
Preliminary Bat Roost Assessment

Meadow Cottage, Stradbroke

for

Larry Verela

19 July 2023

Client

Larry Verela

Planning authority

Mid Suffolk District Council

Time limit of reliance

Please note that the reported surveys were conducted on the date(s) stated in the report and that it represents site conditions at the time of the visit. The findings and recommended mitigation are based on these conditions. If site conditions change materially after the site survey, the original report cannot be relied upon and will need to be updated. Ecological reports and surveys can typically be relied on for 18 to 24 months from the date of survey.

Surveys supporting European Protected Species Mitigation Licence applications must be within the current or most recent survey season for bats (May to September), or within two survey seasons for great crested newts (March to June).

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Signed disclosure

The information, data, advice and opinions provided in this report which I have provided is true and has been prepared in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. I confirm that the opinions expressed are my true and professional bona fide opinions.

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SUMMARY

- Greenlight Environmental Consultancy Ltd. has been commissioned to carry out a Preliminary Bat Roost Assessment for a development at Meadow Cottage, Kersey Hall Lane, Stradbroke, Suffolk, IP21 5LA (grid reference: TM 23030 72823).
- This report outlines the likelihood of bats and barn owls being present and any potential effects of the proposed development on such species.
- The ecology report is required in support of a planning application for the demolition of the existing lean-to on the eastern aspect and replacement with a new single-storey extension.
- The survey and assessment were completed by independent, qualified and experienced ecologists with Natural England survey licences for the relevant protected species.
- The findings of the assessment are that there are no significant ecological constraints that would prevent the proposed works.
- **Although no further surveys/licences are required to inform an ecological impact assessment or mitigation strategy under the current proposed plans, works must take place under the supervision of a qualified ecologist.**
- If the following mitigation and enhancements are incorporated into the proposed layout, there will be a net gain for biodiversity, as is encouraged by the National Planning Policy Framework.

Protected habitats/species	Status	Potential effect	Recommended mitigation and enhancements
Protected sites	No statutory protected sites within 2km.	No significant impacts on protected sites and their qualifying features.	None required.
Bats	Low bat roosting potential in the cottage. Low to moderate value commuting and foraging habitat on site.	Potential disturbance of bat roosts if present in building. Low scale loss and potential light disturbance of commuting and foraging habitats on site.	<u>Mitigation</u> On the first day works are proposed to commence, the tiles will be surveyed for bats using a torch and endoscope. If bats are found to be present and roosting within the building, further activity surveys and a European Protected Species Mitigation Licence (EPSML) may be required for the development. The removal of the tiles on the eastern extension will be undertaken by hand and under watching brief of a licenced bat ecologist. Any lighting schemes will comply with Bat Conservation Trust and CIE 150:2003 guidance.

Protected habitats/species	Status	Potential effect	Recommended mitigation and enhancements
			Installation of an external bat box on either the eastern or southern aspect of the cottage prior to works commencing. If proposed works change to incorporate further areas of the cottage, further activity surveys and an EPSML may be required for the development.
Breeding birds	Nesting habitats for hedgerow, tree and building nesting birds present on site, including potential breeding habitat for Amber listed species. No suitable barn owl foraging habitat on site.	Low scale loss of nesting habitat on site. Potential disturbance to breeding birds.	<u>Mitigation</u> Works to any hedgerow, trees and buildings on site to be conducted outside bird nesting season or under watching brief of ecologist if during nesting season. <u>Enhancement</u> Installation of one small bird box onsite.
Other animals	N/A	Potential harm to animals.	<u>Mitigation</u> Rough sawn planks will be placed inside any open excavations. Construction materials will be stored off the ground on pallets and waste materials in skips.

1. METHOD

- 1.1. A walkover of the site was conducted on 5th July 2023 by Lucy Reed and Daniel Howes – independent, qualified and experienced ecologists. Survey conditions were as follows: 19°C, 8mph wind, sunny intervals and dry.
- 1.2. All survey methods were carried out in accordance with the most up to date good practice guidance for the relevant protected species. Please refer to Appendix A for the full methodology and species breakdown.

2. SITE CONTEXT

Location

- 2.1. The general location of the site is shown in Figure 1 below.
- 2.2. The site is situated to the south of the village of Stradbroke, Suffolk with the A143 located approximately 7km north. The closest town of Eye is located approximately 8km west.
- 2.3. The site is enclosed by grassland. The wider surroundings are comprised of a mixture of residential dwellings, commercial buildings, small blocks of woodland and arable fields lined with mature trees and hedgerows.

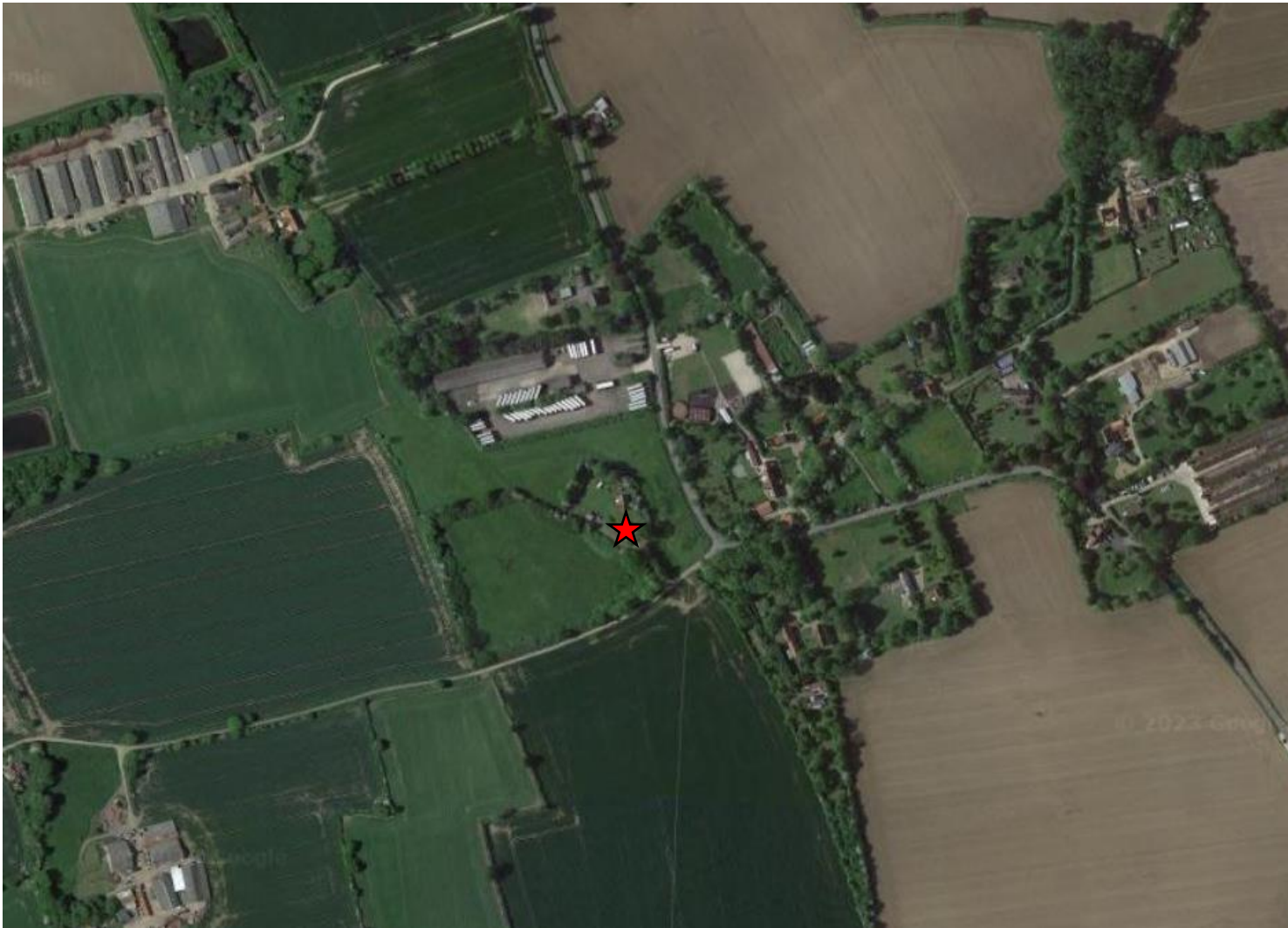


Figure 1
Satellite image of site surroundings, site indicated by red star.
Image © Google, date accessed 12/0723

3. DESCRIPTION OF THE DEVELOPMENT

- 3.1. The proposals are for the demolition of the existing lean-to on the eastern aspect and replacement with a new single-storey extension.

4. PROTECTED SITES

Statutory

- 4.1. There are no statutory protected sites located within 2km of the site.
- 4.2. The proposed development falls outside of all Sites of Special Scientific Interest (“SSSI”) Impact Risk Zones.

5. PROTECTED AND NOTABLE SPECIES

Desktop review

Protected species licences

- 5.1. A 2km search on <http://www.magic.gov.uk/> indicated no records of granted European Protected Species (“EPS”) Mitigation Licences.

Bats

Building one – Meadow cottage

- 5.2. The cottage is a timber-framed, rendered building with timber weatherboarding on the eastern aspect. There is a pitched clay pantile roof and timber framed windows and doors and timber soffits and fascias. The cottage has a single-storey lean-to on the eastern aspect and a small porch on the southern aspect.
- 5.3. The cottage has undergone some renovation works including patch repairs to the roof. As such the tiles are predominately tight, with only a small number of lifted tiles predominately on the northern aspect. The fascias, soffits and weatherboarding are all close fitting or with gaps filled with expanding foam.
- 5.4. The lean-to on the eastern aspect is single storey with a low-pitched clay pantile roof. Gaps along the bottom row have been filled with expanding foam but a small number of tiles predominantly along the second and third rows are lifted. These tiles were inspected with torchlight and no signs of bats were observed. The northern doorway of the lean-to is boarded up with chipboard, which is tightly fitted.
- 5.5. Internally, the cottage does not feature an enclosed roof void with the living space built into the roof.
- 5.6. The cottage is assessed as **low** summer and **negligible** hibernation roost suitability for bats due to its location, roosting features and signs of bats. Please note, the building is occupied during winter months and features central heating, which would create fluctuations in temperature and humidity.



Photo 1, south and west aspects of the cottage, looking northeast.



Photo 2, north and east aspects of the cottage, looking southwest.



Photo 3, looking northwest towards the eastern extension.



Photo 4, example of lifted tiles, predominately on the second and third rows of the low-pitched lean-to.

Foraging and commuting links

- 5.7. The site itself provides **low** to **moderate** value foraging habitat for bats along the boundary hedgerows.
- 5.8. The landscape immediately adjacent to the site is considered of **low** to **moderate** value for foraging and commuting bats, with linked hedgerows and treelines providing links to the wider landscape.

Birds

- 5.9. Birds in the UK are classified into three categories of conservation importance - red, amber and green. Factors such as global threat level, population decline, breeding population decline and contraction of breeding range are taken into account to determine classification.
- 5.10. The following bird species were observed during the site visit:

Amber listed:

Dunnock	<i>Prunella modularis</i>
Woodpigeon	<i>Columba palumbus</i>

Green listed:

Blackbird	<i>Turdus merula</i>
Blue tit	<i>Cyanistes caeruleus</i>
Chaffinch	<i>Fringilla coelebs</i>
Goldfinch	<i>Carduelis carduelis</i>
Great tit	<i>Parus major</i>

- 5.11. The site provides suitable nesting habitats for hedgerow, tree and building nesting species.
- 5.12. The site does not provide potential breeding habitat for the Red listed species.
- 5.13. The site provides potential breeding habitat for the following Amber listed species: dunnock and woodpigeon.
- 5.14. No signs of barn owl were found on the site and no foraging habitat is present.

6. DISCUSSION AND CONCLUSIONS

Protected sites

- 6.1. The development footprint falls outside all identified protected sites (statutory). There are no statutory protected sites located within 2km of the site.
- 6.2. The proposed development falls outside of any SSSI Impact Risk Zones.
- 6.3. The proposed development is expected to have no effects on statutory protected sites or their qualifying features, owing to its relatively small scale, distance to protected sites and limited predicted impacts beyond the area of works.

Bats

- 6.4. The proposed works are expected to result in a low scale loss of potential roosting, foraging and commuting habitats for bats through the demolition of the eastern lean-to and replacement with a new extension.
- 6.5. Although the cottage has low roost suitability for bats with a small number of lifted tiles, the proposed works only involve the demolition of the eastern lean-to to make way for a new single-storey extension. The potential roosting features on the lean-to were carefully inspected with a torch, with no evidence of bats present and comprised of a handful of lifted tiles on the bottom row of a low-pitched roof, further reducing roost suitability. We therefore consider that the mitigation provided below is sufficient, given the evidence available and that the proposed works will have a minimal effect on any potential roosting bats.
- 6.6. The following mitigation will be implemented to avoid impacts on bats from the proposed works:
 - i. On the first day works are proposed to commence, the tiles which will be affected by the proposed works will be surveyed for bats using a torch and endoscope. If bats are found to be present and roosting within the building, further activity surveys and a European Protected Species Mitigation Licence may be required for the development.
 - ii. The removal of the tiles on the eastern extension will be undertaken by hand and under watching brief of a licenced bat ecologist. In the unlikely event that any signs of bats or individual bats are found, work will cease immediately and advice provided on the appropriate mitigation.
 - iii. Any lighting schemes will follow guidance from the Bat Conservation Trust and CIE 150:2003. Warm-white (long wavelength) lights with UV filters will be fitted as close to the ground as possible. Lighting units will be angled below 70° and equipped with movement sensors, baffles, hoods, louvres and horizontal cut off units at 90°.

- iv. One external bat box will be installed on either the eastern or southern aspect of the cottage prior to works commencing (Appendix D for examples).
 - v. If proposed plans change to incorporate further areas of the cottage, further activity surveys and a European Protected Species Mitigation Licence may be required for the development.
- 6.7. Building Regulations state that the energy efficiency of buildings must be improved where possible and that contractors must assess the condensation risk within the roof space and make appropriate provisions in line with BS 5250:2011. This British Standard states that both High Resistance (bitumen type 1F) and Low Resistance (non-bitumen coated roofing membranes (NBCRM)) underlays are acceptable as long as appropriate ventilation is provided. As NBCRM are proven to entangle bats through regular contact, which also compromises the integrity of the membrane, the Bat Conservation Trust recommend only NBCRM that have passed the snagging propensity test (must be supplied/installed with the necessary certification) or traditional type 1F bitumen are used.
- 6.8. After these precautionary mitigation measures, we predict no impact on bats as a result of the development plans. We consider that a European Protected Species Licence will not be required, and no further surveys are necessary.

Birds

- 6.9. The proposed works are expected to result in a low scale loss of bird nesting habitat through the demolition of the lean-to.
- 6.10. As a precautionary measure, the following mitigation will be implemented to avoid impacts on birds from the proposed works:
- i. Any works affecting bird nesting habitat such as management of hedgerows, trees or buildings would ideally need to be conducted outside the main nesting season. If work is planned during the bird nesting season (between 1st March and 31st July), then a precautionary check of all habitats will be conducted by a qualified ecologist immediately prior to starting any work. If any nesting birds are found, an appropriate protection zone from the nest will be required and will be maintained until the young have fledged.
- 6.11. As enhancements, the following will be implemented:
- i. One small bird box installed on a suitable tree onsite (Schwegler 1B or 2H Nest Box – Appendix D).

Other animals

- 6.12. General mitigation to protect wildlife during the construction period are as follows:
- i. Any excavations will have a rough sawn plank placed inside to act as a ramp to allow any animals that have fallen in to escape. The excavations will be checked each morning works are scheduled for, to remove any animals trapped.
 - ii. Construction materials will be stored off the ground on pallets and waste materials in skips, to prevent providing shelter for animals and subsequent harm when materials are moved.

7. BIBLIOGRAPHY

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Appendix A

Methods

Desktop Review

A desktop review of published data, such as records of protected sites and species, OS maps and satellite images has been carried out. A data search was carried out using www.magic.gov.uk for statutory protected sites and habitats.

A field survey visit was conducted to confirm the findings of the desktop review and to record habitats and species located on site.

Equipment available for use during the survey were binoculars, ladders, torches, endoscope and a digital camera.

Bats

An assessment of the habitats on and surrounding the site for bat interest was made, in accordance with latest bat survey guidelines (Collins, 2016).

The building(s) on site was assessed for its potential to support roosting bats and involved a thorough internal and external search of all suitable cavities, holes and crevices. All suitable areas, including objects, ledges and floors were inspected for the following signs:

- Bat droppings
- Stains around roosting places and entrance points
- Urine marks
- Prey remains
- Areas devoid of cobwebs
- Live or dead bats
- Suitable cracks and crevices for bats to enter

In exposed conditions, the signs of bat usage such as droppings and urine marks can be obliterated by heavy rain.

An evaluation system was applied to the building(s) using the following criteria:

- **Negligible roost suitability for bats.** These buildings have no potential roosting features for bats, or very few or minor features in an isolated or unsuitable location such that the presence of a bat roost is considered highly unlikely. Such buildings usually fall into two main types: generally, well maintained without cracks and crevices, no gaps between bargeboard or soffit and wall, or without an attic space; or those which contain some or all of the above features, but are both draughty and thick in cobwebs or contain strong odours such as solvents, diesel etc. It must be borne in mind that a building from this latter group can become suitable for bats following refurbishment. This often happens to houses once the attic space has been cleaned and under-felted prior to timber treatment. When no suitable habitats

for bats are found, no further surveys or European Protected Species (“EPS”) mitigation licence are required.

- **Low roost suitability for bats.** Buildings in this category have one or more potential roost sites that could be used by individual bat opportunistically. These buildings do not however provide suitable conditions (such as space, shelter, temperature, humidity, or light and noise disturbance) to be used on a regular basis by a large number of bats. Structures with low roost suitability for bats will require **one dusk emergence or one dawn re-entry survey** conducted between May and August to assess their current use by bats.
- **Moderate roost suitability for bats.** These buildings contain one or more potential roosting sites which could be regularly used by bats owing to their size, shelter, protection and conditions. These buildings are however unlikely to support a roost of high conservation status (maternity roost or hibernation roost). Structures with moderate roost suitability for bats will require two surveys, **one dusk emergence and one dawn re-entry survey** conducted between May and September with at least one of the surveys undertaken between May and August, to assess their current use by bats.
- **High roost suitability for bats.** This group includes buildings with one or more potential roost sites which are obviously suitable for use by a larger number of bats on a regular basis and potentially for longer periods of time owing to their size, shelter, protection and conditions. These buildings may support a roost of high conservation status (maternity roost or hibernation roost) and will require three activity surveys to assess their current use by bats. The surveys should include at least **one dusk emergence and** at least **one dawn re-entry survey** (the third survey can either be at dusk or dawn) and should be conducted between May and September with at least two of surveys undertaken between May and August.

The habitats on and around the site were assessed for their commuting and foraging potential for bats. An evaluation system was applied to the commuting and foraging potential using the following criteria.

- **Negligible commuting and foraging potential for bats.** Habitat features unlikely to be used by commuting or foraging bats.
- **Low commuting and foraging potential for bats.** Habitats that could be used by a small number of commuting or foraging bats such as, a gappy hedgerow, unvegetated stream or lone trees, but are isolated and not well connected to the surrounding landscape.
- **Moderate commuting and foraging potential for bats.** Habitats that are continuous and connected to the wider landscape such as, lines of trees, scrub, linked back gardens, grasslands and water features.
- **High commuting and foraging potential for bats.** Habitats that are continuous and connected to the wider landscape such as, river valleys, watercourses, hedgerows, lines of trees, deciduous woodland, and grazed parkland. These habitats are likely to be used regularly by commuting or foraging bats and are likely to be close to, or connected to, known roosts.

Birds

The site and its surrounding habitats were assessed for their potential to support breeding birds. Bird nesting habitat could include grassland, hedgerows, scrub, trees and buildings.

Bird species noted during the site visit were recorded. Trees, buildings and grassland were checked for use by barn owls, swifts and skylarks.

Appendix B Legislation

European Protected Species

The Ramsar Convention (1971) on Wetlands of International Importance especially as Waterfowl Habitat seeks to promote the conservation and wise use of wetlands, particularly those which support internationally significant numbers of water birds. This is achieved through the designation of Ramsar Sites.

The European Community Council Directive on the Conservation of Wild Birds (79/409/EEC) sets out general rules for the conservation of all naturally occurring wild birds, their nests, eggs and habitats. It requires member states to designate Special Protection Areas (SPAs) for protection of certain species.

The main piece of legislation relating to nature conservation in Great Britain is **The Wildlife and Countryside Act 1981 (as amended)**. This Act is supplemented by provision in **The Countryside and Rights of Way (CROW) Act 2000** and **The Natural Environment and Rural Communities Act 2006 (in England and Wales)**. This act provides varying degrees of protection for the listed species of flora and fauna, including comprehensive protection of wild birds, their nests and eggs.

The Countryside and Rights of Way Act 2000 strengthens the protection given to SSSIs. It revises the procedures for the notification of SSSIs and for the consenting of operations which may damage the special interest of a SSSI. Local authorities have a duty to take steps, consistent with the proper exercise of their functions, to further the conservation and enhancement of SSSIs. The act also strengthens the existing provisions of the Wildlife and Countryside Act 1981 for the enforcement of wildlife legislation, including a new offence of "recklessly" destroying or damaging the habitats of certain protected species.

UK wildlife is also protected under **The Conservation (Natural Habitats &c.) Regulations 1994** (which were issued under the European Communities Act 1972), through inclusion on Schedule 2. In 2017, these Regulations, together with subsequent amendments, were consolidated into **The Conservation of Habitats and Species Regulations 2017**.

The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites. The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 5. However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Licenses may be granted for a number of purposes but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned.

National Planning Policy - National Planning Policy Framework (NPPF)

Section 15 of the National Planning Policy Framework 2021 (NPPF): Conserving and enhancing the natural environment states that 'planning policies and decisions should contribute to and enhance the natural and local environment by ... minimising impacts on and providing net gains for biodiversity.'

Office of The Deputy Prime Minister (“ODPM”) Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their impact within the planning system.

Paragraph 98 of Circular 06/2005 states that ‘the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat’.

Implications of legislation and policies

Without this ecological assessment, the potential developer would be unable to demonstrate due diligence in his responsibilities. Furthermore, the local planning authority would not have been provided with sufficient information for a planning decision to be made. This could result in non-determination or refusal of the application.

With legal responsibilities and planning implications, it is essential that any ecological assessment of a potential development site, including the area of this report, must determine the possible presence or absence of any protected species as part of any planning development consideration.

Where mitigation or compensation measures are required to ensure that no significant impacts will result on biodiversity from the development, the proposed measures may be secured through planning conditions or by EPS Mitigation Licences from Natural England.

Bats

All bat species in Britain are protected under the Wildlife and Countryside Act 1981 through inclusion on Schedule 5. They are also protected under the Conservation (Natural Habitats &c.) Regulations 1994 (which were issued under the European Communities Act 1972), through inclusion on Schedule 2. On 30th November 2017, these Regulations, together with subsequent amendments, were consolidated into the Conservation of Habitats and Species Regulations 2017.

European protected animal species (“EPS”) and their breeding sites or resting places are protected under Regulation 42. It is an offence for anyone to deliberately capture, injure or kill any such animal or to deliberately take or destroy their eggs. It is an offence to damage or destroy a breeding or resting place of such an animal. It is also an offence to have in one's possession or control, any live or dead European protected species.

The threshold above which a person will commit the offence of deliberately disturbing a wild animal of a European protected species has been raised. A person will commit an offence only if he deliberately disturbs such animals in a way as to be likely significantly to affect (a) the ability of any significant groups of animals of that species to survive, breed, or rear or nurture their young, or (b) the local distribution of abundance of that species. The existing offences under the Wildlife and Countryside Act (1981) as amended which cover obstruction of places used for shelter or protection (for example, a bat roost), disturbance and sale still apply to European protected species.

This legislation provides defences so that necessary operations may be carried out in places used by bats, provided the appropriate Statutory Nature Conservation Organisation (in England this is Natural England) is notified and allowed a reasonable time to advise on whether the proposed operation should be carried out and,

if so, the approach to be used. The UK is a signatory to the Agreement on the Conservation of Bats in Europe, set up under the Bonn Convention. The Fundamental Obligations of Article III of this Agreement require the protection of all bats and their habitats, including the identification and protection from damage or disturbance of important feeding areas for bats.

Barn Owls

The Habitats Regulations (1994), as amended, states that a person commits an offence in the case of Barn Owl only if this species is disturbed in the breeding season. This applies equally to all those bird species listed under Schedule 1.

Breeding Birds

It is an offence to kill, injure or take any wild bird; take, damage or destroy the nest of any wild bird while that nest is in use or being built (even of "pest" species); take or destroy the eggs of any wild bird.

Natural England Licensing - EPS Mitigation Licensing

Licences can be obtained from the Wildlife Management and Licensing Service at Natural England to allow certain activities that would otherwise constitute an offence, for the purposes of development (e.g. destruction of a bat roost, loss of great crested newt aquatic and terrestrial habitat, etc).

Appendix C

Native species suitable for planting and sowing

Plants should be obtained from specialist nurseries and preferably be of local genetic stock.

Key: (f) – fruit and berry species; (e) – evergreen species; (se) semi-evergreen species; (d) – deciduous species

Trees	
Alder (d)	<i>Alnus glutinosa</i>
Apples (f; d)	<i>Malus spp.</i> (local varieties)
Ash (d)	<i>Fraxinus excelsior</i>
Beech (d)	<i>Fagus sylvatica</i>
Bird cherry (f; d)	<i>Prunus padus</i>
Elder (f; d)	<i>Sambucus nigra</i>
Elm (d)	<i>Ulmus procera</i>
Field maple (d)	<i>Acer campestre</i>
Pedunculate oak (d)	<i>Quercus robur</i>
Rowan (f; d)	<i>Sorbus aucuparia</i>
Pears (f; d)	<i>Pyrus spp.</i>
Silver birch (d)	<i>Betula pendula</i>
Small-leaved lime (d)	<i>Tilia cordata</i>
White willow (d)	<i>Salix alba</i>
Wild cherry (f; d)	<i>Prunus avium</i>
Walnut (d)	<i>Juglans regia</i>

Shrubs	
Blackthorn (f; d)	<i>Prunus spinosa</i>
Buckthorn (f; d)	<i>Rhamnus catharticus</i>
Crab apple (f; d)	<i>Malus sylvestris</i>
Dog rose (f; d)	<i>Rosa canina</i>
Dogwood (f; d)	<i>Cornus sanguinea</i>
Field maple (d)	<i>Acer campestre</i>
Guelder-rose (f; d)	<i>Viburnum opulus</i>
Hawthorn (f; d)	<i>Crataegus monogyna</i>
Hazel (d)	<i>Corylus avellana</i>
Holly (e)	<i>Ilex aquifolium</i>
Honeysuckle (f; d)	<i>Lonicera periclymenum</i>
Spindle (f; d)	<i>Euonymus europaeus</i>
Wild privet (f; se)	<i>Ligustrum vulgare</i>
Yew (f; e)	<i>Taxus baccata</i>

Flowering plants	
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Black knapweed	<i>Centaurea nigra</i>
Common cat's-ear	<i>Hypochoeris radicata</i>
Common sorrel	<i>Rumex acetosa</i>
Common vetch	<i>Vicia sativa</i>
Cowslip	<i>Primula veris</i>
Field scabious	<i>Knautia arvensis</i>
Foxglove	<i>Digitalis purpurea</i>
Lady's bedstraw	<i>Galium verum</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Primrose	<i>Primula vulgaris</i>
Red clover	<i>Trifolium pratense</i>
Selfheal	<i>Prunella vulgaris</i>
Sweet violet	<i>Viola odorata</i>
Wild daffodil	<i>Narcissus pseudonarcissus</i>
Yarrow	<i>Achillea millefolium</i>

Grasses	
Common bent	<i>Agrostis capillaris</i>
Crested dog's-tail	<i>Cynosurus cristatus</i>
Meadow fescue	<i>Festuca pratensis</i>
Red fescue	<i>Festuca rubra</i>
Rough meadow-grass	<i>Poa trivialis</i>
Small timothy	<i>Phleum bertolonii</i>
Smooth meadow-grass	<i>Poa pratensis</i>
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>
Yellow oat-grass	<i>Trisetum flavescens</i>

Flowering Lawn Mixture – EL1 Emorsgate Seeds

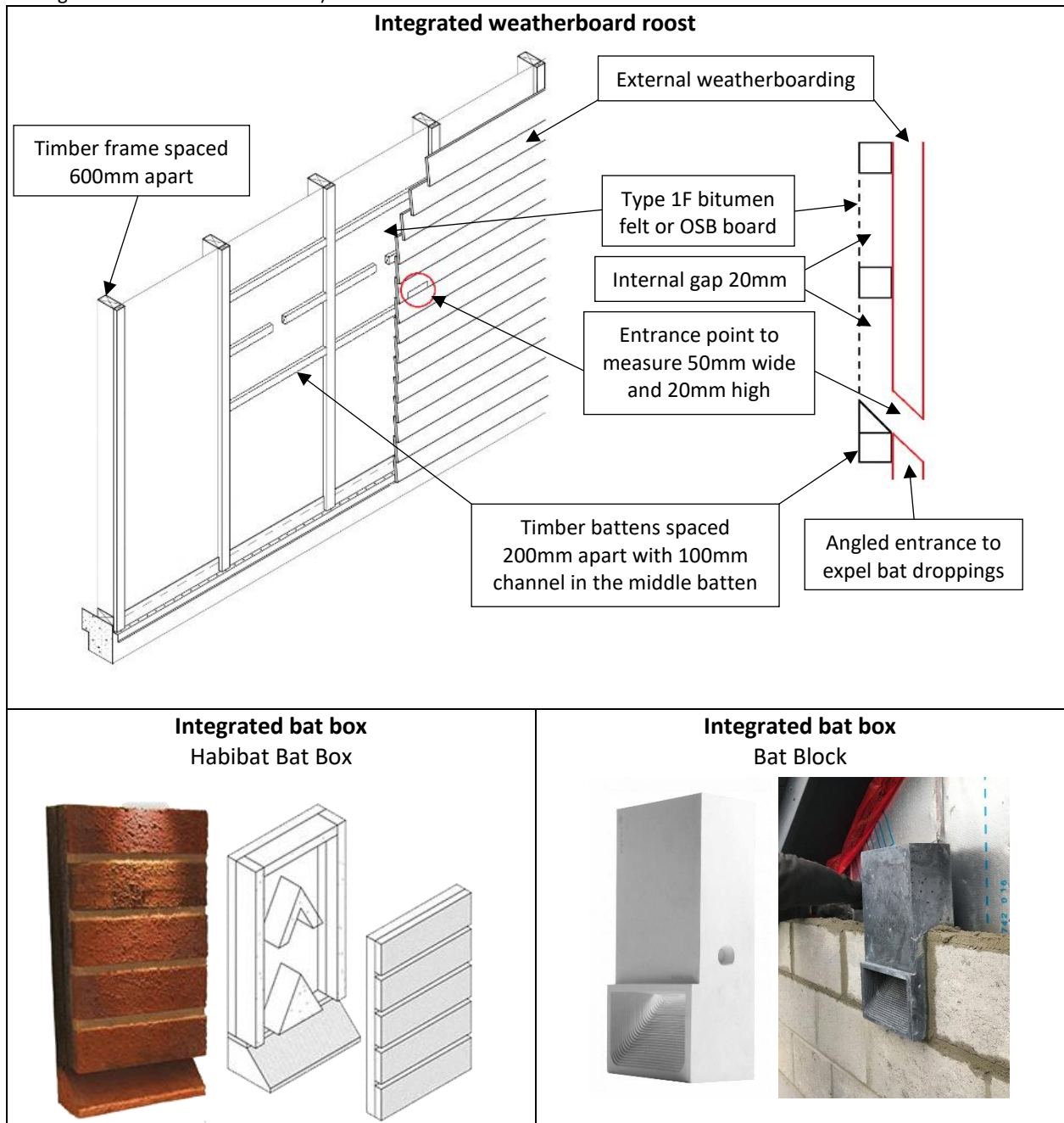
<https://wildseed.co.uk/product/mixtures/complete-mixtures/special-habitat-mixtures/flowering-lawn-mixture/>

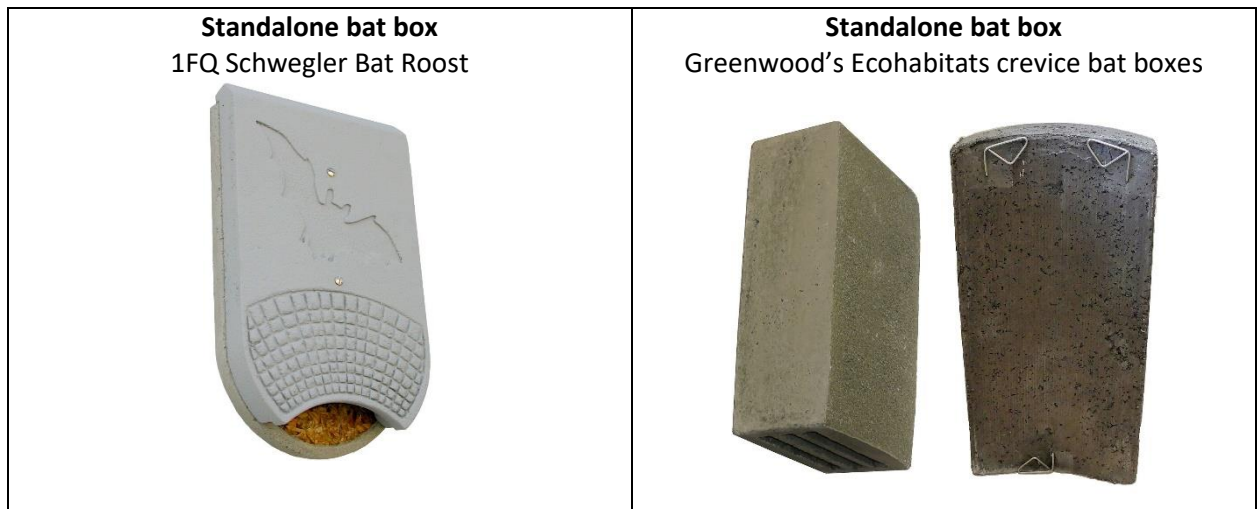
Wildflower Meadow Mixture – EM3 Emorsgate Seeds

<https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures/special-general-purpose-meadow-mixture/>

Appendix D Examples of bat and bird boxes

(images sourced from www.nhbs.com, www.habibat.co.uk, www.manthorpe.co.uk, www.barnowltrust.org.uk and www.greenwoodsecohabitats.co.uk)





Recommendations for installing bat boxes:

(Sourced from Bat Conservation Trust www.bct.org)

Ideally, several boxes should be put up facing in different directions to provide a range of conditions.

Locate boxes:

- Where bats are known to feed close to hedges and treelines (some bats use a treeline or hedgerow for navigation, putting boxes near these features may help the bats find the box).
- On trees: boxes should be placed on the trunk of a mature tree, where there is a clear flight line/accessible entrance.
- On buildings: boxes should be placed as close to the eaves as possible.
- As high as possible (ideally, at least 3 to 4m above the ground, where safe installation is possible).
- In sunny places, sheltered from strong winds (usually between south-west and south-east).

Make sure the boxes are secured.

Boxes can be installed on trees using adjustable ties to avoid damaging the trees. Otherwise, timber screw bolts or nails can be used. Aluminium alloy nails are less likely to damage saws and chipping machinery.

Bats need time to find and explore new homes, and it may be several months or even years before boxes have residents. Once bats find a place they want to live they can return over and over again. Droppings on the landing area, urine stains around the lower parts of the box and chattering noises from inside on warm afternoons and evenings are signs of occupation.

<p>Small bird nesting box 1B Schwegler Nest Box</p> 	<p>Small bird nesting box 2H Schwegler Robin Box</p> 
<p>Integrated swift box Swift Block</p> 	<p>Integrated swift box Manthorpe Swift Brick</p> 
<p>Integrated sparrow terrace 1SP Schwegler Sparrow Terrace</p> 	<p>Integrated sparrow terrace Terraced Sparrow Box</p> 

Recommendations for installing bird boxes:

(Sourced from British Trust for Ornithology www.bto.org, Manthorpe www.manthorpe.co.uk and Barn Owl Trust www.barnowltrust.org.uk)

The highest priority when siting a nest box must be to provide a safe and comfortable environment in which birds can nest successfully.

Tips for putting up a nest box:

- Boxes should be sited 1-3m from the ground, ideally on tree trunks but can be placed on the side of a shed or wall. Avoid areas where foliage obscures the entrance hole.
- Don't place boxes too close to another nest box of the same type, as this may promote aggressive behaviour between neighbours.
- Shelter your nest box from prevailing wind, rain and strong sunlight. The box should face between north and east, and angled vertically or slightly downwards to prevent rain entering.
- Make sure cats cannot get into the box.
- Keep nest box away from bird feeders.
- Use galvanized or stainless steel screws or nails. If fixing boxes to trees, galvanised wire can be used to tie the box to the trunk or hang it from a branch. Make sure to regularly inspect these fittings (every two or three years) to ensure the box remains securely attached.

Tips for putting up house sparrow terraces and swift bricks/boxes:

- Locate ≥ 5 m high on the gable wall of the property and above the level of the insulation zone.
- Where possible, install in locations that are unlikely to receive large amounts of direct sunlight during the hottest times of the day, ideal places include below the overhang of the verge and barge board.

Tips for putting up barn owl boxes:

- The box should be installed on a building or tree in open farmland, on an isolated hedgerow or along the edge of a woodland.
- Boxes should be sited at least 3m from the ground, with a clear flight-path for entry and exit.
- Where possible, install boxes facing suitable habitat and ideally away from the prevailing wind.
- Nest boxes should ideally be installed in pairs.

