

Landscape and Ecological Management Plan (LEMP)

Proposed Development at:

**Land north of Pound Farm
(Phase I)
Hitchin, Herts**

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Landscape and Ecology Management Plan (LEMP)

For

Proposed Development at

Land n/o Pound Farm, Hitchin, Herts (Phase I)

Written by:

Signature:



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1.0 Introduction

1.1 Purpose of this Document

Open Spaces Landscape & Arboricultural Consultants Ltd (Open Spaces) was commissioned by Osprey Homes Ltd to prepare a Landscape and Ecological Management Plan (LEMP) for the Landscape Scheme relating to Phase I of the proposed development site at land north of Pound Farm, Hitchin, Herts. The LEMP is designed for years 1-40.

The LEMP has been prepared pursuant of the requirements of Condition 24 of planning permission 21/00434/HYA:

24. Prior to the commencement of any landscaping works with any particular phase, an ecological management plan which details the how ecological units will be delivered within that phase shall be submitted to and approved in writing by the Local Planning Authority. The plan shall include the following:

- a) aims and objectives of management;*
- b) existing and proposed features to be managed, including specific reference to improvements to retained hedgerows;*
- c) species composition of habitats to be enhanced and created;*
- d) a programme for implementation;*
- e) the body or organisation responsible for implementation of the Plan; and*
- f) monitoring and remedial measures of the Plan.*

The plan shall be implemented in accordance with the approved details and the programme as approved and the measures shall be maintained and retained thereafter. Reason: To ensure that the agreed landscaping and biodiversity gains are delivered and maintained in the interests of local biodiversity, ecology and the visual amenity of the site.

1.2 Aims and Objectives of Management

The aims and objectives of this LEMP are:

- a) To identify ecological features to be managed, including both existing and proposed
- b) To identify the entity responsible for implementation and management
- c) To identify ecological enhancements to be incorporated
- d) To identify appropriate management techniques to be employed on site, and their frequency and timings
- e) To ensure that recommendations, enhancements and ongoing management are appropriate
- f) To set out a plan of monitoring and a programme of remedial measures

1.3 The Site

1.3.1 General Site Description (All Phases)

The proposed residential development (Phases I, II and III) comprises a field bordered by London Road to the west, the field and dwelling comprising Pound Farm to the south, housing and associated amenity landscaping to the north and a stream, Ippollitts Brook, and wooded corridor to the north-east.

The entire site has been assessed as having a very low ecological value but with greater importance given to adjacent land. There are no identified impacts to protected species.

The landscape scheme for the entire site has been assessed to provide a net gain and Osprey Homes Limited has further entered into a S106 agreement securing a financial contribution towards enhancement of biodiversity off-site.

The planting scheme seeks to promote biodiversity across the site, which has been incorporated by introducing mixed native hedging, wildlife friendly planting mixes with an emphasis on seasonal planting attractive to pollinators, flowering meadow areas, native and fruiting trees. A range of other features such as bat and bird boxes, invertebrate towers, woodpiles and cut-outs to fences to promote connectivity across the site for small radiating mammals have been introduced via a Biodiversity Enhancement Plan.

1.3.2 Site Description (Phase I)

Phase I comprises the western end of the site, including the site access driveway off London Road, the spine access driveway through the centre of the site (broadly on a west-east axis) which extends to the eastern end, the eastern end of the site (SUDS area, grassland open space and play provision) and a communal landscape area to the centre of the site, accessed from the spine road. The SUDS area provides a buffer between the housing and the adjacent Local Wildlife Site and an existing balancing pond.

Other soft landscape areas commensurate with the development type include garden areas comprising amenity grass, tree, shrub and herbaceous planting with an emphasis on native and fruiting trees, native hedgerows, planting for pollinators.

A bat sensitive lighting scheme will form part of the proposals and be in accordance with the recommendations contained within the recommendations of the Ecological Impact Assessment (Green Environmental Consultants, February 2021).

1.3.3 Species composition of Retained Vegetation

Some trees are to remain adjacent to London Road (western boundary). Retained tree species in this location are elm, hawthorn, sycamore and a short row of holly which has historically been managed as a short hedgerow. There is vegetation growing on adjacent land that abuts the development to the south, east and north, and tree canopies overhang it, particularly along the eastern boundary. The management of this overhang is included for within this report.

The species composition of vegetation on adjacent land includes willow, alder, carex and reeds, broadleaved woodland species including some non-native species such as holm oak, cherry and grey poplar. Newer adjacent planting to the north eastern corner includes maple, willow and lime. A narrow strip of adjacent land to the southern end of the eastern boundary includes a densely planted area of willow, ash, hazel, whitebeam, rowan and lime.

The southern site boundary (within ownership but outside of the red line development site) is populated with a fragmented line of scrub and hedgerow species, including some scattered trees including oak and ash, all of which is largely unmanaged and forms a belt of small trees.

1.3.4 Species composition of Proposed Vegetation

Where practicable, native species have been selected, and where non-native planting is proposed, this has been chosen for its ability to provide evergreen structure, which will provide year-round shelter and foraging opportunities.

Tree species are predominantly native or non-native fruiting and include field maple, alder, beech, bird cherry and lime, apple and pear.

Hedges are almost entirely comprised of native species and known for their benefit to wildlife: field maple, dogwood, hazel, privet, hawthorn, blackthorn and guelder rose.

Ornamental shrub and herbaceous planting include lavender, hebe, mahonia, dogwood, sweet box and herbaceous geranium, all excellent plants for pollinators, including early and late pollinators and euonymus provides excellent overwintering habitat for ladybirds.

Part of the SUDS area to the north and areas of communal landscape to the southern boundary, including the roundabout at the entrance to the site, are to be seeded with a wildflower meadow mix. The mix is proprietary (Emorsgate EM1) and complete and comprises 10% native wildflowers, and 90% slow growing grasses. The wildflower species are: Common knapweed, wild carrot, oxeye daisy, ribwort plantain, selfheal, meadow buttercup and tufted vetch. The grass component is common bent, crested dogstail, red fescue and smooth stalked meadow-grass.

Similarly, the area of Pond Edge Mix (Emorsgate EP1) contained within the SUDS area is complete, and comprises 20% native wildflowers and 80% slow growing grasses. The wildflower species are: yarrow, agrimony, wild angelica, common knapweed, rough chervil, crossword, wild teasel, meadowsweet, hedge bedstraw, lady's bedstraw, oxeye daisy, purple loosestrife, musk mallow, ribwort plantain, common sorrel and pepper saxifrage. The grass component is common bent, sweet vernal-grass, quaking grass, crested dogstail, red fescue and meadow fescue.

1.3.5 Improvements to Retained Hedgerows

The scanty line of retained hedgerow to the western boundary adjacent to London Road will be supplemented by native hedge planting. The new planting will predominantly take the form of whips/transplants to limit any disturbance to the existing plants and these bare root plants (field maple, hawthorn, hazel, privet, blackthorn and guelder rose) will be notch planted. In order to achieve a biodiverse hedge pot grown species (dogwood) will be included within the planting mix. 3Ltr pot grown dogwoods will only be planted within existing hedging where gaps allow implementation without damage to retained plants.

1.3.6 Ecological Enhancement Features

A range of ecological enhancement features have been incorporated within the development:

Schwegler summer and winter bat roost boxes (type 1WQ) (50% of bat boxes)
Schwegler bat roost boxes (type 1FQ) (50% of bat boxes)
Schwegler Swift Boxes (50% of bird boxes)

Schwegler Sparrow Terrace (multiple boxes) (type 1SP) (50% of bird boxes)
Invertebrate Towers (4no. within public open space just off the internal spine road)
Log piles (within the SUDS area)

Fence cut outs have been incorporated to offer connectivity between landscape areas, including boundary and private garden spaces, to assist commuting/radiating small mammals, both across the site and through to adjacent landscapes.

1.4 Management Responsibilities

1.4.1 Implementation

The developer, Osprey Homes Limited, 5 Beechwood House, Arlington Court, The IO Centre, Whittle Way, Stevenage, SG1 2FS will be responsible for the implementation of the scheme of hard and soft landscape.

1.4.2 Management up to Practical Completion

The developer, Osprey Homes Limited, 5 Beechwood House, Arlington Court, The IO Centre, Whittle Way, Stevenage, SG1 2FS will be responsible for the management of the scheme of hard and soft landscape up to the date of Practical Completion.

1.4.3 Management post Practical Completion

It is the intention of the developer, Osprey Homes Limited, to establish a management company post Practical Completion (company name as yet unknown) to manage the communal areas within the development. Following the sale of the dwellings, the Management Company ('the Client') will be passed over to the residents and the residents will be responsible for the tendering and subsequent and on-going appointment of a Principal Maintenance Contractor ('the Contractor'). Private landscape areas attached to individual dwellings will be managed by the householder.

1.4.4 Management of Landscape Areas

1.4.4.1 Scope of Works

Management will include regular maintenance/ monitoring visits to ensure the landscape and ecological features establish successfully and are maintained in accordance with the aims and objectives of the landscape scheme. This work is set out under the following categories:

- Maintenance of existing vegetation (overhanging canopies of adjacent trees and hedgerows)
- Maintenance of proposed tree planting
- Maintenance of proposed mixed native hedging
- Maintenance of ornamental shrub planting
- Maintenance of herbaceous planting
- Maintenance of climbers
- Maintenance of amenity grass areas
- Maintenance of wildflower/grass meadow

- Maintenance of hard landscape areas
- Maintenance of play equipment
- Maintenance of lighting equipment
- Maintenance of ecological enhancement features

1.4.4.2 General Requirements

The Contractor will apply best practice when carrying out all landscape management and maintenance to ensure successful establishment of all vegetation and to present a green, attractive environment. Hedging and other structural planting will be maintained to form a cohesive, attractive and legible aesthetic to the development as a whole, delineating amenity areas and boundaries and generally softening the hard landscape elements. Both individual trees and tree groups will be managed to ensure that they grow into healthy specimens with good long-term form and branch structure. Areas of ornamental planting will be managed to provide colour, a strong visual aesthetic and ensure biodiversity and year-round interest.

Hard landscape areas will be kept free of litter, detritus and stains and play equipment will be checked regularly in accordance with the manufacturer's recommendations.

Lighting equipment will be checked regularly and any defect remedied in accordance with the manufacturer's recommendations.

1.4.4.3 General Maintenance of Soft Landscape Works

General maintenance will include regular watering, weeding, pruning, removal of litter from planted areas, repair of minor washouts and other horticultural operations necessary for the proper growth of the plants and for keeping the landscape areas neat in appearance.

No chemical pesticide, herbicide or fungicide will be allowed on any soft landscape area in the first year (establishment period), or subsequent 4 years of maintenance.

No strimmer will be used within 0.5m of the base of any tree planted within a grass area unless a suitable guard is in place.

1.4.4.4 Contractor's Specific Responsibilities

Items to be carried out as required:

- i) Keep planted areas free from rubbish and weed growth. No chemical weed killer will be allowed.
- ii) Water sufficiently to allow water to fully penetrate the rooting zone. Allow for extra watering during periods of drought.
- iii) Fork over panned down soil in areas not covered with chipped bark.
- iv) Maintain mulched areas at specified depth, topping up as necessary to maintain a 75 mm cover of chipped bark.

- v) Check that each plant is growing healthily and remove all dead wood, damaged or diseased branches, water shoots and reversion growth. Pruning's to be removed off site to certified tip.
- vi) Re-firm plants which have been loosened by wind or frost.
- vii) Correct any defects which become apparent during the earliest suitable weather conditions.
- viii) Maintain amenity grass areas to a height of between 50-100mm during the growing season.
- ix) Maintain wildflower meadow areas as a traditional meadow management, cutting to maintain a height of 50mm September to March inclusive. No cutting will take place during the months April to August save for a single 'hay cut' in August. August cuttings will be left to dry and shed seed in situ for 7 days, before raking up and removing arising from site.
- x) Maintain wildflower pond mixture by cutting back short section every 2-3 years in rotation, between September and November only.
- xi) Face up adjacent hedgerows outside of bird nesting season (March to August inclusive).
- xii) Adjacent overhanging tree canopies to be monitored for deadwood and large and medium sized deadwood to be removed, where evident. Any hung up branches overhanging the site to be removed, where evident.
- xiii) Establish a regular pattern of maintenance operations throughout the season in accordance with this Plan.
- xiv) Ensure all planted areas are regularly fertilised with appropriate organic fertilisers.
- xv) Allow for extra maintenance in any periods of unusually prolific grass or weed growth.
- xvi) Check all tree ties, stakes and other accessories and remove when appropriate.
- xvii) Ensure all hard surfacing and footways are swept and kept weed, stain and litter free.
- xviii) Ensure all play equipment is inspected regularly and any defect remedied in accordance with manufacturer's recommendations.
- xix) Ensure all lighting equipment is inspected regularly and any defect remedied in accordance with manufacturer's recommendations, including the replacement of faulty bulbs.

1.4.4.5 Appropriate Skills

The Contractor shall employ skilled supervisors and operatives who deliver a high-quality level of workmanship. When necessary, the Contractor shall employ specialist disciplines such as arboriculturists and ecologists for specialist tasks, their workmanship and knowledge.

1.4.4.6 Issues Arising

Where an issue arises which may affect or change the approved design, the Contractor will refer to the landscape design drawings for reference.

1.5 Contract Management

The appointed Contractor shall confirm a named Contract Supervisor ('the Supervisor') to manage the maintenance contract. All works let under the contract will be undertaken by suitably skilled and professionally trained staff.

1.5.1 Inspections and Monitoring

The Contractor shall timetable the Supervisor to attend site regularly to monitor work, report progress and report any damage, defects, vandalism or thefts. The Supervisor shall be notified of any problems or concerns relating to the condition of the landscape outside the remit of the maintenance contract and report any matter arising to the Client.

1.5.2 Record Sheets

All operations undertaken during each maintenance visit will be recorded and a written record shall be issued to the Client.

1.5.3 Health and Safety

The Contractor will be responsible for ensuring the work is carried out in a safe manner avoiding any risks to health and safety of the management employees, users of the site and the public.

1.5.4 Protection of the Public

The works will be undertaken without risk or inconvenience to the public, site occupants or neighbours. Access to the site and work undertaken will have regard to the site's surroundings and users of the site. To avoid unnecessary nuisance and disturbance the work and work times are to be agreed with the Client.

1.5.5 Protection of Property and Utilities

All landscape features e.g., fencing, paving and services are to be protected from any damage during the course of maintenance works. The contractor will allow for protective measures required to facilitate the maintenance operations within the price for any work. Any damage caused to any highway, services or other property will be made good by the Contractor at his expense.

1.5.6 Workmanship and Cleanliness

The landscape maintenance is to be carried out to a professional standard. All areas must always be kept neat and clean, weed and litter free. At the end of a workday the Contractor shall remove all rubbish, trimmings and superfluous materials.

1.5.7 Disposal of Waste Material

The Contractor will allow for the removal and safe disposal of all waste materials arising from any landscape maintenance works. Litter collection is to be undertaken on a fortnightly

basis from all landscape areas. The Contractor will allow for the disposal of all litter off site and be responsible for all waste disposal costs and any relevant approvals. Any fly tipping on site will be reported to the Client and removed on instruction. The use of mechanical shredders or chipping machines on site will not be permitted.

1.5.8 Irrigation and Watering Arrangements

Where there is no localised irrigation system available, the Contractor will be responsible for providing sufficient clean water to water soft landscape areas where appropriate. The site will be monitored during periods of hot and/or dry weather and the Client will be notified of any plant failures or any heat or drought related impact on any vegetation. If excess wet weather has caused areas of water to stand, the ground should be spiked to facilitate drainage water.

1.5.9 Use of Pesticides and Herbicides

No chemical pesticides, herbicides or fungicides will be used on any part of the soft landscaping for the first 5 years of site maintenance after completion of planting works.

Where chemical pesticides, herbicides or fungicides are used following the initial period, the Contractor must use a certified operator, take appropriate safety precautions and comply with the Control of Pesticides Regulations 1986, the conditions of approval for the chemical, and any relevant Code of Practice issued by DEFRA. The Contractor must keep full and accurate records of all herbicides used, the area in question, quantities of chemicals used and the date of completion.

Unintentional spray overlap must be avoided. Spraying must stop whilst turning. The Contractor must mark the point where spraying has stopped for refilling or for breaks. Herbicide must never be allowed to drift, fall or run-off onto open water or onto adjacent sites, gardens or ground not intended for treatment.

The Contractor must dispose of unused and unwanted containers, and chemicals, including unused dilute tank mixtures, in a safe way in accordance with the methods approved by the Control of Pesticides Regulations and relevant Codes of Practice. Disposal will be off site.

1.5.10 Invasive and Harmful Weeds and Pests

To prevent the spread of invasive weeds plants onto the site, regular checks should be made to record the extent of any invasive species and to remove seedling/young plants of invasive species.

1.5.11 Control of Wildlife Pest Species

The Contractor will maintain all protective fencing or guards provided with the landscape work and monitor the occurrence of pest species on the site. The Contractor shall employ an approved pest control specialist to control wildlife pest species and notify the client's representative in advance of any control operation.

1.6 Programming Works

Following Practical Completion of the landscape works and the installation of the biodiversity enhancement features, the appointed Contractor will allow for carrying out all maintenance works in such a manner as to avoid unreasonable disturbance of the buildings and their occupants after occupation.

New planting will be monitored to ensure there is no loss / deterioration of habitats, during maintenance operations, including pruning works.

Any necessary removal of tree, hedge or large ornamental shrub vegetation will be undertaken outside of the main bird breeding season (which is March to August inclusive) or where this is not possible, checks shall be undertaken by a suitably trained ecologist prior to clearance works. Should a nesting bird be encountered, a 5m buffer zone of 'no disturbance' is to be implemented. Any nest encountered should be checked weekly until a suitably experienced ecologist has confirmed that the nest is no longer in use, before works can continue within the former buffer zone.

Pruning will be undertaken during Autumn / late Winter / early Spring in order to avoid disturbance during the bird breeding season. A proportion of the pruning of fruiting trees / shrubs should be undertaken during late February in order to ensure that this foraging resource is available to birds throughout the wintering period – refer to maintenance calendar for specific operations.

Note: All vegetation management work should avoid disturbance to nesting birds, which is an offence under the Wildlife and Countryside Act 1981 (as amended).

1.7 Biosecurity Measures

UK governmental biosecurity policy sets out a series of measures that aim to prevent the introduction and spread of harmful organisms (referred to as the biosecurity continuum), with measures in place to anticipate the spread of pests and diseases (P&D) between countries, intercept these at UK borders and then manage them within the UK.

Refer to the Landscape Institute Technical Guidance Note 01/19: Plant Health and Biosecurity: The Landscapes Consultants Toolkit, for further guidance to help practitioners apply biosecurity principles to their work.

All plants transported to site to comply with government guidelines in relation to biodiversity standards.

All plant supply will follow BS 8545. Trees: From Nursery to independence in the Landscape. Recommendations. In the interest of biosecurity, trees will not be imported directly from European suppliers and planted straight into the field, but spend a full growing season in a British nursery to ensure plant health and non-infection by foreign pests or disease. This is the appropriate measure to address the introduction of diseases such as Oak Processionary Moth and Chalara of Ash. All trees to be planted must have been held in quarantine.

1.8 Reinstatement Works

Where reinstatement works are required either due to Contractors' damage or when instructed under the contract, these shall be undertaken in accordance with good horticultural practice. The Contractor will be expected to undertake and maintain any

reinstatement works so that new works establish well and tie in with existing planting as quickly as possible. The Contractor will be responsible for all defects on reinstatement works until the end of the maintenance contract.

Any reinstatement or replanting works on site should respect the original intent of the design and planting proposals.

1.9 LEMP Revisions

This LEMP will be reviewed and revised, where necessary, every 5 years by a competent person to ensure that all landscape management considerations are relevant and up to date. The review and any revision of the report to be carried out within 6 months' prior to the completion of each 5-year period, and in a timely way as to allow for the re-tendering and re-letting of the Contract.

2.0 Soft Landscape Maintenance

2.1 Existing Vegetation

2.1.1 Existing trees

Retained trees growing both within the site to the western boundary and off site shall have their canopies and overhanging canopies managed to promote healthy growth and good form. Overhanging canopies will not unnecessarily be reduced back to boundary lines. Minor and medium sized deadwood will be allowed to remain where there is no danger posed to the users of the site. Medium and large sized deadwood will be removed as part of normal maintenance operations where retention poses a risk to users of the site. Where practicable, dead wood will be cut into suitable sized lengths and left within the ecological buffer area to the east of the site (SUDS area), as low log piles for the benefit of biodiversity. Stacks of logs will not exceed 0.6m in height and are to be placed at the margins of the area, adjacent to the boundaries or left within long grass areas.

2.1.2 Existing hedgerows

Existing hedgerows will be maintained as part of the management of newly planted native hedges to ensure good form and growth, and faced up to prevent encroachment onto lawn or hard landscape areas. Generally, existing hedgerows will be managed to improve the appearance of the planting, screening and potential wildlife opportunities of the development.

2.1.3 Ecological Timing of Works

All work to the existing trees/hedgerow to take place outside of bird nesting season (March to August inclusive) and allowing for any berries to be retained for as long as possible. Hedging should not be cut during periods of hard frost and checks for nesting birds must be made before remedial/removal works are undertaken. Refer to paragraph 1.6 for further information.

2.2 Proposed Trees

Tree planting maintenance operations are to achieve full establishment of healthy trees with good long-term form and with a diverse range of canopy structure across the site.

2.2.1 General Tree Planting Maintenance Works

General Tree Planting Maintenance Works	
Watering	Year 1-5: 30 litres per tree 2x per week (minimum) during dry periods. Year 6-10: N/A unless drought occurs. Year 11-40: N/A unless drought occurs.
Soil Testing	Year 1-5: 1x per year (1 no test per tree) if problems are evident. Year 6-10: Only if problems are evident i.e., die-back. Year 11-40: Only if problems are evident i.e., die-back.

General Tree Planting Maintenance Works	
Weed Control	Year 1+2: 5x per year. Year 3-5: 3x per year. Year 6-10: 2x per year. Year 11-40: 2x. per year.
Pest Disease Control	Pest Disease Control: Year 1-5: Visual check during each visit during growing season. Year 6-10: Visual check during each visit during growing season. Year 11-40: Visual check during each visit during growing season.
Firmness	Year 1-5: minimum 2x per year (Spring and Autumn) Year 6-10: As necessary. Year 11-40: N/A
Fertiliser	Year 1-20: Apply balanced (NPK) fertiliser 1x every 3 years.
Pruning	Year 1-5: Check 2x per year and carry out formative pruning as required. Year 6-10: Check 1x per year and carry out corrective pruning as required. Year 11-40: Check every 3rd year and carry out corrective pruning as required.
Removing/Checking Guying and Ties	Year 1-3: Check trees minimum 3x per year. Year 2-3: Remove if tree is stable.
Replacement Planting	As necessary

2.2.2 Corrective and Formative Pruning

During the winter months inspect the shape of all trees and allow for corrective/formative pruning to appropriate species to ensure continued development of even shape. Check for damaged branches after storms or strong winds and remove any dead, damaged, diseased growth, and any crossing and/or rubbing branches.

2.2.3 Stakes, Ties, Grilles and Guards

All tree stakes, ties etc to be checked at the time of each maintenance visit. Adjust ties to allow for increases in stem growth. Ensure stakes do not rub or chafe against any tree. Replace broken or damaged stakes, ties etc as and when any damage or breakages are found and remove redundant stakes and ties as appropriate.

Where trees are firm in the ground, stakes and ties to be removed by the end of the second winter after planting. Where a tree requires continued staking because it is not firm in the ground, retain stakes for a further year and repeat inspection as required until year 6. If any tree still requires staking after this time, replace the tree and associated stakes and ties.

At each maintenance visit, check the condition of any tree grilles and associated fixings. Report any damage or maintenance requirement to the Client for further instruction.

Allow for top up of 5-10mm pea shingle beneath tree grille once per year.

2.2.4 Underground Guys

Check condition of underground support systems. Retighten cables as and when required. Remove materials where it is clear they have become redundant.

2.2.5 Ecological Timing of Works

Vegetation management will be carried out outside of the main bird breeding season, March to August inclusive. Where essential works occur within that timeframe, a suitably qualified Ecologist will carry out a check of vegetation to ensure that no nesting birds are present or would be disturbed by works. 5m buffer zones of 'no disturbance' will be used to de-mark nests to be protected and areas where cutting cannot take place. The nests should be checked weekly until a suitably experienced ecologist has confirmed that the nests are no longer in use, before works can continue within the former buffer zone area.

2.3 Proposed Native Hedging

2.3.1 Mixed Native Hedge

Mixed native hedge planting will be managed to achieve successful establishment of planting and to ensure the hedgerow matures to provide screening, nesting and foraging opportunities for birds and small mammals, including foraging and commuting for bats. Trees within mixed native hedges are to be encouraged to develop with good shape and spacing. Hedge bottoms are to be kept free of litter but otherwise generally left undisturbed to encourage wildlife. Where hedgerows are topped when the desired height is reached, care will be taken to ensure there is no damage to the bark of any tree planted within it.

2.3.3 General Hedging Maintenance Works

General Hedge Maintenance Works	
Watering	As necessary during dry periods.
Weed Control	Year 1+2: 5x per year. Year 3-5: 3x per year. Year 6-10: 2x per year. Year 11-40: 2x. per year.
Replacement Planting	As necessary
Seasonal Hedge Maintenance Works	
Spring	Litter and arisings – remove at each maintenance visit. Surface cultivation- by hand at base of plants to relieve compaction Years 1-3 Fertiliser – Apply balanced fertiliser (NPK) on a bi-annual cycle. Watering– Water during dry periods when plants are in active growth. Clipping/pruning – 1x per year – Years 2-40. Re-firm – as necessary.
Summer	Litter and arisings – As Spring Surface cultivation – As Spring

Autumn	Surface cultivation – As Spring Litter and arisings – As Spring
Winter	Litter and arisings – As Spring

2.3.5 Ecological Timing of Works

Vegetation management will be carried out outside of the main bird breeding season, March to August inclusive. Where essential works occur within that timeframe, a suitably qualified Ecologist will carry out a check of vegetation to ensure no nesting birds are present or would be disturbed by works. 5m Buffer zones of 'no disturbance' can be used to de-mark nests to be protected and areas where cutting can take place, where active nests are found. The nests should be checked weekly until a suitably experienced ecologist has confirmed that the nests are no longer in use, before works can continue within the former buffer zone.

2.4 Proposed Ornamental Shrub Planting

The ornamental planting scheme throughout the site is to provide interest in all seasons and to encourage biodiversity. The planting scheme will also provide a soft and sensually varied backdrop to the frontage of the buildings and within car park areas. All shrubs, herbaceous, conifers and climbers are to be maintained to ensure full establishment and continuous growth for leaf to leaf cover and to maximise colour and year round interest. To maintain the planting to encourage foraging, shelter and food for wildlife.

2.4.1 General Shrub Planting Maintenance Works

General Shrub Planting Maintenance Works (Years 1-5)	
Watering	Water as necessary during dry periods when plants are in active growth.
Weed Control	Maintain totally weed free each visit. (5x per year - Years 1-2) (3x per year, 3-5 years)
Mulch	Top up mulch every 2 years to specification of 70mm depth.
Replacement Planting	As necessary
Seasonal Shrub Planting Maintenance Works (Years 1-5)	
Spring	Litter and arisings – remove as soon as they occur or at maintenance visit. Surface cultivation- by hand at base of plants to relieve compaction years 1-3. Fertiliser – Apply organic fertiliser on a bi-annual cycle. Clipping/pruning – 1x per year – Years 2-40. Re-firm – as necessary.
Summer	Weeding – As Spring Litter and arisings – As Spring

	Surface cultivation – As Spring
Autumn	Surface cultivation – As Spring Litter and arisings – As Spring
Winter	Litter and arisings – As Spring Top up with semi-composted mulch as necessary. Replacement planting, like for like. 1x per year – Years 1-3. Prune any shrub, branch etc. growing over or obscuring any footpath, roadway, light or sign.
General Shrub Planting Maintenance Works (Years 6-10 and 11-40)	
Watering	Water as necessary during dry periods.
Weed Control	Maintain totally weed free each visit. (2x per year - Years 6-10) (1x per year – Years 11-40).
Replacement Planting	As necessary
Seasonal Shrub Planting Maintenance Works (Years 6-10 and 11-40)	
Spring	Litter and arisings – remove as soon as they occur or at maintenance visit. Surface cultivation- by hand at base of plants to relieve compaction as necessary. Fertiliser – Apply organic fertiliser on a bi-annual cycle. Re-firm – as necessary.
Summer	Litter and arisings – As Spring Surface cultivation – As Spring
Autumn	Surface cultivation – As Spring Litter and arisings – As Spring
Winter	Litter and arisings – As Spring Thin understory plants and bare rooted whips as required after year 5. Top up with semi-composted mulch as necessary – years 6-10. Prune any shrub, branch etc. growing over or obscuring any footpath, roadway, light or sign.

2.4.2 Shrub Pruning and Training

All ornamental planting areas are to be regularly trimmed to ensure the site is maintained in a neat and tidy condition.

- i) Allow for regular trimming of shrubs to maintain a generally even height to the planting areas and clear visibility across the landscape as is appropriate to scheme, including managing vegetation for visibility splays. Pruning should respond to the natural form of each species, and avoid uniform 'box' shapes, unless the design intent so requires.
- ii) Allow for formative pruning and tidying to shrubs, climbers and ground cover.

- iii) Do not prune shrubs until after fruits / berries have finished, to encourage foraging wildlife.
- iv) Remove dead or broken stems and prune appropriate species to encourage compact bushy growth.
- v) Dead head and cut back herbaceous perennials at the end of the season, as is appropriate to the species
- vi) Trim off vegetation overhanging paths, kerbs, or roadways or obscuring signs.
- vii) Where the design intent requires, trim ornamental hedges to shape twice per season, and ensure hedges are cut to smooth accurate lines.
- viii) Tie in climbing plants to supports as appropriate.
- ix) Fork over any areas of open soil around ground covers
- x) Trail groundcover plants out towards open soil.

2.4.3 Ecological Timing of Works

New planting should be monitored, in order to ensure that there is no loss / deterioration of habitats. This includes pruning works. Pruning should be undertaken during autumn / late winter / early spring to avoid disturbance during the bird breeding season, which is March to August inclusive. A proportion of the pruning of fruiting trees / shrubs should be undertaken during late February to ensure that this foraging resource is available to birds throughout the wintering period.

Any necessary removal should be undertaken outside of the main bird breeding season) or where this is not possible, checks should be undertaken by a suitably trained ecologist prior to clearance works and buffer zones of 'no disturbance' implemented where active nests are found.

2.5 Proposed Herbaceous Planting

The herbaceous planting throughout the site is to be managed so as to provide a strong, colourful visual aesthetic, scent and interest in all seasons, while being wildlife and pollinator friendly. Species specific pruning is to be undertaken to specifically encourage flowering.

2.5.1 General Herbaceous Planting Maintenance Works

General Herbaceous Planting Maintenance Works (Years 1- 40)	
Watering	Water as necessary during dry periods when plants are in active growth.
Weed Control	Maintain totally weed free each visit. (5x per year - Years 1-2) (3x per year, 3-5 years)
Mulch	Top up mulch every 2 years to specification of 70mm depth.

Deadheading	Deadhead throughout growing season as necessary.
Replacement Planting	As necessary
Seasonal Herbaceous Planting Maintenance Works	
Spring	Litter and arisings – remove as soon as they occur or at maintenance visit. chosen, it should have wildlife benefit. Surface cultivation by hand between plants to relieve compaction. Fertiliser – Apply organic fertiliser on a bi-annual cycle. Irrigation – Irrigate during dry periods when plants are in active growth.
Summer	Litter and arisings – As Spring Surface cultivation – As Spring
Autumn	Surface cultivation – As Spring Litter and arisings – As Spring
Winter	Litter and arisings – As Spring Lift or divide herbaceous shrubs if growth is excessive starting year 3. Cut back any foliage growing over or obscuring any footpath, roadway, light or sign.

2.5.2 Pruning, Staking, Tying-in and Deadheading

Allow for general pruning, staking, tying and deadheading of all herbaceous plants on a regular (at least monthly) basis throughout the growing season. Allow for a comprehensive tidying up of all herbaceous planting in September/October, as appropriate to species, in order to ensure that where plants die back, the site is presented in a tidy condition throughout the winter months. Where plants have attractive dead heads, seed heads should be left to overwinter for the benefit of foraging mammals and seed eating birds. Where plants propagate themselves via seed fall, seed heads should be left in-situ until dispersal.

2.5.3 Sub-dividing

Allow for periodic lifting and sub-dividing of herbaceous plants during March and May where plants have become overcrowded or older parts of a planting group are starting to deteriorate. Where congestion indicates division, healthy lifted parts of plants carrying sufficient roots for survival may be used to gap up.

2.6 Proposed Climbers

Maintenance operations should encourage and maintain full establishment of healthy climbers with good long-term shape and cover of boundary and retaining walls.

2.6.1 General Climber Maintenance Works

General Climber Maintenance Works	
Watering	Water as necessary during dry periods when plants are in active growth.
Weed Control	Maintain totally weed free each visit. (5x per year - Years 1-2) (3x per year, 3-5 years)
Mulch	Top up mulch every 2 years to specification of 70mm depth.
Replacement Planting	As necessary.
Seasonal Climber Planting Maintenance Works	
Spring	Litter and arisings – remove as soon as they occur or at maintenance visit. Re-firm plants as necessary 1x - Years 1-3. Surface cultivation by hand around plants to relieve compaction, as necessary. Prune any excessive growth. Years 1-40. Fertiliser – Apply organic fertiliser on a bi-annual cycle.
Summer	Litter and arisings – As Spring Surface cultivation – As Spring
Autumn	Surface cultivation – As Spring Litter and arisings – As Spring
Winter	Litter and arisings – As Spring

2.6.2 Pruning/Training of Climbers

All climbers to be regularly pruned to ensure the site is maintained in a neat and tidy condition. Allow for formative pruning. Remove dead or broken stems and prune to encourage compact growth. Trim off vegetation overhanging walls, paths, kerbs, or roadways or obscuring signs. Fork over any areas of open soil around ground cover and trail ground cover plants out towards open soil. Remove arisings from site.

Maintain wildflower meadow areas as a traditional meadow management, cutting to maintain a height of 50mm September to March inclusive. No cutting will take place during the months April to August save for a single 'hay cut' in August. August cuttings will be left to dry and shed seed in situ for 7 days, before raking up and removing arising from site.

- x) Maintain wildflower pond mixture by cutting back short section every 2-3 years in rotation, between September and November only.

2.7 Proposed Wildflower Meadow Mixture

A wildflower seed mix, which includes wildflowers and grasses, will be introduced in strategic locations around the site to provide seasonal colour, and to enhance biodiversity.

2.8.1 General Wildflower Meadow Maintenance Works

General Hedgerow Wildflower Margins Maintenance Works	
Watering	Water as necessary during dry periods when plants are in active growth.
Cutting	Year 1 growth – Cut regularly to 50mm height (Avoid April to August inclusive) Year 1+ - Maintain to 50mm height September to March, making a single 'hay cut' in August following flowering. Hay cut to be carried out using a petrol strimmer or tractor mower, arising allowed to fall and remain in-situ for 7 days to allow seed to fall. On day 8, arising to be raked up and removed from site.

2.8.2 First Year Management

Mow newly sown meadows should be cut once in early August, clippings removed from site. Thereafter, mow to 50mm height until end of March. This will control annual weeds while offering shelter to sown seedlings. Perennial weeds such as dock should be removed by hand.

2.8 Proposed Pond Edge Mixture

A wildflower seed mix, which includes wildflowers and grasses, will be introduced within the SUDS area to the east of the site to provide seasonal colour, and to enhance biodiversity.

2.8.2 Pond Edge Mixture Maintenance Works

General Hedgerow Wildflower Margins Maintenance Works	
Watering	Water as necessary during dry periods when plants are in active growth.
Cutting	Year 1 growth – Cut annual weed growth back to encourage development of good perennial ground cover. Year 1+ - Maintain with minimal disturbance. Create variation in structure by cutting back and removing short sections of vegetation every 3 years in rotation, during September to November inclusive to ensure least disruption to wildlife. Selectively thin dense stands of single species (eg. yellow iris) during this period.

2.8.2 First Year Management

Cut back annual weed growth to encourage the development of good perennial ground cover.

2.9 Proposed Amenity Lawn

Private rear gardens are to maintain by property owners, the advised maintenance works are recommendations only to establish a healthy lawn.

2.9.1 Recommended General Lawn Maintenance Works

General Lawn Maintenance Works (Monthly) Years 1-40	
January	Remove fallen leaves and other debris.
February	Remove fallen leaves and other debris.
March	Remove leaf litter and any other surface debris (only in dry conditions) 1x prior to first cut of the season. Rolling: if there have been any heavy winter frosts, settle the turf by light rolling 1x, 3 days prior to first season's cut. Mowing: — First season's cut should be to slightly top the grass sward. Do not close cut. 2x. Weed control: - Apply a moss killer if necessary 1x or as manufacturer's requirements. Lawn edges: Tidy up (neaten) lawn edges with half-moon edging tool /handheld shears 1x Mid-March.
April	Weed control: If broadleaf weeds are growing, treat with a suitable weed killer 1x Late-April. Mowing: Maintain a 25-40 mm height 2-3x (Note, height specification shall take precedence over frequency). Seeding; Over-seed any sparsely growing areas of lawn. – Lightly prepare lawn surface first. 1x.
May	Watering: Water as necessary during dry periods to fully saturate the ground. Mowing: Maintain a 25-40 mm height 3-4x (Note, height specification shall take precedence over frequency). Weed control: If broadleaf weeds are growing, treat with a suitable weed killer 1x. Apply a moss killer if necessary 1x. Fertiliser: Apply a nitrogen-based lawn fertiliser once lawn is actively growing 1x Mid-April.
June	Watering: As per May. Mowing: As per May. Weed control: As per May. Spike, lightly top-dress areas subject to heavy wear. Lawn edges: Tidy up (neaten) lawn edges with half-moon edging tool /handheld shears 1x.
July	Watering: As per May. Mowing: As per May. Weed control: As per May. Lawn edges: Tidy up (neaten) lawn edges with half-moon edging tool /handheld shears 1x.
August	Watering: As per May. Mowing: As per May. Weed control: As per May. Fertiliser: Apply a nitrogen-based lawn fertiliser 1x.

	Lawn edges: Tidy up (neaten) lawn edges with half-moon edging tool /handheld shears 1x.
September	Watering: As per May. Mowing: As per May. Remove any fallen leaves. Lawn edges: Tidy up (neaten) lawn edges with half-moon edging tool /handheld shears 1x.
October	Watering: Only as required if the ground remains dry. Mowing: Only as required to maintain a 50-75 mm height. Scarify, spike and top-dress. Over-seed bare patches or areas where grass is growing thinly. Remove fallen leaves and other debris.
November	Mowing: Only as required to maintain a 50-75 mm height – Do not mow after heavy frost or if the ground is saturated after rainfall. Remove fallen leaves.
December	Remove fallen leaves and other debris.

3.0 Hard Landscape Maintenance

3.1 Hard Landscape Areas

The hard landscape areas to be maintained throughout site and are to be kept weed, stain and litter free. Lighting is to be inspected regularly and any defective units put into working order, in accordance with the manufacturer's specification/recommendations.

3.1.1 General Hard Landscape Maintenance Works

General Hard Landscape Maintenance Works	
Weed Control	Maintain totally weed free each visit. Spot spray application of suitable herbicide (Bi-monthly).
Stain Removal/Gum removal	Remove any stains or gum as required using an appropriate stain or gum remover, dependent on the nature of the stain.
Litter and Arisings	Remove as soon as they occur or at maintenance visit.
Bark Mulch	Remove any bark from hard landscape areas and return to planting beds as soon as they occur or at maintenance visit.
Leaf Sweeping	Remove any leaf litter and any other surface debris (only in dry conditions) from hard paved areas in autumn and at any other time of year when necessary.
Lighting units	Inspect regularly for timing issues, defective units, requirement for replacement bulbs and remedy on next maintenance visit.

3.1.2 Weed Control

Allow for spot spray application (bi-monthly) of suitable herbicide to any weeds emerging in hard surfaces and along kerb lines. All areas to be maintained weed free throughout the year.

3.1.3 Stain Removal/Gum removal

Remove any stains or gum from hard landscape surfaces using a suitable proprietary product, following all manufacturer recommendations as to application rate etc. and using any protective equipment recommended.

3.1.4 Litter and Arisings

Remove all litter and deleterious material from hard landscape areas at the time of each maintenance visit.

3.1.5 Bark Mulch

Remove any bark mulch from all hard landscape areas e.g. parking, roadways and walkways. Return bark mulch to planting beds unless contaminated with litter or other materials.

3.1.6 Leaf Sweeping

Remove all autumn leaf fall and any other surface debris from all hard landscape areas, particularly during the winter months (October-December). Also remove any other plant material as they occur or at maintenance visit.

3.2 Play Area and Equipment

3.2.1 General Safety Notes

Maintenance operations to be carried out in accordance with manufacturer's specification, safety requirements and test methods and, where relevant, current legislation.

- i) An inspection schedule should be prepared for each playground, listing components and appropriate action should be taken if defects are noted
- ii) Appropriate safety systems must be established by the operator
- iii) No access should be allowed to unsafe equipment or areas
- iv) Records of safety management should be kept by the playground operator
- v) Effectiveness of safety measures should be assessed annually (a risk assessment and annual inspection)
- vi) Signs should give owner details and emergency service contact points
- vii) Entrances for emergency services should be freely accessible
- viii) Information on accidents should be kept
- ix) Ensure safety of staff, users and public during maintenance operations
- x) Equipment should be installed safely to appropriate national building regulations and to the manufacturer's instructions.
- xi) Foundations should not present a hazard. Infill loose-fill surfaces where necessary.

3.2.2 Documentation

Playground documentation/records should include:

- i) Certificates of tests or compliance with standards

- ii) Inspection and maintenance instructions
- iii) Operating instructions from the supplier/manufacture
- iv) Contractor's own inspection and maintenance recommendations
- v) Design and tender documents (where applicable)

3.2.3 Routine Inspections

Recommended Routine Inspections	
Fortnightly	- Check fixtures and fittings. Basic routine maintenance details should be supplied by the manufacturer and include security of fixings, painting and staining, surface maintenance, lubrication, cleansing as appropriate. - Inspections to include checks for wear and tear and that the equipment is still fit for purpose. Notify the Client immediately if there is any sign of damage or vandalism and that the equipment is felt to be unsafe in any way - Clear leaves and rubbish from the area - Deal with any weeds, moss or algae.
Monthly	- Check any loose infill levels and top up
Annually	- An inspection schedule should be prepared for each playground, listing components and manufacturer's recommendations.

4.0 Ecological Enhancement Features (Products)

4.1 Ecological Enhancement Requirements

Wildlife boxes are to be located on the site for bird and bat species and will be erected on buildings in accordance with the Biodiversity Enhancement Plan.

'Insect hotels' (invertebrate towers) will be located within proposed planting of the communal park area located off the spine road in the middle of the site.

4.2 Bird Boxes

4.2.1 Recommended Products

	
Product: Schwegler 1SP Sparrow Terraces (50% of all boxes installed) Species: House Sparrow	Product: Schwegler Swift Boxes No.17 (50% of all boxes installed) Species: Swift

4.2.2 Aftercare

The nesting bird season is generally accepted as between March to September (with some overlap dependant on localised environmental conditions). Therefore, following installation the bird boxes should not be disturbed, as disturbance may result in an offence under the Wildlife and Countryside Act (1981) as amended by the Countryside and Rights of Way Act (CROW) 2000. Recommended maintenance to bird boxes should be undertaken as set out within Section 4.6, and specifically outside of this nesting period. Should a nesting bird be encountered, disturbance must cease immediately.

4.3 Bat Boxes

4.3.1 Recommended Products

	
Product: Schwegler Bat Roosts 1FQ (50% of all boxes installed) Species: Common Pipistrelle and Daubenton's Bat	Product: Schwegler Summer and Winter Bat Roosts 1WQ (50% of all boxes installed) Species: Common Pipistrelle and Daubenton's Bat

4.3.2 Aftercare

Bats are a protected species, and any object they utilise for roosting is therefore also protected. Therefore, following installation the bat boxes should not be disturbed, as disturbance may result in an offence under the Wildlife and Countryside Act (1981) as amended by the Countryside and Rights of Way Act (CROW) 2000. Bat boxes are very robust and will not require maintenance, and therefore are at their most effective if left undisturbed. Should, for any reason, disturbance of the boxes be envisaged, the Contractor must appoint an appropriately licensed ecologist to undertake any work required.

4.4 Log Piles

Any dead wood from tree work on the Site (unless diseased) to be placed within the eastern SUDS area to create log piles to benefit invertebrates.

4.4.1 Aftercare

The habitat woodpiles will not be subject to management or disturbance, other than topping up on occasions where further tree works produce more arisings.

4.5 Invertebrate Towers

The invertebrate towers will not be subject to management or disturbance other than checking they are still securely in place.

4.5.1 Aftercare

Re-secure towers to their associated stake in an upright position, if movement has occurred.

4.6 Ecological Enhancement Features (Products) Management Schedule

Works shall be undertaken in accordance with the Work Schedule.

At the end of the first 5-year period, management actions will be reviewed and revised where necessary. All management operations will be in accordance with this revised plan.

Actions	Timing for Works to Occur	Years
Annual Works		
Bird box management	Annual cleaning and inspection for loss, damage or obstruction during winter (September to February), and cleaning out old nesting matter as necessary (without use of chemicals).	1-40
Bat box management	Bat boxes should be inspected from the ground on an annual basis to ensure they are still present and undamaged. Bat boxes will not be moved or opened at any time other than by an appropriately licensed bat ecologist.	1-40
Invertebrate Tower management	Any loose boxes or dislodged stakes to be refixed	1-40
	Replace any towers which deteriorate/rot and place any redundant towers at the base of mature hedges around the site to enable residual wildlife to migrate.	6-40
Habitat log piles	Top up log piles as any tree surgery allows for.	As required