

Biodiversity Enhancement and Management Plan

Survey site: Hatts Copse Farm, Brook Lane, Botley, Southampton SO30 2ER.

Client: Brinton King

Date: 21/02/2025

Project:

This report is prepared to inform a planning application with **Eastleigh Borough Council**. The proposal is described as: Construction of 2 bedroom bungalow with adjoining garages following demolition of existing annex and outbuildings

Planning Application Number:

F/24/97960

Introduction

Biodiversity Enhancement and Management Plan (BEMP) has been prepared for the above-named client to outline measures to be implemented post-construction works at the above named site.

The purpose of this plan is to ensure the protection and mitigation of ecological receptors, adhere to best practices and industry standards, and provide adequate supervision by licensed professionals. The BEMP also outlines the management frameworks required for the planning and implementation of construction activities that comply with legislation and the environmental commitments.

BEMP The below table provides the wider ecological context of the site and details any associated planning conditions.

Site Context and Landscape History	
The site is located in a rural area of Botley, Hampshire at the National Grid Reference SU 50603 12359 and has an area of approximately 0.09ha, comprising an outbuilding, a gravel driveway and an area of modified grassland. Within the wider ownership boundary to the west are further areas of grassland used for grazing sheep and cattle and amenity use, scattered trees, a small vineyard and two large ponds. Aerial imagery shows the local landscape comprised of grassland interspersed with small parcels of woodland, lines of trees and hedgerows. Water bodies can be found nearby, such as the River Hamble located ~1.3km to the southeast as well as several ponds. A Preliminary Ecological Appraisal and Roost assessment (PEA/PRA) were conducted by Arbtech Consulting Ltd Oct 2024. This was followed up by a Biodiversity Net Gain Pt 1.	
Planning Conditions	
Condition 13	No development shall take place until a Biodiversity Enhancement and Management Plan (BEMP) has been submitted to and approved in writing by the Local Planning Authority.

	The plan should show the positions and specification of any mitigation and enhancement features on the proposed building, grounds (proposed private amenity space) and on suitable trees on the wider site which shall be based upon the recommended enhancements as detailed within the submitted Preliminary Ecological Appraisal and Roost Assessment (Arbtech, 23 October 2024). The BEMP shall include timings for the implementation of the recommended measures and details of their future maintenance. The approved BEMP shall then be implemented in full. Reason: To ensure that wildlife features are appropriately protected, enhanced and managed and to secure a net gain for biodiversity
<i>Condition 14</i>	Any building or vegetation removal should be undertaken outside of the nesting bird season (1st March to 31st August inclusive). If this timeframe cannot be avoided, a close inspection of the vegetation should be undertaken by a suitably qualified ecologist, immediately prior to the start of any work. All active nests will need to be retained and protected from disturbance with a 5m minimum buffer until after the young have fledged and left the nest. Additional precautions should be taken with machinery and noise levels when working close to any retained nests so as not to disturb any nearby nesting birds during construction works. Reason: To protect nesting birds from harm during demolition and construction works
<i>Condition 15</i>	The cavity wall of Building B2 (as referenced within the submitted Preliminary Ecological Appraisal and Roost Assessment, Arbtech, 23 October 2024) should be inspected immediately prior to the commencement of any development works by a qualified ecologist. This should include the use of an endoscope to fully inspect the gaps within cavity walls. If the endoscope cannot view all of the available gaps, further surveys may be required. In the unlikely event that a bat is identified during this inspection, works must cease and advice be sought from qualified ecologist in conjunction with Natural England. Reason: To protect bats from harm during the undertaking of the development works.
<i>Condition 16</i>	The precautionary working methods set out within the submitted Preliminary Ecological Appraisal and Roost Assessment (Arbtech, 23 October 2024) for reptiles, badgers and hedgehogs shall be adhered to for the duration of the demolition and construction period. Reason: To protect these species from harm during the undertaking of the development works. Note to Applicant: In accordance with paragraph 38 of the National Planning Policy Framework, Eastleigh Borough council take a positive approach to the handling of development proposals so as to achieve, whenever possible, a positive outcome and to ensure all proposals are dealt with in a timely manner. Note to Applicant: If at any point during construction works any great crested newts are identified, then all works should cease immediately and advice be sought from a suitably qualified ecologist. You should not try to handle or rescue a great crested newt and works should not resume until advised to do so by an ecologist.

The below table describes the ecological baseline conditions on site.

Ecological Background Information

Detailed using desk study and site survey.

The site had a PEA and PRA survey undertaken by Arbtech Consulting Ltd 2024-

Habitats identified at the site include-

- Modified grassland
- Unsealed surface
- Buildings

This does not include habitats identified outside of the development boundary, in the wider site landscape.

Value for protected species on the site includes the following-

- **Birds-** Several nests and bird boxes were identified within and on B1. There are also two large bird boxes for birds of prey on mature trees within close proximity to the site.
- **Badgers-** No badger setts were noted on site or within a 30m radius of the site. Further, no evidence of foraging badgers was noted within the development area. However, the site was considered suitable for badger sett excavation and foraging habitat. .
- **Bats-** Habitats on site are assessed to provide foraging and commuting opportunities for bats in the form of modified grassland. This habitat is likely to attract invertebrate prey species. However, due to the generally managed nature of habitats on site and the presence of more extensive habitats locally (i.e. woodland), the site is not assessed to represent a significant resource for foraging and commuting bats. The single-storey shed on site has some very low suitability for roosting bats and should be endoscoped before removal.
- **Reptiles-** Habitats on site are assessed to provide limited opportunities for basking and commuting reptiles, in the form of grassland. Due to the generally managed nature of the grassland, and predominant homogenous sward, there is a lack of refuge opportunities for commuting reptiles. This, therefore, does not provide suitable protection against predation
- **Amphibians-** Habitats on site provide limited suitable terrestrial habitat for great crested newts and other common amphibians, in the form of grassland. The grassland, however, is predominantly homogenous lacking suitable refuge habitat for great crested newts. However, the site has

suitable connection to the woodland adjacent to the southern site boundary. It is noted that there are two ponds within the ownership boundary, and several more ponds within a 500m radius of the site, which all have connectivity to each other.

- **Terrestrial mammals-** The habitats at the wider site and habitats adjacent are likely to support a variety of terrestrial mammals, such as hedgehogs, foxes, rabbits and rodents.
- **Invertebrates** The habitats present on-site, including modified grassland, likely provide common invertebrates with opportunities to forage and shelter. The site contains no further notable habitats which may provide niches for specialised or protected invertebrates

The following tables detail the proposed mitigation, habitat creation and biodiversity enhancement measures for the development as well as management requirements to ensure the longevity of these measures. as detailed in the PEA and BNG. These include further details of the habitats on site and the impacts of the development upon them and will be read in conjunction with this document.

Scope

This BEMP outlines construction and ecological measures for the following works:

Construction of 2 bedroom bungalow with adjoining garages following demolition of existing annex and outbuildings

Aims and Objectives

This report aims to identify key stakeholder requirements, ensure compliance by all stakeholders with all relevant legislation, to provide ecological and biodiversity enhancement measures for the site and include a management strategy in order to achieve long-term success and improvements.

Work Schedules and Ecological Presence

Work schedules will be developed by the client to ensure activities with specific timing requirements are carried out in a manner that minimises harm to ecological receptors. These schedules will be provided to all relevant personnel and contractors involved in the project. This will include planting schedules based on the details within the report, and timings of management and any required checks. The following measures will be implemented:

Ecological Clerk of Works

A qualified and suitably experienced ecologist will be there to provide ecological expertise and guidance throughout the project. They will also be the first point of call if any fauna is identified at the site, such as amphibians. A suitably qualified ecologist is also required to endoscope and check the outbuilding before demolition as requested by planning condition 15, and to check the site 48 hours prior for any nesting bird activity, as stated in condition 14. Therefore, the same ecologist will be used to provide advice regarding the BEMP in order to fulfill condition 13

Persons Responsible and Lines of Communication

A Development Biodiversity Champion is selected for the construction phase of the development. The Biodiversity Champion will be someone with significant influence during construction, such as the contract, site or project manager. They are responsible for ensuring all actions outlined in the approved BEMP are implemented including the provision of a toolbox talk prior to works commencing. Any queries with regards to the mitigation prescriptions will be addressed to the project ecologist and communication will be retained between the Development Biodiversity Champion and project ecologist and/or a suitably qualified Ecological Clerk of Works (ECoW) throughout the construction phase of the development where necessary to ensure the mitigation is applied and impacts to adjacent ecological receptors are effectively minimised. The project ecologist's contact details are located on the title page of this report. It is recommended that the Biodiversity Champion informs the project ecologist and designated ECoW of the commencement of construction works and provides updates where necessary. The ECoW will provide ecological expertise and guidance throughout.

Table 2- Construction and Ecological mitigation measures-

Ecological Mitigation Measures	This table includes any measure required to obtain or comply with planning permission or other consent and to comply with legislation.
Ecological Protection Areas and Buffer Zones	
Ecological protection areas and buffer zones within the project site. These areas will be demarcated using physical means of protection, such as exclusion fencing, to prevent unauthorised access and minimise disturbance to sensitive habitats.	
Tree Protection	
Tree root protection areas will be identified based on the existing tree inventory. A buffer from retained trees and woodland will be established and protected throughout the duration of construction activity in line with the site's Tree Protection Plan (to be submitted separately). No trenches or ground works will be completed within the specified buffer of any retained trees on site. Trees will be appropriately protected in accordance with BS 5837:2012 - "Trees in relation to design, demolition and construction – Recommendations". As such, it is recommended that the trees are separated from construction works by protective fencing throughout the duration of the construction phase of the development. A fencing specification is included within Figure 1 below. Appropriate signage is to be included on the fencing in order to ensure that fences are not moved after establishing. As shown in Figure 2	

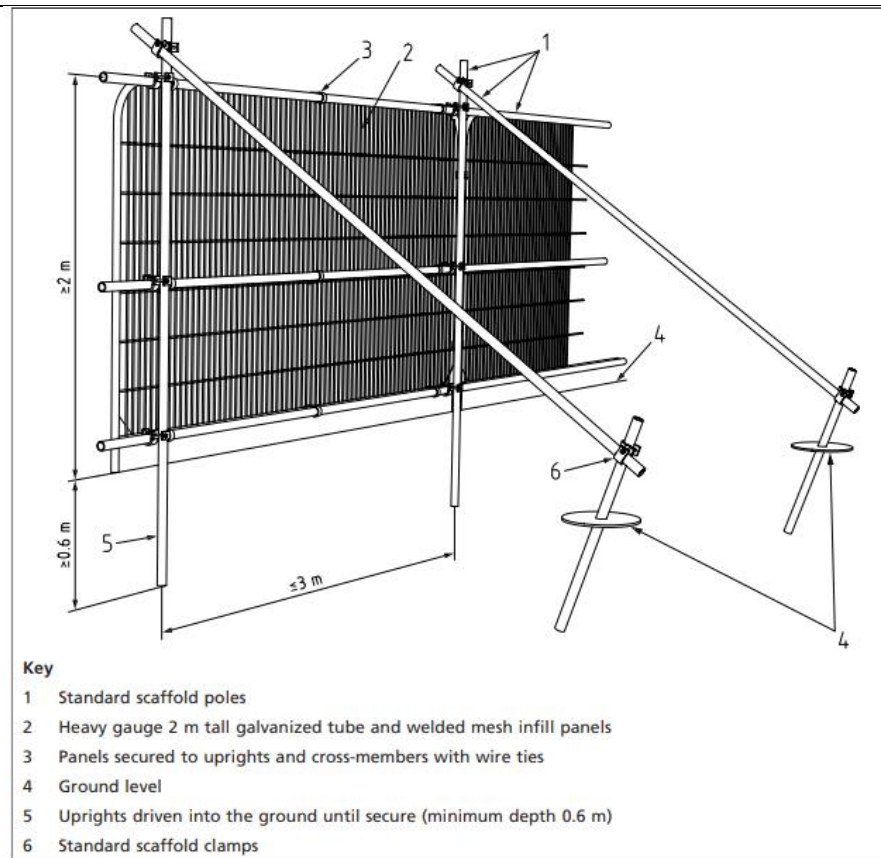


Figure 1: Default protective barrier specification (British Standards Institute 2012).



Figure 2 Appropriate signs to be attached to root protection zone fencing- Source- www.SafetySignsandNotices.co.uk

Construction measures- Mitigation and Pollution control.

Pollution Prevention

<i>Risk</i>	Pollution resulting from increased levels of water run-off, noise, and dust creation during construction works have potential to pollute the woodland on the southern boundary which is likely to enact adverse impacts upon health of trees closes and subsequently reduce both plant and animal diversity.
<i>Statutory Compliance</i>	To limit impacts of pollution resulting from the construction phase of the development, construction works must be completed in accordance with current statutory guidelines relating to pollution prevention (Environmental Agency 2016). Furthermore, although withdrawn in 2015, pollution prevention guidelines detailed within guidance document: <i>PPG6: Working at Construction and Demolition Sites</i> (Environment Agency 2010) remain applicable to the site. Considering both the

	relevant statutory requirements and best practice measures detailed within guidance document PPG6, the below mitigation prescriptions are considered suitable to mitigate impacts of pollution during the construction phase of the development. The allocated Biodiversity Champion will be responsible for ensuring the below mitigation recommendations are undertaken successfully during the works.
<i>Materials Storage and Surface Water Runoff</i>	It is recommended that the Biodiversity Champion ensures that: • No stockpiles are created on exposed ground areas and ensure that all materials and chemicals are stored securely and safely on site in accordance with current Control of Substances Hazardous to Health (COSHH) regulations (HSE 2002). • Stockpiles are located as far away as possible from the woodland on the southern boundary and on level ground to prevent any accidental run-off. No material are to be stored near the wider site ownership ponds. • Contaminated materials, chemicals, and other hazardous substances must be stored on an impermeable surface, in a bunded area, within any area of the site. • All chemicals and hazardous substances are stored away from areas where there is heightened risk of damage from impact or collision such as site traffic. • All chemicals and hazardous substances are labelled, containers are sealed when not in use and inspected regularly and fit for purpose. • Any damaged or old containers are replaced in line with the duty of care requirements. Note such containers may be considered hazardous waste. • Staff are trained in use of spill kits and emergency procedures. • Ensure there is a designated 'responsible person' on site at all times. • Lock storage facilities when not in use.

<i>Site Drainage</i>	It is recommended that the Biodiversity Champion ensures that: • Pollution risks are identified pre-construction. • Pollutants are prevented from entering drains where possible. • If any pollutant enters a drain, immediately stop the pollution with a physical block, stop the activity causing the pollution, then notify the Environment Agency for surface water drains or the local sewerage provider for foul water drains. If there's a spill, accident, or emergency, try and prevent pollutants entering the drains. • Report all pollution incidents to site management and the Environment Agency. • Inspect drains and protection measures frequently and maintain them during the construction activity. Well maintained drains will also reduce risks of flooding and subsequent surface water run-off. • As a last resort, should any pollutants be required to enter the drainage system on site, permission from Environment Agency or the local sewerage provider must be sought before discharging anything other than clean uncontaminated surface water to a drain and other surface waters or groundwater. Apply for permission early, as authorisation can take up to four months.
Biosecurity and Invasive Species Management¹	
<i>Invasive/non-native Species Mgt</i>	Giant Rhubarb was identified on the site, this is not within the development boundary but within the wider ownership boundary. Construction activities risk spreading this species around the site, as well as being tracked into the wider environment via plant tyres, as well as through unwashed boots.

¹ <https://ccsbestpractice.org.uk/entries/biosecurity-preventing-the-introduction-of-invasive-species-to-site/>

[https://www.nonnativespecies.org/biosecurity/biosecurity-in-the-field/#:~:text=Basic%20biosecurity%20advice%20for%20site%20visits&text=If%20practical%20do%20not%20take,debris\)%20before%20leaving%20the%20site.](https://www.nonnativespecies.org/biosecurity/biosecurity-in-the-field/#:~:text=Basic%20biosecurity%20advice%20for%20site%20visits&text=If%20practical%20do%20not%20take,debris)%20before%20leaving%20the%20site.)

	In the case of this site, which hosts semi-natural habitats, there is an additional risk that native species from other habitats could be imported, which may alter the composition and relative abundances of locally characteristic communities, such as woodland adjacent or overtaking ponds. This risk will be managed via the implementation of appropriate biosecurity measures as listed below.
<i>Biosecurity</i>	A Biosecurity Declaration Form will be distributed via email to all contractors intending to send plant machinery to the development site. This instructs that power washing of all plant prior to entry on site to remove all traces of mud debris etc. The completed form must be returned to the site Biodiversity Champion prior to delivery/access. This form and a copy of the BEMP will be sent to all subcontractors that intend to bring machinery onto the site. Upon arrival to site the plant item is inspected at a designated quarantine area. This inspection ensures the delivered plant item has been thoroughly cleaned. Should the item of plant be deemed to be inadequately cleaned it will be refused entry. <i>Advice for Contractors on Site.</i> 1. Avoid taking any vehicles onto the parkland beyond those essential in completing works, keep to established tracks and park vehicles on established parking areas away from the pasture. 2. Arrive at the site with clean equipment, and vehicle, paying particular attention to wheels. 3. Ensure equipment and footwear is clean (visually from soil and debris) before entering/leaving the site. 4. Ensure the vehicle is kept clean - in particular, remove any accumulated mud before leaving the site.

	5. Facilities will be provided on the site in the work zone surrounding the buildings to clean footwear/equipment. 6. Keep access to a minimum. 7. Plan visits so that there is no need for contractors or vehicles to visit parts of the wider ownership site where giant rhubarb is present. Materials will not be stored in this area either. Such robust biosecurity measures will prevent the leaving behind of a degraded environment and subsequent financial bills for the control of introduced invasive species, or any species that may alter communities within nearby designated sites.
Wildlife Protection – Precautionary Methods of Working-	
<i>Herpetofauna</i>	The habitat on site is of poor suitability for amphibians, but there are two ponds on the wider site and another 7 within 500m of the site that could be suitable for amphibians. The proposed works are not anticipated to lead to any levels of habitat loss or fragmentation likely to affect local population status for either amphibians or reptiles, but individuals may be injured or killed during clearance and construction. Pre Development Vegetation management Vegetation clearance works must take place outside of the typical hibernation period for reptiles and amphibians, which is typically between November and February. Reptiles and amphibians are mostly torpid during this timeframe and are thus most vulnerable to injury or death. Undertaking vegetation clearance works during their active period, typically between March and September, will allow individuals to disperse unperturbed to adjacent retained habitats.

- a) Vegetation at the site shall be kept to its current short sward cut (5cm) until the development is complete to prevent reptiles and amphibians from establishing in this area.
- b) If any amphibians reptiles are discovered, then the ECoW must be contacted right away. If identified as a great crested newt this animal must not be moved by anyone. If it is a common species, this can be moved by hand by wearing clean rubber or disposable gloves to the site boundary and allowed to disperse.
- c) Reptiles are not to be half by the tails as this can cause them to shed tails if feeling threatened, exposing them to infection or death as a result.

Site Management During Construction

- During the course of construction works a site wide check for reptiles and amphibians must be carried out by contractors at the commencement of each working day, with any found relocated to safety within woodland south of the site. Any materials will be stored on pallets away from tall vegetation or boundaries.
- Rubble created during the development will be safely disposed of in a skip. If no skip is available the rubble will be stored off the ground (e.g. on pallets) until it can be removed from site, to prevent common reptiles and amphibians from using the rubble piles for hibernation or refugia.
- All trenches will (where possible) be backfilled before nightfall, or a ramp will be left to allow amphibians to easily exit. Any trench that could not be closed the previous day must be checked for reptiles and amphibians at the beginning of the next working day; particularly where this is scheduled for infilling.
- Any chemicals or pollutants used or created by the development will be stored and disposed of correctly according to COSHH regulations.
- Where for any reason contractors are a non-compliant and rubble and other piled items are left on the floor overnight or for any period of time beyond that working day, they must be dismantled by hand.

	- Any reptiles or amphibians found must be encouraged to move away of their own volition, or if in immediate danger and unable to perambulate themselves, will be captured in gloved hand or by any other means avoiding injury and safely relocated to suitable cover within the adjacent habitat. No amphibians will be handled via bare hand due to the risk they may absorb toxic compounds through their permeable skin. <u><i>If at any point Great crested newts are found during development, all works must cease until further advice has been obtained from a qualified ecologist and the relevant regulators.</i></u>
<i>Birds</i>	The buildings on site provide foraging and nesting habitat for a wide range of species. Nests and bird boxes were identified, and two bird of prey boxes were identified on mature trees in proximity to the site. Habitat loss being relatively minor, it is likely to be inconsequential to local bird populations owing to the retention and enhancement of the habitats across the majority of the site as well as the creation of new habitats such as wild meadows and hedgerows and the installation of bird boxes However works can see active nest at and within the current buildings destroyed, and disturbance to nesting birds in proximity and near the edges of the retained habitat areas. Nest boxes will have to be removed as well to facilitate. Vegetation clearance/demolition of buildings, topsoil stripping and other activities will be undertaken outside the core nesting period 1st March to 31st August. If this timeframe cannot be avoided, a nesting birds check of the the bird boxes, vegetation and buildings on the site will be undertaken, by the project ecologist or ECoW, within 48 hours prior to the commencement of work. All active nests will need to be retained with a species-appropriate (generally 5m) buffer until the young have fledged (species specific but typically 4-6 weeks). If the birds of prey nests are active, these boxes will need a much larger buffer to reduce disturbance. A watching brief will be undertaken during clearance in case any nests were not evident during the first check.

	The buffer will need to be increased in the event of the presence of any Schedule 1 species (such as barn owls in birds of prey boxes within nearby trees) as reckless disturbance as well of destruction of the nests of such species is an offence. Buffer zones regarding schedule 1 species are on a case by case, species by species basis and must be reflected accordingly. If any nesting birds are identified suitable fencing and signage installed to prevent encroachment into these areas. Examples of appropriate installed work signs are shown in Figure 3. Signs can also be installed in regard to non-schedule 1 species, installed in full view in areas where nesting birds have been identified on the pre-work checks.  Figure 3- Work signage regarding nesting birds on the site. Source- www.Britishsafetysigns.co.uk
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<i>Bats</i>	Bat roosts were not directly identified at the site during surveys and potential presence of bats within building 2 is considered acceptably low, due to the presence of bird nests in many locations in cavity spaces. Instead, the cavity wall should be inspected immediately prior to commencement of work, by a suitably qualified professional. This can be an individual with a level 2 licence, or someone accredited on a level 2 licence. This should include the use of an endoscope to fully inspect the gaps within cavity walls. If the endoscope cannot view all of the available gaps, however, further survey effort may be required in the form of dusk emergence surveys. In the unlikely event that a bat is identified during this inspection, works must cease and a full suite of three surveys must be completed, and a licence acquired before works are able to proceed.
<i>Badgers and other terrestrial mammals</i>	The following recommendations are given in order to mitigate against potential harm to hedgehogs, badgers and other mammalian fauna during the development works. • The work zone will be checked for wildlife prior to works commencing, with any fauna encouraged to move away via their own volition or transported by gloved hand to the reptile receptor area if this not be possible. This will only apply to smaller mammal species. Larger mammals such as badgers and foxes will not be transported by hand. • Any inadvertently injured wildlife will be taken to an appropriate local wildlife carer or vet. • Any trenches dug will ideally be backfilled before contractors leave. If this is not possible they will be covered at night or have a rough sawn plank placed in them to act as a ramp for any wildlife which may fall in. They must be checked for wildlife before backfilling. • Security lighting must be directed away from undergrowth and vegetated site boundaries. • Any chemicals or pollutants used or created by the development will be stored and disposed of correctly according to COSHH regulations.
Lighting Strategy	

The habitats on site have habitat value for roosting, commuting and foraging bats and other nocturnal wildlife within what is at present a dark area.

Additional lighting could impact behaviour of wildlife and adversely affect the integrity of roosting and foraging resources. Any proposed external lighting will be installed in accordance with current guidance issued by the Bat Conservation Trust and Institute of Lighting Professionals: Guidance Note 08/18: Bats and Artificial lighting in the UK (BCT & ILP 2018).

The below strategy utilises light prescriptions detailed within this guidance to limit impacts of artificial lighting on bats and other light sensitive species using retained habitats on and directly adjacent to the site including badgers and hedgehogs.

In particular, the lighting strategy seeks to influence the lighting design so that impacts can be avoided to key habitats of value including:

- Any woodland or site boundaries/tree lines/scattered trees.
- The species-specific habitat enhancements detailed below, predominantly the bird and bat boxes and new meadow and hedgerow areas.

The following lighting design prescriptions are considered suitable for the type and scale of the Development to minimise the impacts of artificial lighting on site or within the public realm on bats and other light sensitive species.

Lighting design prescriptions recommended for the Site comprise:

- The southern woodland on the boundary must not be illuminated to ensure the present dark zones are retained.
- Reducing the operating time of any installed public realm lighting and levels of illuminance provided via: Part-night operation. Turning off lights between certain hours, for example between midnight and 06:00.

- The use of motion sensors will be avoided to ensure no unnecessary light spill occurs during night-time hours. Where the use of motion sensors cannot be avoided, lights must be set to be turned on for no longer than 1 minute.
- Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on.
- Avoiding light spill via: The use of directional lighting by using luminaires with rear shields and an upwards lighting ratio of zero; and Consideration to the height and spacing between lighting columns where practicable. Examples include stud LED or footpath lighting. There will be no bare bulbs and no light pointing upwards. The spread of light will be kept in line with or below the horizontal. Use low-level lighting in conjunction with hoods, cowls, louvers and shields.
- Lights will be directional to ensure that light is directed to the intended areas only.
- Light type: Use of lamps that minimise UV emissions or use UV filters to reduce the attractiveness of the lamp to invertebrates. Use high-pressure sodium or LED lamps, ideally warm white as its function as an invertebrate attractant is relatively low.
- The use of landscaping as to block light spill where appropriate.
- Install lighting systems that deliver no greater than a 3lux average illuminance, with a maximum horizontal illuminance of 0.6 uniformity (subject to appropriate maintenance factors).

- Use narrow spectrum light sources to lower the range of species affected by lighting.
- Use light sources that emit minimal ultra-violet light.
- Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they will be of a warm / neutral colour temperature <4,200 kelvin.
- External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on.
- All lighting on the developed site will make use of the most up to date technology available.

Consideration will be taken for internal lighting as well as external light. Measures in order to reduce light spillage from internal lighting are displayed below in **Figure 4**

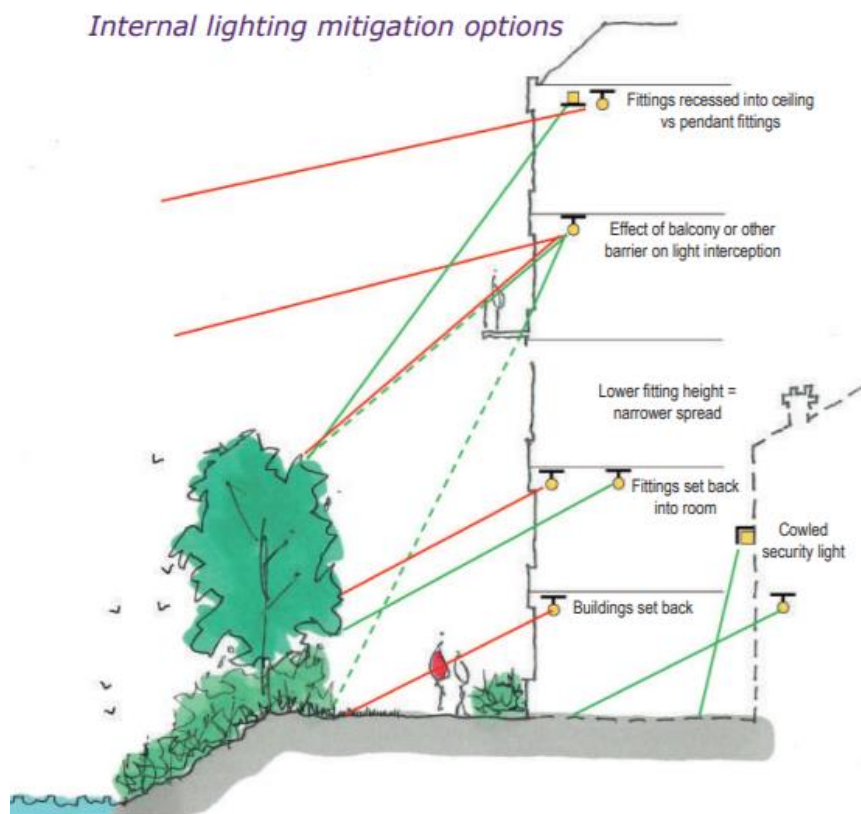


Figure 4- Mitigation measures for internal lighting.

3.0 Habitat Creation and Biodiversity Enhancement Measures

Table 3 details the habitat creation and biodiversity enhancement measures for the site. These are also illustrated in **Appendix 2 for habitat and 3 for fauna species**.

Ecological/Biodiversity enhancement and management measures	This table includes any measure required to obtain or comply with planning permission, conditions ,or other consent and to comply with legislation.
Works	Specification
wild meadow grassland	Overview Areas of grassland will be created on a bank within the southern half of the site, as shown in the proposed landscape plans (Appendix 1) and habitat creation plan (Appendix 2). Objectives • To create a successful grassland that will provide habitat for pollinating invertebrate species, that will in turn, provide foraging opportunities for protected and/ or notable species groups including amphibians, bats, birds, invertebrates and hedgehogs. • Employ techniques that use organic fertilizers and minimise the use of chemicals wherever possible. Creation Method- Wildflower meadow. • Ground preparation The location of the proposed wildflower meadow creation currently comprises areas of dense vegetation and areas of hardstanding. For areas of ground currently covered by vegetation, any existing weeds will be removed through repeated cultivation and the land subsequently ploughed/ turned to bury all remaining vegetation. For areas of ground currently covered by hardstanding, the hard surface will need to be broken up and removed leaving exposed bare earth suitable for seeding. Once the land has been ploughed/

turned or cleared to bare earth, the soil will be rolled or stamped to produce a firm surface ready for seeding. It is noted that the underlying soil substrate is expected to contain a high clay content in places. Clay is generally unworkable when very wet or very dry and autumn sowings may therefore not be possible. It is often better to dig or plough the soil in the autumn, allow winter frosts to break down the clods, and prepare a seedbed in the spring. Soils in the area are also slightly acidic but base rich loamy and clayey soils.

- **Seeding**

To be undertaken in the spring between April and May or in the Autumn between September and October.

The following seed rates are recommended: 40kg/ha or 4g/m²

- **Proposed seed mix:**

It is proposed to seed the meadow with Hedgerow and light shade Wildflower seed mix LW7M 80/20. This seed mix contains 6 no. grass species and 22no. wildflower species. The mixture contains no dominant grass species.; it is considered reasonable to assume a species diversity of 6-8 species per m². For exact specifications, please refer to: <https://www.wildflower.co.uk/products/wildflower-seed-mixtures/80-20-wildflower-meadows-seed-mixtures/lw7-hedgerow-light-shade-80-20.html>

This mix was chosen as the location of the proposed meadow area will experience partial shading, due to the volume of trees to the south, adjacent to the boundary. Therefore a shade-tolerant mix will be needed.

Alternative mixture

- Alternatively Woodland and Heavy Shade Wildflower seed mix LW8M 80/20 can also be recommended, as this mix will also tolerate the shade of the site. This mixture contains 6 meadow grasses and 24 flowering species.
<https://www.wildflower.co.uk/products/wildflower-seed-mixtures/80-20-wildflower-meadows-seed-mixtures/lw8-woodland-heavy-shade-80-20.html>

Table 3.2: Wild meadow Grassland management prescriptions.

Management	When	Rationale
Cut meadow Every 2-3 years, with no more than 50% of the grassland cut each year. This will continue to maintain the tussocky sward for species such as reptiles and mammals and prevent over encroachment. This will only be cut during the hibernation season Oct-March to a height of 100mm and all arising removed	Winter months.	This ensures the meadow does not grow excessively long and become rank but allows wildflowers to set seed and invertebrates to breed. This will also allow a diverse sward of varying lengths to naturally occur in accordance with growth characteristics of each species. Cuts will be during winter to avoid killing fauna such as reptiles within the grassland. Cutting will also follow a routine as demonstrated in figure 5- to prevent entrapping and killing any wildlife within the meadow.
Cut grass as to provide a heterogeneous habitat structure aiming to maintain at least 20% of grass <7cm and 20% >7cm. As such, each cutting phase must cut 20% of the area to ground level, 60% of the area to 15cm, and the remainder to 30cm. These areas must be rotated each year to maintain a diverse sward.	Late March / early April and—late August/ early Sept	To retain a diverse sward whilst limiting impacts to protected species potentially present at ground level and ensuring the natural germination of seeds.
Turn and dry the cut grass over 3-5 days before removing arisings off Site	Post cut	This allows the seeds to drop encouraging species diversity and invertebrates to relocate unharmed. Cuttings will have to be removed to prevent nutrient enrichment of the soil which will affect meadow quality
Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow or cause large areas of bare ground due to inhospitable growing conditions

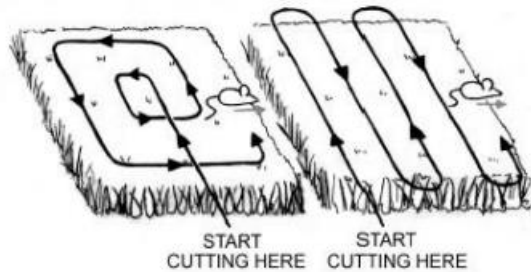


Figure 5- A schematic representation of vegetation cutting patterns best suited for fauna to allow escape and avoid harm.

Native Hedgerow Planting

Overview:

It is proposed to plant hedgerow within the landscaped garden. This will be planted along the southern boundary adjacent to the woodland.

Objectives:

- To create native hedgerows of moderate condition.
- To create dense hedgerows that will provide foraging, commuting, and refugia opportunities for notable species groups including bats, birds, badgers, and hedgehogs.
- To ensure native species only are planted.
- Ensure cultural techniques are employed which use a variety of mulches and organic fertilisers and which minimise the use of chemicals and peat wherever possible.

Species to be included-

Hawthorn 40%, Hazel 20%, Blackthorn 10%, Native Cornus 10%, Field Maple 10% & Dog Rose 10%.

Creation Method:

- **Ground preparation**

Prepare the ground by digging over a strip approximately 60-90cm (2-3ft) wide and one spit (or spade blade) deep. Soils that become waterlogged in winter may require a permanent drainage system. Alternatively, form the soil into a ridge about 15-20cm (6-8in) high and 50-70cm (20-28in) across to plant into.

- **Planting**
Plants will be positioned set back from hardscaped boundaries to allow space for the hedgerow to develop and mature prior to requiring any significant management/ cutting back. Plant density will focus on achieving a hedgerow width >1m; as such, plants will be planted in a staggered double row approximately 45-60cm apart, where individual plants are planted 90cm apart within each row.
- **Timing**
It is best to prepare the land during the summer ready for planting between November and March. Planting before the new year helps ensure better rooting and subsequent establishment including faster growth.

Recommended management prescriptions over a minimum 30-year period:

Management	When	Rationale
At the end of each growing season all plant failures are to be 100% replaced	When required; checked annually in Autumn.	To maintain amenity and wildlife value.
If required, provision of stakes and guards. Guards to be left on for a minimum of 5 years	N/A	Protect from damage
Stakes will be checked and any broken or damaged stakes during this time would be removed (as above) and replaced with ties re-fixed	When required; checked annually in Autumn.	Maintain protection
Remove weeds	When required; checked twice annually in early spring and in Autumn.	Reduce competition for resources nutrients etc.by weeds

		Application of bark mulch at a depth of 50 mm	Immediately after planting and then when required; checked annually in Autumn.	Reduce competition for resources nutrients etc.by weeds
		Apply a light dressing of well-rotted manure	Annually in the winter	Note the overuse of manure fertilisers will encourage vigorous grasses and weeds to grow.
		Watering will be undertaken before and after planting out and as necessary for the continued thriving of all planting.	When required; provide more water during periods of draught and less water during times of prolonged rain.	Ensures plants do not dry out and subsequently fail.
		Check and replace any plant failures once a year	For the first 5 years	To ensure no gaps form.
		Once the hedgerow reaches an average height of 1.5m or above along the hedgerow length, this height or above must be retained.	To be checked annually once hedgerow reaches 1.5m in height.	To ensure the hedgerow is not maintained at a low level of worse value to biodiversity.
		Once the hedgerow reaches an average width of 1.5m or above along the hedgerow length, this width or above must be retained.	To be checked annually once hedgerow reaches 1.5m in width.	To ensure the hedgerow is not maintained at a thin density of worse value to biodiversity.
		Flailing to be avoided- due to increase risk of disease entering individuals. Management to include a mixture of pruning, live head and dead hedge layering once at a suitable size.	Once hedge has reach desired size, to be undertaken in winter months after any berry producing plants have finished. No cutting between 1 st March and 31 st September. Laying recommended very 5-10 years	To increase hedge density and to prevent high volumes of damage which will reduce hedgerow health and quality over time.
Bat Boxes	Overview: A total of three bat boxes will be installed at each site, these will be installed as integrated onto the new building. The proposed locations are shown on the plans provided in Appendix 2 . Details of the bat boxes recommended for the sites are as follows:			

	<i>Integrated bat boxes to be integrated into the façade of new buildings</i> • The recommended integrated bat bricks will be constructed of woodcrete/ woodstone. Boxes of this construction are known to require minimal maintenance and have a lifespan of 25 years plus. • 3 No. Vivara Pro Build-in Woodstone bat tubes (or similar) (see Figure 6) will be installed into the façade of new buildings within either the new home or new nurse building.. This bat brick type is suitable for integration into a range of building types including brick walls, timber cladding, and stone and are suitable to support a range of species including common pipistrelles <i>Pipistrellus pipistrellus</i> and soprano pipistrelles <i>Pipistrellus pygmaeus</i> which are likely to be present in the local area. • The bat boxes will be positioned 3-5m above ground level facing a southwest elevation with a clear flight path to and from the entrance, away from artificial light and facing vegetated habitats. This  Figure 6: Integrated Vivara Pro build-in woodstone bat tubes.
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	(Photo credit: https://www.nhbs.com/ib-vl-05-vivara-pro-build-in-woodstone-batbox) Recommended management: The proposed bat boxes are designed to require no management or maintenance. Furthermore, preventing physical disturbance of bat boxes will increase the chances of occupation by roosting bats. However, it is recommended that the bat boxes are inspected annually for the first five years outside of the typical active season for bats (May to September inclusive) following installation. Inspection must be done by a licenced individual. The boxes are not to be blocked at any time.
Bird Boxes	Two bird boxes are recommended to be installed on the building. The building lacks the height and wall suitability for installation of integrated swift boxes, due to the one-storey height. This instead will include external sparrow-terrace boxes. Bird box specification: • The recommended bird boxes will be constructed of woodcrete/ woodstone. Boxes of this construction are known to have minimal maintenance and have a lifespan of 25 years plus. • 2No. Vivara Pro WoodStone House Sparrow Nest Boxes (or similar) (see Figure 7) will be installed onto the walls of the new building. This bird box type is designed to provide enhanced nesting opportunities for house sparrow <i>Passer domesticus</i>. House sparrows are priority species listed on Section 41 of the NERC Act. However alternative species like tits will also utilise these boxes if sparrows are not present. • The bird box will be positioned approximately 3m above ground level facing a northern elevation where they will be sheltered from prevailing wind, rain and strong sunlight.



Figure 7: Vivara Pro WoodStone House Sparrow Nest Box Nest Box (image credit arkwildlife.co.uk)

Recommended Management:

The proposed bird boxes are designed to require no management or maintenance. Furthermore, preventing physical disturbance of bird boxes will increase the chances of occupation by nesting birds. However, it is recommended that the bird boxes are inspected annually for the first five years outside of the typical nesting bird season (March to September inclusive) following installation. External bird boxes must be replaced if they are damaged, removed, or have fallen from their recommended location. Internal bird boxes will not be blocked or removed.

Invertebrate house	<i>Provision of log piles</i>
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One log pyramid will be constructed to enhance opportunities at the site for invertebrates, the locations of which are shown on the plan in **Appendix 3** near the newly created wild meadow areas. Log pyramids are of particular value to invertebrates which rely on deadwood of varying degradation states to fulfil their lifecycle. The log pyramids will be constructed using logs from deciduous wood, no smaller in diameter than 100mm.

A variation of log sizes is optimum. Logs will be installed partially underground within a shaded location, such as adjacent to tree or hedge planting areas. This will allow the logs to remain damp and subsequently degrade. The proposed log pyramid specification is illustrated on **Figure 8**. Further guidance regarding the construction of log pyramids can be found here: <https://ptes.org/wp-content/uploads/2020/05/Build-a-log-pyramid-for-stag-beetles.pdf>.

**Large log pyramid
suitable for parks
and large gardens**

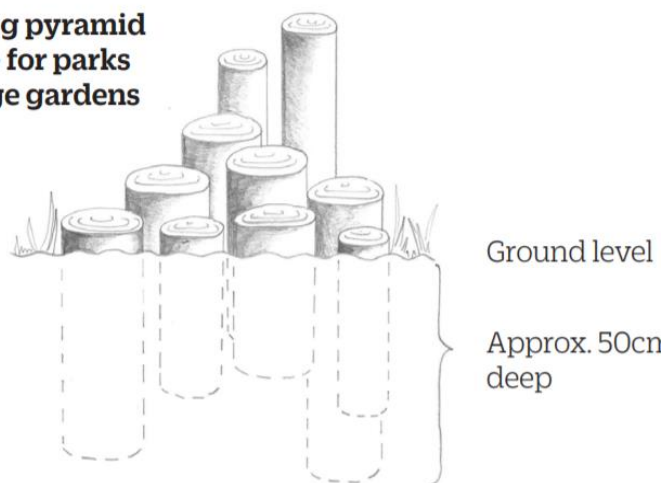


Figure 8: A schematic representation of a log pyramid taken from <https://ptes.org/wp-content/uploads/2020/05/Build-a-log-pyramid-for-stag-beetles.pdf>.

	Any additional wood created at the site or wider site can be added against the pyramid to increase the log pile size.
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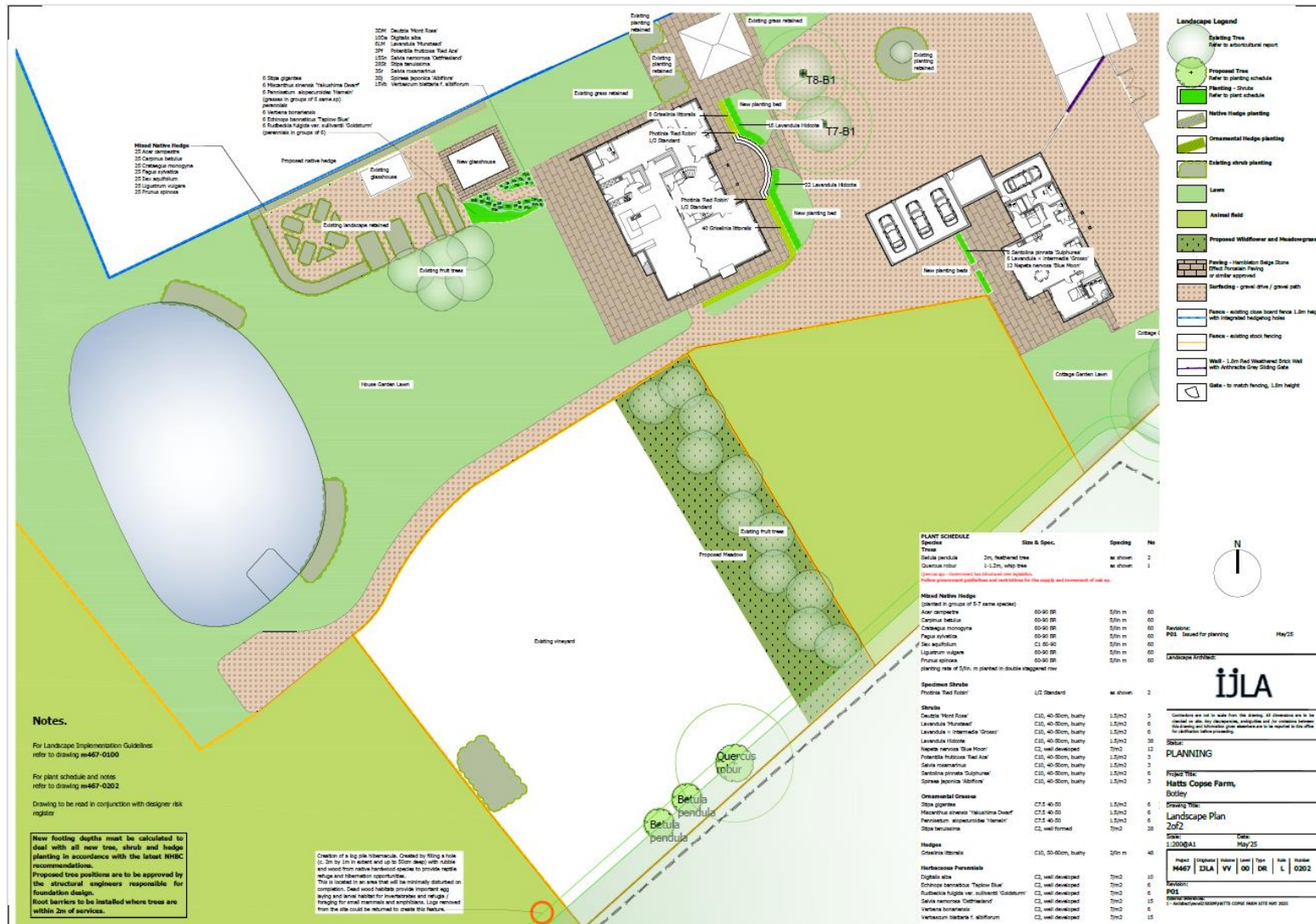
Compliance and Reporting

The BEMP requires stakeholders to comply fully with the pre-construction and construction-related elements of any mitigation strategies agreed with the Local Planning Authority and Natural England under any license requirements. Construction activities will therefore be conducted strictly in accordance with the approved BEMP. Regular inspections and monitoring will be undertaken to ensure compliance with the plan's requirements.

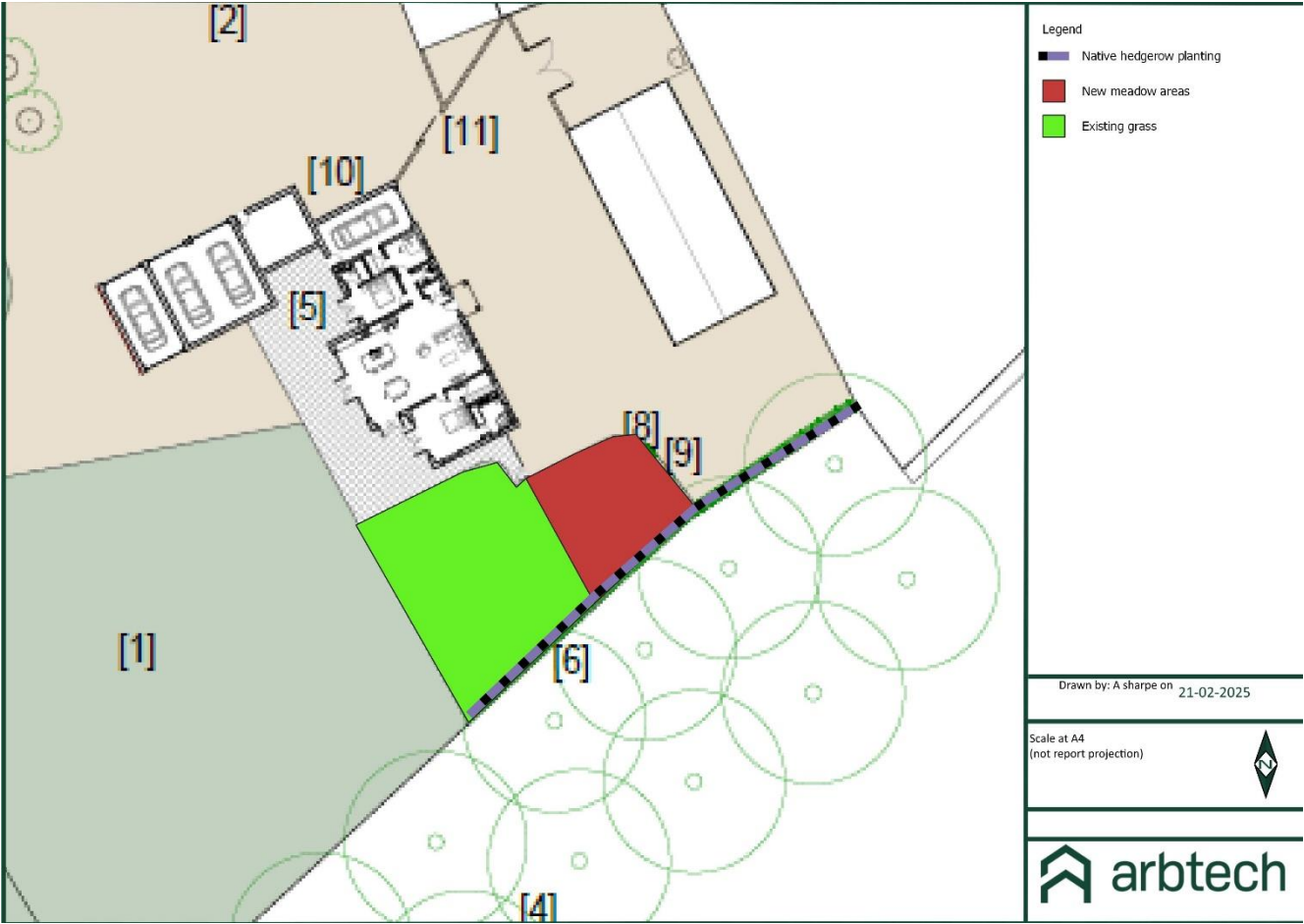
Any deviations or incidents that may affect ecological receptors will be immediately reported to the designated ecologist / Natural England. Updates to the BEMP will be relayed to the Local Planning Authority.

The BEMP will be periodically reviewed and updated as necessary throughout the construction phase to address changing site conditions and evolving ecological considerations.

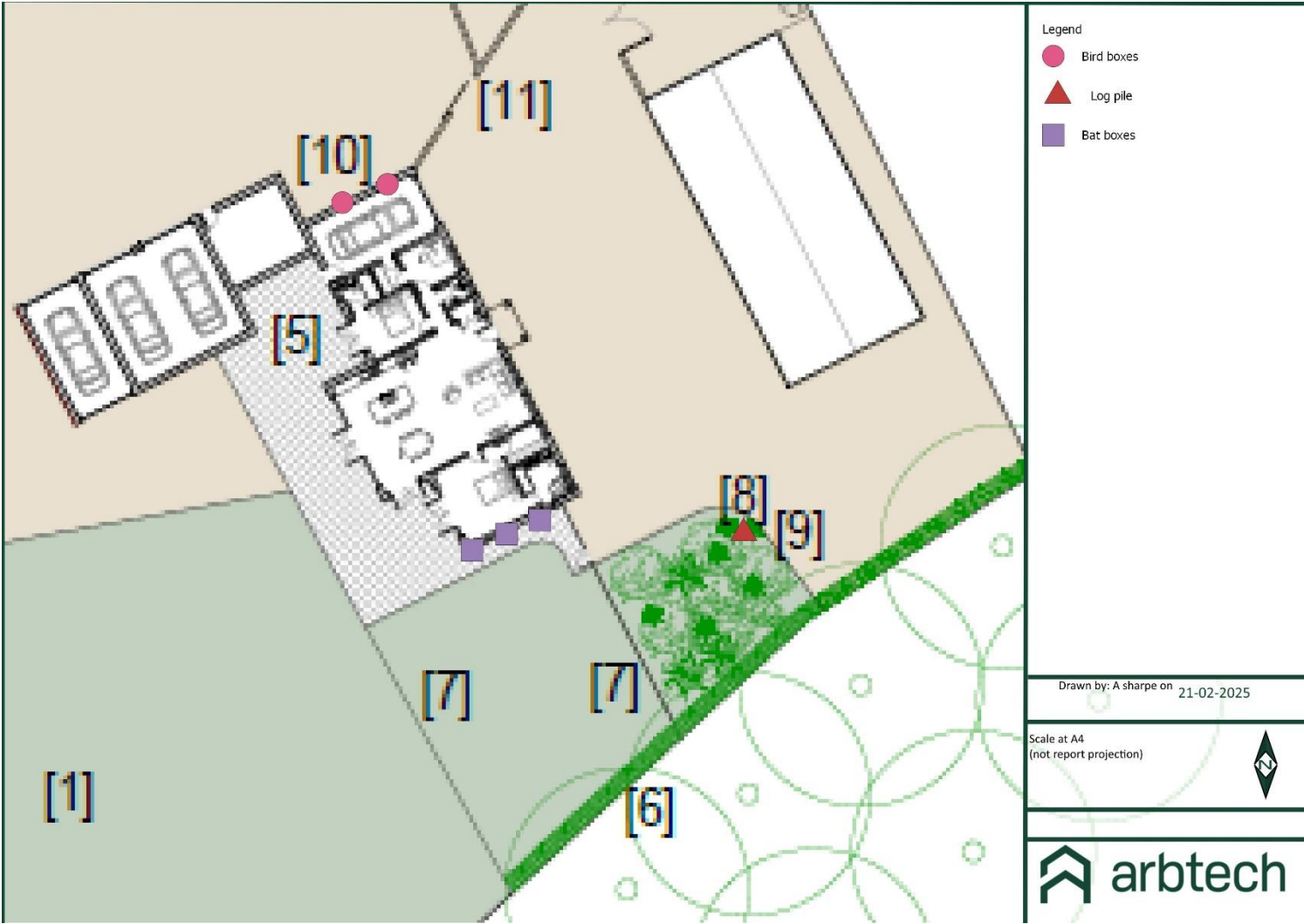
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Appendix 2: Habitat on-site creation and enhancements.



Appendix 3: Species specific enhancements.





Red circle- Location of bat boxes

Blue circle- Bird box locations

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Draft	1.0	Annabel Sharpe, Bsc (Hons) Consulting Ecologist	21/02/2025
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