

Ecological Impact Assessment at

Moss Villa

Chapel Lane
Bronington
Wrexham
SY13 3HR

(SJ48518.37626)

By Churton Ecology
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SUMMARY

Background

Churton Ecology was instructed to carry out an Ecological Impact Assessment of land and buildings at Moss Villa, Chapel Lane, Bronington, Whitchurch, Wrexham SY13 3HR.

The site comprises a two-storey dwelling, a brick built outbuilding and a small dutch barn surrounded by rank neutral grassland and hardstanding. The proposal is for the conversion of the outbuildings and the extension of the dwelling.

Method of study

A desktop search, daytime building inspection and general protected species walkover of the site and surrounds aimed to establish the presence or absence of bats, reptiles, breeding birds and other protected species with potential to be negatively affected by the development.

Ecological features

The site supports habitats of low to moderate biodiversity value. Bats, reptiles and breeding birds are considered to be important ecological features of the site and/or its potential area of influence.

Mitigation and enhancement measures

With mitigation measures in place for bats, reptiles and breeding birds there should be no significant residual adverse effect on protected species.

With enhancements in place (planting new hedgerows, trees and shrubs and installing bat and bird boxes) there could be a maintenance or increase in the biodiversity value of the site.

1 INTRODUCTION

1.1 Background and site description

Churton Ecology was instructed by Berrys to carry out an Ecological Impact Assessment of land and buildings at Moss Villa, Chapel Lane, Bronington, Whitchurch, Wrexham SY13 3HR (SJ48518.37626).

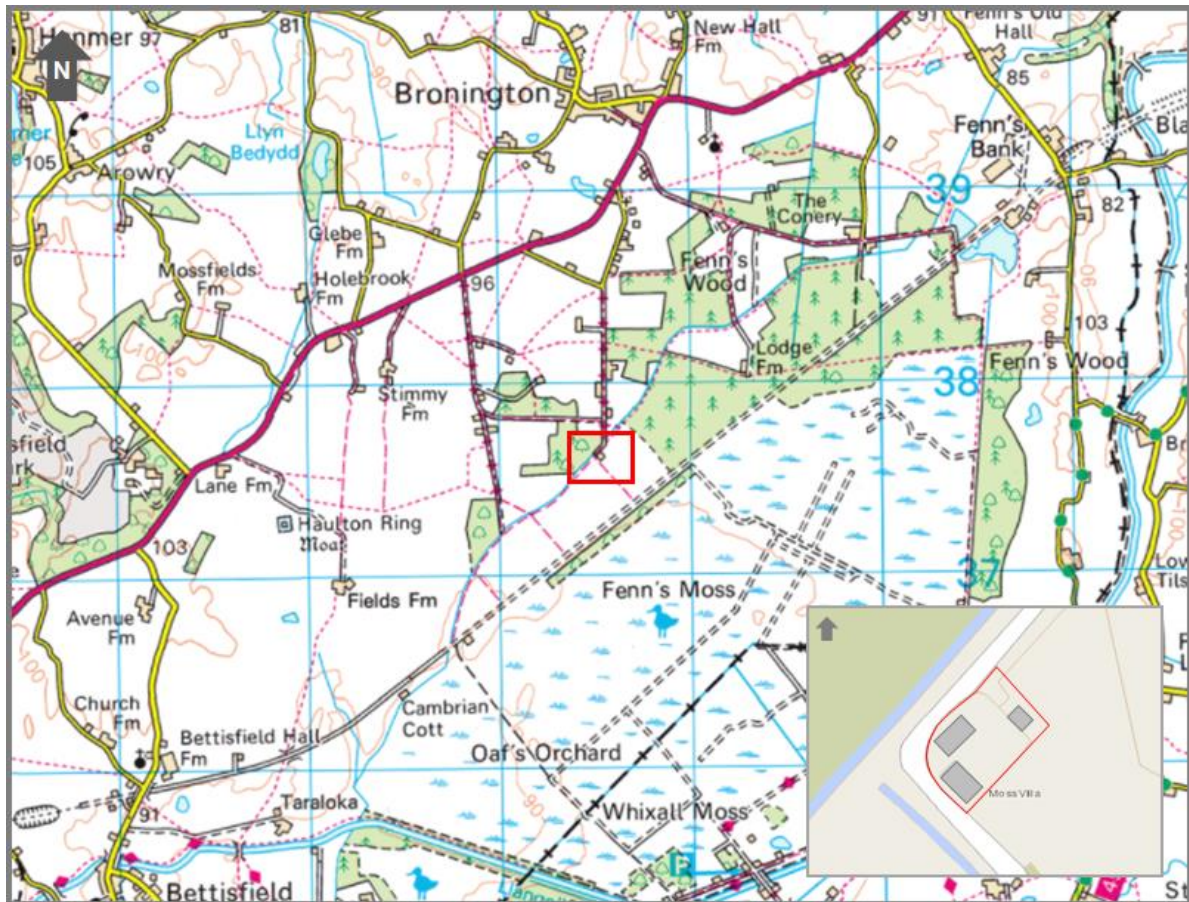


Fig 1: Site location and layout
OS map licence no. 100048619

A desktop search, daytime building inspection and general protected species walkover of the site and surrounds aimed to establish the presence or absence of bats, reptiles, breeding birds and other protected species with potential to be negatively affected by the development.

The site comprises a two-storey dwelling, a brick built outbuilding and a small dutch barn surrounded by rank neutral grassland and hardstanding.

1.2 Proposed works

The proposal is for the conversion of the dutch barn into a garage and the outbuilding into an office. A single-storey extension to the dwelling will provide a covered walkway to the office.

2 METHODOLOGY

2.1 Desk study

Sites of international and national conservation significance were sought within 1km of the site. Searches were conducted using the following sources:

- MAGIC maps

OS maps and aerial photographs (Google Earth) were used to identify landscape features of potential ecological interest including hedgerows, tree-lines, ponds, streams, ditches and areas of likely (semi-)natural value.

2.2 Habitat survey

A building inspection and survey of the site and surrounds was conducted on 13/07/2023 by Mr. R.G.Thorne (Churton Ecology).

Habitats were assessed and their importance/value noted based on botanic diversity and/or their potential to support uncommon or rare species of flora and fauna (e.g. axiophytes/Red Data Book species).

2.3 Protected species survey

2.3.1 Bats

Daytime inspection survey

A suitably high ladder was used to access all elevated areas with potential to support roosting bats. A roof ladder was used to access and inspect the undersides of the ridge and roof-tiles. The two loft compartments were searched from end-to-end using a high powered torch.

Searches were conducted using a fibrescope, extraction pooter, mirrors and torches to identify and collect signs indicating past or current bat use, such as the presence or not of live or dead bats, their droppings or urine splats, cobweb-free areas in cracks and crevices, grease stains or smoothed edges within or below potential roosts and/or their access points.

Habitat suitability assessment

A general habitat suitability assessment of the site and surrounds was carried out to determine the likely value of foraging and commuting habitats.

2.3.2 Great Crested Newt

Desktop search

Ponds and other potential breeding habitats were sought within 250m of the site using OS maps and aerial photographs.

2.3.3 Reptiles

Field survey

A direct visual search was carried out for basking reptiles during the survey. Suitable surface refugia were also lifted and inspected for reptiles or evidence of their presence (e.g. their sloughed skins).

Habitat suitability assessment

The habitats on site were assessed for their potential to support the 'widespread' reptile species. Areas were assessed for their potential to provide permanent, seasonal and/or temporary reptile habitats. Dispersal links and barriers between more abundantly suitable habitats were also considered in relation to mobile species.

2.3.4 Badger

Field survey

Burrows were sought within at least 30m of the site. Other evidence of site use, such as latrine pits, paths, snuffle holes, feeding remains and hairs (in burrow spoil or snagged along trails) was also sought.

2.3.5 Breeding birds

Field survey

Birds seen or heard during the survey were recorded and old nests were attributed to species where possible.

Habitat suitability assessment

Habitats, with potential to support common, priority or Schedule 1 species of nesting bird were identified within the site and the immediate surrounds.

2.3.6 Other protected and priority species

Habitat suitability assessment

Habitats thought suitable to support other protected or priority species potentially relevant to the site location were also sought. Where no suitable habitats exist and/or where no impacts can be reasonably predicted, species can be discounted from further survey, impact assessment and mitigation - in this instance Otter, Dormouse, White-clawed Crayfish and Water Vole.

3 RESULTS AND EVALUATION

3.1 Designated sites

Statutory and non-statutory sites

The site is located immediately adjacent to Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses SSSI, SAC and Ramsar sites. Collectively these form part of the Midlands Meres and Mosses group comprising extensive areas of lowland raised mire and heathland with open water, reedswamp, fen, carr and damp pasture and an extensive array of associated protected, priority and notable flora and fauna species.

Evaluation and discussion

The site does not support any habitats for which Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses SSSI/SAC/Ramsar have been primarily designated, so there is no intrinsic habitat that links the two sites. It is also worth noting that the house has all the facilities to be re-occupied; therefore, comparable drainage discharge rates will be ongoing regardless of the status of this planning application.

Ultimately all drainage matters will be addressed by the relevant planning consultees and appropriate solutions (i.e. more effective, modern systems) will be incorporated into the design of the scheme if required. It is not the remit of this report to consider the effects of pollution on statutory or non-statutory sites for nature conservation since there is no reasonable likelihood of this occurring with the system of planning control in place.

3.2 Field survey

3.2.1 Building descriptions

Dwelling

The house comprises a rectangular two-storey dwelling which was last occupied in 2021. The walls are pre-cavity-era brick construction and the masonry is intact. The roof is unlined

and covered with torched slate and overlapping angled clay ridge-tiles. With the exception of three missing slates these are flush, tight-fitting and intact – the three slate crevices contained accumulations of old spider webs and there were no signs of historical bat use. With the exception of one accessible ridge-tile, the ridge-tiles are securely bonded and there is no mortar loss between the joints or along the ridge-bed. The central chimney supports an intact mortared fillet and the roof-verges are also mortared and intact.



P1: NW (gable) + SW (side) elevations: looking E



P2: NE (side) + NW (gable) elevations: looking S



P3: S loft: viewed from the N end, looking SE



P4: N loft: viewed from the S end, looking NW



P5: Example of the ridge and roof-tiles, with slipped slate



P6: Example of a missing slate with cobwebs inside



P7: Example of the tight-fitting gable soffits



P8: Example of the obstructed eaves and sarking

The building contains an apex loft space with lower vaulted ceiling sections. Accumulations of spider webs were noted hanging from the ridge-board and filling the crevices under the end rafters against the gable-end-walls, indicating an absence of bat activity within the loft space. The eaves have been obstructed with brick and timber sarking, precluding potential bat access to the lower vaulted ceiling sections. With the exception of three slightly wider crevices, the gables support tight-fitting timber soffits – the crevices all contained accumulations of old spider webs and an endoscope inspection found no signs of historical bat use within. There is also a larger hole in the soffit at eaves level on the north-west gable – this contained a Tit nest.

Brick outbuilding

A small brick built barn with north and south (end) lean-tos is present to the north of the house. The walls comprise a mix of single-skin brick and hollow breeze block. The roof is covered with corrugated tin sheeting and supported on timber purlins and rafters. The tin sits loosely on the top of the gable-end-walls; reducing this area's suitability to support roosting bats. There are a few crevices in the wall masonry and these could be inspected thoroughly.



P9: NE (end) + NW (side) elevations: looking SW



P10: SW (end) + SE (side) elevations: looking NNE



P11: Main interior: looking W



P12: Lean-to interior: looking N

Overall the building has a low suitability to support day roosting bats.

Outbuildings

A dutch barn is present to the north-east of the house. This is open-sided with a tin covered roof.



P13: Dutch barn: viewed from the NW, looking SE



P14: Dutch barn detail: viewed from the NW, looking SE

The building has no potential to support day roosting bats.

3.2.2 Habitats in the site/site surrounds

The garden area and the land surrounding the dutch barn to the north supports rank neutral grassland (dominated by False Oat-grass, Common Bent and Yorkshire Fog), tall ruderal vegetation (Nettle) and hardstanding. Two apple trees are also present to the south of the dutch barn.



P15: Garden area: viewed from the N, looking S



P16: Site: viewed from the NW corner, looking SSW

The boundaries support fencing and a trimmed hedgerow with a few immature trees – no hedgerow removal is proposed. The site is surrounded by a field of rank neutral grassland to the south-east and north-east and an access track with heathland beyond to the north-west and south-west.

Evaluation and discussion

Rank neutral grassland and tall ruderal vegetation provide shelter, nectar and foodplants for various common invertebrates as well as foraging and nesting opportunities for small mammals and common amphibians. These are not rare or priority habitats; however, they are still considered to have some (site level) biodiversity value.

3.2.3 Flora

No non-native invasive, rare or otherwise notable plant species were recorded in the survey area.

3.3 Protected species survey

3.3.1 Bats

Daytime inspection survey

No bats, feeding remains, urine splats or droppings were noted ii) in the loft of the house ii) under the one available ridge-tile iii) under the three missing roof slates (which were filled with cobwebs) iv) in the three soffit crevices (which were filled with cobwebs and contained no evidence of past occupation i.e. old bat droppings) v) in the soffit hole (which contained a Tit nest). No bats, feeding remains, urine splats or droppings were noted in the brick outbuilding, in particular associated with the gable-wall-tops and the wall masonry crevices. Roosting bats are not considered to be an important ecological feature of the site.

Habitat suitability assessment

The site has excellent links to extensive areas of (semi-) natural habitat and is suitable for a wide range of both generalist and specialist bat species – as a consequence the site is ideally suited to providing ecological enhancements, particularly in relation to bats and nesting birds.

Evaluation and discussion

The inspection survey was carried out thoroughly and all areas could be accessed and inspected closely and no evidence of a bat roost could be identified in any of the buildings. It is therefore the opinion of Churton Ecology that no further bat survey effort, impact assessment or mitigation is required in relation to roosting bats.

The Bat Conservation Trust's guidelines state in Section 5.2.9 that: 'if the structure has been classified as having low suitability for bats, an ecologist should make a professional judgement on how to proceed based on all the evidence available...if sufficient areas (including voids, cracks and crevices) of a structure have been inspected and no evidence found (and is unlikely to have been removed by weather or cleaning or been hidden) then further surveys may not be appropriate. Information should be presented in the survey report to justify this conclusion and the likelihood of bats being present at other times of the year estimated'.

The types of sheltered crevices associated with the dwelling and the brick outbuilding would retain droppings (and other field signs) from this year and from previous years and the equipment used ensured that no area was hidden from view or inaccessible and no field signs were recorded in or below any of the features identified. None of the buildings are suitable for hibernation/swarming purposes; therefore, it is reasonable to conclude that none of the buildings would be occupied by bats at any time of year.

3.3.2 Great Crested Newt

Desktop search

The site is located in the known geographic range for this species and the species is widespread in this part of the county. Given the scale of the development, only ponds within 250m of the site were considered to be potentially relevant to the proposal. No mapped ponds were identified within this area and there is nothing to indicate the potential presence of any unmapped ponds (based on aerial photography). The mapped ditches within 250m of the site were all dry during the survey.

Evaluation and discussion

Great Crested Newt is not considered to be an important ecological feature of the site; therefore, no further survey effort, impact assessment or mitigation is required in relation to it.

3.3.3 Reptiles

Field survey

The survey was carried out in perfect conditions for detecting reptiles and at a suitable time of year – 16°C with hazy and intermittent sunshine. Despite the conditions, no basking reptiles were identified and no reptiles were recorded under any discarded surface refugia.

Habitat suitability assessment

The grassland on-site represents suitable reptile habitat although this has only relatively recently developed (over the last two years) and there is an abundance of more suitable habitat in the immediate and wider surrounds.

Evaluation and discussion

The surrounding mosses support all four of the 'widespread' native reptile species; therefore, it would be reasonable to conclude that the site could be occupied by sedentary species such as Slow-worm. Transient (Grass Snake) and more specialist species (Common Lizard and Adder) could potentially occupy the site on an occasional basis; however, given the size of the site, the sub-optimal status of the grassland habitat and its flat topography this is likely to be a rare occurrence if it occurs at all. As a consequence the site is not going to be of intrinsic (sustenance) value to local reptile populations; therefore, the impact of any minor habitat loss is unlikely to have a significant adverse effect on any resident reptile populations.

Reptiles are considered to be an important ecological feature of the site; therefore, some precautionary mitigation measures have been recommended to ensure the safeguarding of these animals.

3.3.4 Badger

Field survey

No signs of Badger were noted within 30m of the site.

Evaluation and discussion

Badger is not considered to be an important ecological feature of this site; therefore, no further survey, impact assessment or mitigation is required in relation to it.

3.3.5 Birds

Field survey

Evidence of nesting Tit was recorded in a soffit hole in the house. A Kestrel perch was also recorded on the drainage downpipe of the house.

Habitat suitability assessment

The brick building has the potential to be used by small numbers of ledge and/or cavity nesting species such as Wren or Blackbird.

Evaluation and discussion

Nesting birds are considered to be an important ecological feature of the site but given the scale and commonality of the habitats present these are likely to be important at the site level only.

3.3.6 Other protected and priority species

Hedgehog scat was recorded on the lawned area to the north-east of the house. There is negligible potential for other protected or priority species to be negatively affected by the proposed development.

4 POTENTIAL IMPACTS

4.1 General

This section considers the potential impacts (and subsequent effects) which might arise from the development in the absence of avoidance measures and/or mitigation. Wherever possible, the negative ecological impact of a development must be avoided. Any residual effects and their level of significance are further discussed with mitigation and/or enhancements in place.

It is important to note that the purpose of an ecological impact assessment is to consider impacts and effects in relation to species and habitats that have some level of international, national or local conservation significance – broadly speaking rare, uncommon or declining species and habitats. These are variously protected by domestic law and priority species

have some limited protection under the provisions of the Environmental (Wales) Act – species and habitats listed on the UK/Local biodiversity/habitat action plan and consequently S7 of the Act.

4.2 Protected species

4.2.1 Bats

Significance of effects prior to mitigation

The development will not result in the deterioration, damage, destruction or obstruction of a bat roost and no bats will be disturbed, captured, injured, killed or transported as a result of the proposal.

There will be no significant loss of potential bat foraging habitat; however, the illumination of any peripheral habitats could result in the disturbance or deterioration of commuting habitats. It would be difficult to quantify the significance of the impact of lighting and its effect on bats, since the species and status of any roosts potentially present nearby is unknown. Therefore, it must be assumed (on balance) that a significant effect at the site level is possible.

Significance of residual effects after mitigation

With lighting mitigation measures in place there should be no significant residual adverse effect on commuting and foraging bat species.

Significance of residual effects after enhancements

The provision of bat boxes fixed to mature nearby trees under the same land ownership could only have a beneficial effect on local bat populations.

4.2.2 Reptiles

Significance of effects prior to mitigation

The development has the potential to result in the small scale loss of suitable reptile habitat and there is a possibility that ground clearance operations could injure or kill small numbers of reptiles. The impact of this habitat loss is unlikely to have a significant adverse effect on local Slow-worm populations; however, the injuring or killing of reptiles is a legal consideration.

Significance of residual effects after mitigation

With a few precautionary mitigation measures in place there should be no significant residual adverse effect on reptiles and the chance of a legal offence occurring will be negligible.

4.2.3 Breeding birds

Significance of effects prior to mitigation

The development will result in a small scale loss of suitable nesting habitat. The impact of this is unlikely to have a significant adverse effect on local bird populations; however, works that have the potential to damage or destroy the (active) nesting site of a bird would constitute a legal offence.

Significance of residual effects after mitigation

With mitigation measures in place (providing replacement nesting sites, timing restrictions, pre-commencement checks and/or obstruction of nesting sites prior to the nesting season) there will be no significant residual adverse effect on nesting birds.

Significance of residual effects after enhancement

The development could result in the provision of new bird nesting opportunities (boxes/cups) for House Martin, House Sparrow, Starling and other crevice nesting bird species. The impact of this could have a beneficial effect on local bird populations.

4.2.4 Hedgehog

Significance of effects prior to mitigation

The development could result in the small scale loss of suitable nesting/hibernating/breeding and foraging habitat. The impact of this is unlikely to have a significant adverse effect on the local Hedgehog population; however, the species is listed as a 'species of principal importance for the purpose of conserving biodiversity' under Section 42 of the NERC Act.

Significance of residual effects after mitigation

With mitigation measures in place (creating nesting habitats and timing any site clearance activities) there will be no significant residual adverse effect on this species.

Significance of residual effects after enhancement

The development could result in the provision of new nesting opportunities (boxes) for this species. Hedgerow planting would provide replacement habitat for this species in the long-term.

4.3 Survey constraints

There were no significant survey constraints.

4.4 Protected species legislation

Bats

All UK bat species are protected under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and The Wildlife and Countryside Act 1981 (as amended). Essentially this makes it unlawful to; deliberately capture, injure or kill a bat; intentionally or recklessly disturb a bat whilst it occupies a roost or deliberately cause disturbance to (a bat) or significant group of bats; damage or destroy the roosting site of a bat; intentionally or recklessly obstruct access to a bat roost.

Notably, legal protection gives absolute protection to bat roosts and their continued functionality, regardless of deliberate, intentional or reckless action. Legal protection also extends to seasonal roosts which are not always occupied by bats throughout the year.

Disturbance caused through excessive noise or lighting and/or alterations to the landscape could potentially impact on bat roosting, foraging and/or commuting habitats and may have legal implications with regards disturbance and roost deterioration laws. It is therefore the duty of the relevant competent authority to take habitat severance, disturbance and land use change issues and their potential for impact on bat populations into consideration when assessing applications for the relevant consent.

Reptiles

The 'widespread' reptile species, namely the Adder, Grass snake, Slow-worm and Common Lizard all receive protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offense to intentionally injure, kill or trade these species.

A defence to the above might be considered '*if the act was the incidental result of a lawful operation and could not have been reasonably avoided*'. However, this defence is unlikely to

be relied on where no reasonable avoidance effort had been made to mitigate potential impacts where reptiles were known or thought likely to occur.

Birds

With the exception of Schedule 1 listed bird species, which receive a higher level of protection against breeding disturbance, all common species of bird are protected during their breeding activities under the Wildlife and Countryside Act 1981

Essentially, this makes it an offence to intentionally take, damage or destroy the nest of any wild bird whilst that nest is occupied or being built; intentionally take or destroy the egg of any wild bird.

4.5 Personnel

Rob Thorne BA (Hons) MRSB has eighteen years' experience surveying sites for development and conservation purposes, covering Ecological Impact Assessment, botanical and vegetation surveys, and is competent to survey for a wide range of protected and priority species. He holds NE and NRW bat (17yrs) and Great Crested Newt (15yrs) survey and numerous mitigation licences and is a long-time member of The Shropshire Bat Group. He holds, or is accredited to work under, survey licences for Barn Owl, White-clawed Crayfish and Dormouse. He is also an experienced reptile and Otter surveyor having undertaken large scale reptile surveys for Natural England (to inform SSSI designations) and the Wildlife Trusts and targeted Otter surveys of watercourses for The Shropshire Mammal Group (as well as for numerous development proposals). He is also experienced in reptile mitigation, habitat management and trans/re-locations and has carried out long-term studies of several Slow-worm populations.

5 PROPOSED AVOIDANCE MEASURES, MITIGATION AND ENHANCEMENTS

5.1 Avoidance measures and mitigation

5.1.1 Protected species

Bats

No further mitigation is required other than the careful vigilance of contractors during the works period; however, in the event that bats, or evidence of bats, are encountered during any part of the development, then there is a legal requirement for works to cease immediately. Natural Resources Wales and/or a suitably qualified ecologist must be

consulted at the earliest opportunity and further surveys will most likely need to be conducted to meet any subsequent licensing requirements.

If bats are discovered these should be covered by the last object removed (where there is no risk of crushing) and any associated coverings nearby must also be replaced. An estimate of the numbers should be **quickly** ascertained by the contractor before the bats are concealed. If grounded bats are discovered these should be covered by a cardboard box until the bat worker arrives.

If any external lighting is proposed, then a lighting plan may be requested as a condition of planning consent. Alternatively, a lighting plan can be submitted with the application to reduce the number of conditions attached to the decision notice. The plan submitted must take into account the following guidance and summary recommendations:

- Bat Conservation Trust (2018) *Bats and artificial lighting in the UK – Bats and the Built Environment Series* Bat Conservation Trust, London
- Bat Conservation Trust (2014) *Interim Guidance: Artificial lighting and wildlife – Recommendations to help minimise the impact of artificial lighting* Bat Conservation, London
- Institute of Lighting Professionals (2011) *Guidance notes for the reduction of obtrusive light* Institute of Lighting Professionals, London

As a matter of best practice, external lighting must be minimised or avoided altogether. Where used, lighting must be fixed on the lowest column practical with light spread kept well below the horizontal using cowls, hoods, screens or simply by downward directionality. LED bulbs with a warm white colour spectrum (2700 Kelvins) must be used to reduce the blue light component most disturbing to bats. PIR systems must be set on a short timer (1 minute maximum) and responsive only to larger moving objects. There must be no allowance for permanent security lighting.

Hedgehog and reptiles

Site clearance operations have the potential to injure or kill reptiles and Hedgehogs and there could be a minor loss of summer foraging habitat and hibernation/brumation habitat.

Prior to the development commencing, all habitats within the site must be cut or strimmed carefully to a height of 150mm and retained in this way. All arisings (existing and those created) must be removed by hand and placed off site. Since there is potential for

Hedgehogs and reptiles to hibernate within the site, habitat manipulation measures (removing stone, log and brash piles) must be carried out between March and October (inclusive) to avoid potential disturbances occurring during this sensitive period.

Breeding birds

The nests of actively breeding birds must be avoided during the works period. If nests are encountered then works must cease or avoid that area until the young have departed the nest. Works that may affect nesting birds (building conversion/extension works) must be carried out as follows:

- Between 31st August and March 1st - outside the breeding season - when birds are unlikely to be nesting. **This is the most suitable form of mitigation in this instance**
- During the nesting season between March 1st and August 31st after an ecologist has inspected the building for signs of nesting birds. **This could result in delays to the project and is not recommended.**
- After bird access into the building has been suitably obstructed prior to March 1st or immediately after a negative nest inspection by a suitably experienced ecologist has been carried out during the breeding season. **This approach could result in delays to the project and is not recommended.**

5.2 Enhancement recommendations

5.2.1 Habitats

Hedgerows, scattered native trees and shrubs can also be planted around the site to attenuate transmitted light and to provide habitat corridors, food sources, foraging areas and nesting habitats for bats and birds.

Native shrub and tree species recommended for garden shrub, tree and hedgerow planting	
Taxon	Common name
<i>Corylus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Hawthorn
<i>Quercus robur</i>	Oak
<i>Carpinus betulus</i>	Hornbeam
<i>Taxus baccata</i>	Yew
<i>Viburnum lantana</i>	Wayfaring tree
<i>Prunus avium</i>	Wild Cherry
<i>Sorbus aucuparia</i>	Rowan
<i>Euonymus europaeus</i>	Spindle
<i>Viburnum opulus</i>	Guelder Rose
<i>Acer campestre</i>	Field Maple

Cornus sanguinea	Dogwood
Ilex aquifolium	Holly
Rosa canina	Dog Rose
Sambucus nigra	Elder
Frangula alnus	Alder Buckthorn

Note: Blackthorn is best avoided as its suckering habit will soon scrub over any margins.

All planting must be carried out within the recognised planting season (November to March) and plants **must** be of local origin/provenance due to the site's sensitive location.

5.2.2 Species

Two woodcrete bat boxes could be mounted on a nearby tree or building.

One Schwegler 1SP House Sparrow nesting terrace could be installed in a suitable location on the existing dwelling. The box could be mounted under the eaves on the north-east side elevation.

The locations of these would typically be provided at the Reserved Matters (or a prior to first occupation condition).

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