

EASTLEIGH BOROUGH COUNCIL

Itchen Valley Country Park, Allington Lane, Eastleigh

Biodiversity Mitigation and Enhancement Plan

Planning Issue

Prepared by	GS
Checked by	
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1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned to prepare a Biodiversity Mitigation and Enhancement Plan for the proposed enhancement works at Itchen Valley Country Park, Allington Lane, Eastleigh. As part of this proposal, a Long-Term Soft Landscape Management Plan has been compiled to provide management and maintenance prescriptions for the proposed landscape areas.
- 1.2 The Biodiversity Mitigation and Enhancement Plan should be read in conjunction with the Woodland Management Plan (2022-32), reference: P EBC IVCPWMP SKJM 1. 3 prepared by Hampshire Arboricultural Consultancy, and the Landscape Management Plan, ref. LLD2475-LAN-REP-004 prepared by Lizard Landscape Design and Ecology.
- 1.3 The Biodiversity Mitigation and Enhancement proposals for the development at the site have been prepared by Lizard Landscape Design and Ecology, Worthing in coordination with the soft landscape proposals and requirements for ecological protection measures during the works. The report is intended to discharge planning condition 7 of the planning application (Application Number: F/22/92889).
- 1.4 The Soft Landscape Management Plan includes:
 - *Information about existing site conditions throughout the Country Park;*
 - *Description of the Ecological Baseline of the Proposal Area;*
 - *Details of the Ecological Avoidance and Mitigation Measures required;*
 - *Description of the Enhancement Proposals;*
 - *Long-Term Design and Management Objectives.*
- 1.5 Detailed landscape planting and management prescriptions and a management schedule are detailed within the LLD2475-LAN-REP0-004 Landscape Management Plan.

2.0 EXISTING SITE INFORMATION

- 2.1 The Site encompasses land at Itchen Valley Country Park (Grid Reference: SU 46189 16209). The proposed application site is some 5.8 hectares, (14 acres) within the Itchen Valley Country Park, including woodlands, amenity grasslands and wildflower meadows, with associated visitor facilities such as the welcome centre buildings, car parks, picnic areas and play areas.
- 2.2 Within the wider Country Park, the proposals focus on Highwood Barn Hub area, main car park area, and parts of High Hill Fields.
- 2.3 Highwood Barn Hub is the central area to the south of the site, with Highwood Barn, Kingfisher Barn and surrounding areas. High Hill Fields are located to the north, with three large open fields surrounded by woodlands.
- 2.4 The country park is approached from the south, off Allington Lane, via a restricted access road leading towards the main car park areas. The road is bordered by an open field to the west and Ancient Woodland to the east, before reaching the woodlands north of Highwood Barn visitor hub and terminating at the car parks to the northern end, at High Hill Fields.
- 2.5 The landform within the Site falls from a height of some 27m above Ordnance Datum (aOD) to the north-east (Upper Meadow Field), to some 5m aOD to the west, where the River Itchen and its water meadows border the Site.
- 2.6 Soil type across the Site is understood through reference to the Soils Map (produced by Cranfield University, with support from Defra) to comprise: *'Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils'*.

Surrounding Landscape

- 2.7 There is limited built up area present within the close proximity of the country park, with a line of houses and a static home park built to the north of Allington Lane and further dispersed buildings associated with industrial use such as the water works site to the south-west, poultry farm and equestrian centre to the south-east of the park.
- 2.8 The transport links and corridors around the Site are limited and are mainly located to the edge of the Study Area. These include the Southampton Airport to the west and the M27 corridor to the south. The railway running in a northwest-southeast direction is located approximately 1.5 km from the Site centre.

3.0 ECOLOGICAL BASELINE INFORMATION

Existing Site Vegetation

- 2.9 The Site itself and the surrounding landscape within the Country Park consists of alternating mature woodlands and meadow areas. The surrounding woodland cover is a mixture of coniferous and deciduous woodlands dominated by pine and oak, whilst the meadow areas vary from well-grazed and improved grassland to more natural meadows around the lower and upper fields of High Hill Fields.
- 2.10 The majority of the woodlands within the Country Park are noted as Ancient and Priority Habitat Woodlands. With reference to IVCP Woodland Management Plan (2022 - 2032) *'Some areas were managed as forestry plantation in the past, and still retain a dominance of coniferous soft-wood growth'*.
- 2.11 Woodland to the east of the access road is described within the Management Plan as being dominated by oaks, and comprises of *'Typically young, self-set etiolated stems. Prime area for replanting'*. The woodlands to the west of the access road, north of Highwood Barn Hub are also dominated by oaks, and described as *'Mixed woodland: includes the more established oaks that are present on site.'*

Existing Ecology on Site

- 2.12 According to the Preliminary Ecological Appraisal (PEA) Report prepared by LLD, 'The site contains a mixture of habitats, ranging from negligible to district value. Direct impacts would mostly impact upon low value habitats; however in the absence of mitigation improper works may impact upon district value habitats.'
- 2.13 The report finds localised habitats to be of negligible or site value only; however, the mixed woodland is largely designated as Ancient Replanted Woodland, and as such whilst its current condition is not optimal due to the abundance of conifers, the area is considered of district value.
- 2.14 Table No. 01 below outlines the species or animal groups considered present or likely to be present on-site, alongside the level of potential or confirmation of presence and the likely value of the site to the species, as taken from the LLD2475-ECO-REP-002-01 – Ecological Impact Assessment. Potential impacts on designated sites and habitats of principal importance are also included.

Table No. 01 – Summary of Protected Species Baseline

Species/ Group	Summary of Potential / Presence on-site	Likely Value of Site
Designated Sites	<i>SPA to the west of site.</i>	<i>Indirect value to SPA through protection and buffering</i>
Habitats of Principle Importance	<i>Deciduous woodland. Ancient woodland and hedges on-site. River adjacent to site.</i>	<i>Local-district value</i>
Amphibians	<i>Widespread amphibians likely to be present on-site; GCN highly unlikely to be present.</i>	<i>Value at site only</i>
Bats	<i>Maternity Colony of soprano pipistrelles with day roosts of common pipistrelles and Myotis sp. bats in the buildings.</i>	<i>Local value for roosting, foraging and commuting</i>
Reptiles	<i>Habitats suitable for reptiles throughout site; areas proposed for disturbance offer low potential</i>	<i>Value at site only</i>
Badgers	<i>Habitats suitable for badgers throughout site; areas proposed for disturbance offer low potential, no evidence of badgers noted</i>	<i>Value at site only</i>
Dormice	<i>Habitats suitable for dormice throughout site; areas proposed for disturbance offer low potential</i>	<i>Local value in wider site but site value in areas of proposal</i>
Nesting Birds	<i>Habitats suitable for nesting throughout site; areas proposed for disturbance offer low-moderate potential, mainly for common species</i>	<i>Local value in wider site but site value in areas of proposal</i>
Otters and Water Voles	<i>Habitats suitable for otters and water voles along the riverbank, but this area is distant from the proposal area.</i>	<i>Local value in wider site but negligible value in areas of proposal</i>
Invertebrates	<i>Habitats suitable for invertebrates throughout site; areas proposed for disturbance offer low-moderate potential</i>	<i>Local value in wider site but site value in areas of proposal</i>

4.0 ECOLOGICAL AVOIDANCE AND MITIGATION MEASURES

- 2.15 In the absence of mitigation, proposals might result in negative impacts upon designated sites, habitats or principle importance and protected species. The following is a summary of mitigation measures proposed within the Ecological Impact Assessment, Information to Guide Habitats Regulations Assessment, and the Bat Mitigation Strategy.

Table No. 01 – Summary of Potential Impacts and Avoidance, Mitigation and Compensation Required

Species/ Group	Likely Impacts of Proposals	Mitigation Required
Designated Sites	<i>Potential impacts upon River Itchen SAC, Solent and Southampton Water SPA, Ramsar and Solent Maritime SAC</i>	<i>Drainage of carpark incorporates SuDS designed in accordance with CIRIA Guidance. CEMP to control negative impacts of construction.</i>
Habitats of Principle Importance	<i>Potential loss of habitats and damage to others.</i>	<i>Works with potential to harm woodland to be undertaken under supervision; CEMP to control negative impacts of construction.</i>
Amphibians	<i>Loss of small ponds through works as well as disturbance/removal of terrestrial habitat</i>	<i>Careful removal of ponds and manual clearance of terrestrial habitat</i>
Bats	<i>Roosts likely to be disturbed; Minor disturbance of flightlines and foraging habitats</i>	<i>Mitigation licence being sought from Natural England. Works to be undertaken outside maternity season and under ecological supervision. New bat boxes to be installed to nearby trees. Any features lost in building to be reinstated. Foraging habitats to be replaced where lost. Lighting designed in accordance with BCT/ILP Guidance Note 08/1</i>
Reptiles	<i>Carpark works might injure reptiles or cause minor habitat loss</i>	<i>Grass to be mown prior to car park works commencing. Ground to be cleared under ecological supervision. New habitats to replace those lost</i>
Badgers	<i>Potential for badgers to become trapped in footings, trenches etc.</i>	<i>Trenches, pipes etc. to be covered or fitted with ramps and checked daily</i>
Dormice	<i>Potential disturbance of individual dormice</i>	<i>Careful manual removal of any hedge sections or woodland understorey</i>
Nesting Birds	<i>Potential disturbance of bird nests</i>	<i>Removal of suitable habitat outside nesting season</i>
Otters and water voles	<i>No likely impacts</i>	<i>No works in proximity to river</i>
Invertebrates	<i>Loss of common habitats for invertebrates</i>	<i>Replace habitats lost with new suitable habitats</i>

5.0 PROPOSED ENHANCEMENT SCHEME

- 3.1 Itchen Valley Country Park and Eastleigh Borough Council proposes a coordinated scheme of works throughout the park; the aim being to raise engagement with the potential visitor audience and generate an increase in visitor attendance to the park.
- 3.2 Along with new facilities, this would be achieved through greater site coherence and legibility with a rationalisation of circulation routes to strengthen and enrich the visitor journey experience. The Country Park seeks to positively promote and encourage active countryside recreation and nature exploration to a new audience as well as enhancing the experience for regular visitors.
- 3.3 Alongside this the Country Park aims to enhance the biodiversity value of the site, through improved management of existing valuable habitats such as woodland and through installation of new habitats and wildlife features.
- 3.4 DEFRA Metric calculations have identified that the proposals should result in a habitat gain of 12.6%, and a hedge gain of 54.75%. This report how those enhancements should be installed and managed.

Biodiversity Mitigation and Enhancement Objectives

- 3.5 The Soft Landscape Management Plan sets out long-term objectives for delivery and safeguarding of amenity, functional and ecological values through prescribed landscape maintenance and management operations. The long-term design and management objectives include:
 - *Creation of attractive and wildlife beneficial planting areas to enhance habitat connections throughout the site;*
 - *Retention and enhancement of the existing valued habitats on site, supporting local wildlife;*
 - *Provision of Sustainable Urban Drainage System to avoid negative impact of any proposals on the River Itchen, wetland meadows and associated SAC;*
 - *Ensuring healthy plant growth, flowering and fruit development for the benefit of wildlife;*
 - *Provision of new features for wildlife to enhance the already-diverse habitats on-site.*

Drawings and Reports

3.6 The Management Plan shall be read alongside the following documentation:

- *LLD2475-ECO-REP-002 – Ecological Impact Assessment*
- *LLD2475-ECO-REP-003 – Biodiversity Net Gain Assessment*
- *LLD2475-ECO-REP-004 – Information to Guide Habitats Regulations Assessment*
- *LLD2475-ECO-REP-005 – Bat Mitigation Strategy*
- *LLD2475-ARB-REP-001 – Arboricultural Impact Assessment*
- *LLD2475-LAN-SCH-001 – Detailed Plant Schedule and Specification; and*
- *LLD2475-LAN-SPE-001 – Soft Landscape Specification;*
- *P EBC IVCPWMP SKJM 1. 3 - Woodland Management Plan 2022-32 prepared by Hampshire Arboricultural Consultancy*

6.0 ENHANCEMENT AND MANAGEMENT PRESCRIPTIONS

EXISTING VEGETATION

Vegetation Removal

- 4.1 All existing trees designated for removal are to be removed in accordance with BS 5837: 2012 - 'Trees in Relation to Design, Demolition and Construction - Recommendations' and BS3998: 2010 – 'Tree Work: Recommendations'. Trees designated for removal and felling shall be clearly marked on site with white paint. Prior to the removal and felling of trees, the required work and tree positions shall be agreed on site with the Landscape Architect / Arboricultural Consultant. Trees shall be felled, and tree surgery works undertaken prior to the erection of the Tree Protective Fencing. Care should be taken during the tree removal process to avoid any damage to any trees which are designated to be retained and protected.
- 4.2 Stumps shall be removed and cut away so that the top of the tree stump shall be at least 450 mm below the final topsoil level in order that the site can be reinstated in accordance with the existing site levels. Stumps are to be treated with an approved herbicide to be agreed with the Landscape Architect / Arboricultural Consultant. Where the depth is greater than 450 mm the areas shall be backfilled with topsoil to the required level.
- 4.3 The removal of shrub or scrub material within the tree root protection area of any tree to be retained shall employ a manual removal method; the use of hand tools shall 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 tree root zone. Adjacent trees shall not be utilised as anchors or levers to facilitate the removal of adjacent vegetation.
- 4.4 Any significant defects found in the trees during the course of the scheduled work shall be reported to the Landscape Architect. All work shall be undertaken by an approved and qualified Tree Surgeon in accordance with BS3998: 2010 Tree Surgery. Care should be taken to avoid damage to neighbouring trees and hedgerows to be retained. Branches in confined spaces shall be removed and taken down in sections. All arisings shall be transported and disposed of away from site to the Contractor's tip.

Protection and Retention of Existing Vegetation

- 4.5 The Contractor shall exercise diligence and care when performing operations near existing mature trees and vegetation designated for protection and avoid at all times damage to the roots, trunk and branches.

- 4.6 All excavations, cultivation and grading beneath the canopy of existing mature trees and within the tree Root Protection Areas outside the canopy of the trees and vegetation shall be carried out using hand tools, taking care not to damage or disturb any existing tree roots.
- 4.7 Proposed hard surfacing within Root Protection Areas of retained trees is to be constructed in accordance with BS 5837; 2012; *'Trees in Relation to Design, Demolition and Construction - Recommendations'* - ground levels should not be raised or lowered within the existing tree root protection areas. A *'No-Dig' Construction* method shall be employed in order to avoid damage to existing tree roots and localised compaction of subsoil within the tree root protection area, using a geo-grid or geo-web, or a combination of the two shall be placed beneath the sub-base to prevent compaction of the soil in which the tree roots are growing. Such surfaces should be laid down prior to the commencement of any other building works, to ensure that the ground beneath the existing trees is protected throughout the construction process.
- 4.8 Construction areas and access routes / existing ground beneath the existing tree canopy or within the tree Root Protection Areas is to be overlain with a geo-textile membrane and compressive material. The construction access / area is to be protected with interlocking metal plates or scaffolding boards for the duration of the construction period. Tree Protective Fencing is to be realigned / relocated on site only in agreement with the Arboricultural Consultant, to suit the construction phasing / process.
- 4.9 Refer to the Arboricultural Impact Assessment prepared by Lizard Landscape Design for further details. Objectives set out in this report should be abide.

Management of Existing Mature Vegetation

- 4.10 The condition of the retained existing mature trees 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. The existing trees should be checked annually for dead, dying, or damaged branches during the spring of each year. Dead, dying, or damaged branches should be cleaned from the tree trunks, removing all dead wood back to the tree trunks. Any overhanging branches which constrict use within the development site should be trimmed hard back to the development boundary. Any works required to neighbouring trees / vegetation should be limited. Tree surgery works are to be undertaken in accordance with BS 3998; 2010 – *Recommendation for Tree Works*.

4.11 Management procedures to be carried out in accordance with IVCP Woodland Management Plan 2022-32 prepared by Hampshire Arboricultural Consultancy.

- *Existing Mature Trees and Vegetation; inspect trees regularly for dead and dying branches, during the Spring of every year as a minimum All existing trees are to be inspected every year for dead, dying, or damaged branches; including any diseased wood or wounds, with particular attention given to signs of ash dieback. Any dead, dying, or damaged branches should be cleaned from the tree trunk by a Qualified Tree Surgeon, removing all dead wood back to the tree trunk;*
- *Litter Collection on a regular basis in accordance with current operations at the Country Park.*
- *Weed control to cleared areas, to allow sward establishment.*

PROPOSED NATIVE AND ORNAMENTAL TREES

Tree Planting

4.12 The proposals incorporate the planting of native and ornamental tree species and include tree planting of the following Nursery Stock sizes:

- *Extra Heavy Standard Trees: 14-16 cm girth, 4.0 - 4.5 m height;*
- *Heavy Standard Trees: 12-14 cm girth, 3.5 – 4.0 m height;*
- *Multistem trees: 2.0 – 2.5 m height,*
- *Feathered Conifer Trees: 3.0 – 3.5 m height.*

4.13 All grass seeded areas shall be cut before any pit preparation is undertaken to a maximum height of 75 mm. All tree planting pits are to be cut by removing the existing grass or vegetation. Planting pits shall be dug by hand and any major existing tree or shrub roots found within the pits shall not be severed. Once set out tree planting positions are to be treated with a suitable non-residual herbicide application.

4.14 The size of tree planting pits and planting method shall be as follows;

Tree planting in proposed soft landscape areas:

- *Planting pits should be excavated to the same depth as the trees root system with the root flare or root collar level with the surface of the surrounding existing soil.*
- *If the bottom of the planting pit is compacted or there is a soil pan, this should be alleviated by breaking up the soil in the bottom of the pit to ensure that there is suitable drainage.*
- *The width of the tree pit should be excavated to a minimum of 150 mm radially greater than the radius of the root ball or container.*
- *If the tree pit sides are compacted, smooth or smeared they should be scarified to loosen the soil.*
- *During excavation, the soil should be separated into topsoil and subsoil in order that during backfilling the soil can be replaced in the same order.*
- *The trees root system should be lightly wetted prior to planting.*
- *The tree should be planted at the correct depth ensuring the root flare is just visible above the soil level and that there has been allowance for any settling of soil levels.*
- *Backfilling should be added gradually in layers of 150mm ensuring the tree is held upright. Each layer should be firmed down to remove air pockets within the soil and to aid tree stability but not to excessively compact the soil.*
- *The final layer of backfilling should not be consolidated, but should be of a sufficient depth to allow for settlement and mulching.*

- *Refer to 'BS 8545 : 2014 – Trees: from nursery to independence in the landscape – Recommendations' for details on tree planting.*
- 4.15 Where required, backfilling material shall be the site excavated topsoil combined with an organic compost planting medium, and soil improver. The organic compost shall be thoroughly mixed into the backfill or cultivated material at a rate of 1 no. part planting medium to 3 no. parts existing site topsoil.
- 4.16 Tree staking is to be long double staking for Extra Heavy Standard and Heavy Standard trees with stakes driven vertically to a minimum of 300mm into bottom of pit before planting. Feathered and Multistemmed trees should be short triple staked. Backfilling should seek to consolidate material around stakes. Long stakes shall extend above ground level to a maximum 600mm and maximum 300 mm for short stakes. The tree shall be tied firmly but not rigidly to the stakes with adjustable ties, ties secured in place with a 25 mm long galvanized clout nail.
- 4.17 Organic mulch comprising of well composted organic material, wood chips, or bark, shall be free of pests, disease, fungus, weeds and foreign material. The organic mulch shall be matured for a minimum of 16 weeks. Organic mulch shall consist of graded fines to a maximum particle size of 40 mm with approximately 70 % particle size 5 mm to 40mm, 30 % particle size less than 5 mm.
- 4.18 Clear all weeds, water soil thoroughly and mulch all planting pits to an even depth of 75 mm after settlement.
- 4.19 Trees planted within grassland should be maintained with a weed and grass-free area at the base of each tree. A 600 mm diameter weed / grass-free zone should be achieved by hand-weeding and retention of sufficient mulch cover. This management prescription should be undertaken bi-annually, in Spring / Autumn.
- 4.20 No strimming should be undertaken around the base of the proposed tree planting.
- 4.21 In order to establish newly planted Advanced Nursery Stock trees, the proposed planted trees should be watered throughout the early to late summer period; May / June / July / August / September. Semi-mature and Nursery Stock tree planting should be watered fortnightly throughout the Spring / Summer Period; May / June / July / August / September. 20 litres should be applied to each tree at each watering visit. Thereafter, water as deemed necessary only where natural precipitation levels are insufficient in order to maintain healthy dense growth.
- 4.22 All tree guards and rubber tree ties should be checked to each tree bi-annually; Spring / Autumn.

4.23 Tree planting should be checked for dead, dying, or damaged branches and stems bi-annually. Trees should also be checked for shape, form, and size within the site areas and adjacent. Trees should be pruned accordingly during the Spring and Autumn, whilst the trees are still in leaf.

4.24 Proposed Tree Planting - Management Prescriptions

- **Trees within Grassland:** *Maintain a weed-free zone at the base of trees; check bi-annually; Spring / Autumn;*
- **Mulching;** *Trees within Grassland should be maintained with a mulch zone 600 mm diameter to the base of the trees. Mulch layer to be checked annually;*
- **Watering;** *Nursery Stock Tree Planting to be watered fortnightly throughout May / June / July / August / September; and as deemed necessary after the establishment period, only where natural precipitation levels are insufficient.*
- **Tree Guards and Tree Ties;** *Check fitting of tree guards and rubber tree ties including tree stakes; check bi-annually; Spring / Autumn;*
- **Pruning;** *Prune trees for dead and damaged branches bi-annually; Spring and Autumn whilst the trees are still in leaf;*
- **Defects;** *Replace dead trees as required.*

PROPOSED NATIVE SHRUB PLANTING AREAS

Planting Proposals

- 4.25 Native planting areas are provided to enhance biodiversity and habitat connectivity throughout the Site. For species selection and location refer to *LLD2475-LAN-DWG-200 to 203 – Detailed Planting Plans*; for nursery stock details and specification refer to *LLD2475-LAN-SCH-001 – Detailed Plant Schedule and Specification*.

Setting Out

- 4.26 The planting material shall be set out throughout the proposed locations in staggered rows according to densities specified. Bare root native plants to be planted in existing grassland using notch planting method.

Weeding

- 4.27 All Native Planting areas should be maintained clear of invasive species by hand weeding. Weed growth to be checked bi-annually during Spring and Autumn.

Mulch Top-up

- 4.28 Shrubs planted within grassland should be maintained with a weed and grass-free area at the base of each shrub. A 600 mm diameter weed / grass-free zone should be achieved by hand-weeding and retention of sufficient mulch cover.
- 4.29 Organic mulch comprising of well composted organic material, wood chips, or bark, shall be free of pests, disease, fungus, weeds and foreign material. The organic mulch shall be matured for a minimum of 16 weeks. Organic mulch shall consist of graded fines to a maximum particle size of 40 mm with approximately 70% particle size 5mm to 40 mm, 30 % particle size less than 5 mm.
- 4.30 Clear all weeds, water soil thoroughly and mulch all shrub base to a depth of 75 mm after settlement. Mulch should be topped up and checked annually during Spring.

Watering

- 4.31 In order to establish Native Shrubs, water as deemed necessary only where natural precipitation levels are insufficient in order to maintain healthy growth.

Long Term Shrub Planting Management

- 4.32 Native shrubs should be pruned only where necessary to maintain access and visibility. Pruning to be carried out in every 2 years, in early Spring, whilst plant are dormant (February / March).
- 4.33 All native shrub guards should be checked and refitted where necessary to all shrub transplants. Shrub guards should be checked bi-annually and refitted where necessary.

Litter Collection

- 4.34 All planting areas should be checked on a regular basis for litter collection. All planting areas should be cleared of litter and checked fortnightly throughout the year.
- 4.35 All litter to be removed from site.

Proposed Native Shrub Planting Areas – Management Prescriptions

- **Native Planting Area Weeding:** Maintain Planting areas free of invasive species, check bi-annually in Spring and Autumn;
- **Plant Debris:** Remove and trim all plant debris during monthly maintenance visits throughout the Spring / Summer;
- **Guards:** Check guards and stakes bi-annually; Spring / Autumn;
- **Pruning:** only where necessary to maintain access and visibility. Pruning to be carried out in every 2 years, in early Spring, whilst plant are dormant (February / March);
- **Watering:** Water during first Summer after planting during prolong dry periods;
- **Litter Collection:** Collection on a fortnightly basis.

PROPOSED ORNAMENTAL PLANTING AREAS

Planting Proposals

- 4.36 The ornamental planting areas are to enhance the visual amenity and provide additional opportunity to increase biodiversity within the site using flowering species. For species selection and location refer to *LLD2475-LAN-DWG-204 to 207 – Detailed Planting Plans*; for nursery stock details and specification refer to *LLD2475-LAN-SCH-001 – Detailed Plant Schedule and Specification*.

Setting Out

- 4.37 The planting material shall be set out throughout the proposed locations in staggered rows according to densities specified.

Weeding

- 4.38 All Ornamental Planting areas should be maintained weed free throughout the maintenance period. It is recommended that shrub planting areas should be cleared of all weed growth by hand weeding and maintaining full depth of mulch. Weed growth to be checked bi-annually during Spring and Autumn.
- 4.39 Regular maintenance should be made to the Ornamental Planting areas to check weed growth by hand weeding. This should be checked and undertaken monthly throughout the year; March – October.

Plant Debris

- 4.40 Soft landscape plant debris such as spent flowers, bulb, and perennial plant material debris should be cleared from the planting beds on a regular basis. The condition of the planting beds should be checked monthly throughout the year; March – October.
- 4.41 All plant debris to be cleared from the soft landscape areas.

Mulch Top-up

- 4.42 The Ornamental Planting Areas are to be mulched with an ornamental bark mulch. Organic mulch comprising of well composted organic material, wood chips, or bark, shall be free of pests, disease, fungus, weeds and foreign material. The organic mulch shall be matured for a minimum of 16 weeks. Organic mulch shall consist of graded fines to a maximum particle size of 40 mm with approximately 70% particle size 5mm to 40 mm, 30 % particle size less than 5 mm.
- 4.43 Clear all weeds, water soil thoroughly and mulch all planting areas to a depth of 50-100 mm after settlement. Mulch should be topped up and checked annually during Spring.

Watering

- 4.44 In order to establish the Ornamental Planting Areas, the planting material should be watered fortnightly throughout the summer season in the first year of establishment during May / June / July / August / September. 10 litres per metre square should be applied fortnightly throughout the summer season at each maintenance visit. Thereafter, water as deemed necessary only where natural precipitation levels are insufficient in order to maintain healthy dense growth.

Pruning and Trimming

- 4.45 Shrub plant material should be lightly trimmed and pruned to maintain vigorous and dense growth during early establishment. Plant material should be checked for size and space adjacent to the footpaths and paving. Pruning and trimming should be undertaken annually, according to individual species requirements:
- *Shrubs flowering in Winter – 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;*
 - *Shrubs with ornamental winter shoots – coppice in Spring;*
 - *Deciduous ornamental grasses and Herbaceous perennials: cut back close to ground in early Spring (February / March);*
 - *Evergreen ornamental grasses: do not cut, remove dead plant material by raking.*

Litter Collection

- 4.46 All planting areas should be checked on a regular basis for litter collection. All planting areas should be cleared of litter and checked fortnightly throughout the year.
- 4.47 All litter to be removed from site.

Proposed Ornamental Planting Areas – Management Prescriptions

- **Planting Area Weeding:** *Maintain Ornamental Planting areas weed free; check annually; Spring / Autumn. Hand-weed monthly throughout the Spring / Summer repeat where necessary;*
- **Plant Debris:** *Remove and trim all plant debris during monthly maintenance visits throughout the Spring / Summer;*
- **Planting Area Mulch Top-Up:** *Maintained mulch levels to a consistent depth of 75 mm; check annually Spring;*

- **Watering:** *Water plant material fortnightly during the summer season for the first year of establishment; and as deemed necessary after the establishment period, only where natural precipitation levels are insufficient; provide 10 ltr/ m²/ visit;*
- **Planting Area Pruning:** *Pruning and trimming; lightly prune / trim plant materials to all soft landscape areas annually according to individual species requirements;*
- **Litter Collection:** *Collection on a fortnightly basis.*

PROPOSED HEDGEROW PLANTING

Hedge Planting

- 4.48 The soft landscape scheme includes mixed species native hedgerow planting; to reinforce or supplement existing vegetation; to offer screening and boundary feature between pedestrian and vehicular areas.
- 4.49 Hedgerow transplants shall be planted in mulched beds / or native grass seeded areas, which should be kept clear of all weeds at the base of the plant material. The hedgerow planting should be kept weed free by hand weeding and retaining full depth of mulch. Native hedgerow planting should be checked for invasive species bi-annually; Spring and Autumn.
- 4.50 The hedgerow plant material is generally located within mulched planting beds. The beds should be topped up with an ornamental bark mulch to assist with the suppression of weeds to these hedgerow planting areas. A mulch top-up should be undertaken and checked bi-annually; Spring / Autumn. Mulch levels should be maintained at a consistent depth of 75mm.
- 4.51 During the first three years of hedgerow establishment the hedgerow transplants should be lightly trimmed to maintain shape and form. Light trimming shall encourage vigorous and dense growth. Hedgerow trimming during the first three years of establishment should be undertaken annually; during early Spring (February / March) to maintain size, shape, and vigorous growth.
- 4.52 In order to establish the hedgerow planting, the hedgerow transplants should be watered fortnightly throughout the summer season in the first two years of establishment during May / June / July / August / September. Quantity of water to be 10 litres per metre square during each visit. Thereafter, water as necessary where natural precipitation levels are insufficient in order to maintain healthy dense growth.
- 4.53 All hedgerow shrub guards should be checked and refitted where necessary to all hedgerow transplants. Shrub guards should be checked bi-annually and refitted where necessary.
- 4.54 All hedgerow planting areas should be checked on a regular basis for litter and leaf collection. All Hedgerow Planting areas should be cleared of litter and checked on a fortnightly basis throughout the year. All litter to be removed from the site.

Long-Term Hedgeline Management

- 4.55 The management objective for the hedgerow planting should be to achieve a dense hedgerow of 1.8 – 2.0 m height.
- 4.56 After three years of establishment and light trimming, the hedgerows should be maintained to the maximum objective height and should be pruned early spring (February / March) to achieve this goal. The hedgerow should be trimmed to an 'A' shape and form.

Proposed Hedgerow - Management Prescriptions

- **Weeding;** *Maintain hedgerow planting areas weed free; check bi-annually, Spring / Autumn;*
- **Mulch Top Up;** *Maintain mulch to all hedgerow planting areas; check bi-annually; Spring / Autumn;*
- **Trimming and Pruning;** *Light trimming of hedgerow transplants to stimulate vigorous and dense growth; carry out annually during early Spring (whilst hedgerow is dormant);*
- **Shrub Guards;** *Check and refit where necessary all hedgerow shrub guards, check bi-annually; Spring / Autumn;*
- **Watering;** *Fortnightly during May / June / July / August / September for establishment of new hedgerow planting; and as deemed necessary after the establishment period, only where natural precipitation levels are insufficient.*
- **Litter Collection;** *Collection on a fortnightly basis.*
- **Long-term Management:** *Maintain specified height with pruning every second year or on a yearly basis closer to access road where more formal appearance is needed, prune early Spring, whilst dormant (February / March).*

PROPOSED NATIVE WOODLAND GROUNDFLORA PLANTING

Native Groundflora Planting

- 4.57 The soft landscape scheme includes the re-wilding of some of the existing car parking areas. The re-wilding will be carried out with the planting of native grasses and ferns, 1 or 3 plant/m², as shown in *LLD2475-LAN-SCH-001 Detailed Planting Schedule and Specification*.
- 4.58 The car parks would have the existing hard and bare compacted ground removed under supervision to ensure no root damage. Following this an appropriate surface layer will be installed (*likely site-won topsoil*) and lightly compacted. This soil will be partially planted with Native Ground Flora and with Native Shrub Planting. The remaining areas would be left to self-colonise. Within these areas, only invasive species should be removed, checking bi-annually in Spring and Autumn.
- 4.59 Watering of newly planted groundflora planting is advised during the first Summer.

Proposed Groundflora Planting - Management Prescriptions

- **Weeding;** *Maintain groundflora planting areas weed free; check bi-annually, Spring / Autumn;*
- **Watering;** *As necessary for establishment of new groundflora planting during the first Summer after planting.*

WILDFLOWER GRASSLAND AREAS

Flowering Grassland Areas (From Seed)

- 4.60 Species rich grassland meadow areas are proposed to northern edge of High Hill Field. Seed mix to be *Emorsgate's 'Wild Flowers for Loamy Soils EM5F'* or equal and approved. The wildflowers will be slow to germinate.
- 4.61 The area to be prepared by raking the existing grassland, to expose 50% of bare soil, where the wildflower seeds can be sown. Seeds to be sown in the Autumn, followed by regular mowing to keep the grasses short. Stop mowing between April and July/August.
- 4.62 To newly prepared ground around the Main Car Park, *Emorsgate's 'Meadow Mixture for Loamy Soils EM5'* or equal and approved should be sown. Ground to be prepared to provide minimum 450 mm growing medium, with 450 mm Subsoil or 150 mm Low Fertility Topsoil and 300 mm subsoil beneath.
- 4.63 After sowing, do not cut the annual weeds until mid to late summer. Then cut, remove and compost, in early August. This will reveal the young meadow, which can then be kept short by grazing or mowing through to the end of March of the following year.
- 4.64 Once established, the two types of seed mixes can be managed the same way. Do not cut from spring through to late July/August to give sown species an opportunity to flower. After flowering in July or August, cut back to c 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site. Mow or graze the re-growth through to late autumn/winter to c 50mm and again in spring if needed.
- 4.65 Mow regularly as lawn along hard surfaces to maintain visibility and tidy appearance, as shown on the drawings.

Wildflower Areas (Pre-Seeded Growing Medium)

- 4.66 *Wildflower Turf's Meadowscape Pro Native Enriched* or equal and approved to be laid in accordance with Supplier's recommendations. Prepare ground with lifting existing turf, retaining existing soil below. Lay *Meadowscape* in recommended depth (20-25 mm uniform depth).
- 4.67 Once laid, water the area thoroughly, for the first few weeks until a seedling sward starts to appear– this could take up to 4-6 weeks (weather dependent). The initial watering should soak through the entire growing medium and ideally into the soil beneath. Do not allow the profile of the *Meadowscape* to dry out while the seeds establish. Depending on the time of year, seedlings will emerge in the first few weeks and these plants will develop rapidly.

- 4.68 Once established, the annual maintenance cut should be done in late September, early October, with the meadow to be cut to 25-50 mm height. Cut only half of the meadow area at one time to allow time for fauna to migrate to the uncut meadow. Allow some regrowth of the cut area before cutting the second half, but aim to have finished all cutting by the end of the first week of October. Over time alternate the areas that are cut early and the areas that are left as this will benefit species diversity.

Wetland Meadows (Wildflower Turf)

- 4.69 *Wildflower Turf's SUDS Turf* or equal and approved to be laid in accordance with Supplier's recommendations. Prepare ground with forming the swales with maximum of 1:3 steep banks. If swales are dug into existing ground, dig over minimum of 100 mm of existing soil to loosen up. Provide minimum of 50 mm topsoil over subsoil.
- 4.70 Cutting of wetland meadows within swales to be carried out once a year, Late September, early October to a height of 40-60 mm. Cuttings to be removed from Site.

Meadow Areas – Management Prescriptions

- *First year management: follow suitable management prescribed above;*
- *Management once established: Flowering Grassland Areas: cut after flowering (July/August), and potentially in autumn and spring also. Mow regularly as lawn along hard surfaces. Wildflower Areas and Wetland Meadows: cut annually (late September / early October).*

PROPOSED AMENTIY LAWN AREAS

Lawn Turf Areas

- 4.71 The cutting regime of the Grassed Areas should vary throughout the year. The grass should be maintained to a height of 35 mm. Grassed Areas which fail to establish or become bare due to wear should be top dressed with sandy loam topsoil and re-seeded with Grass Seed Mix as specified. The bare areas that are re-seeded should be temporarily fenced off to enable establishment. Bare patches should be reseeded in March / April or September / October. The Grassed Areas should be checked for bare patches bi-annually; Spring and Autumn.
- 4.72 A fertiliser application should be made bi-annually to the Grassed Areas during Spring and Autumn as follows; In March apply 15: 10: 10; Spring Turf Fertiliser at 35 g / m² or equal and approved; In September apply 5: 10: 10; Autumn Turf Fertiliser at 35 g / m² or equal and approved.

Grassed Areas – Management Prescriptions

- *Cutting: cut grass to tidy up after winter to 40-50 mm height in early Spring (February / March). Cut fortnightly from April to October to 35 mm height. Final cut in November to 40-50 mm height.*
- *Re-seed bare patched bi-annually (Spring and Autumn);*
- *Fertiliser to be applied bi-annually (Spring and Autumn).*

PROPOSED SUSTAINABLE DRAINAGE SYSTEM (SUDS)

SuDS Car Park

- 4.73 The drainage layers for the SuDS car parking must be designed and installed in strict accordance with the CIRIA Guidance to ensure the drainage successfully filters pollutants from the car park runoff.
- 4.74 The surfaces shall subsequently be checked bi-annually (spring and autumn) for any damage or deterioration, with appropriate remediation as necessary.
- 4.75 Any attenuation basins shall be checking for silting, general litter and leaf litter, and any obvious signs of pollution e.g. oil slicks / biofilms. Should any evidence thereof be noted, a specialist shall be consulted to assess and determine if remediation is required.
- 4.76 A schedule of water assessment shall be devised by an aquatic ecologist or drainage engineer. This shall be undertaken at appropriate times e.g. during both high and low rainfall periods and shall test the runoff for levels of contaminants such as hydrocarbons and heavy metals. Levels of any relevant contaminants must not exceed accepted safe loads. If such problems occur, further filtration solutions must be instigated to prevent pollution of local watercourses.
- 4.77 A litter pick shall be undertaken at least fortnightly but shall be undertaken more often as required. Litter picks shall be undertaken immediately following any events at the Park.

SuDS Car Park – Management Prescriptions

- *Inspections: Inspect bi-annually for damage and deterioration; seek professional remediation where necessary;*
- *Assessment; specialist to undertake appropriate schedule of monitoring;*
- *Attenuation basins: check fortnightly for litter, leaf litter, silt, and signs of pollution; consult drainage specialists should any signs of pollution be evident; de-silt / remove leaf litter as required;*
- *Litter pick fortnightly.*

PROPOSED BIRD BOXES

Within Woodland / Natural Areas

- 4.78 Within the woodland and other semi-natural habitats a range of bird boxes shall be installed to increase the roosting opportunities for birds, which can be a major limiting factor in woodlands. Open nestboxes shall be installed in hedges and shrubs for species such as robins, wrens, blackbirds and thrushes. The following boxes shall be installed as a minimum:

- *1no. treecreeper nestbox*
- *1no. nuthatch nestbox*
- *2no. open nestboxes*
- *2no. All-purpose predator-proof nestbox*

Bird Boxes On Buildings / Structures

- 4.79 Bird boxes shall be installed to new buildings, and to existing where appropriate. At least one of each of the following shall be installed. Boxes can be timber. Woodstone or synthetic.
- 4.80 Boxes shall be sited facing between north and east and at least 2.0 m height, with swallow/swift features preferably 5.0 m high but at a minimum 4.0 m high. Boxes shall be affixed securely and checked annually in late summer/autumn. Any box which fails shall be replaced. Any box not used within 3no. years can be re-sited elsewhere on-site. Boxes can be cleaned with boiling water if necessary.

- *Sparrow Terrace*
- *Swallow/swift cup*
- *All-purpose predator-proof nestbox*

Bird Boxes – Management Prescriptions

- *Checks: Check annually in September;*
- *Replace any failed boxes with similar replacements in the same or similar location*
- *Re-site unused boxes after 3no. years;*
- *Clean out boxes using boiling water where necessary.*

PROPOSED BAT BOXES

Bat Box Specification

- 4.81 In accordance with the bat mitigation strategy, 5no. bat boxes shall be installed along the southern edge of the woodland adjacent the barns to act as relocation sites for bats if they are found during works. 4no. boxes shall be crevices boxes with a single cavity box for *Myotis* bats. The boxes should be woodcrete and securely wired, screwed or nailed between 3.0 – 5.0 m height and south facing on mature woodland-edge trees. Boxes shall be checked annually during transitional seasons (October-November or March-April). Any box which fails shall be replaced. Any box not used within 3no. years can be re-sited elsewhere on-site. Boxes can be cleaned with boiling water if necessary. Any removal or internal checking of boxes must be undertaken under the guidance of a licenced ecologist.

Bat Boxes – Management Prescriptions

- *Checks: Check annually in October-November;*
- *Replace any failed boxes with similar replacements in the same or similar location*
- *Re-site unused boxes after 3no. years;*
- *Clean out boxes using boiling water where necessary;*
- *Internal inspections or removal of boxes to be undertaken under guidance of a licenced ecologist.*

PROPOSED INVERTEBRATE FEATURES

Specification

- 4.82 New features for invertebrates shall be installed to the site to further encourage invertebrates. These features may take the form of 'bee bricks' or insect boxes within new buildings; or 'bug hotels' installed to corners of the site. Features shall be checked annually in autumn and replaced or replenished as required.

Invertebrate Features – Management Prescriptions

- *Checks: Check annually in October-November;*
- *Replace any failed features with similar replacements in the same or similar location;*
- *Re-site unused features after 3no. years.*

7.0 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				
General																	
Clearing services	1 x month				✕	✕	✕	✕	✕	✕	✕	✕		✕	✕	✕	✕
Litter Collection	1 x every 2 weeks				✕	✕	✕	✕	✕	✕				✕	✕	✕	✕
Weeding	2 x year				✕						✕				✕		✕
Tree Planting																	
Monitoring of existing trees	1 x year				✕									✕	✕	✕	✕
Mulching	1 x year				✕									✕	✕	✕	✕
Watering	1 x every 2 weeks				✕	✕	✕	✕	✕	✕				✕	✕	✕	✕
Checking Tree Guards and Ties	2 x year				✕						✕			✕	✕	✕	✕
Pruning: dead or damaged branches	2 x year				✕						✕			✕	✕	✕	✕
Native Shrub Planting																	
Weeding	2 x year				✕						✕			✕	✕	✕	✕
Checking Shrub Guards and Stakes	2 x year				✕						✕			✕	✕	✕	✕
Watering	1 st Summer						✕	✕	✕								
Pruning	1 x every 2 years			✕											✕		✕

Operation	Frequency	Year 1												Year 2	Year 3	Year 4	Year 5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
Ornamental Planting																	
Monitoring	1 x month			✕	✕	✕	✕	✕	✕	✕	✕			✕	✕	✕	✕
Pruning: Species flowering in Winter	1 x year			✕										✕	✕	✕	✕
Pruning: Species flowering between March and July	1 x year				✕									✕	✕	✕	✕
Pruning: Species flowering between July and October	1 x year											✕		✕	✕	✕	✕
Pruning: Ornamental Grasses and Herbaceous Perennials	1 x year			✕										✕	✕	✕	✕
Mulching	1 x year				✕									✕	✕	✕	✕
Watering	1 x every 2 weeks				✕	✕	✕	✕	✕	✕				✕	As required	As required	As required
Native Hedgerow Planting																	
Weeding	2 x year				✕						✕			✕	✕	✕	✕
Checking Shrub Guards and Stakes	2 x year				✕						✕			✕	✕	✕	✕
Watering	1 st Summer						✕	✕	✕								
Pruning	1 x every 2 years			✕											✕		✕

Operation	Frequency	Year 1												Year 2	Year 3	Year 4	Year 5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
Native Woodland Ground Flora																	
Weeding	2 x year				✕						✕			✕	✕	✕	✕
Watering	1 st Summer						✕	✕	✕								
Grassland Meadows																	
Cutting	1 to 3 x year				(✕)			✕			(✕)			✕	✕	✕	✕
Wildflower Areas and Wetland Meadows																	
Cutting	1 x year									✕				✕	✕	✕	✕
Amenity Lawn																	
Cutting	Fortnightly during growing season			✕	✕	✕	✕	✕	✕	✕	✕	✕		✕	✕	✕	✕
SuDS Parking Area																	
Detailed Surfacing Checks	Bi-annually			✕							✕			✕	✕	✕	✕
Attenuation Basin Checks	Fortnightly	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
Litter Pick	At least fortnightly and after events	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
Water Quality Assessment	As determined by a specialist	✕						✕						✕	✕	✕	✕
Bird Boxes																	
Inspections	Annually in autumn										✕			✕	✕	✕	✕
Bat Boxes																	
Inspections	Annually in autumn										✕			✕	✕	✕	✕
Invertebrate Features																	
Inspections	Annually in autumn										✕			✕	✕	✕	✕



L I Z A R D

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