Landscape and Ecological Management Plan (LEMP)

2513 - Carmarthen West

Doc Ref: 2513-URB-XX-XX-RP-LA-001

2026 / Rev P02

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Document number:	2513-URB-XX-XX-RP-LA-001
Origin date	2025-10-08
Revision	P02
Revision date	2026-02-05
Stage	RIBA Stage 1 / Planning
Author / Checker	HC
Checked by	FC

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1. Introduction

This statement accompanies the planning application for a proposed housing development that includes the construction of 84 homes with extensive green infrastructure including approximately 1 hectare of open space, planting, and social areas to enhance open space, deliver net biodiversity benefit, and provide designated play areas.

The *Landscape and Ecological Management Plan* (*LEMP*) has been prepared by The Urbanists, with input from The Environmental Dimension Partnership Ltd (EDP) on behalf of Lovell Partnerships Ltd. The purpose of this document is to provide landscape and ecological objectives, management prescriptions, and advice on maintenance operations to guide the establishment of a mature landscape setting for the short, medium and long term at Carmarthen West. The LEMP is based on an initial five (5) year period with the opportunity to be reviewed periodically. Roles and responsibilities for management and maintenance operations will need to be agreed in conjunction with the land owner and county council in due course.

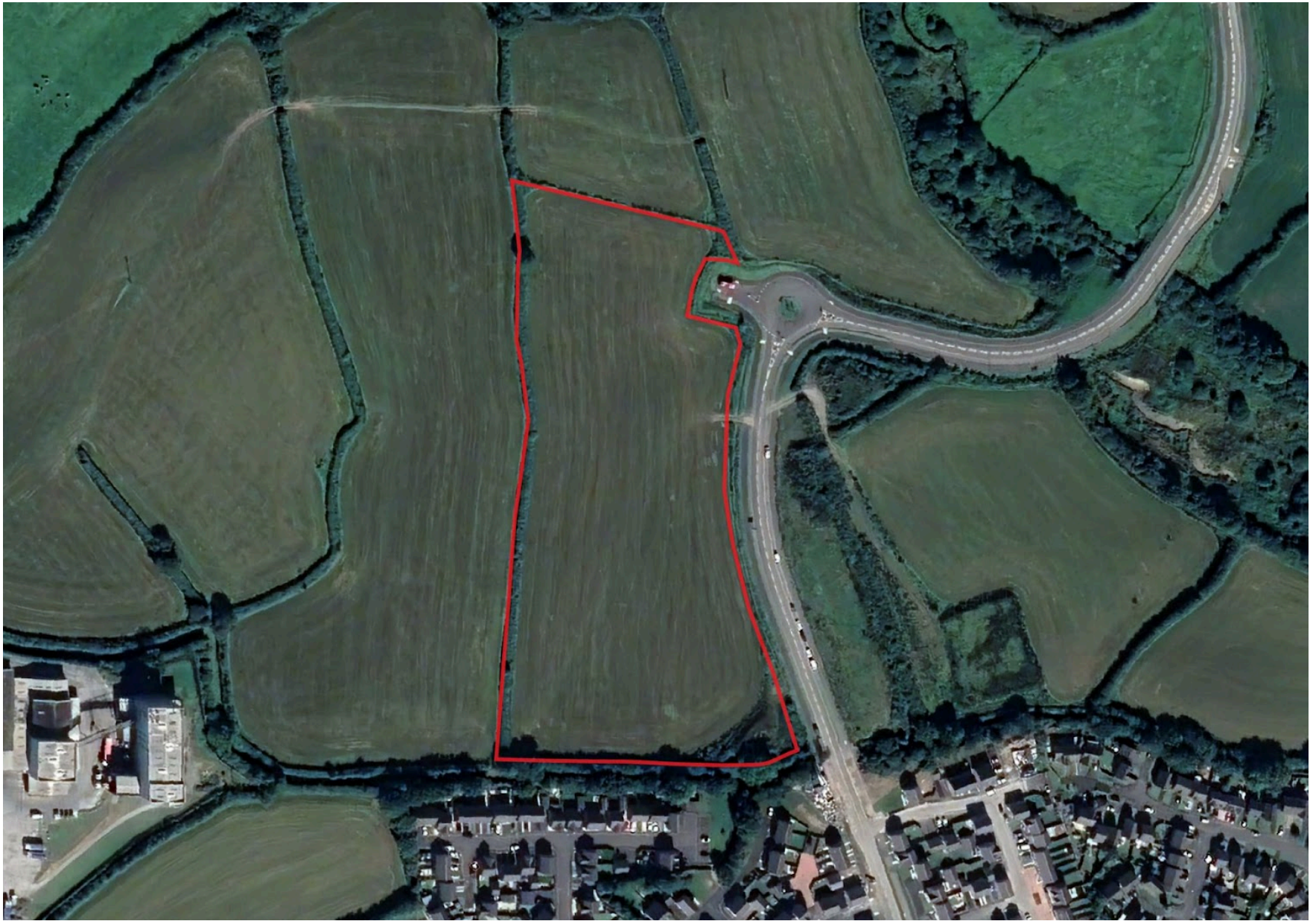
The LEMP should be read in conjunction with all appended documents and supporting documents.

2. The Existing Site

The site consists of an open grassland field. To the north and west, the site is bordered by further open grassland with a defensible hedgerow boundary forming the western edge of the site and giving natural separation from the rest of the open land. The boundary to the north is less formal and largely consists of a post and wire fence.

The site is bordered to the east by Fford Pendre. A drainage ditch and nondescript roadside planting separate the site from the strategic shared route associated with Fford Pendre. There is a single point of access into the site via double gates near the northern part of the western boundary. However, immediately north of this, there is a pre-built access spur adjoining a roundabout, which is designed to serve this site and other parts of the wider allocated site.

The southern boundary is bordered by hedgerows and trees, which form a natural and attractive site boundary, fully enclosing the site to the south. This boundary also forms the lowest part of the site. The topography generally slopes down from the north east to the south west and is fairly gentle with only a 6m fall over about 280m diagonally across.



3. The Development

This proposal seeks full planning permission for the development of 84 new homes, comprising 42 affordable and 42 open market units, across 8.4 acres (3.4 hectares) of greenfield land. The homes will offer a mix of one, two, three, and four-bedroom properties.

The proposed development will feature comprehensive access and internal highway infrastructure, as well as dedicated active travel routes. It includes extensive green infrastructure designed to enhance open space and deliver net biodiversity benefit, along with designated play areas and robust drainage infrastructure, including Sustainable Drainage Systems (SuDS). Approximately 1 hectare of the site will be dedicated to open spaces, amenity footpaths, attenuation, existing and proposed planting, play areas, and social gathering spaces.

The land at Carmarthen West is a key strategic site within the Council's Housing Regeneration and Development Delivery Plan, contributing to the delivery of over 1,100 homes, a new school, and employment opportunities across the county within the next five years.

The development layout is designed to align with the broader allocation vision. A new school and local centre are planned for the land east of Fford Pendre Road, with an employment area situated further to the south-west.

These development proposals aim to create a vibrant and attractive new residential community, fostering a distinct sense of place through a multi-functional green infrastructure network.

The proposals have been meticulously prepared in accordance with the Placemaking Wales Charter and its 6 Placemaking Principles. They ensure that the scheme's design sensitively responds to the unique character and opportunities of the site and its local area, thereby fulfilling the place-based approach to new development enshrined in the Placemaking Wales Charter and the statutory requirement to practice placemaking.

3.1. Key features of the development

- New housing, including 50% of affordable housing, to support the local / future community
- One (1) attenuation basin
- Gateway Green open space park at entry of site consisting of planting and recreational areas
- One Local Area of Play (LAP) as a part of the Gateway Green open space
- Informal nature play area in southern portion of site with seating /picnic area
- Western pathway 'Play along the way' play elements
- Connecting pathway around perimeter of site
- New native species-rich hedgerows on the East and North sides of site.
- Sustainable Drainage Systems (SuDS) integrated into the landscape, consisting of diverse native and non-native species of value to wildlife
- New habitat and ornamental planting areas using a percentage of native species. Native species will primarily be used where there is a connection to retained habitats
- Preservation and enhancement of existing native hedgerows and trees

4. Summary of Ecological Baseline

Detailed ecological assessments of the Site were undertaken by EDP in 2025 and the results of which are provided in an Ecological Appraisal (report reference: edp9176_r002a). Baseline surveys included an initial desk study and Extended Phase 1 Habitat Survey, and further detailed surveys with respect to bats, badger (*Meles meles*), dormouse (*Muscardinus avellanarius*) and reptiles.

No part of the Site is covered by any statutory or non-statutory designations. However, there are several such designations within the potential zone of influence of the Site, the most pertinent of which include Afon Tywi Special Area of Conservation (SAC) and Site of Special Scientific Importance (SSSI), Carmarthen Bay and Estuaries SAC, Cors Goch National Nature Reserve (NNR) and SSSI. In addition, Ancient Semi-natural Woodland (ASNW) lies within 1km of the Site.

With respect to habitats, the Site comprises one agricultural, species-poor grassland field, considered to be of negligible ecological importance. The southern boundary is defined by a species-rich hedgerow and associated wet ditch, which qualifies as ‘important’ under the wildlife and landscape criteria within the Hedgerows Regulations (1997). The wet ditch flows in an eastly direction, parallel to Clifford Byway. The western boundary of the Site is delineated by an intact, species-rich hedgerow whilst the north-east corner of the Site supports a section of species-poor hedgerow.

Habitats supported by the Site are of value for a breeding bird and bat assemblage and also provide suitable habitat for badger, dormouse, common reptile and amphibians, as well as for notable mammal species such as European hedgehog (*Erinaceus europaeus*).A detailed reptile survey recorded no reptiles within the Site boundary such that a common reptile population is presumed absent or in such low numbers as to be undetectable. Similarly, no evidence of dormouse was identified during detailed survey effort such that this species is presumed likely absent

5. Proposed Landscape and Ecological Design

Our approach is to celebrate the unique landscape context and reconnect nature to the site. The proposed planting strategy is focused on enhancing and protecting existing habitats and introducing new ones, whilst also providing an attractive and natural setting to the new development. Incorporating landscape-led Sustainable drainage features and creating naturalistic gardens and amenity areas.

The Arboricultural report (TR) and Ecological Appraisal (EA) as well as the Carmarthenshire County council's Trees, hedgerows and woodlands supplementary planning guidance (SPG) have influenced the landscape design, fully incorporating recommendations such as habitat mitigation, diversity improvement and long-term interest.

- Provision of native, species-rich woodland and understory, as well hedgerow planting with fruit species to provide compensatory habitat (replacement of habitat on a 2:1 ratio)
- Native shrub, understory, and hedgerow planting to provide compensatory habitat for reptiles and nesting birds and biodiversity enhancements;
- The mitigation of trees removed for the development with a 1:3 tree replacement ratio
- Brash piles, composite heaps, and log piles to provide habitat for reptiles, amphibians and invertebrates thus delivering net benefits to biodiversity.

5.1. Key project outcomes:

- A site that preserves and enhances the existing habitats
- Great connectivity with nature/ creation of ecological/ canopy corridors to connect habitats
- A robust landscape with seasonal colour and interest
- Appropriate planting for the micro-climate and setting eg, drought-tolerant planting
- Human scale
- Landscape character through planting typologies
- A varied landscape with colour and interest
- Promotion of active travel, exercise routes and nature walks

The landscape design, developed in consultation with the project ecologist, aims to deliver net benefits to biodiversity through the creation and enhancement of habitats within the site. These enriched habitats will offer foraging opportunities and connectivity for various existing fauna, including birds, reptiles, bats, and mammals, while potentially accommodating species not identified in the ecological surveys. Eight planting typologies have been created to provide character, setting and biodiversity. These typologies have been designated for maintenance and management prescriptions. While not recognised as specific habitats, these will contribute to the LEMP's aims and safeguard sensitive areas within and beyond the site boundary.

5.2. Landscape Principles

The LEMP will help meet the following aims of the Landscape Design :

1. Biodiversity enhancement through SuDS, including bioretention areas, with rich perennial plant species, to elevate biodiversity net benefits
2. Gravel, sand, and log piles provide habitat opportunities for invertebrates, amphibians, and reptiles, for further biodiversity enhancement
3. Provision of bat boxes to provide additional roosting habitat for bats and further biodiversity enhancement
4. Provision of bird boxes that offer nesting opportunities
5. Enhancement of existing grassland with overseeding
6. Access to nature / Human scale
7. Landscape with seasonal colour and interest

5.3. Landscape Typologies

5.3.1. Street trees and green corridors

A combination of native and non-native trees has been proposed to provide visual amenity and guidance throughout the site and create consistent canopy cover for commuting bats and birds. The selected species can be found on site or are utilised for their resilience and amenity value, and their canopy coverage will provide shade in the summer and habitat opportunities for birds. Individual scattered species are to be planted within the southern portion of site among proposed grassland areas. While specimens of smaller size will be used for the urban part of the scheme. The urban trees will provide amenity and appropriate scale near the play areas, front gardens and roads.

5.3.2. Scrub

To the south and north ends of site, scrub vegetation of medium height will act as a buffer/ transition canopy to existing tree / hedgerow boundary lines and outer parts of the site while providing habitats for birds, bats and invertebrates.

5.3.3. Native hedgerow with native edible species

To compensate for the hedgerow removed due to the development, existing hedgerows will be expanded and new ones will be planted, with native and fruiting species, in various areas across the site. The hedgerows will provide habitat for invertebrates and foraging opportunities for birds and small mammals. They will provide canopy continuation and connectivity throughout the site, and maintain “dark corridors” for bats and rodents to move in and out on the site. Their canopy will also provide screening for the proposed housing buildings.

5.3.4. Amenity planting

Amenity planting with multilayered, drought tolerant, pollinator-friendly species with year-round interest are located in the LAP play areas, along the road spine, parking areas and front gardens. The species are selected to respond to the needs of each area (aspect sun/ shade) as well as creating a clear identity and hierarchy throughout the site.

5.3.5. Raingarden planting

A comprehensive surface water management scheme, in line with national development policy, has been developed. The proposed landscape-led sustainable drainage scheme in the main road spine is a significant part of this scheme, promoting amenity, biodiversity, water attenuation and water quality, and providing an important educational resource for the community. Rain gardens are typically dry environments with short periods of water inundation. To cope with these extremes, a range of largely non-native plants has been selected. These species share many similar characteristics with native species, are long-established in Wales, and are non-invasive. Private rain gardens will also be implemented to provide pre-treatment before discharging to ground via the infiltration basin.

5.3.6. Existing and proposed grassland oversown with species-rich amenity grass

The site's grasslands will be enhanced and new areas will be proposed. In the wider areas of open space, native species-rich amenity grass mixes with wildflowers will be implemented. This will enhance and complement the biodiversity of the site's existing grasslands while addressing the particular areas' functional and ecological needs.

5.3.6.1. Short-cut grass

In areas with increased foot traffic such as near settlements or LAPs, strips of shortcut grass with hardy grass species is proposed. This will widen the proposed paths and provide opportunities for "edge"exploration.

5.3.6.2. Attenuation basin wildflower area

In the site's attenuation basin an appropriate native wildflower / sedge mix for wetland soil will be sown.

6. Establishment and Management Principles

6.1. Amenity grass/ wildflower & attenuation basin meadow mixes

During the first year after sowing, mowing will be undertaken to promote establishment as follows:

Grasslands and Meadow areas will be cut as and when necessary, between **March** and the end of **October**, to 75 mm height; subsequent cuts through the maintenance period (i.e. years 2 to 5). The sward shall be cut twice annually.

Cut 1 shall be carried out before flowering in March and Cut 2 shall be carried out following the setting of seed in late **August or September**. Mowing may be undertaken using an appropriate mechanical mower, or using a brushcutter/strimmer where access for larger machinery is not possible.

Cut material will be left in place for 2 weeks before being removed and disposed of away from the grassland areas, e.g. baled as hay, or sent for composting. This allows seed and invertebrates to drop out, but it may be necessary to use a mower/collector for practical reasons. In subsequent years, cutting will be undertaken as follows:

- Cut 75% of the area of grassland to 50 mm in **March and September**, leaving 25% of the area uncut each year, the location of which should be rotated.
- Cut material will be removed as described above.

Weed and scrub control will be undertaken twice a year, with more visits if required, to prevent pernicious perennial weed species and woody plants from becoming established. The growth of gorse and bramble will be monitored and controlled by manual or chemical means, as required. During the early developmental stages of the grassland and meadow sward, some 'undesirable' broad-leaved species are to be expected and should become less dominant as the communities become established and stabilised. Control methods will comprise hand-pulling.

NO HERBICIDE TREATMENT TO BE USED WITHOUT WRITTEN PERMISSION from the appointed Landscape Architect or Ecologist.

Control of invasive species will be carried out in accordance with current best practice guidelines published by Natural Resources Wales.

The grassed areas to be mown and strimmed are generally flat. There are no grass areas with gradients over 1 in 20; however, care should still be taken when mowing operations are carried out in locations with softer gradients.

6.2. Scrub Planting

Proposed shrubs to be planted in **autumn or winter**.

- Keep whole areas free from rubbish, litter, grass and weed growth. All dead weed growth shall be forked out and removed to a registered tip or composted on-site (check twice a year).
- Water sufficiently to allow it to fully penetrate the rooting zone (monitor monthly during the summer).
- Maintain mulched areas at a depth of 50 mm, top up as necessary, and sweep up mulch from adjacent edgings and paving (check twice a year).
- Apply fertiliser to all planting areas each spring as a top dressing at a rate of 70 gms/m^2 and rake-make only (April or May).

Note that the application of fertiliser on the planting adjacent to the watercourse along the southern boundary must be **WITH PRIOR WRITTEN APPROVAL** from the Landscape Architect or Ecologist and accompanied by a method statement identifying how this will be kept to a minimum to ensure no leaching of nutrients into the watercourse.

- Check that each plant is growing healthily and remove any dead, diseased or damaged branches, water shoots and reversion growth. Prune shrubs to encourage bushiness. All arisings shall be removed to a registered tip or composted on-site (check twice a year).
- Re-firm plants which have been loosened by wind or frost action (check twice a year, or as necessary).
- Perennial planting to be cut back hard as required in spring, before new growth appears (**March or April**).

6.3. Newly Created Native hedgerow

The proposed native hedgerows along the north and east boundaries will be planted between **November** and **early March**. The hedgerow created along the northern boundary will be managed for wildlife. The eastern hedgerow will be native but managed as an ornamental hedgerow.

Year 1 - Ensure the base of each plant is kept clear of weeds, for a diameter of 1m. Litter picking during each visit. Install rabbit fencing around the hedgerow during planting and retain it for the establishment years. Water sufficiently to allow it to fully penetrate the rooting zone. Minimum of three visits (**April, June, and September**).

Year 2 - Lightly trim plants in **February** and maintain them weed-free. Apply general-purpose fertiliser in spring (**April**). Litter picking and rabbit fencing check.

Years 3-4 - Management of newly created hedgerows will seek to achieve a continuous (<10% gaps), dense and bushy 'A' shaped structure, aiming for a final height at no less than 3m for the northern hedgerow and 1.6m – 1.8m for the eastern hedgerow, and widths of at least 2m. Following establishment of new hedgerow planting, new growth will be topped by approximately 30% on two sides on an annual cycle for up to the first three years after planting to encourage low lateral growth of branches necessary to establish a thick hedgerow at its base. (**February and August**). Litter picking and removal of rabbit fencing.

Year 4 - Apply general-purpose fertiliser in spring (**April or May**).

Year 5+ - Management of created hedgerows will seek to achieve a continuous (<10% gaps), dense and bushy 'A' shaped structure whilst maintaining a height of no less than 3m for the northern hedgerow and 1.6m – 1.8m for the eastern hedgerow, with widths of at least 2m. The northern hedgerow will be cut back on a three-year rotation, with only 30% of the hedgerow resource subject to such cutting at any one time to ensure that a proportion of cut versus un-cut hedgerows exists on-site at any one time so as to be sympathetic to the annual lifecycle of dormouse and other fauna which use them **(October – February)**. The eastern hedgerow should have reached its final height of 1.6 to 1.8m high and should be cut back once a year **(September – February)**. Apply general-purpose fertiliser in spring (**May**). Litter picking during each visit. Monitoring of conditions to be undertaken in years 2 and 4 of the aftercare period.

6.4. Newly Planted Trees

Trees will be planted between **November** and **early March.**

a) Check underground guying for each tree. Carry out remedial works to adjust, refix or renew guying as appropriate (check once a year).

b) Check that each tree is growing healthily and remove all dead wood and diseased or damaged branches (check once a year).

c) Any wounds shall be neatly pared back to sound tissue (check once a year).

d) Re-firm trees loosened by wind, frost or other ground disturbance. Trees should be checked after each potential disturbance event (check minimum once a year).

e) Water sufficiently to penetrate the rooting zone (monitor monthly during the summer).

f) Apply fertiliser annually as per landscape specification to supplier's instructions (typically **April or May**).

g) Top up mulch to 50mm on all trees for a minimum of 3 years

h) If lower branches cause an obstruction or damage other plants, remove them with formative pruning to ensure a well-balanced and healthy crown.

i) Tree ties and stakes will be checked and adjusted as necessary (check once a year). Once the trees have become self-supporting remove stakes and ties after no more than two growing seasons (**March and October**). (check once a year). Replace or re-secure loose or missing ties at each maintenance visit, ensuring the tree is stable and vertical. Adjust to suit stem growth and to provide correct and uniform tension.

j) Removal of tree stakes; reduce height of stake and top tie annually, as much as possible whilst holding roots securely in the ground. **Complete removal by the third year.**

k) Formative pruning of young trees; Do not prune during the late winter/early spring sap flow period. Crown prune by removing dead branches and reducing selected side branches by one third to preserve a well-balanced head and ensure the development of a single strong leader. Remove duplicated branches and potentially weak or tight forks. In each case, cut back to live wood.

6.5. Work on trees/ large woody shrubs and hedgerow planting

This is only to be carried out outside of the nesting bird period, **March to August** inclusive. Any required work inside the nesting period should follow a check for nesting birds or bats, such as wood pigeons, which nest all year round. Checks/surveys of this nature are to be done by a qualified ecologist.

Where remedial work to mature trees is required, an update ground-level inspection by a suitably qualified ecologist will be undertaken to determine its current potential to support roosting bats. Where remedial works proposed are considered likely to impact upon potential bat roosting features, a detailed aerial inspection will be undertaken to further inspect suitable roosting features to be impacted for the presence of bats, prior to any commencement of tree works. Aerial inspections will be undertaken by a suitably qualified and Natural Resource Wales (NRW) bat licensed ecologist, an arboricultural contractor with an NRW bat survey licence, or with experience of working with bats and under the supervision of an NRW bat survey licence holder. Thereafter, works will only progress in accordance with the advice of the suitably qualified and NRW bat licensed ecologist.

6.6. Pedestrian footpaths and play surfaces

Maintain clean, even-surfaced paths.

Top dress with self-binding gravel-wearing course to play areas and toping-up gravel to the geocell paths.

Remove weeds and re-edge paths annually to maintain width and original design form.

6.7. LAP play areas

Play areas to be regularly inspected per the Playground equipment manufacturer.

Refer to the manufacturer for all replacement parts, maintenance and equipment upkeep, and safety surfacing.

Remove litter, sweep miscellaneous material (e.g sand) and ensure the playspace is clean and safe at all times.

6.8. Bat Boxes

A total of 10 Bat Boxes will be installed across the site. Five of these are to be installed on trees along the southern and/or western boundaries. If there are no suitable trees, wooden posts will be erected, within the southern section of the site, to support bat boxes. Example boxes include: Schwegler 2FN, Schwegler 2F, Nestbox Company's Eco Bat Box, Beaumaris WoodStone Bat Box or similar.. Additionally, another five bat boxes will be integrated within the buildings. Example boxes include: Schwegler 1FR and Integrated Eco Bat Box. Bat boxes should be installed following manufacturer's instructions and securely mounted between 4m and 6m above ground level on the south and west aspect of the tree / building, pointing away from artificial light sources. Installation should be overseen or checked by a suitably qualified ecologist. Locations to be mapped, photographed and kept as a record. Long-term maintenance of bat boxes will be undertaken by the owners of the site. Maintenance measures will include checking that bat boxes are in a usable condition. Any damaged bat boxes should be replaced at the earliest opportunity on a like-for-like basis.

6.9. Bird Boxes

12 Bird Boxes to be installed across the Site. This will include a variety of new nest boxes to accommodate different bird species. Four swift boxes (No16. Schwegler, or similar) and four house sparrow nest boxes will be installed in pairs onto separate buildings. Four general purpose tree mounted bird nest boxes with a round entrance hole between 28 and 34mm (for example Schwegler 2M, Vivara Pro Seville 32mm WoodStone Nest Box, Bilbao Nest Box, or similar) to be installed on trees along the southern and/or western boundaries. Bird boxes will be installed in accordance with manufacturer's specifications, avoiding south-facing aspects (to be protected from strong wind, rain and sunlight), and at suitable heights of 3–7m above ground level. Entrances will face away from prevailing winds and sources of light, and within or immediately adjacent to good vegetation cover to increase the shelter and food source available. Locations to be mapped, photographed and kept as a record. Long-term maintenance of bird boxes will be undertaken by the owners of the site. Maintenance measures will include checking that bird boxes are in a usable condition. Any damaged bird boxes should be replaced at the earliest opportunity on a like-for-like basis.

6.10. Habitat piles and hibernacula

The creation of two habitat log piles, to provide suitable hibernation, refuge and basking habitats for reptiles and amphibians, to be located within retained grassland close to the attenuation basin in the southern portion of site in sunny locations. These habitat piles will be created as follows:

- Reptile and amphibian hibernacula will have a finished size no less than approximately 2m (L) x 2m (W) x 1m (H), and be partially buried in a pit up to 0.5-1m deep;
- The body of the hibernaculum is to contain a range of materials including cut timber, brash, inert hardcore, bricks, rocks, grubbed up tree roots or building rubble;
- Materials that will decompose should not be placed beneath heavy components such as bricks or rocks, to avoid the risk of collapse;
- Wood chippings or loose topsoil should be incorporated into the construction, to pack some of the larger cavities;

- Hibernacula to be covered with topsoil and seeded using a wildflower grassland seed mix; and
- Access points for reptiles should be created by ensuring that some timber, or rubble protrudes from the edge, creating crevices that allow reptiles to access deep inside the hibernacula

Long-term maintenance of habitat piles will be undertaken by the owners of the site. Maintenance measures will include checking that the piles are in a usable condition. Any damaged habitat piles should be replaced at the earliest opportunity on a like-for-like basis.

7. Management Prescriptions

To ensure the maintenance and the future enhancement of the site, appropriate long-term management prescriptions for the hard and soft landscape, the green spaces and the other open areas are set out in the following pages, which identify:

- Landscape / Habitat Type
- Maintenance Objectives
- Indicators of Success
- Maintenance Prescriptions
- Programme / Frequency

Softworks

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Overall soft landscape monitoring (site-wide)	Implement a programme of ongoing landscape monitoring to ensure the successful implementation of this management plan and to inform future revisions/amendments to the plan.	The long-term presence of the soft landscape design, the net increase in the site's biodiversity and simple maintenance operations result in a well-established landscape that integrates the site with the neighbouring land uses and designated habitats.	In the autumn of the first year, record the number, species and position of any dead and dying plants. If at any point more than 10 % of the total number of plants has died, replace them with matching stock during the next bare-root planting season and repeat the process for the next 5 years or until 100% canopy enclosure has been achieved.	Annually					
			Consider the use of fixed-point photography to assist with monitoring change.	Every 5 years					

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Specimen trees	Maintain a safe condition and promote healthy growth and achieve good form and longevity.	Rapid growth within the development site with minimal branch removal and failures (trees placed in planted areas of adequate size for a viable rootable soil volume)	Ensure new trees are regularly watered during extended periods of dry weather (for at least the first three years). The Landscape Management Contractor shall be entirely responsible for varying the frequency of these visits according to climatic conditions.	Water as necessary for the continued thriving of all planting. Water trees during dry periods (being any period without substantial rainfall for 14 days or more), until trees are successfully established. Apply water at a frequency of once per fortnight from April to the end of September (to a maximum of 15 visits). Increase watering frequency during any continuous hot weather lasting more than 7 days					
			Check that stakes are firm and secure and that ties/strips are holding the tree firm without damaging it.	Inspect twice during growing season and once during winter annually for the first three years.					
			Check underground guying for each tree. Carry out remedial works to adjust, refix or renew guying as appropriate						
			Remove stakes and ties once tree has been established.	Annual inspection					
			Maintain weed free a minimum 1 metre radius mulch area around each tree.	Weeding frequency should be varied according to the site and density of vegetation cover and in any event, should be between 4 and 8 times during a single growing season, whatever is required to achieve a weed free scheme, with 1 extra visit outside the growing season in Dec or Jan to inspect the condition of the beds.					

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
			Inspection of existing trees for defects and poor health. If an arborist identifies the tree as diseased or a health and safety risk, then the tree will be removed. Consultation with the ecologist with regards to potential for roosting bats will be undertaken prior to any action being taken.	Annually					
			Formative pruning and Dead wood removal	Annually inspection and action as required from Winter to Spring, October to the end of March					
			Water sufficiently to penetrate the rooting zone (monitor monthly during the summer).	Annually - As required					
			Any new planting required will carried out between November and March	Annually - As required					

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Proposed Woodland Edge buffer	Provide edge woodland for a range of locally important mammal, bird and insect species. Woodland edge provides a gradual transition from the proposed development into the existing woodland and also provides dappled shade for invertebrates. Woodland edge planting should be managed for the diversity of woodland plants, to benefit wildlife and to enhance the area as a safe and enjoyable recreational resource	The long-term retention of the woodland edge areas is key. New woodland edge planting in the surrounding areas will expand the existing woodland area.	Woodland monitoring visits, carry out Woodland survey to monitor ongoing viability.	Annually					
			Carry out regular inspections of the planting. Water to maintain healthy growth, particularly in times of low rainfall in summer (at least the first three years).	Every 6 months or as necessary to ensure plants thrive and establish over the first 3 years					
			Keep areas 500 mm in dia. around each plant weed-free, by strimming or hand pulling, until 100% cover has been achieved. **(NO HERBICIDE TREATMENT PERMITTED)**	Twice annually over firth 3 years					
			Remove spiral guards and tube shelters after 3 years or as necessary to ensure plants are not constricted.	Annually					
			Before the end of the year's defects liability period, record dead plants and replace them at the beginning of the next planting season. Follow with annual inspections and biannual replacement as required in winter	Annually					
			Thin woodland, by tree removal, at Year 5 or before if necessary to reduce competition for space. Remove an even mix of species or remove species to restore a healthy balanced mix. Pile dead wood in habitat piles in wetter low-lying parts of the wet woodland.	Every 5th year					
			On-going, post –establishment, inspections to be carried out annually from Year 5 onwards. Control excessively invasive growth or replanting as necessary.	Annually					

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr1	Yr 2	Yr 3	Yr 4	Yr 5
Existing Woodland	To maintain woodland buffers alongside established existing woodland and enhance opportunities for wildlife, including bats, birds and invertebrates; To undertake designed felling to create a more diverse canopy and species structure with consideration to forest resilience To maximise woodland understory species and structural diversity, including longer grassland edges where possible	No Schedule 9 non-native plant species present (Wildlife and Countryside Act 1981) Achieve restocking with =< 65% Primary species SS and 20% other conifers and 5% MB and 10% OG. Already 69% G/OL across ownership No net loss of scrub area and establishment of proposed scrub across areas identified (as part of detail design)	Monitoring and recording of the condition of the ON SITE woodland and understory planting to establish a record of the health and success of the woodland which acts as a valuable habitat and also a buffer to this and neighbouring development. Replace any failed trees or shrubs in winter. Remove any non-native invasive species, to be informed by an ecologist and the annual monitoring surveys	Annually					

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Native Hedge Planting	Maintain a safe attractive condition and promote healthy growth. Provide continuity of access control, visual screening of the new development and	Fully developed and even growing with "A" form in section and providing habitat for insects, birds and	Ensure the base of each plant is kept clear of weeds, for a diameter of 1m. Litter picking during each visit. Install rabbit fencing around the hedgerow during planting and retain it for the establishment years. Water sufficiently to allow it to fully penetrate the rooting zone. Minimum of three visits (April, June, and September)						

	benefit the local landscape character and a diverse range of wildlife.	mammals.	Year 2 - Lightly trim plants in February and maintain weed-free. Apply general-purpose fertiliser in spring (April). Litter picking and rabbit fencing check.						
			Years 3-4 - Lightly trim and shape the 1) Pembroke hedge to a final height of approx 1.6-1.8m high. 2) Ornamental hedge to a final height of approx 1 to 1.5m (February and August) Litter picking and removal of rabbit fencing.						
			Year 4 - Apply general-purpose fertiliser in spring (April or May).						
			Year 5+ - Hedge should have reached its final height of 1.8 to 1.5m and should be clipped at least 2 times a year (February and September), to maintain a neat and tidy appearance. Apply general-purpose fertiliser in spring (May). Litter picking during each visit.	Twice annually					
			Prior to the end of the year's defects liability period, record dead plants and replace them at the beginning of the next planting season.	Every 3 months or as necessary to ensure plants thrive and establish over the first 3 years.					
			Water to maintain healthy growth, particularly in times of low rainfall in summer (at least the first 3 years).	Every 3 months or as necessary to ensure plants thrive and establish over the first 3 years.					
			Remove spiral guards and tube shelters	After 3 years or as necessary to ensure plants are not constricted.					
			Cut plants back where they overhang hard surfaces and grass areas excessively.	Minimum 3 cuts per year					
			On-going post-establishment inspections to be carried out annually. Control excessively invasive growth or replanting as necessary.	Annually.					

			If gaps within the hedgerows are more than 10% of the total hedgerow length, additional planting will be implemented.	Annually.					

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Shrubs/ woodland understory shrubs	Maintain a safe, attractive condition and promote healthy growth. Achieve good form, 100% cover and maximise longevity. Note that the application of fertiliser on the planting adjacent to the watercourse along the southern boundary must be **WITH PRIOR WRITTEN APPROVAL** from the Landscape Architect or Ecologist and accompanied by a method statement identifying how this will be kept to a minimum to ensure no leaching of nutrients into the watercourse.		Prior to the end of the year's defects liability period, record dead plants and replace them at the beginning of the next planting season. Planting of shrubs in autumn or winter only	Annually					
			On-going post-establishment inspections to be carried out annually. Control excessively invasive growth or replanting as necessary.	Annually.					
			Keep whole areas free from rubbish, litter, grass and weed growth	Twice annually					
			Maintain mulched areas at a depth of 50 mm, top up as necessary, and sweep up mulch from adjacent edgings and paving	Twice annually					
			Apply organic fertiliser to all planting areas each spring until fully established with minimum 70% cover throughout planting area as a top dressing to suppliers recommendation.	Annually, (spring April to May)					
			Water to maintain healthy growth, particularly in times of low rainfall in summer (at least the first 3 years).	As required (monitor monthly during the summer).					
			Check that each plant is growing healthily and remove any dead, diseased or damaged branches, water shoots and reversion growth. Prune shrubs to encourage bushiness. All arisings shall be removed to a registered tip	Twice annually					
			Re-firm plants which have been loosened by wind or frost action (check twice a year, or as necessary)	Twice annually					
			Perennial planting to be cut back hard as required in spring, before new growth appears (March or April).	Annually					

			Perennial planting is to be split (50% removed) as required in line with good horticultural practices and species specific, in spring, before new growth appears (March or April).	Bi-annually or as required. Carry out works in autumn or spring					
			On-going post-establishment inspections to be carried out annually. Control excessively invasive growth or replanting as necessary.	Annually.					

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Bioretention Rain Gardens	Maintain an effective SuDS function (flow control and water quality enhancement); Enhance visual amenity, and Enhance the ecological value of the Site, providing a valuable habitat for birds, amphibians and invertebrates. To attenuate runoff and slow down the runoff from the Development; To filter coarse sediments and pollutants;	Fully established landscape with significant habitat and ecological value (biodiversity) Free flowing drainage in all aspects of the SuDS design (Raingardens and Swales), with only the prescribed maintenance requirements Systems carrying capacity and ability to pass water from one place to another is retained.	General inspection and works: Remove litter and debris	Every two months and Immediately following heavy storm events					
			General de-silting and cleaning should be undertaken regularly, especially in late autumn/ early winter following trees shedding their leaves.	Every two months and Immediately following heavy storm events which are likely to lead to a high rate of debris being built up in the system					
			Planting establishment inspection and works: Review of plant establishment and ongoing health of planting within all elements of the SuDS system. Remove invasive species. Replace planting as required to maintain the integrity of the system/design.	Every two months during the establishment period (2 years) then annually; between November and February					
			Check for poor vegetation growth due to lack of sunlight or dropping of leaf litter, and cut back adjacent vegetation where possible	Annually					
			Perennial planting to be cut back hard as required in spring, before new growth appears (March or April).	Annually					
			Thin perennial vegetation evenly by splitting and re-moving plants to provide coverage to three-quarters of the rain garden area as required in line with good horticultural practices and species-specific, in spring, before new growth appears (March or April).	Bi-annually or as required. Carry out works in autumn or spring					

			Specific system inspections and works: Periodically an inspection of all inlets, outlets and overflows (including trash screens/grates) to ensure that they are in good condition, clear from debris and operating as designed. Inspect associated drainage features (headwalls etc) at each visit.	Every two months and Immediately following heavy storm events					
			Significant accumulated sediment and debris are to be removed as required – a sign will be ponding on the rain garden base e.g. if water remains in sections following rainfall. If visible sediment to the edge of the rain garden step accumulates, sediment should be removed.	Every two months and Immediately following heavy storm events					

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Amenity Lawn: Amenity Grass Mix, Bioretention Meadow Mix, Wildflower Meadow Mixes.	Maintain a sword which is a safe, durable, multi-use recreational surface.		During the first year after sowing, Grass and Meadow areas will be cut to 75 mm height as necessary to promote establishment.	Mowing between March and the end of October					
			Subsequent cuts through the maintenance period (i.e. years 2 to 5). 1) Short-cut Amenity Grass paths shall be cut to 50mm every month between March to September. 2) Wildflower, Wetland Meadow and Long Grass areas shall be cut to 150mm high after flowering bulbs have turned every two months between March to September. The intention is the grass reaches a mature height of 500-600mm, before being re-cut to encourage bulbs and other flowering species. Mowing may be undertaken using an appropriate mechanical box mower, or using a brushcutter/strimmer where access is restricted. Cut material will be left in place for 2 weeks before being removed and disposed of away from the grass areas. This allows seed and invertebrates to drop out, but it may be necessary to use a mower/collector for practical reasons.	Cut 1 - March, 75% of grass area carried out before flowering Cut 2 shall be carried out following the setting of seed in late August or September.					
			During the defects liability period control undesirable plant growth within sward, such as dandelion, dock, thistle, nettles, and ragwort by hand excavation and/or pulling.	Annually					
			Weed and scrub control will be undertaken, to prevent pernicious perennial weed species and woody plants from becoming established. The growth of gorse and bramble will be monitored and controlled by hand excavation and/or pulling, as required.	Twice annually, with more visits if required					

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
			In winter/spring inspect for areas of poor drainage and or compaction and instigate remedial action.	Annually					
			Ensure successful establishment of grass sward by regularly watering during expended periods of dry weather.	Annually					

Hardscape

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Vehicle tarmac to roads	Maintain regular and even surfacing free from deep depressions, potholes or ridges	The surface is intact and constant in finish. Uninterrupted access with well-planned maintenance.	Inspection for wear and formation of ridges or potholes	Monthly					
			Provide advanced programming of management to avoid disruption of use and operation of the facilities	Annual maintenance programme					
			Scalp, regrade and feed surface to form constant finish	As required					
			Remove ridges and potholes	As required					
			Inspect edgings and associated covers, signage and highway/road furniture	Monthly					
Permeable vehicular paving surfacing to private drives & private parking spaces	Maintain a safe and attractive surface.	The surface is intact and constant in finish. Uninterrupted access with well-planned maintenance.	During the defects liability period replace/repair areas that are broken or damaged as soon as practical. Cordon-off areas that are damaged until fully repaired.	As necessary during first year.					
			Carry out regular inspections of the area, particularly in autumn when leaf fall may be a problem.	Quarterly or as necessary.					
			Sweep to keep clear of debris.						
			Remove sharp or dangerous objects.						
			Grit where appropriate in icy conditions to maintain a safe walking surface						
			Sweep up grit once further snowfall or icy conditions are unlikely.						

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Pedestrian paving to private/ public footpaths	Maintain a safe and attractive surface.	The surface is intact and constant in finish. Uninterrupted access with well-planned maintenance	During the defects liability period replace/repair areas that are broken or damaged as soon as practical. Cordon-off areas that are damaged until fully repaired.	As necessary during first year.					
			Carry out regular inspections of the area, particularly in autumn when leaf fall may be a problem.	Quarterly or as necessary.					
			Sweep to keep clear of debris.						
			Remove sharp or dangerous objects.						
			Grit where appropriate in icy conditions to maintain a safe walking surface						
			Sweep up grit once further snowfall or icy conditions are unlikely.						
Self-binding gravel surfacing	Maintain a safe and attractive surface.	The surface is intact and constant in finish. Uninterrupted access with well-planned maintenance	During the defects liability period replace/repair areas that are broken or damaged as soon as practical. Cordon-off areas that are damaged until fully repaired.	As necessary during first year.					
			Carry out regular inspections of the area, particularly in autumn when leaf fall may be a problem.	Quarterly or as necessary.					
			Sweep to keep clear of debris.						
			Remove sharp or dangerous objects.						
			Grit where appropriate in icy conditions to maintain a safe walking surface						
			Sweep up grit once further snowfall or icy conditions are unlikely.						
Gravel GeoCell to amenity paths around the site	Maintain a safe and attractive surface.	Geocell structure and added gravel is intact, interlocked and constant level. Uninterrupted access with well-planned	During the defects liability period replace/repair areas that are broken or damaged as soon as practical. Cordon-off areas that are damaged until fully repaired.	As necessary during first year.					
			Carry out regular inspections of the area, particularly in autumn when leaf fall may be a problem.	Quarterly or as necessary.					
			Sweep to keep clear of debris.						
			Remove sharp or dangerous objects.						

		maintenance.	Grit where appropriate in icy conditions to maintain a safe walking surface						
			Sweep up grit once further snowfall or icy conditions are unlikely.						

Landscape / Habitat Type	Maintenance Objectives	Indicators of Success	Maintenance Prescriptions	Programme / Frequency	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Bat & Bird Boxes	To maximise opportunities for roosting bats and to maximise opportunities for nesting birds.	No damaged or missing bat boxes	Monitoring of bat and bird features to ensure that they are in favourable condition.	Annually					
		No damaged or missing bird boxes	Replacement of damaged or missing boxes as advised by an ecologist.	As required					
Habitat piles and hibernacula	To create habitat for provide refuge for reptiles, amphibians and hedgehogs	No damaged or missing habitat piles	Monitoring of habitat pile features to ensure that they are in favourable condition.	Annually					
		No damaged or missing hibernacula	Replacement of damaged or missing ecology elements as advised by an ecologist.	As required					

8. Future Management, Monitoring and Maintenance

This LEMP covers a five (5) year post-implementation of the landscape, ecological mitigation, compensation and enhancement proposals. A Residents Management Company (RMC) will be set up for the development and each purchaser will be a member of the company (Open Market and Affordable Housing). A Managed Agent will be appointed on behalf of the RMC to manage and maintain areas on and off the development.

The main contractor for the development, Lovell Partnerships Ltd, will initially be responsible for appointing a Managing Agent to maintain and manage the relevant areas of the development. Once all properties are sold, control of the RMC will be transferred to the residents, who will have the opportunity to become Directors of the Management Company. The Managing Agent will continue to handle day-to-day maintenance and administrative duties under the supervision of the RMC Directors.

Following the initial 5-year period, a review of the management operations will be carried out by the local authority to establish any changes to the management plan. This will be carried out following a survey of the habitats and soft landscape features by a qualified landscape architect and the ecological mitigation, compensation and enhancement measures by a qualified ecologist. A similar review will then be carried out at 5-year intervals.

This LEMP aims to ensure the establishment of landscape features, coherent ecological networks and a safe external environment.

This involves assessing in the field the success of the management prescriptions applied with feedback into future practice; building up a picture of the evolving habitats, identifying new emerging priorities; and reflecting on experience gained to guide natural processes and optimise recreational and ecological value, all according to a methodology and supervisory participation to be agreed between the developer, and the

local authority. Only by monitoring and reacting to changes on the ground can the objectives initially set for the development be met in the long term.

8.1. Short-term Annual Reports

An annual monitoring report should be produced, which will recommend any necessary changes to this Landscape and Ecological Management Plan and identify management requirements or amendments to this report for the following year; these will be undertaken by an appointed ecologist and facilities management company and reported back to the client as required.

8.2. Woodland Survey

The woodland and woodland buffer will be monitored to assess habitat conditions and the need for changes in management prescriptions. The survey will take the form of a walkover survey to be undertaken by a qualified ecologist, which will record species diversity and habitat conditions. Habitat condition assessments will include litter levels, species diversity, presence of gaps, width and height of hedgerows, and any trampling or disturbance to buffer habitats. Any dead plants within the first five years of planting will be replaced. Reactive management will be undertaken in the form of tree removal or planting, or coppicing/pollarding. Habitat monitoring will include an inspection of the site for non-native species such as Japanese knotweed. A control programme is to be implemented if necessary.

8.3. Bioretention Rain Gardens and Ornamental Planting

Monitoring of bioretention features will be undertaken annually to assess the condition of the ornamental planting areas, and the need to change management prescriptions. The survey will take the form of a walkover survey to be undertaken by a qualified ecologist and contracts manager, which will record species diversity. Any dead plants within the first five years of planting will be replaced.

8.4. Litter

Monthly litter picking will include an assessment of the litter quantity and distribution and monitor the effectiveness of the litter removal and the need for any further measures, such as additional bins, re-location of bins or more regular removal. Significant areas of debris/litter will be removed as soon as they are discovered.

8.5. Long-term Implementation

A Residents Management Company (RMC) will manage the site, initially using a Managing Agent appointed by Lovell Partner.. They will be responsible for implementing this management plan and meeting its associated costs. This LEMP is to be reviewed and amended at the end of Year 5. Over the next 15 years, the management company would monitor and supervise the site, producing an annual report. In year 5, the management would report a 5-year review for their consideration of the adoption of a long-term management strategy capable of addressing changing needs in the future.

8.6. Biosecurity Good Practice

Biosecurity good practice refers to a way of working that would minimise the risk of contamination and the spread of animal and plant diseases, parasites and non-native species. As disease-causing agents, plant pests, parasites and non-native species cannot always be easily seen, they can be picked up and carried on clothing and footwear, and on vehicles and equipment to other locations. Biosecurity is therefore important when any land is entered where there is a risk of spreading pests or disease. Plant health and Biosecurity issues present a major threat to ecosystem resilience, the Landscape Institute has recently published a new Biosecurity tool kit. This guidance sets out clear guidance for each stage of a project, defining the processes to be adopted and promoting best practices across the industry. The LI guidance is to be followed for the design, implementation, management and monitoring of the landscape of the Site.

9. Key documents

APPENDIX 1 - General Arrangement Plan (see separate attachment for full pages)

APPENDIX 2 - Planting Plan (see separate attachment for full page and separate plans)

APPENDIX 3 - Plant Schedules (see separate attachment for full pages)

Planting Palette

Trees

ID	Botanical Name	Common Name	Girth/Diameter	Quantity	Native	Notes
A ca 'S'	Acer campestre 'Streetwise'	Field Maple 'Streetwise'	14-16	25		
B pen	Betula pendula	Common Silver Birch	14-16	18	Y	
C mon	Crataegus monogyna	Common Hawthorn	14-16	23	Y	
F syl	Fagus sylvatica	Common Beech	14-16	9	Y	
L st	Liquidamber styraciflua 'Slender silhouette'	Slender Silhouette	14-16	27		
Q pe	Quercus petraea	Sessile Oak	14-16	21	Y	
S auc	Sorbus aucuparia	Rowan	14-16	21	Y	
T co	Tilia cordata	Small Leaved Lime	14-16	11	Y	
			Total	150		

Ornamental Plant Mix

ID	Botanical Name	Common Name	Size	Quantity	Native	Notes
A re	Ajuga reptans	Bugle	3L			
C pe	Carex pendula	Pendulous Sedge	3L			
D ca	Deschampsia cespitosa	Tufted Hair Grass	3L			
E pu	Echinacea purpurea	Purple Coneflower	3L			
E a r	Euphorbia amygdaloides robbiae	Mrs Robb's Bonnet	3L			
G 'J B'	Geranium 'Johnson's Blue'	Cranesbill 'Johnson's Blue'	3L			
H x h	Helleborus x hybridus	Hybrid Lenten Rose	3L			
L mu	Liriope muscari	Big Blue Lilyturf	3L			
L ca	Lobelia cardinalis	Cardinal Flower	3L			
O vu	Origanum vulgare	Oregano	3L			
R h 'H'	Rudbeckia hirta 'Herbstsonne'	Black-eyed Susan 'Herbstsonne'	3L			
S of	Salvia officinalis	Common Sage	3L			

Rain Garden Mix

ID	Botanical Name	Common Name	Size	Quantity	Native	Notes
B co 'P'	Bergenia cordifolia 'Purpurea'	Elephant's Ears 'Purpurea'	3L			
C pe	Carex pendula	Pendulous sedge	3L			
D f-m	Dryopteris filix-mas	Male Fern	3L			
I ps	Iris pseudacorus	Yellow Flag Iris	3L			
L fo	Libertia formosa	Chilean Iris	3L			
L sa	Lythrum salicaria	Purple Loosestrife	3L			

Native Hedge Mix

ID	Botanical Name	Common Name	Size	Quantity	Native	Notes
A ca	Acer campestre	Common Maple	2L		Y	
C av	Corylus avellana	Common Hazel	2L		Y	
C mon	Crataegus monogyna	Common Hawthorn	2L		Y	
I aq	Ilex aquifolium	Common Holly	2L		Y	
L per	Lonicera periclymenum	Common Honeysuckle	2L		Y	
P sp	Prunus spinosa	Blackthorn	2L		Y	
R arv	Rosa arvensis	Field Rose	2L		Y	
V la	Viburnum lantana	Common Wayfaring Tree	2L		Y	
V op	Viburnum opulus	Guelder rose	2L		Y	

Ornamental Hedge

ID	Botanical Name	Common Name	Size	Quantity	Native	Notes
E 'A B'	Escallonia 'Apple Blossom'	Escallonia 'Apple Blossom'	2L			
I c 'C'	Ilex crenata 'Convexa'	Box-leaved Holly 'Convexa'	2L			
L an	Lavandula angustifolia	True Lavender	2L			

Bioretention Basin

ID	Botanical Name	Common Name	Size	Quantity	Native	Notes
B co 'P'	Bergenia cordifolia 'Purpurea'	Elephant's Ears 'Purpurea'	2L			
C p	Caltha palustris	Marsh Marigold	2L			
D f-m	Dryopteris filix-mas	Male Fern	2L			
I la	Iris laevigata	Smooth Iris	2L			
I ps	Iris pseudacorus	Yellow Flag Iris	2L			
L fo	Libertia formosa	Chilean Iris	2L			
L sa	Lythrum salicaria	Purple Loosestrife	2L			
R fl	Ranunculus flammula	Lesser Spearwort	2L			
T mi	Typha minima	Dwarf Bulrush	2L			

Native Shrub Planting Mix

ID	Botanical Name	Common Name	Size	Quantity	Native	Notes
C av	Corylus avellana	Common Hazel	2L		Y	
C san	Cornus sanguinea	Dogwood	2L		Y	
C mon	Crataegus monogyna	Common Hawthorn	2L		Y	
E eu	Euonymus europaeus	Spindle	2L		Y	
L vu	Ligustrum vulgare	Common Privet	2L		Y	
P sp	Prunus spinosa	Blackthorn	2L		Y	
R can	Rosa canina	Dog Rose	2L		Y	
S ci	Salix cinerea	Grey Willow	2L		Y	
V la	Viburnum lantana	Common Wayfaring Tree	2L		Y	
V op	Viburnum opulus	Guelder rose	2L		Y	

Shrub Planting Mix

ID	Botanical Name	Common Name	Size	Quantity	Native	Notes
C 'P B'	Ceanothus 'Puget Blue'	Californian Lilac 'Puget Blue'	2L			
C ter	Choisya ternata	Mexican Orange Blossom	2L			
C san 'M F'	Cornus sanguinea 'Midwinter Fire'	Dogwood 'Midwinter Fire'	2L			
C av	Corylus avellana	Common Hazel	2L			
G ll	Griselinia littoralis	Broadleaf	2L			
I c 'C'	Ilex crenata 'Convexa'	Box-leaved Holly 'Convexa'	2L			
L vu	Ligustrum vulgare	Common Privet	2L			
M aq	Mahonia aquifolium	Oregon Grape	2L			
R can	Rosa canina	Dog Rose	2L			
R 'Ke'	Rosa 'Kent'	Rose 'Kent'	2L			
R of	Rosmarinus officinalis	Rosemary	2L			
S ci	Salix cinerea	Grey Willow	2L			
S ch	Santolina chamaecyparissus	Cotton Lavender	2L			
S ja	Skimmia japonica	Japanese Skimmia	2L			
V la	Viburnum lantana	Common Wayfaring Tree	2L			
V op	Viburnum opulus	Guelder rose	2L			

Garden Mix

ID	Botanical Name	Common Name	Size	Quantity	Native	Notes
A at	Allium atropurpureum	Purple Flowered Onion	2L			
B co 'P'	Bergenia cordifolia 'Purpurea'	Elephant's Ears 'Purpurea'	2L			
D ca	Deschampsia cespitosa	Tufted Hair Grass	2L			
D f-m	Dryopteris filix-mas	Male Fern	2L			
E pu	Echinacea purpurea	Purple Coneflower	2L			
E 'A B'	Escallonia 'Apple Blossom'	Escallonia 'Apple Blossom'	2L			
G 'J B'	Geranium 'Johnson's Blue'	Cranesbill 'Johnson's Blue'	2L			
H ra	Hebe rakaiensis	Rakai Hebe	2L			
I c 'C'	Ilex crenata 'Convexa'	Box-leaved Holly 'Convexa'	2L			
L an	Lavandula angustifolia	True Lavender	2L			
L fo	Libertia formosa	Chilean Iris	2L			
L mu	Liriope muscari	Big Blue Lilyturf	2L			
O vu	Origanum vulgare	Oregano	2L			
R h 'H'	Rudbeckia hirta 'Herbstsonne'	Black-eyed Susan 'Herbstsonne'	2L			
S of	Salvia officinalis	Common Sage	2L			
V mi 'G J'	Vinca minor 'Gertrude Jekyll'	Lesser Periwinkle 'Gertrude Jekyll'	2L			

Grass/Meadow Planting Mix

ID	Botanical Name	Common Name	Size	Quantity	Native	Notes
A od	Anthoxanthum odoratum	Sweet Vernal Grass	2L			
C bu	Carex buchananii	Leatherleaf Sedge	2L			
C cr	Cynosurus cristatus	Crested Dog's-tail	2L			
F ru	Festuca rubra	Red Fescue	2L			
H lan	Holcus lanatus	Yorkshire Fog	2L			
L sy	Luzula sylvatica	Great Wood-rush	2L			
M ca	Molinia caerulea	Purple Moor Grass	2L			

APPENDIX 4 - Tree Retention & Removal Plans (see separate attachment for full pages)

APPENDIX 5 - Ecology Reports (see separate attachments)

- UK Habitat (UK HAB) Classification Survey.
- Invasive Non-Native Species (INNS) Survey.
- Preliminary Bat Roost Assessment (PRA) of Buildings.
- Bat Emergence Surveys of buildings.
- Ground-Level Tree Assessment (GLTA).
- Bat Transect Surveys.
- Automated Bat Surveys.
- Hazel Dormouse Muscardinus avellanarius Survey.
- Badger Meles Survey.
- Otter Lutra lutra and Water Vole Arvicola amphibius Survey.
- Breeding Bird Surveys.
- Great Crested Newt (GCN) Triturus cristatus Survey.
- Reptile Surveys.

APPENDIX 6 - other reports / surveys / key documents (see separate attachments)