by hand to facilitate the species to easily escape from the working area. • Vegetation removal should be completed directionally, if cut within the active season for reptiles. i.e., working from one side of the site to the other cut the vegetation in lengths down to 150mm until completed across the site. Once complete over the whole site to 150mm, vegetation can be cut to ground level, again directionally to facilitate the escape of reptile species form the working area. Once completed the area should be maintained until works commence on the site, to maintain unsuitability for reptiles. • If burning any cleared vegetation, carry out immediately after piling to prevent reptiles moving in prior to burning. • If clearance works can be completed within the inactive season (November to March) then no reasonable avoidance measures are required	During construction works phase during the active season – between April to October.

to be followed for reptile species, as the site is unlikely to support species within hibernation period.	

7.10 West European Hedgehog / Brown Hare

Hedgehog / Brown Hare	Timing
Recommendations	
Hedgehogs and brown hare may use the site for foraging or commuting purposes. The recommended reasonable avoidance measures should be followed: a) Any temporarily exposed open pipes are to be capped to prevent hedgehogs or brown hare gaining access. b) Undertake works during daylight hours. c) The vegetation should be checked prior to removal d) Search areas of deadwood, brash, and discarded items by hand before removing. e) If burning any cleared vegetation, carry out immediately after piling to prevent hedgehogs moving in prior to burning. f) Any exposed excavations to be left overnight are to be covered at the end of each working day or include a means of escape for any fallen animals (e.g., a scaffolding plank).	During clearance and development
Enhancement Prescriptions	
Use of native shrubs in soft landscaping proposals will provide benefits on site for native fauna post-development. For hedgehogs, gaps approximately 20x20cm could be left in any new boundary fencing to enable any hedgehogs present to continue to use the site post-construction. A single Schwegler Hedgehog Dome, or similar approved, should be incorporated into the design of the scheme to promote the conservation status of this mammal species.	Post development

Appendix 1. Phase 1 Habitat Plan



Appendix 2. Phase 1 Target Notes

Target Note Number	Description
TN1	Tarmac spoil heap at grid reference SE 22153 04128
TN2	Hay bales stored at approx. SE 22132 04102
TN3	Stone spoil heap at SE 22105 04099

Plant Species List with DAFOR Scale

Scientific nomenclature follows Stace (2010) for vascular plant species and common names follow BSBI List of British & Irish Vascular Plants and Stoneworts.

Please note that this plant species list was generated as part of a Phase 1 Habitat survey, and does not constitute a full botanical survey.

Abundance was estimated using the DAFOR scale as follows: D = dominant, A = abundant, F = frequent, O = occasional, R = rare, LF = locally frequent

Common Name	Scientific Name	Estimated Abundance (DAFOR)
American Willowherb	*Epilobium ciliatum*	LF
Apple	*Malus sp.*	R
Bramble	*Rubus fruitcosus*	O
Broadleaved Dock	*Rumex obtusifolius*	O
Broadleaved Plantain	*Plantago major*	F
Cleavers	*Galium aparine*	A
Cock's-foot	*Dactylis glomerata*	D
Common Couch	*Elytrigia repens*	A
Common Nettle	*Urtica dioica*	O
Cow parsley	*Anthriscus sylvestris*	O
Creeping Buttercup	*Rannunculus repens*	O
Creeping Thistle	*Cirsium arvense*	O
Dandelion	*Taraxacum*	O
False Oat-grass	*Arrhenatherum elatius*	F
Field Maple	*Acer campestre*	D
Hogweed	*Heracleum sphondylium*	F
Leylandii	*Cupressus x leylandii*	A
Perennial Rye-grass	*Lolium perenne*	A
Pineappleweed	*Matricaria discoidea*	F
Rosebay Willowherb	*Chamerion angustifolium*	O
Sorrel	*Rumex acetosa*	O
Sow Thistle	*Sonchus*	O
Tufted Hair-grass	*Deschampsia cespitosa*	A
White Clover	*Trifolium repens*	F
Yorkshire Fog	*Holcus lanatus*	A

Appendix 3. General References

Bell, S. McGillivary, D. (2006) *Environmental Law*. 6th ed. Oxford University Press.

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Gilbert G, Gibbons DW, Evans J. (1998) *Bird Monitoring Methods: Breeding Bird Survey* (pages 389-393). RSPB.

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Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.

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Sutherland, W.J. (1996) *Ecological Census Techniques*. Cambridge University Press.

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www.barnsleybiodiversity.org.uk.

Appendix 4. Legislation, Policy and Guidance

Articles of British wildlife and countryside legislation, policy guidance and both Local and National Biodiversity Action Plans (BAPs) are referred to. The articles of legislation are:

- The Wildlife and Countryside Act 1981 (as amended)
- The Conservation of Habitats and Species Regulations 2017 (as amended)
- Department for Communities and Local Government. National Planning Policy Framework. (2021)
- EC Council Directive on the Conservation of Wild Birds 79/409/EEC
- The Protection of Badgers Act 1992
- The Natural Environment and Rural Communities Act 2006 (Including National and Local Biodiversity Action Plan (LBAP / HPI))
- Hedgerow Regulations 1997

Appendix 5. Legislation, Guidance and Methodology for Preliminary Ecological Appraisals.

Legislation, Guidance and Methodology

Breeding Birds

All nesting birds are protected under the Wildlife and Countryside Act 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, for species listed on Schedule 1 of the Wildlife and Countryside Act 1981 it is an offence to intentionally or recklessly cause disturbance at, on or near an 'active' nest.

The bird breeding season is typically accepted to start in February/March and continue through until September/October, however breeding birds can be found all year round depending on the given species and climatic conditions.

A sites habitat composition, locality, association to designated sites as well as current usage and management are all considered in the decision as to whether further bird related surveys are required. In addition, surveys may be recommended based on incidental bird records collected during a Preliminary Ecological Appraisal, species identified within an ecological data search or target species listed within a local biodiversity action plan.

Bird surveys are carried out in accordance with:
Gilbert G, Gibbons DW, Evans J. (1998) *Bird Monitoring Methods*. RSPB.

Bats

Roosting Bats

All bats in the United Kingdom and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to damage or destroy any bat roost, intentionally or recklessly obstruct a bat roost, deliberately, intentionally or recklessly disturb a bat or intentionally kill, injure or take any bat.
Areas of concern; can be encountered in many types of structure and care should therefore be taken when undertaking maintenance or demolition of suitable structures and trees.

Site assessments of buildings, commuting and foraging habitat and trees are undertaken in accordance with: Collins, J (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, (3rd edition), Bat Conservation Trust, London. (Table 1 & 2 Below).

Preliminary Ecological Surveys look for evidence of bat presence such as feeding remains, bat droppings, roosting individuals and staining around potential access points. The suitability of site features are also assessed because absence of bat evidence, is not confirmation of a negative result.

Within trees, features searched for include; natural holes, woodpecker holes, cracks/splits in major limbs, loose bark, hollows, and dense cover of ivy over the tree. If evidence is found, or a building supports features conducive to supporting roosting bats then further presence / absence bat surveys and/or roost characterisation surveys will be recommended.

Foraging and Commuting bats

Habitat features on site are assessed for their suitability to support foraging and commuting bat populations. This assessment is independent from the suitability of the site to support roosting bats, and provides information on the likeliness of bat foraging activity within the local environment, and the dependence of individuals on these features for commuting to alternative roosting sites, foraging and migration.

Table 1: Guideline for assessing the suitability of a structure to support roosting habitat (Buildings and Trees), amended from Collins, J (2016)

Category	Description of roosting habitat	Number of additional presence / absence surveys required
Negligible Suitability	Suitable cavities may exist, but these are less than ideal.	None
Low Suitability	A structure with one or more potential roost sites that could be used by individual bats opportunistically. The feature and surrounding habitat do not provide enough shelter, conditions* space for larger roost types such as a maternity or hibernation roost. A tree of sufficient size and age to support roosting bats, but with no features observed from the ground, or the features only have a limited potential to support roosting bats.	One survey between May and August Trees – No further surveys required
Moderate Suitability	A structure or tree considered to have one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions* and surrounding habitat but are unlikely to support a roost of high conservation status (With regard to roost type only – assessments are made irrespective of species conservation status, which is established after presence is confirmed).	Two surveys between May and September (with at least one survey undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to ideally be undertaken at least two weeks apart.
High Suitability	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* and surrounding habitat.	Three surveys between May and September (with at least two surveys undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to be undertaken. The third survey can be either Dusk or Dawn, undertaken at least two weeks apart.
Confirmed	This category is where positive evidence of bats has been recorded. For example, bats are found; bat droppings may be present at a suitable location for roosting bats; existing bat records may be associated with the structure.	

(* in this context conditions refers to the level of disturbance, light, height above ground, temperature, and humidity etc)

Table 2: Potential suitability of foraging and commuting habitat within an application boundary. Features should be assessed following this guide and professional judgement. Adapted from Collins J (2016)

Category	**Description of commuting and foraging habitat**	**Survey effort to establish the value of commuting and foraging habitat****
Negligible Suitability	Negligible habitat features on site likely to be used by commuting or foraging bats.	None
Low Suitability	Habitat which could be used by low numbers of commuting bats such as an isolated gappy hedgerow, or an unvegetated stream unconnected to suitable habitat in the wider environment.	**Transect /spot count/ timed search survey:** One survey visit per active season **AND** **Static automated surveys:** One location per transect, over a five-night period, per season.

	Suitable, yet isolated habitat that could be used by foraging bats such as individual trees, or a patch of scrub.	
Moderate Suitability	Continuous habitat connected to the wider landscape that could be used by commuting bats, notably tree lines, hedgerows or linked back gardens. Habitat that is connected to the wider landscape which could be used by bats for foraging such as trees, open water, scrub or grassland.	**Transect /spot count/ timed search survey** One survey visit per month At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period. **AND** **Static automated surveys:** Two locations per transect, over a five-night period, per month (April to October)
High Suitability	Continuous, High-quality habitat that is well connected to the wider landscape which is considered to be highly conducive to commuting bats including river valleys, stream, hedgerows, and woodland edge 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. Site is close to and connected to known roosts.	**Transect /spot count/ timed search survey** Up to two survey visit per month (April to October) At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period. **AND** **Static automated surveys:** Three locations per transect, over a five-night period, per month (April to October)

*(** This is only a guide for survey effort required, the complexity of the site and the proposed disturbance / loss of features will determine the extent of works required on a site by site basis).*

Badgers (*Meles meles*)

Badgers are protected under the Protection of Badgers Act 1992. It is illegal to wilfully kill, injure, disturb or take any badger, or attempt to do so and it is an offence to intentionally or recklessly damage, destroy, or obstruct access to any part of a badger sett.

Site assessments are undertaken in accordance with:
Harris S, Cresswell P and Jefferies D (1989). *Surveying Badgers*.

During the PEA, the site and the 30 metre zone of Influence considered for this species are searched for evidence of badger activity. The surveyor will identify evidence of activity, or habitat suitability for this protected species. Even If no evidence of badger activity is found, if local conditions suggest that the habitat may be suitable for badger, further surveys will be recommended.

Amphibians

The great crested newt and natterjack toad are fully protected under Schedule 5 of the wildlife and countryside Act 1981. The legislation protects these amphibians and their place of shelter or protection which may extend 500m from the breeding pond.

Great Crested Newt (*Triturus cristatus*)

The great crested newt, is fully protected under the Conservation of Habitat Regulations 2017 (as amended), making it an offence to intentionally or recklessly kill, injure, disturb or take great crested newts, intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection.

The legislation protects these amphibians and their place of shelter or protection which may extend 500m from the breeding pond. Sites should be considered suitable to support great crested newts if distribution and historical records suggest newts may be present, there is a pond within 500m of the development or the development site includes suitable terrestrial habitat refuges.

Great crested newt site assessments are undertaken in accordance with:
English Nature. (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough. and Langton T, Beckett C and Foster J (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

Prior to a site visit, a desk study pond search is undertaken. When searching for ponds, Brindle & Green apply a total of 4 sources to establish their location. The following online sources are used:
OS MAPPING VIA PRO MAP, GOOGLE EARTH PRO, GOOGLE MAPS and MAGIC MAPS

Each identified pond (Access permitting) is subjected to a Habitat Suitability Index (HSI) assessment providing a score for each pond. This survey should be undertaken during the summer period to be fully accurate, however assumptions can be made out of season to guide survey recommendations.

Reptiles

Two species of reptile, the sand lizard and smooth snake, and their habitats are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981. All other native British reptiles are protected against intentional killing and injury.

British reptiles are found in exposed, undisturbed areas, such as areas without cultivation with differing areas of grassland sward length. Suitable areas include abandoned sand quarries, fallow farmland land, heathland, post-industrial land, railway corridors etc. If these types of suitable features are found then further reptile surveys are recommended.

Edgar P, Foster J and Baker J (2010) *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.
Gent T and Gibson S (2003) *Herpetofauna Workers Manual*. JNCC, Peterborough.

Invasive non-native weeds

Plant species such as Japanese knotweed (*Fallopia japonica),* Himalayan balsam *(Impatiens glandulifera)* and giant hogweed (*Heracleum mantegazzianum*) are examples of invasive non-native weeds classified under Part II of Schedule 9 of the Wildlife and Countryside act 1981. Any person who causes these species to grow or spread in the wild by dumping or other means is guilty of an offence. The plant and the soil these species are found growing in are classified as waste material and should be treated as such.

A simple walk over survey of the site to determine if these species are present was carried out during the PEA. A full list of Schedule 9 species can be found at Plantlife.org

Botanical Value

There are 60 plant species listed under Schedule 8 of the Wildlife and Countryside Act 1981 where it is an offence to intentionally pick or uproot or destroy any of these plant species.

During the PEA, a phase one habitat survey was undertaken following JNCC guidance. Further assessments are made to determine whether habitats comprise those identified as Habitats of principle Importance under S42 of NERC Act 2006.

Surveys can be undertaken year-round, however, if species or site conditions suggest higher botanical interest a full botanical survey will be recommended.

Invertebrates

The following invertebrates are European protected species and it is considered an offence if you capture, kill, disturb or injure, on purpose or by not taking enough care. It is also against the law to damage or destroy a breeding or resting place,
obstruct access to their resting or sheltering places, possess, sell, control or transport live or dead protected invertebrates, or parts of them.

Large blue butterflies (eggs, caterpillars, chrysalises and adults)
Fisher's estuarine moths (eggs, caterpillars, chrysalises and adults)
Little ramshorn whirlpool snails

Approximately 400 additional species form the invertebrate species of Principal Importance in England and are included within Schedule 5 of the Wildlife and Countryside Act 1981 and S4I of NERC Act 2006.

If suitable habitat for invertebrates is identified during the PEA further surveys will be recommended.

Ecological Enhancement

In March 2021 the Department for Communities and Local Government published the National Planning Policy Framework. This sets out planning policies on protection of biodiversity through the planning system. The document states - *opportunities to incorporate biodiversity in and around developments should be encouraged*.

For new buildings guidance such as in the following will be used:
Williams, C. (2010) *Biodiversity for Low and Zero Carbon Buildings, A Technical Guide for New Build*. Riba Publishing.

Designated Sites

Designated areas are Sites of Special Scientific Interest (SSSI) while others have been designated as having European protection status. Local authorities can also designate areas for nature conservation and in doing so may impose local authority byelaws to support local nature conservation objectives.
European designated status includes Special Protection Areas (SPAs) that preserve areas for birds and Special Areas of Conservation (SACs) which provides protection for habitats and the species which these habitats supports.

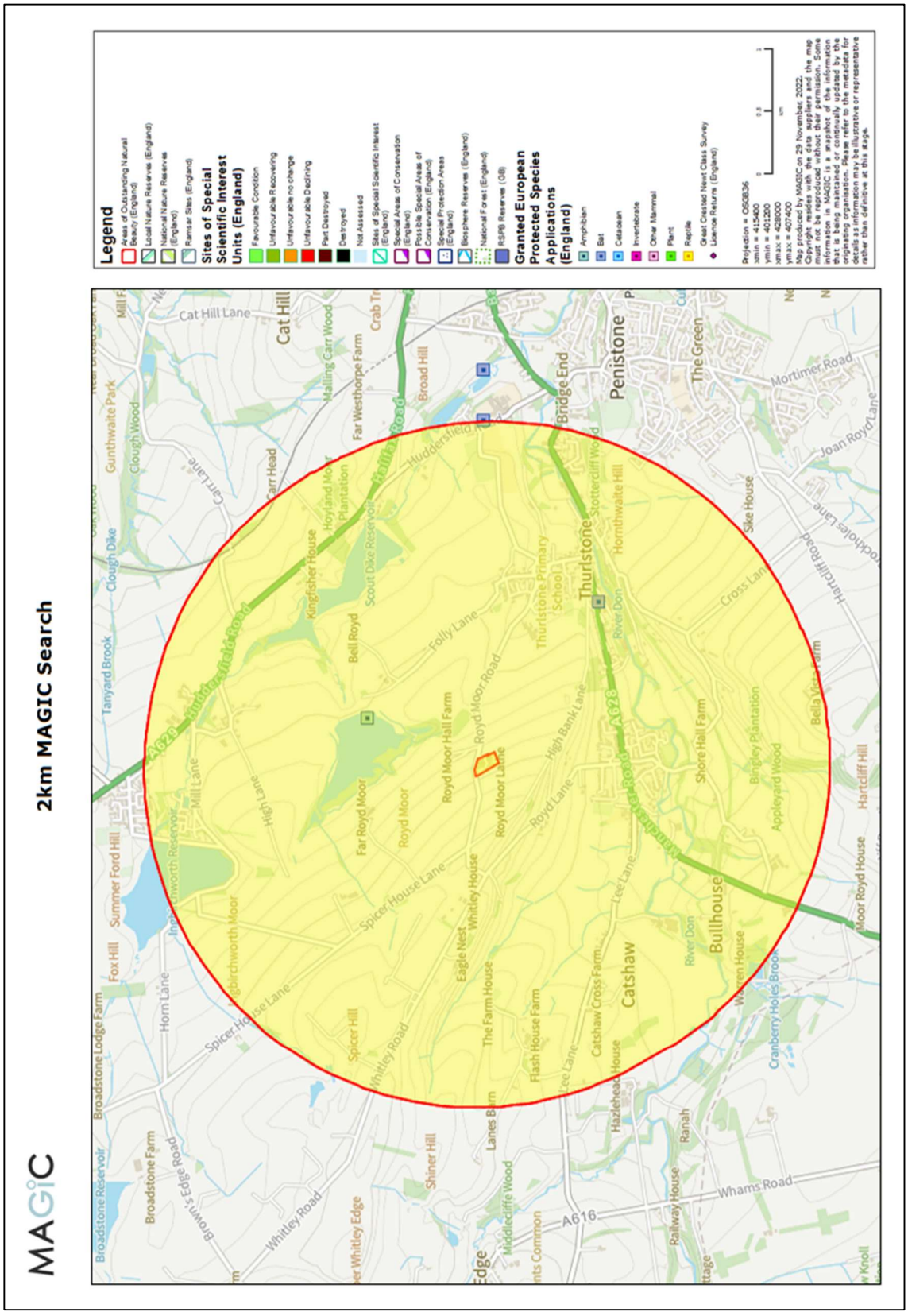
Information of Designated Protected Areas is received through Ecological Data Searches and Magic Map searches.

Appendix 6. Proposed Plans

Design plans have not yet been provided

Appendix 7. Magic Data

Two kilometre radius search of the project site.



16/08/2022, 09:15

Site Check Report Report generated on Tue Aug 16 2022
You selected the location: Centroid Grid Ref: SE22110407
The following features have been found in your search area:

Local Nature Reserves (England) - points
No Features found

Local Nature Reserves (England)
No Features found

National Nature Reserves (England) - points
No Features found

National Nature Reserves (England)
No Features found

Ramsar Sites (England) - points
No Features found

Ramsar Sites (England)
No Features found

Sites of Special Scientific Interest Units (England) - points
No Features found

Sites of Special Scientific Interest Units (England)
No Features found

Sites of Special Scientific Interest (England) - points
No Features found

Sites of Special Scientific Interest (England)
No Features found

Special Areas of Conservation (England) - points
No Features found

Special Areas of Conservation (England)
No Features found

Special Protection Areas (England) - points
No Features found

Special Protection Areas (England)
No Features found

Biosphere Reserves (England) - points
No Features found

Biosphere Reserves (England)
No Features found

RSPB Reserves (GB) - points
No Features found

RSPB Reserves (GB)
No Features found

1/1

16/08/2022, 09:09

Site Check Report Report generated on Tue Aug 16 2022
You selected the location: Centroid Grid Ref: SE22120407
The following features have been found in your search area:

Granted European Protected Species Applications (England)

Case reference of granted application	EPSM2012-4929
Species group to which licence relates	Bat
Species on the licence	C-PIP
Site county of licence	South Yorkshire
Licence Start Date	03/10/2012
Licence End Date	31/08/2014
Does licence impact on a breeding site	N
Does licence allow damage of breeding site	
Does licence allow damage of a resting place	
Does licence allow destruction of breeding site	N
Does licence allow destruction of a resting place	Y
Does licence impact on a hibernation site	Unknown
NERC agreement reference	Unknown

Case reference of granted application	EPSM2009-508
Species group to which licence relates	Amphibian
Species on the licence	Great Crested Newt
Site county of licence	South Yorkshire
Licence Start Date	02/02/2009
Licence End Date	31/08/2009
Does licence impact on a breeding site	Y
Does licence allow damage of breeding site	
Does licence allow damage of a resting place	
Does licence allow destruction of breeding site	Y
Does licence allow destruction of a resting place	Y
Does licence impact on a hibernation site	Unknown
NERC agreement reference	Unknown

Great Crested Newt Class Survey Licence Returns (England)
No Features found

Great Crested Newt Pond Surveys 2017 - 2019
No Features found

1/1

Appendix 8. Habitat Suitability Index – GCN

Table 1. HSI categories and individual water body scores.

***Key**: S1 = Location, S2 = Pond Area, S3 = Pond Permanence, S4 = Water Quality, S5 = Shade, S6 = Water Fowl, S7 = Fish, S8 = Pond Numbers. S9 = Terrestrial Habitat Quality, S10 = Macrophyte Coverage, T = Total HSI Score*

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	T
Pond 2	1	0.8	0.9	0.67	1	0.67	0.33	0.8	1	0.3	**0.69**

Total HSI Score = (S1 x S2x S3x S4x S5x S6x S7x S8x S9x S10) $^{1/10}$)

Appendix 9. Building Photographs including PRF's

Figure 7. Southern elevation of Building 1 showing two storey stone wall. Gaps in mortar providing roosting potential.	
Figure 8. Eastern elevation of Building 1 with gaps in mortar providing roosting potential.	
Figure 9. Internal crevices with hibernation suitability within Building 1.	

Figure 10. Internal gap in timber lintel with suitability within Building 1.	
Figure 11. South eastern elevation of Building 2.	
Figure 12. Interior of Building 2.	

Figure 13. Southern elevation of Building 3.	
Figure 14. Southern elevation of Building 4.	
Figure 15. Western elevation of Building 5.	

Figure 16. Interior of Building 5.	
Figure 17. western elevation of Building 6.	
Figure 18. Northern elevation of Building 7.	

Figure 19. Interior of Building 7.	
Figure 20. Northern elevation of Building 8.	
Figure 21. Building 8 interior.	

Figure 22. Northern elevation of Building 9.	
Figure 23. Building 9 interior.	
Figure 24. Southern elevation of Building 10.	

Figure 25. Interior of Building 10.	
Figure 26. Eastern elevation of Building 11.	
Figure 27. Interior of Building 11.	

Figure 28. Northern elevation of Building 12.	
Figure 29. Building 12 interior.	
Figure 31. Northern elevation of Building 13.	

Figure 32. Southern elevation of Building 13 with missing mortar providing gaps in stonework.

Appendix 10. PRF Map