HAZEL DORMOUSE MITIGATION & COMPENSATION STRATEGY

Client: Cygnature Homes

Site: South Hill, Pulborough

14.03.2024

Version 001

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001	14.03.2024	N/A	Issued to client.

Life Span of Survey Data and Report	
Report	This report remains valid for 12 to 18 months from date of issue. The report, conclusions and recommendations are valid for current development plans only. Should this change, the report should be reviewed and, if necessary, further survey work and desk study review undertaken.
Survey Data	Survey data are valid for 12 to 18 months from the date the survey was undertaken.

The information which we have prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

Contents

List of Tables:

1. Summary

Site Details
• Site Address: South Hill, Storrington Road, Thakeham, Pulborough, RH20 3EN. • OS grid reference: TQ 1035 1745. • Area of Site: 6873.2 m² (0.687 ha).
Scope of Works
• aLyne Ecology Ltd was commissioned by Cygnature Homes to undertake a Hazel Dormouse Mitigation & Compensation Strategy, detailing an impact assessment and recommendations for mitigation and compensation, on the assumption that hazel dormice are present. • This Hazel Dormouse Mitigation & Compensation Strategy has been prepared in accordance with advice provided by Horsham District Council on 21st November 2023, in response to the planning application for the proposed works (planning reference: DC/23/1777) as the hedgerow habitats on site were assessed as having low potential to support hazel dormice in aLyne Ecology Ltd.'s report (aLyne Ecology Ltd., 2023).
Development Proposals
• The development proposals are for the construction of five detached dwellings with associated access, car ports, and landscaping. • Landscaping includes the following: o Hedgerow planting. o Tree planting. o Ornamental shrub planting. o Herbaceous perennial planting. o Specimen grasses. o Flowering lawns. • Habitats recorded during the Preliminary Ecological Appraisal (PEA) (see Figure 1) to be removed or partially removed include the following: o Modified grassland. o Horticulture. o Developed land, sealed surface. o Buildings. o Artificial unvegetated, unsealed surface. o Other hedgerow. o Line of trees. • Habitats recorded during the PEA (see Figure 1) to be retained include the following: o Hedgerow (Priority Habitat). o Line of trees. • The Proposed Site Plan Drawing is provided in Figure 2.

Preliminary Impact Assessment

Construction impacts:

- In the absence of avoidance and mitigation measures, the removal of hedgerows and trees on site could potentially result in the permanent loss and fragmentation of hazel dormouse habitat, as well as the potential killing and injury of hazel dormice, which is an offence under the Wildlife and Countryside Act 1981 (as amended) (HM Government, 1981) and the Conservation of Habitats and Species Regulations 2017 (HM Government, 2017).

- Hazel dormice are successional feeders and opportunistic foragers that are able to adapt to many food sources including fruit, berries, nuts, seeds, invertebrates, and flowers (People's Trust for Endangered Species, 2024); therefore, the removal of the hedgerows and trees on site could limit the year-round food availability for hazel dormice.

Operational impacts:

- Hazel dormice may also be deterred from using the hedgerows and trees for nesting and foraging/commuting if lighting levels are altered as a result of the development.

Key Hazel Dormouse Mitigation & Compensation Strategy Measures

- To ensure that all personnel on site are aware of their legal obligations pertaining to hazel dormice and that all mitigation measures are adhered to throughout the construction works, the project ecologist will give a toolbox talk to all personnel involved in the construction works prior to the start of the construction activities.

- The proposed Maintenance Path will be seeded with a flowering lawn (Lizard Landscape Design and Ecology, 2023). It is recommended that this Maintenance Path functions as a buffer zone.

- In order to protect the existing hedgerows and trees to be retained on site from construction activities associated with the development, it is recommended Heras fencing is erected along the hedgerows and lines of the trees to form a physical barrier to prevent damage.

- An inspection of the hedgerows by a licensed hazel dormouse ecologist should take place prior to the commencement of the hedgerow and tree removal. The licensed hazel dormouse ecologist will check all hedgerows and trees for signs of hazel dormice and hazel dormice themselves. In the unlikely event that a hazel dormouse is found during the search, works would need to cease immediately and a European Protected Species Licence (EPSL) for hazel dormice should be obtained from Natural England before works continue.

- Hedgerows and trees that require removal on site should be cut down between November and March inclusive, to avoid both the bird nesting season and the majority of the period when hazel dormice might be found in nests above ground. Clearance should be done by hand and in a sensitive manner, to minimise the likelihood of disturbing or killing hibernating dormice.

- A sensitive lighting plan should be adopted, to ensure that outside lighting does not adversely affect adjacent habitats and wildlife, particularly hazel dormice when foraging and commuting.

- A Construction and Environmental Management Plan (CEMP) should be prepared, demonstrating how features of ecological value will be retained and protected during

construction, particularly the hedgerow and trees that have suitability to support hazel dormice.
Key Outline Hazel Dormouse Enhancement Strategy

• The following enhancements have been recommended (see Figure 3):
  ○ Hedgerow interplanting.
  ○ Tree and shrub planting.
  ○ Wildflower lawns.
  ○ Hazel dormouse nest boxes.
  ○ Hibernacula.

Management and Monitoring
• The manufacturer's instructions will be followed for management and monitoring of all newly created grassland. Fertilisers, pesticides, and herbicides will be avoided. • Planting of trees, scrub, and hedgerows will take place from October to February. Trees, shrubs, and hedgerows will be well-watered to aid establishment, for at least one year following planting. All new trees/shrubs/hedgerows will be checked annually for damage/disease. Protective fencing/guards will be checked bimonthly for damage/adjustments. • Management of the hazel dormouse boxes is not required. If a hazel dormouse box is damaged, it will be replaced. Replacement of hazel dormouse boxes will only be carried out by a licensed hazel dormouse ecologist. • The hibernacula will be checked annually and replaced, where necessary.

2. Introduction

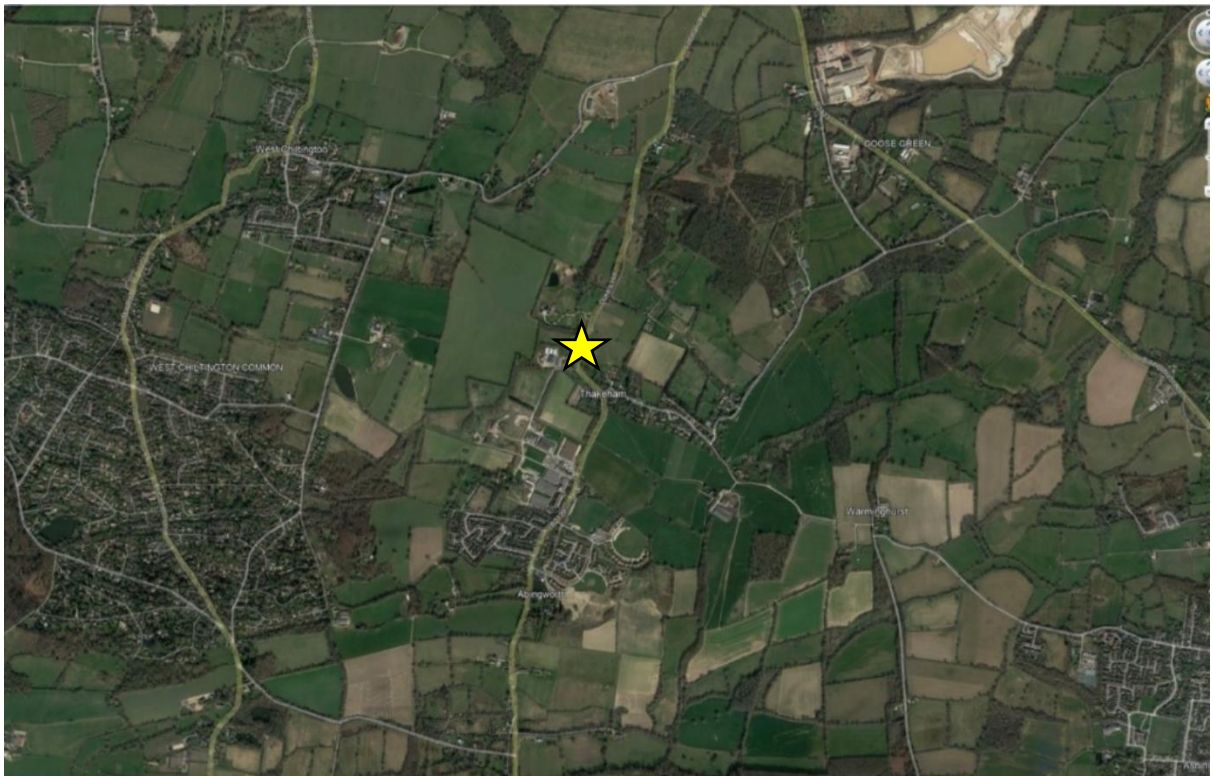
2.1 Site Details

Table 1 provides details on the site, intended as a summary of key features. Table 1 and Table 2 have been derived from Magic (Natural England, 2013) and aLyne Ecology Ltd.'s report (aLyne Ecology Ltd., 2023).

Table 1. Site Details

Site Name	South Hill, Pulborough
Site Address	South Hill, Storrington Road, Thakeham, Pulborough, RH20 3EN
OS Grid Reference	TQ 1035 1745
Approximate Total Area of Site	6873.2 m² (0.687 ha)
Landowner and Local Authority	Cygnature Homes, Horsham District Council
Geology and Soils	Freely draining, slightly acidic, loamy soils
Hydrology	Freely draining
Nature Conservation Designations	None on site
Other Designations	None on site
The Woodland Trust Ancient and Notable Tree Inventory	None on site
Biodiversity Opportunity Area	None on site
National Habitat Network	None on site
Current Land Use	Horticultural plot and surrounding amenity grassland

An aerial plan showing the location of the site is provided below.



Site Location (© Google Earth Pro, accessed 7th March 2024).

2.2 Site Context

Table 2 provides details on the context of the site in terms of habitats, land use and connectivity to the wider landscape.

Table 2. Site Context

Surrounding Habitats and Land Use	Rural location, comprising a mixture of arable and grazed fields, hedgerows, and woodland. Numerous waterbodies are located within 1 km of the site, the closest being approximately 80 m from the north-east corner of the site. The wider landscape is characterised by scattered residential and light industrial buildings, and further areas of farmland.
Urban Context / Locality	The site is located in Thakeham, off the B2139.
Connectivity to Wider Landscape	The site has reasonable connectivity via existing hedgerows and lines of trees to areas of key foraging habitat for bats and other wildlife in the wider landscape.
Priority Habitats within 1 km	• Hedgerows. • Deciduous woodlands. • Ponds. • Rivers/streams. • Woodpasture & parkland. • Traditional orchards.
Ancient Woodland within 1 km	Three parcels, the nearest being approximately 445 m to the north of the site.
Statutory Designated Sites within 1 km	None.
European Designated Sites within 5 km	• Arun Valley SAC/ Special Protection Area (SPA)/Ramsar located approximately 4 km to the west of the site.
EPSLs within 2 km	Two granted EPSLs in total for roosting bats: • Destruction of a resting place and breeding site for common pipistrelles (*Pipistrellus pipistrellus*) and brown long-eared bats (*Plecotus auritus*) located approximately 1.45 km to the east. • Destruction of a resting place for common pipistrelles and brown long-eared bats located approximately 1.95 km to the south-east. One granted EPSL for the damage and destruction of a hazel dormouse (*Muscardinus avellanarius*) resting and breeding site located approximately 1.37 km to the south-west.

2.3 Proposed Development

The development proposals are for the construction of five detached dwellings with associated access, car ports, and landscaping.

Landscaping includes the following (Lizard Landscape Design and Ecology, 2023) (Lizard Landscape Design and Ecology, 2023):

- Hedgerow planting.
- Tree planting.
- Ornamental shrub planting.
- Herbaceous perennial planting.
- Specimen grasses.
- Flowering lawns.

Proposed mixed-species native hedgerow species include:

- *Carpinus betulus.*
- *Corylus avellana.*
- *Fagus sylvatica.*
- *Malus sylvestris.*
- *Prunus avium.*

Proposed single-species native hedgerow species include:

- *Carpinus betulus*.

Proposed native tree species include:

- *Acer campestre.*
- *Betula pendula.*
- *Prunus padus.*
- *Quercus robur.*
- *Sorbus aucuparia.*

Proposed ornamental tree species include:

- *Amelanchier lamarckii*.
- *Crataegus monogyna* 'Alboplena'.
- *Cornus kousa* 'Stella Pink'.

Proposed ornamental shrub species include:

- *Cornus sanguinea* 'Midwinter Fire'.
- *Skimmia japonica* 'Rubella'.
- *Pittosporum tenuifolium* 'Variegatum'.

Proposed herbaceous perennial species include:

- *Achillea* 'Moonshine'.
- *Rudbeckia fulgida* var. *sullivantii* 'Goldsturm'.
- *Salvia nemorosa* 'Ostfriesland'.

Proposed specimen grasses species include:

- *Calamagrostis brachytricha.*
- *Deschampsia cespitosa.*
- *Stipa tenuissima.*

Proposed flowering lawns will be sown with the following:

- EH1 Hedgerow Mixture by Emorsgate Seeds.
- EL1 Flowering Lawn Mixture by Emorsgate Seeds.

Habitats recorded during the PEA (see Figure 1) to be removed or partially removed include the following:

- Modified grassland.
- Horticulture.
- Developed land, sealed surface.
- Buildings.
- Artificial unvegetated, unsealed surface.

- Other hedgerow.
- Line of trees.

Habitats recorded during the PEA (see Figure 1) to be retained include the following:

- Hedgerow (Priority Habitat).
- Line of trees.

2.4 Planning Context

Horsham District Council provided a response to the planning application (planning application reference: DC/23/1777) on 21st November 2023.

Horsham District Council's response regarding bats was as follows: *"This is because we note from the Landscape Masterplan 01 Drawing No. LLD2823-LAN-DWG-010 Lizard Landscape Design and Ecology* (Lizard Landscape Design and Ecology, 2023) *that existing trees are proposed for removal along the northern boundary although the Preliminary Ecological Appraisal Report (aLyne Ecology Ltd., January 2023) recommends retention of all treelines and hedgerows. The Preliminary Ecological Appraisal Report* (aLyne Ecology Ltd., 2023) *states that there are no trees on site with bat roosting potential, but since trees are to be removed, we request clarification that these trees have been subject to a Preliminary Roost Assessment for bats in line with 4th Ed. Bat Surveys for Professional Ecologists Good Practice Guidelines* (Collins, 2023)*. This information is required prior to determination in order to inform any mitigation requirements or the need for further surveys according to Government Standing Advice.*

In addition, the site lies approximately 9.1km from The Mens Special Area of Conservation (SAC) for which one of the qualifying features is barbastelle bats (Barbastella barbastellus). The site lies within the 12 km Wider Conservation Area for the Sussex bat SACs (Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol) and therefore may be within the range of foraging areas required by the bats. The LPA will need to prepare a project level Habitat Regulations Assessment (HRA) to assess the likely effects from this development on the bats of the Sussex bat SACs.

It is therefore reasonable for a suitably qualified ecologist to clarify if there are any potential roost features (PRFs) in any trees to be removed and potentially to prepare a Preliminary Roost Assessment as well as assessing if any features used by foraging bats will be impacted. This assessment can be undertaken at any time of the year and the results need to be submitted to the LPA together with full details of any mitigation and compensation required to avoid an offence.

In addition, the hedgerows on site provide low potential to support hazel dormice, there is low connectivity to woodland within the wider landscape and there are dormouse records within 2 km of the site (aLyne Ecology Ltd., 2023)*. Since the existing hedgerow along the eastern boundary will be gapped up, there will be impacts to this hedgerow. Therefore, we have concerns about the potential impacts to hazel dormice (European Protected Species), together with loss of habitat, and we recommend that a mitigation/compensation strategy for hazel dormice should be submitted to the LPA.*

The results of the above surveys for bats and any mitigation measures for hazel dormice are required prior to determination because paragraph 99 of ODPM Circular 06/2005 highlights that: "It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision."

2.5 Ecological Background

2.5.1 Preliminary Ecological Appraisal (PEA)

A PEA was carried out by aLyne Ecology Ltd in January 2023 (aLyne Ecology Ltd., 2023). The site was assessed as comprising modified grassland, line of trees, hedgerows (Priority Habitat), other hedgerows, broadleaved trees, horticulture, developed land, sealed surface, buildings and artificial unvegetated; unsealed surface (see Figure 1).

A data search was provided by Sussex Biological Records Centre (SxBRC) showing records of designated sites and protected species within 1 km of the site. The data search showed Arun Valley SAC/ SPA/Ramsar, which encompasses Pulborough Brooks Site of Special Scientific Interest (SSSI), is located approximately 4 km to the west of the site. Species recorded in the data search include the following:

- At least six bat species, including rare species such as Alcathoe's bat (*Myotis alcathoe*).
- Bird species of conservation concern, including brambling (*Fringilla montifringilla*), bullfinch (*Pyrrhula pyrrhula*), fieldfare (*Turdus pilaris*), greenfinch (*Chloris chloris*), house sparrow (*Passer domesticus*), redwing (*Turdus iliacus*), song thrush (*Turdus philomelos*), and yellowhammer (*Emberiza citronella)*.
- Hazel dormouse.
- Two invertebrates of conservation concern including cinnabar moth (*Tyria jacobaeae*) and grizzled skipper butterfly (*Pyrgus malvae*).

The site was assessed as having suitability for great crested newts (*Triturus cristatus*) during their terrestrial phase, reptiles, nesting birds, foraging and commuting bats, hazel dormice, foraging badgers (*Meles meles*), and hedgehogs (*Erinaceus europaeus*).

Recommendations include the following:

- A HRA is carried out in relation to Arun Valley SAC/SPA/Ramsar to determine the need for an Appropriate Assessment.
- Trees, hedgerows, and scrub should be retained and protected.
- A fingertip search of the grassland habitats within the site should be carried out by a great crested newt licenced ecologist prior to works taking place and the removal of scrub or any other vegetation should be carried out carefully by hand with an Ecological Clerk of Works (ECoW) present, to ensure that any amphibians, reptiles, or European hedgehogs, which may be present, can escape unharmed.
- If any great crested newts are found, all works must cease immediately, and a EPSL should be obtained from Natural England.
- Any removal of vegetation should be undertaken outside the bird breeding season (March to August inclusive) to avoid destruction/disturbance of nesting birds.
- Any trenches or ditches created during the construction phase should be covered at night or provide a means of escape for badgers.
- A sensitive lighting plan should be adopted, to ensure that outside lighting does not adversely affect adjacent habitats and wildlife, particularly bats when foraging and commuting.

The following ecological enhancements were recommended:

- Planting of native hedgerows along site boundaries.

- Planting native trees and shrubs.
- The enhancement of retained grassland on site by sowing a wildflower mix suitable for the geology of the site.
- Use of planters, containing wildflower seed mixes, or plants of known benefit to wildlife.
- The installation of appropriate bat and bird boxes.
- The installation of a hibernacula for invertebrates.
- Construction of log piles for invertebrates and reptiles.
- The installation of a Royal Hedgehog House.
- A Biodiversity Net Gain Assessment is carried out.

No further ecological surveys were recommended, providing the avoidance and mitigation measures are adhered to.

2.5.2 Ground Level Tree Assessment (GLTA)

A GLTA was carried out by aLyne Ecology Ltd in March 2024 (aLyne Ecology Ltd., 2024). All 59 trees were assessed from the ground for the presence of potential roosting features that could be used by bats following current best practice guidance, published by the Bat Conservation Trust (Collins, 2023).

The tree location in terms of surrounding habitat type, quality, and connectivity was also taken into consideration when assessing a potential roosting feature. The type and quality of the roosting feature observed also determines the type of roost (maternity, summer/transitional, hibernation) that it could potentially support.

Following the assessment, the trees were categorised as either NONE, FAR, or PRF, then each individual PRF identified was also assigned as PRF-I or PRF-M, where possible from the ground (Collins, 2023).

Of the 59 trees that were inspected, three (trees T6, T7, and T14) were assessed as having PRF features, all of which were assessed as PRF-I. All three trees are proposed to be retained and protected as part of the development proposals, meaning it was assessed there would not be any direct impacts on the trees with PRF features; however, there could be indirect impacts on the trees through construction and operation activities associated with the development.

A sensitive lighting plan should be adopted, to ensure that outside lighting does not adversely affect adjacent habitats and wildlife, particularly bats when foraging and commuting.

2.6 Brief and Objectives

The brief was to prepare a Hazel Dormouse Mitigation & Compensation Strategy, detailing an impact assessment and recommendations for mitigation and compensation, on the assumption that hazel dormice are present on site.

This Hazel Dormouse Mitigation & Compensation Strategy has been prepared in accordance with advice provided by Horsham District Council on 21st November 2023, in response to the planning application for the proposed works (planning reference: DC/23/1777).

3. Legislation and Planning Policy

Hazel dormice are listed on Schedule 5 of the Wildlife and Countryside Act, 1981 (as amended) (HM Government, 1981), and are subject to the provisions of Section 9, which makes it an offence to:

- Intentionally kill, injure, or take a hazel dormouse ((Section 9(1))).
- Possess or control any live or dead specimen or anything derived from a hazel dormouse ((S 9(2))) (unless it can be shown to have been legally acquired).
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a hazel dormouse ((S 9(4)(a))).
- Intentionally or recklessly disturb a hazel dormouse while it is occupying a structure or place which it uses for that purpose ((S9(4)(b))).

The hazel dormouse is included in Section 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) (known as the Habitats Regulations) (HM Government, 2017), which makes it an offence to:

- Deliberately capture or kill a hazel dormouse (Regulation 39(1)(a)).
- Deliberately disturb a hazel dormouse (R. 39(1)(b)).
- Damage or destroy a breeding site or resting place of a hazel dormouse (R. 39(1)(d)).
- Keep, transport, sell or exchange, or offer for sale or exchange a live or dead hazel dormouse or any part of a hazel dormouse (R. 39(2)).

If planned works would constitute an offence, they may only be carried out under licence from Natural England. Works or mitigation activities involving interference with hazel dormice, or their habitats must be carried out by a licensed ecologist (with a Natural England Hazel Dormouse Licence).

Furthermore, the Natural Environment and Rural Communities Act (NERC Act) 2006 (HM Government, 2006), requires due consideration be given to biodiversity and its potential enhancement when considering proposed developments. The hazel dormouse is listed as species of principal importance.

The National Planning Policy Framework, 2023 (NPPF) (HM Government, 2023) sets out government policy on biodiversity in planning decisions. Under the NPPF, the presence of a protected species is a material consideration when a planning authority is considering a development proposal.

4. Preliminary Impact Assessment

4.1 Construction Impacts

In the absence of avoidance and mitigation measures, the removal of hedgerows and trees on the northern boundary of the site could potentially result in the permanent loss and fragmentation of hazel dormouse habitat, as well as the potential killing and injury of hazel dormice themselves, which is an offence under the Wildlife and Countryside Act 1981 (as amended) (HM Government, 1981) and the Conservation of Habitats and Species Regulations 2017 (HM Government, 2017).

Hazel dormice are successional feeders and opportunistic foragers that are able to adapt to many food sources including fruit, berries, nuts, seeds, invertebrates, and flowers (People's Trust for Endangered Species, 2024); therefore, the removal of the hedgerows and trees on site could limit the year-round food availability for hazel dormice.

4.2 Operational Impacts

Hazel dormice may also be deterred from using the hedgerows and trees for nesting and foraging/commuting if lighting levels are altered as a result of the operational phases of the development.

5. Mitigation & Compensation Measures

The following recommendations have been provided based on best practice guidelines (Bright, et al., 2006).

5.1 Toolbox Talk

To ensure that all personnel on site are aware of their legal obligations pertaining to hazel dormice and that all mitigation measures are adhered to throughout the construction works, the project ecologist will give a toolbox talk to all personnel involved in the construction works prior to the start of the construction activities. The toolbox talk will cover the following points:

- A brief summary of the outcome of the ecological surveys.
- Legal protection of hazel dormice.
- Details of mitigation measures.
- What to do in the unlikely event that a hazel dormouse is encountered during the works.

Contractors will be asked to sign a form to confirm they have understood the sensitivity of the works relating to hazel dormice.

5.2 Buffer Zones

The proposed Maintenance Path will be seeded with a flowering lawn (Lizard Landscape Design and Ecology, 2023). It is recommended that this Maintenance Path functions as a buffer zone. These should be cut in late-Autumn, after the bird breeding season and once the flowering plants have seeded. The management of the buffer zones should aim to promote the plants that would be beneficial to increase floristic and invertebrate diversity. There should be fencing erected around the buffer zones to ensure there is no access into the buffer for the residents of the proposed dwellings. Construction materials will not be stored within the buffer zones.

To prevent damage to retained trees during development, a buffer zone should be put in place to protect the rooting area of trees (Root Protection Area, which is calculated in accordance with British Standard 5837, 'Trees in Relation to Construction'), in which no construction activities should be permitted.

5.3 Protective Fencing

5.3.1 Construction Phase

In order to protect the existing hedgerows and trees on site from construction activities associated with the development, it is recommended Heras fencing is erected along the hedgerows and lines of the trees to form a physical barrier to prevent damage and remain in place throughout the construction activities. The integrity of the Heras fencing should be checked regularly throughout the construction phase and will be the responsibility of the contractors, appointed by the developer

5.3.2 Operational Phase

The development proposals include timber post and rail fencing with wire mesh, which will be planted with a mixed species native hedgerow on the boundaries of the private gardens (Lizard Landscape Design and Ecology, 2023).

The post and rial fencing and mixed species hedgerow in combination with the recommended buffer zones will protect the existing hedgerows and lines of trees to be retained from operational activities associated with the development.

5.4 Pre-Works Inspection

An inspection of the hedgerows and trees by a licensed hazel dormouse ecologist should take place prior to the commencement of the hedgerow and tree removal. The licensed hazel dormouse ecologist will check all hedgerows and trees for signs of hazel dormice and hazel dormice themselves.

In the unlikely event that a hazel dormouse is found during the search, works would need to cease immediately and an EPSL for hazel dormice should be obtained from Natural England before works continue.

5.5 Hedgerow and Tree Removal Timing

Hedgerows and trees that require removal on site should be cut down between November and March inclusive, to avoid both the bird nesting season and the majority of the period when hazel dormice might be found in nests above ground. Clearance should be done by hand and in a sensitive manner, to minimise the likelihood of disturbing or killing hibernating dormice.

The process of removing the cut material should protect hazel dormice hibernating on the ground, through the following techniques:

- Using a long-reach mechanical grab and/or limiting the number of 'drag-lines' along which stems are removed.
- Directional felling to minimise the ground impact.

Sufficient vegetation should be removed to dissuade hazel dormice emerging from hibernation in April or May entering the works area.

5.6 Sensitive Lighting Plan

Recommendations to minimise the potential impacts of artificial external lighting on hazel dormice and wildlife are provided below (Bat Conservation Trust, 2023):

- Avoid prolonged use of outside lighting during the period dusk to dawn, particularly during the bat active season (April to October).
- Security lighting should be on a motion sensor and short duration timer (1 minute).
- Lighting that is required for security or safety reasons, should use a lamp of no greater than 2000 lumens (150 Watts) and should comprise sensor activated lamps.
- Red light bulbs should be used, where possible.
- LED luminaires with a warm white spectrum (<2700 Kelvin) are the preferred option and should be used where possible. Luminaires should feature peak wavelengths higher than 550 nm to minimise disturbance to bats. All luminaires should lack UV elements, metal halide and fluorescent sources should not be used.
- Lighting should be directed to where it is needed with minimal light spillage. This can be achieved by limiting the height of the lighting columns and by using as steep a downward angle as possible and/or a specialist bollard that directs the light below the horizontal plane (<90^{o}).
- Internal luminaires should be recessed where installed in proximity to windows to reduce glare and light spill.

- Waymarking inground markers with a low output and with cowls should be used to delineate path edges.
- Artificial lighting should not directly illuminate any potential hazel dormouse habitat, i.e., hedgerows and line of trees.

5.7 CEMP

A CEMP should be prepared for the site and subject to an appropriate planning condition in order to avoid and mitigate any potential impact on hazel dormice. The CEMP should include, but not be limited to, the following:

- Site description, description of development and ecological background.
- Defining ecological features.
- Brief and objectives.
- Relevant legislation and planning policy.
- Defining the Ecological Clerk of works.
- Biodiversity protection zones and signage.
- Responsible persons and lines of communication.
- Ecological risk assessments.
- Practical measures to avoid ecological risks (Method Statements).
- Ecological clerk of works timing schedule.
- References.
- Figures.
- Appendices.

6. Enhancement Measures

The recommended enhancement measures have been provided on Figure 3.

6.1 Hedgerow Interplanting

The enhancement of existing hedgerows on the eastern site boundary and in the centre of the site should be carried out by interplanting native trees, shrubs, and climbers, to provide hazel dormice a year-round food source, including:

- Blackthorn (*Prunus spinosa*).
- Bramble (*Rubus fruticosus* agg.).
- Dog-rose (*Rosa canina*).
- Dogwood (*Cornus sanguinea*).
- Elder (*Sambucus nigra*).
- English oak.
- Goat willow (*Salix caprea*).
- Grey willow (*Salix cinerea*).
- Hawthorn (*Crataegus monogyna*).
- Hazel.
- Honeysuckle (*Lonicera periclymenum*).
- Holly (*Ilex aquifolium*).
- Ivy (*Hedera helix*).
- Spindle (*Euonymus europaeus*).
- Wayfaring tree (*Viburnum lantana*).

6.2 Tree and Shrub Planting

Native tree and shrub planting have been proposed for the areas associated with the gardens of the proposed dwellings on site. To provide hazel dormice a year-round food source in all seasons (The Berkshire Mammal Group, 2020) (People's Trust for Endangered Species, 2024), a diversity of trees and shrubs should be selected from the following:

Spring food sources for hazel dormice:

- Blackthorn.
- Dogwood.
- English oak.
- Goat willow.
- Grey willow.
- Hawthorn.
- Wayfaring tree.

Summer food sources for hazel dormice:

- Ash (*Fraxinus excelsior*).
- Bramble.
- Cherry.
- Honeysuckle.
- Sweet chestnut (*Castanea sativa*).

Autumn food sources for hazel dormice:

- Ash.
- Beech.
- Blackthorn.
- Bramble.
- Crab apple.
- Elder.
- Goat willow.
- Grey willow.
- Hawthorn.
- Hazel.
- Sweet chestnut.
- Yew (*Taxus baccata*).

Winter food sources for hazel dormice:

- Dog-rose.
- Holly.
- Ivy.
- Juniper (*Juniperus communis*).
- Rowan.
- Spindle.

6.3 Wildflower Lawn

Open spaces on the eastern site boundary and associated with the gardens of the proposed dwellings are proposed to be seeded with EL1 Flowering Lawn Mixture by Emorsgate Seeds (Emorsgate Seeds, 2024). The wildflower mix will increase the floristic diversity on site, which will in turn increase the invertebrate diversity on site, thereby increasing the availability of invertebrate prey for hazel dormice.

6.4 Hazel Dormouse Nest Boxes

It is recommended that two hazel dormouse nest boxes are installed on suitable trees on site by a licensed hazel dormouse ecologist. The hazel dormouse nest box can be purchased from NHBS (NHBS, 2024).

6.5 Hibernacula

Log piles should be installed along site boundaries, to provide a suitable hibernaculum for hazel dormice.

7. Management and Monitoring

The management and monitoring of habitats to be retained, created, and enhanced is crucial to ensure the required benefits to wildlife, namely hazel dormice, are achieved. Management and monitoring measures are provided for each habitat in the following sections.

Management and monitoring will be the responsibility of the landscape contractor, appointed by the developer.

7.1 Hedgerows

Planting will take place from October to February, avoiding frozen ground and using an organic peat-free compost. Tubes and stakes will be used to protect the hedging plants from grazing animals.

Hedgerow plants will be well-watered to aid establishment, for at least one year following planting. In the initial maintenance period (the first three years), the planting area will be kept weed-free using herbicides approved by Natural England (Natural England, 2003), or by hand.

All new hedgerow plants will be checked annually for damage/disease.

At the end of the first growing season, the landscape contractor will mark all dead, dying, and diseased hedgerow plants, which will be replaced during the following planting season. Dead/dying/diseased plants will be replaced each year.

Watering will be carried out at least once every two weeks during the establishment period of the newly planted hedgerow plants.

Protective fencing/guards will be checked bimonthly for damage/adjustments.

Hedgerow plants will be pruned annually at the end of the growing season (winter months, avoiding the bird breeding season), to facilitate healthy and bushy growth.

Hedgerows will be laid, where possible.

7.2 Tree and Shrub Planting

Planting will take place from October to February, avoiding frozen ground and using an organic peat-free compost. Tubes and stakes will be used to protect the trees and shrubs from grazing animals.

Trees and shrub will be well-watered to aid establishment, for at least one year following planting. In the initial maintenance period (the first three years), the planting area will be kept weed-free using herbicides approved by Natural England (Natural England, 2003), or by hand.

All new trees and shrub will be checked annually for damage/disease.

At the end of the first growing season, the landscape contractor will mark all dead, dying, and diseased trees, which will be replaced during the following planting season. Dead/dying/diseased trees will be replaced each year.

Watering will be carried out at least once every two weeks during the establishment period of the newly planted trees and shrubs.

Protective fencing/guards will be checked bimonthly for damage/adjustments. Trees and scrub will be pruned annually at the end of the growing season (winter months, avoiding the bird breeding season), to facilitate healthy and bushy growth.

7.3 Wildflower Lawns

The manufacturer's instructions will be followed for management and monitoring of the newly created grassland. This will include removal of annual weed growth and mowing regularly during the first year of establishment, removing arisings, and mowing in rotation in autumn in subsequent years to no lower than 10 cm in height. Fertilisers, pesticides, and herbicides will be avoided.

7.4 Hazel Dormouse Nest Boxes

Management of the hazel dormouse nest boxes is not required. If a hazel dormouse nest box is damaged, it will be replaced. Replacement of hazel dormouse nest boxes will only be carried out by a licensed hazel dormouse ecologist.

7.5 Hibernacula

The hibernaculum will be checked annually and replaced, where necessary.

8. Responsible Persons and Lines of Communication

Table 3 defines the key roles and responsibilities for each involved persons for the implementation of the Hazel Dormouse Mitigation & Compensation Strategy.

Table 3. Persons Responsible for Action

Responsible Persons	Role and Responsibilities	Contact Details
Client	The client shall be responsible for the implementation of the Hazel Dormouse Mitigation & Compensation Strategy and will arrange the input and attendance of the ECoW at required stages during the project timetable. In the event of site management changing, the client should alert the ECoW so the Hazel Dormouse Mitigation & Compensation Strategy can be made aware to them.	**Fran Lazenby – Director, Cygnature Homes** **07736714328** **fran@cygnaturehomes.com**
ECoW	The ECoW is to support the project by ensuring the client adheres to the Hazel Dormouse Mitigation & Compensation Strategy and remain legally complaint. The ECoW will assist and advise both the client and main contractor on ecological issues during the development.	**Martin Roche BSc (Hons) ACIEEM – Senior Ecologist** **martinroche@alyneecology.co.uk**
Main Contractor	The main contractor will adhere to the Hazel Dormouse Mitigation & Compensation Strategy under the direction of the client and the ECoW. The main contractor will support the ECoW when issues are highlighted to ensure continued compliance with Hazel Dormouse Mitigation & Compensation Strategy.	**Fran Lazenby – Director, Cygnature Homes** **07736714328** **fran@cygnaturehomes.com**

9. References

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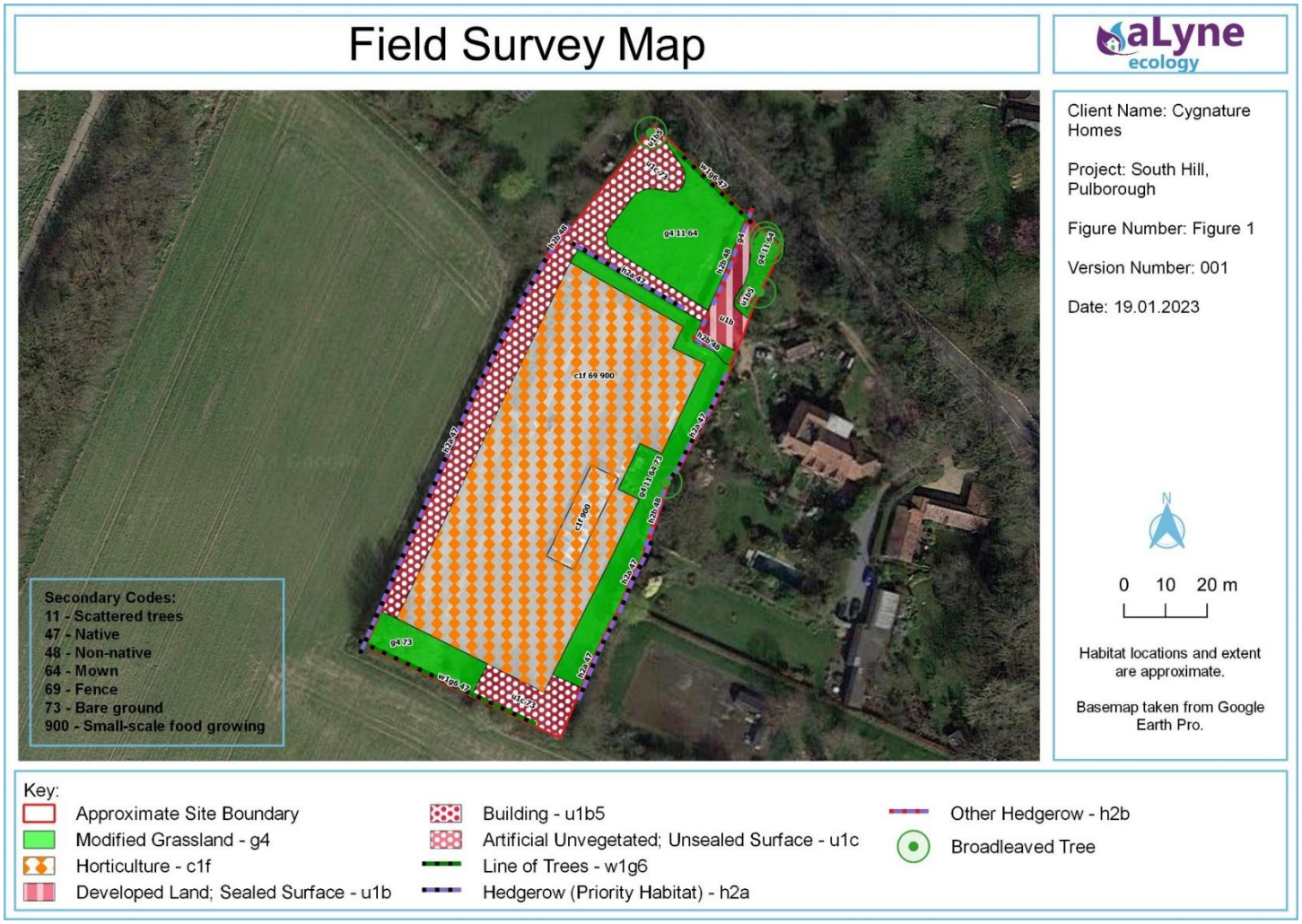
10. Figures

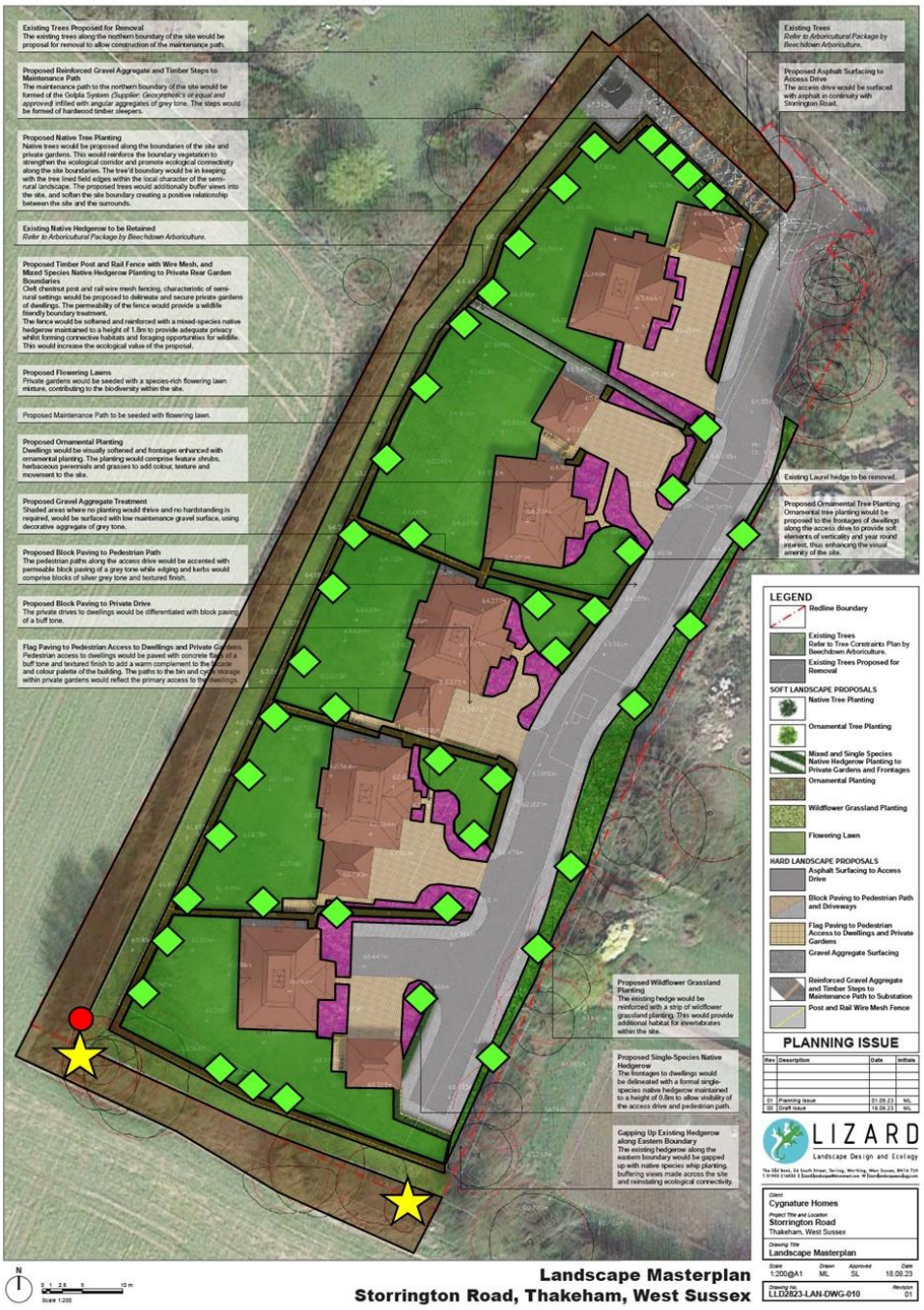
10.1 Figure 1: Results of Field Survey



10.2 Figure 2: Proposed Site Plan Drawing

aLyne ecology London & South East Tel: 01372 602372 Mob: 07443 652988	Client Cygnature Homes	Figure Number, Version Figure 2, 001	Title Proposed Site Plan Drawing
	Project South Hill, Pulborough	Date 08.03.2024	Provided by Lizard Landscape Design and Ecology. Drawing Number: LLD2823-LAN-DWG-010

10.3 Figure 3: Enhancement Plan



KEY:

- Hedgerow Planting and Interplanting
- Tree Planting
- Shrub Planting
- Wildflower Lawn
- Hazel Dormouse Nest Box
- Hibernacula

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Client	Cygnature Homes
Project	South Hill, Pulborough
Figure Number, Version	Figure 3, 001
Date	08.03.2024
Title	Enhancement Plan

Basemap provided by Lizard Landscape Design and Ecology. Drawing Number: LLD2823-LAN-DWG-010