



Church Street, Weldon- Ref: KETT 064 Eco PEA  
EcoCheck Ref: JH\_135 PEA Alpine Planning

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## Land to Rear of 32 Church Street, Weldon, Corby, NN17 3JY

### Preliminary Ecological Appraisal

Date: March 2024

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#### **1. Introduction and Proposals**

- 1.1. Eco-Check has been commissioned by Alpine Planning Ltd in regard to ecological matters relating to a planning application submitted to North Northamptonshire Council for the construction of a single detached dwelling and garage and a new access off Church Street. The proposal is for a residential dwelling with private garden, parking spaces, patio and driveway via an existing gated entrance off Church Road. The site is centred at grid reference: SP930894. The proposal requires the removal of a number of trees as detailed in the accompanying arboricultural assessment.
- 1.2. The site already benefits from an existing gated access off Church Street to the west as shown in Appendix 1. The site is bordered by scattered trees and scrub to the north, woodland to the east and south and dwelling houses to the west. Eco Check Ltd has been commissioned to undertake a preliminary ecological survey and appraisal of the site in order to inform the proposed development, the results of which are therefore set out below.

#### **2. Site Location and Surroundings**

- 2.1. The application site is situated in the village and civil parish of Weldon on the outskirts of Corby in the north Northamptonshire District. The site is located approximately 10km west of Oundle and 10km north-east of Kettering. The site is accessible from a gated entrance off Church Street and the nearest main road is the A43 approximately 0.4km north. The application site comprises a roughly rectangular shaped parcel of land extending to approximately 930m<sup>2</sup>.
- 2.2. The land within the site forms an area of garden to the rear of the existing dwellings and is laid mostly to amenity lawn with a range of ornamental plants and shrubs. The proposed location of the dwelling is within a clearing of the bordering trees and woodland with sparse understory and with frequent brush and stone piles. A number of semi-mature trees require removal to facilitate the new access and footprint of the buildings.

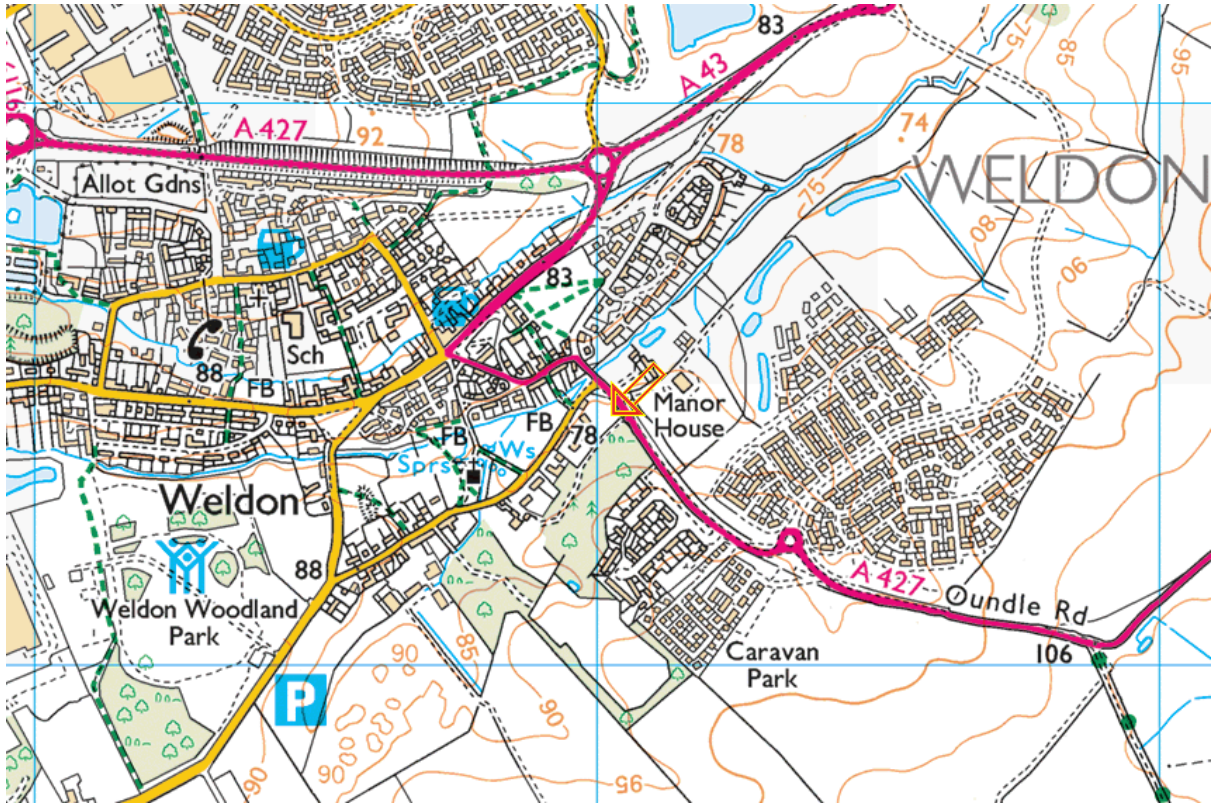


Figure 1. Site Location Map – StreetMap 2024



Figure 2. Aerial View of Site – Google Earth- March 2022

### 3. Methodology

#### Desktop Information

- 3.1. In order to compile background information on the site and its immediate surroundings, ecological information, including background records of protected, rare and notable species from the site and surrounding area have been obtained from Northamptonshire Biodiversity Records Centre (NBRC) and from Northants Bat Group with data requested on the basis of a search area of 2km.
- 3.2. Information on statutory designations was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC) database, which utilises data provided by Natural England. In addition, the MAGIC database was searched to identify the known presence of any Priority Habitats within or adjacent the site. Relevant information is reproduced at Table 1 and Appendix 1, where appropriate.
- 3.3. In addition, the Woodland Trust database was searched for any records of ancient, veteran or notable trees within or adjacent to the site.

#### Survey Work

- 3.4. An ecological walkover survey was carried out on 16<sup>th</sup> January 2024 by James Hodson of Eco-Check Ltd, an experienced ecological consultant with a BSc (Hons) in Environmental Sciences and MSc in Environmental Impact Assessment and licensed to undertake bat surveys and to disturb bats under Natural England Level 2 Bat Survey License 2017-30927-CLS-CLS and great crested newts 2018-36283-CLS-CLS. The site was surveyed in order to ascertain the general ecological value of the land contained within the boundaries of the site and to identify the main habitats and ecological features present.
- 3.5. The site was surveyed based on standard Phase 1 Habitat Survey methodology<sup>1</sup>, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail through Phase 2 surveys. This method was extended, in line with the Guidelines for Preliminary Ecological Appraisal<sup>2</sup> to record details on the actual or potential presence of any notable or protected species or habitats.
- 3.6. Using the above method, the site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified. The nomenclature used for plant species is based on the Botanical Society for the British Isles (BSBI) Checklist.
- 3.7. General faunal activity, such as mammals or birds observed visually or by call during the course of the surveys was recorded. The potential for the site to support any protected, rare or notable faunal species was also appraised.

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<sup>1</sup> Joint Nature Conservation Committee (2010, as amended) *'Handbook for Phase 1 habitat survey: A technique for environmental audit.'*

<sup>2</sup> Chartered Institute for Ecology and Environmental Management (CIEEM) (2017) *'Guidelines for Preliminary Ecological Appraisal.'*

## Survey constraints/limitations

- 3.8. All of the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent during different seasons. The Phase 1 habitat survey was undertaken outside the optimal season of May to September which provides a less robust assessment of botanical interest across the site, however given the historical use as garden land and managed lawns this is not considered to be a significant constraint. All the site habitats were clearly evident and relative confidence is given in the survey findings.
- 3.9. Attention was paid to the presence of any invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). However, the detectability of such species varies due to a number of factors, e.g. time of year, site management, etc., and hence the absence of invasive species should not be assumed even if no such species were detected during the Phase 1 survey.

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<sup>3</sup> Statutory designation include Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR).

<sup>4</sup> Non-statutory sites are designated by local authorities and protected through the planning process (e.g., County Wildlife Sites, Sites of Importance for Nature Conservation or Local Wildlife Sites).

<sup>5</sup> Legally protected species include those listed in Schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981; Schedule 2 of the Conservation of Species and Habitats (Amendment EU Exit) Regulations 2019; or in the Protection of Badgers Act 1992 (as amended).

<sup>6</sup> Notable species include Species of Principal Importance under the Natural Environment and Rural Communities Act 2006; Local Biodiversity Action Plan (LBAP) species; Birds of Conservation Concern (Eaton et al., 2009); and/or Red Data Book/nationally notable species (JNCC, undated).

## 4. Survey Results, Discussion and Recommendations

### Ecological Designations <sup>3 4</sup>

#### 4.1.

Site Name	Description	Approximate distance and direction from application area
<b>Statutory sites</b>		
Cowthick Quarry SSSI	Designated for geological features that have subsequently been destroyed. Site has no features of ecological interest having now been turned into a landfill.	1.18km south-west
Weldon Park SSSI	Ancient woodland; ashmaple and hazel-ash canopy types with diverse groundflora and nationally rare purple emperor ( <i>Apatura iris</i> ) butterfly present	1.3km north-east
<b>Non-Statutory sites</b>		
Weldon Churchyard Local Wildlife Site/NIA	Species rich neutral calcareous grassland	225m south-west
Weldon Mound Local Wildlife Site/NIA	Species rich neutral grassland with some calcareous grassland indicators	275m south-west
Weldon Pocket Park/Local Wildlife Site/NIA	Calcareous grassland	600m south-west
Weldon Marsh Local Wildlife Site/Pocket Park/NIA	Species rich wet meadow with areas of scrub and tall ruderal vegetation	216m south-west
Weldon Stone Local Geological Site/Potential Wildlife Site/NIA	Geological interest; limestone exposures	715m south-west
Harrys Wood Quarry Local Wildlife Site/NIA	Open mosaic habitat with areas of species rich calcareous grassland, bare ground, ponds and wet flushes	1.9km south
Laundimer Woods Local Wildlife	Replanted ancient woodland, rides and small pond.	1.5km south-east
Corby Old Quarry Ponds Local Wildlife Site/NIA	Ponds with a variety of submerged, floating and emergent vegetation; calcareous grassland and mixed woodland plantation	850 m south-east
Corby Old Quarry Gullet Local Wildlife Site/Local Geological Site/NIA	Designated for calcareous grassland habitat and also for its geological interest	650 m north
Priors Hall (west) Local Geological Site/Local Wildlife Site/NIA	Limestone exposures	1.1km north-west

Middle and Nether Laundimer Wood Local Wildlife Site/NIA	Ancient semi-natural woodland with well managed rides and diverse <u>groundflora</u>	1.4 km south
Stanion Lane Planation Local Wildlife Site/NIA	Woodland with rides and calcareous grassland	1.9 km south-west

Table 1- Summary of Statutory and Non-Statutory Sites within 2km

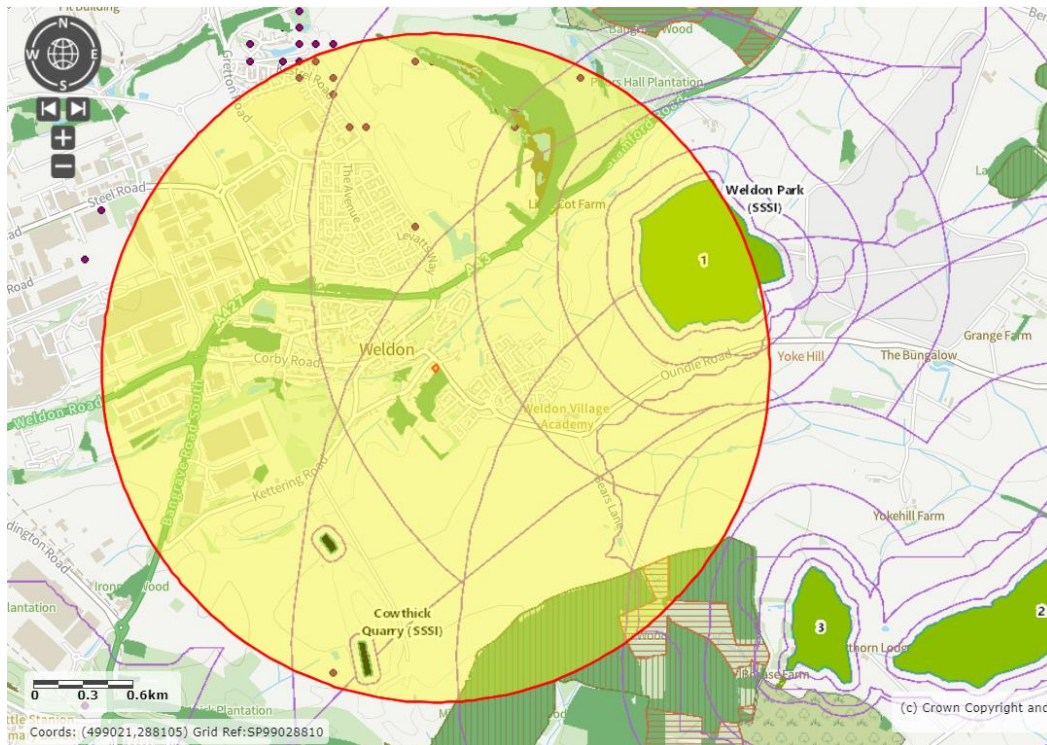


Figure 3. Magic Search Map- 2km

- 4.2. On the basis of the information reviewed, it is clear that the site does not contain any identified nature conservation designations. The closest identified statutory ecological designation to the site is Cowthick Quarry (SSSI) approximately 1.2km south-west of the site. The site does not contain any priority habitats but is adjacent to a block of broadleaved deciduous woodland to the immediate east and which is a UK Priority Habitat.
- 4.3. No international level statutory ecological designations have been identified within 5km of the site, whilst information available on the MAGIC database identifies that site is included within the Impact Risk Zones (IRZs) of Weldon Park and Banhaw, Spring and Blackthorn's Wood. The development proposal does not fall within the scope for consultation with Natural England as the development is for less than 10 new dwellings.
- 4.4. Within the 2km search, the following UK Priority habitats have been recorded, Lowland Deciduous Woodland, Traditional Orchard and Lowland Calcareous Grassland. In summary, the following UK Priority Habitats occur (as depicted on MAGIC) within 2km of the site:
- Lowland Calcareous Grassland: 3 parcels – 1 small parcel to the south associated with former quarry workings; and,
  - Deciduous Woodland: 12 parcels –nearest offsite parcel situated immediately to the east. Ancient woodland within Laundimer Woods.

- 4.5. Overall, given the distance and separation of all identified ecological designations from the site, along with the size and scale of the proposals, the proposed development of the site is unlikely to result in any adverse significant effects on any such designations in isolation, which do not therefore appear to represent a potential constraint or require further consideration in regard to the proposed development.

#### Habitats and Ecological Features

- 4.6. **Survey Results.** The internal areas of the site are formed almost entirely by modified grassland forming part of the garden to the existing dwelling and a number of mature and semi-mature scattered trees. The garden contains a range of ornamental plants and shrubs including daffodil, snow drop, primrose, viburnum, laurel, bamboo, privet, wild strawberry, comfrey, fuchsia, rhododendron, crocosmia, and snowberry. A 2m high timber post and featheredge fence, encroached with creeping ivy, runs along the east boundary with the woodland, a brick wall forms the south boundary with the proposed access and the north boundary is formed by scattered trees and scrub vegetation with a post and rail fence along Oundle Road.
- 4.7. Modified grassland forms the main site habitat. The grassland present supports a high proportion (approximately 50% or more) of Perennial Rye-grass (*Lolium perenne*), with scattered rarely occurring Meadow Grasses *Poa* sp. Forbs were recorded to be similarly scattered and include nipplewort (*Lapsana communis*), ground ivy (*Glechoma hederacea*), white clover (*Trifolium repens*), daisy (*Bellis perennis*), bristly ox-tongue (*Helminthotheca echioides*), creeping thistle (*Cirsium arvense*), nettle (*Urtica dioica*), ribwort plantain (*Plantago lanceolata*), docks (*Rumex spp.*). Flowering plants included white dead nettle (*Lamium album*), herb Robert (*Geranium robertium*), cleavers (*Galium aparine*), buttercup (*Ranunculus repens*), purple dead nettle (*Lamium purpureum*) and Dove's foot cranesbill (*Geranium molle*).
- 4.8. Tall ruderal vegetation is frequent interspersed within the site margins, fences, walls and scrub belt to the north. Species included bramble (*Rubus fruticosus*), blackthorn (*Prunus spinosa*), common nettle (*Urtica dioica*), Lords and Ladies (*Arum maculatum*), teasel (*Dipsacus fullonum*), hogweed (*Heracleum mantegazzianum*), garlic mustard (*Alliaria petiolate*), cow parsley (*Anthriscus sylvestris*) and willowherb (*Chamerion angustifolium*).
- 4.9. South-east of the site is a substantial area of woodland which extends into the site itself. The woodland forms part of a Tree Preservation Area (TPO/75/2). The site contains a range of semi-mature and mature scattered trees including ash (*Fraxinus excelsior*), field maple (*Acer campestre*), sycamore (*Acer pseudoplatanus*), holly (*Ilex aquafolium*), olive and cypress (*Cupressus leylandii*).
- 4.10. **Evaluation.** The grassland present forming the internal areas of the site was recorded to be clearly species-poor, supporting a limited range of common and widespread species, with a high proportion of Perennial Rye-grass typical of modified and nutrient enriched grassland. The survey work was undertaken outside the optimal period for grassland survey, but it was clear that the grassland present is typical of species-poor amenity lawn which is therefore unlikely to be of any raised ecological value, nor represent a constraint on the proposals.
- 4.11. Other vegetation within the internal parts of the site is limited to common ruderal and ephemeral weed species. The garden areas also contain wood, stone and brash piles. Where possible, it is recommended that the existing trees are retained under any proposed development layout, with suitable protective measures (e.g. the use of temporary fencing,

including in line with any relevant arboricultural recommendations and best practice, including BS5837) put in place during any construction works.

4.12. Due to a lack of suitable access a detailed bat roost assessment of the trees was not undertaken but many have creeping ivy growth, and some may contain potential roost features and so the trees must not be disturbed without a detailed roost assessment being undertaken. This would likely require an elevated tree survey using a mobile elevated working platform (MEWP) or aerial survey with a climber.

4.13. The proposals offer the opportunity to enhance the site with new tree, shrub and hedge planting.



*Figure 4.- Gated access off Church Street (left), amenity lawn (right)*



*Figure 5.- Scattered trees and scrub to north boundary (left), scattered trees within garden (right)*



*Figure 6.- Location of proposed dwelling and garage (left), ivy clad trees within garden (right)*





Figure 7.- Location of proposed dwelling and garage (left), east boundary fence (right)



Figure 8. North-east corner of garden (left), dwelling and barn to the west (right)

#### Faunal Considerations <sup>5 6</sup>

- 4.14. **Background Records.** A search for designated sites and historical species records within 2km of the site was requested from Northamptonshire Biodiversity Records Centre (NBRC). Please note that NBRC does not hold records for bats and so Northants Bat Group records have been used in this instance. No specific records of any fully protected, rare or notable species within the site itself, were identified based on the desktop study undertaken, whilst the nature of the habitats are such that it would appear unlikely to support certain species such as water vole, otter, hazel dormouse and white clawed crayfish.
- 4.15. Bat species records comprise two common pipistrelle (*Pipistrellus pipistrellus*), 10 unidentified pipistrelle species bats (*Pipistrellus* sp.), one soprano pipistrelle (*Pipistrellus pygmaeus*), two brown long long-eared bat (*Plecotus auritus*), two Daubenton's (*Myotis daubentonii*), two Natterer's (*Myotis nattereri*), two noctule (*Nyctalus noctula*) and two barbastelle (*Barbastella Barbastella*) bats. All records were supplied with four figure grid references only; however the closest records to site are two known roosts of an unspecified pipistrelle bat species recorded at Weldon Church, which lies approximately 215m south-west of the site, one dating from 1991 and one dating from 1992. Other bat activity recorded close to site is of a Natterer's and a Daubenton's bat found grounded within Weldon village.

A total of 39 great crested newt (*Triturus cristatus*) records from three locations were returned by NBRC. The records are between 2018-2022 situated between 0.8 km and 2km north of the site, with nearest record on the distal side of the A43. The records are separated from site by considerable distance, housing and infrastructure including main roads. No common amphibian records were supplied by NBRC. There are also 4 records of EPS licensed in respect of great crested newt.

Five records of badger setts within 2.5 km of the application area were provided by NBRC. None of the records relate to the application area. Five records of hedgehog *Erinaceus europaeus* 2016-2022.

4 records of common lizard (*Zootoca vivipara*) were returned within the search radius. 2 records of hazel dormouse (*Muscardinus avellanarius*) from 2022. None of the records appear to be of particular relevance to the site itself, whilst the majority are well-removed from the site. In any event, the site is located within the core range of these species, such that their presence within the surrounding search area is unsurprising.

A total of 23 bird species of conservation concern have been recorded within 2km of the application area. Of these, three are listed on under Schedule 1 of the Wildlife and Countryside Act 1982 (as amended), eight are Red listed and the remainder is Amber listed (Table 2).

Common name	Scientific name	WaCA/BoCC Status
Barn owl	<i>Tyto alba</i>	Schedule 1, Amber
Hobby	<i>Falco subbuteo</i>	Schedule 1, Green
Red kite	<i>Milvus milvus</i>	Schedule 1, Green
Cuckoo	<i>Cuculus canorus</i>	Red
Fieldfare	<i>Turdus pilaris</i>	Red
Hen harrier	<i>Circus cyaneus</i>	Red
Lapwing	<i>Vanellus vanellus</i>	Red
Redwing	<i>Turdus iliacus</i>	Red
Ring ouzel	<i>Turdus torquatus</i>	Red
Song thrush	<i>Turdus philomelos</i>	Red
Tree pipit	<i>Anthus trivialis</i>	Red
Bullfinch	<i>Pyrrhula pyrrhula</i>	Amber
Glaucous gull	<i>Larus hyperboreus</i>	Amber
Great black-backed gull	<i>Larus marinus</i>	Amber
Green woodpecker	<i>Picus viridis</i>	Amber
Iceland gull	<i>Larus glaucoides</i>	Amber
Kestrel	<i>Falco tinnunculus</i>	Amber
Marsh harrier	<i>Circus aeruginosus</i>	Amber
Mistle thrush	<i>Turdus viscivorus</i>	Amber
Swallow	<i>Hirundo rustica</i>	Amber
Whinchat	<i>Saxicola rubetra</i>	Amber
Whitethroat	<i>Sylvia communis</i>	Amber
Willow warbler	<i>Phylloscopus trochilus</i>	Amber

Table 2- Birds of Conservation Concern

4.16. **Badger.** A search of the site and bordering habitats found no evidence of badger activity, sets, latrines etc. The nature of the garden site is such that a lack of densely vegetated habitats or areas that could conceal setts, latrines or other key Badger activity are absent and the site is enclosed with walls and fences. Given the size of the site, regular disturbance, human presence and lack of evidence for this species, it is unlikely that the site forms an important resource for this species, which does not, therefore appear to represent a potential constraint, nor require any further consideration in regard to the current proposals. The

adjacent woodland to the east does provide habitat for badgers, and it is recommended that this woodland area is surveyed prior to any works commencing.

#### 4.17. **Bats.**

##### **Preliminary Tree Roost Assessment- B1**

A preliminary tree roost assessment was made of the trees within the application site area and particularly those subject to removal. The majority of the trees are in good condition however some potential roost features PRFs were identified including knot holes, splits and tears which could be used by roosting bats. Due to a lack of suitable access a detailed bat roost assessment of the trees was not undertaken but many have creeping ivy growth, and some may contain potential roost features and so the trees must not be disturbed without a detailed roost assessment being undertaken. This would likely require an elevated tree survey using a mobile elevated working platform (MEWP) or aerial survey with a climber.



*Figure 9- Ivy obscured knot hole (left) and ivy clad trees (right)*

The proposed development has the potential to kill, injure and disturb individual bats and has the potential to damage/ destroy bat roosts if present. Mitigation has been proposed, including no external lighting of the boundary trees and woodland which have foraging and roosting opportunities. Biodiversity enhancement will be through the provision of bat boxes and/or bat bricks to be incorporated into the site during works and maintaining access points to the external fascias and weatherboards.

Should works be required to the identified trees (e.g. felling as detailed, address arboricultural management requirements and/or for health and safety) a suitably qualified ecologist should first be contacted for further advice, which include precautionary mitigation measures such as detailed inspection prior to works and/or the use of soft-felling techniques in the absence of any evidence for the presence of bats. A number of the trees surveyed were covered in creeping ivy which may cover potential roosting features PRS' or itself provide roosting opportunities beneath the lattices.

- 4.18. In terms of foraging and commuting bats, the internal areas of the site are likely to be used by foraging and commuting bats. It is recommended that new native planting and vegetation be provided within the site as part of the proposals (in particular linking with and extending the retained boundary vegetation), with any new lighting designed to ensure the boundary features and vegetation remain unlit, forming dark corridors for use by bats, subject to which, no further surveys or consideration would appear to be required in regard to this group in relation to the proposed development of the site.

#### 4.19. *Great Crested Newt.*

There are numerous historical records for great crested newts from different ponds and terrestrial habitat to the north of the site, the nearest being 835m north on the distal side of the A43. One pond was identified within 250m which is situated 110m to the north-east within the grounds of a Manor House and was therefore not accessible. A drain runs approximately 50m north-west, but this channel has flowing water which is considered unsuitable for GCN. No other waterbodies were identified within a 250m radius. Suitable habitats for commuting, foraging, sheltering and hibernating GCN is very limited and isolated with poor ecological connectivity apart from the woodland but these do not link through to any waterbodies and so presence of great crested newt and other amphibians within the site is deemed unlikely.

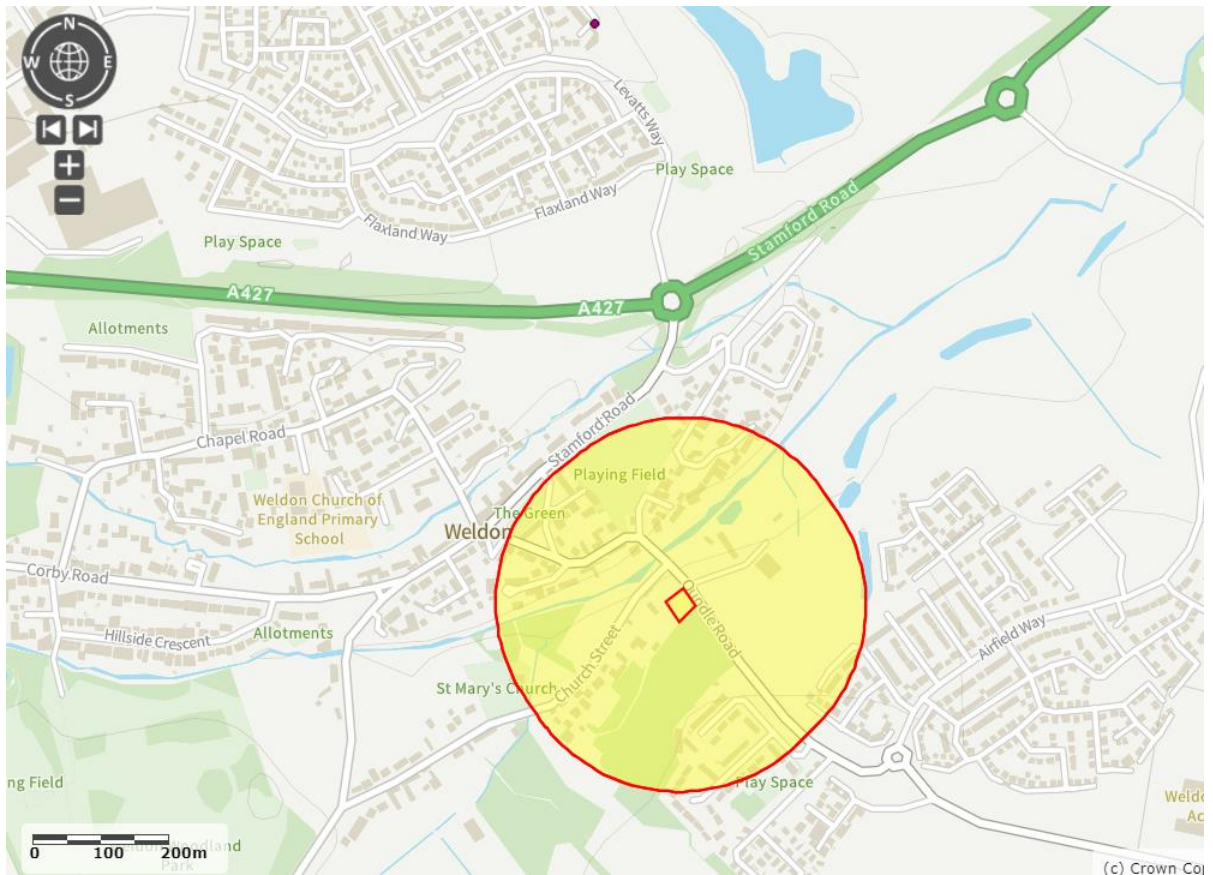


Figure 10– Pond Search Map 250m

- 4.20. The lack of ponds within or connected to the site and low value terrestrial habitat (mown lawn) are such that no suitable breeding opportunities for amphibian species such as the fully protected species Great Crested Newt *Triturus cristatus* appear to be present within the vicinity of the site.
- 4.21. On this basis, the proposals are unlikely to result in any adverse effects on fully protected amphibian species (Great Crested Newt), which do not, therefore require further consideration or survey work in regard to the current proposals.

#### 4.22. **Reptiles.**

The site is formed by garden habitat with mown short grassland containing little botanical diversity and subject to management, which is therefore largely unsuitable for reptile species. Accordingly (particularly given the lack of background records of reptiles from the surrounding area, with only common lizard recorded within 2km it is clear that the site offers negligible potential for reptile species, which are unlikely to represent a constraint on the proposed development.

4.23. Nonetheless, the very small areas of taller grass and ruderal vegetation along with the stone, wood and brash piles provide suitable opportunities for individual reptiles should they be present and accordingly, it is recommended that any works affecting these areas are undertaken following initial management of vegetation (e.g. strimming or cutting in line with the existing site management) in order to render the habitats unsuitable for wandering reptiles and encourage any individual that may be present to disperse to retained/offsite habitats away from worked areas, thereby safeguarding them and avoiding any potential offence.

4.24. Subject to the implementation of this very minor consideration, it is extremely unlikely that the proposed development would result in any significant adverse effects on reptiles, such that no further consideration would appear to be required in regard to this group.

#### 4.25. **Birds.**

The site contains trees, hedges and shrubs that would provide particular opportunities to support nesting birds. Evidence of nesting birds was found including wren (*Troglodytes troglodytes*), blackbird (*Turdus merula*) and pigeon. No evidence of any Schedule 1 birds was recorded. Nonetheless, the vegetation present (in particular the trees and shrubs) provide opportunities for use by common nesting birds.

4.26. Where possible under any proposals for the site, it is recommended that the existing tree and boundary vegetation be retained and protected such that these continue to provide potential for use by birds.

4.27. In any event, in order to safeguard any individual birds during the proposed works and ensure compliance with the legislation in this regard, it is recommended that any clearance of suitable nesting vegetation (in particular tree felling, removal of the encroaching creeping ivy etc) and brash piles be undertaken outside of the bird nesting season (i.e. outside of March to August inclusive). Should this not be possible, areas due to be worked on should first be checked by a suitably qualified ecologist in order to confirm the absence of any active nests immediately-prior to removal. Any active nests identified would need to be retained and protected until the end of the nesting season or until the birds have fledged. Subject to such measures, the proposals are unlikely to result in any significant effects on bird species, whilst the opportunity exists for enhancements in relation to this group through the provision of new bird boxes and boundary vegetation.

4.28. **Other Species.**

No evidence for the presence of any other protected, rare or notable faunal species was previously recorded at the site, whilst the nature of the habitats is such that they are unlikely to provide suitable opportunities for any such species. Hedgehogs are likely to be present within the surrounding area and so any arisings from clearance must be burnt the same day, chipped or removed from the site to prevent hedgehogs using them as refuge/hibernacula. Brash and wood piles to be dismantled by hand before burning or removal from site.

4.29. Overall, on the basis of the survey work undertaken, subject to the minor considerations, measures and safeguards set out above, the proposed development is unlikely to result in any significant harm to any protected, rare or notable species such that faunal considerations do not appear likely to represent a constraint on the proposed development, nor require further specific survey or consideration.

<b>Ecological Feature</b>	<b>Scale of Value</b>	<b>Unmitigated Impact</b>	<b>Confidence Level</b>	<b>Residual or Long-Term Impact</b>
<b>Sites of International Importance</b>	International	Neutral	Likely	Neutral
<b>Sites of National Importance</b>	National	Neutral	Likely	Neutral
<b>Sites of Local Importance</b>	District	Neutral	Likely	Neutral
<b>Habitats</b>	Parish	Minor Adverse-Neutral	Likely	Minor Positive
<b>Green Infrastructure</b>	Parish	Neutral	Likely	Minor Positive
<b>Reptiles</b>	Parish	Neutral	Likely	Neutral
<b>Great Crested Newts</b>	Site Only	Neutral	Likely	Neutral
<b>Rare/Scarce Plant Species</b>	Low	Neutral	Certain	Neutral
<b>Veteran Trees</b>	Negligible	Negligible	Certain	-
<b>Invertebrates</b>	Parish/District	Minor Adverse-Neutral	Likely	Neutral
<b>Amphibians (excluding GCN)</b>	Negligible	Negligible	Certain	Neutral
<b>Breeding Birds</b>	Parish	Minor Adverse	Likely	Neutral
<b>Wintering Birds</b>	Negligible	Negligible	Certain	-
<b>Aquatic Mammals</b>	Negligible	Negligible	Certain	-
<b>Terrestrial Mammals</b>	Parish	Minor Adverse - Neutral	Likely	Neutral
<b>Roosting Bats</b>	Parish	Minor Adverse	Likely	Neutral/Minor Positive
<b>Foraging/Commuting Bats</b>	Parish	Minor Adverse-Neutral	Certain	Neutral

Table 3 – Summary of ecological features, unmitigated impact and residual impact with mitigation

## 5. Mitigation and Enhancements

The development proposals for this site have been considered in terms of the mitigation hierarchy (BSI 2013)<sup>7</sup>. This consists of a 4-point framework of reference as reproduced below:

Avoidance, mitigation, compensation, and enhancement measures can be secured through planning conditions or obligations.

1. Avoidance should be the primary objective of any proposal.

If protected species are discovered on site either before or during the proposed works, all works should stop a suitably qualified ecologist should be contacted for advice on mitigation before continuing. Requirements below outline how impacts to reptiles, great crested newt, birds and small mammals such as hedgehogs can be avoided.

2. Mitigation measures aim to reduce or remove impacts.

Mitigation for this site should take the form of informed landscape planting and retention of boundary habitats to maintain a corridor for wildlife around and through the site.

3. Compensation is considered to be the last step on the hierarchy

Compensation 'should only be used in exceptional circumstances and as a last resort after all options for avoidance and mitigation have been fully considered' (BSI 2013). No compensation measures are considered necessary for these proposals.

4. Enhancement measures

These aim to provide opportunities for ecological gain as part of a development proposal in line with the NPPF<sup>8</sup>. Suggestions for enhancement are provided below in Section 6.

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<sup>7</sup> BSI (2013). The British Standard BS 42020:2013 Biodiversity a Code of practice for planning and development

<sup>8</sup> National Planning Policy Framework (NPPF) July 2021

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5.1. In line with the above considerations, the following mitigation measures are recommended in relation under the proposed development, subject to which the proposals are unlikely to result in any significant adverse effects on ecological receptors at the site:

- Retention and protection of existing trees where possible (subject to any relevant arboricultural considerations/BS5837);
- Infill hedgerow/native planting to provide enhanced corridors for wildlife movement;
- Sensitive design of any lighting scheme to ensure boundary corridors and woodland remain dark for use by nocturnal/crepuscular species such as bats.
- Precautionary approach to vegetation clearance and tree felling in relation to nesting birds.

5.2. In addition, the proposals present the opportunity to incorporate a number of ecological enhancements (in particular associated with the retained boundary features and any open space areas), including the following:

- New native planting, including hedgerows, trees and species rich grassland;
- Incorporation of new bat roosting and bird nesting opportunities with bird and bat boxes.

5.3 Birds – To increase nesting opportunities generally, nest boxes should be installed. Installation of the nest boxes will be supervised by ‘Eco- Check Ltd’ or an experienced ecologist to ensure the correct positioning for each species. The types of nest boxes will cover a range of species and could include;

- 1 x Eco-Roost or Schwegler (32mm)
- 1 x Eco-Roost or Schwegler (28mm)
- 1 x Eco-Roost or Schwegler wren roundhouse box
- 1 x Eco-Roost or Schwegler deep nest box for robins
- 1 x Eco-Roost or Schwegler triple chamber house sparrow box

5.4 Bats- As a biodiversity enhancement, areas for bats to roost in should be created and could include;

- 2 x Eco-Roost Kent Boxes
- 1 x Eco-Roost Bat Brick cemented into a suitable wall of the new dwelling

These boxes are to be installed on the building or boundary trees, ideally one on each elevation to provide the best variation in temperature, shelter and flight lines. If only one elevation is used this should be south-east facing as this provides the most shelter and warmth.

5.5 To provide a shelter for small mammals and herpetofauna an artificial refugia/hibernaculum to be created within the north-east corner of the site. This will also serve as a receptor site in the event any wildlife needs relocating away from the working areas.

5.6 It is recommended that areas of species rich amenity wildflower grassland are created within the site such that, in combination with new native landscape planting, opportunities for biodiversity will be maximised under the proposals. Consideration



should be given to the laying of wildflower turfs, comprising locally appropriate native species, to establish wildflower grassland. This would ensure rapid establishment of these habitats and reduce the timeframe for delivering the range of ecological benefits that are proposed. Areas of bare soil and disturbed ground to be seeded with a species rich wildflower grass seed mix such as Emorsgate EM-4 or WFG20 species rich amenity grass in the garden. This would make a positive contribution towards a biodiversity net gain as the existing grassland is predominantly rye grass.

5.7 There are also a number of records of Hedgehog, a UK Priority Species, in the surrounding area. To maintain connectivity for this species, all boundaries (including garden boundaries) should be made permeable to hedgehogs. This can be achieved by using hedgerow boundaries or gaps of 13x13cm, at ground level, in fences and walls.

5.8 Bee Bricks - It is recommended that a number of bee bricks be incorporated within the proposed development thereby increasing nesting opportunities for declining populations of non-swarming solitary bee populations. Ideally, bee bricks should be located within suitable south-facing walls (where architectural design allows), located at least 1m off the ground. The bricks should be unobstructed by vegetation.

#### 5.9 **Habitat Creation/Enhancement**

With the exception of the access, parking and buildings, the remainder of the site will form vegetated garden and modified grassland with introduction of additional trees, hedges and ornamental plants and shrubs. A new native mixed species hedge could be planted along the west boundary with the garden which would serve to provide a biodiversity net gain. Details of suitable hedge planting is detailed below.

##### *Hedge Planting Schedule:*

Hedging will be planted between October and April when the ground is moist and free from frost, set out in a staggered pattern in two rows 40cms apart. The native species will consist of 50% hawthorn (*Crataegus monogyna*) with a mixture of at least five of the following species: field maple (*Acer campestre*), hazel (*Corylus avellana*), hornbeam (*Carpinus betulus*), holly (*Ilex aquafolium*), dogwood (*Cornus sanguinea*) and guelder rose (*Viburnum opulus*).

The hedgerow shrubs will be planted as a mixture, but with the supplementary species (guelder rose, spindle and dog wood) distributed in groups of 3 or 4 at a minimum of 2m spacing ensuring that the plants are incorporated into both rows and not in a single line within one row. They will be planted as bare root plants 40-60cm high, and individually protected by 0.6 m biodegradable Tubex wide mouthed shrub guards supported by a 0.75 m pressure treated softwood stake, or by 0.6m biodegradable spiral guards supported by a cane. The hedges will be maintained until fully established with losses replaced annually, and then managed by biennial flailing to achieve the characteristic box or 'A'-shape profile.

The hedgerow mix is beneficial to wildlife and planting to the following specification:

PLANTING SCHEDULE				
HEDGEROW MIX (as necessary)				
SPECIES	DENSITY	AGE	ROOT	HEIGHT
50% Hawthorn ( <i>Crataegus monogyna</i> )	0.45m	1+1 or 1/1	BR	40-60cm
10% Field maple ( <i>Acer campestre</i> )	0.45m	1+1 or 1/1	BR	40-60cm
10% Guelder Rose ( <i>Viburnum opulus</i> )	0.45m	1+1 or 1/1	BR	40-60cm
10% Hazel ( <i>Corylus avellana</i> )	0.45m	1+1 or 1/1	BR	20-30cm
5% Dog Wood ( <i>Cornus sanguinea</i> )	0.45m	1+1 or 1/1	BR	20-30cm
5% Holly ( <i>Ilex aquifolium</i> )	0.45m	1+1 or 1/1	CG-3l	40-60cm
5% Dog Rose ( <i>Rosa canina</i> )	0.45m	1+1 or 1/1	BR	40-60cm
5% Hornbeam ( <i>Carpinus betulus</i> )	0.45m	1+1 or 1/1	BR	40-60cm

Table 4. Hedgerow Planting Mix

## 6. Summary and Conclusions

- 6.1. This report sets out the results of the preliminary ecological survey work and consideration undertaken in respect of the site during January 2024, in order to inform the proposed development of the site for residential use.
- 6.2. The survey work undertaken at the site has confirmed the current position in regard to habitats and potential for protected species. Overall, the habitats present within the internal areas appear to support species-poor improved grassland habitats, ornamental plants and shrubs which are unlikely to support any particularly raised ecological value nor support significant populations, or use by protected, rare or notable faunal species. Nonetheless, it is recommended that, where possible initial vegetation works and should be timed to avoid the bird nesting season to minimise any risk of harm to any nesting bird species that may be present (and thereby avoid any offence).
- 6.3. Based on the survey work undertaken and subject to the implementation of the measures and recommendations set out, there is no evidence to suggest there are any over-riding ecological constraints to the current proposals for the site. The proposed tree felling represents the greatest risk to wildlife, particularly roosting bats and nesting birds and so further surveys and checks of the trees are required prior to removal.
- 6.4. It is advised that if a period of more than 18 months passes between the date of this survey and the commencement of clearance and construction works then a further site survey should be made in addition to the pre-works checks outlined above.

## 7. Ecological Conditions and Recommendations for Further Surveys

We suggest that any habitat loss associated with the proposal can be adequately mitigated through landscaping, planting and other biodiversity enhancement measures. The following advisory recommendations include:

- Destruction of in-use nests or harm to adult birds caused by building works or cutting trees on site during the main breeding bird season (1st March to 31st August). If works commence during this period a nesting bird survey must first be undertaken by an appointed ecological clerk of works (ECoW).
- We advise that before the commencement of construction, it is recommended that in line with the British Standard 42020:2013 Biodiversity – Code of practice for planning and development - that a **Biodiversity Enhancement Plan (BEP)** is submitted and approved. The role of the BEP is to ensure that the identified risks to biodiversity are assessed and that suitable methods are adopted on site to minimise the risks through the production of a method statement. The BEP is also to ensure that biodiversity protection zones are enforced.
- A Biodiversity Net Gain Assessment which uses the DEFRA Biodiversity Metric 4 (or any successor) and follows the Biodiversity Net Gain Report & Audit Templates (CIEEM, 2021) has been submitted which shows a biodiversity net gain of approximately **+12% (0.85) habitat units**. The scheme is therefore considered to be policy compliant with the BNG net gain of 10% which is not yet mandatory but will become mandatory on the 2<sup>nd</sup> April 2024. Further details will be required to be provided by way of a suitably worded planning condition for the implementation of the habitat management and monitoring plan HMMP.
- Site Clearance- Due to the presence of suitable habitat for badgers adjacent to the site within the woodland area, it is recommended that a further detailed badger survey of the site and any land areas within 30m are re-surveyed prior to works commencing.

### **PRIOR TO COMMENCEMENT: COMPLIANCE WITH ECOLOGICAL REPORT RECOMMENDATIONS**

**Prior to commencement of works above slab level, a Biodiversity Enhancement Strategy for protected and Priority species shall be submitted to and approved in writing by the local planning authority. The content of the Biodiversity Enhancement Strategy shall include the following:**

- a) Purpose and conservation objectives for the proposed enhancement measures.**
- b) detailed designs to achieve stated objectives.**
- c) locations of proposed enhancement measures by appropriate maps and plans.**
- d) timetable for implementation demonstrating that works are aligned with the proposed phasing of development.**
- e) persons responsible for implementing the enhancement measures.**

**f) details of initial aftercare and long-term maintenance (where relevant). The works shall be implemented in accordance with the approved details prior to occupation and shall be retained in that manner thereafter.**

Reason: To allow the LPA to discharge its duties under the Conservation of Habitats and Species Regulations 2017 (as amended), the Wildlife & Countryside Act 1981 (as amended) and s40 of the NERC Act 2006 (Priority habitats & species), as updated by the Environmental Act 2021.

**“A lighting design scheme for biodiversity shall be submitted to and approved in writing by the local planning authority. The scheme shall identify those features on site that are particularly sensitive for bats and that are likely to cause disturbance along important routes used for foraging; and show how and where external lighting will be installed so that it can be clearly demonstrated that areas to be lit will not disturb or prevent bats using their territory. All external lighting shall be installed in accordance with the specifications and locations set out in the scheme and maintained thereafter in accordance with the scheme. Under no circumstances should any other external lighting be installed without prior consent from the local planning authority.”**

Reason: To conserve protected and Priority species and allow the LPA to discharge its duties under the Conservation of Habitats and Species Regulations 2017 (as amended), the Wildlife & Countryside Act 1981 as amended and s40 of the NERC Act 2006 (Priority habitats & species), as updated by the Environmental Act 2021.

**“A ‘statement of good practice’ shall be signed upon completion by the competent ecologist, and be submitted to the LPA, confirming that the specified enhancement measures have been implemented in accordance with good practice upon which the planning consent was granted’.**

## 8. References

British Standards Institution (2013). BS42020 – Biodiversity – Code of practice for planning and development.

CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal*. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2015) *Guidelines on Ecological Report Writing*. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2016) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2<sup>nd</sup> Edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

Froglife (1999) *Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10, Froglife, Halesworth

Gent T & Gibson S (2003)- *Herpetofauna Workers Manual*. JNCC, Peterborough.

Hill, D, Fasha M, Tucker G, Shewry M & Shaw P (2005) *Handbook of Biodiversity Methods: Survey Evaluation and Monitoring*, Cambridge University Press, Cambridge

Collins, J (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, 4<sup>th</sup> edition, Bat Conservation Trust.

DEFRA (2005) *Fifth Quinquennial Review of Schedules 5 and 8 of The Wildlife and Countryside Act 1981*. Department for Environmental, Food and Rural Affairs, London.

JNCC, (1993). *Handbook for Phase 1 Habitat Survey: A technique for environmental audit* (2010 reprint). Joint Nature Conservation Committee, Peterborough.

JNCC, (2006). *Handbook for using the National Vegetation Classification*. J.S. Rodwell, 2006 Joint Nature Conservation Committee.

Joint Nature Conservation Committee, 2003. *Herpetofauna Worker's Manual*. JNCC Publications, Peterborough.

Froglife (2001), *Great Crested Newt Conservation Handbook*, Froglife, Halesworth, Suffolk

Mitchell-Jones, & McLeish, A.P. Ed. (2004), 3<sup>rd</sup> Edition *Bat Workers' Manual*

# Plan 057/ECO1

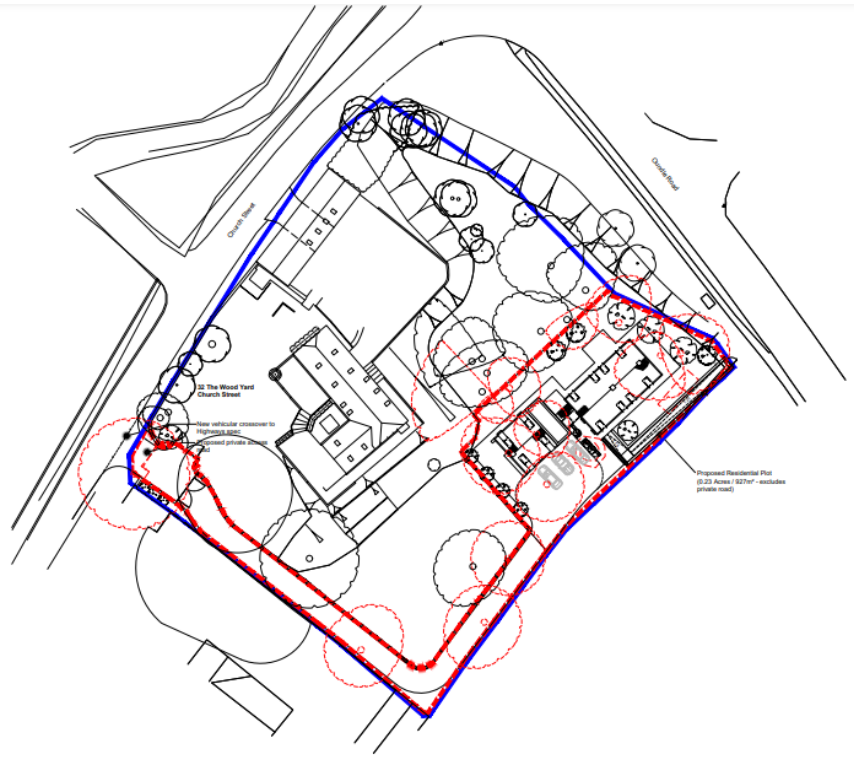


01 - Site Location Plan (Scale 1:500 @ A0)

KEY

- Site Boundary
- Township Boundary

Scale bar and north arrow are included.



02 - Proposed Site Plan (Scale 1:250 @ A0)

KEY

- Site Boundary
- Township Boundary
- Extent of Demolition / removal

Scale bar and north arrow are included.

10. All building contracts shall be subject to the approval of the Council.

11. All building contracts shall be subject to the approval of the Council.

12. Unless otherwise specified, the building contractor shall be responsible for the provision of all services to the site.

13. The building contractor shall be responsible for the provision of all services to the site.

14. The building contractor shall be responsible for the provision of all services to the site.

15. The building contractor shall be responsible for the provision of all services to the site.

NO.	REVISION	DATE
1	Issue for comment	10/10/2023
2	Issue for comment	10/10/2023
3	Issue for comment	10/10/2023
4	Issue for comment	10/10/2023
5	Issue for comment	10/10/2023
6	Issue for comment	10/10/2023
7	Issue for comment	10/10/2023
8	Issue for comment	10/10/2023
9	Issue for comment	10/10/2023
10	Issue for comment	10/10/2023

Site Location and Proposed Layout



- 01 - Proposed Site Boundary Treatments (Scale 1:200 @ A3)
- Site Boundary
  - Ownership Boundary
  - Existing Retained Stone Wall
  - Proposed Stone Wall (Established To 1.5m in Height)
  - Existing Retained Brick Wall
  - Proposed Brick Retaining Wall of Grade Only (Not Retaining Over)
  - Proposed Laurel Hedge
  - Proposed Metal Fence (Consolidated With Hedge)
  - Proposed Timber Fence 1.8m Tall
  - Proposed Parking Drive
  - Proposed Vehicle Gate 1.8m Tall
  - Proposed Pedestrian Gate 1.8m Tall



B - Proposed Stone Wall To Match Existing (Established To 1.5m Tall)



C - Closed Timber Fence 1.8m Tall



D - Proposed Vehicle Gate 1.8m Tall



E - Proposed Planting



F - Existing Retained Brick Wall



G - Proposed Brick Retaining Wall To Grade with Stone Base with Gate



H - Proposed Metal Fence 1.2m Tall



I - Proposed Pedestrian Gate 1.8m Tall



A - Existing Retained Stone Wall



J - Proposed Laurel Hedge with Metal Fence as Seen E



K - Existing and Retained Boundary Condition Fronting County Road

1. These drawings shall be used to construct the site boundary treatments in accordance with the proposed site boundary treatments and landscaping plan. The drawings shall be used to construct the site boundary treatments and landscaping plan in accordance with the proposed site boundary treatments and landscaping plan.
2. Where the drawings are used as a basis for construction, the drawings shall be used as a basis for construction and shall be used as a basis for construction.
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## Proposed Boundary Treatment and Landscaping

Plan 057/ECO2





# Appendix 1

## Desktop Ecological Information

**COUNTY:** NORTHAMPTONSHIRE                      **SITE NAME:** COWTHICK QUARRY

**District:** Corby

**Status:** Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

**Local Planning Authority:** Corby District Council

**National Grid Reference:** SP 924883  
SP 926877

**Ordnance Survey Sheet 1:50,000:** 141                      **1:10,000:** SP 98 NW

**Date Notified (Under 1949 Act):** 1981                      **Date of Last Revision:** 1970

**Date Notified (Under 1981 Act):** 1985                      **Date of Last Revision:**

**Area:** 1.35 ha 3.33 ac

**Other Information:** This site is identified as of national importance in the Geological Conservation Review.

### Description and Reasons for Notification

A site of national importance for its geology. Cowthick exposes the best and most instructive sections of their kind in the Middle Jurassic rocks of the Midlands. Its section consists of the Northamptonshire Ironstone, Grantham Formation and Lincolnshire Limestone. The latter is developed as channel infillings cutting in to the underlying Grantham Formation. The northern channel fill includes unique Lower Lincolnshire Limestone below Upper Lincolnshire Limestone, as well as high relief hardgrounds. The southern channel is affected by a major Pleistocene Fault structure which brings about the juxtaposition of six Jurassic formations, from the Upper Lias to the Upper Estuarine 'Series'.

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**COUNTY:** NORTHAMPTONSHIRE

**SITE NAME:** WELDON PARK

**District:** Corby

**Status:** Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

**Local Planning Authority:** Corby District Council

**National Grid Reference:** SP 946901

**Ordnance Survey Sheet 1:50,000:** 141

**1:10,000:** SP 99 SW, SP 99 SE,  
SP 98 NW, SP 98 NE

**Date Notified (Under 1949 Act):** 1970

**Date of Last Revision:** 1970

**Date Notified (Under 1981 Act):** 1983

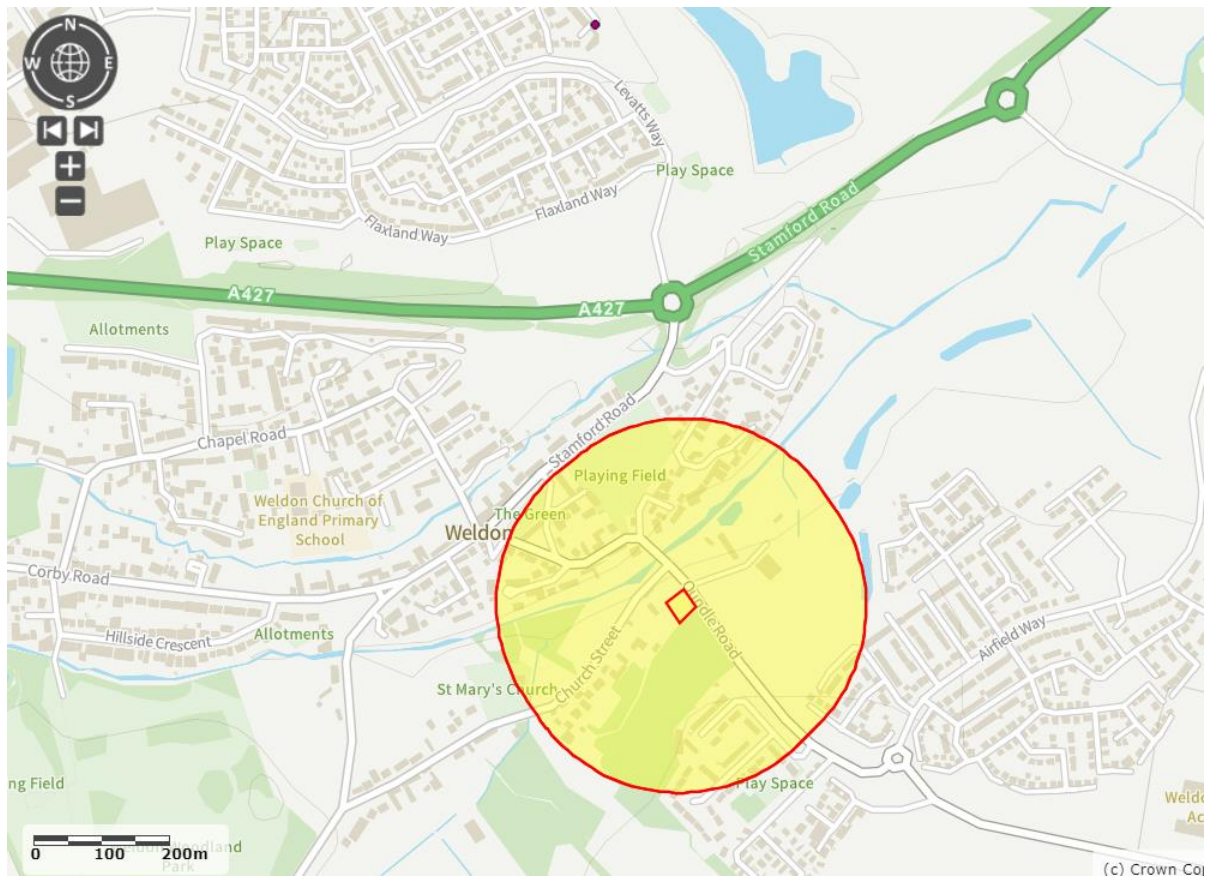
**Date of Last Revision:**

**Area:** 51.4 ha 127.2 ac

#### **Description and Reasons for Notification**

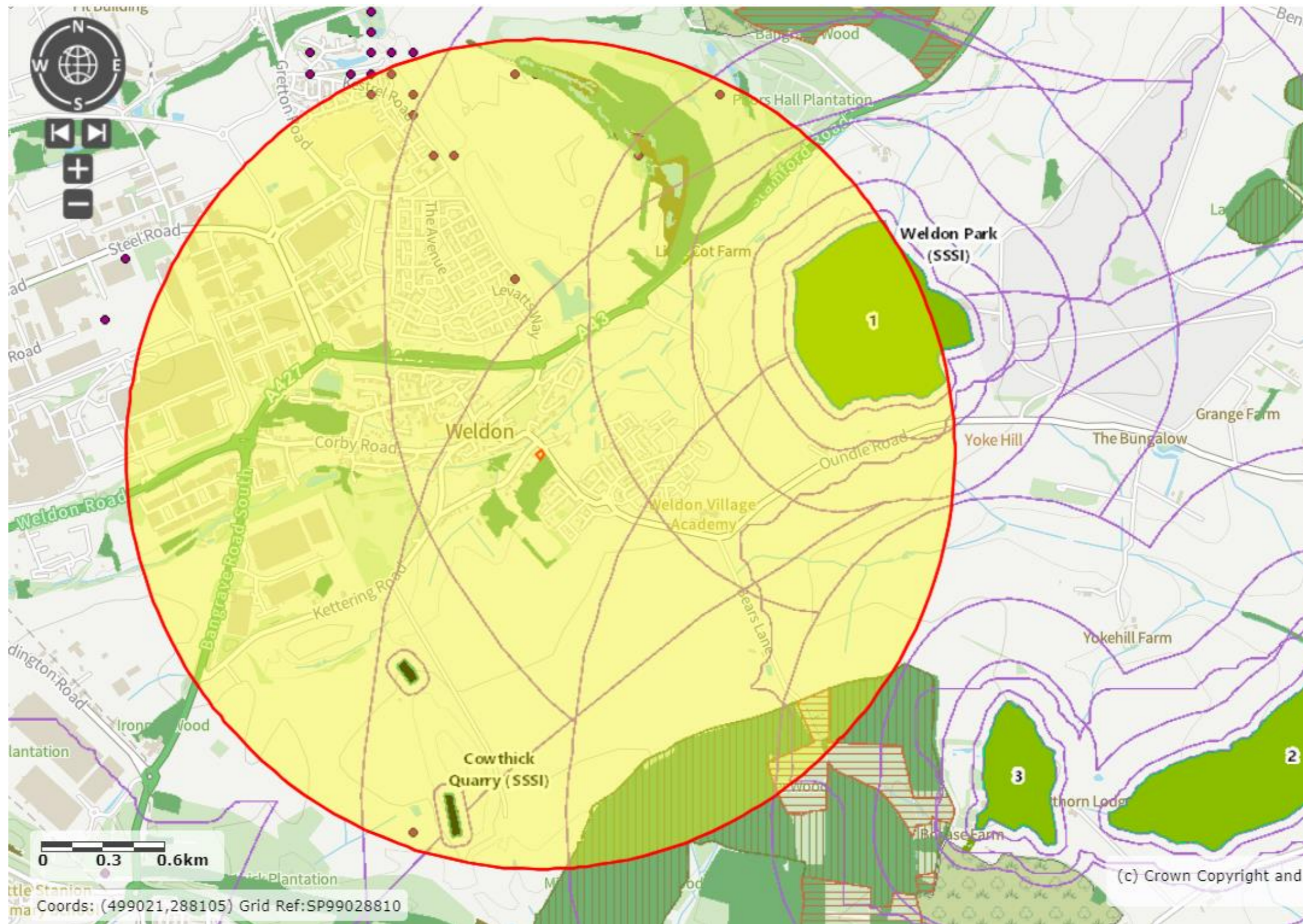
One of the largest intact ancient woodlands in the county to have survived unaffected by post-war clearance or plantation forestry. The site is composed entirely of semi-natural vegetation developed on Boulder clay with ash-maple and hazel-ash canopy types of the Rockingham Forest area well represented. The wood has a rich flora for its size, an uncommon vegetation variant on the wettest soils of the south-east quarter, and unspoiled, old grassland in the rides of great botanical interest. The woodland canopy structure provides a varied habitat for birds and insects including the nationally uncommon purple emperor butterfly. The long-documented history is of additional interest.

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Pond Search- 250m radius- Nearest GCN Record Purple Dot- 830m north on distal side of A427.

## Designations



## Examples of Bat Boxes

It is important that the bat boxes are positioned sufficiently high above the ground to dissuade ground predators, a minimum of 4m up; and at a distance from sources of artificial lighting. The boxes should be located on the west, south and east facing sides of the trees / buildings giving bats a range of microclimates through the year and direct access to foraging and commuting habitat along site boundaries.

Schwegler 1FF Bat Box		<p>The 1FF bat box can be sited in trees or on buildings. Size: 43cm high x 27cm wide x 14cm deep.</p>
Schwegler 2F Bat Box		<p>The 2F bat box can be sited in trees or on buildings. Size: 33cm high x 16cm diameter.</p>
1FQ Schwegler Bat Roost (For External Walls)		<p>Suitable for a variety of crevice-dwelling bats, for larger roosts or maternity groups. Internal layout provides 3 different areas where bats can roost, offering different levels of light and temperature. Gaps ranging from 1.5cm to 3.5cm wide offering various places for bats to roost. Suitable to erect on most types of external brick, timber or concrete structures. Size: 60cm high x 35cm wide x 9cm deep.</p>
Improved Roost-Maternity Bat Box		<p>A large 3 crevice bat box. 3 separate crevices each with different temperature characteristics. Suitable for larger roosts or maternity groups of small crevice-dwelling species such as pipistrelle bats. Suitable to erect on buildings or trees. Size: 49cm high x 26cm wide x 13cm deep.</p>
Timber Double Chamber Bat Box		<p>This bat box is suitable for siting on trees in gardens or woodland and requires no annual maintenance. Should not be painted or treated with any type of preservative, as these can harm the bats. Size: 31.3cm high x 16cm wide x 16cm deep.</p>
The Kent Bat Box		<p>Made from untreated rough-sawn timbers ca.20mm thick. Crevices can be between 15mm and 25mm wide. Suitable to fit to walls, other flat surfaces or trees. Approximate dimensions (boxes vary in size): 24cm wide x 47.5cm high x 17cm deep.</p>

## Bird Nesting Habitat

### CedarPlus Nest Box

Available with 2 entrance hole sizes:

**32mm hole** – suitable for great, marsh and coal tits, redstart, nuthatch, pied flycatcher, house sparrow and tree sparrows.

**26mm hole** – to allow access only to blue, marsh and coal tits (and possibly wrens).

Height: 370mm; Width: 156mm; Depth: 175mm



### Schwegler 1B Bird Box

The 1B nest box will attract a wide range of species and is available with different entrance hole sizes to prevent birds from competing with each other for the boxes.

It is available in 4 colours: brown, green, white and red. The nest box can be attached to the tree or wall using an aluminium nail or by hanging over a branch and is made from Woodcrete to ensure that it is long-lasting.

Entrance hole sizes:

**32mm hole** – will attract great, blue, marsh, coal and crested tit, redstart, nuthatch, collared and pied flycatcher, wryneck, tree and house sparrow.

**26mm hole** – suits blue, marsh, coal and crested tit and possibly wren. All other species are prevented from using the nest box due to the smaller entrance hole.

**Oval hole** (29x55mm) – suits redstarts because more light enters the brood chamber. It is also suitable for all other species which nest in the 32mm boxes.

Height: 23cm; Diameter: 16cm



### No. 10 Schwegler Swallow Nest

The Swallow Nest No. 10 consists of a woodcrete nesting bowl which is attached to a wooden panel of formaldehyde-free chipboard. The nest should be placed inside outbuildings such as sheds, barns or stables leaving a distance of at least 35mm between the top of the nest and wall top. Ensure there is always access for the birds through an open window or skylight, or other high level access (minimum of 50mm (H) x 70mm (W) gap). Multiple nests should not be placed at less than 1m intervals.

To avoid problems with droppings accumulating, a droppings board could be placed beneath each nest box to collect the droppings.



**Eco-Roost Bat Brick**  
<https://www.eco-roost.co.uk/shop?Collection=Bat+Bricks>



**Eco-Roost Double Chamber Bat Box**  
<https://www.eco-roost.co.uk/product-page/kent-hibernation-rect>



**Eco-Roost Double Kent Box**  
<https://www.eco-roost.co.uk/product-page/kent-style-rect-large>



**Eco-Roost 28mm, 32mm and Open fronted bird boxes**  
<https://www.eco-roost.co.uk/product-page/tit-sparrow-front-fall>





## Artificial lighting and wildlife

### Interim Guidance: Recommendations to help minimise the impact artificial lighting

Wherever human habitation spreads, so does artificial lighting. This increase in lighting has been shown to have an adverse effect on our native wildlife, particularly on those species that have evolved to be active during the hours of darkness. Consequently, development needs to carefully consider what lighting is necessary and reduce any unnecessary lighting, both temporally and spatially. When the impacts on different species groups are reviewed, the solutions proposed have commonalities that form the basis of good practice. These are outlined in the following document.

#### Overview of impacts

##### Invertebrates

Artificial light significantly disrupts natural patterns of light and dark, disturbing invertebrate feeding, breeding and movement, which may reduce and fragment populations. Some invertebrates, such as moths, are attracted to artificial lights at night. It is estimated that as many as a third of flying insects that are attracted to external lights will die as a result of their encounter.<sup>1</sup> Insects can become disoriented and exhausted making them more susceptible to predation. In addition, the polarisation of light by shiny surfaces attracts insects, particularly egg laying females away from water. Reflected light has the potential to attract pollinators and impact on their populations, predators and pollination rates. Many invertebrates natural rhythms depend upon day-night and seasonal and lunar changes which can be adversely affected by artificial lighting levels.

It is not always easy to disentangle the effects of lighting on moths from other impacts of urbanisation. However, it is known that UV and green and blue light, which have short wavelengths and high frequencies, are seen by most insects and are highly attractive to them. Where a light source has a UV component, male moths in particular will be drawn to it. Most light-induced changes in physiology and behaviour are likely to be detrimental. They discern it to be 'light', so they do not fly to feed or mate.<sup>2</sup>

##### Birds

There are several aspects of changes to bird behaviour to take into account. The phenomenon of robins and other birds singing by the light of a street light or other external lighting installations is well known, and research has shown that singing did not have a significant effect on the bird's body mass regulation. However, it was felt that the continual lack of sleep was likely to be detrimental to the birds' survival and could disrupt the long-term circadian rhythm that dictates the onset of the breeding season<sup>3</sup>. Many species of bird migrate at night and there are well-documented cases of the mass mortality of nocturnal migrating birds as they strike tall lit buildings. Other UK bird species that are particularly sensitive to artificial lighting are long-eared owls, black-tailed godwit and stone curlew.<sup>4</sup>

<sup>1</sup> Bruce-White C and Shardlow M (2011) A Review of the Impact of Artificial Light on Invertebrates - See more at: <http://www.buglife.org.uk/advice-and-publications/publications/campaigns-and-reports/review-impact-artificial-light#sthash.s7GPA1vL.dpuf>

<sup>2</sup> As above

<sup>3</sup> Pollard A. (2009) Visual constraints on bird behaviour. University of Cardiff

<sup>4</sup> Rodriguez A., Garcia A.M., Cervera F. and Palacios V. (2006) Landscape and anti-predation determinants of nest site selection, nest distribution and productivity in Mediterranean population of Long-eared Owls, *Asio otus*. *Ibis*, 148(1), pp. 133-145



## Mammals

A number of our British mammals are nocturnal and have adapted their lifestyle so that they are active in the dark in order to avoid predators. Artificial illumination of the areas in which these mammals are active and foraging is likely to be disturbing to their normal activities and their foraging areas could be lost in this way. It is thought that the most pronounced effect is likely to be on small mammals due to their need to avoid predators. However, this in itself has a knock-on effect on those predators.

The detrimental effect of artificial lighting is most clearly seen in bats. Our resident bat species have all suffered dramatic reductions in their numbers in the past century. Light falling on a bat roost exit point, regardless of species, will at least delay bats from emerging, which shortens the amount of time available to them for foraging. As the main peak of nocturnal insect abundance occurs at and soon after dusk, a delay in emergence means this vital time for feeding is missed. At worst, the bats may feel compelled to abandon the roost. Bats are faithful to their roosts over many years and disturbance of this sort can have a significant effect on the future of the colony. It is likely to be deemed a breach of the national and European legislation that protects British bats and their roosts.

In addition to causing disturbance to bats at the roost, artificial lighting can also affect the feeding behaviour of bats and their use of commuting routes. There are two aspects to this: one is the attraction that short wave length light (UV and blue light) has to a range of insects; the other is the presence of lit conditions.

As mentioned, many night-flying species of insect are attracted to lamps that emit short wavelength component. Studies have shown that, although noctules, serotines, pipistrelle and Leisler's bats, take advantage of the concentration of insects around white street lights as a source of prey, this behaviour is not true for all bat species. The slower flying, broad-winged species, such as long-eared bats, barbastelle, greater and lesser horseshoe bats and the *Myotis* species (which include Brandt's, whiskered, Daubenton's, Natterer's and Bechstein's bats) generally avoid external lights.

Lighting can be particularly harmful if it illuminates important foraging habitats such as river corridors, woodland edges and hedgerows used by bats. Studies have shown that continuous lighting along roads creates barriers which some bat species cannot cross<sup>5</sup>. It is also known that insects are attracted to lit areas from further afield. This could result in adjacent habitats supporting reduced numbers of insects, causing a further impact on the ability of light-avoiding bats to feed.

These are just a few examples of the effects of artificial lighting on British wildlife, with migratory fish, amphibians, some flowering plants, a number of bird species, glow worms and a range of other invertebrates all exhibiting changes in their behaviour as a result of this unnatural lighting.

## Recommendations

### Survey and Planning

The potential impacts of obtrusive light on wildlife should be a routine consideration in the Environmental Impact Assessment (EIA) process<sup>6</sup>. Risks should be eliminated or minimised wherever possible. Some locations are particularly sensitive to obtrusive light and lighting schemes in these areas should be carefully planned.

In August 2013, Planning Minister Nick Boles launched the new National Online Planning Guidance Resource aimed at providing clearer protection for our natural and historic environment. The guidance looks at when lighting pollution concerns should be considered and is covered within one of the on line planning practice

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<sup>5</sup> Stone E. L., Jones G and Harriss (2009) Street lighting disturbs commuting bats. *Current Biology*, 19, pp 1-5

<sup>6</sup> See also: Institution of Lighting Professionals - Professional Lighting Guide (PLG 04) Guidance on undertaking lighting environmental impact assessments)

guides<sup>7</sup>. The guide provides an overview for planners with links to documents that aim to give planners an overview of the subject through the following discussion points:

1. When is obtrusive light / light pollution relevant to planning?
2. What factors should be considered when assessing whether a development proposal might have implications for obtrusive lighting / light pollution?
3. What factors are relevant when considering where light shines?
4. What factors are relevant when considering how much the light shines?
5. What factors are relevant when considering possible ecological impact?

This can help planners reach the right design through the setting of appropriate conditions relating to performance and mitigation measures at the planning stage.

The Institution of Lighting Professionals (ILP) recommends that Local Planning Authorities specify internationally recognised environmental zones for exterior lighting control within their Development Plans<sup>8</sup>. In instances lacking classification, it may be necessary to request a Baseline Lighting Assessment/Survey conducted by a Lighting Professional in order to inform the classification of areas, particularly for large-scale schemes and major infrastructure projects.

When assessing or commissioning projects that include the installation of lighting schemes, particularly those subject the EIA process, the following should be considered and relayed to applicants:

- *Ecological consultants should confirm the presence of any sensitive fauna and flora, advising the lighting designers of bat routes and roosts and other areas of importance in order to ensure that reports correspond with each other.*
- *Ecological consultants should consider the need for quantitative lighting measurements. In some instances it may be necessary for further lighting measurements to be taken. For example, outside an important bat roost. These should follow best practice guidance from the ILP and would ideally be conducted by a Lighting Professional.*
- *Where appropriate, professional lighting designers should be consulted to design and model appropriate installations that achieve the task but mitigate the impacts. This should be done at the earliest opportunity. Early decisions can play a key role in mitigating the impact from lighting.*
- *Reports submitted should outline the impacts of lighting in relation to ecology, making clear reference to the ecological findings, highlighting any sensitive areas and detail proposed mitigation. Consideration should also be given to internal lighting where appropriate.*
- *Post -installation checks and sign off upon commissioning should be carried out by the lighting designer to ensure that the lighting installation has been installed in accordance with the design, that predictions were accurate and mitigation methods have been successful.*

## Principles and design considerations

### *Do not*

- *provide excessive lighting. Use only the minimum amount of light needed for the task.*
- *directly illuminate bat roosts or important areas for nesting birds*

### *Avoid*

- *installing lighting in ecologically sensitive areas such as: near ponds, lakes, rivers, areas of high conservation value; sites supporting particularly light-sensitive species of conservation significance (e.g. glow worms, rare moths, slow-flying bats) and habitat used by protected species.*
- *using reflective surfaces under lights.*

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<sup>7</sup><http://planningguidance.planningportal.gov.uk/blog/guidance/light-pollution/when-is-light-pollution-relevant-to-planning/>

<sup>8</sup>Institution of Lighting Professionals (2011) Guidance Notes for the Reduction of Obtrusive Light GN01:2011.

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