



LIZARD

Landscape Design and Ecology

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LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN

Mistletoe Farm, Horsemere Green Lane
Climping, West Sussex

Planning Issue

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1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned to produce a Landscape and Ecological Management Plan for the proposals at Mistletoe Farm, Horsemere Green Lane, Climping, West Sussex.
- 1.2 This Landscape and Ecological Management Plan report has been produced with the intention of satisfying Condition 3 of the Arun District Council planning decision reference: CM/13/19/RES.
- 1.3 Reasonable steps to ensure the avoidance of harm to local wildlife and habitats during construction shall be detailed.
- 1.4 Following this, reasoned prescriptions for habitat enhancement shall be made. With the aim of achieving the long-term ecological objectives, the Management Plan would provide detailed prescriptions for initial maintenance requirements and the long-term management of the proposed works.
- 1.5 The Landscape and Ecological Management Plan shall be read alongside the following drawing Ecological Enhancement Plan - LLD2175-ECO-DWG-001.
- 1.6 The following Ecological Design Strategy and Ecological Mitigation, Enhancement and Management Plan has been prepared through reference to the following documentation:

- ¿ Lizard Landscape Design and Ecology; Ecological Statement - LLD1394-ARB-LET-001-00;
- ¿ Lizard Landscape Design and Ecology; Arboricultural Impact Assessment - LLD1394-ARB-REP-001-02;
- ¿ Ben Smith and Partners; Site Plan - 1071/SK04 Rev01
- ¿ Kazys Narbutas Consulting; Drainage Layout - KNC1820/502-01 - Rev D.

1.7 The Ecological Design Strategy and Ecological Mitigation, Enhancement and Management Plan includes the following:

- ¿ Information on the Existing Site;
- ¿ Ecological Baseline;
- ¿ Guidance for the Avoidance of Harm to Wildlife and Habitats;
- ¿ Habitat Enhancement;
- ¿ Habitat & Landscape Management Prescriptions;
- ¿ Annual and Long-Term Management Schedule.

2.0 EXISTING SITE

Existing Site

The site comprises an existing house building with adjacent large residential garden. The southern and western boundaries of the existing property are adjacent to scattered garden fruit trees and mature conifer hedge located along Wooldridge Walk. The northern boundary is edged with a mature mixed species treeline and understory shrubbery of different species, height and maturity. The eastern boundary includes scattered tree and overgrown and fragmented mixed species shrub groups. The southern boundary includes overgrown unmanaged hedge. Several mature beech trees to the centre of the site are covered by Arun District Council Tree Preservation Order, TPO/CM/1/20.

Surrounding Landscape

- 2.1 The wider landscape of Climping has a rural feel, the immediate surrounding landscape is that of residential properties, with arable farmland extending south for at least 1km. The town of Yapton is located 1.9 km NW of the site. The area surrounding the site is a mixture of scattered small pockets of deciduous woodland and coastal and floodplain grazing marsh in an easterly direction toward the Arun River.
- 2.2 There are very few waterbodies located within 500.0m of the proposed development site, with vast areas of housing and hard standing in-between. Due to the intervening distances and poor terrestrial habitat on site, no further investigation with regards to Great Crested Newts was considered necessary.

Development Proposal

- 2.3 The development proposals consist of the construction of a total 2 no. dwellings with associated parking arrangements, new vehicular access, alteration of existing vehicular access to the eastern boundary and associated landscape areas. One property would be sited to the north and one to the south, with the highway access driveway running along the eastern boundary to the southern property. To the centre of the site would be an open space with trees and drainage swale. The site would be bounded by new closeboard fencing.
- 2.4 The landscape proposals are to create areas of ecological value to species present locally, as well as providing ecological connectivity, whilst providing a pleasant environment for residents. Habitats are designed to be manageable by the residents themselves or could be managed by specialist contractors.

3.0 ECOLOGICAL BASELINE

- 3.1 The following section outlines the ecological context of the development site, describing any designated nature conservation sites in the vicinity of the development site.

Statutory Designated Sites

- 3.2 Statutory protected sites within 2.0 km of the site are shown in Table No. 01 below:

Table No. 01 ~ Statutory Protected Sites

Site	Reason for Designation	Location
Climping Beach SSSI.	Nationally uncommon habitat which supports important populations of wintering birds.	2.15km SE.
West Beach LNR.	Site forms part of Climping Beach SSSI. The area includes mud flats, shingle and sand dunes.	2.2km SE.

- 3.3 The site is within the Impact Risk Zone (IRZ) of Climping Beach SSSI. The development proposals are considered unlikely to detract or impinge upon the citation criteria of this SSSI.

Non-Statutory Sites

- 3.4 Sites of Nature Conservation Interest (SNCIs) are non-statutory designations given to areas of high, local conservation value. Despite being non-statutory, SNCIs are still recognised by local planning authorities in their policies and plans. No SNCIs are located within 2.0km of the site. Biodiversity Opportunity Areas (BOAs) were originally defined in a project lead by the South East Biodiversity Forum in 2008, and are now administered by the Sussex Local Nature Partnership. A single BOA is present within 2.0 km and is detailed in Table No. 02 below:

Table No. 02 ~ Non-Statutory Protected Sites

Name	Distance
Climping to Houghton Biodiversity Opportunity Area (BOA).	1 Km E.

On Site Habitats

- 3.5 Through reference to the Ecology Walkover, the following habitats were recorded within the site area:

Amenity Grassland

- 3.6 The majority of the site area consists of amenity grassland lawn of 'low' ecological value. The vegetation is well-maintained with a short sward dominated by perennial rye-grass (*Lolium perenne*) and common forbs such as daisy (*Bellis perennis*). To the south of the site, the grassland has been allowed to grow longer; the sward is dominated by cocksfoot grass (*Dactylis glomerata*) and contains tall ruderal species such as thistle (*Cirsium* sp.). This 'rank' grassland is of 'low' ecological value.

Ruderal / Ephemeral Vegetation

- 3.7 A small area to the east contains piles of logs and brash, and evidence of a bonfire. The piles are surrounded by a small area of tall ruderal vegetation dominated by nettle (*Urtica dioica*), of 'low' ecological value. Patches of ephemeral / short perennial vegetation, containing species such as ground ivy (*Glechoma hederacea*) are also present here.

Bare Ground

- 3.8 Beneath the mature trees the ground is largely bare, with occasional daffodils (*Narcissus* sp.) emerging.

Boundary Vegetation

- 3.9 The gardens are bounded by coniferous hedges (many of which are varieties of cypress), mixed trees and scattered scrub, with small patches of tall ruderal vegetation of 'low' ecological value.

Scattered Trees

- 3.10 The site contains a number of trees both ornamental and native. Of note are the large TPO beech (*Fagus sylvatica*) and willow (*Salix* sp.) trees to the centre, and several cherry (*Prunus* sp.) and apple trees (*Malus* sp.).

Protected Species

- 3.11 The suitability of the on-site habitats to support species was evaluated in terms of its potential for biodiversity and the contribution the area makes as part of the wider landscape. Overall, on the basis of the survey results, habitats within the site were considered largely to be of ecological value within the site only with the exception of the mature trees to the centre, which are of local value and now protected.

Bats

- 3.12 The existing building now outside of the site area is proposed for retention as-is. A static caravan / mobile home and wooden shed would likely require removal as part of the proposals. These both offer negligible bat roost potential. The only tree with significant bat roost potential is the large willow T38 - it displays several woodpecker holes and splits which could offer roost potential to low numbers of bats. The tree is proposed for retention and protection during the proposals. The vegetation on-site offers very limited bat foraging or commuting potential. The group of large trees (T38 - TG41) offer the only foraging potential and are proposed for retention and protection during the proposals.

Birds

- 3.13 The site offers potential for common garden birds. A nest was noted within T38 and T39 which are proposed for retention and protection during the proposals. Other vegetation should be removed outside the bird nesting season or following a check by an ecologist to confirm no birds are nesting.

Amphibians

- 3.14 The nearest ponds are over 100m away and separated from the site by housing. The proposals are highly unlikely to disturb or harm great crested newts. No further surveys are recommended.

Reptiles

- 3.15 The tall ruderal, log piles and rank grassland offer a small area of suitable reptile habitat. The site consists of a garden, bounded by fences and coniferous hedges and surrounded by other residential properties which appear well-tended. It is considered unlikely that reptiles could have reached the site and established a population, and the area of habitat is limited in extent. No further surveys are recommended; however, it would be prudent to reduce the grassland with care in the spring (a taller cut to ~15cm followed by a close cut to ~5cm) and keep it maintained at a short height to prevent habitats developing further.

Others

- 3.16 No suitable habitat for any other protected species was recorded within or adjacent to the site area. The site offers negligible potential for dormice, water voles or rare invertebrates and plants. No evidence of use by badgers was noted within or adjacent the site.

Protection and Enhancement of On-site Habitats

- 3.17 The majority of the habitats on-site are of low ecological value and would be removed through the proposals. The mature trees protected by TPO, as well as the boundary trees, hedges and shrubs which form part of a green corridor shall be protected through the use of protective barriers, ground protection measures and supervised excavation in accordance with BS 5837:2012; BS 42020:2013 and Arun District Planning Policy.
- 3.18 Following construction, the centre of the site will remain as open space with trees and swale. It is proposed to seed or turf the grass area to create a 'flowering lawn' which can be managed regularly with ordinary garden tools as a fine grass lawn, but would contain flowering species of benefit to invertebrates. A new mixed species native hedge is proposed along the western boundary to provide new bird, hedgehog and invertebrate habitat. Small patches of shrub planting surrounding the area will be of low-level native shrubs, especially those with flowers and berries. New trees will be planted to replace those lost and to create new habitats. The north-western corner will have several trees closely-planted to create a dense patch of vegetation, providing shelter for hedgehogs, birds and amphibians.
- 3.19 The swale will be seeded or turfed to create a seasonally-wet wildflower grassland, which will revert to a wildflower grassland-style habitat in summer but also withstand waterlogging in winter. This will make a good habitat for invertebrates and their amphibian prey such as newts and toads.
- 3.20 The habitats created will be further enhanced by installation of bird, bat and hedgehog boxes and log piles to create numerous further wildlife opportunities. A new 1.8 m height closeboard timber fence will be required along the western boundary to delineate the new site from the Mistletoe farm property. Gaps to the base of these new fences will be created to ensure hedgehogs can traverse the site.
- 3.21 The mitigation measures and habitat enhancement strategies as can be found within the following sections: Section 4 - Avoidance of Harm to Wildlife & Habitats During Construction; and Section 5 - Habitat Enhancement.

4.0 AVOIDANCE OF HARM TO WILDLIFE & HABITATS DURING CONSTRUCTION AND OPERATION

4.1 The following guidance statements have been prepared to avoid potential harm to wildlife and habitats on-site. All contractors should be made aware of this guidance and the sensitive working approach that is required.

4.2 Objectives:

- ¿ Ensure the avoidance of harm to wildlife including protected species, and to valuable habitat on and adjacent to the site through employing the use of suitable working methods and mitigation measures.

Stages of Work / Mitigation Measures

4.3 The following stages of work / mitigation measures shall be followed to ensure the avoidance of harm to wildlife;

¿ Precautionary Working Methods:

- o Trees and Vegetation;
- o Nesting Birds;
- o Reptiles and Amphibians;
- o Bats;
- o Hedgehogs

¿ Visitor movements; Site access and operations; Location and Stationing of Site Facilities.

Precautionary Working Methods

Precautionary Working Methods – Trees and Vegetation

- 4.4 All contractors shall be advised to exercise extreme care when performing operations beneath the canopy of existing mature trees and vegetation and avoid at all times damage to the roots, trunk, and branches. The contractor shall train all members of the construction workforce operating within the proximity of valued habitats and make such persons aware that there shall not be the following operations undertaken within the tree Root Protection Areas:
- ⌘ Dumping of spoil or rubbish, excavation or disturbance of topsoil, parking of vehicles or plant, storing of materials or placing of temporary accommodation within the specified tree Root Protection Areas;
 - ⌘ The severing of roots exceeding 25 mm in diameter. If unintentionally severed notice shall be given and specialist arboricultural advice sought;
 - ⌘ Changes to the level of the ground within the specified RPAs.
- 4.5 The single exception to the above is where excavation to widen the access is proposed. In accordance with the detailed tree package and comments from the Arun District Council Tree Officer, the area of ground shall be carefully excavated under arboricultural supervision with the machinery operating outside of RPAs
- 4.6 Trees which are to be retained on site will be protected in accordance with BS 5837:2012. No machinery or storage of materials, fuel or other hazardous materials will be permitted within the RPA of retained trees. All construction work will be undertaken in accordance with best practise regarding dust and emissions. Vegetation removal shall be undertaken in accordance with BS 3998:2010.
- 4.7 Where herbicide application is needed this should be non-residual and in small controlled areas. Herbicides should comply with the Control of Pesticides Regulations 1986 and be on the current DEFRA list of approved products. Further licence is required for any use of pesticide within 10.0 m of a watercourse.

Precautionary Working Methods – Nesting Birds

- 4.8 All birds, their nests and eggs are protected by the Wildlife and Countryside Act (1981) as Amended under which it is an offence to intentionally kill, injure, disturb or take any wild bird. This protection includes any active bird nest, whenever it is in use.
- 4.9 Any tree and vegetation works shall be undertaken outside the main bird nesting season, which runs from March to August inclusive. Where this is not possible, a Suitably Qualified Ecologist would need to check the vegetation for active nests and signs of bird breeding activity. It should be noted that March to August inclusive is the main breeding period – but breeding activity may occur outside this period (depending on the particular species and geographical location of the site) and thus due care and attention should be given when undertaking potentially disturbing works at any time of year.
- 4.10 Pruning back of overhanging vegetation and scrub can be undertaken following the same method; hedges shall be reduced in late winter before birds are actively nesting.
- 4.11 Any works to piles of brash and ruderal habitats shall avoid the nesting season where possible and must be preceded by a walkover to check that no ground nesting birds are present.

Precautionary Working Methods – Reptiles and Amphibians

- 4.12 Great Crested Newts (GCN) are protected by The Conservation of Habitats and Species Regulations 2017, Wildlife & Countryside Act 1981 (as amended) and Natural Environment & Rural Communities Act 2006. Reptiles are protected by Wildlife & Countryside Act 1981 (as amended) and Natural Environment & Rural Communities Act 2006. The vegetation on-site offers some potential for reptiles, and potential for amphibians (albeit no potential for breeding amphibians or great crested newts).
- 4.13 Any works to grassland and ruderal habitats shall be carried out with due care to minimise risk of harming reptiles and amphibians. Vegetation shall be cut from the centre towards the margins, to allow wildlife to disperse. Log and brash shall be manually cleared and used as habitat within the corners of the site. Stumps shall be lifted and piled for at least 24 hours to allow any wildlife within to escape.

Precautionary Working Methods – Bats

- 4.14 All bat species, their breeding sites and resting places are fully protected by law, namely The Conservation of Habitats and Species Regulations 2017, Wildlife & Countryside Act 1981 (as amended) and the Natural Environment & Rural Communities Act 2006. It is likely that bats are using the grassland and river habitats for foraging, and the tree lines and hedges around the site may provide commuting and foraging opportunities.
- 4.15 The following measures are recommended to minimise the risk of disturbance to bats:
- ⌘ There shall be no night-time vegetation works and no construction-phase lighting save for the minimal security requirements;
 - ⌘ New external lighting to the access route shall be low-level bollards fitted with caps, to match the existing lighting. Any external lighting to the dwellings shall be the absolute minimum, low-level and downlighters on PIR sensors to minimise unnecessary lightspill. No floodlighting shall be permitted within the site;
 - ⌘ Any works surrounding the mature willow and beech trees to the centre of the site shall be mindful of their bat roost potential – no works to the trees are required, but any operations within their vicinity shall be undertaken with great care to avoid harm to the trees, or excessive noise or dust.

Precautionary Working Methods – Hedgehogs

- 4.16 The site may contain hedgehogs which, whilst not strictly protected, are covered by the Wild Mammals Protection Act (1996), prohibiting cruelty and mistreatment. They are listed as a Species of Principle Importance in England under the Natural Environment and Rural Communities (NERC) Act 2006 Section 41 and are therefore a material planning consideration. The habitats on-site are highly suitable for hedgehogs being a mix of grassland, ruderal vegetation and scrubby hedge.
- 4.17 Consequently, throughout operation of the site the following working methods should be employed to avoid any harm to hedgehogs in the vicinity of the site:
- ⌘ There shall be no night-time vegetation works or vehicular movements and no construction-phase lighting save for the minimal security requirements;
 - ⌘ New lighting in the parking area shall be low-level bollards fitted with caps, to match the existing lighting;

- ¿ Hedgehog gaps of at least 12cm x 12cm shall be fitted to proposed and (where possible) existing fences to allow hedgehogs to commute through the site.
- ¿ Any removal of scrub, brush or leaf litter shall be carried out manually, with dense material being carefully and slowly lifted in small sections to ensure any hedgehogs within are not injured. Hedgehogs if found should be allowed to naturally disperse in their own time, but may require lifting to a corner of the site; Removed materials shall be kept on-site and piled in corners;
- ¿ If any hedgehog is found which appears sick or injured, an appropriate wildlife rescue centre (such as RSPCA Mount Noddy) or local veterinary practice shall be contacted to arrange collection of the hedgehog.

Contractor Movements; Site Access and Operations; Storage and Site Compound; Location and Stationing of Temporary Site Cabins

- 4.18 All site operations shall seek to protect the existing site vegetation and root protection areas in accordance with BS 5837; 2012 ~ Trees in Relation to Design, Demolition and Construction ~ Recommendations~.
- 4.19 Access to the site area should be made at all times via the existing entrance into the site, and from existing hard surfaces.
- 4.20 Vehicular movement within the site should be limited to the minimum requirement and no vehicular access shall be permitted over unmade ground within the tree Root Protection Area of existing trees.
- 4.21 All canopy clearances should be checked prior to and during any relocation of the facilities block in order to avoid contact and potential damage to branches. The removal of vegetation to enable the installation process should be undertaken in accordance with the granted permission and :BS 3998:2010: Tree work. Recommendations~.

Tree Surgery Works

- 4.22 As stated previously, any tree and hedge works shall be undertaken outside the main bird nesting season which runs from March to August inclusive (see Precautionary Working Methods – Nesting Birds). Any significant defects found in the trees during operation of the site shall be reported to the Landscape Architect / Arboricultural Consultant. Any tree surgery and vegetation works required within the site shall be undertaken by qualified tree surgeons / vegetation contractors in accordance with the granted permission and BS 3998:2010: Tree work. Recommendations.
- 4.23 No permission has been sought or granted for works to the TPO beech trees to the centre of the site – these trees must be protected through development as any works which cause them to fail may be considered a breach of the TPO. No works may be carried out to the trees without prior written approval of the LPA.
- 4.24 The removal of shrub or scrub material within the tree Root Protection Area of any tree to be retained should employ a ‘manual removal’ method; the use of hand tools should be used in order to maintain the ground surface of the tree Root Protection Area and reduce any damage to existing tree roots within the protected root zone. Adjacent trees should not be utilised as anchors or levers to facilitate the removal of adjacent scrub vegetation. Care should be taken to avoid damage to neighbouring trees to be retained. Branches in confined spaces should be removed and taken down in sections.
- 4.25 All arisings shall either be transported and disposed of away from site to a commercial composting site or stacked to the site corners as habitat piles for wildlife.

5.0 HABITAT ENHANCEMENT

5.1 The habitat enhancement proposals have been detailed in the following drawing:

- ¿ LLD2175-ECO-DWG-001 - Ecological Enhancement Plan.

5.2 In accordance with Paragraph 109 of National Planning Policy Framework, which recognises that the planning system should contribute to and enhance the natural environment, a series of habitat enhancement measures are outlined below which would be incorporated into the design scheme.

5.3 The objectives:

- ¿ Enhance biodiversity across the site with the introduction of new and enhancement of existing wildlife features, such as: native species-rich hedges; flowering lawn; seasonally-wet wildflower grassland; log, compost and brash piles; native low-level shrubs; and native trees;
- ¿ Ensure the avoidance of harm to any habitat or protected species on site and mitigate for lost habitat.

5.4 Habitat enhancements and Landscape Management Proposals within the proposed landscape scheme are as follows:

- ¿ P1 - Existing Trees and Vegetation;
- ¿ P2 - Proposed Flowering Lawn;
- ¿ P3 - Proposed Native Shrub and Tree Planting;
- ¿ P4 - Proposed Native Mixed-Species Hedge Planting;
- ¿ P5 - Proposed Wildflower SuDS Grassland;
- ¿ P6 - Proposed Installation of Bird Boxes;
- ¿ P7 - Proposed Installation of Bat Boxes;
- ¿ P8 - Proposed Installation Hedgehog Boxes;
- ¿ P9 - Proposed Construction of Log, Brash and Compost Piles.

P1 - Existing Trees and Vegetation

- 5.5 It is good management practice to maintain regular inspections of the arboricultural resource on site – it is the responsibility, in law, of the land manager to take reasonable care to avoid acts or omissions that cause a reasonably foreseeable risk of injury to persons or property.
- 5.6 Existing trees and shrubs within the shared areas will be kept maintained as at present. Overhanging branches will be reduced as deemed necessary. Any significant defects will be discussed with an arboriculturalist or tree surgeon to determine appropriate actions.

P2 – Proposed Flowering Lawn

- 5.7 It is proposed to create a flowering lawn in the centre of the site. This will enable simple management by homeowners, a space which can be occasionally used for amenity and a useful wildlife habitat.
- 5.8 The lawn shall be created either by seeding or turfing. Proposed seed and turf mixes are:
- ¿ E morsgate EL1 Flowering Lawn Seed Mixture;
 - ¿ Wildflower Lawns and Meadows Low Flowering Lawn Mixture;
 - ¿ Wildflower Lawns and Meadows Extra Floristic Low Flowering Lawn Turf.

P3 – Proposed Native Shrub and Tree Planting

- 5.9 New native shrub and tree planting is proposed to compensate for any minor loss of vegetation created by the proposals, and to enhance the site for birds, invertebrates and bats.
- 5.10 New native shrubs shall be planted within beds to the edges of the road, and kept low through regular pruning. Over several years these shrubs shall become dense and bushy to provide shelter.
- 5.11 New native trees shall be allowed to grow and mature to become ecological features, with pruning only undertaken to remove defects and hazards.

- 5.12 The species used shall be suited to the habitat and present locally, and shall aim to further increase diversity and foraging opportunities on the site. The following shrub species should be included (or ornamental varieties thereof) where possible. Shrubs shall be either 90/120cm Bareroot Whips or 3lt Container Plants at a minimum of 3 plants per square metre (preferably 5 or more for whips) with denser planting reaching maturity more rapidly:

- ζ *Cornus sanguinea*;
- ζ *Viburnum opulus*;
- ζ *Ribes sanguineum*;
- ζ *Ilex aquifolium*;
- ζ *Viburnum lantana*;
- ζ *Sambucus nigra*.

- 5.13 The following tree species should be included (or ornamental varieties thereof) where possible. Trees shall be Heavy Standard or Multistem Stock; 12-14cm Girth and 3.0-4.0 m Height:

- ζ *Crataegus monogyna* (Hawthorn);
- ζ *Malus sylvestris* (Crabapple);
- ζ *Sorbus aucuparia* (Rowan);
- ζ *Sorbus torminalis* (Wild Service);
- ζ *Betula pubescens/pendula* (Downy/Silver Birch);
- ζ *Alnus glutinosa* (Alder);
- ζ *Acer campestre* (Field Maple);
- ζ *Ilex aquifolium* (Holly).

P4 - Proposed Native Mixed-Species Hedge Planting

5.14 The western boundary is proposed to be planted with a native, mixed-species hedge to form an ecological habitat and corridor. Following establishment this shall be maintained regularly to create a dense form.

5.15 The hedge shall be formed of 90/120cm Bareroot Whip Transplants interplanted or in lines at 5 per metre. At least five species from the following or other approved native species shall be utilised:

- ζ *Corylus avellana*;
- ζ *Crataegus monogyna*;
- ζ *Prunus spinosa*;
- ζ *Ilex aquifolium*;
- ζ *Prunus padus*;
- ζ *Rosa* sp.;
- ζ *Frangula alnus*;
- ζ *Viburnum opulus*;
- ζ *Viburnum lantana*.

P5 - Proposed Wildflower SuDS Grassland

5.16 It is proposed that the swale/drainage ditch be planted to create a wildflower grassland-style habitat in summer but also withstand waterlogging in winter. The habitat will be managed less-frequently than the surrounding grassland, providing a good shelter habitat for invertebrates and amphibians, and good foraging for hedgehogs.

5.17 The Wildflower SuDS Grassland shall be created either by seeding or turfing. Proposed seed and turf mixes are proposed below, although other mixes may be used subject to approval:

- ζ Wildflower Turf SuDS Turf;
- ζ Emorsgate EP1 Pond Edge Seed Mixture.

P6 - Proposed Installation of Bird Boxes

5.18 Additional bird nesting provision shall be incorporated into the design proposals. Bird boxes are to be installed on to existing mature trees and into shrubs around the boundaries of the site, with sparrow terraces installed to the buildings. These will provide a nesting resource for a variety of species including sparrows which often

associate with dwellings, as well as more common birds such as song thrush, blackbird and tits.

5.19 The following bird boxes shall be installed to trees and hedges:

- ζ 2no. CJ Wildlife Vivara Pro Barcelona WoodStone Open Nest Box;
- ζ 1no. Schwegler 1B Nestbox with Predator-Proof Front Panel;
- ζ 2no. Bird Brick Houses Integrated Sparrow Terrace Nestbox.

P7 - Proposed Installation of Bat Boxes

5.20 Bat boxes would provide roosting opportunity for a variety of species, with the possibility of integrated boxes on the buildings being used by species present locally including pipistrelles and serotines and, with the addition of a large tree box to the mature beech trees, potentially noctules.

5.21 The following bat boxes shall be installed to trees:

- ζ 1no. CJ Wildlife Large Multi Chamber WoodStone Bat Box.
- ζ 2no. Bird Brick Houses Integrated Bat Boxes.

P8 - Proposed Installation of Hedgehog Boxes

5.22 Hedgehog boxes would shelter and hibernation opportunities for hedgehogs within the site and protect them from predators. Hedgehog boxes are proposed in dense vegetation along the western boundary, within an area of new tree planting and in the existing roadside vegetation. Log, compost and brash piles are sited adjacent with the intention of adding further shelter and foraging opportunities. Leaf litter and brash should be piled over the box (leaving the entrance clear) to increase the insulation and privacy of the box. The box shall be pegged in place using tent pegs or shortened road spikes (and wire if required) to prevent foxes and other animals from disturbing them.

5.23 Boxes shall be accompanied by gaps in adjacent fences of at least 12.0 cm by 12.0 cm to allow hedgehog movement between all plots on the site. Gaps can be bespoke holes within concrete gravel boards, or manually cut into timber leaving no sharp edges. If holes are created above gravel boards, a solid timber ramp (e.g. 300mm length of 100mm post, cut on the diagonal) shall be installed and pegged in place to ensure permanent access for hedgehogs. Where possible a request shall be made to neighbours to allow cutting of holes in existing boundary fences.

5.24 All gaps shall be properly marked with signage denoting 'hedgehog highway' - do not block this gap_ or similar (premade signs are available from PTES).

5.25 The following hedgehog boxes shall be installed (or equal and approved):

- ¿ 2no. Wildlife World Hedgehog House.

P9 - Proposed Construction of Log, Brash and Compost Piles

5.26 A new habitat for invertebrates, hedgehogs and amphibians shall be provided by the incorporation of log, brash and compost piles into the site boundaries, particularly to the western corners and to the bases of trees, shrubs and scrub. Piles shall be made in both shaded and sunny locations to vary the microhabitats present. Piles shall be made from arisings of native vegetation taken from the site or surrounding areas where possible. Piles should contain both larger logs (with gaps between), brash and branches and smaller leaf litter and cuttings/grass clippings, to create varied conditions.

5.27 For locations of the proposed piles, refer to drawing: LLD2175-ECO-DWG-001 - Ecological Enhancement Plan.

6.0 HABITAT AND LANDSCAPE MANAGEMENT PRESCRIPTIONS

6.1 All Management prescriptions for the proposed development site are illustrated on the following drawing:

- ¿ LLD2175-ECO-DWG-001 - Ecological Enhancement Plan.

Management Responsibility and Ongoing Monitoring

6.2 Responsibility for management of the site shall fall to the landowners and subsequently the residents of the plots. The management plan has been designed such that the residents can undertake the majority of the ongoing management themselves with domestic gardening tools (push mower, pruners, hedge trimmer and strimmer) and use the arisings for ecological habitat. The residents should divide responsibilities as they see fit, either alternating tasks or caring for a certain area of the site. Alternatively, the residents may wish to employ contractors or professional groundskeepers to undertake works. All works to trees shall be undertaken by trained, qualified and insured tree surgeons

- 6.3 It is assumed the communal land will either be jointly owned by the residents (under an association, similar to a driveway) or will remain in the developer's ownership, allowing enforceable covenants to be inserted into the deed if required. The appointed ecologist shall re-visit the site at completion of the development, and it is recommended that a repeat visit is undertaken every five years to ensure the enhancements and management prescriptions are being followed, and whether any changes to the plan are required.
- 6.4 Should either or both residences fail to uphold their responsibility to management, the LPA shall be informed of this as a breach of the management plan.

Once the first 5 years of management are complete, the ecologist shall determine whether the existing management regime shall be continued or altered. The ecologist shall meet with the landowner, and the council and local authority representatives as necessary to agree any changes to management, and remedial actions, and their timeframes. If any changes or remedial actions are required, the ecologist shall determine an appropriate timeframe for follow-up visits in accordance with current best practice.

P1 - Existing Trees and Vegetation

General - Protection and Retention of Existing Vegetation During Construction

- 6.5 The Contractor shall exercise extreme care when performing operations beneath the canopy of existing mature trees and vegetation designated for protection and avoid at all times damage to the roots, trunk and branches.

P1 - Existing Mature Trees and Vegetation - Management Prescriptions

- 6.6 The following summarises management prescriptions for the above feature:
- ¿ Existing trees: to be inspected every year for dead, dying, or damaged branches; including any diseased wood or wounds;
 - ¿ Defects: Any dead, dying, or damaged branches should be cleaned from the tree trunk by a Qualified Tree Surgeon, in accordance with BS 3998:2010 Tree work; Recommendations, removing all dead wood back to the tree trunk; note prior notice required for TPO trees as below;

- ¿ Monitoring: Condition of the existing mature trees and hedges to the site boundaries shall need to be monitored each year, in order to identify any dead or dying branches within the existing canopy or any areas of significant die-back;
- ¿ Hedge Pruning: Hedges to be maintained every 2-3 years (or laid every 10 years) to maintain a dense hedge of good form.;
- ¿ TPO Trees: No works to the TPO trees shall be undertaken to the TPO beech trees without prior written approval from the LPA (via a tree works or planning application) and justification for said works from a qualified tree surgeon or arboriculturalist.

P2 - Proposed Flowering Lawn

Proposal

- 6.7 Seed or turf a flowering lawn in the centre of the site, to be regularly managed by residents to form a dense, low, flowering sward.

Specification

- 6.8 Proposed seed and turf mixes are:

- ζ Emorsgate EL1 Flowering Lawn Seed Mixture;
- ζ Wildflower Lawns and Meadows Low Flowering Lawn Mixture;
- ζ Wildflower Lawns and Meadows Extra Floristic Low Flowering Lawn Turf.

- 6.9 Turf to cover entire area shown for habitat on LLD2175-ECO-DWG-001 - Ecological Enhancement Plan. Seed to be sown at minimum 4g/sqm.

Establishment

- 6.10 Ground shall be free of contaminants and building debris before establishment, and raked over to provide a level, friable soil. Seed shall be hand sown and turfs laid in spring or autumn and kept regularly watered until established. Regular mowing to 40-60mm (medium-high mower height setting) every 7-10 days shall be undertaken for the first season to prevent coarse grasses

Ongoing Maintenance

- 6.11 In following years, grass shall be cut every 1-2 weeks between spring and autumn (whenever it is actively growing) to a height of c.40mm (medium mower height setting). To enable better flowering and a taller sward, cutting can be reduced to every 4-8 weeks between June and October. Arisings shall be piled in the western corner, taking care not to cover the hedgehog access points and tree stems.

Weeding

- 6.12 Undesirable weeds to be pulled by hand or strimmed as required. Fertiliser use is to be avoided.

Defects

- 6.13 Re-seed any bare patches of grass in the following spring.

P2 - Proposed Flowering Lawn Management Prescriptions:

6.14 The following summarises management prescriptions for the above feature:

- ¿ Establishment: Rake soil and seed/turf in spring or autumn; Mow every 7-10 days to height of 40-60mm spring to autumn of first season;
- ¿ Annual Cutting: Cut every 1-2 weeks between spring to autumn; relax mowing to every 4-8 weeks if desired in summer;
- ¿ Weeding: Pull or spot-spray undesirable weeds as required;;
- ¿ Defects: Re-seed bare patches in following spring season.

P3 - Proposed Native Shrub and Tree Planting

Proposal

6.15 New native shrub and tree planting is proposed to compensate for any minor loss of vegetation created by the proposals, and to enhance the site for wildlife. Trees to be planted to corners whilst shrubs shall be planted in beds and pruned regularly to keep them low and dense.

Specification

6.16 Shrubs shall be either 90/120cm Bareroot Whips or 3lt Container Plants at a minimum of 3 plants per square metre (preferably 5 or more for whips) with denser planting reaching maturity more rapidly:

- ¿ *Cornus sanguinea*;
- ¿ *Viburnum opulus*;
- ¿ *Ribes sanguineum*;
- ¿ *Ilex aquifolium*;
- ¿ *Viburnum lantana*;
- ¿ *Sambucus nigra*.

- 6.17 The following tree species should be included (or ornamental varieties thereof). Trees shall be Heavy Standard or Multistem Stock; 12-14cm Girth and 3.0-4.0 m Height:

- ζ *Crataegus monogyna* (Hawthorn);
- ζ *Malus sylvestris* (Crabapple);
- ζ *Sorbus aucuparia* (Rowan);
- ζ *Sorbus torminalis* (Wild Service);
- ζ *Betula pubescens/pendula* (Downy/Silver Birch);
- ζ *Alnus glutinosa* (Alder);
- ζ *Acer campestre* (Field Maple);
- ζ *Ilex aquifolium* (Holly).

Planting Pits

- 6.18 Native trees and transplant shrubs shall be planted in prepared beds clear of all weeds. The size of shrub planting pits shall be as follows;

- ζ Whips - to be heeled into slots made with a spade;
- ζ Shrubs 300 x 300 x 300mm;
- ζ Trees 600 x 600 x 600mm;
- ζ Or 20% wider in any direction than the root ball whichever is the greater.

- 6.19 The contractor shall form a planting pit for bare rootstock to a sufficient depth and width to allow roots to spread without cutting or bending. The tree and shrub plant material is to be inserted into the planting pit, firming the soil by treading with the heel, ensuring that the plant material remains in an upright position. Backfilling shall be undertaken with topsoil, with ameliorants including sand, compost or grit if determined necessary. Care must be taken to backfill to the same level as the top of the existing roots, avoiding leaving roots exposed to air or filling over the top of the original rootball soil line.

Watering

- 6.20 In order to establish the shrub and tree plant material, the stock should be watered fortnightly throughout the summer season in the first year of initial establishment during May / June / July / August / September. Quantity of water to be 10 litres (1 watering can) per metre square during each visit, for the first initial year of establishment only.

Pruning

- 6.21 During the first three years of establishment the native shrub transplants should be lightly trimmed to maintain shape and form, until a height of. c.1.0 m is achieved. Following this, light but regular trimming should encourage vigorous and dense growth. Trimming during the first three years of establishment should be undertaken annually during the winter to maintain size, shape, and vigorous growth. Different species flower on young and old wood at different times; this should be accounted for to maximise flowering and fruiting. Shrubs should be maintained at varying heights to maximise ecological diversity.
- 6.22 Trees should need minimal pruning in the first 5 years of establishment; any which appear to be forming poorly or with obvious defects should be pruned in winter as required.

Weeding

- 6.23 Plant material would be planted in planting pits, which should be kept clear of all weeds at the base of the plant material. The plant material should be kept weed free by hand weeding as required between spring and autumn. Following establishment the wildflower grassland shall be allowed to surround the trees in this area.

Mulching

- 6.24 Following planting, shrubs and trees shall be surrounded by a 75mm depth of mulch, to prevent weed growth and provide slow-release nutrients to the roots. The mulch shall be checked at the end of the first and second seasons and topped up as required. Well-composted leaf mould from the compost piles can be used to top up mulch.

Litter Collection

- 6.25 Any litter or debris noted shall be removed when observed, with checks undertaken every 2 weeks during the year for any new litter.

Defects

- 6.26 Any dead or dying shrub or tree plants shall be replaced with new material in the next bare root planting season (October-May).

P3 - Proposed Native Shrub and Tree Management Prescriptions

- 6.27 The following summarises management prescriptions for the above feature:

- ¿ Watering: Water all plant material fortnightly during the summer season for the first year of establishment and as deemed necessary after the establishment period where natural precipitation levels are insufficient; provide 10 ltr/ m2/visit;
- ¿ Pruning: Lightly prune plant materials to all soft landscape areas annually; Winter-flowering shrubs – prune in Spring; Shrubs flowering in Spring and early Summer – prune immediately after the flowering period; Shrubs flowering in Summer and Autumn – prune back to old wood in Winter; Prune trees only if essential and in winter;
- ¿ Weeding: Maintain planting areas weed free; Spring to Autumn. Hand-weed throughout the Spring / Summer; March / April / May / June / July / August / September / October; repeat where necessary;
- ¿ Mulching: Organic Mulch Top Up; Maintain organic mulch to all planting areas; check annually in first and second season;
- ¿ Litter Collection: Collect litter from planting areas on a fortnightly basis;
- ¿ Defects; Replace all dead / dying plant material. Replacement planting should be undertaken on an annual basis.

P4- Proposed Mixed-Species Native Hedge Planting

Proposal

- 6.28 The western boundary is proposed to be planted with a native, mixed-species hedge to form an ecological habitat and corridor. Following establishment this shall be maintained regularly to create a dense form.

Specification

- 6.29 The hedge shall be formed of 90/120cm Bareroot Whip Transplants interplanted or in lines at 5 per metre. At least five species from the following or other approved native species shall be utilized, and species should be randomly varied to create a natural effect:

- ¿ *Corylus avellana*;
- ¿ *Crataegus monogyna*;
- ¿ *Prunus spinosa*;
- ¿ *Ilex aquifolium*;
- ¿ *Prunus padus*;
- ¿ *Rosa* sp.;
- ¿ *Frangula alnus*;
- ¿ *Viburnum opulus*;
- ¿ *Viburnum lantana*.

Planting

- 6.30 New whip planting shall be undertaken during October-May (whips must be planted before leaf-out). The soil shall be level and free of any contaminants or building rubble prior to planting.
- 6.31 The contractor shall dig a slot using a narrow spade, to the depth of the whip root system. The whip plant material is to be inserted into the planting pit to the point at which roots stop, firming the soil by treading with the heel, ensuring that the plant material remains in an upright position.

Watering

- 6.32 In order to establish the hedge plant material, the stock should be watered fortnightly throughout the summer season in the first year of initial establishment during May / June / July / August / September. Quantity of water to be 10 litres (1 watering can) per metre square during each visit, for the first initial year of establishment only.

Pruning

- 6.33 During the first three years of establishment the native hedge transplants should not be trimmed, until the desired height of c.1.5 m is achieved. Following this, light but regular trimming should be undertaken annually during the winter to encourage vigorous and dense growth, whilst the top should be allowed to grow to a final height of 1.8-2.0 m. Once the hedge has reached the desired height and width the hedge should be pruned hereafter every 3-5 years, to keep it in good dense form without excessive disturbance.
- 6.34 Pruning of the hedge should be undertaken manually during winter. Brash arisings can be piled on-site as habitat. The hedge should be tapered into an A-shape at the top to provide optimal bird perching opportunities and to balance the hedge's vigour.

Weeding

- 6.35 During the first two years, the plant material should be kept weed free by hand weeding or careful strimming regularly through spring-autumn to prevent dominant weeds overtaking the hedge. Following establishment, the wildflower grassland shall be allowed to surround the trees in this area and subject to further bi-annual strimming in Spring and Autumn, to allow wildflowers to grow taller but to prevent perennial weeds such as nettles establishing.

Mulching

- 6.36 Following planting, hedge whips shall be surrounded by a 75mm depth of mulch, to prevent weed growth and provide slow-release nutrients to the roots. The mulch shall be checked at the end of the first and second seasons and topped up as required. Well-composted leaf mould from the compost piles can be used to top up mulch.

Litter Collection

- 6.37 Any litter or debris noted shall be removed when observed, with checks undertaken every 2 weeks during the year for any new litter.

Defects

- 6.38 Any dead or dying plants shall be replaced with new material in the next bare root planting season (October-May).

P4 - Proposed Native Mixed-Species Hedge Management Prescriptions

- 6.39 The following summarises management prescriptions for the above feature:
- ¿ Watering: Water all plant material fortnightly during the summer season for the first year of establishment and as deemed necessary after the establishment period where natural precipitation levels are insufficient; provide 10 ltr/ m²/ visit;
 - ¿ Pruning: Do not prune until height reaches c. 1.5 m; following this prune regularly until a dense hedge of 1.8-2.0 m is achieved; finally prune hedge every 3-5 years back to shape; aim for a tapered A-shape hedge and undertake all pruning in winter;
 - ¿ Weeding: Maintain planting areas weed free; Spring to Autumn. Hand-weed throughout the Spring / Summer; March / April / May / June / July / August / September / October; repeat where necessary for first 2 years; strim bi-annually in spring and autumn following this to prevent perennial weeds;
 - ¿ Mulching: Organic Mulch Top Up; Maintain organic mulch to all planting areas; check annually in first and second season;
 - ¿ Litter Collection: Collect litter from planting areas on a fortnightly basis;
 - ¿ Defects; Replace all dead / dying plant material. Replacement planting should be undertaken on an annual basis.

P5 - Proposed Wildflower SuDS Grassland

Proposal

- 6.40 It is proposed that the swale/drainage ditch be planted to create a wildflower grassland-style habitat in summer but also withstand waterlogging in winter. The habitat will be managed less-frequently than the surrounding grassland, providing a good shelter habitat for invertebrates and amphibians, and good foraging for hedgehogs.

Specification

- 6.41 The Wildflower SuDS Grassland shall be created either by seeding or turfing. Proposed seed and turf mixes are proposed below, although other mixes may be used subject to approval. Turf to cover entire area shown for habitat on LLD2175-ECO-DWG-001 - Ecological Enhancement Plan. Seed to be sown at minimum 4g/sqm:

- ζ Wildflower Turf SuDS Turf;
- ζ Emorsgate EP1 Pond Edge Seed Mixture.
- ζ Emorsgate Seeds - EP1F - Wild Flowers For Pond Edges

Ground Preparation

- 6.42 Following construction of the swale/ditch, the bare ground shall be raked to ensure it is even and relatively friable.

Sowing

- 6.43 Seeds require warmth and moisture in order to germinate and therefore late August - October and March - April are generally the best times to sow. The seed shall be sown at a rate of 4 grams / m² (as specified by the manufacturer). Seeds do not require covering with soil but should be protected from rabbits during the first season.

Cutting

- 6.44 The vegetation should generally require little cutting or management; cutting can be undertaken to a height no lower than 100mm in October if the vegetation becomes very dense. Overly-dominant stands of single species such as iris can be pulled or trimmed as required. Thatch should be removed from the ditch in winter to prevent silting, and stacked to the corner of the site adjacent the ditch, to allow wildlife to crawl back to the ditch. Once dry, the vegetation can then be piled further in the corner to break down.

Watering

- 6.45 The vegetation should not require watering but during the establishment period and subsequently in cases of extreme drought can be watered if required to ensure to maintain healthy growth. Watering to commence following 10 consecutive days of no rainfall, during the months of June to August for the first season.

Weeding

- 6.46 The vegetation should be cleared of all weeds and encroaching scrub as required. Undesirable weeds to be pulled by hand or strimmed.

Defects

- 6.47 Re-seed any bare patches in the following spring.

P5 - Proposed Wildflower SuDS Grassland Management Prescriptions:

- 6.48 The following summarises management prescriptions for the above feature:
- ¿ Ground Preparation: Rake soil to ensure it is even and friable;
 - ¿ Sowing: Sow/turf in spring or autumn at rate specified by manufacturer;
 - ¿ Watering: Commence following 10 consecutive days of no rainfall, during the months of June to August for the first season;
 - ¿ General Cutting: Cut entire habitat area once in October to c.100mm sward height; Lift thatch and stack in corner of site every winter;
 - ¿ Weeding: Pull or strim undesirable weeds and scrub as required;;
 - ¿ Defects: Re-seed bare patches in following spring season.

P6 - Proposed Installation of Bird Boxes

Proposal

- 6.49 Additional bird nesting provision shall be incorporated into the design proposals. Bird boxes are to be installed on to existing mature trees and into shrubs around the boundaries of the site, with sparrow terraces installed to the buildings. These will provide a nesting resource for a variety of species including sparrows which often associate with dwellings, as well as more common birds such as song thrush, blackbird and tits.

Specification

- 6.50 The following bird boxes shall be installed to trees and hedges:
- ¿ 2no. CJ Wildlife Vivara Pro Barcelona WoodStone Open Nest Box;
 - ¿ 1no. Schwegler 1B Nestbox with Predator-Proof Front Panel;
 - ¿ 2no. Bird Brick Houses Integrated Sparrow Terrace Nestbox.

Installation

- 6.51 All boxes shall be installed as per manufacturer's instructions, at the locations specified within LLD2175-ECO-DWG-001 - Ecological Enhancement Plan. Nestboxes should generally be installed above 2.0 m height other than the open boxes, which should be installed at c.1.5 m height in dense vegetation. Openings should avoid southern and western orientation.

Maintenance

- 6.52 One annual clean in October / November. It is important not to clean out nest boxes before August as they may still be occupied. Contents of the boxes shall be removed, scattering them on the ground some way from the box to help prevent parasites re-infesting the nest box. A small brush or scraper shall be used to remove debris from the corners. Boiling water shall be used to kill any parasites remaining in the box.

Defects

- 6.53 Replace any box that fails and re-install any which fall down. If a box is not used within 3 years, re-site within the site to another suitable location.

P6 - Proposed Installation of Bird Boxes Management Prescriptions

- 6.54 The following summarises management prescriptions for the above feature:

- ¿ Cleaning - One annual clean in October / November.
- ¿ Defects - Replace failed boxes; re-site unused boxes after 3 years.

P7 - Proposed Installation of Bat Boxes

Proposal

- 6.55 Bat boxes would provide roosting opportunity for a variety of species, with the possibility of integrated boxes on the buildings being used by species present locally including pipistrelles and serotines and, with the addition of a large tree box to the mature beech trees, potentially noctules.
- 6.56 The following bat boxes shall be installed to trees:
- ¿ 1no. CJ Wildlife Large Multi Chamber WoodStone Bat Box.
 - ¿ 2no. Bird Brick Houses Integrated Bat Boxes.

Installation

- 6.57 All bat boxes shall be installed as per manufacturer's instructions. Bat boxes shall be between 3.0-6.0 m in height, facing between south and east at the locations specified within LLD2175-ECO-DWG-001 - Ecological Enhancement Plan.

Maintenance

- 6.58 No maintenance required, unless specified by the manufacturer (e.g. cleaning). Bat boxes shall be checked for position and condition annually. If the bat boxes do require inspection or re-siting, this should be carried out by a licenced bat ecologist.

P7 - Proposed Installation of Bat Boxes Management Prescriptions

- 6.59 The following summarises management prescriptions for the above feature:

¿ Inspection - Annual inspection.

P8 - Proposed Installation of Hedgehog Boxes

Proposal

- 6.60 Hedgehog boxes are proposed in dense vegetation along the western boundary, within an area of new tree planting and in the existing roadside vegetation.

Specification

- 6.61 The following hedgehog boxes shall be installed (or equal and approved):

¿ 2no. Wildlife World Hedgehog House.

Installation

- 6.62 Boxes are to be sited in the corners of the site in dense vegetation, as shown specified within LLD2175-ECO-DWG-001 - Ecological Enhancement Plan. The box shall be pegged in place using tent pegs or shortened road spikes (and wire if required) to prevent foxes and other animals from disturbing them.
- 6.63 Lead litter and brash shall be placed over the box to increase insulation and shelter, but the entrance must be kept clear.

Inspection and Maintenance

- 6.64 No specific maintenance is required, but boxes should be checked in late spring to ensure no vegetation has grown over the entrance, and late summer to ensure the hole is clear of debris. Any vegetation blocking access should be manually cleared. This will allow hedgehogs to keep using the boxes without any risk of them being disturbed during hibernation.

Hedgehog Gaps

- 6.65 Boxes shall be accompanied by gaps in adjacent fences of at least 12.0 cm by 12.0 cm to allow hedgehog movement between all plots on the site. Gaps can be bespoke holes within concrete gravel boards, or manually cut into timber leaving no sharp edges. If holes are created above gravel boards, a solid timber ramp (e.g. 300mm length of 100mm post, cut on the diagonal) shall be installed and pegged in place to ensure permanent access for hedgehogs. Where possible a request shall be made to neighbours to allow cutting of holes in existing boundary fences. All gaps shall be properly marked with signage denoting 'hedgehog highway' do not block this gap or similar (premade signs are available from PTES). Gaps shall be checked every 2 months to ensure they do not become blocked.

Defects

- 6.66 Replace any box that fails. If a box does not appear used within 3 years, re-site within the site to another suitable location.

P8 - Proposed Installation of Hedgehog Boxes Management Prescriptions

- 6.67 The following summarises management prescriptions for the above feature:
- ¿ Inspection and Maintenance - Bi-annual inspection in late spring and late summer; manually clear blocking vegetation;
 - ¿ Hedgehog Gaps - provide 12.0cm by 12.0cm gaps to all new fences and existing where possible, with ramps if needed; check access every 2 months, manually clearing any blockages;
 - ¿ Defects - Replace any box that fails; re-site any box that appears unused after 3 years.

P9 - Proposed Construction of Log, Brash and Compost Piles

Proposal

- 6.68 A new habitat for invertebrates, hedgehogs and amphibians shall be provided by the incorporation of log, brash and compost piles into the site boundaries, particularly to the western corners and to the bases of trees, shrubs and scrub. Piles shall be made in both shaded and sunny locations to vary the microhabitats present. Piles shall be made from arisings of native vegetation taken from the site or surrounding areas where possible. Piles should contain both larger logs (with gaps between), brash and branches and smaller leaf litter and cuttings/grass clippings, to create varied conditions.
- 6.69 For locations of the proposed piles, refer to drawing: LLD2175-ECO-DWG-001 - Ecological Enhancement Plan.

Specification

- 6.70 Piles shall be made from arisings of native vegetation taken from the site or surrounding areas. Log, Brash and Compost Piles shall be a combination of standard stacked logs and vertically driven, partially-buried logs; piles of brash / tree limbs; and piles of grass, leaves and wildflower cuttings. Materials can be varied to provide a more complex structure. Piles should be a minimum of 1.0m W x 1.0 m L by 0.5 m D with at least 10.0 cm below ground level. Location of Piles to be agreed on site with the Ecologist.

Maintenance

- 6.71 Piles shall be replenished annually with arisings from the site.

P9 - Proposed Construction of Log, Brash and Compost Piles Management Prescriptions

- 6.72 The following summarises management prescriptions for the above feature:
- 2 Replenishment - Replenish annually.



7.0 PROPOSED LANDSCAPE MAINTENANCE AND MANAGEMENT SCHEDULE

7.1 The following schedule for works has been proposed, to ensure that construction phasing takes account of the presence of protected habitats and species.

7.2 The schedule takes account of the following protected species:

- ¿ Nesting Birds; Present to Boundary Vegetation and Grassland Margins;
- ¿ Reptiles and Widespread Amphibians: Potentially present within Grassland Margins, scrub and marginal vegetation;
- ¿ Hedgehogs: Potentially commuting through and foraging on the site;
- ¿ Bats: Commuting and foraging along boundary vegetation.

7.3 The schedule takes account of the following general guidelines:

- ¿ Winter - No removal of reptile / amphibian hibernation habitat (stumps, log piles);
- ¿ Spring - No removal of bird nesting habitat; no works to ditch or hedge;
- ¿ Summer - No removal of bird nesting or reptile / amphibian habitat.



8.0 SCHEDULE NO. 01 - LANDSCAPE MAINTENANCE AND MANAGEMENT SCHEDULE

Operation	Frequency	Year 1												Year 2	Year 3	Year 4	Year 5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
P1 - Existing Trees /Vegetation																	
Monitoring of existing trees and hedges	1 x year	U												U	U	U	U
Pruning Back of Trees, Shrubs and Scrub	As required (Prior notice required for TPO trees)	U												As required	As required	As required	As required
Litter Collection	1 x every 2 weeks	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
P2 - Proposed Flowering Lawn																	
Regular Mowing of Grassland	Regularly as required				U	U	U	U	U	U	U			U	U	U	U
Relaxed Mowing of Grassland (alternative to regular mowing)	Reduce Mowing in Late Summer				U	U	U		U		U			U	U	U	U
Weeding	As required				U	U	U	U	U	U				U	U	U	U
Litter Collection	1 x every 2 weeks	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
P3 - Proposed Native Shrub and Tree Planting																	
Watering	Fortnightly for first summer then as required					U	U	U	U	U				As required	As required	As required	As required
Weeding	As required				U	U	U	U	U	U	U			U	U	U	U
Mulching	1 x year for first 2 years										U			U			
Litter Collection	1 x every 2 weeks	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Pruning of Shrubs	Annually as required	U									U	U	U	U	U	U	U
Pruning of Trees	As required	U												As required	As required	As required	As required

Operation	Frequency	Year 1												Year 2	Year 3	Year 4	Year 5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
P4 - Proposed Mixed-Species Native Hedge Planting																	
Watering	As required					U	U	U	U	U				As required			
Weeding	Monthly first two years then as required				U	U	U	U	U	U	U			U	U	As required	As required
Mulching	1 x year										U			U	U	U	U
Litter Collection	1 x every 2 weeks	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Pruning of Hedges	As required until establishment then every 3-5 years	U												U			U
P5 - Wildflower SuDS Grassland																	
Preparation	Rake Ground				U						U						
Preparation / Sowing	Sow in the autumn or spring				U						U						
Management	Cut 1 x a year and lift thatch										U			U	U	U	U
Weeding	As required					U	U	U	U	U	U			U	U	U	U
P6 - Proposed Installation of Bird Boxes																	
Cleaning. Check for position and condition. Replace fallen or broken boxes.	Once Per Year										U			U	U	U	U

Operation	Frequency	Year 1												Year 2	Year 3	Year 4	Year 5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
P7 - Proposed Installation of Bat Boxes																	
No maintenance required. Check for position and condition. Replace fallen or broken boxes.	Check position and condition annually. Inspection by a licenced bat ecologist only												U	As required	As required	As required	As required
P8 - Proposed Installation of Hedgehog Boxes																	
No maintenance required. Check for position and condition. Replace broken boxes.	Twice per year.					U				U				As required	As required	As required	As required
P9 - Proposed Construction of Log, Brash and Compost Piles																	
No maintenance required - replenish with arisings	Annually or as required	U				U	U	U	U	U	U	U	U	As required	As required	As required	As required