MHECONSULTING
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Ecology Report

PROPOSED CART LODGE
Targuin Barn, Neaves Lane,Stradbroke

February 2024

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Contents

Executive Summary

MHE Consulting Ltd were instructed to undertake an ecological survey at land at Tarquin Barn, Neaves Lane, Stradbroke (TM 23485 72984), where a householder application has been submitted to Mid Suffolk District Council for a proposed detached garage/workshop/garden store.

The application site comprises an area of bare ground with some short grassland to the south by the converted barn. An existing access will be used off Neaves Lane.

Two ponds are located within 100m of where the garage is proposed which could support amphibians including great crested newts (*Triturus cristatus*) (EPS; WCA5; S. 41), but the site supports no suitable refuge habitat and negligible terrestrial foraging habitat. Common reptiles are not likely to be present though grass snake (*Natrix helvetica*) could potentially pass through the site if they hunt in the ponds.

Adjacent boundary hedgerows and scattered trees provide potential nesting, foraging and song perch habitat for a range of bird species. They also provide bat commuting and foraging habitat, whilst they may also support notable invertebrates such as the white-letter hairstreak butterfly (*Satyrium w-album*) butterfly the caterpillars of which feed on elm (*Ulmus procera*). Areas of lawn provide habitat for foraging hedgehog (*Erinaceus europaeus*).

Recommendation are made to avoid and mitigate potential ecological impacts including timing of work and implementation of good working practice. Ecological enhancements are recommended to deliver a Biodiversity Net Gain. Standard planning conditions are recommended to secure the measures proposed.

1 Introduction

1.1 BRIEF

MHE Consulting Ltd were instructed to undertake an ecological survey at land at Tarquin Barn, Neaves Lane, Stradbroke (Figure 1, TM 23485 72984), where a householder application has been submitted to Mid Suffolk District Council for a proposed detached garage/workshop/garden store.

The ecological survey and this report are necessary to:

- Identify the existing ecological value of the site;
- Identify the need for further (e.g. protected species) surveys;
- Assess any potential adverse impacts of the proposed development on ecological features of the site or nearby designated sites;
- Make recommendations for mitigation (if required); and
- Identify opportunities for biodiversity enhancements and, consistent with national and local planning policy, net gains.

This report will be used to develop the proposals as necessary, and to form the basis for the submission of biodiversity information with any planning application. It reflects the site at the time of the survey and should be reviewed and revised as appropriate.

1.2 SITE LOCATION AND DESCRIPTION

The application site (Figure 1) comprises an area of bare ground (Photo 1) with some short grassland (Photo 2) to the south by the converted barn (Photo 3). An existing access will be used off Neaves Lane (Photo 4).

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2 Planning policy and legislation

2.1 INTRODUCTION

This chapter summarises the key legislation and policies relevant to assessing the biodiversity impacts of the scheme upon habitats and species.

2.2 PLANNING POLICY

2.2.1 National Planning Policy Framework (NPFF)

The National Planning Policy Framework was originally published in 2012 and recently revised on 19 December 2023, this document replaces the previous version of the NPPF, published in September 2023. The document sets out the Government's planning policies for England and provides guidance on how these policies are expected to be applied. It provides a framework for, and must be taken account of within, locally prepared plans for housing and other development, and is a material consideration in planning decisions.

An overarching objective of the NPPF, which aims to secure net gains, is to contribute to protecting and enhancing the natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

The full NPPF is available to view online using the gov.uk website: https://assets.publishing.service.gov.uk/media/65829e99fc07f3000d8d4529/NPPF_December_2023.pdf

Policies of particular relevance to development and biodiversity include: 180, 186, 187 and 188, which are listed below.

180. Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

186. When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

187. The following should be given the same protection as habitats sites:

a) potential Special Protection Areas and possible Special Areas of Conservation;
b) listed or proposed Ramsar sites; and
c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

188. The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects) unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

2.2.2 *Local Plan*

Adopted local plans provide the framework for development across England, and include policies related to conserving and enhancing the natural environment. Existing planning policies and supporting documents, including the adopted joint local plans, that are used to plan, deliver and monitor development across the Babergh and Mid Suffolk District Council areas can be found at:
https://www.midsuffolk.gov.uk/planning/planning-policy/adopted-documents/babergh-district-council/babergh-local-plan/
https://www.midsuffolk.gov.uk/web/mid-suffolk/w/mid-suffolk-local-plan

These policies encourage environmental net gains from new development through the creation of new habitats and green infrastructure. Both policies also implement the

mitigation hierarchy to avoid, mitigate and compensate for any losses due to new development. However, neither policy specifies the need for the 10% biodiversity net gain. Net gains for biodiversity are secured as per para 180 d) of the NPPF (2023).

2.2.3 *Biodiversity Net Gain Interim Planning Guidance Note for Suffolk*

A recently published Interim Biodiversity Net Gain Planning Guidance Note for Suffolk[1] provides detailed guidance for applicants and decision makers in local authorities across Suffolk during the interim period before November 2023 when a measurable biodiversity net gain of at least 10% will be a mandatory requirement for all major developments from 12 February 2024 (and minor developments from 2 April 2024), with some exceptions (see Section 2.3.1 - Environment Act (2021) below).

Householder applications do not require the completion of the Statutory Biodiversity Metric (major applications) or the Small Sites Metric (small sites). Therefore, a BNG assessment is not required.

2.3 LEGISLATION

2.3.1 *Environment Act 2021*

The Environment Act received royal assent in November 2021. The Act will set clear statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water and waste, and includes an important new target to reverse the decline in species abundance by the end of 2030. Of particular relevance to development planning will the requirement for all new development to deliver a quantified (10%) Biodiversity Net Gain

2.3.2 *Natural Environment and Rural Communities (NERC) Act 2006*

Section 40 places a duty on every public body in exercising its functions, to have regard to the purpose of conserving biodiversity; this includes restoring or enhancing populations or habitats. A key purpose of this duty is to embed consideration of biodiversity as an integral part of policy and public-sector decision making. S*pecies and habitats of principal importance* in this respect are those published under Section 41 ("S. 41") of the NERC Act 2006.

2.3.3 *Wildlife and Countryside Act 1981 (as amended)*

Rare and scarce habitats and species are afforded varying levels of protection under the Wildlife and Countryside Act 1981 (as amended) (hereafter "WCA 1981"). Some species and groups are afforded full protection (e.g. Schedule 1 bird species, bats), whilst others receive partial protection (e.g. widespread reptiles). Section 3.1 provides further detail relevant to this scheme. Species afforded legal protection are referred to by their relevant schedule ("Sch.") within the act, i.e. "Sch. 1" (birds), "WCA5" (other animals), or "Sch. 8" (plants).

Invasive plant species such as Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzanium*) are listed on Schedule 9 of the WCA 1981. It is an offence to plant or otherwise cause these species to grow in the wild and this includes the development of sites such that the plant colonises land owned by a third party.

[1] https://democracy.ipswich.gov.uk/documents/s36985/PD-22-14%20Appendix%201%20-%20Suffolk%20Wide%20BNG%20Guidance%20Document.pdf

2.3.4 *The Countryside and Rights of Way (CROW) Act 2000*

The CROW Act 2000 strengthened and updated elements of the WCA 1981, and gave a statutory basis to biodiversity conservation, requiring government departments to have regard for biodiversity in carrying out its functions and to take positive steps to further the conservation of listed habitats and species. It strengthened the protection of SSSI and threatened species. Many of its provisions have been incorporated as amendments into the WCA 1981 and some have been superseded by the NERC Act 2006.

2.3.5 *The Conservation of Habitats and Species Regulations 2017*

The Conservation of Habitat and Species Regulations 2017 (as amended) transposed the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Directive 2009/147/EC) into UK law. They have been recently amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019, which continue the same provision for European Protected Species, licensing requirements, and protected areas (National Site Network) after Brexit.

Under the Regulations, competent authorities i.e. any Minister, government department, public body, or person holding public office, have a general duty, in the exercise of any of their functions, to have regard to the Regulations.

2.3.6 *Protection of Badgers Act 1992*

The Protection of Badgers Act 1992 (hereafter “PBA 1992”) consolidates and improves upon the previous Badgers Act 1973, Badgers Act 1991, and Badgers (Further Protection) Act 1991. Under the PBA 1992 (except when holding a licence to do so) it is illegal for a person to willfully; kill, injure, take, posses, sell, or otherwise cruelly treat a badger. It is also illegal to dig out, damage, destroy, or obstruct entry to setts (including by use of dog(s)). Further information on offences, exceptions, and penalties are listed on the PBA 1992 on legislation.gov.uk.

3 Methodology

3.1 INTRODUCTION

This report has been produced with reference to relevant guidance, most notably:

- Guidelines for Ecological Report Writing (CIEEM, 2017);
- Biodiversity – Code of Practice for Planning and Development (BS 42020:2013[2]);
- Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018); and
- Biodiversity Net Gain: good practise principles for development (CIRIA, CIEEM and IEMA, 2016).

The following sections summarise the approaches used to review existing data, and to undertake appropriate field surveys to scope and inform an Ecological Impact Assessment (EcIA) for the scheme. Where further surveys are considered necessary, this is identified in section 5.

3.2 DESK SURVEY

The following data sources were consulted to assess the potential for the application site to support protected or notable habitats/species:

- Aerial photos, Ordnance Survey maps, Natural England open source data, and the MAGIC website (http://magic.defra.gov.uk/): These were used to identify habitat types including priority habitats, suitability for particular species/groups, and the locality of nationally and internationally designated sites;
- Previous ecological surveys of the site (Applied Ecology, 2017 and MHE Consulting Ltd, 2020); and
- Historical SBIS biological records: species and locally designated site records within 2km of the sites.

From this exercise, it was concluded that the following legally protected species/groups may be present on the sites and/or land immediately adjacent:

- Amphibians including great crested newt (GCN) (*Triturus cristatus*)[3] and reptiles such as grass snake (*Natrix helvetica*)[4];
- Mammals including badgers (*Meles meles*)[5] and bats[2];
- Breeding birds[6] including Red and Amber status[7] species; and
- S. 41[8] list habitats such as hedgerows, and species such as hedgehog (*Erinaceus europaeus*).

In the context of the setting and nature of the developments, the small 'zone of influence' of the scheme is considered restricted to habitats on the site and species within 100m of the site boundaries.

[2] BSI Standards publication BS 42020:2013 Biodiversity – Code of practice for planning and development.
[3] GCNs and all species of bats receive full protection under the WCA 1981 and Habitats Regulations 2017.
[4] Widespread amphibians and reptiles receive partial protection under the WCA 1981.
[5] Badgers and their setts are afforded protection by the PBA 1992.
[6] All wild birds, their nests and eggs are protected under the WCA 1981 (as amended), level of protection varies per species.
[7] The conservation statuses of UK bird species are listed within the Birds of Conservation Concern 4 (Eaton *et al*., 2015).
[8] S. 41 of the NERC Act 2006 lists 'habitats and species which are of principal importance for the conservation of biodiversity in England'.

3.3 FIELD SURVEY

An initial site walkover was undertaken on the 12 February 2024 to 1) record habitats present, and 2) assess the value of the habitats present for protected and notable species. A list of vascular plants and a description of the vegetation was made, including the location and extent of any Schedule 9 (WCA 1981) plants. Photos of the habitats present, and any field signs are provided in Appendix A1.

3.3.1 Habitats and vascular plants

The sites were walked with all distinct vegetation and habitat types, and any features of interest identified. Care was taken to record as many species as possible.

3.3.2 Amphibians and reptiles

a) Amphibians

Two ponds P1 and P2 (Figure 1) are located within 100m of the application site and previously assessed in May 2020 with regards to their suitability for supporting GCNs was assessed using the Habitat Suitability Index (HSI) methodology as developed by Oldham *et al*. (2000) and modified by Lee Brady. These ponds are still present and their condition has not changed since the initial site survey in support of an application to convert a barn into a house (Tarquin Barn).

The terrestrial habitat suitability of the sites was assessed with respect to refugia and foraging habitat based on the known habitat preferences of GCNs and widespread amphibians such as common frog (*Rana temporaria*), smooth newt (*Lissotriton vulgaris*) and common toad (*Bufo bufo*).

Recommendations are provided in chapter 5 to avoid impacts on GCNs and common amphibians.

b) Reptiles

Habitats on and around the application sites were assessed with respect to the known foraging and refuge habitat preferences of widespread reptile species.

3.3.3 Bats

No trees exist within or immediately adjacent to the proposed development site that support any potential roosting niches for bats.

Consideration is given to the value of any potential foraging and commuting habitats (i.e., hedgerows, trees, streams, ponds, composting areas) on the application site as per Table 4.1 of the BCT guidelines (Collins, 2023). The criteria used are listed below in Table 3.3.

Table 3.3 Criteria for determining the commuting and foraging value of habitats.

Suitability	Description
High	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging

	bats such as broadleaved woodland, trees-lined watercourses, and grazed parkland. Site is close to and connected to known roosts.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland, or water.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e., not very well connected to the surrounding landscape by other habitats. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in parkland situation) or a patch of scrub.
Negligible	Negligible habitat features on site likely to be used by commuting and foraging bats.

3.3.4 *Nesting birds*

The value of the sites was assessed in relation to nesting birds. This was supplemented with field records of birds seen or heard within the site, or nests observed.

3.3.5 *Badger*

The application site was surveyed for evidence of badger activity including setts, day beds, latrines, diggings/snuffle holes, paths/runs, scratching posts, hair, and footprints. Any setts were classified as per current guidance (Scottish Badgers, 2018).

3.3.6 *S. 41 list habitats and species*

The site was surveyed to determine the presence of any S. 41 habitats such as native species-rich hedgerows. The site's suitability for S. 41 list species such as hedgehog and invertebrates were assessed based on their habitat preferences.

3.3.7 *Non-native invasive plant species*

The site was inspected for Schedule 9 species such as Japanese knotweed and giant hogweed.

3.4 SURVEY CONSTRAINTS

All of the site was accessible for inspection and there were no constraints to the survey.

3.5 SURVEYORS

The initial site survey was conducted by Christian Whiting BSc (Hons) MSc MCIEEM has over 24 years' experience working as an ecologist and holds NE survey licences for barn owl (CL29/00213), bats (2015-14745-CLS-CLS - Bat Survey Level 2), and great crested newts (Class A licence 2015-17633-CLS-CLS).

He is a Registered Consultant (Registration RC089) on NE's Bat Mitigation Class Licence. He is registered on the NE water vole (*Arvicola amphibius*) Developers Class Licence CL31 (Intentional disturbance of water voles and damage/destruction of water vole burrows by means of 'Displacement') and the Environment Agency's and IDB

water vole organisational and class licences respectively. His main areas of expertise are bats, vascular plants, amphibians and reptiles, otter (*Lutra lutra*) and water vole.

3.6 ASSESSMENT

Impacts and effects upon habitats and species are assessed with reference to the CIEEM Guidelines for Ecological Impact Assessment (2018) and are reported in Section 5, based on the baseline conditions reported in Section 4.

The assessment includes potential impacts upon habitats and species during the construction and operational phases of the scheme. It considers positive and negative impacts, their extent, magnitude and duration, frequency and timing, and reversibility.

4 Results

4.1 INTRODUCTION

This chapter summarises the results of the desk and field surveys.

4.2 BASELINE ECOLOGICAL CONDITIONS - DESK STUDY

4.2.1 Designated sites

Any locally designated sites, e.g. Local Nature Reserves (LNR) within 2km, nationally designated sites within 5km, and Internationally designated sites within 13km of the application site are listed in Table 4.1.

Table 4.1 Relevant designated sites

Site name	Site designation
Stradbroke Meadow	CWS
Stradbroke Cemetery	CWS

No SSSIs or Natura 2000 sites are located within 5km and 13km of the site respectively.

No impacts upon the features of the CWSs are predicted.

4.2.2 Species

1. Relevant biological records

No protected or notable species records exist for the property site boundary, with species located 100m of the site highlighted in bold. Table 4.2 identifies species records for within 2km the application site boundary.

Table 4.2 Protected/notable species within 2km of the application site

Scientific Name	Common name	Legal/conservation status
Lissotriton vulgaris	Smooth newt	Sch. 5
Triturus cristatus	Great crested newt	EPS; Sch. 5; S. 41
Natrix helvetica	Grass snake	Sch. 5; S. 41
Apus apus	Swift	Amber Status
Emberiza citrinella	Yellowhammer	Red Status; S. 41
Passer domesticus	House sparrow	Red Status; S. 41
Passer montanus	Tree sparrow	Red Status; S. 41
Perdix perdix	Grey partridge	Red Status; S. 41
Streptopelia turtur	Turtle dove	Red Status; S. 41
Sturnus vulgaris	Starling	Red Status; S. 41
Turdus philomelos	Song thrush	Red Status
Tyto alba	Barn owl	Sch. 1
Barbastella barbastellus	Barbastelle	EPS; Sch. 5; S. 41
Eptesicus serotinus	Serotine	EPS; Sch. 5
Myotis nattereri	Natterer's	EPS; Sch. 5
Pipistrellus pipistrellus	Common pipistrelle	EPS; Sch. 5
Pipistrellus pygmaeus	Soprano pipistrelle	EPS; Sch. 5; S. 41
Plecotus auritus	Brown long-eared	EPS; Sch. 5; S. 41
Erinaceus europaeus	Hedgehog	S. 41

b) Applied Ecology survey (2016)
A site walkover was undertaken on the 20th December 2016 and no evidence of bats roosting were found in any of the buildings, whilst the 2 ponds were assessed as unsuitable for supporting breeding populations of GCNs.

c) Natural England Class Licence and eDNA records
The nearest recent GCN record is c. 4.5km to the north-west of the application site.

4.3 BASELINE ECOLOGICAL CONDITIONS – FIELD SURVEY

4.3.1 Habitats and vascular plants

The application site (Figure 1) comprises an area of bare ground and some short grassland (Photos 1 and 2). The northern side boundary is marked by a closeboard timber fence with some trees planted within an area of lawn.

4.3.2 Amphibians and reptiles

Ponds P1 and P2 are located adjacent to the application site. P1 supports dense populations of fish and was assessed as supporting poor habitat suitability (HSI = 0.48), whilst pond P2 also supports poor habitat suitability (HSI = 0.44). These scores were consistent with a previous assessment (Applied Ecology, 2017). Therefore, the breeding presence of this species in either waterbody is considered very unlikely.

On the basis of the site's poor suitability for amphibians coupled with the low HSI scores for the two adjoining ponds, further survey and assessment work for reptiles and amphibians is considered unnecessary given the lack of vegetative cover within the area that the new garage/workshop/garden store is proposed.

Grass snake could potentially pass through the site when hunting in pond P1 as they will eat fish, but the lack of cover over much of the site means that any resident populations of common reptiles are unlikely if the site location is maintained with bare ground or short grassland.

4.3.3 Bats

The application site offers no suitable bat commuting or foraging habitat though the northern site boundary offers moderate commuting and foraging habitat (Collins, 2016) along the hedgerows and over the adjacent ponds to the south.

4.3.4 Nesting birds

No suitable habitat exists within the development site.

4.3.5 Badger

No evidence of badger (e.g. snuffle holes, runs, latrines, setts) was observed.

4.3.6 S. 41 list habitats and species

a) Habitats
None present within the application site.

b) Species
The areas of lawn habitat provide foraging habitat for hedgehog. The elm in the hedgerows provide valuable habitat for the white-letter hairstreak (*Satyrium w-album*) butterfly.

4.3.7 *Non-native invasive plants*

No non-native invasive species were recorded within the application site boundary.

4.4 GEOGRAPHIC CONTEXT

The geographic context of a feature is a useful consideration within an assessment of impacts. For this report, the geographic frames of reference for the habitats and species present on sites are provided in Table 4.3; values are based upon the criteria in Table A3.1 and expert best judgements.

Table 4.3 Feature value based on geographic context

Feature	Value
Lawn and scattered immature trees	Local
Amphibians and reptiles	Local
Bats	Local
Nesting birds	Local
S. 41 habitats and species	Local

5 Assessment and recommendations

5.1 INTRODUCTION

The following section provides a summary description of the proposed developments, with an assessment of associated impacts and likely significant effects upon biodiversity.

The assessment and recommendations are based on use of the mitigation hierarchy, which in the first instance aims to avoid impacts. Where impacts cannot be avoided, they should be minimised (through mitigation). Only where impacts cannot be avoided or minimised should there be compensation for biodiversity harm.

Ecological enhancements are suggested, and consideration is given to individual as well as overall net gains or losses of biodiversity.

5.2 DESCRIPTION OF PROPOSED DEVELOPMENT

Proposed works will include the construction of a detached garage/workshop/garden store on an area of bare ground.

Assessments and recommendations below are based on architects drawings as submitted with the planning application and available at the time of writing and should be updated accordingly as the scheme is subsequently amended.

5.3 FURTHER SURVEYS REQUIRED

None required. It is generally advised that subject to no significant change in site management regimes, and dependent on the species present, baseline survey results remain valid for approximately 12 – 18 months (CIEEM, 2019). Exceptions include where mobile species are/may be present, where site management practices cease or change, or where existing guidance indicates otherwise.

5.4 ASSESSMENT OF IMPACTS

The EcIA assessment process (CIEEM, 2018) involves:

- Identifying and characterising impacts and their effects;
- Incorporating measures to avoid and mitigate negative impacts and effects;
- Assessing the significance of any residual effects after mitigation;
- Identifying appropriate compensation measures to offset significant residual effects; and
- Identifying opportunities for ecological enhancement.

The emphasis in EcIA is on the assessment of ‘significant effects’ i.e. an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general. In broad terms significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species including extent, abundance, and distribution.

The ecological features to be subject to detailed assessment in this report are those judged to be important and potentially affected by the project; protected species are included where the development will result in a potential breach of legislation.

5.5 HABITATS AND VASCULAR PLANTS

a) Potential impacts

No significant impacts are predicted with the location of the garage/workshop/garden store currently bare ground with some short grassland adjacent.

Pollution of the nearby ponds could occur due to fuel oil spillages or cement mixer washings (e.g. a high pH) which in turn impact the wildlife likely to be present including fish, amphibians and birds.

b) Mitigation

Retained areas of lawn and any trees should be protected from damage with Heras (or similar) fencing during the construction phase.

A contractor Risk Assessment Method Statement (RAMS) should be developed ahead of works commencing to ensure Good Practice measures are used to avoid and/or minimise the risk of pollution upon the river. Measures may include, but are not exclusive to:

- Locating any site compounds (including any fuel storage) away from the ponds and any ditches.
- Limiting topsoil removal as required and covering topsoil whilst stockpiled (outside of flood risk areas).
- Cleaning machinery in designated areas with a sump and re-using wastewater where possible or discharging via a sewer or tanker only.
- Storing chemical and fuels securely within double-bunded bowsers or chemical stores (with a 110% capacity to contain any spillage) away from the river and flood risk areas.
- Using water based, non-toxic and biodegradable chemicals and hydraulic/fuel oils where possible.
- Mixing and washing chemicals and associated equipment in designated areas with wastewater safely disposed of via mains sewerage or tanker as appropriate.
- Having adequate site security in place; regularly checking equipment for failures and/or leaks.
- Keeping spill kits and booms present on the site and ensuring staff are trained in their use.

c) Residual effects

No significant residual effects are predicted.

5.6 AMPHIBIANS AND REPTILES

a) Potential impacts

The construction of the proposed garage has low potential to cause injury and/or the death of common amphibians which could potentially fall into open trenches (e.g., when animals migrate to breeding ponds) resulting in entrapment and mortality considered a negative effect at the Local level.

On completion of the development, the use of gulley pots or similar as part of a surface water drainage system can result in the entrapment of amphibians (Muir, 2012) if the gulley pots do not discharge straight into a ditch or pond without silt traps or another impediment. These impacts would potentially be a significant negative effect upon a small number of animals at the Local level.

b) Mitigation

The following good practise measures should also be implemented:

- During the construction phase, trenches should be filled on the same day as excavation where possible. Trenches left overnight will be covered with ply/OSB sheets and any gaps filled with damp sharp sand.
- Footings and concrete slabs will be poured during the morning to ensure they have hardened off prior to evening to reduce the risk of animals encountering wet concrete.
- Any hand mixing of mortar or concrete will be on ply boarding over a tarpaulin which is folded over the boarding at the end of each day to prevent animals coming into contact.
- Any excess cement/concrete will be poured into a concrete skip, so it can then set to prevent animals coming into contact.
- All building materials will be stored on bare ground or hard standing or stored off the ground on pallets.
- Should any animals be encountered, they should be allowed to displace into retained habitat (e.g. boundaries) or carefully relocated.
- If any GCNs are encountered works must stop immediately and a qualified ecologist be contacted for advice on how to proceed.
- Any installed gully pots that do not discharge without impediment straight into a ditch or pond must be situated ≥100mm from roadside; OR a wildlife-kerb[9] must be installed adjacent to each gully pot; OR a gully pot ladder[10] placed into each gully pot.
- Any downpipes taking water off the roofs should be sealed at ground level by using a leaf and debris screen[11] to prevent amphibians entering drains.

c) Residual effects

With mitigation implemented direct impacts upon animals will be avoided with no significant residual effect.

5.7 BATS

a) Potential impacts

i) Light disturbance

Lighting during the construction and operational phases can impact bat foraging behaviour and increase the risk of predation, which could affect foraging success and population recruitment.

ii) Commuting and foraging habitat

No impacts are predicted as long as lighting impacts are avoided.

iii) Roofing membranes

Research has shown bats can become entangled in modern breathable roofing membranes (BRMs) which are woven, causing injury or death to individuals (Waring *et al.,* 2013).

In combination, the above impacts have the potential to result in a significant effect upon the conservation status of bats at a Local level.

[9] https://www.aco.co.uk/products/wildlife-kerb
[10] https://www.thebhs.org/the-bhs-amphibian-gully-pot-ladder
[11] https://www.drainagepipe.co.uk/leaf-and-debris-gully-110mm-p-D94G/

b) Mitigation

i) Roosting bats

A modern woven Non-Bitumen Coated Roofing Membrane (NBCRM) can be used under clay reclaimed or new pantiles if it has passed a snagging propensity test to ensure any bats which may decide to roost within the roof of the garage do not become entangled.

ii) Light disturbance

Exterior lighting design will be made with refence to current guidance[12][13] and will consider:

- *Type of lamp (light source)*: Light levels should be as low as possible as required to fulfil the lighting need. Lamps should have a maximum of 7.5 to 10 lux and LED lights should be used using the warm white (or amber) spectrum, with peak wavelengths >550nm (2700°K) and no UV component; and
- *Lighting design*: Lighting should be directed to where it is needed, with minimal horizontal spillage towards retained habitats including grassland, hedgerows, scrub and the watercourse. This can be achieved by restricting the height of the lighting columns and the design of the luminaire, including the following measure:
    - ❖ Light columns/fixtures in general should be as short as possible as light at a low level reduces the ecological impact.
    - ❖ Luminaires with an upward light ratio of 0% should be mounted on the horizontal i.e. with no upward tilt.
    - ❖ If taller lights are required, and as a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill; and
    - ❖ PIR movement sensors and timers should be used to minimise the 'lit time' on residential properties (up to 1 minute).

iii) Commuting and foraging habitat.

As per Section 5.5

c) Residual effects

No significant residual effects are predicted.

5.8 NESTING BIRDS

a) Potential impacts

No impacts are predicted as no suitable nesting habitat exists. The positioning of a builders site compound adjacent to areas of suitable nesting habitat could result in the disturbance of nesting birds during the breeding season which could potentially result in birds abandoning their nests or the failure of eggs to hatch if the parents are regularly disturbed from the nest.

b) Mitigation

The builders compound should be sited away from existing hedgerows or trees, as well as ponds to prevent disturbance issues.

c) Residual effects

With implementation of prescribed mitigation, no significant residual effects are predicted.

[12] https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting

[13] www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_DIN_A4_EUROBATS_08_ENGL_NVK_28022019.pdf

5.9 OTHER S. 41 LIST HABITATS AND SPECIES

a) Potential impacts

Ground-breaking and the excavation of footings and/or pipe runs could result in hedgehogs falling open excavations with steep sides and becoming trapped. Animals could be injured or killed if the excavation is deep or they fall into or walk across wet concrete. Such impacts have the potential to result in negative effects upon a small number of animals at the local scale.

b) Mitigation

During construction, concrete should be poured early in the day or covered with ply boarding or membrane overnight to prevent hedgehog coming into contact. Trenches should be covered overnight.

c) Residual effects

None.

5.10 COMPENSATION

None required.

5.11 CUMULATIVE EFFECTS

The Mid Suffolk District Council planning website was searched on the 21 February 2024 with a 2km buffer dating back a minimum of 2 years. Only minor applications were returned. No significant cumulative impact with the current application are predicted.

5.12 ENHANCEMENT OPPORTUNITIES

If mitigation measures are implemented as advised, the scheme will result in No Net Loss (NNL) of biodiversity. To be consistent with planning policy, development schemes should deliver biodiversity enhancements.

To deliver a significant at least 3 of the 5 proposed enhancements (Table 5.1) should be implemented.

Table 5.1 Enhancement opportunities

Feature	Guidance
Small passerine bird boxes	1. Two sparrow terraces (Appendix A3) could be erected on the garage on the north west gable. 2. A robin/wren box (Appendix A3) could be erected on a suitable tree within a hedgerow.
Bat boxes	3. A Kent bat box (Appendix A4) could be erected on southwest gable end of the proposed garage.
Heritage fruit trees	4. A minimum of 3 trees could be planted on site. (http://www.applesandorchards.org.uk/).
Grassland	5. A wildflower meadow (100m2 minimum) could be sown to the south-east of the proposed garage.

Peat based composts must not be used for any planting or landscaping in order to preserve existing carbon stores and avoid damage to sensitive habitats.

5.13 CONCLUSIONS

With avoidance, mitigation and compensation measures suggested, the scheme will result in NNL of biodiversity, whilst enhancements could be implemented to achieve a BNG in accordance with planning policy.

Measures proposed could be secured through appropriate planning conditions as per the British Standard (BS 42020:2013[1])..

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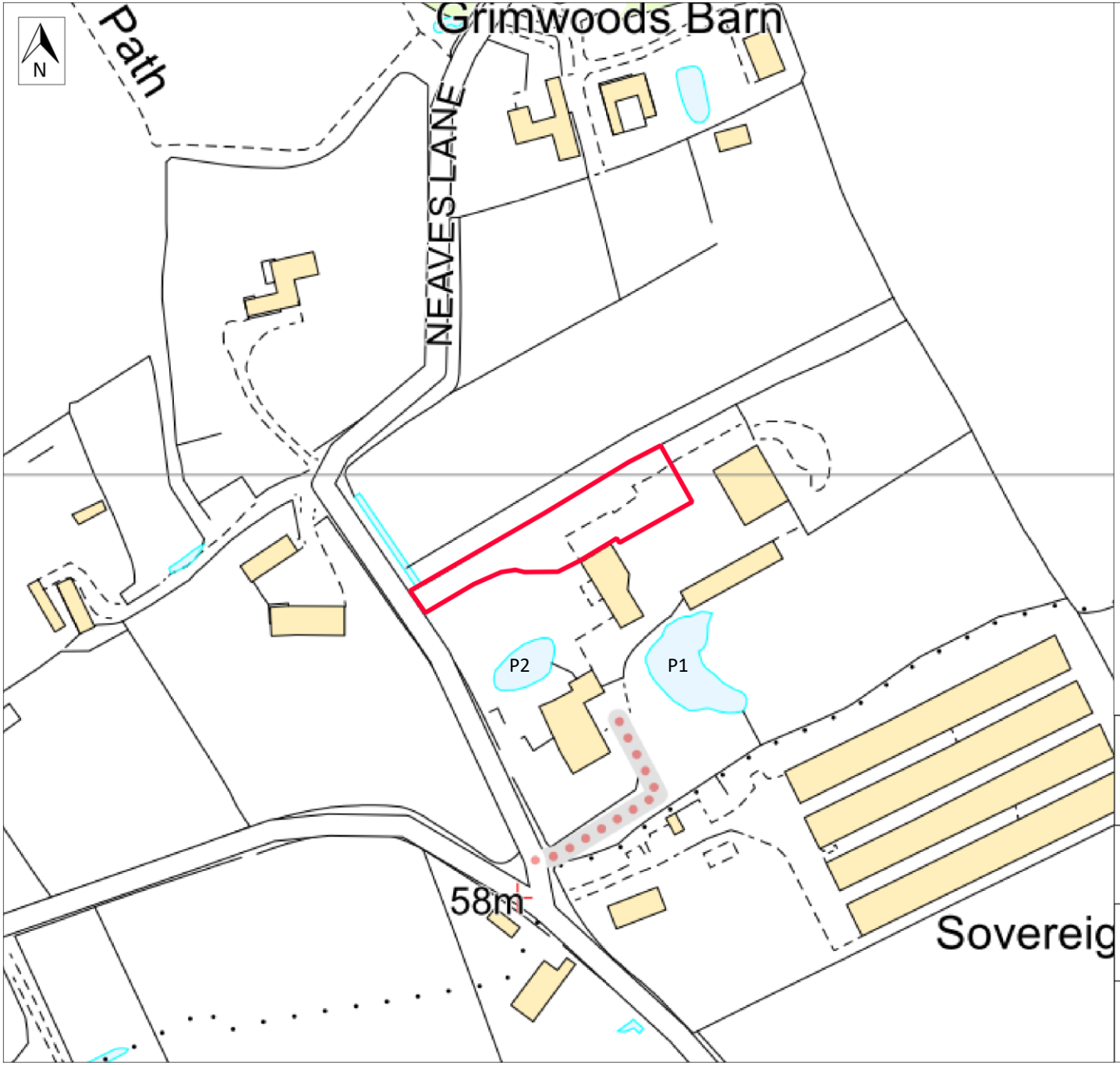
Figures



Legend

Site boundary

0 25 50 75 100 m

Client: Mr and Mrs Thacker

Project: Proposed cart lodge at Tarquin Barn, Neaves Lane, Stradbroke

Drawn:	Date:	Drawing Ref:
CW	21/02/24	TARQUINBARN/ESR/001

Figure 1 Site location plan

MHECONSULTING
environmental consultants

Appendices

Appendix A1 Photos

Photo 1 Location for the proposed garage/workshop/garden store

Photo 2 Bare ground and short grassland to south of where the garage/workshop/garden store is proposed

Photo 3 Tarquin Barn

Photo 4 Access to the site

Appendix A2 EcIA criteria

A2.1 General criteria for geographic context/value

Designation	Example
International	• SPA, SAC and Ramsar sites and the features that they have been designated for. • A sustainable area of habitat listed in Annex I of the Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of a larger whole. • A sustainable population of an internationally important species e.g. UK Red Data Book (RDB) species or European Protected Species (EPS) of unfavourable conservation status in Europe (e.g. Annex II species: bats, GCNs etc.), of uncertain conservation status or of global conservation concern in the UK BAP.
National	• SSSI or a discrete area that meets the selection criteria for designation. • A sustainable area of priority habitat identified included on the S. 41 NERC Act list or smaller areas of such habitat that are essential to maintain the viability of a larger whole. • A sustainable population of priority species (listed under S. 41 of the NERC Act 2006). • A sustainable population of a nationally important species i.e. RDB species not included in above category but which is listed on Schedules 5 or 8 of the WCA 1981 (as amended). Also, sites supporting a breeding population of such species or supplying a critical element of their habitat requirements. • A sustainable population of uncommon or threatened Annex IV EPS species at a UK level. • A nationally scarce species (occurs in 30-100 10km squares in the UK) that has its main UK population within the district.
County	• A viable area of habitat identified in the county BAP. • A County Wildlife Site. • A sustainable population of common or non-threatened Annex IV EPS species at a UK level. • A Nationally Scarce species that does not have its main population within the county. • A sustainable population of a BAP species not included in the 'national' category above for which a county Action Plan exists.
Local	• Individual members of local populations of priority or other nationally/internationally important species which are not in themselves key for maintaining a sustainable population (e.g. individual dog otter passing through area with no holts or resting sites). • Other habitats and species not in the above categories but are considered to have some value at the district/borough level.

Appendix A3 Bird boxes

shopping.rspb.org.uk/garden-bird-nest-boxes/rspb-robin-and-wren-diamond-nestbox.html

Sign In | Fulcrum -... UK Grid Reference... National Biodiversit... Bing Maps ~ Santander Online... Microsoft Office Ho... Jacobs Engineering... Jacobs Engineering...

RSPB Robin and wren diamond nestbox

Product Code: R401640

£ 13.99

★★★★☆ Read all reviews

Best-selling, diamond shaped, open-fronted nest box attractive to robins, wrens, pied wagtails and spotted flycatcher.

Beautifully made from FSC timber; roof treated with safe, non-toxic, water-based preservative. UK made.

Read full information

SAVE £2 WHEN YOU BUY TWO PROMOTIONAL NEST BOXES!

- Add two promotional nest boxes to your basket to save £2
- Offer ends 5th January 2021 and is subject to availability
- Loyalty points can be collected/redeemed as usual
- Not available in conjunction with any other offer

RSPB Sparrow terrace nest box

Qty 1

Product Code: R407816

£ 29.99

In Stock ADD TO BASKET

Product Information Product details Ratings & Reviews

PROMOTIONAL NEST BOXES!

- Add two promotional nest boxes to your basket to save £2
- Offer ends 5th January 2020 and is subject to availability
- Loyalty points can be collected/redeemed as usual
- Not available in conjunction with any other offer

Appendix A4 Bat boxes

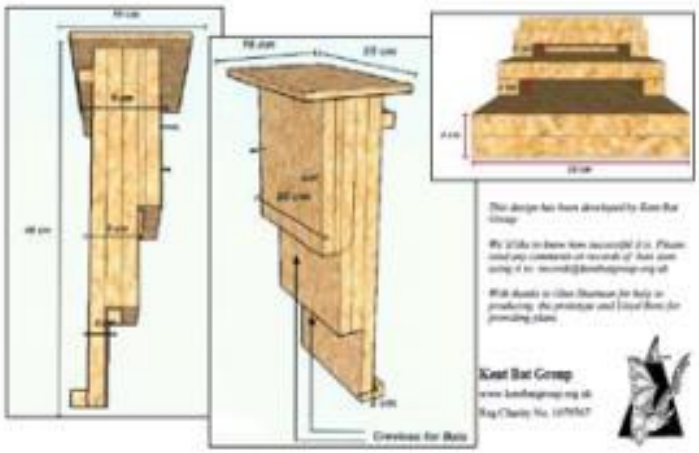
The Kent bat box

Simple to construct, self-cleaning and low maintenance.

The only critical measurement is the width of the crevices—these should be no larger than suggested. Other measurements are approximate.

Materials and construction
Box to be made from untreated rough-sawn timbers
Timber should be c.20mm thick
The box should be roingproof and draught-free
Crevices can be between 15 and 25 mm wide
Fixing may be by use of brackets, durable bands or wires

Location
Boxes are best fixed as high as possible in a sheltered wind-free position, exposed to the sun for part of the day.
They can be fitted to walls, other flat surfaces or trees
A clear flight line to the entrance is important



This design has been developed by Kent Bat Group

We'd like to know how successful it is. Please send any comments or records of bats seen using it to: recorder@kentbatgroup.org.uk

With thanks to Clive Shanteau for help in producing the prototype and Lloyd Bore for providing plans

Kent Bat Group
www.kentbatgroup.org.uk
Reg'd Charity No. 1079567