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Ecological Mitigation, Enhancement and Management Plan

Survey site: **Land Off Windsor Road, Batley, West Yorkshire, WF17 0JG**

Client: Tom and Heather Ainley

Date: 14/01/2025

Project:

This report is prepared to inform a planning application with **Kirklees Council.** The proposal is described as: *the erection of two semi-detached dwellings.*

Planning Application Number:

2021/62/93458/E

Introduction

This Ecological Mitigation, Enhancement and Management Plan (EMEMP) has been prepared for the above-named client to outline measures to be implemented during construction works at the above-named site.

The purpose of this plan is to ensure the protection and mitigation of ecological receptors and adhere to best practices and industry standard. The EMEMP outlines the management frameworks required for the planning and implementation of construction activities that comply with legislation and the environmental commitments.

The wider ecological context of the site and details any associated planning conditions are detailed in **Table 1** and the baseline ecological background and conditions of the site are detailed in **Table 2**. The proposed construction and ecological mitigation measures are detailed in **Table 3** and the proposed habitat creation and biodiversity enhancement measures are detailed in **Table 4** below. These also include management requirements to ensure the longevity of these measures, as detailed in the PEA (which includes further details of the habitats on site and the impacts of the development upon them and will be read in conjunction with this document).

Table 1. The wider ecological context of the site and associated planning conditions to the development.

Site Context and Landscape History	
A detailed description and history are provided in the Preliminary Ecological Appraisal (PEA) (Arbtech, 2022).	
Planning Conditions	
Condition 9	*"Prior to occupation, a "lighting design strategy for biodiversity" for the site shall be submitted to and approved in writing by the local planning authority. The strategy shall:* *a. identify those areas/features on site that are particularly sensitive for bats and that are likely to cause disturbance in or along important routes used to access key areas of their territory, for example, for foraging; and* *b. show how and where external lighting will be installed (through the provision of appropriate lighting contour plans and technical specifications) so that it can be clearly demonstrated that areas to be lit will not disturb or prevent the above species using their territory or having access to their breeding sites and resting places. All external lighting shall be installed in accordance with the specifications and locations set out in the strategy, and these shall be maintained thereafter in accordance with the strategy. Under no circumstances should any other external lighting be installed without prior consent from the local planning authority.* ***Reason:*** *To prevent significant ecological harm in respect of direct impacts to bats and to accord with Policy LP30 of the Kirklees Local Plan and the requirements of section 15 of the National Planning Policy Framework."*

Condition 10	*No vegetation removal shall take place between 1st March and 31st August inclusive, unless a competent ecologist has undertaken a careful, detailed check of vegetation for active birds' nests immediately before the vegetation is cleared and provided written confirmation that no birds will be harmed and/or that there are appropriate measures in place to protect nesting bird interest on site. Any such written confirmation should be submitted to the local planning authority.* ***Reason:*** *To prevent significant ecological harm in respect of direct impacts to birds, their eggs, nests and young and to accord with Policy LP30 of the Kirklees Local Plan and the requirements of section 15 of the National Planning Policy Framework.*
Condition 11	*"Development shall not commence until an Ecological Design Strategy to include mitigation and enhancement measures (including native planting, bat, bird and hedgehog boxes) has been submitted to and approved in writing by the Local Planning Authority. The findings and recommendations shall be implemented in accordance with the Strategy and thereafter retained.* ***Reason****: In the interests of the biodiversity of the area and to accord with Policy LP30 of the Kirklees Local Plan and Chapter 15 of the National Planning Policy Framework. This is a pre-commencement condition in order to ensure that adequate mitigation and enhancement measures are incorporated into the development at the appropriate stage of the development.".*

Table 2. The Baseline Ecological Background and Conditions of the site.

Baseline Ecological Background and Conditions (detailed using desk study and site survey).
The site had a PEA undertaken by Arbtech on the 24th February 2022. Habitats identified at the site include- • Semi-improved neutral grassland (classified using the JNCC Phase 1 Habitat Survey Methodology) • Scattered trees, • Introduced shrubs 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**- The scattered trees and introduced shrubs provide suitable habitat for nesting birds. • **Badgers**- No setts were identified on site however, the grassland provides limited foraging and commuting opportunities. Despite this, the site is fragmented from the wider landscape and therefore the presence of badgers are considered acceptably low. • **Bats**- The scattered trees on site do not provide roosting potential for bats however, they may be used for commuting and foraging opportunities by local bat populations. • **Reptiles**- The grassland onsite provides limited habitat for reptiles however, due to its isolated nature, the likelihood of reptiles is considered acceptably low.

- **Amphibians**- The grassland provides suitable terrestrial habitat for amphibians on site however, there is no suitable aquatic habitat present on site or within 500m therefore, the likelihood of Great Crested Newts (GCN) on site is considered acceptably low.
- **Hedgehog -** The shrub and grassland on site provide opportunities for sheltering, foraging and commuting hedgehogs.

Scope

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

- The erection of two semi-detached buildings.

Aims and Objectives

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

Work Schedules and Ecological Presence

Work schedules will be developed 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. Measures are outlined in later sections.

Persons Responsible and Lines of Communication

A Development Biodiversity Champion is selected for the construction phase of the development. The Development 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 EMEMP are implemented. 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 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 of the commencement of construction works and provides updates where necessary.

The following key personnel are responsible for the management and implementation of works in accordance with the EMEMP:

- Site manager
- Main contractor
- Site owners

Table 3- 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.
Wildlife Protection – Precautionary Methods of Working	
Birds	The site will see a complete loss of habitat on site temporarily (except the retained boundary trees) while construction works takes place, but this will be compensated by the creation of vegetated gardens and the planting of native trees. The proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests within the scattered trees and introduced shrub. Therefore, the removal of scrub/trees will be undertaken outside the core breeding bird season period, which is typically between 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the vegetation will be undertaken by a suitably qualified ecologist (SQE) no more than 24 hours prior to the commencement of work. All active nests will be retained until it has been confirmed by a SQE that the young have fledged, and no construction works will be undertaken within 5m of any active nest. 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 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 as determined by the SQE. If schedule 1 species are identified nesting, these areas must be retained, and suitable fencing and signage installed to prevent encroachment into these areas. It is an offence to recklessly disturbed adult and independent young in proximity to their nests as well as the nests themselves. Examples of appropriate installed work signs are shown in **Figure 1.** 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 1. Work signage regarding nesting birds on the site. Source- www.Britishsafetysigns.co.uk

Reptiles and Amphibians	A precautionary methos of working when removing the grassland onsite is required to prevent causing injury or death during development works to reptiles and amphibians.

Timing of Vegetation Clearance Works

Vegetation clearance works must take place outside of the hibernation period for reptiles/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.

Sensitive vegetation removal

Vegetation removal will comprise a phased cutting method in addition to cutting in systematic patterns. The phased cutting method will be undertaken in two stages; the first cut will remove all vegetation to approximately 200-300mm from ground level and the second cut will be to ground level/ bare ground. Amphibians are most likely to be present at or just below ground level; the phased technique allows any individuals present at this vegetation level to disperse. The systematic vegetation cutting must be applied to both cutting phases and comprises cutting systematically towards areas of retained/boundary habitat to encourage any individuals to retreat unharmed. This method also prevents the creation of habitat islands during the second cutting phase which has potential to trap amphibians in isolated pockets of habitat and thus increase the potential for injury or death during works. A suitable systematic cutting technique is exemplified below on **Figure 2.**

Once the sensitive vegetation clearance has been completed, this area will then be managed as bare ground or very short vegetation (<100mm) which is unsuitable to support reptiles and amphibians for prolonged periods and is likely to prevent individuals from recolonising this section of the site prior to works. All vegetation arisings created from the cutting will be removed from the area whilst ensuring the cleared sections of the site remain unsuitable to support this species during construction.

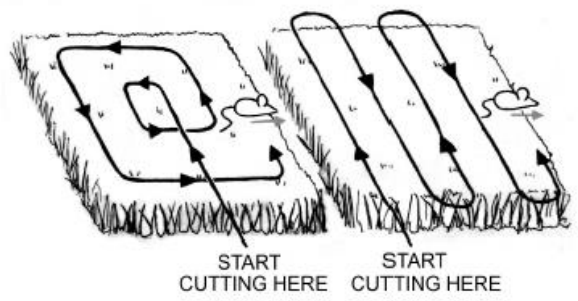

Figure 2. A schematic representation of vegetation cutting patterns as best to eliminate terrestrial opportunities for amphibians.

	Removal of Debris and Storage of Building Materials Once the above mitigation prescriptions have been completed and the on-site areas have been suitably prepared for development, excavation and construction activity can commence. However, in order to prevent the creation of large debris piles resulting from development works that could in turn become suitable refuge hibernacula for amphibians and reptiles, all debris will be stored over hardstanding or within a skip. Furthermore, the storage of building materials should also be located over hardstanding or stored on pallets to prevent providing temporary refuge value to amphibians/reptiles within the development area. Prevent Trapping Amphibians and Reptiles During Works Deep excavations may be required during construction activity. Deep excavations could trap individuals and cause injury or death. All excavations will therefore either be suitably sealed overnight, or a ramp will be installed to enable any trapped animals to escape such as a piece of rough timber that is long enough to reach the base of the excavation from ground level. Should any trapped animals be found, the project ecologist should be contacted for advice on how to proceed.
Lighting Strategy	

Overview

Habitats on site are likely to be utilised by light sensitive protected and/or notable species including bats and other nocturnal wildlife. As such, the installation of external lighting could deter these species from the site. Mitigation is therefore required to minimise impacts of artificial light disturbance resulting from the proposed development.

External Lighting During the Construction Phase

Works will be completed during daylight hours only between May and September (inclusive). This will prevent indirect impacts occurring to nocturnal species on and adjacent to the site because of artificial lighting. Whilst it is acknowledged that some works may take place during periods of darkness between October and April (inclusive), this will be for very short periods shortly prior to dawn and after dusk when nocturnal species are entering hibernation/ periods of inactivity. As such, no significant impacts associated with artificial lighting are anticipated at this time of year.

External Lighting During the Operational Phase

All external lighting will be installed in accordance with current guidance issued by the Bat Conservation Trust and Institute of Lighting Professionals: *Guidance Note 08/23: Bats and Artificial lighting at Night* (BCT & ILP 2023). External lighting will be installed in a way as to limit artificial light spill over habitats of value to protected and/ or notable species potentially using the site. Specifically, artificial lighting should be installed to illuminate car parking and pedestrian access areas only, whereby light installation is avoided within large areas of natural and semi-natural habitats. External lighting will be installed as to avoid excessive light spill over:

- Retained peripheral trees and vegetation
- Installed bird boxes (2 No.)
- Installed bat boxes (2 No.)

The following lighting design prescriptions are considered suitable for the type and scale of the proposed development to minimise the impacts of artificial lighting on site on bats and other protected/notable species. External lighting will be installed in accordance with the below design prescriptions:

- **Reducing the operating time of lighting and levels of illuminance provided via:**
  Preventing the use of motion sensors where possible to allow lights to be turned off permanently whilst not in use.
  Where the use of motion sensors is desirable, light sensors should be set to over-run times no longer that 1 minute to prevent unnecessary light spill.
- **Avoiding light spill via:**
  The use of directional lighting by using luminaires with rear shields and an upwards lighting ratio of zero, i.e. down lights.
- **Light type:**
  Use of warm white LED lamps only, whereby the Corrected Colour Temperature does not exceed 2700 Kelvin and a brightness of 500 lumens or less.

Internal Lighting

Impacts of artificial light spill through windows will be mitigated by fitting internal lighting fixtures in line with recommendations within Guidance Note 08/18 (BCT & ILP 2023). Specifically, in order to limit light spill through windows, internal lighting will be recessed into the ceiling and set back a minimum of 1m from all windows as to limit horizontal light spill. A schematic representation of the effect of these lighting prescriptions is provided on **Figure 3** below.

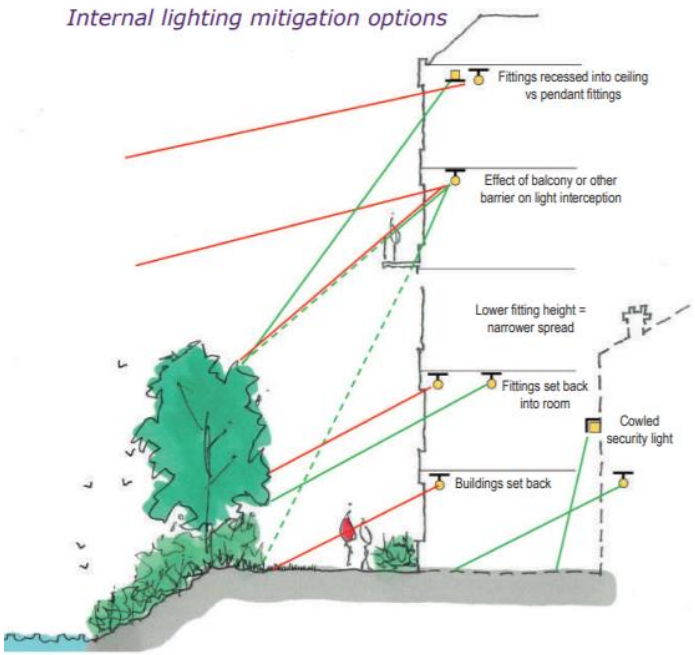

Figure 3. Internal Lighting mitigation options. Image taken from Guidance Note 08/23: Bats and Artificial lighting at Night (BCT & ILP 2023).

2.0 Habitat Creation and Biodiversity Enhancement Measures

The habitat creation and biodiversity enhancement measures for the site are detailed in **Table 4** below. These are also illustrated in **Appendix 2.**

Table 4. Ecological/Biodiversity enhancement and management measures for the proposed development.

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**

Tree and Shrub Planting

Overview

New native tree and shrub planting and a combination of both native and ornamental shrubs are proposed across the site as shown on the proposed landscape plans (see **Appendix 1**). This will focus primarily to include a range of native species, such as English oak, beech, chestnut, birch, hazel and hawthorn.

Ornamental species such as laurel, rhododendron and non-native cotoneasters listed on the schedule 9 invasive species list must be avoided.

Objectives

- To plant a range of trees and shrubs that will provide pollinating, foraging, commuting, and refuge opportunities for protected and/ or notable species groups including amphibians, bats, birds, hedgehogs, and reptiles.
- Ensure that good horticultural practice is employed to encourage the long-term health and vitality of all trees and shrubs.
- Ensure well-balanced crowns and/ or natural shape by preventing over-competition.

Creation Method

- **Ground preparation and planting**

  Each tree and shrub will be planted within a hole three times as wide of the supplied pot and of a similar depth. Root balls will be soaked thoroughly in water before planting and root balls will be loosened to expose restricted roots before planting. The planted trees and shrubs will then be backfilled ensuring there are no air pockets around roots or any roosts protruding out of the ground.
- **Timing**

  It is best to prepare the land during the summer ready for planting between November and March. Planting trees and shrubs before the new year helps ensure better rooting and subsequent establishment including faster growth during the first growing season.

Recommended management prescriptions:

Table 3.1. New tree and shrub planting.

Management	When	Rationale
At the end of each growing season all plant failures are to be 100%	When required; checked annually in Autumn.	To maintain amenity and wildlife value.

		replaced		
		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
		Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow
		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.
		Removal of spent flowers from perennial plants will be removed through 'deadheading'	Twice annually, late spring and in the Autumn.	Allows plants to place more energy into re-growth.
		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	Ensures plants do not dry out and subsequently fail.

			prolonged rain.	
		Check and replace any plant failures once a year	For the first 5 years	To ensure no gaps form.
Bat Boxes	**Overview:** A total of two bat boxes will be installed at the site, comprising external bat boxes onto retained mature retained trees. The proposed locations are shown on the plans provided in **Appendix 2.** Details of the bat boxes recommended for the site are as follows: ***External bat boxes to be installed onto retained trees*** • The recommended external bat boxes will be constructed of woodcrete/ woodstone. Boxes of this construction are known to require minimal maintenance and have a lifespan of 25 years plus. • 2 No. Vivara Pro Low Profile Woodstone Bat Boxes (or similar) (see **Figure 4**) will be installed onto retained trees along the site boundary. This bat box type is suitable to support a range of species including Noctules *Nyctalus noctula* and Soprano pipistrelles *Pipistrellus pygmaeus.* • The bat boxes will be positioned 3-5m above ground level facing a southern elevation with a clear flight path to and from the entrance, away from artificial light and facing vegetated habitats.			

<table>
<tr><td></td><td> 

Figure 4. Vivara Pro Low Profile Woodstone Bat Box (image credit: https://www.nhbs.com/equipment?qtview=194583)

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. Bat boxes must be replaced if they are damaged, removed, or have fallen from their recommended location.</td></tr>
<tr><td>Bird Boxes</td><td>Two bird boxes are recommended to be installed on the retained trees along the site boundary. The proposed locations are shown on the plans provided in Appendix 2. Details of the bird boxes recommended for the site are as follows:

Bird box specification:
• The recommended bird boxes will be constructed of woodcrete/ woodstone. Boxes of this construction are designed to require no maintenance and a lifespan of 25 years plus.
• 2x Woodstone Nest Boxes (or a similar alternative brand) with 28mm entrance holes are proposed on the trees, as shown in Figure 5.
• Woodstone Nest Boxes will be positioned approximately 1.5-3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. Box positions will not be facing south as a result.</td></tr>
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	 **Figure 5.** Woodstone Nest Box – source 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.
Hedgehog House	**Access points** Access will be continued to be provided for hedgehogs on the site. This will include the installation of hedgehog access points within the fencing around the site. Gaps in the fencing will be a minimum 15 x 15cm. A hedgehog highway plaque will be installed over these gaps to indicate the reasoning and to prevent these being accidently being fixed or blocked off, as demonstrated in **Figure 6.** This will also include gaps between the closed board fencing between the gardens, which will provide safe movement across the site. Location of suitable gaps are noted in the map in **Appendix 2.** This will also provide movement access for smaller fauna such as reptiles.

Figure 6. Hedgehog highway plaque- Source- www.Wildcare.co.uk

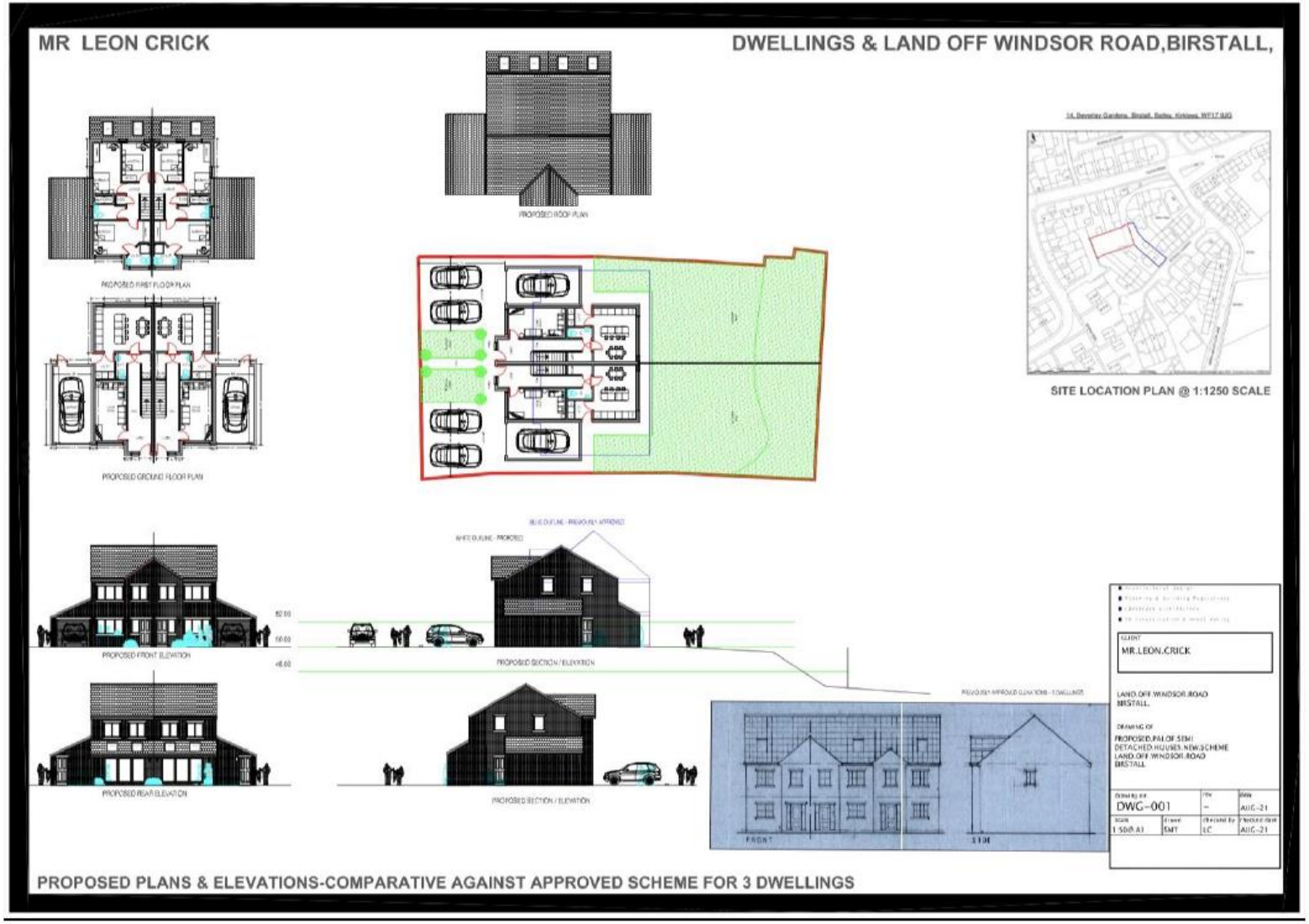
Compliance and Reporting

The EMEMP 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.

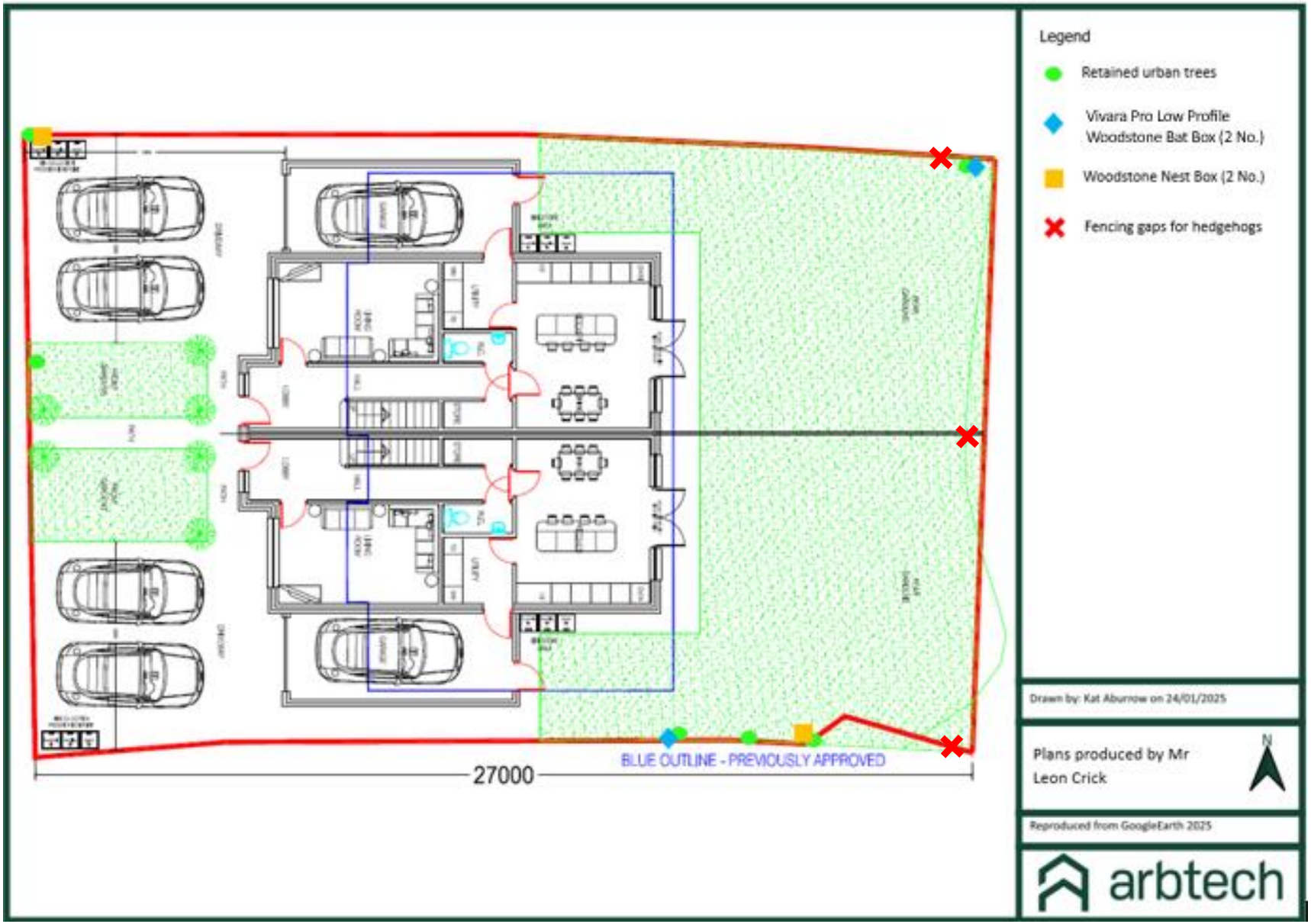
Any deviations or incidents that may affect ecological receptors will be immediately reported to the designated ecologist. Updates to the EMEMP will be relayed to the Local Planning Authority.

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

Appendix 1: Site Landscape Masterplan



Appendix 2: Species-specific enhancements



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