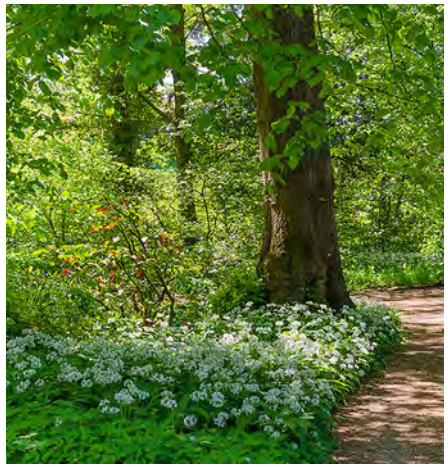
LAND OFF SEMINGTON ROAD, MELKSHAM

LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN

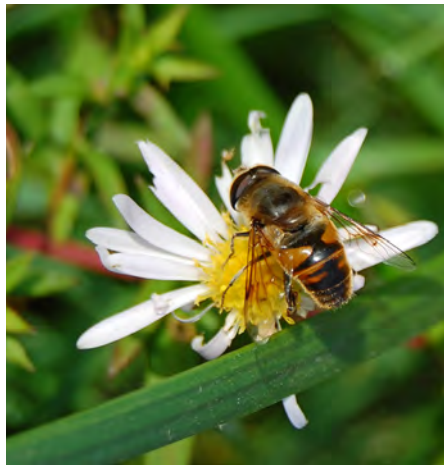
Prepared by Pegasus Group on behalf of Living Space Housing Ltd
Jan 2024 | P22-2409_EN_0003_B_0001

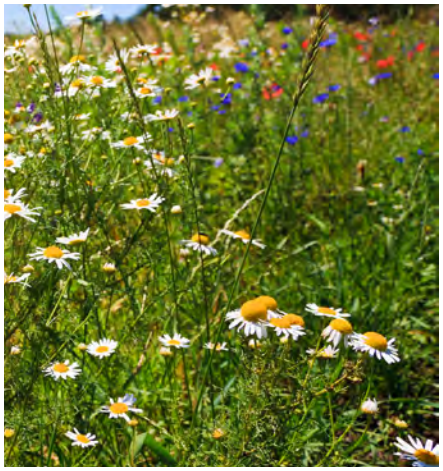


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1.0 Introduction

1.1 This document has been prepared by Pegasus Group on behalf of Living Space Housing Ltd to provide guidance for the perpetual management of public open space areas associated with the proposed residential development at Land off Semington Road, Melksham.

Purpose of the Management Plan

1.2 The purpose of this Landscape and Ecological Management Plan (LEMP) is:

- To ensure that clear objectives for the public open space areas are agreed and laid down.
- To set clear standards for the performance of landscape maintenance work following handover from the landscape contractor.

1.3 To identify, manage and resolve possible conflicts between different users of the site.

- To develop work programmes and schedules for landscape maintenance staff.
- To help in the allocation of financial resources for landscape maintenance.
- To help monitor success and progress against management targets.

Planning Background

1.4 This Landscape and Ecological Management Plan is an accompanying document submitted as part of the reserved matters application relating to Outline Application Reference No. 20/07334/OUT, as approved under Appeal Reference No. APP/Y3940/W/21/3285428. The specific Planning Condition for which the LEMP is required to discharge will be Condition No.6, which reads as follows:

> 6 Prior to the start of construction, a Landscape and Ecology Management Plan (LEMP) shall be submitted to and approved in writing by the Local Planning Authority. The LEMP will include long-term objectives and targets, management responsibilities and maintenance schedules for each ecological feature within the development, together with a mechanism for monitoring the success of the management prescriptions, incorporating review and necessary adaptive management in order to attain targets.
>
> The LEMP shall also include details of the legal and funding mechanism(s) by which long-term implementation of the plan will be secured. The LEMP shall be implemented in full and for the lifetime of the development in accordance with the approved details.
>
> REASON: The application contained insufficient information and the matter is required to be agreed to ensure the long-term management of landscape and ecological features retained and created by the development, for the benefit of visual amenity and biodiversity for the lifetime of the scheme.

Management Responsibility

1.5 It is intended that the long-term implementation of this management plan will be undertaken by a groundworks maintenance team to be appointed by Sovereign Housing Association (a registered provider of affordable housing).

Management Aims

1.6 The main aims for site landscape management and maintenance are:

- To present an attractive and safe environment for home owners, residents and visitors.
- To provide and maintain access for informal recreation purposes.
- To provide management of retained and created features will be sensitive to wildlife, allowing for amenity and safety issue.
- To maximise and maintain the biodiversity value of retained and newly created habitats for wildlife.
- To ensure that existing site features are appropriately managed ensuring that hard and soft landscape areas are fit for purpose and do not pose a health and safety hazard to the public.
- To ensure that newly planted areas become established.
- To keep the site clear of litter and rubbish.
- To carry out maintenance work according to best practice using

sustainable techniques and materials.

Review

1.7 The document should be seen as an operational guide, subject to change and improvement as the different landscape features mature and develop.

1.8 In the first five years, the grassland meadows will be reviewed annually to assess establishment. If required, re-seeding or adjustments to the cutting regime may be needed to prevent dominance by grasses.

1.9 Annual monitoring of the habitats will be undertaken and triggers for management assessed by the project ecologist. Monitoring will be used to detemine whether or not objectives for the site and component features eg. bird/bat boxes have been met

1.10 The Landscape and Ecological Management plan will be reviewed and revised annually following annual monitoring of habitat conditions and species population (undertaken by the project ecologist). An annual monitoring report will recommend any necessary changes to the LEMP and identify management required.

Management Areas

1.11 This management plan applies to the areas of public open space within the development and excludes private frontages conveyed to the homeowner. Please refer to Appendix 1: Landscape and Ecological Management Areas Plan for extent of areas to be managed.

Other Relevant Documentation

1.12 This document is to be read in conjunction with and aligned to the processes set out in the Biodiversity and Ecological Mitigation Plan (BEMP), prepared by BWB consulting, dated August 2022, drawing ref: MSW-BWB-ZZ-XX-RP-LE-0005_BEMP

2.0 Site Description

2.3 The development at Land off Semington Road, Melksham comprises 50 dwellings, with open space including perimeter green space, existing trees and hedgerow, with a local area of play.

Key Landscape Resources

2.4 Along the northern, eastern and southern boundaries the majority of the existing trees and hedgerows will be retained, with reinforcement to include new hedgerow trees where appropriate. An area of scrub to the site entrance (south eastern corner) will be removed to facilitate the site's access. The sites western boundary is located within the centre of an arable field with no assocated vegetation.The key landscape resources of the site can be summarised as follows:

- Existing field boundary hedgerow and trees to the north, east and south;
- Existing scrub to the south eastern corner

Landscape Proposals

2.5 Landscape proposals within the public open space will be typically planted to present a naturalised character to reinforce the existing perimter vegetation structure of the site.

2.6 The tree, hedgerow and shrub planting and tree species within the public open space comprise native species in the majority, along with native cultivars and ornamental trees within the residential areas.

2.7 Plot frontages are filled with a variety of ornamental hedgerows, mixed shrub beds and lawn with street tree planting where space allows.

2.8 This document is to be read alongside the detailed landscape proposals which set out the general landscape components to each public open space area prepared by Pegasus Group, drawings ref:

- P22-2409_EN_001_01-E Detailed Soft Landscape Proposals (1/2)
- P22-2409_EN_001_01-E Detailed Soft Landscape Proposals (2/2)

3.0 Environmental Considerations

3.1 This sections details the environmental considerations that need to be examined to enable a thorough landscape and ecology management strategy for the site.

Horticultural Peat

3.2 Horticultural peat is not to be used as mulch on any beds or as a soil conditioner, and wherever possible plants grown without peat will be preferred to those grown using peat.

Recycled Materials

3.3 Where appropriate use should be made of materials made from recycled components e.g. wood chip mulch.

Pesticides/Herbicides

3.4 A minimal intervention and organic approach will be used in terms of weed control. In areas of standard tree and ornamental shrub and herbaceous planting this is to be achieved by using mulch and hand weeding.

3.5 Weed killer and other chemicals will be used as little as possible on site. Spot removal of weeds will be carried out by hand removal as necessary. The control of invasive and pernicious weeds can be carried out with targeted applications of herbicides containing glyphosate. All pesticides and herbicides should be applied according to manufacturer's recommendations and current legislation, including:

- The Food and Environment Protection Act (1985)
- The Control of Pesticides Regulations (1986)
- The Control of Substances Hazardous to Health Regulations (2002)
- The Environment Protection Act (1990)

3.6 It is the Contractor's responsibility to ensure that all works are carried out strictly in accordance with the requirements of the foregoing legislation and other relevant Codes of Practice, British Standards, rules, guidelines or directives that relate to the use of hazardous materials. The Contractor will make such notifications as are required under the terms of The Food and Environment Protection Act (1985), and will be responsible for replacing plants killed by inappropriate use of herbicides.

Waste Management

3.7 Arisings from management and maintenance operations should, where acceptable, be left on site, or be removed from site and deposited at a legal tip or green compost facility.

Water Management

3.8 Where necessary maintenance staff are to water plants at appropriate times of the day to ensure minimum water evaporation.

Habitat management

3.9 Retention of trees and hedgerows, along with attenuation features, proposed woodland planting and creation of grassland habitats within the public open space will provide opportunities for habitats for wildlife.

3.10 Opportunities for the creation of additional micro-habitats and habitat enhancement should be taken wherever possible for example within the boundary hedgerows and new woodland,

3.11 Allow deadwood, jagged stumps, splits, fungal growths and holes in tree trunks to remain unless they are creating a safety hazard. Discrete habitat piles and hibernation sites (log piles/brash wood piles) in locations where they will not be disturbed will be created from the arisings of tree works.

3.12 The retention, as far as possible, of the existing trees, tree groups and hedgerows is considered an important part of the development. Such areas will be managed appropriately to maintain and develop their value.

4.0 General Maintenance

4.1 The Landscape Contractor is to visit the site and to fully acquaint themselves with local conditions, the nature of the work and the state of the ground (as they will be required to execute work upon it), the programme and manner of work and all other matters affecting the proposed work. No claim for extra work on the grounds of lack of knowledge will later be entertained.

4.2 It is the Contractor's responsibility to ensure that all works and operation are carried out in accordance with the Construction Design and Management Regulations 2015. All work shall be carried out by experienced operatives holding relevant horticultural qualifications and training certificates, or under the supervision on site of such a person. All works detailed in the following specifications shall be carried out in accordance with good horticultural practice, using materials, plant and machinery appropriate to the task, undertaken in such a manner that avoids damage and/or nuisance to the site and its surroundings. Any plant material that dies as a result of the Contractor's operations or omissions shall be replaced by the contractor at his own expense during the next planting season.

4.3 All new trees and shrubs shall be checked at each maintenance visit for damage, security, firmness, fixing and support.

4.4 Any shrubs, hedges or trees which fail to thrive in the first five years shall be replaced with the same species and variety at the size specified on the original landscape planting plans. Trees and shrubs should be checked in September and marked with paint, or noted on a plan, as necessary. Replacements will be planted during the following planting season. If a particular species fails to establish successfully then an alternative, comparable species should be considered as replacement, in agreement with the landscape consultant.

4.5 Amenity bark mulch shall be topped up annually to a depth of 75mm where there is bare soil in planted areas. To avoid accidentally damaging plants herbicides will not be used to control weeds once foliage covers 75% of the ground surface.

4.6 There will also be a 800mm diameter circle of mulch around trees in grass in order to suppress grass and weed growth and minimise the risk of mower/strimmer damage. Care should be taken not to pile mulch around tree stems.

4.7 Water management will need careful consideration as all new trees, shrubs and hedgerows will require substantial and frequent irrigation during establishment. The local conditions of the site will need to be checked to ascertain the appropriate regime. However, the following rates can be used as a guide to help determine the volume of water required at each watering operation.

Semi-mature Trees	70 litres per tree
Heavy Standard, Extra Heavy Standard and Selected Standard Trees	45 litres per tree
Specimen Plants	15 litres per plant
Shrubs, Hedging and Herbaceous material	10 litres per plant
NB 4.5 litres = approximately 1 gallon	

4.8 All planted areas to be watered thoroughly during the growing season. Care should be taken to ensure the water is applied slowly so that it is absorbed in to the rootzone preventing run off. Water will be applied at an appropriate pressure so as not to disturb soil surface, damage soft foliage, etc.. Where trees are fitted with irrigation tubes, water will be applied directly into these.

4.9 Watering will be undertaken to create soil saturation. Following any dry periods of 7-10 days, the water content of the soil should be assessed and the watering regime should be reviewed and increased as necessary. In periods of heavy rain, watering may be waived with the approval of the supervising officer for trees in grass areas and shrub beds. However, trees in hard landscaping will still require watering.

4.10 No pruning works to trees, hedgerows or structural planting are to be undertaken during the general bird nesting season of 1st March to 31st August inclusive. Works outside of this time period should be subject to checks by an ecologist to ensure there are no nesting birds present

4.11 All areas of wildflower grassland, are to follow the mowing regime to create optimal habitat for wildlife.

4.12 All tree surgery work is to be carried out to BS 3998:2010 Tree Work– Recommendations, and should be undertaken by a suitably qualified operative.

4.13 Hygiene works will be avoided, for example fungal fruiting bodies should not be removed nor trees felled because they have bracket fungi on them unless classified as dangerous by an arboriculturist. Where possible, trees will be allowed to age naturally and dying trees will be allowed to decay in-situ. Where a tree poses a health and safety hazard, advice will be sought from an arboriculturist.

4.14 Maintenance operations are to be carried out with regard to BS4428: Code of Practice for General Landscape Operations. Maintenance of soft landscaping (other than amenity turf) to have regard to BS7370-4: Grounds Maintenance. Recommendations for Maintenance of Soft Landscape.

4.15 It is recommended that all new and existing planting on site is subject to on going management to maximise the value of these habitats to wildlife. Such an approach will involve minimised effective use of pesticides and vegetation pruning works to take place outside of the bird nesting season.

4.16 A separate tree protection scheme will ensure that the retained trees are not damaged during the construction process. The maintenance of the retained trees is discussed in Section 5.

4.17 Care is to be taken to avoid interference with the established levels and contours of the ground, and to avoid damage to footpaths, roads, drains, manholes and existing structures and vegetation. Damage so occasioned is to be made good at the contractor's expense.

5.0 Maintenance Specification

5.1 Retained Trees and Tree Groups

Management Aim

- To prolong the life and enhance the aesthetic and wildlife value of the existing trees along the site's boundaries.
- To enhance the functionality of the existing features such as trees, tree groups along the site boundaries.

Management Objectives

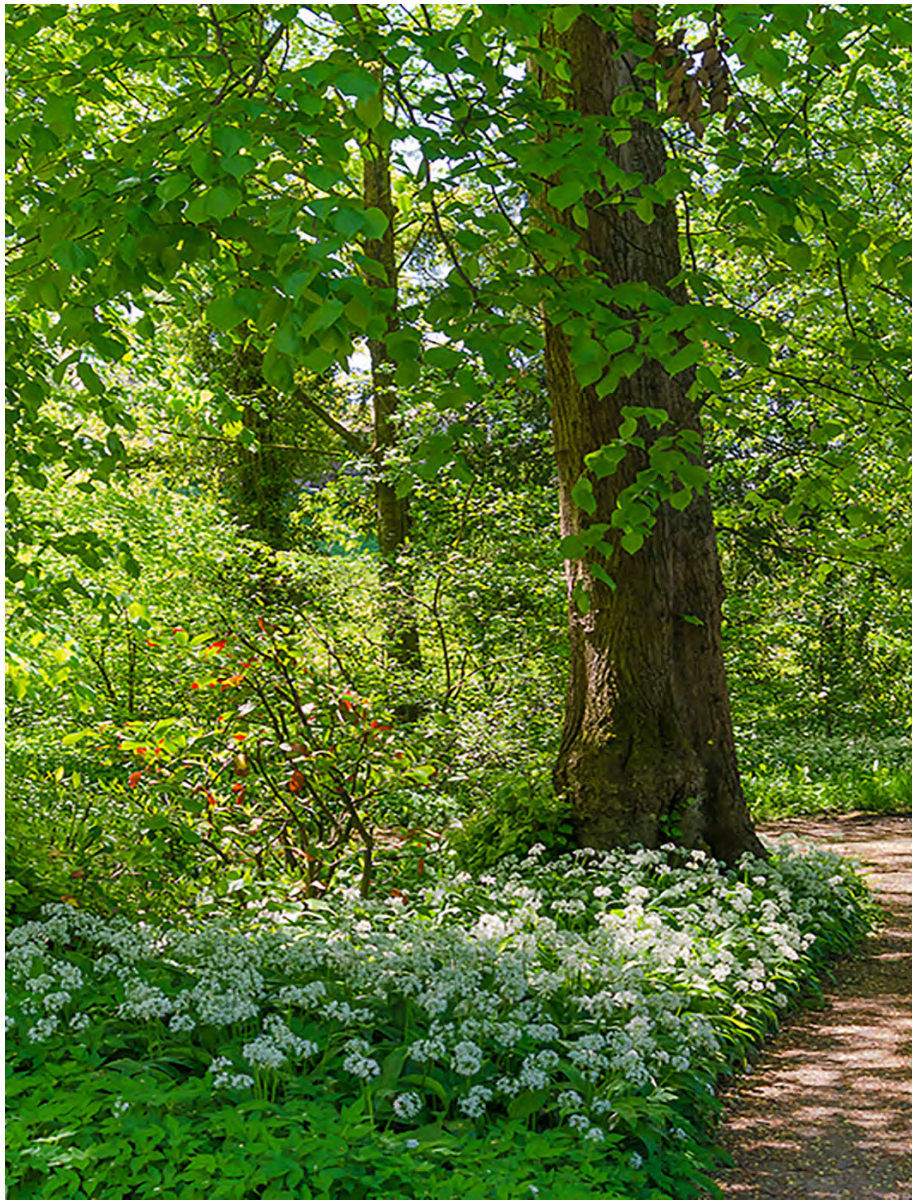
- To maintain the health and visual amenity of the retained trees and tree groups.
- To protect the canopies and rooting environments of retained trees during construction and maintenance operations according to the guidelines set out in BS5837: 2012 "Trees in relation to design, demolition and construction."
- To enhance their ecological/ biodiversity value.

Maintenance

5.4.1 To avoid disturbing nesting birds, maintenance shall take place between September and February i.e. outside the bird nesting season.

5.4.2 A detailed condition survey of all trees will be carried out by a qualified arborist at least once every two years. Any necessary remedial works will be carried out as soon as possible. All tree work should be carried out in accordance with BS3998:2010 (or any subsequent updates).

5.3.3 Material arising from pruning or coppicing of trees should be retained in order to create log piles/brash piles and hibernation sites within the public open space. Deadwood should be left in situ, or as discrete habitat piles in locations where they will not be disturbed.



This table sets out the management objectives for the retained trees and tree groups on the site, how they will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	Check tree safety	Identify hazards and carry our necessary maintenance work eg. remove hanging deadwood (where this would cause a potential health and safety risk, such as over vehicular and pedestrian routes). Deadwood to be retained to create log piles/brash piles and hibernation sites within the peripheries of the public open space away from pedestrian routes. Keep records up to date	Visual tree assessment with instrumental back up where necessary. Monitoring to be undertaken by qualified arboriculturists. Tree works to be carried out to BS 3998:2010. Any trees with bat potential to be inspected by a qualified bat specialist prior to any tree works commencing.	Every 2 years or as recommended
B	Keep paths/highways/parking areas clear from branches/ vegetation.	Pruning/cutting back to prevent degradation of mature trees.	Prune tree branches from encroaching onto adjacent paths and highways. Trees shall be pruned to a height of 5m over highways and 3m over paths	As required annually, avoiding bird nesting season of March to August inclusive
C	Control exotic and invasive tree / shrub / herbaceous species that do not belong in a native woodland setting, and are out competing less vigorous species.	Check and remove any exotic and invasive species e.g self-seeded sycamore, brambles, ground ivy and nettles	Clear by hand and remove from site	Annual
D	Removal of rubbish and debris and keep litter and rubbish free.	Remove litter and fly tipped rubbish	Remove by hand	Monthly

5.2 Retained Hedgerows

Management Aim

- To prolong the life and enhance the aesthetic and wildlife value of the existing hedgerows.

Management Objectives

- To promote a dense continuous hedge line with no gaps;
- To maintain their health and visual amenity;
- To take care in construction and maintenance operations near hedgerows;
- To enhance their ecological value;
- To keep hedgerows free from litter and other waste.

Maintenance

5.2.1 Hedgerows around the site boundary will be maintained at their current width or a minimum width of 2m and to a minimum height of 2m.

5.2.2 Hedgerows should not be cut annually as the abundance of berries increases from one year to two years after cutting and then slowly declines, therefore cutting annually reduces the availability of food for wildlife.

5.2.3 Hedgerow management will follow good practice principles

5.2.4 Except where road safety or access preclude it, hedgerows should be trimmed only every three years.

5.2.5 Only 10-30% of hedgerows should be cut in any one year to ensure that heavily fruiting hedgerows are present on site;

5.2.6 In some places, it may be feasible to cut only one side of the hedgerow, cutting the other side a year or two later, thus not removing all the food resource within a hedgerow at once and allowing some regrowth before further cutting takes place. If possible flails should not be used to manage hedgerows;

5.2.7 When creating new hedgerows or plugging gaps in existing ones, at least 5 and preferably 7 different shrub/tree species should be planted to maintain and improve biodiversity with opportunities for flowering and fruiting species to benefit wildlife.

5.2.8 Arisings from trimming operations shall be retained on site and used to create log/brash piles and hibernation sites. Litter will be removed from the base of retained hedgerows.



This table sets out the management objectives for the retained hedgerows, how they will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	Ensure good shape of hedgerows is created and maintained.	Pruning to create and maintain 'A' shape and control future growth.	Anticipated face-up and top off every 3 years, or as required	Autumn, 3 year rotation (side A year 1, side B year 2 / side year A 4, side B year 5)
B	Maintain diversity of plant species	Removal of invasive species	Dig by hand and remove from site	Annual
C	Control exotic tree and shrub species that do not belong in a native hedgerow	Check and remove any exotic species	Dig by hand and remove from site	Annual
D	Keep litter and rubbish free	Remove litter and fly tipped rubbish	Remove by hand	Monthly

5.3 Native Tree and Shrub Planting

Management Aim

- To successfully establish new tree and shrub planting.
- To present and maintain high quality visual appearance of new tree and shrub planting.

Management Objectives

- To ensure successful establishment of new tree and shrub planting.
- To minimise competition from grass and weeds.
- To maintain appropriate form of trees and shrubs for future growth.
- To ensure trees and shrubs do not present a hazard to site users.

Maintenance

5.3.1 Tree and shrub planting will be attended to three times during the growing season (April-September) and once during the dormant season (October-March inclusive). At each visit the following operations are to be carried out:

5.3.2 Before work commences, all areas shall be inspected for litter, and all debris removed in accordance with the section detailed above.

5.3.3 All plants shall be checked and firmed up in the ground as necessary.

5.3.4 Any damaged shoots or branches shall be pruned off plants using secateurs, cutting back to above a live, outward-facing bud or shoot.

5.3.5 Weed growth within planting areas shall be eliminated during the summer visits with a suitable translocated herbicide such as 'Round-Up' glyphosate herbicide, in line with the manufacturer's instructions and in compliance with the Pesticides Act (1999). Weed removal within ecologically sensitive areas or adjacent to water courses will be carried out mechanically or by hand to avoid the inappropriate use of herbicides.

5.3.6 Tree and/or shrub shelters (if fitted) shall be lifted as necessary to achieve weed control, and re-firmed in the ground after completion of the work. Dead weed material shall be removed during the following visit to site. Stakes shall be firmed up as necessary, and ties adjusted. Any missing or vandalised shelters or ties shall be replaced and lopsided shelters straightened.

5.3.7 Grass growth within planting beds shall be treated during the winter visit with a suitable residual herbicide such as 'Kerb' (pbi), in line with the manufacturer's instructions and in compliance with the Pesticides Acts (1998). Grass growth within planting beds in ecologically important areas will be strimmed during the July mowing operations.

5.3.8 Watering will be carried out during the growing season to maintain trees and shrubs in active growth and in a healthy thriving condition. The rates set up in clause 4.7 to be used a guideline to the Contractor for the volume of water required per visit. Each planting area to be watered to field capacity. In the first growing season (March to September inclusively) after planting new stock should be irrigated 13 times. For the following two years, newly planted stock should be irrigated 7 times per year.

5.3.9 Any dead trees and shrubs shall be removed and the resulting hole filled. Replacement planting to be carried out during the next winter visit.



This table sets out the management objectives for the native tree and shrub planting on the site, how it will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	Reduce competition from grass and weeds	Eliminate weed growth within planting area	Spray ground with herbicide (mechanical removal in any ecologically important areas).	April/June/August
B	Ensure that trees and shrubs grow straight and are not damaged	Check that shelters and guards are intact and secure.	Visual inspection Adjust or replace shelters and guards as necessary. Firm plants as required.	Monthly
C	Make good damage caused by vandalism	Visual inspection to check for vandalism. Report to client.	On instruction from client replace as per planting specification	Monthly
D	Ensure that trees develop healthily	Remove dead, damaged or dying wood	Pruning and thinning in accordance with BS3998:2010. Undertaken outside the nesting bird season	As required annually, avoiding bird nesting season of March to August inclusive
E	To keep transplants free from pests and disease	Qualified arboriculturist to inspect and check on health of trees	Deal with individual problems as they arise keeping use of pesticides to a minimum	Monthly from March to October
F	Maintain good shape and remove hazards	Check for damage in canopy and low branches over kerbs, road edgers and footpaths	Prune in accordance with BS3998:2010	April to September
G	Ensure dead/dying transplants are replaced	Replacement of dead/dying transplants by qualified horticultural staff.	Remove dead plants and replacement as per original approved specification unless otherwise agreed to plant alternative species.	November to March
H	Ensure trees and shrubs in active growth and in a healthy thriving condition.	Watering trees and shrubs	Watering trees and shrubs to the rates set up in clause 4.7 In the first growing season (March to September inclusively) after planting new stock should be irrigated 13 times.	March to September
I	Ensure that plants become self supporting	Remove shelters/guards once root growth is well established. Visual inspection to confirm stability.	Check plant stability. Remove shelters guards when plants is established.	4 to 5 years after planting (typically)
J	Encourage regeneration of new stems from the base.	Coppice established trees/ shrubs	Coppice c. 25% of species mix (weakest plants).	7 years after planting (typically) and between November to March

5.4 Specimen Tree Planting

Management Aim

- To successfully establish new tree planting.
- To present and maintain high quality visual appearance of new trees.

Management Objectives

- To ensure successful establishment of new trees.
- To minimise competition from grass and weeds.
- To maintain appropriate form of trees for future growth.
- To ensure trees do not present a hazard to site users.

Maintenance

5.4.1 An establishment survey of all trees will be carried out by a qualified arboriculturist annually for the first five years, making recommendations to assist with establishment. Any necessary remedial works will be carried out as soon as possible. All tree work should be carried out in accordance with BS3998:2010 (or any subsequent updates). All arisings shall be removed from site.

5.4.2 Planting of new trees to have regard to Section 10 of BS8545:2014 Trees: from nursery to independence in the landscape. All plants to conform to BS3936 and be in accordance with the National Plant Specification.

5.4.3 Tree stakes and ties will be regularly checked during the establishment period and adjusted as necessary to ensure that the developing trees are not damaged. Stakes and ties will be removed by the landscape maintenance contractor at the earliest opportunity (typically between year 3 and year 5) when he considers that the trees are self supporting. All stakes and ties will be removed from site to a legal disposal facility.

5.4.4 There will be a minimal pruning policy for trees as pruning wounds can provide a source of infection. Formative pruning of new trees will be carried out to remove dead and diseased wood and to create a well balanced tree with a single leader. Clear stems of 2 metres will be maintained by rubbing off any shoots and when the trees reach 5 to 6 metres high lower branches will be removed to give a canopy height of approximately 2.4 metres.

5.4.5 Where trees have become moribund due to compaction or lack of nutrients soil aeration techniques and the use of inoculants shall be considered.

5.4.6 Watering will be carried out during the growing season to maintain trees in active growth and in a healthy thriving condition. The rates set up in clause 4.7 to be used a guideline to the Contractor for the volume of water required per visit. The watering schedule listed below sets up a minimum requirement for the first 3 years of the maintenance period.

- Last week in March – 1 visit
- April – September (inclusive) 3 visits each month with more in dry conditions as required.
- Early October – 1 visit

5.4.7 Trees will establish anchor roots better, increase stem girth and form a better stem taper if allowed to move in the wind, whilst remaining secured at ground level. Therefore low staking (75mm dia x 1.5m length) will be used and attached to the tree at approximately 600mm above ground level.

5.4.8 Staked trees will be fixed using proprietary rubber ties and must be firmly fixed and a spacing device must be used to prevent chaffing against the tree. Trees that are underground anchored are to be checked and supplementary staked if not considered to be suitably secure.

5.4.9 If trees die the reason for death shall be investigated and addressed before replanting a replacement. If death is due to the planting conditions these shall be ameliorated. If death is due to pests or disease and likely to be present in the future a resistant species of an alternative similar tree shall be selected.

5.4.10 Any trees which have died as a result of the contractors operations or omissions shall be replaced by the contractor at his own expense during the next planting season.

5.4.11 Where the operations manager has agreed that plant deaths have arisen due to circumstances out of the control of the contractor, replacement planting shall be instructed by the Operations Manager and paid for at an agreed rate.

This table sets out the management objectives for the specimen tree planting on the site, how it will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	Reduce competition from grass and weeds	Keep 800mm radius circle at base of tree, weed and grass free	Spray grass and weeds with glyphosate based herbicide. Do not use strimmers around the base of trees. If required, inter-row mowing may be undertaken 2 - 3 times a year in the establishment phase to control noxious weed growth.	April/June/August
B	Ensure that trees grow straight and are not damaged	Check that stakes and ties and guards are intact and secure. Check that stakes are not rubbing against the bark and that the tie is not too loose, too tight or broken. Check underground anchors	Visual inspection Adjust or replace stakes, ties and guards as necessary. Re-plant in an upright position and re-firm any trees suffering from windrock.	Twice annually eg. mid- June and September
C	Ensure that trees become self supporting	Remove stakes once root growth is well established. Visual inspection to confirm stability.	Check tree stability. Remove stakes, ties and guards when tree is established.	3 to 5 years after planting (typically)
D	Make good damage caused by vandalism	Visual inspection to check for vandalism. Report to client.	On instruction from client replace as per planting specification	Monthly
E	Ensure that trees develop healthily	Remove dead, damaged or dying wood	Prunning and thinning in accordance with BS3998:2010. Undertaken outside the nesting bird season	As required annually, avoiding bird nesting season of March to August inclusive
F	To keep newly planted trees free from pests and disease	Qualified arboriculturist to inspect and check on health of trees	Deal with individual problems as they arise keeping use of pesticides to a minimum	Monthly from March to October
G	Maintain good shape and remove hazards	Check for damage in canopy and low branches over footpaths	Prune in accordance with BS3998:2010	Autumn
H	Ensure continued health of trees	Check and respond as necessary	Water and fertilise if required to ensure the that the tree continues to develop Investigate any continued failed growth of trees and take remedial action.	As necessary
I	Ensure trees in active growth and in a healthy thriving condition.	Watering trees	Watering trees to the rates set up in clause 4.7 Last week in March – 1 visit April – September (inclusive) 3 visits each month Early October – 1 visit	March to October
J	Ensure dead trees are replaced	Replacement of failed trees once deemed appropriate by qualified horticultural staff.	Remove dead tree and replacement as per original approved specification unless otherwise agreed to plant alternative species.	November/ December

Note: Any standing deadwood that is removed will be retained in a number of piles within the wooded areas, providing additional habitat areas for wildlife. Piles are to be no more than 600mm in height. The wood at the bottom of the pile is to be set 1/3rd into the ground. Piles are not to be located in areas of green space with high usage.



5.5 Ornamental Shrub Planting

Management Aim

- To successfully establish areas of new ornamental planting
- To present and maintain high quality visual appearance of planting.

Management Objectives

- To maintain newly planted shrubs and herbaceous plants to ensure a good survival rate and development.
- To minimise competition from grass and weeds.
- To keep planted areas free from litter, rubbish, garden waste & dog faeces.

Maintenance

5.5.1 New shrub and herbaceous planting is located throughout the development, including public open spaces and along the streets.

5.5.2 Formative pruning will be kept to a minimum but where necessary diseased and damaged plant material will be removed. Where shrubs overhang path edges they will be neatly clipped back in order to maintain the full width of pedestrian access routes.

5.5.3 Planting beds will be checked regularly throughout the growing season for pests and diseases and treated as necessary. If a particular plant becomes subject to a fatal pest or disease it shall be replaced by an alternative resistant plant with a similar form and habit.

5.5.4 Watering will be carried out during the growing season to maintain trees and shrubs in active growth and in a healthy thriving condition. The rates set up in clause 4.7 to be used a guideline to the Contractor for the volume of water required per visit. Each planting area to be watered to field capacity. In the first growing season (March to September inclusively) after planting new stock should be irrigated 13 times at regular intervals. For the following two years, newly planted stock should be irrigated 7 times per year.

5.5.5 All plants to conform to BS3936 and be in accordance with the National Plant Specification.

This table sets out the management objectives for the ornamental planting on the site, how they will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	Keep planted beds free from weeds to reduce competition and improve visual amenity	Weeding Keep planted beds topped up with mulch to prevent weeds and to present attractive appearance	Weed clearance by hand, hoe or fork as required. Take care not to disturb shrub roots and avoid excessive treading of bed surface Topping up or replacement of mulch until close cover is achieved.	Monthly from March to October or as required
B	Maintain integrity of planting scheme	Monitor and record any plant losses. Report to client.	On instruction from client replace missing plants and maintain to ensure survival	October/ November
C	Keep planting beds free from excess leaf litter and fallen twigs and branches	Removal of leaves and tree debris	Leaf blower and leaf collection equipment	November to December
D	Keep paths and car parking bays clear from vegetation.	Pruning/cutting back	Prune back shrubs from encroaching onto the adjoining areas.	As required from March to October.
E	To keep newly planted shrubs, perennials and ground cover in prime condition and appearance.	Qualified horticultural staff to inspect and check on condition of ornamental planting.	Prune dead foliage, flowers and extension growth as necessary. Divide perennials as necessary. Formative and seasonal pruning to shrubs to create a natural shape–do not routinely clip shrubs. Apply organic fertiliser, if required. Re-plant in an upright position and re-firm plants that suffer from windrock.	As required depending on species
F	To keep newly planted shrubs and perennials free from pests and diseases	Qualified horticultural staff to inspect and check on health of ornamental planting.	Deal with individual problems as they arise keeping use of pesticides to a minimum	Monthly from March to October
G	To keep newly planted beds free from litter, fly tipped rubbish and dog faeces	Remove litter and fly tipped rubbish	Remove by hand	Monthly
H	Ensure shrubs in active growth and in a healthy thriving condition.	Watering shrubs	Watering shrubs to the rates set up in clause 4.7 In the first growing season (March to September inclusively) after planting new stock should be irrigated 13 times at regular intervals.	March to September
I	To maintain balance of species.	Prevent vigorous species from becoming dominant and crowding out less vigorous species	Reduce amount of overly vigorous species. Remove by hand.	As required from March to October.

5.6 Native and Ornamental Hedgerows

Management Aim

- To assist the establishment of attractive ornamental and native hedgerows to demarcate the public open space and streetscape.

Management Objectives

- To maintain a dense continuous hedge line with no gaps;
- To control weeds;
- To keep free from litter and rubbish;
- To maintain their health and visual amenity and enhance their ecological value;
- To take care in construction and maintenance operations near hedgerows;
- To keep hedgerows free from litter and other waste.



Maintenance

5.6.1 Ornamental hedgerows will be trimmed twice a year in order to maintain a well kept appearance. It is intended that the ornamental hedgerows will be maintained as at least 0.6m in width and approximately 1m in height.

5.6.2 The newly planted native hedgerows will be managed to create a dense, bushy structure at a minimum height of 2m with foliage extending down to ground level. This will be achieved by an appropriate cutting regime as follows:

5.5.3 Cutting will take place in January/February to maximise retention of any berries. From year 4, the native hedgerows will be trimmed every other year to allow berry production and ornamental hedgerows will be trimmed annually to maintain the shape.

5.6.4 Any hedgerow specimens that are identified as future standard trees will be allowed to mature. In the long-term hedgerow trees could be managed as pollards adding structural diversity.

5.6.5 Hedgerow planting will be maintained by weeding, pest & disease control and adjustment /removal of ties/stakes. Any dead, diseased or dying plants will be replaced with equivalent species within the first five years post-planting.

5.5.6 Watering will be carried out during the growing season to maintain trees and shrubs in active growth and in a healthy thriving condition. The rates set up in clause 4.7 to be used a guideline to the Contractor for the volume of water required per visit. Each planting area to be watered to field capacity. In the first growing season (March to September inclusively) after planting new stock should be irrigated 13 times at regular intervals. For the following two years, newly planted stock should be irrigated 7 times per year.

This table sets out the management objectives for the ornamental and native hedgerow planting on the site, how they will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	Keep all hedgerow planting free from weeds to reduce competition and improve visual amenity	Weeding Keep planted beds topped up with mulch to prevent weeds and to present attractive appearance	Weed clearance by hand, hoe or fork as required. Take care not to disturb shrub roots and avoid excessive treading of bed surface Topping up or replacement of mulch until close cover is achieved–use recycled wood chip mulch	Monthly from March to October or as required
B	Allow hedgerow plants to develop healthily	Remove shelters from plants once the plants are established	Remove shelters and take to legal tip	Approx 3 to 5 years after planting
C	Maintain integrity of all hedgerow planting	Monitor and record any plant losses. Report to client.	On instruction from client replace missing plants and maintain to ensure survival	October/November
D	To maintain all hedgerow's shape and form appropriate to species.	Pruning/shaping	Prune dead foliage and extension growth as necessary. Formative and seasonal pruning to create and maintain a natural 'hedge' shape–do not routinely clip shrubs. Re-plant in an upright position and re-firm plants that suffer from windrock.	Year 1-3: All hedgerow cutting to take place January/February Year 4 +: Native hedgerows to be trimmed every other year to allow berry production. Ornamental hedgerows to be trimmed annually to maintain the shape.
E	Maintain diversity of plant species and keep newly planted shrubs free from pest and disease	Qualified horticultural staff to inspect and check on health of planting. Removal of invasive species (refer to section 5.14	Deal with individual problems as they arise keeping use of pesticides to a minimum Dig by hand and remove by hand; removal of invasive species using appropriate eradication method (refer to section 5.10)	Monthly from March to October Annually as required, check on a monthly basis
F	To keep newly planted shrub beds free from litter and fly tipped rubbish	Remove litter and fly tipped rubbish	Remove by hand	Monthly
G	Ensure hedgerows in active growth and in a healthy thriving condition.	Watering hedgerows	Watering hedgerows to the rates set up in clause 4.7 In the first growing season (March to September inclusively) after planting new stock should be irrigated 13 times at regular intervals.	March to September
H	Control exotic tree and shrub species that do not belong in a native tree/hedgerow setting	Check and remove any exotic species	Dig by hand and remove from site	Annually as required, check on a monthly basis

5.7 Amenity Grass

Management Aim

- For grassed areas to present and maintain high quality visual appearance

Management Objectives

- To maintain amenity grass areas at specified height
- To control weeds detrimental to appearance or usage in amenity lawns
- To keep grass areas free from litter rubbish and dog faeces
- To keep amenity grass areas in good condition, suitable for play, recreation and with aesthetic value

Maintenance

5.7.1 Amenity grass areas shall have a well kept appearance at all times and shall be regularly cut during the growing season from April to September to maintain a height of between 25 and 50mm. Unless otherwise agreed, all arisings shall be boxed and taken to a green compost facility. Arisings shall be swept from hard surfaces adjacent to amenity lawns after each visit.

5.7.2 Junctions between amenity grass lawns and plant beds/hard surfaces shall be regularly edged and trimmed to maintain a neat and tidy appearance. In order to avoid damage to trees in amenity grass areas no mower or strimmer will be allowed within 400mm of a tree trunk.

5.7.3 Areas of failed grass shall be prepared and re-sown with the specified seed mix either in April or September. A spring "weed and feed" shall be applied to amenity grass areas at the manufacturer's recommended rates.

5.7.4 Grass growth regulator will not be permitted.



This table sets out the management objectives for the grass planting on the site, how they will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	Control height of amenity grass for recreational use	Cut grass to between 25-50mm	Mow areas with a self-propelled mower. Arisings should be removed from site and disposed of responsibly in council facility as green waste Clean adjoining path areas after mowing	22 times during growing season April – September (weekly during May, June, July and August but do not cut in drought conditions)
B	Keep amenity sward in good condition	Check and report to client on damaged areas	On instruction from client repair damaged or failed areas and re-sow seed. Apply feed treatment. Undertake aeration/thatch removal, if required	April or September
C	Allowing new amenity grass to grow prior to full establishment.	Water new grassland during extended periods of drought particularly during the summer (between May and September)	Water as required.	As required, between May and September.
D	Keep grass areas free from weeds to reduce competition and improve visual amenity	Weeding	Weed clearance by hand, hoe or fork, or mowing as appropriate.	Monthly from March to October or as required
E	Keep all grass areas free from litter, rubbish and dog faeces	Litter removal	Hand picking	Amenity areas–before each cut and monthly October–March. Meadow areas–monthly

5.8 Wildflower Grassland Mixes

Management Aim

- Areas of wildflower and species rich long grass to be maintained as features with high ecological value as well as amenity value.

Management Objectives

- To encourage and maintain an open sward for wildflower grassland meadows allowing wildflower species to flower and set seed.
- To maintain ecological value of wildflower grassland meadows, as appropriate to maintain a beneficial habitat for wildlife.
- To control weeds detrimental to appearance or establishment of wildflowers.
- To keep grassland areas free from litter rubbish and dog faeces.

Maintenance

5.8.1 Areas of wildflower grassland will be sown with a mix of native wildflowers and grass seed such as Special General Purpose Meadow Mix (EM3 supplied by Emorsgate or similar approved). Attenuation basins and slopes of the attenuation ponds will be sown with Meadow Mixture for Wetlands (Emorsgate EM8 or similar approved).

5.8.2 Prior to cutting, litter shall be hand picked and bagged from all grass areas. Bags shall be removed from site and legally disposed of.

5.8.3 The first year of establishment, the wildflower grasslands shall be mowed regularly to help maintain a balance between grasses which are faster growing and the wildflower species. The frequency of cuts shall remain flexible in order to accommodate growth rates and weather conditions. The grassland should be assessed at each visit and mown when heights of the sward reach above 100mm. Mow these areas to a height of 50mm. All arisings should remain on the ground for a minimum of 24 hours, but no longer than seven days, before removing cuttings to on-site compost heaps or off site.

5.8.4 In the secondary and subsequent years, the management of the meadow grassland will alter and will be maintained the following way in the long term. To maintain diversity, all meadow grassland areas will be cut two times annually: firstly at the end of July (main hay cut) following flowering and during hot, dry weather, to reduce the risk of conflict with reptiles emerging from the ponds; and in September. The exact timing of the cut within these months will be dependent on weather conditions, should the ground be too wet to proceed, the maintenance regime should be postponed. Where possible, the hay cut should be undertaken in stages, splitting the grassland into sections that will be cut at different times from the end of June to the end of August. This will promote varied flowering species and increase the diversity of the grassland. Where possible it is beneficial to leave a margin of uncut vegetation of up to 5m from ponds, along swales or alongside hedgerows to ensure the presence of some dense cover throughout the year.

5.8.5 During the main summer hay cut (end of July) the meadow will be cut to 50mm with a forage harvester or similar. The cut grass should be dried on site, turning it to assist drying and promote seed dispersal. No arisings should be removed before a 24 hour period. Dried hay should be removed within 7 days of cutting. All arisings are to be removed from site following cutting operations.

5.8.6 Additional mowing will be required in Autumn (September) to remove excess grass growth and promote flowering species. Grass will be cut to 50mm with a rotary, flail or similar mower. Ideally, cut at least twice within this month to leave the grass short for the winter, except near ponds where at least 1/3 of vegetation should be retained for winter cover. Arisings should remain on the ground for a minimum of 24 hours; all arisings are to be removed from site following cutting operations. See landscape proposals for guidance on the extent of meadow grassland. The areas of meadow grassland shall be maintained as such to ensure there is no reduction in meadow grass areas.

5.8.7 Existing areas of grassland retained will be managed as meadow grassland management set out above.

This table sets out the management objectives for the meadow grassland planting on the site, how they will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	To encourage and maintain an open sward for wildflower grassland meadows allowing wildflower species to flower and set seed	First year of establishment: Mow when heights of the sward reaches above 75mm and cut to 50mm	Mow areas with a self-propelled mower. Arisings should be collected and disposed of responsibly in council facility as green waste, or composted in a designated compost area on site. Clean adjoining path areas after mowing	Once established enough to mow, then mow fortnightly during the growing season, April to September.
B	To encourage and maintain an open sward for wildflower grassland meadows allowing wildflower species to flower and set seed; and to maintain ecological value of wildflower grassland meadows,	Second and subsequent years of establishment: Cut 2 times annually as follows: -Annual hay cut -Late autumn cut	Annual hay cut: Cut to 50mm with a forage harvester or similar. The grass should be cut, hay-dried, and baled within a week. Collect and dispose of grass bales within a week as above. Late autumn cut: Cut to 50mm. Collect and dispose of arisings as above. Near ponds, one third of vegetation should be left as winter cover.	Hay cut: Late July, during hot weather only, varying each year to allow different species to flower and set seed. Late Autumn September
C	To maintain ecological value of wildflower grassland meadows,	Re-seeding bare patches	On instruction from client repair damaged or failed areas and re-sow seed.	In late spring or early autumn.
D	To control weeds detrimental to appearance or establishment of wildflowers	Weeding to control pernicious weed species	Weed clearance by hand, hoe or fork, or spot spraying as appropriate.	Monthly from March to October or as required
E	Keep all grass areas free from litter, rubbish and dog faeces	Litter removal	Hand picking	Monthly.

5.9 Attenuation basin and Swales

Management Aim

- To maintain the attenuation basin and swales as attractive landscape features with ecological value.

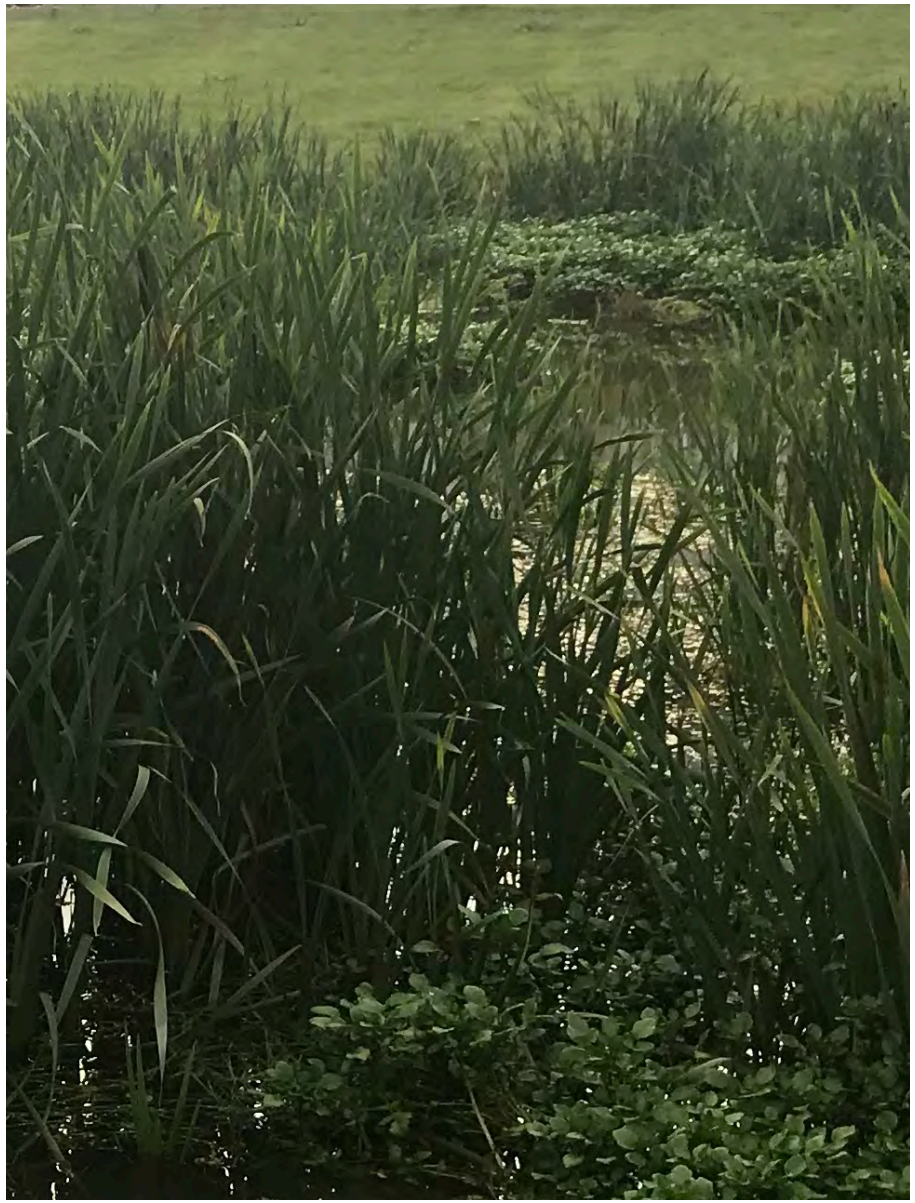
Management Objectives

- To manage grassland and marginal/aquatic planting around attenuation basin and swales to control weeds, opportunistic or invasive species.
- To maximise the biodiversity of the attenuation basin and swales, including for the benefit of reptiles.
- To keep attenuation basin and swales in safe, attractive condition.
- To keep free from litter and rubbish.

Maintenance

5.9.1 The banks of the attenuation basin and swales are to be planted with a meadow mixture for wetlands, such as Emorsgate EM8. If conditions of any areas within the attenuation basins and swales are to remain waterlogged for much of the year, these areas are to be planted with a pond edge mixure such as Emorsgate SP1. Marginal and aquatic plants will be planted at the waterline, with invasive species monitored and removed in order to ensure the diversity of species is maintained.

5.9.2 Meadow grassland will be maintained as set out within Wildflower Grassland Mixes section.



This table sets out the management objectives for the attenuation basins and swales on the site, how they will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	To manage grassland around attenuation basin and swales to control weeds, opportunistic or invasive species.	Control invasive plants and naturally occurring weeds	Eradicate invasive species using appropriate method and necessary licenses. Hand removal only without the use of herbicides. Remove waste to the appropriate place. (refer to Wildflower Grassland section)	Between October and February inclusive
B	To manage grassland around attenuation basin and swales	Mowing and cutting wildflower grassland	Refer to Wildflower Grassland Section for detailed instructions. Note that a margin of uncut vegetation of up to 5m from the pond should be left in rotational sections, to ensure the presence of some dense cover throughout the year.	
C	To keep attenuation basin and swales in safe, attractive condition	Re-seed bare patches as need, to maintain the integrity of the banks.	On instruction from client repair damaged or failed areas and re-sow seed.	October/ November
D	To keep attenuation basin and swales in safe, attractive condition	Ensure no blockages or obstructions occur within the ditches and inlets/ headwalls of the attenuation features.	Inspect. Clearing or cleaning may be conducted by qualified members of staff.	Monthly Every six months.
E	To manage marginal/ aquatic planting in attenuation pond	Once planting is established, control vegetation to cover a maximum of 70-80% of the pond surface.	Leave arisings at the pond edge for two days before removing. Do not clear any greater than one-third of the surface vegetation at any one time.	Every 2 to 3 years, on rotation, between 1st November to 31st January.*
F	Keep attenuation basin free of litter and rubbish	Remove litter and fly tipped rubbish	Remove by hand	Monthly

5.10 Play Equipment

Management Aim

- To regularly inspect and maintain play and recreation areas to comply with current legislation and regulations.

Management Objective

- To maintain the recreational equipment in a safe and viable state which ensures freedom from unacceptable risk.

Maintenance

5.10.1 All play equipment within the Local Area for Play (LAP), including items of natural play, will be regularly inspected to identify any obvious hazards.

5.10.2 All formal pieces of play equipment will undergo frequent checks to ensure the equipment is safe and fit for purpose. The high quality appearance of the equipment will be maintained through maintenance inspections with work undertaken as required.

5.10.3 Whilst annual inspection is not mandatory law under Section 3 of the Health and Safety at Work Act 1974 requires a risk assessment.



This table sets out the management objectives for the play equipment on the site, how they will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	To identify obvious hazards or respond to complaints by public	Routine visual inspection of all play areas	Check for signs of vandalism and remove any litter, glass etc. Check safety surface for faults/loose fill for depth. If parts are found to be unsafe and cannot be immediately repaired the equipment should be immobilised or cordoned off with a warning noticed attached. Record each visit on a spreadsheet.	Weekly
B	To check the operation and stability of the equipment	Operational inspection of all items of equipment, fences and gates	Check all working parts and oil and grease bearings as necessary. Check all ropes, chains and shackles. Check anti slip surfaces eg. on step treads Check that structures and foundations are secure. Check for trip hazards and obstructions in surrounding area. Check for finger traps. Check wooden items for splinters and cracks. Check metal items for corrosion and sharp edges. Check that plastic/polythene items for brittleness and sharp edges. If parts found to be unsafe and cannot be immediately corrected the equipment should be removed or immobilised and cordoned off with a warning noticed attached. Check each item against a check list and record each visit on a spreadsheet.	Monthly
C	To establish overall level of safety of the equipment. Whilst annual inspection is not mandatory a risk assessment is required by law under the Health and Safety Regulations.	Annual technical inspection of all play areas	To be carried out by RPII (Register of Play Inspectors International) trained and certified inspectors or manufacturers inspection engineers. Includes a non–dismantling inspection of all equipment supported by a detailed technical report highlighting any action required. If parts are found to be unsafe and cannot be repaired the equipment should be removed or immobilised and cordoned off with a warning notice attached.	Every 12 months
D	To generally maintain superficial appearance of equipment and street furniture.	As necessary	Sand down and repaint or re-stain equipment, seats, bins and fences to specification supplied by supplier.	As necessary

5.11 Hard Landscape–including footpaths, paved areas and street furniture

Management Aim

- To present the visible indication of high quality, regular site maintenance.

Management Objectives

- To keep paths and paved areas free of debris, litter, graffiti & dog faeces;
- To keep weed colonisation at a minimum and acceptable level;
- To maintain footpaths and paved areas in safe condition;
- To maintain street furniture, including litter bins, seating and bollards and replace if necessary;
- To maintain railings, fences and walls in good condition;
- To maintain items of public art in good condition.

Maintenance

5.11.1 Hard areas and elements will be regularly checked for subsidence and damage and will be repaired at the earliest opportunity using the original specified material. Areas where damage poses a hazard to pedestrians shall be cordoned off with bollards and high visibility tape until repair can be organised.

5.11.2 Painted and stained surfaces shall be checked at five yearly intervals. Where necessary surfaces shall be prepared and repainted/stained using the same product to maintain the integrity of the original design.

5.11.3 A "no tolerance" policy will apply to graffiti which shall be removed as soon as it appears and where necessary specialist contractors shall be employed to carry out this work.







This table sets out the management objectives for the hard landscaping on the site, this includes the footpaths, paved areas and street furniture. It details how they will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	Keep footpaths and paved areas free from litter, dog faeces, staining and chewing gum	Remove bags from litter bins and remove litter and faeces from paths and paved areas. Clean stained surfaces	Remove and replace bags from bins and deposit in legal tip. Sweep up litter and faeces from paths and paved areas. Use pressure washer to remove chewing gum and staining	Twice weekly April to September, weekly October to March As required
B	Keep footpaths and paved surfaces free from leaf and tree debris	Removal of tree litter and debris, including leaves and branches	Removal, collection of all tree litter and debris, including leaves, conkers, branches and transport to tip	November and December
C	Keep hard landscape areas such as paths and paved areas free of weeds	Weed killing	Spray with herbicide containing glyphosate using knapsack sprayer	April/June and August
D	Maintain fencing, paved areas and all hard landscape areas including walls, signage, seating and other street furniture in a safe, clean and graffiti free condition	Monitor and report to client on damaged areas	Repair as instructed by client	As necessary

5.12 Non-native and Invasive Species

Management Aim

- To eradicate non-native and invasive species from the site as they occur
- Prevent the introduction and spread of non-native and invasive species

5.12.1 The control of non-native and invasive species (such as Himalayan balsam or Australian swamp stonecrop which are known locally but not from the site) within the site to ensure that they cannot be spread throughout the site or to adjacent land.

5.12.2 For a list of what is classed as an invasive specie refer to invasive species like under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

5.12.3 The removal of these species from the site would contribute to the national aims and objectives of preventing, reducing and eliminating the impacts from these species in the UK.

5.8.4 Checking of non-native and invasive species to be carried out by a suitably experienced person.



This table sets out the management objectives for the non-native and invasive species on the site, how they will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	Prevent the introduction and the spread of non-native and invasive species	Visual inspection for encroaching non-native/invasive species	Eradicate appropriately using any necessary licenses. Remove waste to the appropriate place. Records to be kept.	Monthly

5.13 Bat and Bird Boxes

Management Aim

- To maintain and increase potential roost/nest sites.

Management Objectives

- To maintain and increase potential roost/nest sites.

Bats

5.13.1 Bat boxes will be installed in accordance with the LEMP and Biodiversity and Ecological Mitigation Plan (BEMP), prepared by BWB consulting, dated November 2023, drawing ref: MSW-BWB-ZZ-XX-RP-LE-0005_ BEMP. The correct installation and suitable location of the bat boxes will be overseen by the a suitably qualified ecologist where necessary. Any change to speciation / ratio should be agreed with the LPA in writing.

5.13.2 Although all foraging and commuting habitat will be retained, indirect effects through light pollution are possible and so the following mitigation strategies have been taken from the Institution of Lighting Professionals and Bat Conservation Trust's Guidance Note 08/18 Bats and artificial lighting in the UK (2018) and other referenced sources:

5.13.3 In general, light sources will not emit ultra-violet light so as to avoid attracting insects and thus potentially reducing numbers in adjacent areas, which bats may use for foraging. Metal halide and fluorescent sources should not be used.

5.13.4 A lighting strategy will be enforced as below:

- LED luminaires will be used where possible. A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component. Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Limiting the height of lighting columns to 8m and increasing the spacing of lighting columns (Fure, 2006) will reduce spill of light into unwanted areas such as the river. Only luminaires with an upward light ratio of 0% and with good optical control will be used. Luminaires will always be mounted on the horizontal, i.e. no upward tilt.



- Other ways to reduce light spill include the use of directional luminaires, shields, baffles and/or louvres. Flat, cut-off lanterns are best. Additionally, lights will be located away from reflective surfaces where the reflection of light will spill onto potential foraging/ commuting corridors.
- Lighting that is required for security or access will use a lamp of no greater than 2000 lumens (150 Watts) and be PIR sensor activated on a short timer (1 minute), to ensure that the lights are only on when required and turned off when not in use (Jones, 2000; Hundt, 2012).

5.13.5 To enhance the site for roosting bats, 8 bat boxes will be installed on new buildings. The following bat boxes are recommended:

- x4 Habibat 003 Built In Bat Boxes
- x4 Ibstock Enclosed C Smooth Faced Bat Boxes

5.13.6 To further enhance the site for bats, plants of known benefit to bats will be included within the planting scheme.

Birds

5.13.7 Bird boxes will be installed in accordance with the LEMP and Biodiversity and Ecological Mitigation Plan (BEMP), prepared by BWB consulting, dated November 2023, drawing ref: MSW-BWB-ZZ-XX-RP-LE-0005_BEMP. . The correct installation and suitable location of the bird boxes will be overseen by the ECoW where necessary. Any change to speciation / ratio should be agreed with the LPA in writing.

5.13.8 Impacts during construction consist of potential bird nest destruction and disturbance. To comply with current legislation and avoid nest destruction, vegetation clearance works affecting nesting habitat will be scheduled so that these do not occur during the bird breeding season (i.e. outside the period March-August inclusive). If this is not possible, a check will be carried out by a suitably qualified ecologist no more than 48 hours in advance of clearance works. If an active nest is found within the proposed clearance zone, suitable avoidance measures such as creating a buffer zone with barrier tape around the nest will be installed to ensure that the nest(s) are not damaged or destroyed by the works. If a species listed on Schedule 1 of the WCA 1981, such as red kite Milvus milvus, is located then these species are protected from disturbance. This will be avoided by establishing a wider 'no-go' buffer area for the duration of the nesting attempt.

5.13.9 To enhance the site for birds, a nest box scheme will be incorporated into the development through the installation of the following boxes (or similar boxes): A total of 14 bird boxes will be installed on new buildings and within trees either to be retained or proposed trees throughout the development. The following bird boxes are recommended:

- x8 Vivara Pro Woodstone Swift Nest Boxes
- x1 Sparrow terrace
- x3 Vivara Pro Seville 28mm Woodstone Nest Boxes
- x2 Vivara Pro Seville 32mm Woodstone Nest Boxes

This table sets out the management objectives for the bat and bird boxes on the site, how they will be achieved and the schedule for the maintenance tasks.

Ref	Management Objective	Maintenance task	Method	Timing
A	To maintain and increase potential roost/ nest sites.	Visual inspection of all roosting/nesting boxes.	Replace any broken/fallen bat or bird boxes.	Annually (October to February)

APPENDIX 1: Landscape and Ecological Management Areas Plan



NORTH

Land off Semington Road, Melksham

Landscape & Ecological Management Areas Plan

Drawing Ref: **P22-2409_EN_0004_A_0001**

Client: **LIVING SPACE HOUSING**

Date : 25/09/2023
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