



LANDSCAPE AND ECOLOGICAL MANAGEMENT AND MAINTENANCE PLAN

Guide to the Management of Landscape and Ecological Areas at Suffolk, Haverhill, Phases 2-6

REF JBA 18/351 – CMP1

ON BEHALF OF
Persimmon Homes Suffolk

MARCH 2020

Over 30 Years of Service, Value and Innovation

34-52 Out Westgate, Bury St. Edmunds, Suffolk IP33 3PA
tel: **01284 335797** email: jamesblake@jba-landmarc.com

Chairman: James Blake BA (Hons) Dip LA (Hons) CMLI

Company Secretary: Louise Blake BSc PGCE

Directors: Elzbieta Zebrowska MSc Eng LArch MScEnvSc CMLI : Kevin Slezacek DipArb MARborA

Associate Directors: Vivienne Jackson : Marie Lowe CIMA Cert BA

www.jba-landmarc.com

Registration no.08169866 VAT no.512.4127 91

Contents

1.0	INTRODUCTION	3
1.1	PURPOSE AND SCOPE OF DOCUMENT	3
1.2	THE GROUNDS	3
1.3	RECITALS	5
2.0	AIMS AND OBJECTIVES OF THE LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN	7
2.1	AIMS	7
2.2	OBJECTIVES	7
3.0	GENERAL ECOLOGICAL ADVICE	9
3.1	INTRODUCTION	9
3.2	GENERAL MANAGEMENT ADVICE (APPLYING TO ALL PHASES OF DEVELOPMENT)	9
4.0	SPECIFIC ELEMENTS REQUIRING MANAGEMENT AND MAINTENANCE	11
4.1	LANDSCAPE AREAS AND LANDSCAPE COMPONENTS	11
4.2	EXISTING / MATURE TREES	11
4.3	EXISTING HEDGEROWS	13
4.4	PROPOSED TREE PLANTING	15
4.5	PROPOSED NATIVE HEDGEROWS	17
4.6	PROPOSED NATIVE WHIP/SHRUB AND BUFFER PLANTING	18
4.7	PROPOSED AMENITY GRASS AND BULBS	22
4.8	PROPOSED SPORTS PITCHES	24
4.9	PROPOSED WILDFLOWER MEADOW	25
4.10	PROPOSED WET MEADOW	26
4.11	PROPOSED WETLAND MARGINAL PLANTING	28
4.12	PROPOSED ATTENUATION BASIN	28
4.13	PLAYABLE FEATURES	29
4.14	STREET FURNITURE	31
4.15	RAILINGS AND GATES	33
4.16	HARD LANDSCAPE AREAS	34
5.0	IMPLEMENTATION, MONITORING AND REVIEW	35
5.1	IMPLEMENTATION	35
5.2	PROCESS FOR MONITORING AND REVIEW	35
6.0	APPENDICES	37
6.1	MANAGEMENT AREAS PLAN (Not to Scale)	37
6.2	SCHEDULE OF MAINTENANCE OPERATIONS	38
6.3	Indicative Pruning Schedule for Plants	43

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE OF DOCUMENT

- 1.1.1 The Management Plan 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 Suffolk, Haverhill, Phases 2-6. 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.
- 1.1.2 The purpose of this document is to schedule all required maintenance regimes, operations and works necessary for the satisfactory management of the landscape in perpetuity. The Management Plan sets out the management aims and objectives for the site along with the specific management objectives for each landscape component, and the associated maintenance works required on an Annual and Occasional basis. The Annual Works are those works that will be required every year, such as watering, weeding and cleaning. The Occasional Works are those that will be required on an irregular or cyclical basis, such as repairs and renewals.

1.2 THE GROUNDS

1.2.1 Location

The site is located to the north of Haverhill, west of the A143 and east of Withersfield Road. The northern side of the site adjoins existing open undeveloped agricultural land. The land is bordered to the south with existing residential development. See Fig's 1 and 2.

1.2.2 Site Description and Development Proposals

The proposals for the site comprise public open space development, sport areas, play areas together with parking areas, amenity areas and landscaping. The boundaries of the site are defined by grasslands and hedges as part of a larger agricultural landscape and the A143 to the east and existing residential development to the south. The proposed boundaries of the site will be a mix of native hedges, wildflower mix, canopy and sub-canopy mixes. The majority of the existing vegetation is to be removed and replaced as part of a comprehensive detailed landscape scheme (refer to drawing JBA 18/351).

- 1.2.3 An ecological baseline site audit was undertaken in September 2009 and updated in 2019, the results of which are discussed in Section 3.1

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

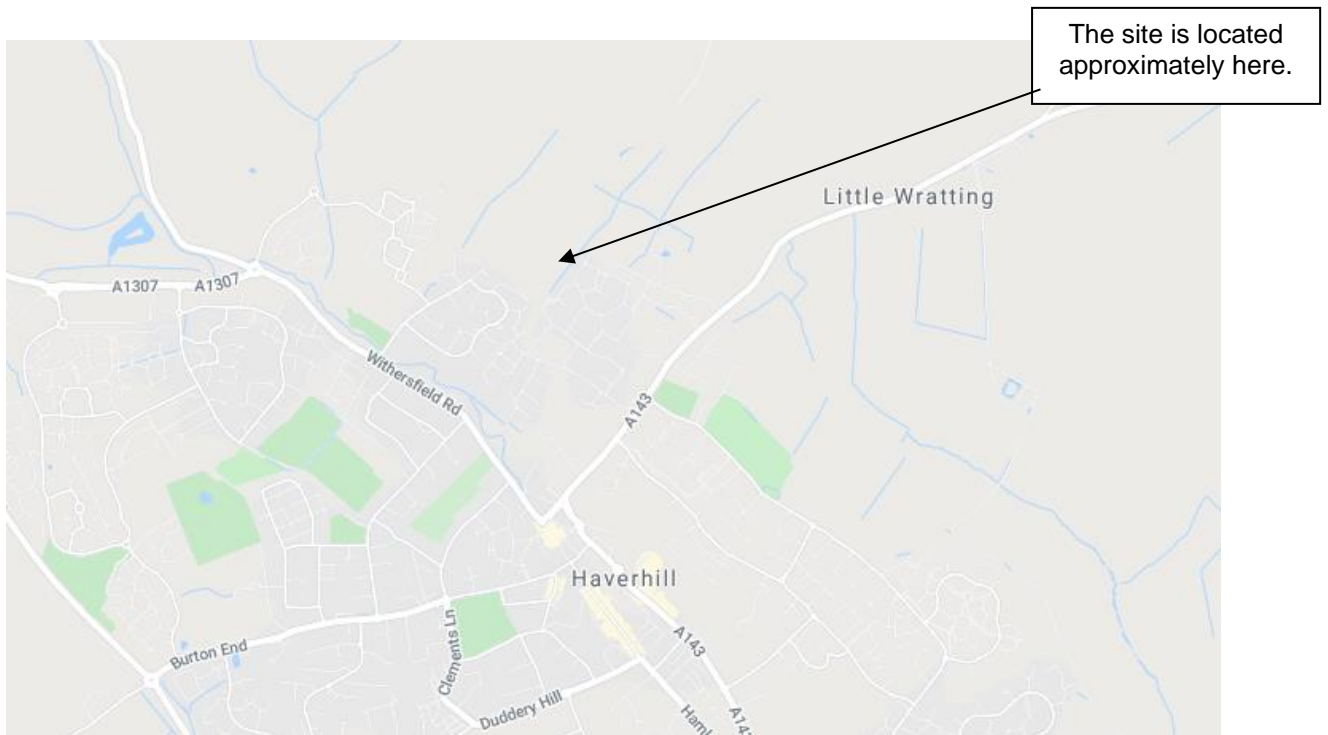


Fig 2. Location plan: Site Boundary: Not to scale



1.2.4 Management Plan Areas

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.

- 1.2.5 All of 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

- **The Developer:** Persimmon Homes Suffolk 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.
- **The Local Planning Authority:** This term (abbreviated to LPA) shall refer to Mid Suffolk District Council and its Planning and Landscape Officers who are involved in the process of the approval of landscape and other documentation.
- **The 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.
- **The 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 and Ecological Management Plan

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 and Ecological 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.

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 and Ecological Management and Maintenance Plan, unless any variation is approved in writing by the Local Planning Authority.

- 1.3.3 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.

1.3.4 **Supportive Information**

This Management Plan is submitted together with the Detailed Soft Landscape Proposals (drawing number JBA 18/351-01-11), the Management Areas and Responsibilities Plan and the Schedule of Maintenance Operations, attached as Appendices (6.1-6.3) to this document.

2.0 AIMS AND OBJECTIVES OF THE LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN

2.1 AIMS

2.1.1 The principal aims of this Landscape and Ecological Management Plan are 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 existing retained, and proposed landscape components.

2.2 OBJECTIVES

2.2.1 The main objectives of the Landscape and Ecological Management Plan are as follows:

- **To maintain landscape character:** To protect and conserve the existing landscape character and screening function of the existing trees on site, and to incorporate locally indigenous species within screening/structural landscape areas, to provide an attractive and robust landscape setting for the buildings on the site and reinforce local distinctiveness;
- **The sustainable management of existing vegetation:** To retain existing trees, hedgerows and other 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 achieve a high standard of maintenance:** To take measures to ensure the successful establishment and growth of 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 bats and reptiles;
- **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 or 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).

3.0 GENERAL ECOLOGICAL ADVICE

3.1 INTRODUCTION

A Preliminary Ecological Appraisal Report was prepared (JBA, 2019) which mapped the key habitats on site and made recommendations for further detailed species surveys which were carried out in 2019/2020. The findings of these surveys are summarised as follows:

- The main habitats within the site boundary are the formerly cultivated arable fields, hedgerows with ditches, grassy field margins and scrub.
- Several hedgerows on site are classed as 'important' under the Hedgerow Regulations 1997 and several hedgerows are considered to be species-rich.
- Great crested newts are not present within waterbodies within 500m of the site boundary.
- Reptiles were not found on site.
- Dormice are unlikely to be present within the site.
- No evidence of badger on site was found.
- Hedgerows, mature trees and scrub on site are used by common and widespread bird species for nesting and/or feeding. Seven pairs of skylark were breeding in the fields.
- The site is used by five bat species for feeding and commuting, including the Near Threatened Barbastelle *Barbastella barbastellus*. The majority of the bat activity was recorded along the internal and boundary hedgerows.
- Sulphur clover *Trifolium ochroleucon*, a Nationally Scarce species, was recorded on site adjacent to certain hedgerows. Other species of interest included dwarf spurge *Euphorbia exigua* (Near Threatened), bee *Ophrys apifera* and pyramidal orchids *Anacamptis pyramidalis* were also recorded on site.
- An important aim of this Management Plan is to prescribe works which will maintain and enhance habitats and features of benefit to protected species known to be present within the local area, as well as provide general enhancements for the wider benefit of local flora and fauna.

An arboricultural method statement detailing the protection of retained trees and an ecological constraints plan have been produced by JBA.

3.2 GENERAL MANAGEMENT ADVICE (APPLYING TO ALL PHASES OF DEVELOPMENT)

No Category A or B trees are to be removed unless otherwise agreed in writing by West Suffolk Council.

Any tree surgery works should be undertaken by a suitably qualified arboricultural contractor, registered with the Arboricultural Association.

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'.

All pruning/removal works to trees, hedgerows and shrubs 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 March to 31st July inclusive (though may extend into February and August for some species). Work during the nesting season could take place but only if an inspection by a suitably experienced ecologist confirms no nesting birds are present.

Given the presence of ground nesting birds (skylarks) in the arable fields, no vegetation clearance of the vegetation in the fields should take place in the bird breeding season unless a suitably experienced ecologist has carried out a nesting bird check within the 48 hour period before work commences.

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.

If at this time any bats are found, work should stop immediately and 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 Landscape Management Plan include the following components:

- Existing/mature trees;
- Existing hedgerows;
- Proposed tree planting;
- Proposed native hedgerows;
- Proposed native whip, shrub and buffer planting
- Proposed amenity grass and bulbs;
- Proposed sports pitches;
- Proposed wildflower meadow;
- Proposed wet meadow;
- Proposed wetland marginal planting;
- Proposed attenuation ponds;
- Playable features;
- Street furniture;
- Railings, fencing and gates; 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 Description

- The majority of existing trees around the boundary of the site will be retained as part of the landscape strategy for the development. A few have been identified as being in need of removal.
- The Tree Survey Schedule and Tree Protection Plan (TPP) identify the location, species, size and condition of the existing trees 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.

4.2.2 Management Objectives

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

- Visual Inspection:** Trees should be regularly (or other frequency according to evaluated recorded risk level) 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.
- Annual Arboricultural Assessment:** In any event, an Arboricultural Assessment should be undertaken once annually (or other frequency according to evaluated recorded risk level) 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 4.2.4 below.

4.2.4 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 inclusively). 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.

- iii) **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.
- iv) **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 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 replacement 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 Description

- 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.

4.3.2 Management Objectives

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.

4.3.3 Annual Works

- Annual Cutting of Native Hedgerows:** To maintain a natural profile, hand trim or cut the top and sides of native hedges once annually, or preferably on a 3-year rotation if the hedge does not border road or footpath, to allow the development of thick hedgerows which provide cover for a variety of species. Cut should be done no earlier than late November which is outside of the bird nesting season, once leaves have started to drop. Cuts could be taken as late as January to allow fruiting tree species to finish fruiting and allow birds to continue feeding further into winter. Trim the hedge to at least 3m to form an even 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.
- 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. Note that some of the hedgerows support the Nationally Scarce plant, Sulphur clover, in their margins and these areas should not have any applications of herbicides, pesticides or fertilisers. If required, the margins can be cut once per year and the arisings removed when the clover has finished flowering and setting seed in late August.
- 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 4.3.4 below.

4.3.4 Occasional Works

- Occasional Works to Native Hedgerows:** 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.

- ii) **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.
- iii) **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 PROPOSED TREE PLANTING

4.4.1 Description

- New tree planting is incorporated into the proposed development within the 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.

4.4.2 Management Objectives

The management objectives for new tree planting is to:

- Ensure the satisfactory establishment and growth of new tree planting typical of the respective species;
- Promote conditions so that trees are healthy and safe; and
- Ensure continuity of the design approach and amenity value of tree planting.

4.4.3 Annual Works

- i) **General tree maintenance during establishment:** Check all trees for firmness and stability in the ground. Check and adjust tree ties, 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. Where trees are in grass areas, remove weed growth by hand 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.
- ii) **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.

4.4.4 Occasional Works

- i) **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 reinstate 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.

- ii) **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 4.2.3 and 4.2.4.
- iii) **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. 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).

4.5 PROPOSED NATIVE HEDGEROWS

4.5.1 Description

- Native hedgerows are proposed strategically around and within the site to enhance the rural character and provide soft landscape edge.

4.5.2 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

4.5.3 Annual Works

- i) **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 Public Open Space areas will be maintained to an eventual height of **1.8m**.
- ii) **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. Long rural native hedges can be flailed once annually if there is suitable access.

4.5.4 Occasional Works

- i) **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
- ii) **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.

4.6 PROPOSED NATIVE WHIP/SHRUB AND BUFFER PLANTING

4.6.1 Description

- Native whip and shrub planting has been proposed strategically around the public open space.
- Native species will be selected to provide general habitats and foraging for wildlife including flowering and fruiting varieties.

4.6.2 Management Objectives

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.

4.6.3 Annual Works

- i) **Weeding:** Remove all weed growth by hand as necessary to ensure weed free and tidy planting areas. Six to eight visits are required per growing season. Visits should occur approximately monthly in the growing season, subject to weather conditions from April to October, with an extra visit outside of the growing season in December or January to inspect the condition of the beds. 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 using a non-biodegradable weed suppressant membrane, reduce 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.
- ii) **Spot Herbiciding:** Where required, persistent perennial weeds can be controlled using herbicide. For planting beds containing herbaceous plants and shrubs, apply a suitable folia-acting systemic translocated 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 SWALE.** 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.

- iii) **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.
- iv) **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 one-year. Prune Cornus varieties back to 200mm above ground every 3rd year, but retaining any young growths.
- v) **Watering:** For the first year 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 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. Following the first year after planting watering should be unnecessary as all of the species are native and should be tolerant of drought conditions.

4.6.4 Occasional Works

- i) **Replacement and enhancement planting:** Cut back any shrubs and herbaceous plants where they have become old, misshapen, leggy or they have lost their vigour. Specimens, shrubs or herbaceous 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, 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.
- ii) **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 arboricultural survey, which should include a visual inspection, 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 on a phased basis in blocks. The aims should be to create a 'ring of sky' around each tree that is retained, into which it can spread. Protect coppice stools from deer/rabbit browsing by piling brush over them. Monitor coppice periodically, noting any stools that fail to regrow and replant the following autumn. Remove weeds and invasive species as required. 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.

4.7 PROPOSED AMENITY GRASS AND BULBS

4.7.1 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 and should not be cut at all until June. The height of the sward can be varied according to amenity and to ensure nature conservation benefits.

4.7.2 Management Objectives

The management objectives for amenity grass areas will be to:

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

4.7.3 Initial Works

- i) **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 hibernaculums. For further information, refer to Detailed Soft Landscape Proposals by JBA.

4.7.4 Annual Works

- i) **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. 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.
- ii) **General lawn care:** Apply an approved turf fertilizer, selective weed killer and moss retardant in May and September, 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 (refer to paragraph 4.6.3).

iii) **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. 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.

4.7.5 Occasional Works

i) **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 re-seeding. 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 Barenbrug Bar 11 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.

4.8 PROPOSED SPORTS PITCHES

4.8.1 Specific Objectives

- To maintain healthy, diverse and hard wearing grass with a consistent colouring. To ensure freedom from pests and diseases, water logging, drought and excessive wear that might cause degradation and failure. To ensure safe and comfortable use of amenity spaces.

4.8.2 Annual Works

- A regular mowing regime, geared to the growing season, shall be commenced on adoption, to maintain the playing surface quality. Mow to height of 20mm, at approximately 7-day intervals throughout the growing season, Set the frequency according to the weather conditions, and allow 25 cuts in total; the grass never being allowed to exceed 40mm in height. Vary the mowing frequency to ensure that there is no excessive cutting during dry periods, increasing the cutting height to 30mm, and ensure that mowing is continued until the grass stops growing. The Landscape Contractor shall take responsibility for the timing of these cuts to ensure that the grass always looks well maintained. Remove grass cuttings from site from May to August, to an approved composting facility. Strim all edges. Inspect monthly to maintain a healthy sward, free from disease, fungal growth, discolouration, scorch or wilt. Maintain grass reasonably free from moss, weeds, frost heave, worm casts and mole hills. Allow for repair damage caused by trampling, abrasion or scalping.
- Aeration is essential to relieve compaction and maintain surface drainage; it also promotes strong root growth and sward resilience. The aeration procedure shall include annual spiking with a spiking machine in suitable moist, but not wet, soil conditions during October, spiking to a depth of 50mm. Fill holes with sharp sand and brush in.
- Regular over seeding is necessary to repair damaged grass and prevent weed invasion. Over seed bare areas annually – incorporating seed into sand used for filling spiking holes.
- Scarify once annually to remove excessive thatch: Scarify by using a suitable scarifying machine, at the end of the summer (September).
- Roll grass in April, June and August. Apply an approved turf fertiliser/selective weed-killer/ moss retardant in May and September.

4.9 PROPOSED WILDFLOWER MEADOW

4.9.1 Description

- The grassland will incorporate a diversity of wildflower and grass species (appropriate to the microclimate and soil type) to benefit a variety of species including birds, bats and invertebrates.
- In accordance with the ecologists recommendations the area will incorporate a number of hibernacula close to the site boundaries to provide refuges for amphibians, reptiles, invertebrates and small mammals.
- To maximise biodiversity, the area will cut once annually in late August.

4.9.2 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.

4.9.3 Annual Works

- Cutting of wildflower areas:** Meadow grass and wildflower areas shall be strimmed only once a year to a height of 100mm in late August. 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. 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 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. 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.

4.9.4 Occasional Works

- i) **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.

4.10 PROPOSED WET MEADOW

4.10.1 Description

- The wet meadow grassland will incorporate a diversity of wildflower and grass species suitable for seasonally wet soils of species traditional found in water meadows (appropriate to the microclimate and soil type).
- Accommodate short periods of flooding in winter months, and well drained in summer months.

4.10.2 Management Objectives

The management objectives for wet wildflower meadow grassland areas will be to:

- To ensure the satisfactory establishment of the grass sward; and
- To maintain a healthy and biodiverse sward suitable for winter flooding and to be drained in summer months.

4.10.3 Annual Works

- i) **Cutting of wet wildflower meadow areas:** Meadow grass and wildflower areas shall be strimmed 'hay cut' to a height of 50mm in late August. To ensure the seed is shed fully, leave arisings for 1-7 days then remove from site. During late autumn / winter strim again to 50mm and again in spring if required, leaving the wet meadow grassland uncut between spring and late July / August. The timing of all cutting operations should take into consideration any protected species 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. Once cut and raked up, all arisings shall be collected and removed off site as agreed.
- ii) **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.

4.10.4 Occasional Works

- i) **Replacement of failed wet wildflower meadow grassland areas:** wet 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 maintain the soil in a moist condition, removing stones, weeding and mowing until the grass is established.

4.11 PROPOSED WETLAND MARGINAL PLANTING

4.11.1 Description

- The water marginal and aquatic planting will incorporate suitable wetland species traditionally found towards the edge of water bodies (appropriate to the microclimate and soil type).

4.11.2 Management Objectives

The management objectives for water marginal and aquatic planting areas will be to ensure the satisfactory establishment of the planting towards the edge of the waterbody.

4.11.3 Annual Works

- i) **Marginal planting:** 50% of *Typha angustifolia* to be cut down in winter or pulled (as required) to restrict spread into water body. Leaf litter to also be removed. All arising's to be removed from site. Other marginal species to be trimmed as required to reduce growth. All arising's to be removed from site.

4.12 PROPOSED ATTENUATION BASIN

4.12.1 Description

- Multiple attenuation basins are proposed within the site.

4.12.2 Management Objectives

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.

4.12.3 Annual Work

- i) **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).

4.12.4 Occasional Work

- i) **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.

4.13 PLAYABLE FEATURES

4.13.1 Description

- Two community play space will be situated to the site, along with community amenity areas, which incorporates various play elements.

4.13.2 Management Objectives

The management objectives for new playable features are:

- To ensure the soundness and safety of all playable features,
- To minimise the risk of injury to users of all ages and,
- To ensure that playable features are regularly monitored, and decommissioned if unsafe and repaired as soon as possible to a sound and satisfactory condition.

4.13.3 Annual Works

- i) **Inspections:** Complete inspections of playable features as follows:
- i) Routine Visual Inspection: To assess the basic condition of play areas, features and surrounds including safety surfaces and surrounds, highlighting issues arising from vandalism, breakages and cleanliness.
 - ii) Operational Inspection: A more detailed inspection of play features for quality control and to identify minor wear and tear. This shall include the inspection of posts, footings, fixings, joints, and wood work for damage or any other defect.

All inspections should be carried out by a suitably experienced representative of either the Adopting Organisation or Landscape Management Contractor and recorded on a site checklist. The frequency of each operational inspection will vary according to the usage of the site and its risk, but should take place at least monthly with routine visual inspections taking place at fortnightly intervals.

- ii) **General:** All play features shall be cleaned, removing dirt and any graffiti monthly at each visit as required. Safety surfaces in particular shall be inspected carefully at each visit for the presence of any sharp objects, litter and debris as well as general wear, tear or other defect. Any such items shall be removed off site immediately. Check that posts are upright and firm, that footings are intact and fixings are secure and in good repair. Ensure that wood work is complete and that there is no sign of damage.
- iii) **Defects and Repairs:** Any defect shall be carefully recorded and arrangements for repair made within seven days with the item supplier or other suitable and approved contractor. Make good wood work with a matching treatment and colour applied strictly in accordance with the manufacturer's instructions, product COSHH sheet and COSHH Regulations. All repairs must be carried out strictly in accordance with the supplier's instructions. If the defect to either play features or surrounds is anything more than superficial (e.g. damage to decoration), then temporary chestnut pale fencing shall be erected and fixed firmly in place around the area and a temporary sign erected warning that the area is unsafe to use. The area must be decommissioned at once, ensuring that items cannot be used in a dangerous state. Temporary protection measures shall be removed as soon as the item is made good.
- iv) **Contact Information:** The Adopting Organisation shall ensure that a representative is available for emergency call out 7 days per week to deal with dangerous items ensuring a response time of no more than 2 hours. A sign shall be erected on site stating the name and telephone number(s) of the representative so that emergencies and defects can be quickly and easily reported to minimise risk to users.

4.13.4 Occasional Works

- i) **Changes and renewals for playable features:** Playable areas and features should be subject to an Annual Inspection. Such inspections shall identify issues relating to vandalism, minor and major wear, long-term structural problems, changes relating to health and safety and other Standards and design practices, and risk. The annual inspection shall be completed by a specialist contractor not employed by the Adopting Organisation, such as those approved by the Register of Play Inspectors (www.playinspectors.com). Following the inspection, the specialist contractor shall prepare and issue an independent written report for review. Any issues identified by the annual inspection shall be prioritised, with those deemed as urgent to be rectified as soon as possible. This shall include the replacement of play features and associated safety surfaces as required, where such items are found to be beyond repairable condition or where they do not meet current standards. Remove all arisings off site and make good any surfaces disturbed.

4.14 STREET FURNITURE

4.14.1 Description

- Street furniture, such as seating and litter bins have been proposed within the site.

4.14.2 Management Objectives

The management objectives for street furniture are:

- To ensure these elements of street furniture, including benches, smart seats, bins, bollards, signage, cycle hoops, cycle barriers etc., are safe, functional, clean and free from dilapidations, bird faeces dust, graffiti and grime.

4.14.3 Annual Works

i) **General maintenance for street furniture.**

Inspect all elements of the street furniture monthly taking great care to inspect posts, footings, fixings and paint work for picnic benches, seats, bins, bollards, signage etc., are safe, functional, clean and free from dilapidations, bird faeces dust, graffiti and grime. Check that posts are upright and firm and that footings are intact. Ensure that paint work is complete and that there is no sign of rust. Ensure that all fixings are secure and in good repair. Any defect shall be carefully recorded and arrangements for repair made within seven days with the Street Furniture Company or other suitable and approved contractor. All painted, electrostatic powder coated, or stained surfaces (or other similar surface treatments) shall be closely inspected, and any damage, chipping, flaking, abrasion or fading made good with matching treatment, applied strictly in accordance with the manufacturer's instructions, product COSHH sheet and latest COSHH Regulations. All graffiti shall be removed and surfaces made good if necessary. Street furniture shall be cleaned monthly, removing dirt, bird faeces, and grime using detergent and scrubbing sponges or brushes – as appropriate, rinsing and drying to leave a clean surface. Litterbins shall be emptied at two-week intervals, including removal of any spilled litter and weekly between April and September inclusively, carting litter to licensed tip in sealed bags.

4.14.4 Occasional Works

i) **Changes and renewals for street furniture.**

Where scheduled inspections report detects to street furniture, that are in need of wholesale replacement 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 effected immediately. Demolish and remove defective elements and replace or add new items as appropriate - including for 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, unless a suitable alternative is agreed with stakeholders and suitable.

4.15 RAILINGS AND GATES

4.15.1 Description

- Throughout the site railings have been used to define and enclose private spaces associated with the residential premises

4.15.2 Management Objectives

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.

4.15.3 Annual Works

- 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 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. 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.

4.15.4 Occasional Works

- Changes and renewals for railings:** 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 effected 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 effected 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 particular 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 local 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.

6.0 APPENDICES

6.1 MANAGEMENT AREAS PLAN (Not to Scale)

 Areas to be managed



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.

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/trimming of native hedgerows	*				*	1	To be carried out outside of the bird nesting season.
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.
Spot herbiciding	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.

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)		
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.
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.
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

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)		
							reptiles are present.
Replacement of tree, hedgerow and shrub planting	*				Optimum time for most species	1	As required. To include enhancement planting.
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:							
Wildlife refuges – trim adjacent wildflower and inspect for damage				Once		1	

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)		
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
Timber sculptures			Once			1	

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>Buxus sempervirens</i>	Dec/Jan	Reduce by 5%	Never	Prune leggy growth only
<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 yeas (30%). Coppice 8 years
<i>Cytisus praecox</i>	Dec/Jan	Reduce by 10%	Never	Prune leggy growth only
<i>Frangula alnus</i>	Dec/Jan	Reduce by 5%	If required	Coppice - 8 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
<i>Rubus tricolor</i>	Dec/Jan	Reduce by 10%	Never	Prune leggy growth only
<i>Sorbus aucuparia</i>	Dec/Jan	n/a	Every 5 years	Thin at 15 years
<i>Salix viminalis</i>	Dec/Jan	Reduce by 10%	Never	Coppice - 8 years
<i>Ulex europeus</i>	Dec/Jan	Reduce by 10%	Never	Coppice - 8 years
<i>Viburnum lantana</i>	Dec/Jan	Reduce by 5%	Never	Coppice - 8 years
<i>Viburnum opulus</i>	Dec/Jan	Reduce by 5%	Never	Coppice - 8 years