

LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN

**Guide to the Management of Landscape
and Ecological Areas at Police Row,
Therfield, Royston, Hertfordshire**

REF JBA 23-231

**ON BEHALF OF
Wheatley Homes**

July 2024

Landscape and Ecological Management & Maintenance Plan

Client: Wheatley Properties

Project: Police Row, Therfield, Royston, Hertfordshire

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE OF DOCUMENT

1.1.1 The **Landscape and Ecological Management Plan (LEMP)** shall be taken to include this document and any supporting plans, reports and specifications approved as part of the planning application for the residential redevelopment of land at Police Row, Therfield, Royston, Hertfordshire. This includes any documentation containing quantitative and qualitative information about the external areas of the site that will be useful to those responsible for managing and maintaining them. The purpose of this document is to provide details of management measures and monitoring to be undertaken for the approved development for the satisfactory management of the landscape in perpetuity. The LEMP sets out the management aims and objectives for the site along with the specific management objectives. Proposed mitigation and subsequent management plan to avoid harm coming to protected species and retained habitats.

1.1.2 As per the North Herts Council Ecologist and consultation report which has been shared, from said consultation which took place on 04 March 2024:

A Landscape and Ecological Management Plan (LEMP) shall be submitted to, and be approved in writing by, the local planning authority prior to the commencement of the development. The content of the LEMP shall include the following.

- a) Description and evaluation of features to be managed.
- b) Ecological trends and constraints on site that might influence management.
- c) Aims and objectives of management.
- d) Appropriate management options for achieving aims and objectives.
- e) Prescriptions for management actions.
- f) Preparation of a work schedule (including an annual work plan capable of being rolled forward).
- g) Details of the body or organization responsible for implementation of the plan.
- h) Ongoing monitoring and remedial measures.

The LEMP shall also include details of the legal and funding mechanism(s) by which the long-term implementation of the plan will be secured by the developer with the management body(ies) responsible for its delivery. The plan shall also set out (where the results from monitoring show that conservation aims and objectives of the LEMP are not being met) how contingencies and/or remedial action will be identified, agreed and implemented so that the development still delivers the fully functioning biodiversity objectives of the originally approved scheme. The approved plan will be implemented in accordance with the approved details.

1.2 THE GROUNDS

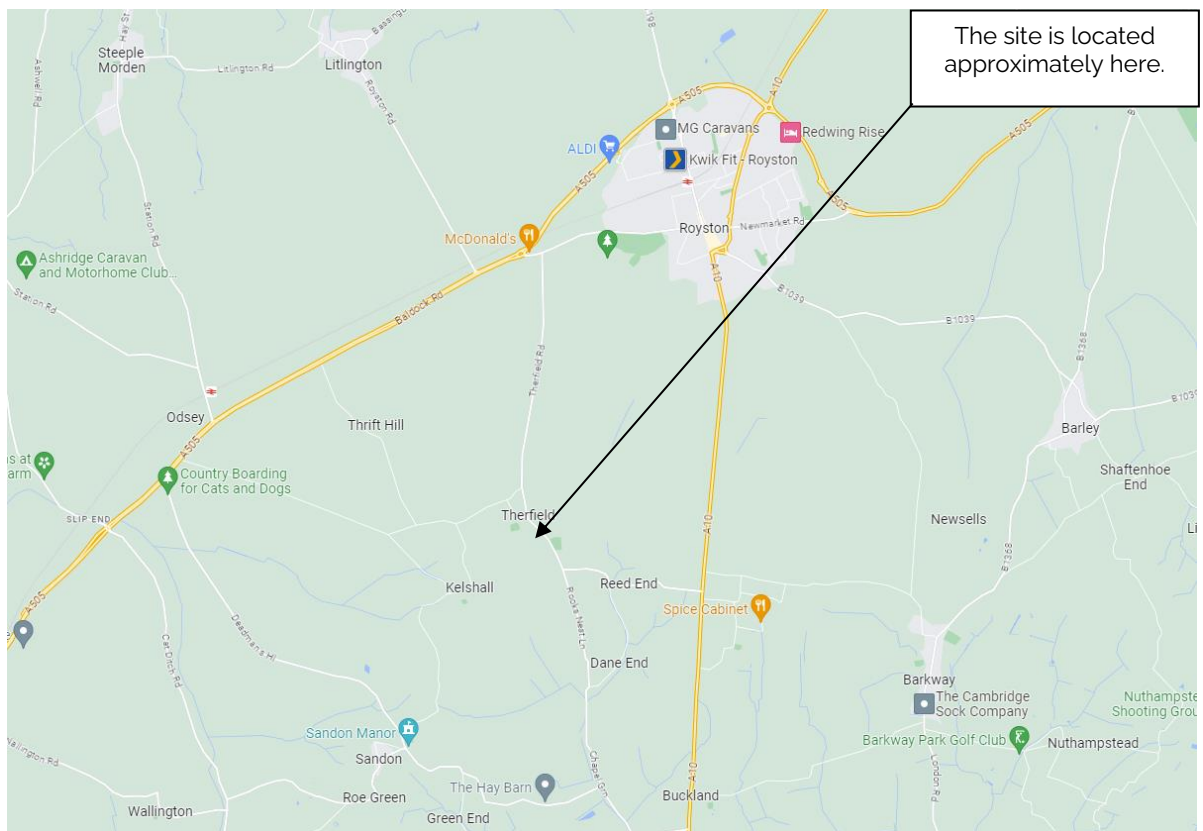
1.2.1 LOCATION

1.2.2 The site comprises the land to the west of Police Row between existing residential development, within the village of Therfield, southwest of Royston, within the county of Hertfordshire. The land is bordered to the north, east and south by existing residential settlement. To the west the site adjoins arable land and is partially open to the wider countryside. See Figs 1 and 2.

1.2.3 SITE DESCRIPTION AND DEVELOPMENT PROPOSALS

1.2.4 The proposals for the site consist of residential development, together with parking areas, amenity areas and landscaping, with the provision of vehicular access from Police Row to the east. The boundaries of the site are defined by significant existing mature hedgerows to the east, intermittent mature trees to the west and existing residential properties to the north and south. All other vegetation is to be removed and replaced as part of a comprehensive detailed landscape scheme.

1.2.5 Fig 1. Location plan: Road Map: Not to scale



1.2.6 Fig 2. Location plan: Site Boundary: Not to scale



1.2.7 MANAGEMENT PLAN AREAS

1.2.8 The purpose of this management plan document is to ensure the appropriate management of the retained and proposed landscape areas on the site following the construction and completion of the development. The landscape areas include existing boundary vegetation along with all new planting (trees, hedges, shrubs and grass) and other hard or soft landscape components outside of private gardens.

1.2.9 All the landscape and ecological areas of the site, except for private gardens, will be the subject of the Landscape and Ecological Management Plan. The landscape areas subject to this Management Plan are set out in Appendix 6.1.

1.3 RECITALS

1.3.1 Parties Involved

- **Developer:** Wheatley Properties is responsible for the construction of this development. The developer will be responsible for the protection and management of existing landscape components through the construction phase and the implementation of the hard and soft landscape works in accordance with the planning drawings, including any contractual maintenance period associated with these works.
- **Local Planning Authority:** This term (abbreviated to LPA) shall refer to North Hertfordshire District Council and its Planning and Landscape Officers who are involved in the process of the approval of landscape and other documentation.

- **Adopting Organisation:** This is the organisation that will adopt ownership of the landscape areas and is therefore responsible for their management and maintenance including all landscape components and features within them. The Adopting Organisation for the site will be a Private Management Company to be appointed by the Developer. The Adopting Organisation shall also be taken to mean any employee or representative of the organisation in ownership of the grounds.
- **Landscape Management Contractor:** the company who may be appointed by the Adopting Organisation to carry out the landscape maintenance works.

1.3.2 STATUS OF THE LANDSCAPE & ECOLOGICAL MANAGEMENT PLAN

1.3.3 Prior to the commencement of development (or such other date or stage in development as may be agreed in writing with the LPA) a detailed long term Landscape Management and Maintenance Plan for all landscape areas shall be submitted to and approved by the LPA in writing. The plan shall include:

- Aims and Objectives;
- A description of Landscape Components;
- Management Prescriptions;
- Details of maintenance operations and their timing; and
- Details of the parties/organisations who will be maintain and manage the site, to include a plan delineating the areas that they will be responsible for.

1.3.4 The plan shall demonstrate full integration of landscape, biodiversity and arboricultural considerations. The areas of planting shall thereafter be retained and maintained in perpetuity in accordance with the approved Landscape Management and Maintenance Plan, unless any variation is approved in writing by the Local Planning Authority.

1.3.5 PLANNING STATUS

1.3.6 The LPA will approve this document as part of the planning process and this document therefore forms part of the approved planning documents. Management shall therefore be carried out in accordance with this document following completion of the implementation management plan (and any contractual maintenance periods associated with these works). This document will outline the minimum standard of maintenance to ensure a safe, comfortable, attractive, biodiverse and sustainable landscape is achieved in perpetuity.

1.3.7 SUPPORTIVE INFORMATION

1.3.8 This LEMP is submitted together with the Detailed Soft Landscape Proposals (drawing number JBA 23/231 01-02), the Management Areas and Responsibilities Plan and the Schedule of Maintenance Operations, thereafter, within this document.

1.3.9 The document should be read in conjunction with the following planning documents:

- Detailed Soft Landscape Proposal for Plots and POS, JBA, July 2023;

- Design & Access Statement Land off Police Row, Therfield, Woods Hardwick, June 2023;
- Updated Preliminary Ecological Appraisal and Protected Species Scoping Assessment of Land at Police Row, Therfield, Hertfordshire, Skilled Ecology, July 2023
- Biodiversity Net Gain Calculation for Land West of Police Row, Therfield, Royston, JBA, January 2024
- BS 5837:2012 Preliminary Arboricultural Impact Assessment, Maydencroft Ltd, July 2023.

2.0 AIMS AND OBJECTIVES OF THE LANDSCAPE & ECOLOGICAL MANAGEMENT PLAN

2.1 AIMS

- 2.1.1 The principal aim of this Landscape and Ecological Management and Maintenance Plan is to secure a coordinated and high standard of landscape management for the landscape areas within the site, to ensure the successful integration of the residential development with the surrounding landscape and to protect and enhance nature conservation interests in accordance with the design objectives in the approved planning documents. This will include the appropriate maintenance of both the existing and the proposed landscape components.

2.2 OBJECTIVES

- 2.2.1 The main objectives of the Landscape and Ecological Management Plan are as follows:
- **To maintain the landscape character:** To protect and conserve the existing lowland heath landscape character and screening function of the existing trees on the boundaries, and to incorporate locally indigenous species within screening/structural landscape areas, to provide an attractive and robust landscape, SANGs areas and especially the heathland habitat, to provide the right setting for the new dwellings on the site and both maintain and reinforce local distinctiveness.
 - **The sustainable management of existing vegetation:** To retain existing trees, hedgerows, heathland habitat and associated vegetation that are worthy of retention, and to enhance their character, composition and age structure through positive management with consideration to long-term viability and health and safety.
 - **To ensure establishment and long-term health of relevant landscape elements for the benefit of ecology:** To take measures to ensure the successful establishment, growth and maturity of new heathland habitat, new structural and incidental planting and to take appropriate long-term management measures to ensure the satisfactory appearance and sustainability of vegetation. To ensure that landscape components are replaced, augmented and/or improved over time as appropriate.
 - **To maintain and enhance biodiversity:** To protect and enhance the nature conservation interest of both existing and new habitats and to ensure the adoption of management practices that enhance the biodiversity value of the site. To fulfil all legal requirements in relation to the protection and management of ecological features and

the protection and management of target species including dormice, birds, bats and reptiles, and since the Environment Bill, ensure also the provision of a minimum biodiversity net gain of 10% or more.

- **To ensure a management and monitoring plan for retained and introduced ecological features.**

- Create and maintain suitable foraging and potential nesting habitat for small mammals, invertebrates, bats and birds
- Ensure the protection of the reptile population on site, including creation of a temporary reptile receptor area and relocating reptiles out of the construction zone until new habitat creation has established on site.
- Maintain and enhance retained hedgerows to the site boundaries.
- Ensure the ongoing quality of all new landscape and biodiversity features.
- Enhance biodiversity and ecological connectivity on site.
- Achieve the above whilst causing minimal disruption, disturbance, and alteration to the surrounding landscape.

- **To avoid or minimise impacts to protected species.**

- **To ensure health and safety:** To uphold the duty of care that all landscape components are safe and that all reasonable steps are taken to minimise risk of injury and damage to people and property; and
- **To provide a mechanism for monitoring and review:** To ensure that management practices are monitored and where necessary reviewed on an annual basis in accordance with changing site circumstances and the views of key stakeholders (Adopting Authority, resident's representatives and LPA).

2.2.2 GENERAL DESIGN OBJECTIVES

2.2.3 The overall design objectives are:

- To ensure a high quality and attractive, robust and appropriately maintained landscape setting is created for the new development, internally and along all boundaries.
- To create an engaging and stimulating environment using a range of different landscape typologies, for residents and visitors, and for local people accessing the site.
- To mitigate the landscape and visual impact of the proposed development on the wider landscape context.
- To enhance the ecological value and biodiversity function of the site, by protecting and enhancing existing habitats, creating and managing new areas of native grassland, wildflowers, trees, scrub and hedgerows, and promoting connectivity between habitats.

2.2.4 GENERAL MANAGEMENT OBJECTIVES

2.2.5 The overall landscape management objectives for the site are:

- To ensure the healthy establishment and growth of plants.
- To protect planted areas from damage
- To minimise competition by perennials weeds and grasses.

- To ensure adequate watering to enable establishment and survival.
- To ensure that areas of shared open space, including hard surfaces, are maintained to a high level of physical condition, to maintain useability and to ensure health and safety of residents.
- To undertake landscape management in a manner that is sustainable and avoids wherever possible the use of chemicals that could damage the environment.

2.2.6 SPECIFIC LANDSCAPE DESIGN OBJECTIVES

2.2.7 The arrangement of site elements has been designed to protect and enhance ecological habitats, and in places to create new habitat. The proposal includes areas of native species planting, meadow grass and wildflower areas.

2.2.8 The plant selection comes almost exclusively from a native and wildlife-friendly palette. The on-site habitats created will comprise native species trees indigenous to the area, wildflower-rich grassland and hedgerows. This management plan has been designed to ensure that the ecological value of on-site habitats is maintained and protected in the long-term.

2.2.9 The key native species planted include varieties of Birch (*Betula pendula*), Hawthorn (*Crataegus monogyna*), Hornbeam (*Carpinus betulus*), Field Maple (*Acer campestre*), Alder (*Alnus glutinosa*), Cherry or Gean (*Prunus avium*), and Bird Cherry (*Prunus padus*). These species will contribute a soft rural characteristic to the tree canopy, and offer plenty in terms of spring flower, autumn colour, berrying and winter bark effects. Long-lived native trees, including Oak will feature in shared open space areas.

2.2.10 Traditional hedgerow species included for flower, fruiting and foraging, will attract birds and other wildlife to add to natural beauty and the enjoyment of living on the site.

2.2.11 The site is currently of relatively open and exposed landscape character, lacking mature vegetative structure. A specific landscape design objective is to introduce more structure, diversity and maturity to the landscape in a way that will create sustainable new habitats for wildlife, and a naturalistic setting for the new development.

2.2.12 MANAGEMENT RESPONSIBILITY

2.2.13 All front and rear garden areas will be conveyed over to individual house owners who will be responsible for maintaining their own private property. A landscape management company funded by residents will be responsible for maintenance of remaining landscape areas, including communal open spaces and paths and seating areas within them.

2.2.14 Landscape within the adoptable highway will be managed by the county highways authority.

2.2.15 New residents should be informed of on-site ecological measures being taken in the form of a brochure, pamphlet, or web platform to increase awareness and encourage environmentally friendly practices within their private curtilages.

- 2.2.16 All fenced boundaries, including those around private rear gardens, are to be designed to include openings for hedgehog access.
- 2.2.17 The residents' landscape information pack will include advice not to block these openings and to keep them open, allowing access by hedgehogs which will help control garden slugs and snails.
- 2.2.18 Residents will be encouraged to avoid use of environmentally damaging herbicides and pesticides within their private curtilages.
- 2.2.19 Hand weeding or organic mulching, and the minimal use of fertilisers for grass areas will be encouraged.

3.0 ECOLOGICAL MITIGATION SUMMARY

3.1 INTRODUCTION

- 3.1.1 This summary provides an overview of the biodiversity features expected to occur within the approved development, for which management and monitoring will take place.
- 3.1.2 The development proposals for the site have been driven by the desire to create a form of development that respects the characteristics of the site's ecological and landscape character and remains in union with that of the surrounding area too. To that end the development includes considerable 'green space' which provides a function both for public recreation and for the protection of local biodiversity interests.

3.2 MEASURES UNDERTAKEN

- 3.2.1 The following measures will be undertaken with the open space for the purpose of protecting and enhancing the populations of protected species and habitats present on or using the site:
 - Retain boundary hedgerows, where possible
 - Dense continuous mixed native scrub planting to the southern boundary to provide new nesting opportunities for known bird species using the site;
 - A substantial portion of the eastern boundary hedgerow will be retained and protected as a part of the development.
 - Mitigation of removed hedgerow will be installed along the eastern and southern boundaries of the site.
 - Utilise native species sympathetic to local landscape character
 - Native tree and shrub planting proposed throughout the site
 - Creation of native species-rich wildflower grassland meadows to open space areas to provide habitat suitable for reptiles on site
 - Management of existing grassland in open space area to enhance and support habitat for reptiles and amphibians on site.
 - Habitat enhancement by overseeding existing species poor, cattle grazed grassland

- Addition of No. 1 hibernacula to on-site grassland areas.
- Enhancements of SuDs feature with planting with a wetland meadow seed mix.
- Attenuation basin modelled to create a consistently wet ponding area, planted with emergent and floating native vegetation suitable to support breeding great crested newts.
- A bat friendly lighting strategy to include dark sky areas along boundary habitat
- No. 10 Eco integrated Bat Boxes and No. 4 Vivaro pro Sparrow nesting box (or similar if out of stock) No. 4 Ibstock Swift Bricks (or similar if out of stock) and No. 4 Starling Bricks by Bird Brick Houses (or similar if out of stock). Bat boxes to be ideally positioned facing a southerly aspect, and bird boxes/bricks should be facing a northerly direction or otherwise be out of direct sunlight. The swift bricks will be positioned together to create a colony.

3.3 ARBORICULTURAL WORKS

- 3.3.1 Tree survey documentation (plans and documents) is listed above (Supporting Information), which have been produced by James Blake Associates Ltd, which provide information on the locations of all important (Category A/B) trees as well as the dimensions of the required 'root protection areas' for these trees (to meet the requirements of BS 5837:2012, 'Trees in relation to design, demolition and construction').
- 3.3.2 Any tree surgery works should be undertaken by a suitably qualified arboricultural contractor, registered with the Arboricultural Association.
- 3.3.3 All tree surgery works shall be undertaken in accordance with the requirements of BS 3998:2010 'Tree Work - Recommendations' and BS 5837:2012 'Trees in Relation to design, demolition and construction'.
- 3.3.4 All pruning/removal works to trees should ideally be undertaken outside the nesting season to ensure breeding birds are not disturbed; the bird nesting season is generally accepted to be from the 1st of March to 31st August inclusive (though may extend into February and September for some species). Work during the nesting season could take place but only if an inspection by a suitably qualified ecologist/ arboriculturist confirms no nesting birds are present.
- 3.3.5 Where tree surgery is planned as part of this management plan or in the situation where an approved tree surgeon has recommended remedial work for health and safety reasons, the potential for bats to be present must be assessed before work is carried out. It is recommended that this assessment be carried out by a suitably experienced and licensed bat worker to avoid unlawful harm to these protected species.
- 3.3.6 If at this time any bats are found further advice should be obtained by the ecologist from Natural England.

4.0 SPECIFIC ELEMENTS REQUIRING MANAGEMENT AND MAINTENANCE

4.1 LANDSCAPE AREAS AND LANDSCAPE COMPONENTS

4.1.1 The landscape areas subject to this LEMP include the following components:

- Existing trees;
- Existing hedgerows;
- Existing grassland;
- Proposed tree planting;
- Proposed native hedgerows;
- Proposed native whip and shrub planting;
- Proposed amenity grass with bulbs;
- Proposed wet meadow;
- Proposed wetland marginal and aquatic planting;
- Proposed attenuation basin;
- Bird boxes;
- Bat boxes;
- Proposed hibernacula; and
- Hard landscape areas.

4.1.2 The information includes a description and specific management objectives for each component along with the annual and occasional management regimes required.

4.1.3 The extent and location of areas to be managed is shown on the Landscape Management Areas Plan in Appendix 6.1.

4.2 EXISTING / MATURE TREES

4.2.1 MANAGEMENT OBJECTIVES

4.2.2 The management objectives for retained trees are to:

- Maintain the trees in as healthy and attractive condition for as long as possible, to ensure continuity in tree cover and their contribution to the landscape structure, biodiversity, and screening/amenity value of the site; and
- Ensure that trees are healthy and safe, particularly in places in proximity to residential properties and with public access.

4.2.3 ANNUAL WORKS

4.2.4 **Visual Inspection:** Trees should be regularly visually checked for the presence of any diseased or rotten wood; fungal or other infections/disease; and stability. If any such issues are identified, then the advice of a qualified Arboriculturist should be sought immediately.

4.2.5 **Annual Arboricultural Assessment:** In any event, an Arboricultural Assessment should be undertaken once annually by a qualified Arboriculturist inspecting the condition of existing trees including any cause of increased risk to people or property. Furthermore, during the Arboricultural Assessment, the health of the trees shall be monitored, and any works required for health and safety or to promote the health and sustainability of existing trees shall be identified, scheduled and actioned at a suitable time of year following application and granting of appropriate consents by the LPA (where required), refer to Occasional Works in paragraph 4.2.6 below.

4.2.6 OCCASIONAL WORKS

- **Tree Work Consents:** Any works recommended for each tree (such as crown raising, crown reduction, substantial pruning, removal of limbs, pollarding or felling) should be documented and a formal application made to the LPA for approval (with the exception of the removal of dead wood) in advance of the works being undertaken wherever necessary. This includes trees protected by a Tree Preservation Order (TPO) or a condition of the planning consent (within 5 years).
- **Timeframes & Specialist Advice:** All works should be completed at an appropriate time of year and in accordance with relevant EU and UK wildlife legislation. Where possible this should be outside of the bird nesting season (i.e. between October through to March inclusive). In any event according to the nature of the works, there may be an additional requirement for monitoring or a watching brief by a qualified ecologist to ensure there are no nesting birds or bats present.
- **Tree Works:** All works shall be carried out by a skilled, qualified and approved Arboricultural Contractor in accordance with BS3998: 2010 'Tree Work - Recommendations'. All brushwood and logs that result from surgery and felling of trees on site shall be removed off site, unless needed to enlarge or renew hibernacula or eco piles. Brushwood may be chipped on site, but all wood chippings resulting from these operations shall be raked up, bagged and removed. Where surgery works affect a highway, the Arboricultural Contractor shall ensure the relevant permissions and road control permits are obtained, and all necessary health and safety parameters are met.
- **Tree replacement and enhancement of tree cover:** Any tree that dies or is necessarily felled, but which is not removed as part of a programme of thinning or coppicing, shall be replaced with a tree of appropriate species and stock size. Such replacement shall be with a tree of either the same or similar species as those existing. The option for replacing with a different species is to allow some flexibility avoiding problems encountered with 'Same Species Disease' and to ensure sustainable tree cover in the interests of visual amenity. Possible damage to drainage/services and adjoining building foundations must be considered before choosing a replacement tree species and location. Where alternative species are being considered, then the species should be suitable to the character of the location, either native (in the case of structural planting on the boundary of the site) or of a source of local provenance where possible or if ornamental, then appropriate to the type of trees adjacent to them. Once annually the site shall be considered for the need for any strategic replacement or enhancement planting, to broaden the age class of trees and tree groups, in the interests of the long-term sustainability of strategically important vegetation. All trees should be a minimum stock size of standard (10-12cm girth), and implemented and maintained in accordance with good horticultural practice. Replacement and enhancement planting is best undertaken during the planting season (November through to March inclusive)

4.3 EXISTING HEDGEROWS

4.3.1 The existing hedgerows along the eastern and southern boundary are to be retained as part of the proposal. The existing intact hedgerows bordering the site will be managed to remain in their current condition during and post-development. Inspections of these will be carried out to determine the need for successional replacement with the aim of maintaining a strong boundary feature in the future.

4.3.2 The existing hedgerows are largely dominated by the following species: *Crataegus monogyna* or common hawthorn and *Prunus spinosa* (Blackthorn). Prior to development, none of the hedgerows on the site were deemed "important" in the context of the landscape and wildlife criteria of the Hedgerow Regulations, 1997.

4.3.3 Hedgerows will be trimmed on a three-year rotational basis, cutting trees only due to health and safety concerns.

4.3.4 The existing vegetation on and adjacent to the site is set out in the Arboricultural Report. The Tree Survey Schedule and Tree Protection Plan (TPP) identify the location, species, size and condition of the existing vegetation to be retained by the proposed development and identify any initial works to be completed by the Developer during the construction phase as well as any on-going monitoring which may be required. This includes the reduction of the hedgerow to an approximate height of 3m and a formal shape as advised by the Arboricultural Report to aid future management.

4.3.5 MANAGEMENT OBJECTIVES

4.3.6 The management objectives for the existing hedgerow are to:

- To maintain and enhance where appropriate the screening value, augmenting any hedgerow gaps; and
- To traditionally manage the hedgerow to develop its structure and to develop its wildlife value, particularly for birds and bats.

4.3.7 ANNUAL WORKS

4.3.8 ANNUAL CUTTING OF NATIVE HEDGEROWS:

- To maintain a natural profile, hand trim or cut the top and sides of native hedges on a 2-3 year rotation, if hedge does not border road or footpath, to allow the development of thick hedgerows which provide cover for a variety of species) in late November (outside of the bird nesting season once leaves have started to drop) (Consider changing to January to allow fruiting tree species to finish fruiting, to allow birds to continue feeding further into winter), to an approximate height of 3m to form an even and tidy hedge line, retaining individual hedgerow trees.
- Cut larger stems, and prune any diseased rotten wood back to sound wood. Remove all cut material from site. This ties in with the Site Wide Ecology Strategy- for trees and hedgerow to be subject to low intensity management (cut every 2-3 years).

4.3.9 HEDGEROW GROUND FLORA:

- Leave the vegetation beneath the hedge line uncut to allow ground flora to develop. Avoid the use of herbicides and pesticides in the vicinity of native hedgerows.

4.3.10 ANNUAL ARBORICULTURAL ASSESSMENT:

- An **Arboricultural Assessment** should be undertaken once annually by a qualified Arboriculturist to inspect the condition of existing vegetation. The health of existing hedgerows shall be monitored and any works required for health and safety or to promote the health and sustainability of existing hedgerows shall be identified, scheduled and actioned at a suitable time of year, refer to Occasional Works in paragraph 4.3.11 below.

4.3.11 OCCASIONAL WORKS

- Where identified by the annual Arboricultural Assessment e.g. where native hedgerows have become overgrown or require more extensive work, carry out recommended remedial work, including coppicing or hedge laying (in sections) to thicken and rejuvenate the hedge line.
- All extensive works shall be carried out by a skilled, qualified and approved Arboricultural Contractor in accordance with BS3998: 2010 'Tree Work - Recommendations'. All arisings that result from such management works shall be removed off site, unless needed to enlarge or renew hibernacula or eco piles.

4.3.12 TIMEFRAMES & SPECIALIST ADVICE:

- All works should be completed at an appropriate time of year and in accordance with relevant EU and UK wildlife legislation. Where possible this should be outside of the bird nesting season (i.e. between October through to March inclusive).
- In any event according to the nature of the works, there may be an additional requirement for monitoring or a watching brief by a qualified ecologist to ensure there are no nesting birds or bats present.

4.3.13 GAPPING UP NATIVE HEDGES:

- Where sections of hedgerow become thin or fail, gap up hedgerows with an appropriate mix of native species to an approximate density of 6 plants/linear metre, planted in a double staggered row during the planting season (November through to mid-March inclusively).
- Plants should be a minimum size of open ground whips 600-900mm high or 3L container grown stock for evergreen species (such as holly).
- Gap up areas of less dense growth with additional plants as required to achieve a continuous hedge line taking due allowance for natural growth and regeneration of cut material.
- All plants should be native (from a source of local provenance where possible), appropriate to the character of the area and should be selected to increase the species diversity of the existing hedgerow and maximise ecological value.

4.4 EXISTING GRASSLAND

4.4.1 DESCRIPTION

- Existing species poor, improved grassland will be retained to the south within the open space of the site. This area is roughly 0.33HA within the site boundary.

- To maximise biodiversity, the area will be cut on a rotational basis, once annually: To strim once every three years, splitting meadow into three section and cut one area in one year and carry on around the meadow in rotation.
- Informal mown pathways will run through these already established grassland areas, thereby reducing informal recreational use of the grassland and corresponding disturbance of terrestrial GCN and other wild fauna.
- Pathway mowing will be in accordance with species protection laws and within this documents highlighting ecological management recommendations for mow height, frequency, and timing to avoid any potential harm to existing reptiles and amphibians on site.

4.4.2 MANAGEMENT OBJECTIVES

4.4.3 The management objectives for the existing grassland will be:

- To maintain a healthy and biodiverse sward suitable for a range of wildlife.

4.4.4 Initial Works

- **Habitat and landscape enhancement:** As part of the wider landscape improvements to the site, the enhancements proposed for the existing grassland are limited to hand planting of proposed native trees (feathers), mowing of informal paths through the grassland, and placement of hibernaculum.

4.4.5 Annual Works

- **Cutting of retained grassland areas:** Grassland shall be strimmed on rotation only once a year to a sward height of 150mm in late August. To allow formation of a thatch layer arisings are to be left in situ. In a warm and wet year, a second cut may be required and if so, this should be carried out in March. The timing of all cutting operations should take into consideration any protected species (such as reptiles) that may be present. There may be an additional requirement for monitoring or a watching brief by a qualified ecologist to ensure that no protected species are present.
- **Mowing informal pathways:** Informal paths through existing grassland are to be mown regularly, in full accordance with clause 4.4.5 except to a sward height of 100mm.
- **General care:** Hand weed pernicious, ruderal and aggressive or invasive weeds to maintain the visual amenity of the area. **Do not herbicide or fertilise.** Hibernacula should be left undisturbed. Arising's from tree surgery work can be retained on site and used to create new hibernacula as required.

4.5 PROPOSED SEMI-NATURAL WATERBODIES

4.5.1 DESCRIPTION

- Seminatural waterbodies are defined as attenuation basins, swales, ditches, and associated damp meadow basin bases and dry banks.
- The attenuation basin allows for regulation of the discharge of rainwater. Often these temporary water bodies can provide vital habitats to the wildlife.

4.5.2 MANAGEMENT OBJECTIVES

4.5.3 The management objectives for attenuation basins are to:

- Ensure drainage features are in working order.

- Maintain sustainable health and growth of marginal vegetation and ensure water bodies do not become overgrown with plant growth inhibiting drainage and storage functions.
- Ensure directly related exiting water bodies are maintained with existing water levels for the benefit of ecologically important flora and fauna.

4.5.4 ANNUAL WORKS

- Regular inspection and maintenance: This will be undertaken by the Adopting Organisation and is important for the effective operation. Regular mowing in and around the area is required along maintenance access routes, amenity areas and across embankments. Maintenance activities should be detailed in the Health and Safety Plan and a risk assessment should be undertaken. Specific maintenance activities are detailed in the maintenance schedule attached (see appendix 6.1).

4.5.5 OCCASIONAL WORKS

- **Replacement planting:** For distressed and failing areas of vegetation, remove dead material and re-cultivate the topsoil, to a depth of 100mm. Small areas may be reseeded following the autumn cut by spreading the cut arisings onto the bare soil to set seed. Evenly seed with an appropriate mix of wildflowers and grasses in either October/ November or February/ March, to a mix and at a rate as agreed with the landscape architect or consultant ecologist. Carefully rake in thoroughly to ensure that the seed is a few millimetres below the surface. Roll using a very light roller or a cylinder mower, ensuring the surface is even and level. In the event of unexpected dry weather water thoroughly to field capacity using a fine spray hose and continue to water to maintain a moist soil until complete establishment.
- **Protect newly seeded areas** by metal stakes and high visibility tape to restrict access and hand weed out persistent residual weeds and new germinated ruderal weed seed. Inspect inlets, outlets, overflows and grilles for blockages and clear if required. Inspect inlets for silt accumulation, and excavate if found to be impeding inlet function. Sediment to be disposed of in line with Environment Agency protocol, with sediment testing to be undertaken as required.
- Care to be taken in created ponds where the clay liner is implemented not to damage or remove parts of the clay when carrying out maintenance works such as desilting/debris removal.

4.5.6 MANAGEMENT OBJECTIVES

4.5.7 The management objectives for the attenuation basins, will be:

- To ensure functioning attenuation features, by providing suitably regular inspection and clearance of any rubbish, litter, debris or artefacts to prevent obstruction or blockages.
- To provide a seasonal habitat for wildlife and enhance biodiversity. To protect the habitat around SuDS feature with ecological recommendations while ensuring a safe environment.
- To maintain reasonably tidy, dry, stable banks free from dense growth or other obstructions.

- To create and maintain sustainable health and growth of marginal and aquatic vegetation and ensure water bodies do not become overgrown with plant growth, inhibiting drainage and water storage functions.
- A 2m wide strip of uncut grassland will be left around SuDS feature to allow cover for species such as small mammals, amphibians, reptiles and invertebrates.

4.5.8 All personnel will be familiar with the content of this system prior to commencing work within the site.

4.5.9 ANNUAL WORKS

- **General maintenance for attenuation basins, ditches and swales:** Remove collections or build-up of fallen leaves, dumped rubbish, artifacts, litter and any debris left by users.
- **Clear clumps of marginal vegetation** every second autumn in 3m long segments by rotation so that there is always a succession developing from bare ground, and the whole bank is managed thus every 10 years. If marginal plants start spreading noticeably from the margins into the centre, and clogging it, action will need to be taken to remove them and the frequency increased to annual rotational removal. Manage vegetation on the banks of ditches and swales to maintain water flow and to create potential wildlife habitats. Check headwalls and outlets and remove any litter and debris at each visit ensuring no obstructions are present that restrict the flow of water. Monitor water quality and take remedial action if required.
- **Strim dry wildflower meadow banks:** Strim 75% dry meadows once annually in late August, and the remainder after 2 years. This leaves areas of uncut meadow, which favours some overwintering fauna species. Rake up and cart arisings to a designated compost area.
- **Strim any ruderal or invasive weeds** in early July - before they set seed, if established, but hand-pull individuals beginning to invade, to prevent seeding and spreading, carting to a compost area designated on site.
- **Strim wet meadow once annually in June.** Rake up and cart arisings to a designated compost area. This ensures spring meadow species to thrive.

4.5.10 OCCASIONAL WORKS

- **Monitoring:** Management should be flexible. Monitoring should be an integral part of any management. The careful recording of information is necessary before, during and after any work.
- **Marginal Planting:** Monitor the extent of marginal planting. If plants start spreading into the centre of the ditch, swale or basin, clear any such vegetation from its 'invading front', on the inner or waterside of the margin, leaving the landward side as undisturbed habitat. Retain a solid margin of vegetation to discourage access; but ensuring flow, (or potential flow) is not blocked.
- **Siltation:** Dig out any accumulated silt in ditches and swales in early autumn. If the ditch or swale is permanently wet, with an active aquatic habitat, clear only a third part of the silted area in any 12-month period to ensure biodiversity is preserved and can re-colonise from undisturbed sections.

- **Habitat:** Retain and enhance areas of habitat (e.g. logs, stones and rough vegetation at the ditch/ swale edges), especially during winter when these will be used as hibernation sites by frogs, newts and others.
- **Control of Invasive Vegetation:** Ensure existing vegetation adjacent to the feature is managed appropriately with control of any invasive emergent growth, and generally such growth should be monitored and controlled to ensure function. Trees and scrub should not shade out or substantially overhang the basins, ditches or swales, and any within the or close to the bases should be cleared.
- **Banks:** Reinforce any unstable or eroded banks with stakes and logs, to hold back the soil and place silt from the base behind the logs to build back any eroded areas. Such filled areas can be planted with marginals to stabilise the soil.
- **Assessment of Banks and Interventions:** An assessment of the banks should be carried out to highlight any health and safety issues or stability problems, and all natural banks should be battered to an angle less steep than the 'angle of repose. If remodelling of the banks is deemed to be required, and appropriate, this should only occur after any required surveys for protected species has been carried out and all recommendations adhered to. Works should be carried out in a manner that limits the disturbance to the existing habitat, and the edge of the bank should be made good and replanted. Specific guidance on works should be sought from Ecological Clerk of Works to ensure the works are carried out in a way that positively benefits the feature, and associated habitats. Maintenance activities should be detailed in the Health and Safety Plan and a risk assessment should be undertaken.
- **Wet basins:** For wet basins, maintain 50% open water across the surface by clearing vegetation as appropriate, focussing on the most vigorous species. Remove material by pulling, cutting or strimming and lay arisings on the pond side for 48 hours to allow any fauna to return to the pond, before removal off site. For distressed and failing areas of vegetation, remove dead material by the same method as above. Small areas of failed marginal vegetation may be replanted with plugs of appropriate marginal and aquatic species. Small areas to the upper banks of the pond may be reseeded following the autumn cut by spreading the cut arisings onto the bare soil to set seed.
- **Re-Seeding:** Evenly seed with an appropriate mix of wildflowers and grasses appropriate to the soil location and dampness, sowing in either October/ November or February/ March, to a mix and at a rate as agreed with the ECoW. Carefully rake the seed in thoroughly to the surface to ensure that the seed is a few millimetres below the soil surface.
- **Method:** Roll using a light roller or a cylinder mower, ensuring the surface is even and level. In the event of unexpected dry weather, water thoroughly until sodden, using a fine spray hose, and continue to water to maintain a moist soil until complete germination and establishment has taken place.
- **Protection:** Protect newly seeded areas by metal stakes and high visibility tape to restrict access and hand weed out persistent residual weeds and new germinated ruderal weed seed. Inspect inlets, outlets, overflows and grilles for blockages and clear if required.
- **Inlets and Outlets:** Inspect inlets for silt accumulation and excavate if found to be impeding inlet function. Sediment to be disposed of on site for bank strengthening work. If it must be removed from site, then such removal shall be in alignment with

Environment Agency protocols, with sediment testing to be undertaken as required and disposal at a suitable site for the nature of the silt.

4.6 PROPOSED TREE PLANTING

4.6.1 DESCRIPTION

- New tree planting is incorporated into the proposed development within front gardens, parking areas, woodland and public open space to provide landscape structure and amenity value. Such tree planting will define focal points, enclose streets and spaces and soften the built form. This will also infill any tree removals to create a woodland canopy towards the BNG requirements.

4.6.2 MANAGEMENT OBJECTIVES

4.6.3 The management objectives for new tree planting are to:

- Ensure the satisfactory establishment and growth of new tree planting typical of the respective species, most notably, silver and downy birch (*Betula pendula* and *pubescens* respectively), Scots pine (*Pinus sylvestris*) and pedunculate oak (*Quercus petraea*).
- Improve growing conditions so that trees grow and maintain a healthy and safe condition.
- Ensure the continuity of the design approach and amenity value of tree planting.

4.6.4 ANNUAL WORKS

- **General tree maintenance during establishment:** Check all trees for firmness and stability in the ground. Check and adjust tree ties, ensuring they are not too tight around the trunk of the tree, replacing if necessary.
- **Top up bark mulch levels** where necessary around the base of new trees, using the same or similar product to that previously supplied to maintain an approximate depth of 50mm to reduce competition from weeds and retain soil moisture.
- **Remove weed growth by hand**, where trees are in grass areas, and retain a circle of bark mulch (approximate radius of 500mm) to aid mowing and prevent damage to the main stem. All trees shall be fertilised using a suitable and approved liquid feed (N10:P15:K10) at a rate of 60g/m² during early May and again in late September. Prune back any diseased or rotten wood (including the removal of main stems and limbs) back to sound wood as required. Remove all cut material from site.
- **Watering trees:** Water trees during dry periods (being any period without substantial rainfall for 14 days or more), until trees are successfully established. Water at a rate of 25 litres per tree position into watering tubes. 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. The Landscape Management Contractor shall be entirely responsible for varying the frequency of these visits according to climatic conditions and for contacting the Adopting Organisation and agreeing the timing of any additional watering visits if required and where restrictions are placed on the use of water, sources and costs of obtaining second class water. The Landscape Management Contractor shall be responsible for any tree failures or excessive die back from drought stress during the management contract.

4.6.5 OCCASIONAL WORKS

- **Checking and removal of tree stakes and ties:** Review the need for tree stakes and ties annually for up to 6 years. Remove stakes and ties between 4 to 6 years after planting, but be sure trees are firm and stable. Stakes and ties removed shall be cut at ground level, below lowest grass height (to prevent snagging mower blades) or pulled from the ground and the post holes filled with suitable topsoil. If the tree is found to be weak or unstable after the stakes have been removed, then check the base of the tree for signs of rot. If rotten or unlikely to stabilise, remove the tree and replace. If the tree is free from rot or other cause of its instability, then re-instate a tree support, using 100mm diameter chestnut stake and single tie. The stake should be pushed into the ground with a post rammer, to a depth of 600mm and cut to one third the height of the tree. Fix the tree stem with a rubber tie and spacing device attached to at a point no more than 25-35mm below the top of the post, in order to prevent chaffing against the post in high winds. Remove old posts and ties and arisings and dispose off site.
- **Long-term tree surgery works:** After 10-20 years of maintenance as above (or earlier if required), newly planted trees will reach semi-maturity and at this time may be in need of corrective surgery. Trees should become subject to the annual Arboricultural Assessment and any works recommended shall be carried out in accordance with paragraphs 4.2.4 and 4.2.5.
- **Tree replacement and enhancement of tree cover:** Any tree that dies or is necessarily felled, but which is not removed as part of a programme of tree removals, shall be replaced with a tree of appropriate species and stock size. Such replacement shall be with a tree of either the same or similar species as those existing. The option for replacing with a different species is to allow some flexibility avoiding problems encountered with 'Same Species Disease' and to ensure sustainable tree cover in the interests of visual amenity.
- **Replacement selection:** Possible damage to drainage/services and adjoining building foundations must be considered before choosing a replacement tree species and location. Where alternative species are being considered, then the species should be suitable to the character of the location and adjoining trees. Once annually the site shall be considered for the need for any strategic replacement or enhancement planting, to broaden the age class of trees and tree groups, in the interests of the long-term sustainability of strategically important vegetation. Trees should be a minimum stock size of standards (10-12cm girth), and implemented and maintained in accordance with good horticultural practice. Replacement and enhancement planting is best undertaken during the planting season (November through to March inclusive).

4.7 PROPOSED NATIVE HEDGEROWS

4.7.1 DESCRIPTION

- Native hedgerows are proposed strategically around the site periphery and to create soft boundaries to public open space to enhance the rural character and provide soft landscape edge.

4.7.2 MANAGEMENT OBJECTIVES

- To maintain existing and new native hedgerows to a naturalistic appearance and to a given predetermined ultimate height, shape and width.

- To ensure continuity of form and density through under or inter-plant any gaps or sparse areas using species mixes to match as required.
- To ensure that leggy and unkempt growth is pruned back and maintained at a functional size so that the hedge does not hold litter or present Health and Safety problems.
- To ensure a suitable number of native hedges are managed on rotation to support sufficient foraging opportunities for local fauna. Support habitat creation nesting opportunities for birds and mammals.

4.7.3 ANNUAL WORKS

- **General native hedge maintenance:** Top up mulch levels for new hedges where necessary, using the same or similar product to that previously supplied. Prune new native hedges once or twice annually; once in June and, if required, again in November. Single cuts will provide a more natural appearance and a second cut will ensure a neater profile – more suitable to urban areas. Native hedges associated with the urban/semi-urban Public Open Space areas will be maintained to an eventual height of 1.8m. Those on the periphery of the site may be allowed to grow to 3m high and cut on a rotational basis. This should be carried out in accordance with Rural Payments Agency Hedgerow Management Rules.
- **Pruning native hedges:** Prune any diseased or rotten wood (including the removal of main stems and limbs) back to sound wood. Remove all stems and limbs which are unsafe or are in danger of falling or breaking up during gales. Remove all cut material from site and cart away to tip. Do not site burn. Top out native hedgerows to the above intended eventual height, and face up the sides, using an electric hedge cutting device, to form an even and tidy hedge alignment. Cut larger stems with a shrub pruning tool. Cart arisings to designated compost site and chip them before adding to the compost.

4.7.4 OCCASIONAL WORKS

- **Gapping up native hedges:** Remove failed plants for new native hedges and replace with a plant of the same species, to a minimum size of an open ground whip, 0.9-1.2m high, planted between the months of December and mid-March inclusively, unless the plant is either Ilex, Ligustrum or other native evergreen species, when the height can be 500mm minimum and be supplied in a 3L pot. Gap up areas of less dense growth with additional plants as required to achieve a continuous hedge alignment, taking due allowance for natural growth and form.
- **Occasional surgery to larger native hedges:** Native hedges which have grown out into tree lines, should be faced up only, retaining taller trees, unless there are weaknesses in the root stock and stumps from rot. Such trees shall be pollarded to the given hedge height above. Retain any sound stems.
- **Laying:** Once established following 10-15 years of growth, it may be good practice to lay the new hedgerows to form a dense vegetation barrier of high ecological and amenity value.

4.8 PROPOSED NATIVE WOODY BUFFER PLANTING

4.8.1 DESCRIPTION

- A suitable mix of native scrub, canopy and sub canopy species planting are proposed for buffering purposes in key locations.

- Native species selected to benefit the habitats they are adjacent to and ensure foraging for indigenous wildlife.

4.8.2 MANAGEMENT OBJECTIVES

4.8.3 The management objectives for native whip and shrub planting are to:

- Ensure the satisfactory establishment and growth of new planting;
- Maintain planting in a healthy and attractive condition and enhance the value of planting as a food source to wildlife; and
- Ensure continuity of the design approach and amenity value of planting.
- To create a mosaic of habitats in a variety of growth stages. Management to be on a rotation of 1/3 cut each year.

4.8.4 ANNUAL WORKS

- **Weeding:** Remove all weed growth by hand as necessary to ensure weed free and tidy planting areas. Four visits are required per growing season. Visits should occur approximately bi-monthly in the growing season, subject to weather conditions from April to October, with an extra visit outside of the growing season in mild winters (December or February) to inspect the condition of the planting areas. Take great care not to disturb sheet or bark mulch; top up bark mulch levels where necessary for the first 3 years, using the same or similar product to that previously supplied. Note: For planting, the continued use of a non-biodegradable weed suppressant membrane will keep visits to 4 times per year in the growing season. Where a biodegradable weed suppressant fabric has been used, this will have disappeared within the establishment phase. Weeding frequency should therefore be varied according to the site and density of vegetation cover and in any event should be between 4 and 8 i.e. whatever is required to achieve a weed free scheme. All weeds shall be removed from the site.
- **Spot Herbicide Application:** Where required, persistent perennial weeds can be controlled using a non-residual herbicide, agreed by the ECoW or instead utilise hot foam spray. Apply twice annually. For planting beds containing herbaceous plants and shrubs, apply a suitable herbicide using a weed wiper device to avoid killing wanted plants. The use of herbicides should only be made following a risk assessment to consider potential effects on the environment and on human health, but also spray drift killing the wrong plants. The purchase, transport and storage of herbicides are regulated by Part III of the Food and Environment Protection Act 1985, Control of Pesticides (Amendment) Regulations 1997; the Health and Safety at Work Act 1974; the COSHH Regulations, the product COSHH sheet and EC Directive 91/414/EEC (the "Authorization Directive") and the Plant Protection Products Regulations 1995 as amended by the Plant Protection Products (Basic Conditions) Regulations 1997. All herbicides must have an appropriate full or "off-label" approval for use in a relevant situation. Refer to the Pesticide Safety Directive, for which the website is given here for your assistance: www.pesticides.gov.uk.
- All pesticides shall be applied in suitable calm weather conditions; allow for repeat spraying as required to achieve a complete kill.

DO NOT HERBICIDE WITHIN CLOSE PROXIMITY OF WATER FEATURES.

- Herbicide applications are **not permitted** within sensitive ecological or habitat areas within the site.
- In event of specified and targeted eradication, apply herbicide as required and at intervals to ensure no regeneration of weed, usually equating to four sprays per year during the growing season at 6-week intervals, from late April onwards. The timing of visits may vary according to weather conditions.
- **Extreme care** must be taken to avoid damage to surrounding plants and grass, and to avoid spray drift. Any damage resulting from incorrect usage, spillage, and spray drift, to be rectified at the Landscape Management Contractor's expense.
- **General planting maintenance:** At each visit firm in and straighten any loose plants. Top up bark mulch levels where necessary for the first 3 years, using the same or similar product to that previously supplied to maintain an approximate depth of 50mm to reduce competition from weeds and retain soil moisture.
- **Pruning of planting:** Prune back shrubs in the period between October to March in accordance with sound horticultural practices, pruning back to a node, shoot or bud; prune out dead, leggy and broken branches, without damage to the natural habit or appearance of plant without box clipping or rounding off plants. Prune out crossover branches, invasive suckers, dead wood, damaged stems, any spindly growths and any epicormic growth that will weaken the plant. Prune back Rosaceous and quick and leggy growing plants much harder than other species, but prune back by no more than 30% in any single year.
- **Watering:** For the first 2 growing seasons after planting, water both shrubs and whips during dry periods (being any period without substantial rainfall for 14 days or more). Water all shrubs to field capacity (minimum 10 litres per m²) and water all large specimens at 10 litres each. Apply water at a frequency of up to 2 times per week from April to the end of September (to a maximum of 15 visits in any one calendar year) as required during any continuous hot weather lasting more than 7 days. The Landscape Management Contractor shall be entirely responsible for varying the frequency of these visits according to climatic conditions and for contacting the Adopting Organisation and agreeing the timing of any additional watering visits if required.
- **Water Restrictions:** Where restrictions are placed on the use of water, sources and costs of obtaining second class water. The Landscape Management Contractor shall be responsible for any tree failures or excessive die back from drought stress during the management contract. Following the first 2 years after planting, further watering should be unnecessary as all the species are native and should be tolerant of normal levels of drought conditions. Monitoring of droughts, thereafter, considering recent climate change driven heat events, should be continuous and contingent measures allowed for to ensure exceptional watering provision for extreme hot or dry weather.

4.8.5 OCCASIONAL WORKS

- **Replacement and enhancement planting:** Cut back any shrubs and herbaceous plants where they have become old, misshapen, leggy or they have lost their vigour. Plants that fail to show growth or develop full foliage (including plants damaged during management operations), where such plant failure leaves a gap in the foliage not filled by adjacent plants, then such failed plants shall be replaced with stock of the size, species and quality originally specified. Include any plants that are destroyed by vandalism, theft or similar cause through no fault of the Landscape Management Contractor, up to and not exceeding 5% of the plant stock. Specimens, shrubs or

herbaceous plants so replaced shall be the same as those specified, previously supplied and approved. Nursery stock shall be open grown whips (60-90 cm high) or where evergreen species a minimum stock size of a 3L pot. Planting should be implemented and maintained in accordance with good horticultural practice. Include any works necessary to enable planting to be properly carried out i.e. removal and disposal of dead material off site and for topping up/replacement of bark mulch. Once annually the site shall be considered for the need for any strategic replacement or enhancement planting, to broaden the age class of vegetation in the interests of the long-term sustainability of strategically important vegetation.

- **Thinning and Coppicing:** Thinning and coppicing will allow trees and shrubs to develop diversity of form and different types of nesting, feeding and foraging habitat and extend the potential life of individual plants. Additional thinning of the buffer planting areas may be required at intervals following an initial selective thin. The timing of thinning should be informed by the ECoW and the arboricultural survey information, which should include a visual inspection by an arboriculturist, checking if crowns are overlapping and thinning is needed. Any trees, apart from understorey species, which have failed to reach the canopy and have been suppressed, will need removal. Thin trees on a phased basis in blocks. The aim should be to create a 'ring of sky' around each tree that is retained, into which it can spread. A competent person, such as a qualified Arboriculturist should plan thinning and coppicing operations in advance by identifying and marking all trees for removal and coppicing in winter. All thinning operations should be undertaken between October and February.
- **Grazing Damage:** Protect coppice stools from deer/rabbit browsing by piling brash over them. Monitor coppice periodically, noting any stools that fail to regrow and replant the following autumn. Remove weeds and invasive species as required.

4.9 PROPOSED AMENITY GRASS WITH BULBS

4.9.1 DESCRIPTION

- Areas of cultivated amenity grass are located across the open space and amenity areas, with incidental drifts of bulbs.
- The mowing frequency will be related to the grass mix and function of the area. Where bulbs are present these grass areas will generally be subject to a lower frequency cutting regime for aesthetic reasons. The height of the sward can be varied according to amenity and to ensure nature conservation benefits.

4.9.2 MANAGEMENT OBJECTIVES

4.9.3 The management objectives for amenity grass areas will be to:

- To ensure the satisfactory establishment of the grass sward and bulbs.
- To maintain healthy and suitable grass areas appropriate to function and use.

4.9.4 ANNUAL WORKS

- **Mowing and edging:** Amenity grass areas shall be mown in order to maintain the visual amenity of the area. Mowing frequency and height shall be adjusted the function and use of each area: Generally 8 – 12 cuts. All grass shall be mown initially with a rotary mower once during the spring (mid-March), to a height of 50mm and thereafter using a cylinder mower, collecting the arisings each time, and removing off site. Delay cutting of grass areas containing bulbs (including a 150mm margin) until late June once bulbs have finished flowering and the leaves have wilted after deadheading bulbs in May.

Soft edges between grass areas and planting beds shall be kept free from grass by cutting the grass with a 'half moon' edging tool to ensure a neat, clean-cut finish once per year at the start of the growing season.

- The edge of paving and shrub beds shall be kept free of grass using strimmers or edge clippers once per month during the growing season.
- **General lawn care:** Apply an approved turf fertilizer, selective weed killer and moss retardant once in September, so not to affect bulbs, applying strictly in accordance with the manufacturer's instructions, Control of Pesticide Regulations, COSHH Regulations and product COSHH sheet in suitable weather conditions. Otherwise amenity grass areas shall be weeded either by hand or (especially persistent weeds) herbicide treated in order to maintain the visual amenity of the area.
- **Watering amenity grass areas:** During the first 3 years following initial seeding or following re-seeding operations, water amenity grass areas during periods of extreme drought (2 or more weeks without substantial rainfall) to a maximum of 15 occasions. After establishment continue to water only if deemed to be required. To aid the natural establishment of grass areas, only water where unavoidable, where the grass is going brown and appears to be suffering from severe drought stress. When watering, water to field capacity (minimum 20L/m²) in the morning or in the evening to reduce water evaporation, when the water is more likely to reach the roots.
- **Watering Frequency:** The Landscape Management Contractor shall be entirely responsible for varying the frequency of these visits according to climatic conditions and for contacting the Adopting Organisation and agreeing the timing of any additional watering visits if required and where restrictions are placed on the use of water, sources and costs of obtaining second class water.

4.9.5 OCCASIONAL WORKS

- **Replacement of failed turf:** Small areas of dead, dying or failing grass and bulbs shall initially be made good through changes to the mowing regime or through temporary protection of high wear areas using temporary fencing or similar. Larger areas of degradation may require re-cultivating and reseeded. Cut out sections of distressed and failing or dead areas of turf using a suitable turf-stripping machine or for small areas by hand. Supply and lay new turf of a suitable standard and lay flush with existing sward, filling any cracks and top dressing with a 70:30 ratio mix of sand and screened topsoil. This sand/soil mix shall also contain grass seed of the same or similar species to the turf. For more wholesale degradation of the turf sward, the entire area will require to be re-seeded. Cultivate or power-harrow the affected area until a fine tilth is achieved (removing stones greater than 20mm) and grade until level with adjoining areas. Apply a pre-seeding fertilizer at a rate of 70g/m² and seed with a general amenity seed mix such as EL1 or EG22 or other equal and approved, raking until the seed is a few millimetres below the surface. Water thoroughly and maintain the soil in a moist condition, removing stones, weeding and mowing until the grass is established.

4.10 PROPOSED AMENITY GRASS MOWN PATHS

4.11.1 MANAGEMENT OBJECTIVES

- **General turf maintenance:** To maintain healthy, suitably hard-wearing grass for the function intended, with a consistent colouring and species mix. To ensure freedom from pests and diseases, water logging, drought and excessive wear that might cause degradation and failure.

- **Function and utility:** To ensure safe and useful amenity spaces for their intended purpose as a light trafficked mown walkway.

4.11.2 ANNUAL WORKS

- **General amenity turf maintenance:** Amenity grass paths shall be regularly mown, the frequency of which shall be 16 - 22 times annually, but shall be cut up to weekly intervals at peak growing times – mid March – Mid May, less than once a fortnight, in hot and dry summer weather, usually between mid-May and Late August and weekly again from September to November 10th. Cut to a height of 25mm. Increase height by 20mm in hot dry weather. One further cut may be needed in late November in very mild autumns. Cease cutting in November until Mid-March.
- **Watering amenity grass paths:** During the first 3 years following initial seeding or re-seeding operations, water amenity grass areas during periods of extreme drought (2 or more weeks without substantial rainfall). After establishment continue to water only if deemed to be required. To aid the natural reestablishment of grass areas, only water where unavoidable, where the grass is going brown and appears to be suffering from severe drought stress. When watering, water to field capacity (minimum 20L/m²). Water grass areas in the morning or in the evening to reduce water evaporation, because at this time the water is more likely to reach the roots of the grass plants, instead of evaporating off or getting locked up in the top 25mm of soil.

4.11.3 Occasional Works

- **Replacement of failed turf:** Dead, dying or failing turf shall be made good as appropriate through re-cultivating and re-seeding. Areas of high wear will need to be protected with suitable temporary chestnut paling or similar method. With kick about areas, this can be achieved by altering the orientation of the finer cut surfacing, through changes to the mowing regime. For amenity grassland areas, cut out sections of distressed and failing or dead areas of turf using a suitable turf-stripping machine or for small areas by hand. Supply and lay new turf of a suitable standard and lay flush with existing sward, filling any cracks and top dressing with a 70:30 ratio mix of sand and screened topsoil. This sand/soil mix shall also contain grass seed of the same or similar species to the turf. For more wholesale degradation of the turf sward, the entire area will require to be re-seeded. Cultivate or power-harrow the affected area until a fine tilth is achieved. Apply a pre-seeding fertilizer at a rate of 70g/m² and seed with a hard-wearing general amenity seed mix such as EL1 or other equal and approved.

4.11 PROPOSED WET MEADOW

4.11.1 DESCRIPTION

- Wet meadow grassland occurs in hollows, swales and where there is a perched water table, and can be seasonal. This sort of meadow will incorporate a diversity of wildflower and grass species (appropriate to the microclimate and soil type) different to the dry meadows, and will benefit a variety of species including birds, bats and invertebrates.
- In accordance with the ecologist's recommendations the area will incorporate several hibernacula close to the site boundaries to provide refuges for amphibians, reptiles, invertebrates and small mammals, locations to be advised by the ECoW.
- To maximise biodiversity, these areas will cut once annually – month to be advised by the ECoW, either June or August, according to species present.

4.11.2 MANAGEMENT OBJECTIVES

The management objectives for wildflower grassland areas will be to:

- To ensure the satisfactory establishment of the grass sward; and
- To maintain a healthy and biodiverse sward suitable for a range of wildlife.
- Where specified, a 1m margin of natural landscape adjacent to Native Hedgerows be maintained with a hay cut above 15cm.

4.11.3 ANNUAL WORKS

- **Cutting of wet wildflower areas:** Wet meadow grass and wet wildflower meadow areas shall be strimmed only once a year to a height of 100mm in late June for spring meadows, or late August, if summer species are desired.
- The ECoW will advise on specifics of each area according to the species present, which may change over time.
- To ensure that soil fertility is reduced, rake up the arisings immediately, or in hot dry weather, they can be left in situ for a maximum of 2 days to set seed before raking up and carting to the designated compost area on site, location as directed by the ECoW. In a warm and wet year, a second cut may be required and if so this should be carried out either in October or March as appropriate.
- The timing of all cutting operations should take into consideration any protected species (such as reptiles) that may be present. There may be an additional requirement for monitoring or a watching brief by the ECoW to ensure that no protected species are present. Once cut and raked up, all arisings shall be collected and removed off site as agreed.
- **General care:** Hand weed pernicious, ruderal and aggressive or invasive weeds in in order to maintain the visual amenity of the area. Do not herbicide or fertilise. Hibernacula should be left undisturbed. Arising's from tree surgery work can be retained on site and used to create new hibernacula as required.

4.11.4 OCCASIONAL WORKS

- **Replacement of failed wildflower grassland areas:** Meadow grass and wildflower sward that is species poor shall be enhanced. In areas of low fertility, closely strimming or mow the existing sward and remove all cuttings in August.
- Rake or scarify to disturb the ground and overseed with a suitable mix of wildflowers selected to the microclimatic and soil conditions and repeatedly tread over the area. After sowing mow the grass to a height of 60mm in height to allow light and air to the emerging seedlings for a full growing season.
- In areas where soil fertility is too high or the sward has failed the area will require re-cultivating and re-seeding. Remove dead material and re-cultivate the topsoil to a depth of 100mm. Small areas may be reseeded following the autumn cut by spreading the cut arisings onto the bare soil to set seed. For more wholesale degradation, cultivate the affected area until a fine, level tilth is achieved, removing stones greater than 20mm diameter. **Do not fertilise or herbicide.** Evenly seed with an appropriate seed mix (80% grasses: 20% wildflowers) selected to the microclimatic and soil conditions at the specified rate. Carefully rake in thoroughly to ensure that the seed is a few millimetres below the surface and roll using a very light roller or a cylinder

mower, ensuring the surface is even and level. Water thoroughly and maintain the soil in a moist condition, removing stones, weeding and mowing until the grass is established.

4.12 PROPOSED BIRD BOXES

4.12.1 DESCRIPTION

4.12.2 Bird boxes will be provided for a variety of locally occurring bird species. Boxes will be positioned so they are sheltered from prevailing wind, rain and strong sunlight, normally facing north through to south-east on suitable mature trees and buildings, at a height of 4m and above, depending on the bird species, ensuring a clear flight path to the entrance.

4.12.3 Different types of boxes (hole-entrance and open-fronted) will attract a variety of different birds. The type of bird boxes, density, and location should be agreed on site with the consultant ecologist. All boxes should be specified as per paragraph 3.2.1 as these are known to be durable, long-lasting and to regularly attract birds to nest.

4.12.4 When positioning boxes on trees, nails should be long and only be hammered in halfway to allow for tree growth and minimise the risk of boxes being pushed off. Ideally nails should be aluminium alloys which would be unlikely to significantly damage chainsaws or chippers. Boxes can be purchased through on-line suppliers such as NHBS or similar and approved.

4.12.5 Bird boxes are proposed to be erected around the site as specified in paragraph 3.2.1 ensuring the entrance is free from obstruction. Favoured sites are close to linear features along the hedge line or incorporated into the building.

4.12.6 Bird boxes will be checked annually for damage by the management company. The management company will be responsible for ensuring that the boxes are not subject to vandalism and are replaced if lost or damaged.

4.12.7 SPECIFIC OBJECTIVES

4.12.8 The management objectives for bird boxes are to:

- Provide sheltering and nesting opportunities for a variety of bird species.
- Ensure nest boxes are maintained for the functionality for birds and for safety to the public.

4.12.9 ANNUAL WORK

4.12.10 All nest boxes should be annually inspected for presence, damage, obstruction and if necessary, should be cleaned. Inspection and cleaning should be conducted during winter months to avoid impact on nesting birds.

4.11.5 OCCASIONAL WORK

If replacement through loss or damaged is required, it should be for an identical product positioned in a similar location.

4.13 PROPOSED BAT BOXES

- 4.13.1 Bat boxes will be provided for a variety of locally occurring bat species. Boxes will be positioned so they are sheltered from prevailing wind, rain and strong sunlight, normally facing north through to south-east on suitable mature trees and buildings, at a height above 4m depending on the bat species, ensuring a clear flight path to the entrance.
- 4.13.2 Different types of boxes (hole-entrance and open-fronted) will attract a variety of different bat. The type of bat boxes, density, and location should be agreed on site with the consultant ecologist. All boxes should be as specified in paragraph 3.2.1.
- 4.13.3 When positioning boxes on trees, nails should be long and only be hammered in halfway to allow for tree growth and minimise the risk of boxes being pushed off. Ideally nails should be aluminium alloys which would be unlikely to significantly damage chainsaws or chippers. Boxes can be purchased through on-line suppliers such as NHBS or similar and approved.
- 4.13.4 Bat boxes are proposed to be erected around the site in groups of three, to include a range of different aspects (mainly to the south or west but providing a variety of different positions to offer a range of climatic conditions). Boxes should be placed as high as possible, (4m and above), ensuring the entrance is free from obstruction. Favoured sites are close to linear features along the hedge line or incorporated into the building. All boxes should be Schwegler as these are known to be durable, long-lasting and to regularly attract bats to roost.
- 4.13.5 Bat roosts are protected under law, so should any bat boxes require maintenance or repair be required a bat licenced ecologist will be required to carry this out. The management company will be responsible for ensuring that the boxes are not subject to vandalism and are replaced if lost or damaged, under licenced supervision for the bat boxes.
- 4.13.6 MANAGEMENT OBJECTIVES
- 4.13.7 The management objectives of the bat boxes are to:
- Provide sheltering and nesting opportunities for a variety of bat species.
 - Ensure nest boxes are maintained for the functionality for bats and for safety to the public.
- 4.13.8 ANNUAL WORK
- 4.13.9 Any maintenance required should be carried out by suitably licenced ecologist certified to handle bat boxes. Damaged or obstructed boxes should be replaced for an identical product in a similar location.
- 4.13.10 OCCASIONAL WORK
- 4.13.11 The boxes should be cleaned once every three years by a suitably licensed bat ecologist. Unlicensed individuals should not interfere with bat boxes or bricks once installed.

4.14 PROPOSED HIBERNACULA

4.14.1 DESCRIPTION

4.14.2 To increase the structural diversity within the wildflower grassland area several hibernacula will be provided; these will provide important refuges and microhabitats for reptiles and other wildlife. These form part of the EMS to provide additional habitat, shelter, and nesting/roosting opportunities for the species present.

4.14.3 MANAGEMENT OBJECTIVES

4.14.4 The management objectives for hibernacula are to:

- Maintain important refuge areas for a variety of species, including reptiles, amphibians, and insects.

4.14.5 INITIAL WORKS

4.14.6 To provide reptile habitat structure until the scrub and grassland has developed, a series of shelters, hibernacula and breeding foci will be established in the second year after sowing (management in the first year precludes it). Shelters will be constructed either from logs or brash resulting from habitat clearance on the development site. Brash piles are made with a compacted central core of branches and twigs covered by layers of looser laid brash. Log piles are made from a variety of log sizes and shapes, with some wood chips layered through to occasionally fill voids and provide micro-habitat variation. Both types of shelter are subject to decomposition and will therefore be 'topped' up every couple of years. It is essential that these shelters are located away from public disturbance and so will be placed at the edges of the field away from the path.

4.14.7 Hibernacula will be created using a range of material which will be readily available on site either from habitat clearance or building demolition. The core of each hibernaculum can be made from timber, brash, inert hardcore, bricks, rocks or building rubble. It is important that heavier material such as rubble is not placed on top of compostable material which will in time drop and potentially block entrance and exit routes. The core is covered over with topsoil and covered with either turf or seeded immediately for rapid establishment of vegetation cover. Access points are created by allowing some of the core material to protrude from the soil covering at ground level, but pipes should not be used for this purpose. Minimum measurements for hibernacula are at least 4 m long x 2 m wide x 1 m wide, with one long bank facing south.

4.14.8 Breeding sites can also be easily constructed from readily available material. The Grass Snake lays eggs in a warm environment, generally of vegetative material, and compost heaps are ideal providing that they are actively decomposing and producing heat. Piles of grass cuttings will be created at suitable locations throughout this habitat mosaic, the larger the pile the better, but they should be at least 1 m³ in volume.

4.14.9 A 1m buffer strip surrounding ponds, log piles and hibernacula will be retained where no cutting occurs, to allow continual cover for reptiles, amphibians and birds using these features

4.14.10 ANNUAL WORK

4.14.11 Once created the hibernacula will be seeded with wildflower meadow mix EM2.

- In the first year following development spot treatment for weed species will be undertaken and the grassland over the hibernacula will be strimmed on a regular basis and all arising will be left in situ.
- In subsequent years the grassland over the hibernacula will be strimmed to a height of approximately 50mm on an annual basis in mid-summer and the arisings will be left in situ. Strimming in mid-summer will allow the regeneration the grassland over the hibernacula prior to the hibernation period.

4.15 STRUCTURES, WALLS, RAILINGS, FENCING AND GATES

4.15.1 Throughout the site a combination of elements, such as walls, railings and fencing have been used to define and enclose private spaces associated with the residential premises, such as back and front gardens.

4.15.2 Boundary treatments such as bollards and knee rail are proposed to informally enclose open space to contain activities such as the sports pitch or play area.

4.15.3 The management objectives for these areas will be to:

- To ensure structures, walls and fencing are safe, functional, sound, clean and free from dilapidations, hazards, rot, vandalism or damage, graffiti, and grime.
- To repair and preserve structures, such as railings and fences, staining or painting to suit, when required and sufficient intervals to ensure a well-maintained appearance.
- To keep bins emptied regularly.

4.15.4 ANNUAL WORKS

4.15.5 General maintenance for structures and walls: Inspect structures, walls monthly taking great care to inspect piers, masonry, pointing and jointing, copings, damp proof courses etc. Look for and record any cracking, loose elements, damage, graffiti, spalling cement, efflorescence or dampness issues, sapping, flaking, or crumbling of masonry or units. All defects shall be carefully recorded and arrangements for repair made within seven days with an approved masonry contractor as appropriate.

4.15.6 General maintenance for timber fences: Inspect posts, footings, rails, styles, braces, fixings, latches, bolts, fasteners and paint or stain work. Check that posts are upright and firm and that footings are intact. Ensure that fixings show no signs of rust. Record all defects carefully and making arrangements for making good, repair adjusting, tightening or re-painting/ staining as required within seven days with an approved fencing, decorating or cleansing contractor as appropriate.

4.15.7 General maintenance for railings: Inspect posts, footings, rails, rods, braces, fixings, latches, bolts, fasteners, galvanising, and paint work. Check that posts are upright and firm and that footings are intact. Ensure that fixings, metalwork, and paint work

show no signs of rust, chipping, flaking, abrasion, or any other defect. Record all defects carefully and making necessary arrangements for making good, repair, adjusting, tightening, or re-painting/ staining as required within seven days with an approved specialist fencing, decorating, or cleansing contractor as appropriate.

4.15.8 Railings that have defective paintwork shall be painted with paint to match existing. Apply with a suitable brush for the paint type (e.g. some metal work paints need a Turks-head brush, and ensure 100 Microns per coat, and a total of 3 coats, applied in dry open weather, above the dew point and following suitable preparation work, cleansing the surfaces with soap and water and then allowing adequate drying time. Re-painting shall take place at 5–10-year intervals or as required to keep paintwork in good condition.

4.15.9 OCCASIONAL WORKS

4.15.10 Changes and renewals for structures, walls, railings, fencing and gates: Where scheduled inspections report defects to structures and other enclosing elements, that are in need of wholesale replacement, extension or alteration in order to function satisfactorily and to minimise risk of injury or harm, and where such items are found to be beyond repairable condition, then these changes or renewals should be affected immediately. Demolish and remove defective elements and replace or add masonry, panels, posts, timber work, or metalwork, as appropriate - including carting away the failed and excavated or broken out materials to skip, ensuring all new elements match those existing in all respects, both the material type and gauge/ dimensions and the decorative finish and colour.

4.16 HARD LANDSCAPE AREAS

4.16.1 DESCRIPTION

- A range of hard landscape areas will be incorporated into the development layout including footpaths and shared car parking areas.

4.16.2 MANAGEMENT OBJECTIVES

- To ensure that hard landscape surfaces are safe and comfortable to use and are clean from litter and other debris.

4.16.3 ANNUAL WORKS

- **General cleanliness:** All paved surfaces shall be swept monthly to ensure that they are clean, tidy, and free from dust, litter and debris (removing all arisings off site). Increase sweeping to fortnightly in autumn when leaves are falling.
- **Condition of paved surfaces:** All hard landscape surfaces and edgings shall be inspected monthly checking for mechanical damage, vandalism, settlement, frost heave, staining, litter and debris or any other defect. Any such defects shall be documented, and a corrective methodology agreed with the Adopting Authority and implemented as appropriate by the Landscape Management Contractor.

4.16.4 OCCASIONAL WORKS

- **Repairs and renewals:** Where scheduled inspection detects paved areas are in need of replacement, extension or alteration to their original intended function or to minimise risk of injury, then such repair and/or renewals should be affected immediately.

- Remove defective paving, through excavation and make good base and sub-base materials as required, re-use salvageable paving units, and relay paving, buying in new products to replace any that are damaged or defective. Where there is differential settlement or the units wobble, or are not firmly bedded, jointed or pointed, ensure that the units are relayed firmly, re-bedding, jointing and where appropriate pointing, all to match the bonding pattern existing on site.

5.0 IMPLEMENTATION, MONITORING AND REVIEW

5.1 IMPLEMENTATION

- 5.1.1 A Private Management Company will be established for the site to undertake all management aspects relating to the external landscape areas that lie outside of private residential gardens.
- 5.1.2 The Private Management Company will coordinate all management of the site in perpetuity in accordance with this Landscape Management Plan and the accompanying maintenance schedules. A representative of the Private Management Company will be appointed as the main point of contact for residents, relating to the management of the site.
- 5.1.3 The Private Management Company may employ a Landscape Management Contractor to carry out general maintenance operations. Specialist Contractors may be used on an as needs basis to complete specialist operations and/or occasional works.
- 5.1.4 The Private Management Company may also appoint from time-to-time consultants to provide specialist advice, monitoring or to undertake a watching brief in relation to aspects of this site or specific maintenance operations. This may include suitably qualified ecologists, arboriculturists, landscape architects, engineers and/or health and safety executives.
- 5.1.5 All works, materials and operations will be in accordance with relevant legislation, British Standards, Regulations (including the CDM Regulations) and Codes of Practice.

5.2 PROCESS FOR MONITORING AND REVIEW

- 5.2.1 The Landscape and Ecological Management Plan and maintenance schedules will be monitored and assessed for their effectiveness on an annual basis for the first five years following the completion of the development.
- 5.2.2 Each annual review will be coordinated and completed by a suitably qualified representative of the Adopting Authority. The review will include advice from specialist consultants as required (such as a qualified Arboriculturist and ecologist), the Landscape Management Contractor and other stakeholders including representative(s) from the LPA and **residents**.
- 5.2.3 To this end the review may include (as appropriate):
- **Specialist reports** - advising on particular aspects such as protected species, general silvicultural husbandry and health and safety issues;

- Records or attendance sheets demonstrating the maintenance work undertaken; and
 - A walk over assessment of the landscape areas to assess landscape components and their condition, and the need for enhancement including minutes.
- 5.2.4 The review should identify any changes to site conditions and circumstances, whether the aims and objectives of the Landscape and Ecological Management Plan are being met, and where identified changes are need to existing management practices and timeframes. Furthermore, any strategic enhancements, including new planting should be identified and priorities established for undertaking these works.
- 5.2.5 Within 1 calendar month of the review, a revised Landscape and Ecological Management Plan shall be produced (if appropriate) and circulated to stakeholders. Within 5 years of the completion of the site, then the revised document shall be submitted to the LPA as a non-material amendment to the previously approved Landscape Management Plan.
- 5.2.6 After the first five years the Landscape and Ecological Management Plan will be reviewed every five years, or as required to ensure the satisfactory management of the landscape in perpetuity.

5.3 GENERAL STANDARDS

- 5.3.1 All maintenance and management operations and materials should comply with relevant legislation, British Standards, Regulations (including the CDM Regulations 2015) and Codes of Practice (as amended).
- 5.3.2 All works should be completed at an appropriate time of year and in accordance with relevant UK wildlife legislation. i.e. and for example, all tree works, and vegetation clearance should be undertaken to avoid the bird breeding season, because all birds are protected (Wildlife and Countryside Act, 1981 (as amended)) whilst establishing a nest and until that nest is vacated. In this respect, the period late August to March is most appropriate.
- 5.3.3 Due to the possibility of unseasonal weather conditions, an inspection should be made for active nests prior to vegetation clearance even outside this period. All retained trees will be managed to promote their amenity and wildlife value, whilst ensuring the health and safety of the public.
- 5.3.4 The use of herbicides or pesticides is discouraged and should only be applied following a risk assessment to consider potential effects on the environment and human health. Where required, treat invasive and/or persistent weeds with spot applications of translocated herbicide, taking care to avoid spray drift. Pesticides should only be used for major infestations or outbreaks if the general public or the long-term health of shrubs or trees is likely to be affected.
- 5.3.5 Any treatment must be carried out using an appropriate and authorised product in accordance with the COSHH Regulations 2002, EU Biocides Regulations 528/2012, COPR Regulations 1986 (as amended), product COSHH/Safety Data Sheet and manufacturer's instructions, using the principles of good control practice by a

skilled and certified operative in suitable weather conditions. Further information can be found at <http://www.hse.gov.uk>.

- 5.3.6 The maintenance of all SuDS components should be in accordance with the CIRIA C753 'SuDS Manual,' the approved SUDs and Drainage Maintenance and Management Plan and best practice.
- 5.3.7 Where practical, fallen and dead timber may be left in situ creating valuable deadwood habitat. If this is not feasible fallen timber (or that arising from tree surgery works) can be used on-site for reptile refugia and hibernaculum or similar habitat features as deemed appropriate by the ECoW or Ecologist. All other waste (rubbish, debris etc.) arising from management operations shall be removed and suitably disposed of off-site.
- 5.3.8 The planting of invasive and non-native plant species is prohibited within all open space areas.

5.4 HEALTH AND SAFETY

- 5.4.1 In accordance with the Health and Safety at Work Act, the Management Company and all contractors should carry out their own risk assessment in respect of all operations and external hazards.
- 5.4.2 All operatives should be appropriately trained and qualified.
- 5.4.3 The health and safety of users of the public accessible open spaces should be ensured, always, as a priority.

6.0 APPENDICES

6.1 MANAGEMENT AREAS PLAN (Not to Scale)



6.2 SCHEDULE OF MAINTENANCE OPERATIONS

Maintenance Operation	Number of Visits (to be dependent on season – where not dependent on season, if appropriate, the timing shall be agreed between the Adopting Organisation and the Contractor. Indicative timings are shown with a *)					Total number of visits per year	Additional Comments
	Jan – March (13 weeks)	April – June (13 weeks)	July – Aug (9 weeks)	Sept – Oct (9 weeks)	Nov –Dec (8 weeks)		
GENERAL							
Collection and removal of litter and other debris	Once per month	Once per month	Once per month	Once per month	Once per month	12	All hard and soft areas. Cart away litter/debris and remove off site to licensed tip.
PAVING							
Inspection and sweeping	Once per month	Once per month	Once per month	Once per month	Once per fortnight while leaves dropping	14	Document any defects, recommend methodology and carry out remedial works as required.
SOFT WORKS							
Visual inspection of mature trees	Once per month	Once per month	Once per month	Once per month	Once per month	12	On each visit or as required.
Annual Arboricultural Assessment of mature trees and hedgerows		*	*	*		1 (plus additional visits as required)	To be completed by a qualified Arboriculturist annually when trees are in leaf or as required when visual inspections identify a health and safety risk.
Tree Surgery and significant works to boundary vegetation/hedgerows	*				*	1	As identified by arboricultural assessment following approvals from LPA. To be carried out outside of the bird nesting season and following advice from an ecologist.
Cutting/trimming of native hedgerows	*				*	1	To be carried out outside of the bird nesting season.
Cutting of ornamental hedgerows			Once in June	Once in late November		2	Or as required to maintain a formal appearance.
Hand weeding		Once per month	Once a month	Once per month	*	4-8	Weed by hand taking care not to disturb sheet or bark mulch. Remove arisings off site.

Maintenance Operation	Number of Visits (to be dependent on season – where not dependent on season, if appropriate, the timing shall be agreed between the Adopting Organisation and the Contractor. Indicative timings are shown with a *)					Total number of visits per year	Additional Comments
	Jan – March (13 weeks)	April – June (13 weeks)	July – Aug (9 weeks)	Sept – Oct (9 weeks)	Nov –Dec (8 weeks)		
Spot herbicide application	Once in late March		Once in late June, once in mid-August	Once in mid-October		4	To occur at approximately 6-week intervals only if required.
Watering		Once per fortnight	Once per fortnight	Once per fortnight		15	Water once per fortnight from April to September until trees/plants/grass areas are established. Watering frequency should be adjusted by the Landscape Management Contractor depending on climatic conditions. Increase watering during hot and dry weather until plants have established.
General maintenance of planted areas	*	Optimum time for application of bark mulch	*	*	*	12	Check at each visit. Apply bark mulch as and when required within the first 3 years.
Fertilising trees and shrubs		Once in early May		Once in mid-September		2	Fertilize new trees and planting, once in early May and once in late September. Use a slow-release product, ideally granular.
Checking, adjusting, replacing or removing tree stakes and ties	*	*	*	*	*	12	At each visit as required
Pruning trees and shrubs	Optimum time for Buddleia & Cornus				Optimum time for most species	1	As required to sound horticultural practice between October and March. Cut back grasses in spring.

Maintenance Operation	Number of Visits (to be dependent on season – where not dependent on season, if appropriate, the timing shall be agreed between the Adopting Organisation and the Contractor. Indicative timings are shown with a *)					Total number of visits per year	Additional Comments
	Jan – March (13 weeks)	April – June (13 weeks)	July – Aug (9 weeks)	Sept – Oct (9 weeks)	Nov – Dec (8 weeks)		
Cutting formal lawns	Only if required from start of growing season	Once per week	Once every fortnight	Once per week	As required to finish of growing season	Max 20 per year according	Mowing frequency to be adjusted according to climatic conditions and use. Reduce frequency to fortnightly in hot and dry weather. Collect and remove arisings at each cutting.
Cutting amenity grass areas	Only if required from start of growing season	Once every fortnight	Once every 3 weeks	Once every fortnight	As required to finish of growing season	12-15 times per year	Mowing frequency to be adjusted according to climatic conditions and use. Reduce frequency to every 21 days in hot and dry weather.
Edging lawns and amenity grass areas		Once per month	Once per month	Once per month		7	Re-profile and edge shrub beds at start of growing season with half-moon tool, then strim or cut margins with edging shears throughout growing season.
General lawn care		Once		Once		2	Apply a fertiliser, selective weed killer and moss retardant in May and September.
Cutting wildflower grassland	*		Once in late August	*		1	In hot dry weather leave cuttings to set seed for 2 days before collecting and removing off site. Cut again in October or in March if required due to weather conditions. Cutting may be varied by ecologist if reptiles are present.
Replacement of tree, hedgerow and shrub planting	*				Optimum time for most species	1	As required. To include enhancement planting.

Maintenance Operation	Number of Visits (to be dependent on season – where not dependent on season, if appropriate, the timing shall be agreed between the Adopting Organisation and the Contractor. Indicative timings are shown with a *)					Total number of visits per year	Additional Comments
	Jan – March (13 weeks)	April – June (13 weeks)	July – Aug (9 weeks)	Sept – Oct (9 weeks)	Nov – Dec (8 weeks)		
Replacement of amenity grass and wildflower areas				Optimum time		1	As required.
Swales and Ponds – remove leaves and debris & clear up to 1/3 of marginal/aquatic vegetation.				Once		1	Clearance on a rotational basis to maintain 50% open water.
Ponds – trim wildflower margins					Once	1	On a 2-4 year rotation
Scrub clearance						1	As required and informed by the ecologist and Arboriculturist
Thinning & coppicing							To be informed by the annual arboricultural survey
CONSERVATION:							
Visual inspection of bat and bird boxes for presence, damage and obstruction.	* Outside nesting season					1	If required, replace with an identical product in similar location
PLAY AREAS:							
Visual Inspection of playable features & safety surfacing	Once every 2 weeks	Once every 2 weeks	Once every 2 weeks	Once every 2 weeks	Once every 2 weeks	24	To be adjusted as required
Operational Inspection of playable features & safety surfacing	As recommended	As recommended	As recommended	As recommended	As recommended		To be adjusted as required
Visual and Operational Inspection of playable features & safety surfacing	Once every 2 weeks	Once every 2 weeks	Once every 2 weeks	Once every 2 weeks	Once every 2 weeks	1	Any defect recorded and arrangements for repair made within seven days

6.3 Indicative Pruning Schedule for Plants

Plant Species	Pruning dates	Pruning amount	Crown raising	Additional Comments
<i>Betula pendula</i>	Dec/Jan	n/a	every 5 years	Thin by 50% in year 15
<i>Cornus sanguinea</i>	Feb/March	Reduce by 20%	Never	Coppice - 4 years
<i>Corylus avellana</i>	Dec/Jan	Reduce by 10%	If required	Coppice - 8 years
<i>Crataegus monogyna</i>	Dec/Jan	Reduce by 5%	Every 5 years	Thin at 15 years (30%). Coppice 8 years
<i>Frangula alnus</i>	Dec/Jan	Reduce by 5%	If required	Coppice - 8 years
<i>Fraxinus excelsior</i>	Dec/Jan	n/a	Every 5 years	Thin at 15 years
<i>Ligustrum vulgare</i>	Dec/Jan	Reduce by 10%	Never	Prune leggy growth only
<i>Prunus spinosa</i>	Dec/Jan	Reduce by 5%	If required	Coppice - 8 years
<i>Prunus avium</i>	Dec/Jan	n/a	Every 5 years	Thin at 15 years
<i>Quercus robur</i>	Dec/Jan	n/a	Every 5 years	Thin at 15 years
<i>Rhamnus cathartica</i>	Dec/Jan	Reduce by 10%	Never	Coppice - 8 years
<i>Rhamnus frangula</i>	Dec/Jan	Reduce by 10%	Never	Coppice - 8 years
<i>Rosa canina</i>	Dec/Jan	Reduce by 10%	Never	Coppice - 4 years