

Great Crested Newts

5.3.10 The data search returned three records within 2km of the site, with the nearest record located approximately 1km southeast of the site.

5.3.11 The site supported hedgerows, modified grassland, and roots of scattered trees that were all considered suitable to support the terrestrial phase for this species. The site itself supports four ponds (P1 – P4) shown within Appendix 1. These ponds were each subjected to Habitat Suitability Index (HSI) surveys (Oldham et al, 2000) the results of which are shown within Table 8, and ponds P2 – P4 were subject to eDNA surveys. The results of the eDNA surveys are shown within Appendix 9 along with photographs and descriptions. It should be noted that P1 was not sampled due to health and safety concerns. The desk study highlighted two additional ponds within 500m of the application site (P5 and P6).

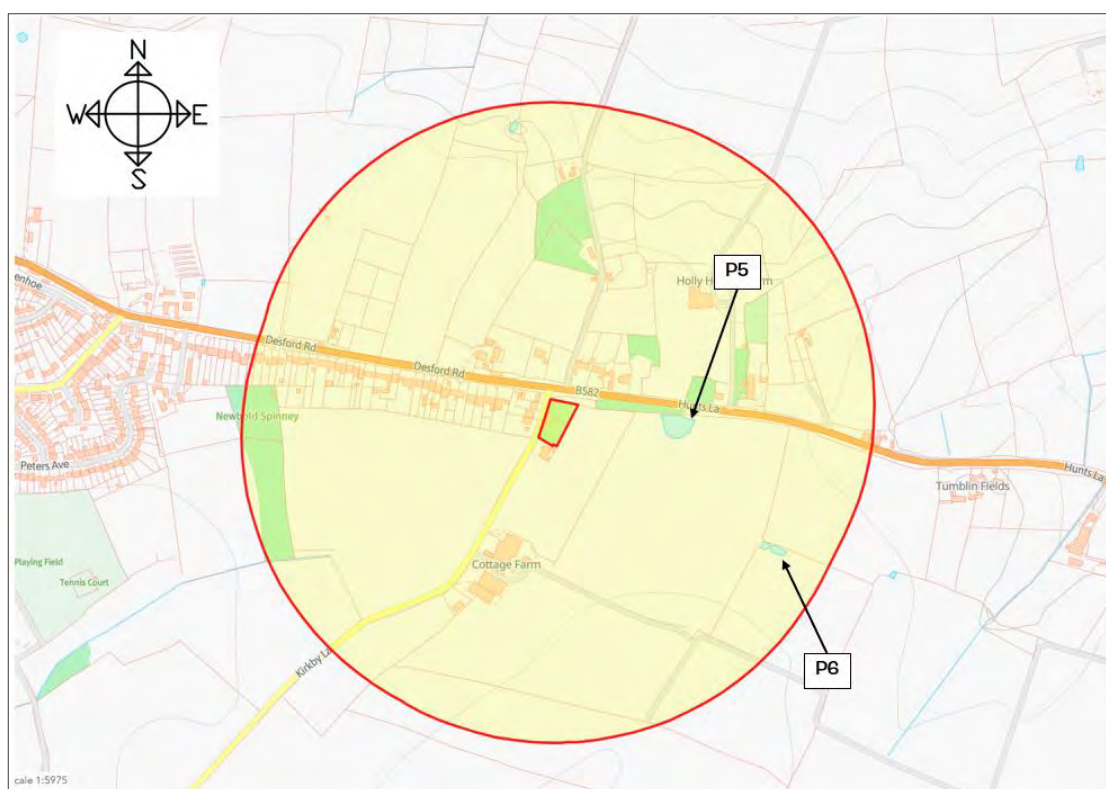


Table 8: Pond Locations and Suitability for Great Crested Newts

Pond Number	Grid Ref.	HSI Score	Distance from site
P1	SK 45887 03662	0.76 - Good	Within application site
P2	SK 45906 03671	0.55 – Below Average	Within application site
P3	SK 45934 03710	0.64 - Average	Within application site
P4	SK 45895 03666	0.64 - Average	Within application site
P5	SK 4611 0367	No access during survey – situated on private land.	175m E
P6	SK 4627 0347	No access during survey – situated on private land.	375m E

Reptiles

5.3.12 The data search returned 14 records of reptile species within 2km of the site, all of which pertain to grass snake. The site supports a range of suitable habitat for reptiles, including bramble scrub, hedgerow bases, both short and long grass, and waterbodies. There are also rubble piles and compost heaps which may provide suitable shelter and hibernacula for the species group. As a result, it is considered that common species such as common lizard (*Viviparous lizard*), slow worm (*Anguis fragilis*), and grass snake may be present within the site.

Mammal Species of Principal Importance

5.3.13 The NERC Act 2006, Section 41 highlights 17 species of principal importance within England.

Western European Hedgehog (*Erinaceus europaeus*)

5.3.14 The habitats on site were considered conducive to supporting Western European hedgehog. Habitats including the hedgerows, rough grassland, and scrub provide suitable foraging, refuge and commuting habitats for this species, and may also be suitable for hibernating hedgehogs.

6 Evaluation

6.1 Development Proposals

- 6.1.1 The site is subject to an outline planning application for partial site clearance to facilitate the self-build development of two residential dwellings. Design proposals can be found within Appendix 6.

6.2 Desk Study Impacts

- 6.2.1 There are no statutory or non-statutory designated sites located within 2km of the application site. The closest such site is Botcheston Bog Site of Special Scientific Interest (SSSI), which is located approximately 2.6km northeast of the application site. Given the small scale of the proposals, and the significant distances between the site and designated sites, no negative impacts are anticipated as a result of the proposals.
- 6.2.2 The site lies within an Impact Risk Zone (IRZ) for Botcheston Bog (SSSI), however, the proposed development does not meet the criteria for the IRZ, as such no further action is required.

6.3 Habitats

- 6.3.1 Due to the presence of LBAP habitats being present within the site, the habitats on site have been evaluated as having 'District' value in relation to the immediate surroundings and a regional context. The site comprises a vegetated garden containing ornamental planting, short mown grassland, longer unmanaged grassland, hedgerows, scattered trees, seven buildings, four ponds, four hedgerows, and bramble scrub.

6.4 Invasive Weeds

- 6.4.1 Significant stands of both cotoneaster and what is considered to be giant rhubarb are present within the site (Appendix 2). Currently, these are both managed within the private garden. However, both of these species are listed as Schedule 9 species. The spread of these species into the 'wild' (deemed to be outside the site boundary) should be prevented and controlled. Chapter 7 provides recommendations pertaining to the removal of invasive weeds.

6.5 Breeding Birds

- 6.5.1 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.

- 6.5.2 The vegetation on site was considered to provide suitable nesting and foraging habitat for common bird species. The habitats on site are of low value and locally frequent, as such the impact of the loss of these habitats is short term and can be offset through post-construction landscaping. However, in the absence of mitigation direct or indirect impacts on individual birds, their young, eggs and habitats could occur during site clearance. Chapter 7 provides recommendations relating to the need for precautionary working methods to safeguard this species group during vegetation clearance.

6.6 Bats

- 6.6.1 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.

Roosting Bats

- 6.6.2 Scattered trees on site did not support features such as cracks, crevices or rot holes which would be suitable to support roosting bats and were not considered 'Negligible' to support roosting bats.
- 6.6.3 Building B3 was identified as having 'Low' suitability to support roosting bats due to the presence of PRFs within the building's external roof features. Plans show the retention of Building 3.
- 6.6.4 The recommendations within Chapter 7 of this report sets out safeguarding measures to avoid impacts on this species and measures to support its conservation status through ecological enhancement.

Foraging and Commuting Bats

- 6.6.5 The linear features provided by boundary vegetation, hedgerows and trees could act as important commuting lines for bat species and are considered to hold 'Moderate' suitability. Current proposals show that the majority of these features are to be retained. As a result, it is

anticipated that the retention of these features, and through the provision of a sensitive lighting strategy implemented during the construction phase and post-development, flight lines and commuting corridors will be retained and foraging and commuting bats will not be negatively impacted by the proposals. Safeguarding measures for foraging and commuting bats are outlined within Chapter 7 of this report.

6.7 Badgers

- 6.7.1 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.
- 6.7.2 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.
- 6.7.3 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

- 6.8.1 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).
- 6.8.2 Four ponds (P1 – P4) are present within the site, with suitable terrestrial habitat also present. Three of the four ponds (P2 – P4) were subject to eDNA sampling, which returned a negative result. Pond P1 was not sampled, due to health and safety concerns. However, as ponds P2 – P4 returned negative results, it is considered highly unlikely that GCN would be present within P1 as they have been recorded as being absent from the remaining ponds within the site as they are all well connected. There two additional waterbodies (P5 and P6) located within 500m of the application site. However, it should be noted that after reviewing satellite imagery, P5 no longer exists. P6 is located approximately 380m southeast of the application site, at its closest point. While P6 has not been assessed, the negative results obtained through the eDNA analysis highlight that the species are likely to be absent from the site. However, given the presence of waterbodies within the site and the zone of influence, there is potential that other amphibian

species, such as common toad (*Bufo bufo*) may be present. Chapter 7 outlines appropriate safeguarding measures to protect this species group during the construction phase.

- 6.8.3 As the species are considered absent from the application site, and no other waterbodies are present within the zone of influence, no negative impacts on the species are anticipated as a result of the proposals.

6.9 Reptiles

- 6.9.1 Reptiles are protected under the Wildlife and Countryside Act 1981 (as amended) making it illegal to intentionally kill or injure reptiles.
- 6.9.2 No evidence of reptiles was recorded during the survey; however, the site supports a suitable habitat matrix comprising grassland with a variable sward structure and hedgerows providing dead wood refugia. Scattered trees provide shade and the banks of ponds also offer suitable basking opportunities. As such it is therefore possible that harm or injury could be sustained to this group of species during the pre-construction clearing of the site. Given the small scale of the site, it is considered disproportionate to undertake a full suite of surveys. Instead, Chapter 7 provides important guidance on measures to avoid impacts to this species and measures to support its conservation status.

6.10 Mammal Species of Principal Importance

- 6.10.1 The NERC Act 2006, Section 41 highlights 17 species of principal importance within England. This includes several species of bat, however these have been addressed in section 6.7.

Western European Hedgehog

- 6.10.2 The habitats on site were considered conducive to supporting Western European hedgehog. Habitats including the hedgerows, rough grassland, and scrub provide suitable foraging, refuge and commuting habitats for this species. Chapter 7 provides recommendations aimed at safeguarding this species during construction, and measures to facilitate their use of the site post-development.

7 Recommendations

The site should be the subject of further ecological surveys, assessment and reasonable avoidance measures should be detailed and implemented during the construction phase of the proposed development.

These surveys can be used to guide the Master Plan layout to ensure that mitigation is employed to retain and enhance local biodiversity where possible. Efforts should be made to support National and Local Biodiversity Action Plans, achieve a 10% Biodiversity Net Gain Post development and seek opportunities to incorporate ecological enhancements within the proposed development as detailed within the National Planning Policy Framework (2023), which seeks biodiversity enhancements through the planning process, and the Environment Act 2021.

7.1 Habitats

Habitats	Timing
Enhancement Prescriptions	
Soft landscaping proposals should seek to include areas of open space to be enhanced with native planting for the benefit of biodiversity, guided by a biodiversity impact assessment to achieve a minimum 10% net gain.	During design stage

7.2 Breeding Birds

Breeding Birds	Timing
Recommendations	
Trees, shrubs, and hedgerows on site provide suitable habitat for breeding birds. In addition, a nest box was recorded on Building B3. Given their protection, development must be sympathetic to the value of this habitat and potential impacts on breeding birds, their eggs, nests and young. The breeding bird season is generally accepted as being between March and September. Consideration and implementation must be given to the following options most appropriate to the scheme. a) Undertake vegetation clearance between the months of October and February where possible. b) Clearance between the months of March and September should be subjected to a search for active birds' nests 24 hours prior to commencement of works.	Works outside of the breeding season (Oct-Feb) If unachievable, follow steps in recommendation.
Enhancement Prescriptions	
Soft landscaping proposals should seek to include areas of open space to be enhanced with native planting for the benefit of biodiversity, guided by a biodiversity impact assessment. There is a requirement to provide nest boxes on new builds at a ratio of 1:1. Specific box recommendations can be provided once development plans have been made available.	During design stage

7.3 Roosting Bats

Roosting Bats	Timing
Recommendations	
Building B3 was assessed to hold 'Low' suitability for roosting bats however will be retained during the development. If lighting is required, a scheme should be devised and positioned to have minimal disturbance following the guidance of an ecologist. Any lighting used during the development should be directed away from the building with overspill less than 1lux (ideally 0) onto suitable habitats.	During and post development
Enhancement Prescriptions	
Habibat built in bat boxes 001 (or similar approved) to be integrated into the external fabric of proposed dwellings, positioned on a south-western elevation at a height of at least 5 metres with an unobstructed flight path.	During construction

7.4 Foraging and Commuting Bats

Foraging and Commuting Bats	Timing
Recommendations	
The boundary features at the west, north and east should be retained where possible in order to ensure commuting and foraging lines are retained. Similarly, the large trees within the site should also be retained, as these may also contribute to a commuting corridor, and attract invertebrates which in turn may provide a food source. The extent of disturbance to foraging and commuting bats within the area should be reduced where possible by employing a sensitive lighting scheme during construction works, and artificial security lighting should not be installed post construction in a way which directs lighting towards the hedge boundaries and mature trees If lighting is required, a scheme should be devised and positioned to have minimal disturbance following the guidance of an ecologist. Any lighting used during the development should be directed away from the north-western boundary with overspill less than 1lux (ideally 0) onto suitable habitats.	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 primary component of UK bat species' diets. Planting should consider species that attract night-flying insects such as night-scented stock (<i>Matthiola longipetala</i>) and evening primrose (<i>Oenothera biennis</i>).	During design stage

7.5 Badgers

Badgers	Timing
Recommendations	
Appropriate precautions should be employed before and during construction works to prevent harm to this protected species. a) A Pre-works check of the site should be undertaken within three months prior to the onset of construction related activities. 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
Enhancement Prescriptions	
It is recommended that a range of fruit bearing shrubs and trees are incorporated into the design of the scheme. This will provide continued foraging resources for badgers, post development.	During design stage

7.6 Great Crested Newts

Great Crested Newts	Timing
Recommendations	
The survey effort to date indicates that GCN are absent from the site. However, while it is considered to be highly unlikely, there is the potential that an incidental encounter may occur during the construction phase. Additionally, common toad may also be present within the site. Therefore, the following reasonable avoidance measures should be followed during the construction phase to minimise risk to individual amphibians: 1) All materials to be stored off the ground (for example on pallets) to minimise the likelihood of herptiles accessing them for refugia. 2) All spoil/waste materials to be removed from site at the end of each working day (or stored in a skip). 3) If the ponds require removal, this should be undertaken during late Autumn (September / October) when all amphibians are outside of the pond. If any evidence of GCN presence is uncovered during development works, then works should cease immediately and the advice of an ecologist sought as a European Protected Species License would be required to continue works.	During Construction
Enhancement Prescriptions	
Use of native shrubs in soft landscaping proposals will provide benefits on site for native fauna post-development.	During design stage

7.7 Reptiles

Reptiles	Timing
Recommendations	
A detailed Reptile Method Statement should be produced by a suitably worded planning condition which ensures that the following reasonable avoidance measures are followed during the construction phase to prevent reptiles colonising any potential habitat incidentally created by spoil, open trenches or arisings. a) Any tall grass/ruderal vegetation to be directionally strimmed in a two-phase process during the active season (March – October) to allow for any potential herptiles to disperse, the first cut to reduce the height to 30cm, then the second cut to 10-15cm. b) All materials to be stored off the ground (for example on pallets) to minimise the likelihood of reptiles accessing them for refugia. c) All spoil/waste materials to be removed from site at the end of each working day (or stored in a skip). If any evidence of reptiles is uncovered during development works, then works should cease and the advice of an ecologist sought.	As planning condition
Enhancement Prescriptions	
Use of native shrubs in soft landscaping proposals will provide benefits on site for native fauna post-development.	During design stage

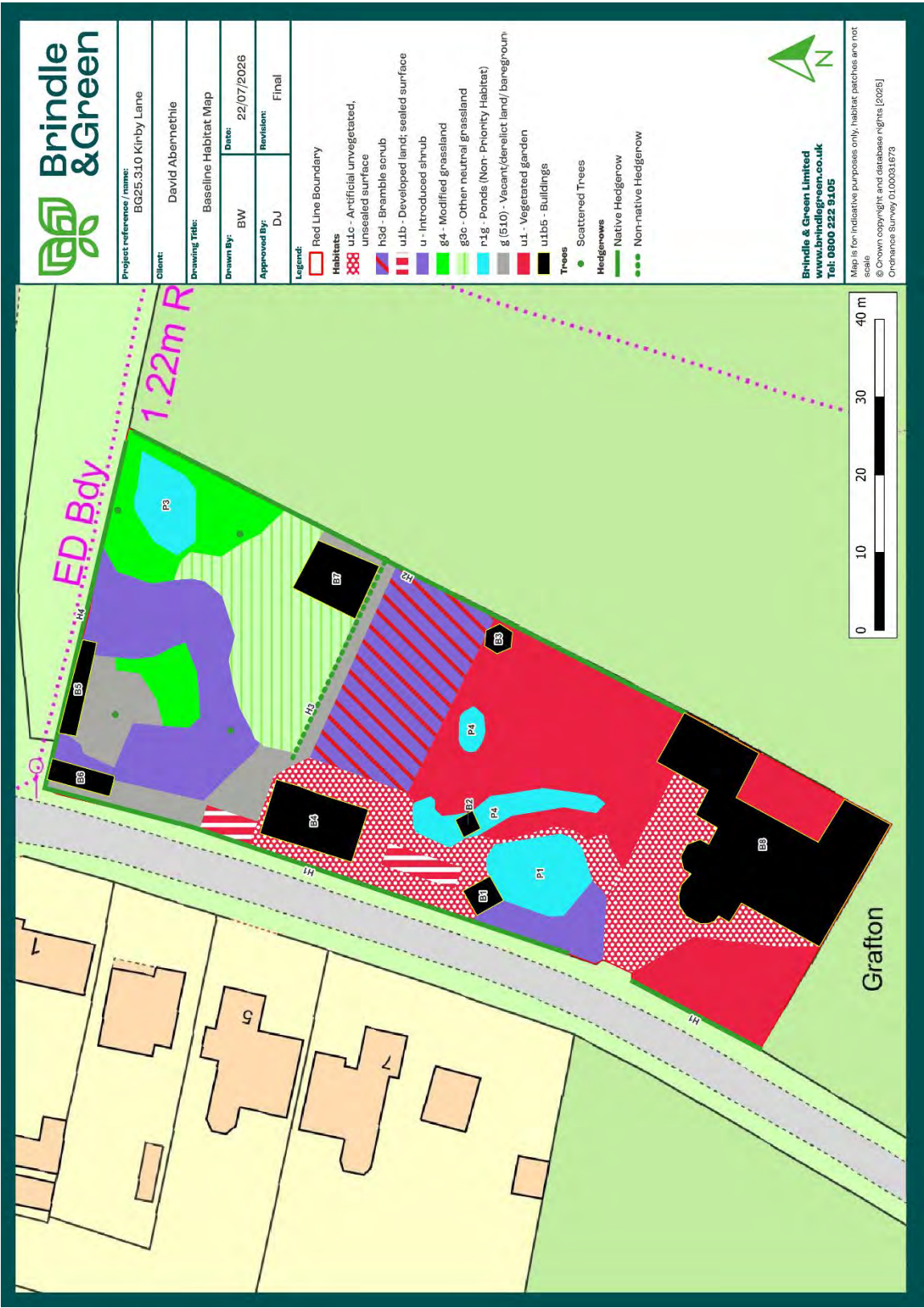
7.8 Mammal Species of Principal Importance

Mammal Species of Principal Importance	Timing
Recommendations	
Hedgehogs may use the site for foraging or commuting purposes. The recommended reasonable avoidance measures should be followed: - Any temporarily exposed open pipes are to be capped to prevent hedgehogs gaining access. - Undertake works during daylight hours. - The vegetation should be checked prior to removal. - Search areas of deadwood, brash, and discarded items by hand before removing. - If burning any cleared vegetation, carry out immediately after piling to prevent hedgehogs moving in prior to burning. - 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

7.9 Invasive Weeds

Other Species	Timing
Recommendations	
Cotoneaster and giant rhubarb are present within the site. It is recommended that if these ornamental species are not to be retained and managed under the proposals, they are removed and disposed of appropriately by a competent contractor.	During clearance and development
Enhancement Prescriptions	
A Construction Environmental Management Plan (CEMP) should be implemented to prevent the spread of these invasive species during clearance and development.	During clearance and development

Appendix 1 – UK Habitat Classification Plan



Appendix 2 - UKHab Target Notes and Species List

Table 9: UKHab target notes

Target note number	Description
TN1	Debris Piles at SK 45901 03717 and SK 45901 03717 

Target note number	Description
TN2	Brash pile at SK 45924 03680 
TN3	Cotoneaster stands at SK45910 03705 

Target note number	Description
TN4	Giant rhubarb at SK 45893 03664 

Table 10: 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 UKHab 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)
Apple	<i>Malus sp.</i> ,	R
Bamboo	<i>Bambusa sp.</i> ,	R
Birch	<i>Betula sp.</i> ,	R
Birdsfoot trefoil	<i>Lotus corniculatus</i>	R
Broadleaved willowherb	<i>Epilobium montanum</i>	R
Cleavers	<i>Galium aparine</i>	R
Cocksfoot	<i>Dactylis glomerata</i>	O
Common knapweed	<i>Centaurea nigra</i>	R
Conifer		R
Contoneaster	<i>cotoneaster sp</i>	O
Creeping bent	<i>Agrostis stolonifera</i>	O
Curled dock	<i>Rumex crispus</i>	R
Devils-bit scabious	<i>Succisa pratensis</i>	R
Dogrose	<i>Rosa canina</i>	R
Duckweed	<i>Lemna sp.</i> ,	R
Eucalyptus	<i>eucalyptus sp.</i> ,	R
False oat grass	<i>Arrhenatherum elatius</i>	O
Fern	<i>Tracheophyta sp.</i> ,	R
Foxglove	<i>Digitalis purpurea</i>	R
French cranesbill	<i>Geranium endressii</i>	R
Giant rhubarb	<i>Gunnera manicata</i>	R
Goat willow	<i>Salix caprea</i>	R
Hawthorn	<i>Crataegus monogyna</i>	R
Hazel	<i>Corylus avellana</i>	R
Hedge bindweed	<i>Calystegia sepium</i>	R
Hogweed	<i>Heracleum sphondylium</i>	R
Holly	<i>Ilex aquifolium</i>	R
Hop	<i>Humulus lupulus</i>	R
Iris	<i>iris sp.</i> ,	R
Lady's bedstraw	<i>Galium verum</i>	R
Ladys mantle	<i>Alchemilla mollis</i>	R
Maple	<i>Acer sp.</i> ,	R
Meadow foxtail	<i>Alopecurus pratensis</i>	R
Pedunculate oak	<i>Quercus robur</i>	R
Perennial ryegrass	<i>Lolium perenne</i>	O
Scarlette pimpernel	<i>Anagallis arvensis</i>	R
Sedge	<i>Carex sp.</i> ,	R
Sessile oak	<i>Quercus petraea</i>	O
Silver birch	<i>Betula pendula</i>	R
Sugar maple	<i>Acer saccharum</i>	R
Tufted vetch	<i>Vicia cracca</i>	R

Common Name	Scientific Name	Estimated Abundance (DAFOR)
Tutsan	<i>Hypericum androsaemum</i>	R
Water lily	<i>Nymphaeaceae sp.,</i>	R
White clover	<i>Trifolium repens</i>	O
Whitebeam	<i>Sorbus aria</i>	R
Willow	<i>Salix sp.,</i>	R
Wood avens	<i>Geum urbanum</i>	R
Yorkshire fog	<i>Taraxacum officinale</i>	O
	<i>Euonymus sp.,</i>	R
	<i>Hosta sp.,</i>	R

Appendix 3 – General References

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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. (2024)
- 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
- The Environment Act 2021
- Town and Country Planning Act 1990

Appendix 5 – 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. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines, (4th edition). Bat Conservation Trust, London. ISBN-978-1-7395126-0-6 (Table 11, 12 and 13).

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 11: Guideline for assessing the suitability of a structure to support roosting habitat amended from Collins, J (2023)

Category	Description of Roosting Habitat	Number of additional presence / absence surveys required
None	No habitat features on site likely to be used by roosting bats at any time of year (complete absence of potential roosting features).	None
Negligible Suitability	Suitable cavities may exist, but these are less than ideal. Uncertainty remains as bats can use these features on occasion.	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.	One survey between May and August
Moderate Suitability	A structure 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). Surveys should be spaced at least 3 weeks apart.
High Suitability	A structure 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). Surveys should be spaced at least 3 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 12: Guideline for assessing the suitability of a tree to support roosting habitat amended from Collins, J (2023)

INITIAL STAGE (Site scoping/PEA/PRA)		
Category	Description	Survey effort to establish the presence/absence of bats
NONE	Either no PRFS in the tree or unlikely to be any	None
FAR	Further assessment required to establish if PRFs are present in the tree	Ground Level Tree Assessment (GLTA) to further assess suitability
PRF	A tree with at least one PRF present	Ground Level Tree Assessment (GLTA) to further assess suitability
DETAILED STAGE (PEA/PRA/GLTA)		
PRF - I	PRF only suitable for individual bats or small numbers of bats due to size or lack of suitable surrounding habitats	None – precautionary method of works for removal and provision of roosting compensation
PRF - M	PRF suitable for multiple bats and may therefore be used by a maternity colony	Three Climbing inspection surveys for features to be undertaken May to September with at least 2 May to August. Surveys should be 3 weeks apart. If climbing and inspection not possible, 3 dusk emergence surveys with NVAs (Night Vision Aids) to be undertaken May to to September with at least 2 May to August. Surveys should be 3 weeks apart. Should a maternity colony be confirmed less invasive methods, such as dusk emergence survey with NVAs should employed.
Known roost	Known roost present through local records, evidence, sightings, etc	Three Climbing inspection surveys for features to be undertaken May to September with at least 2 May to August. Surveys should be 3 weeks apart. If climbing and inspection not possible, 3 dusk emergence surveys with NVAs (Night Vision Aids) to be undertaken May to to September with at least 2 May to August. Surveys should be 3 weeks apart. Should a maternity colony be confirmed less invasive methods, such as dusk emergence survey with NVAs should employed.

Table 13: 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 (2023)

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. Suitable, yet isolated habitat that could be used by foraging bats such as individual trees, or a patch of scrub.	Nighttime bat walk (NBW) survey: One survey visit per active season (Spring – April/May, Summer (June/July/August) – autumn – September/October). AND Static automated surveys: Data to be collected over a five-night period, per season. (Spring – April/May, Summer (June/July/August) – autumn – September/October).
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.	Nighttime bat walk (NBW) survey: One survey visit per active season (Spring – April/May, Summer (June/July/August) – autumn – September/October). AND Static automated surveys: Data to be collected 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.	Nighttime bat walk (NBW) survey: One survey visit per active season (Spring – April/May, Summer (June/July/August) – autumn – September/October). AND Static automated surveys: Data to be collected 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 EMAPSITE
- 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

Ecological Enhancement

In December 2024 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

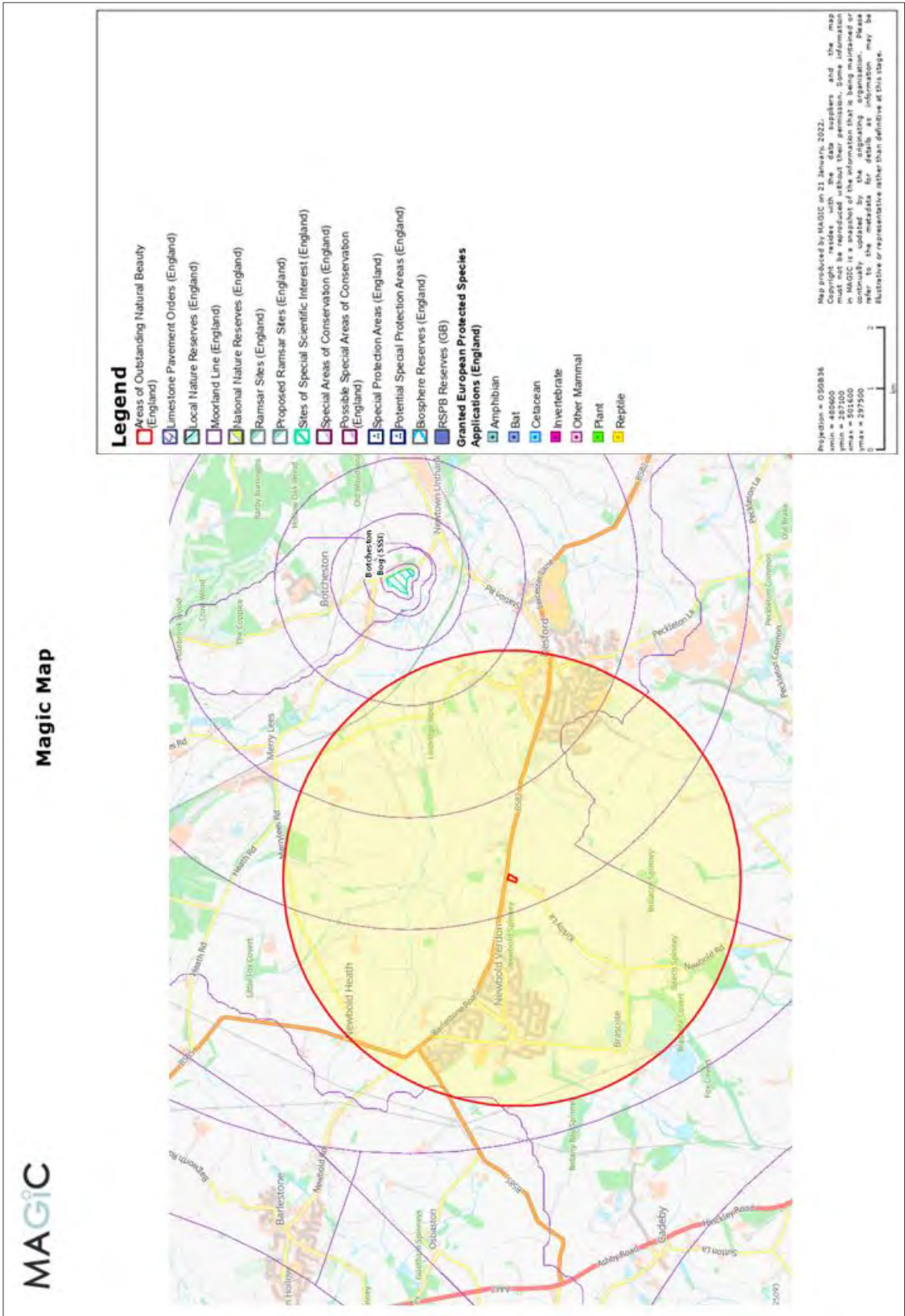
Designated areas are Sites of Special Scientific Interest (SSSI) while others have been designated as having European protection status. Local authorities can also designate areas for nature conservation and in doing so may impose local authority byelaws to support local nature conservation objectives.

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 support.

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

BG25.310 Kirkby Lane, Newbold Verdon – Preliminary Ecological Appraisal

Appendix 7 – MAGIC data



Appendix 8 – Ecological Data Search Information

Ecological data can be made available upon request.

Appendix 9 – Great Crested Newt Survey Results

Table 14 Habitat Suitability Index assessment for great crested newts

Key:

W = Waterbody 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

W	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	T
P1	1	0.1	0.9	1	1	1	1	0.9	1	0.8	0.76
P2	1	0.1	1	0.67	0.6	1	0.67	0.9	0.33	0.3	0.55
P3	1	0.1	1	0.33	1	1	1	0.9	1	0.4	0.64
P4	1	0.1	0.9	1	0.8	1	1	0.9	0.33	0.5	0.64

Total HSI Score = $(S1 \times S2 \times S3 \times S4 \times S5 \times S6 \times S7 \times S8 \times S9 \times S10)^{1/10}$

Table 15: Pond Descriptions and Photographs

Image	Pond description
Pond P1	
	Medium sized garden pond (100m²) with steep sides, surrounded by dense vegetation, including emergent and floating vegetation. Vegetation within and surrounding the pond includes a range of sedge species, bramble, and water lilies

Image	Pond description
Pond P2	
	Small garden pond measuring approximately 20m². P2 has steep artificial banks created from stone, and brick. There is very little emergent vegetation within this pond, but a significant amount of duckweed is present at the water surface.
Pond P3	
	Medium sized garden pond measuring 70m² located to the northern extent of the site, with shallow banks vegetated with a range of marginal vegetation including giant rhubarb, sedge species, iris sp., and willow. This water surface is almost entirely covered with duckweed.

Image	Pond description
Pond P4	
	Medium sized garden pond measuring approximately 80m², running through the centre of the site, extending south. This waterbody is heavily shaded by surrounding vegetation, which largely consists of ornamental planting associated with the residential garden. The waterbody has steep banks, with the water surface heavily choked with duckweed.

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GCN eDNA Analysis

Summary

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

Results

Lab ID	Site Name	OS Reference	Degradation Check	Inhibition Check	Result	Positive Replicates
GCN25 6708	Kirkby Lane - 6708	45891 03672	Pass	Pass	Negative	0/12
GCN25 10717	Kirkby Lane - 10717	SK 45907 03676	Pass	Pass	Negative	0/12
GCN25 10718	Kirkby Lane - 10718	SK 45936 03710	Pass	Pass	Negative	0/12

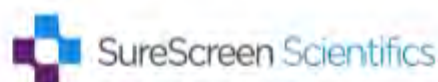
Matters affecting result: none

Reported by: Amy Bermudez

Approved by: Consuela Sopronyi



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Methodology

The samples detailed above have been analyzed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample tube which then undergoes DNA extraction. The extracted sample is then analyzed using real-time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded. Analysis of eDNA requires attention to detail to prevent the risk of contamination. True positive controls, negative controls, and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added analytical security.

SureScreen Scientifics Ltd is ISO9001 accredited and participates in Natural England's proficiency testing scheme for GCN eDNA testing.

Interpretation of Results

Sample Integrity Check:	When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results. Any samples which fail this test are rejected and eliminated before analysis.
Degradation Check:	Pass/Fail. Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.
Inhibition Check:	Pass/Fail. The presence of inhibitors within a sample is assessed using a DNA marker. If inhibition is detected, samples are purified and re-analyzed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.
Result:	Presence of GCN eDNA (Positive/Negative/Inconclusive) Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location. Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with the WC1067 Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence. Negative: GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection. Inconclusive: Controls indicate inhibition or degradation of the sample, resulting in the inability to provide conclusive evidence for GCN presence or absence.

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Figure 1.1: GCN eDNA Results

Appendix 10 – Building Photographs and Potential Roost Plan for Bats

Table 16: Building Photographs showing Potential Roost Features

Image	Description
Building B1	
	Exterior of B1. Recorded as having 'Negligible' suitability for roosting bats.
	Interior of B1. Recorded as having 'Negligible' suitability for roosting bats.

Image	Description
Building B2	
	Exterior of Building B2. Space around tiles not sufficient to support roosting bats. Recorded as having 'Negligible' suitability for roosting bats.
Building B3	
	Lifted and missing tiles, and lifted lead flashing around the small dormer on the roof of B3, the summerhouse. These features are considered to provide opportunities for individual roosting bats.

Image	Description
	External photograph of B3. Exposed internally.
Building B4	
	Exterior of B4. Gaps around walls are too exposed to support roosting bats. Recorded as having 'Negligible' suitability for roosting bats.

Image	Description
	Interior of B4. Considered too light and exposed for roosting bats. Recorded as having 'Negligible' suitability for roosting bats.
Building B5	
	Exterior of B5. Very open structure, Recorded as having 'Negligible' suitability for roosting bats.

Image	Description
	Interior of B5. Very light and airy structure. Recorded as having 'Negligible' suitability for roosting bats.
Building B6	
	Exterior and interior of B6. Very open and exposed. Recorded as having 'Negligible' suitability for roosting bats.

Image	Description
B7	
	Exterior of B7. No cracks or holes in walls or roof. Recorded as having 'Negligible' suitability for roosting bats.
	Interior of B7. Very light and exposed. Recorded as having 'Negligible' suitability for roosting bats.

Image	Description
B7	
	Exterior of B8. No cracks or holes in walls or roof. Recorded as having 'Negligible' suitability for roosting bats.

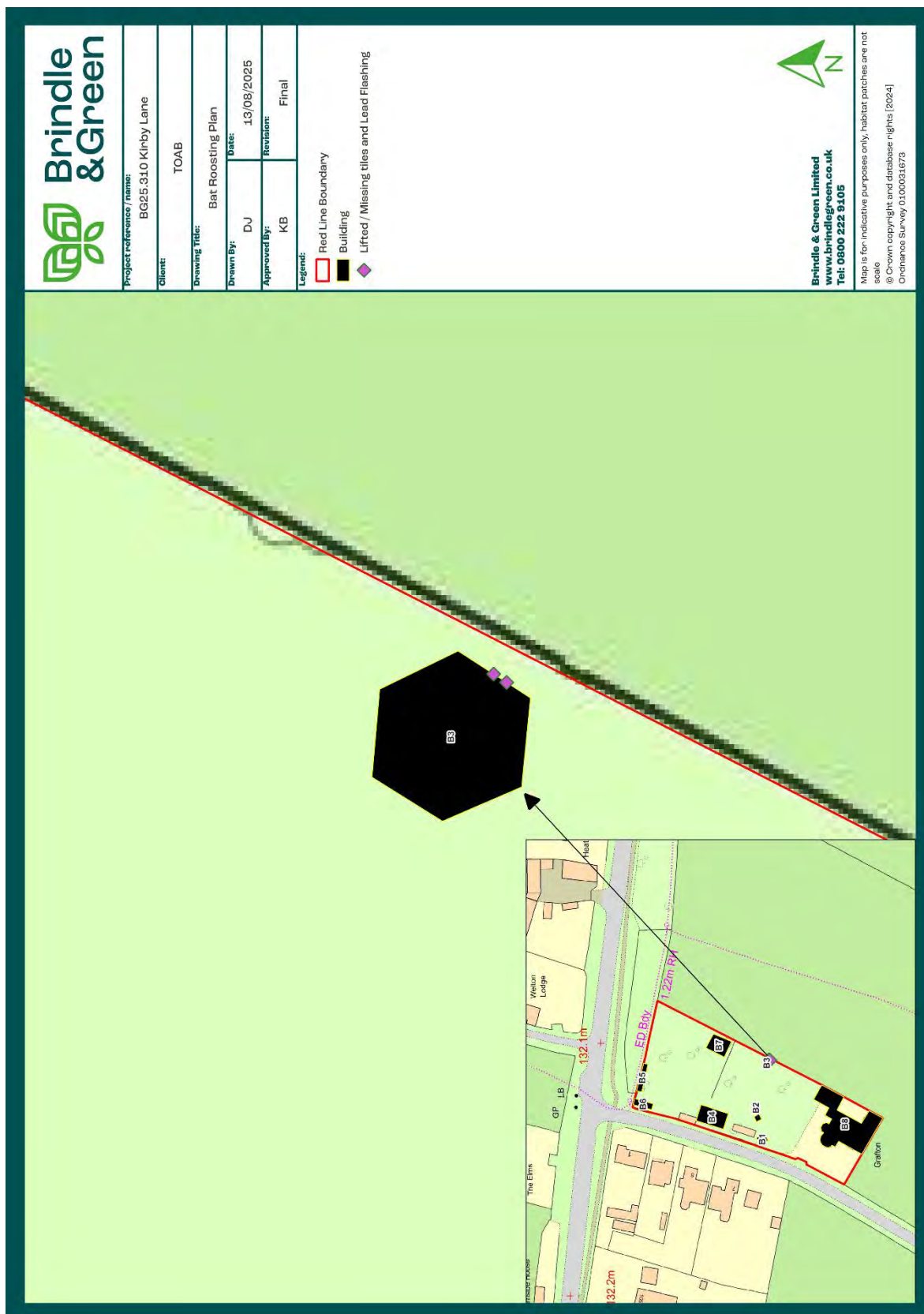


Figure 12: Bat Roosting Plan