

BARRATT DAVID WILSON HOMES

WHITE POST ROAD, BODICOTE

**S106 PLANNING OBLIGATIONS
OPEN SPACES, CAR PARK, SUDs & BRIDLEWAY MANAGEMENT PLAN**

PLANNING

December 2020

CLIENT Barratt David Wilson Homes

PROJECT White Post Road, Bodicote

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Drawings:

1. Drawing '2832-4-5-DR 5705-S4-P1_S106 SUDs Layout Plan' – David Jarvis Associates Ltd. (01/12/20)

1. PRELIMINARIES

1.1 This Landscape Management and Maintenance Plan shall be read in conjunction with all other Contract Documents; including all Drawings and Standard Forms of Tender. Any queries arising in respect of this document, are to be referred to the Landscape Architect.

References:

- a. All references to the "Management Company (MC)" within this document shall mean the organisation (private or otherwise) to which overall responsibility for the site is devolved upon satisfactory completion of the site works by the Housing Developer.
- b. All references to the "Housing Developer" within this document shall mean Barratt David Wilson Homes.
- c. All references to the "Specialist subcontractor/sub consultant/maintenance contractor" within this document shall mean the organisation/s employed by the MC to undertake works within the development on their behalf.
- d. All references to the "Architect" within this document shall mean the leader of the professional team who is responsible to the Client under the terms of the contract.
- e. All references to the "Engineer" within this document shall mean the engineers employed by the client to take overall responsibility for engineering concerns, including the setting of site levels and drainage matters.
- f. All references to the "Landscape Architect" within this document shall mean David Jarvis Associates Ltd or their representatives.
- g. All references to the "development/site/envelop" within this document shall mean the White Post Road development scheme as set out in the approved planning documentation.
- h. All references to, "existing trees" or "existing tree stock" within this document shall mean those identified as being onsite prior to the commencement of site work which are to be retained as set out in the approved planning documentation.
- i. All references to the, "hardscape" within this document shall mean all hard surfaces, boundary treatments, walls and enclosures.
- j. All references to the, "RR" within this document shall mean the Risk Register which shall form part of the Health and Safety file and/or folders for the site within which the site and play area inspection and audit sheets shall be stored. This will detail all individual site items and elements, their general condition, together with [any] remedial action required. Items not requiring immediate attention, will be submitted 2 weeks prior to, but for, discussion at the AMMR.
- k. All references to the, "AMMR" within this document shall mean the Annual Management and Maintenance Review, which shall include as a format for discussion the Risk Register (RR), out of which will derive the AMP.
- l. All references to the, "AMP" within this document shall mean the Annual Maintenance Plan. This shall be informed by the RR, but decided at the AMMR, unless matters of an urgent nature require an immediately actionable response. For example, site items or elements man made or natural that put site users at an unacceptable level of risk arising from their use or presence on site require an immediately actionable response.
- m. All references to the "Public Realm" within this document shall mean those areas that are 'accessible to all' within this private development that do not constitute 'trespass' onto another proprietor's private property. Examples include, but may not be limited to, access corridors (roads and footpaths) into, and out of, the development, multiple-use car parking courts and amenity style planting for enjoyment by all.
- n. All references to the "Private Realm" within this document shall mean those areas where access is typically (but not always) restricted to use by the proprietor alone, and where uninvited access, may constitute, 'an Act of Trespass'. Examples may include a private garden space and/or private parking at the front of a property whereby use is for the obvious and explicit use

by the proprietor of the property, usually differentiated by some form of boundary demarcation and/or signage separating it from use by multiple users.

- o. All references to “multiple-use parking courts” within this document shall mean all parking courts accessible to all where access would not necessarily constitute an, ‘Act of Trespass’ and where, ‘*car park facilities are made available for use by multiple users [of that particular unit/block of flats etc.] often differentiated by white lining alone*’.

1.2 The Main Contractor shall note that David Jarvis Associates Limited Landscape Management and Maintenance Plan, together with any associated drawings and specifications, are composite drawings based on information, drawings and correspondence from (but not necessarily limited to) the following:

- a. Barratt David Wilson
- b. Harris Lamb
- c. Infrastructure Design
- d. FPCR

here-in-after referred to as the Design Team.

Responsibilities

1.3 *Compliance*; all workmanship shall be strictly in accordance with the Clauses of this document. All specified works are to be in accordance with DJA drawings and compliant with what follows.

1.4 *Health & Safety*; the Contractor is deemed to be conversant with his obligations applicable under all relevant health and safety legislation at the time of the works on site and shall be fully compliant with them.

1.5 *British Standards*; all work is to be carried out in accordance with the latest edition of the following:

- a. BS 1722 - Fences. (All relevant parts).
- b. BS 3882: 2015 - Specification for topsoil and requirements for use.
- c. BS 3936-1: 1992 - Nursery stock. Specification for trees and shrubs.
- d. BS 3936-7: 1989 - Nursery stock. Specification for bedding plants.
- e. BS 3936-10: 1990 - Nursery stock. Specification for ground cover plants.
- f. BS 3998: 2010 - Tree work. Recommendations.
- g. BS 4043:1989 - Recommendations for transplanting root-balled trees.
- h. BS 4428: 1989 - Code of practice for general landscape operations (excluding hard surfaces).
- i. BS 5709: 2006 - Gaps, gates and stiles. Specification.
- j. BS 5837: 2012 - Trees in relation to design, demolition and construction. Recommendations.
- k. BS 7370-1: 1991 - Grounds maintenance. Recommendations for establishing and managing grounds maintenance organizations and for design considerations related to maintenance.
- l. BS 7370-2: 1994 - Grounds maintenance. Recommendations for the maintenance of hard areas (excluding sports surfaces).
- m. BS 7370-4: 1993 - Grounds maintenance. Recommendations for maintenance of soft landscape (other than amenity turf).
- n. BS 7533 - Pavements constructed with clay, natural stone or concrete pavers. (All relevant parts).

together with the latest amendments of all these and all other relevant British Standards.

1.6 *Guidance Notes for herbicides*; all work requiring the use of herbicides in or near water bodies shall be carried out in accordance with the latest edition of the following:

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- a. “Guidelines for the use of herbicides on weeds in or near watercourses and lakes” (PB2289).
- 1.7 *Guidance Notes for SuDS maintenance*; all maintenance work to SuDS should be carried out in accordance with Chapter 32 of the CIRIA SuDS manual.
- 1.8 The Contract Administrator (CA), reserves the right to condemn any work which appears unsatisfactory; due to poor workmanship or, non-compliance with this documentation. The sub-contractor shall, at his own expense, make good any defects or liabilities to the satisfaction of the CA, and shall be responsible for all the consequential costs resulting from his failure to comply with this documentation.”
- 1.9 *Responsibility*; Non-approval or non-acceptance shall not relieve the Contractor of his responsibilities under the contract for the quality of materials and standard of workmanship in the works.

2. INTRODUCTION

Planning Context

2.1 This landscape management and maintenance plan (LMMP) details the landscape management intent and maintenance operations for the public open spaces including play areas, car park, SUDs and bridleway at White Post Road, Bodicote pursuant to clause 3.7, Schedule 2 of the Section 106 agreement dated 20th November 2017 which states:

'Prior to the commencement of development to submit to the Council for approval the Open Space Works Specification the Bridleway Scheme the Bridleway Specification and the Management Plan, and not to commence development until the Council has approved in writing the Open Space Works Specification the Bridleway Scheme the Bridleway Specification and the Management Plan.'

2.2 Management plan is defined in clause 1.1.52:

'Management Plan' means a scheme to be submitted to and approved in writing by the Council, which Identifies:

- i. the future management and maintenance requirements of the Car Park the Open Space the SUDs and the Bridleway*
- ii. the proposed ongoing maintenance operations for the Car Park the Open Space and the SUDs, and the Bridleway specifically identifying the management objective, task and the timing and frequency of the operation for all the features of the Car Park the Open Space and the SUDs*
- iii. the proposed means of funding the ongoing maintenance and management of the Car Park the Open Space and the SUDs in accordance with the Management Plan by the Owner and where one is formed pursuant to the provisions of this deed the Management Company*
- iv. a mechanism for the periodic review with the Council and where necessary amendment of the Management Plan'*

Scope and Purpose

2.3 The aim of the LMMP is to provide a set of aims and objectives for the management of the existing and proposed features on site. These determine the appropriate management prescriptions required, which is accompanied by a work schedule to provide an overall long-term management strategy.

2.4 The management strategy is to ensure the long-term viability of both existing and proposed habitats and planting and to achieve the overall design intent of the scheme. It should ensure planning conditions are met, as a minimum, and exceeded if at all possible, to create a balanced and well managed site, that enhances the existing biodiversity where possible, that is attractive, safe and secure; both for the people who live there and for visitors to the site.

2.5 The LMMP is divided into four main sections to consider the existing and proposed components within the open space areas, car park and SUDs separately and includes;

Section 4 – Management of Existing Habitat Components

Section 5 – Management of Proposed Planting Components

Section 6 – General Landscape Maintenance Operations

Section 7 – Management of Proposed Hard Landscape Treatments

3. EXISTING SITE AND PROPOSED DEVELOPMENT

Site Background and Existing Features

- 3.1 The site is located between Banbury and Bodicote and forms the eastern most area of a proposed new neighbourhood along the southern edge of Banbury.
- 3.2 The site is bounded by a series of field hedgerows, some with large specimen trees. The most significant trees are located at the entrance off White Post Road.

Proposed Development

- 3.3 The site comprises a mixture of landscape elements; including existing tree and hedgerow planting, alongside the proposed structural and ornamental planting, proposed tree planting, amenity greenspace and additional species rich grassland together with hardscape material detailing.
- 3.4 Green corridors and SUDs have been integrated to aid ecological connectivity.
- 3.5 The design has sensitively incorporated the existing habitats as much as possible within the requirements of a publicly accessible recreational open space.

Overall Management Aims and Objectives

- 3.6 Aims and Objectives:
- a. To provide and maintain an attractive/visually appealing and robust landscape setting to the development, particularly along the main access roads and frontages.
 - b. To maintain a secure and decorative physical enclosure to the site and parts thereof.
 - c. To help partially screen the new development, provide privacy and define plot boundaries in order to create a visually interesting development cell.
 - d. Provide recreational opportunities for the nearby residents within the framework of the existing and proposed habitats.
 - e. To maintain and enhance existing biodiversity and green ecological corridors throughout the site. Manage and enhance the habitat types and ensure their future longevity.
 - f. To maintain health and safety requirements to all publicly accessible areas of public open space for all residents and visitors.

4. MANAGEMENT OF EXISTING HABITAT COMPONENTS

General Management Aims and Objectives

4.1 Aims and Objectives;

- a. To maintain and enhance existing biodiversity and green ecological corridors throughout the site.
- b. Manage and enhance a mosaic of habitat types that will ensure future longevity.
- c. To maintain health and safety requirements to all publicly accessible existing habitats.
- d. Any replacement planting shall be native and include seeds and plants from local sources of provenance.
- e. Prevent the spread of invasive species.

Existing Tree Groups

Management Prescriptions

- 4.2 Details of tree protection fencing, tree survey and tree works specification are provided in the Arboricultural Method Assessment (FPCR May 2019)
- 4.3 The management of the existing tree groups is to have a 'light touch' approach in order that they retain their ecological value for wildlife, whilst preventing the spread of invasive species.
- 4.4 Monitoring and inspections to identify structural defects, including dead or broken branches, cracks, decay, and root decay should be held annually and after major storms. Remedial works and overall management aims and prescriptions shall be determined by a suitably qualified Arboriculturalist/Ecologist.
- 4.5 The edge buffers shall be cut once annually on rotation each autumn. Strimming of the buffer will be carried out to maintain a mosaic of long (semi rank) and short (>15cm) grassland areas and scrub. One third of the area will be strimmed each year, so that the entire buffer will receive a cut once in a three year period. Strimming and scrub removal will be completed during winter (mid-September to February) to avoid the active season for birds, reptiles and hedgehogs, and allow plants to fruit, thereby providing foraging opportunities for many species including badger.
- 4.6 Deadwood within woodlands shall be retained on site to provide possible habitats for invertebrates and small mammals. Brash will be removed from site to prevent excessive piling up of cut material. The value of retained deadwood should be monitored and reduced if it adversely affects the value of the field layer.
- 4.7 Any young saplings or regenerated plants to be retained shall be fitted with a mulch mat and guard and be managed as per sections 5 and 6 below.

Existing Trees and Field Hedgerows

Management Prescriptions

- 4.8 Details of tree protection fencing, tree survey and tree works specification are provided in the Arboricultural Method Assessment (FPCR May 2019)

- 4.9 Tree remedial work such as pruning / tree surgery, removal of dead, dying or diseased wood shall be carried out following the annual review, refer to 4.18 below.
- 4.10 The management of trees will be generally non-intervention unless there are reasons to cut trees for health and safety considerations, in which case arboricultural advice will be sought and followed.
- 4.11 The future management of the hedgerows shall encourage thickening, planting up gaps and generating an uneven and broad min. 2m margin in order to create a range of microhabitats for various species.
- 4.12 The existing hedgerows shall be trimmed on a 2-3 year rotation, which will always leave areas to fruit and flower thereby providing a foraging source. Avoid trimming all hedges in the same year, cutting no more than a third of the hedgerow height in any year. The hedgerow should be allowed to grow up to and maintained at 2.4-3.6m tall. Hedgerow junctions shall only be trimmed very occasionally in order to provide an alternative habitat.
- 4.13 Pruning of hedgerows should encourage the development of tall "A" shaped, full hedgerows with a dense base cover.
- 4.14 A strip of uncut vegetation shall be left at the base of the hedge as rough grassland to further enhance the hedgerow. This shall be cut twice a year in early spring and autumn to a minimum 150mm high and arisings removed.
- 4.15 A review of the hedgerows shall take place to determine if there are any sections that are deteriorating with gaps (of 1m or more), hollow bottoms and die back. Plant gaps 1m or wider within existing hedgerows to improve their function as a corridor feature, using 60-90cm whips to match those existing species. They will be planted in a double staggered row with 0.40m distance between plants and 0.25m between rows. Each plant will be supplied with a 0.5 x 0.5m biodegradable mulch mat pegged into place. The plants shall be from seeds of local region of provenance. The soil should be improved with well-rotted manure prior to planting. The existing plants on either side of the gap shall be coppiced to provide room and light for the new plant.
- 4.16 If the hedgerow requires regenerating or to prevent the hedgerows turning into a line of trees then hedge laying/ trimming/ coppicing followed by further gapping up could be undertaken following consultation with the Arboriculturalist / Ecologist.

Existing Habitat Monitoring

- 4.17 General monitoring of the existing habitats and management actions will take place in years 1,3 and 5, with the findings informing any changes to the management strategy. Specifically, it shall include monitoring of the condition and sustainability of mature trees and tree groups within the development. The management plan shall be adjusted accordingly with any subsequent remedial works to be defined by the Arboriculturalist / Ecologist and agreed with the LPA and adjacent building occupiers/owners before works commence on site.
- 4.18 Monitoring shall also incorporate an annual tree safety survey on existing trees close to public paths, trees fronting public roads and paths to identify any structural defects, including dead or broken branches, cracks, decay, and root decay that may require remedial works for safety reasons. Additional surveys may be required after major storms.

All Tree and Hedgerow Work and Surveys

- 4.19 All tree work (including work to dead, dying and diseased trees) shall be carried out by an Arboricultural Association approved contractor (arboricultural contractor or arborist) to latest

version of BS 3998: Recommendations for Tree Work (at the time of writing: 2010); whom, unless by agreement to the contrary, shall be responsible for obtaining all necessary felling licenses pertaining to the work.

- 4.20 Contractors should be aware of the legal protection afforded to breeding birds/nests, amphibians and bats/bat roosts. The bird nesting season is generally (although not restricted to) March - August inclusive. Under no circumstances shall trees be removed and or disturbed during this time if there are bird's nests present. Should works be required within this period the vegetation must first be inspected by an ecologist who will advise on any restrictions necessary to protect nesting birds. Cutting in February allows the fruit to remain on the trees for the longest period to feed the birds. Overtime, changes to the tree such as ivy on trees or the development of splits or holes may make them more suitable as a bat roost. Prior to any works taking place at any time of year the trees shall be assessed for the suitability for roosting bats by an Ecologist and appropriate mitigation and/or licencing will be undertaken as required.

5. MANAGEMENT OF PROPOSED PLANTING COMPONENTS

- 5.1 This incorporates all 'publicly accessible' soft landscape and boundary treatments (where applicable) including tree planting, shrub and herbaceous beds, hedge planting and grassland.
- 5.2 The management requirements for new planting will need to change as the planting establishes and begins to mature. Three phases are identified as below including the initial 12 month maintenance period. However, as these definitions are not mutually exclusive (of one another) a programme of monitoring will be necessary to ensure the LMMP aims and objectives are effectively realised.

Proposed Planting Management Phases

- 5.3 *Short Term (1-3yrs) – this incorporates the initial 12 month maintenance period;* the initial establishment period will require more frequent maintenance operations to ensure planting thrives without competition and planting sundries are maintained. Cosmetic and/or functional pruning operations may be carried out during this timeframe to ensure the overall aims and objectives are met and to ease the maintenance burden over the medium to long term timeframe. Management examples may include removal of crossing/rubbing branches to maintain general tree health, removal of tree supports once wind firm, crown reduction to maintain appearance, or removal of branches to manage conflicts both 'on' and 'off' site.
- 5.4 *Medium to Long Term (4+yrs);* as the development establishes and matures, the management regime will shift to ensure longevity. Pruning and/or other operations may be required. Precise timing will be dependent on a programme of monitoring to ensure effective maintenance is carried out at the appropriate time.

Proposed Native Tree and Shrub Mix

Management Aims and Objectives

- 5.5 Ensure the establishment and continuing health of the new planting.
- 5.6 Promote a diverse mix and structure through managing the tree and shrub planting and planting edge respectively, including a rough grass margin.
- 5.7 To maintain health and safety requirements to all publicly accessible areas of tree and shrub planting for all visitors.
- 5.8 Retain the wildlife value of the trees with any remedial works taken under advice from a suitable qualified ecologist.

Management Prescriptions

Short Term Management

- 5.9 Refer to section 6 for general maintenance operations.
- 5.10 In late autumn of each year the site will be inspected and a programme of work for the next twelve months agreed. Actions required might include practices such as formative pruning and replacement of stock.

Medium to Long Term Management

- 5.11 Protection – Remove (remnants of) tree guards before they start to restrict growth. Stakes will be removed following a test on sample trees. To test whether trees are root-firm, sample trees within a group (say 10%) shall be untied in spring and monitored over the next growing season. When firmness is proven, remove all remaining stakes and ties, fill in resulting post holes and remove surplus materials. Where stakes and ties are still necessary, further inspections will be required to adjust and maintain them in good order, ensuring that stems are not being damaged.
- 5.12 Once good establishment of the planting areas has been achieved, the density of the planting can be reduced by selective thinning. Thinning should aim to promote the growth of a good field layer and prevent the growth of tall and spindly trees or where adjacent branches are touching or overshadowing each other.
- 5.13 Continue to weed seasonally.
- 5.14 The planting shall be managed in the longer term by felling and replanting in order to gradually generate a mixed age structure. This includes a program of selective felling and replanting with locally native species, of small groups of mature or over-mature trees on a 10-year cycle. Where possible, the management of naturally regenerated seedlings should be used to provide replacement trees rather than replanting. Replanting should aim to give a varied structure including some dense and open areas.
- 5.15 Some trees with splitting bark, fallen limbs and cavities developing shall be retained as potential habitats and bat roosts unless the tree becomes dangerous when in proximity to areas available to public access. Such trees would not be removed unless hazardous.
- 5.16 Selective thinning within the graded edges will be required on a 5 yearly cycle to open up and diversify the age and structure.
- 5.17 Seasonal weeding around new planting growth will be required to prevent smothering as above. Dense stands of bracken or bramble may be treated with herbicides as per the general maintenance operation guidelines.

Proposed Native Field Hedgerow Planting

Management Aims and Objectives

- 5.18 Maintain the hedgerow to encourage healthy establishment and a good shape.
- 5.19 Prevent the spread of undesirable species.
- 5.20 Avoid ingress onto public paths.
- 5.21 Include native planting to promote and enhance the existing site biodiversity. Seeds and plants should be from local sources of provenance.
- 5.22 Keep hedgerow base litter free.

Management Prescriptions

Short Term Management

- 5.23 Refer to section 6 for general maintenance operations.

- 5.24 Pruning - Pruning of native hedges shall have the following objectives:
- To remove any dead, dying or diseased wood.
 - Pruning of hedgerows should encourage the development of tall "A" shaped, full hedgerows (at 1.8m in height and at least 1 metres in width), with a dense base cover.
 - To remove suckers or other unwanted growth.
- 5.25 Prune in accordance with good horticultural and arboricultural practice.
- 5.26 Heavy pruning shall be carried out in the first year to encourage bushy side growth, thereafter; pruning will be carried out on a 3 year cycle. Avoid trimming all hedgerows in the same year, cutting no more than a third of the hedgerow in any year. Leave a minimum of 1m strip of uncultivated land between the hedgerow and cut grass. Pruning shall be carried out at the correct time having regard to the species and maintenance objectives above.
- 5.27 A strip of long grass shall be left at the base of the hedge as rough grassland with arisings removed to further enhance the hedgerow. This shall be cut twice a year in early spring and autumn to a minimum 150mm high.

Medium to Long Term Management

- 5.28 Protection – Remove (remnants of) tree and shrub guards before they start to restrict growth.
- 5.29 Once good establishment of the hedgerow planting areas has been achieved, the density of the planting can be reduced by selective thinning if required.
- 5.30 Continue to weed seasonally.
- 5.31 A review of the hedgerows shall take place to determine if there are any sections that are deteriorating with gaps (of 1m or more), hollow bottoms and die back. Plant any gaps 1m or wider within the hedgerow using 60-90cm whips to match those existing species. Short term maintenance of the gapping up planting shall focus on establishment as per 5.23-5.27 above.
- 5.32 Hedgerow trimming shall take place every 3 years on a rotational basis. Trimming of all the hedgerows in one year should be avoided, cutting no more than a third of the hedgerow in any year. The hedgerow should be allowed to grow up to and maintained at 1.8m tall. Hedgerow junctions shall only be trimmed very occasionally in order to provide an alternative habitat.
- 5.33 Sections of new planting should only be lightly trimmed allowing the hedge to increase in size each time.
- 5.34 Hedgerow trimming shall be carried out at the correct time of year having regard to the species and management objective, but shall exclude the months of March – August, hard frosts and the spring flush.
- 5.35 Occasional standard trees shall be left to add diversity to the hedgerow. However, they shall be maintained to a maximum height of 18m to minimise the potential for bird roosting sites. Trees shall be pruned to remove diseased wood or dead/ dying wood to maintain clearances above roads. Pruning shall be in accordance with good horticultural and arboricultural practices.
- 5.36 If the hedgerow requires regenerating or to prevent the hedgerows turning into a line of trees then hedge laying followed by further gapping up could be undertaken following consultation with the Ecologist / Local Wildlife Trust.

- 5.37 Follow the tree hedgerow work guidelines given in section 4.
- 5.38 Continue to leave a strip of long grass at the base of the hedgerow and cut twice a year with arisings removed.

Proposed Street Trees and Specimen Trees

Management Aims and Objectives

- 5.39 The aftercare of the trees should be tailored to their size requirements and ensure a safe and healthy development whilst promoting their wildlife value.
- 5.40 To maintain health and safety requirements to all publicly accessible areas of public open space for all residents and visitors.
- 5.41 Maintain bark mulch and weed control.
- 5.42 To control the spread of pests and diseases.

Management Prescriptions

Short Term Management

- 5.43 Refer to section 6 for general maintenance operations.
- 5.44 In late autumn of each year the site will be inspected and a programme of work for the next twelve months agreed. Actions required might include practices such as formative pruning and replacement of stock.

Medium to Long Term Management

- 5.45 Continue to monitor and act upon findings to ensure the aims and objectives continue to be met. Follow the tree work guidelines given in section 4.

Proposed Ornamental Hedgerow Planting

Management Aims and Objectives

- 5.46 Maintain the hedgerow to encourage healthy establishment and a good neat shape.
- 5.47 Prevent the spread of undesirable species.
- 5.48 Avoid ingress onto public paths.
- 5.49 Keep hedgerow base litter free.

Management Prescriptions

Short Term Management

- 5.50 Refer to section 6 for general maintenance operations.
- 5.51 Pruning - Pruning the hedgerow shall have the following objectives:
- a. To remove any dead, dying or diseased wood.
 - b. To remove suckers or other unwanted growth.

- c. To achieve a regular height of 1.2m with trimmed edges and top.

5.52 Carry out formative pruning in the first two years to promote dense hedge growth as below:

- a. Deciduous hedgerows (upright plants e.g. Crataegus, Ligustrum) - cut back plants to 30cm on planting, followed by trimming side branches in the summer. In the second year (Feb-Mar) cut back growth by half, followed by further trimming of side branches in the summer. Cut the leader shoot to the desired height in the autumn.
- b. Deciduous hedgerows (stocky, bushy at the base of plant e.g. Carpinus, Corylus, Fagus) - cut back leading and side shoots by one third on planting. Repeat this in the following winter.
- c. Evergreen hedgerows (upright plants e.g. Buxus, Lonicera, Escallonia) – cut back all stems by one third after planting and repeat at the same time the following year.
- d. Evergreen hedgerows (conifers and other evergreens e.g. Prunus, Cotoneaster, Pyracantha) – Lightly cut back straggly side shoots and leave leading shoot unpruned on planting followed by further trimming of side shoots in the summer (up to Aug).

Medium to Long Term Management

5.53 Continue to weed seasonally.

5.54 Maintenance pruning shall include:

- a. Deciduous hedgerows – Trim annually in June and again in August to a shape that tapers at the top.
- b. Evergreen hedgerows (upright plants e.g. Buxus, Lonicera, Escallonia) – trim the top and sides to maintain the desired shape and height.
- c. Evergreen hedgerows (conifers and other evergreens e.g. Prunus, Cotoneaster, Pyracantha) – trim the hedge and leading shoot to the desired shape and height. Avoid hard pruning to expose old wood.

5.55 Protection – Remove (remnants of) tree and shrub guards before they start to restrict growth.

5.56 Once good establishment of the hedgerow planting areas has been achieved, the density of the planting can be reduced if required by selective thinning to prevent encroachment onto adjacent pathways.

5.57 Contractors should be aware of the legal protection afforded to breeding birds/nests, amphibians and bats/bat roosts. Some formal hedgerow maintenance pruning will be required during the bird nesting season (March-August inclusive). If completed regularly these operations should not be invasive or directly affect nesting birds or wildlife. However, the hedgerows should be inspected prior to any works being carried out to ensure that nesting birds aren't present or will not be disturbed. If birds are present the pruning should be left until the young have fledged the nest.

Proposed Ornamental Shrubs, Groundcover, Herbaceous and Grasses

Management Aims and Objectives

- 5.58 Ornamental planting should be managed to promote the healthy growth and development of decorative features such as flowers, foliage and stems.
- 5.59 Allow plants to flower and fruit / set seed
- 5.60 Prevent the spread of undesirable species.
- 5.61 Avoid encroachment onto public paths and play areas.
- 5.62 Keep shrub beds litter free.

Management Prescriptions

Short Term Management

- 5.63 Refer to section 6 for general maintenance operations.
- 5.64 In late autumn of each year the site will be inspected and a programme of work for the next twelve months agreed. Actions required might include practices such as thinning, coppicing, and/or replacement.
- 5.65 Any losses or damage to shrubs are to be noted and replaced for five years from scheme completion for planning compliance. Thereafter plant and replace to ensure continuity of cover. Continual failure of a species at a particular locality may suggest general unsuitability for the location.
- 5.66 Carry out formative pruning in the first two years to promote bushy growth as below:
 - a. Specimen shrubs - only requires light trimming and shaping in the first few years.
 - b. Young shrub planting - only requires light trimming and shaping in the first few years.
 - c. Evergreen planting - in mid-spring before growth starts.
 - d. Deciduous early flowering shrub planting – trim after flowering.
 - e. Deciduous mid-summer flowering shrub planting – trim in early to mid-spring.
 - f. Winter flowering shrubs – trim in spring.
 - g. Species with coloured stems/large foliage (e.g. Cornus) - In the second or third spring coppice plant in Feb-March to 7.5cm from the ground and thin outside shoots.
 - h. Lavandula - prune annually to keep a compact shape after flowering in late summer.
 - i. Herbaceous – Dead head to prolong flowering (e.g. Monarda, Rudbeckia, Salvia, Stachys). Annually cut down after flowering ceases.
 - j. Herb planting – Cut back Allium sp. down to ground after flowering. Lightly trim Thymus after flowering.

- k. Ornamental Grasses (Deciduous) – Trim to ground level before growth starts in early spring (except Pennisetum which grows later and therefore needs cutting in April).
- l. Ornamental Grasses and Sedges (Evergreen and Semi Evergreen) – Annually trim and comb through spent flower stalks, unsightly scorched foliage or diseased leaves individually in Spring, taking care not to cut any new season's growth.

Medium to Long Term Management

- 5.67 Continue to monitor and act upon findings to ensure the aims and objectives continue to be met. The annual review will determine future management operations; this may include selective thinning, additional planting/replacements and further dividing.
- 5.68 Carry out maintenance pruning as below:
- a. Specimen shrubs – only require light trimming to maintain shape and prevent leggy growth. Remove branches that overhang adjacent paths / drives. Prune as per deciduous early flowering shrubs below.
 - b. Evergreen shrubs – large and slow growing shrubs will require little pruning except the removal of unhealthy, dead, diseased or damaged shoots and unsightly/badly positioned shoots. Formal clipped evergreen planting (e.g. Lonicera nitida) shall require shaping and trimming to maintain the desired form and size. Prune in mid-spring just before new growth begins, or until flowering has finished (winter/early spring flowering).
 - c. Deciduous early flowering shrub planting – Prune after flowering and remove some stems to ground level to avoid becoming too bushy. Remove spindly and twiggy growth right back. Remove at least 20% of old stems to the base.
 - d. Deciduous mid-summer flowering shrub planting – Prune in early to mid-spring the previous year's flowering stems to within 1-2 buds.
 - e. Winter flowering shrubs – prune in spring.
 - f. Species with coloured stems/large foliage (e.g. Cornus) - cut back every 2-3 years in Feb - March to the previous coppice stubs. Fertilise each spring to support new growth.
 - g. Lavandula planting – prune established plants after flowering in late summer to remove flower stalks and 2.5cm of the current year's growth maintaining some green growth. If plants become old and woody they should be replaced.
 - h. Herbaceous - Continue to deadhead flowers and annually cut after flowering ceases. Divide perennials to control their spread. If space in the bed they can be replanted.
 - i. Herb planting – Cut back or trim as per 5.54 h). Regularly divide or thin the Mentha sp. to prevent the plant becoming invasive.
 - j. Ornamental Grasses and Sedges (Deciduous and Evergreen) – Cut back or trim as per formative pruning above. Divide plants to control their spread and outgrown their space. Replant if an alternative space is available in the bed.

- 5.69 Advise client when thinning of groundcover planting may be necessary and await instruction before carrying out this work so as to maintain ornamental shrub areas.
- 5.70 Continue to weed seasonally.
- 5.71 Contractors should be aware of the legal protection afforded to breeding birds/nests, amphibians and bats/bat roosts. Some larger shrub maintenance pruning will be required during the bird nesting season (March-August inclusive). If completed regularly these operations should not be invasive or directly affect nesting birds or wildlife. However, larger shrubs should be inspected prior to any works being carried out to ensure that nesting birds aren't present or will not be disturbed. If birds are present the pruning should be left until the young have fledged the nest.

Proposed Bulb Planting

Management Aims and Objectives

- 5.72 Bulb planting should be managed to promote the healthy growth and development of flowers.

Management Prescriptions

Short to Long Term Management

- 5.73 Divide clumps of bulbs as necessary six weeks after flowering. Remove any faded flowers to extend the season and improve the vigour of the bulbs. Deadhead bulbs but allow leaves to die down before removing or cutting back to ground level.
- 5.74 Watering - water as necessary to maintain moist soil conditions during the growing season.
- 5.75 Fertilizer - no feeding should be necessary during the first year. For subsequent years, one or two applications of high potash fertilizer annually will encourage large bulbs to form/promote flower production.
- 5.76 Overcrowded clumps - after the foliage and flowers have died down, lift the bulbs with their leaves on when the soil is moist, using a border or hand fork. Divide clumps of bulbs by hand, trying to avoid damaging the roots. Ideally replant singly, with adequate spacing. Water in thoroughly to settle the roots.
- 5.77 Check regularly for damage or infection and remove as necessary.

Grassland Generally

Grass Maintenance Operations Generally

- 5.78 Maintenance of grass areas will be as described in BS 7370: Part 3, 1991 in suitable weather conditions and shall have the following objectives:
- Any shrinkage and/or depressions, bare patches and other failed areas will be rectified in accordance BS 7370-3; if turfing: Clause 12.2, if reseeding: Clause 12.6.
 - Humps, bumps and hollows will be rectified in accordance with BS 7370-3, clauses 12.4 and 12.5, quality and appearance to match the existing.
 - Prior to any grass cutting operations commencing, all litter and obstructive debris shall be removed.

- d. Fertiliser – Spring and autumn application granular fertiliser shall be applied only as required to help establish a healthy sward. (In March of each year apply a 9/7/7 fertiliser at 35g/m². In September of each year, apply a 3/12/12 fertiliser at 35g/m²). All fertilisers are to be stored and applied in accordance with the manufacturer's instructions. Depending on the vigour and health of the plant, fertiliser applications may be suspended as part of the regular inspection programme. Fertiliser should not be applied to areas of species rich grassland.
- e. No burning, shredding or chipping on site will be allowed.
- f. Generally, allow naturally colonizing species to emerge where appropriate e.g. in low maintenance grass / species rich grassland, but remove invasive 'weed' species.
- g. Within amenity and close mown grass areas prevent the encroachment of large herbaceous or scrub species, keeping amenity grassland areas free of flower stalks and weed species.
- h. Any damage caused during cutting such as trampling, rutting, abrasion or scalping should be repaired at the earliest opportunity to maintain an attractive sward.
- i. Litter and excessive fallen leaves should be removed regularly to maintain a neat appearance.
- j. DO NOT USE mowing machinery or nylon filament rotary cutters closer than 100mm to tree stems. For operations close to stems, use hand tools. N.B. USE OF HAND TOOLS WILL GENERALLY NOT BE REQUIRED IF TREES ARE MULCHED IN ACCORDANCE WITH THE SPECIFICATION AND THIS DEPTH IS MAINTAINED OVER and BEYOND THE RECTIFICATION PERIOD.
- k. Soft edges to seeded areas adjacent to shrub planting beds and HS+ trees are to be cut back to clean straight lines and/or smooth curves as directed by the planting plan geometry. Soil is to be drawn back and mulch topped up as required in compliance with the specification.
- l. Grass should be removed from all hard surfaced areas, paths, pavements and gravel/mowing strips to prevent the build-up of moss/lichen/slippery surfaces/nutrient enrichment.
- m. If standing water occurs, aeration with a spiked roller or other approved implement having tines which penetrate 50-100mm into the soil surface shall be carried out once per month between September and April inclusive on all areas.

5.79 Time of first cut - Mar/Apr after Autumn sowing or Jun/Jul after Spring sowing.

5.80 Monitor grass erosion annually and reinstate damaged or worn areas. Resow failed areas of grassland with original specification seed mix. Protect with temporary fencing until sufficiently established for intended use and water as necessary.

5.81 For bulb planting swathes in grass the frequency of grass cutting is to be adjusted so that the grass can be left to grow longer around the bulbs and is cut a minimum of 6 weeks after the season flowering has finished. Therefore after winter and spring flowering the grass shall be cut from June and after summer flowering from September.

Amenity Grassland

Management Aims and Objectives

5.82 Amenity grassland forms the majority of the grassland area and shall be managed more intensively in order to provide more formal recreational space.

5.83 Maintain a safe useable surface for public use.

Management Prescriptions

Short to Long Term Management

- 5.84 Grass areas will be maintained in suitable weather conditions as Category D grass in accordance with the Tables 1, 2 and 6 of BS7370: Part 3 1991, i.e. mown fortnightly to 25mm between April and November with a maximum allowable height of growth of 50mm, but with cuttings removed.
- 5.85 The standards to be achieved for short amenity grass shall be as follows, abstracted from Table 6 of BS7370: Part 3 1991:
- a. Total ground cover (by area) to be at least 80%.
 - b. No stones or hard litter at the surface with a diameter greater than 25mm.

Species Rich Grassland

Management Aims and Objectives

- 5.86 Species rich grassland shall be managed less intensively in order to provide a more diverse sward with greater biodiversity value.
- 5.87 Prevent the spread of undesirable species
- 5.88 Prevent soil enrichment by removing mowing arisings.
- 5.89 Provide a visual distinction between the areas for recreation (amenity grassland) and areas for wildlife value.

Management Prescriptions

Short Term Management

- 5.90 Once sown, the site will require good weed management. Regular mowing/ topping in the first year will generally control the annual weed growth and can be cut at least 8 weeks after sowing to a height of 50mm. However, treat residual perennial weeds with a selective herbicide or glyphosate by either spot spraying or by weed wiping with a wick applicator.
- 5.91 Following an autumn sowing the grass shall not be cut in spring or early summer in order to allow any sown annuals such as yellow rattle to flower. Instead the first cut shall take place in midsummer before the annual flowers can die back and set seed and the arisings removed. Mowing / topping regularly can then continue.
- 5.92 Grass areas will be maintained in suitable weather conditions as Category H grass in accordance with the tables 1, 2 and 6 of BS7370: Part 3 1991, i.e. mown twice a year with no maximum allowable height of growth once established (i.e. the first flowering season shall be sacrificed to prevent the more vigorous grasses outcompeting the less vigorous wild flowers).
- 5.93 The standards to be achieved for the sward stated above shall be as follows, abstracted from Table 6 of BS7370: Part 3 1991:
- a. Total ground cover (by area) to be at least 40%.
 - b. No stones or hard litter at the surface with a diameter greater than 75mm.
- 5.94 Oversow with the same seed mix as necessary.

First growing season

- a. Time of first cut: Midsummer

- b. Height of first cut: to 50 mm.
- c. Frequency of subsequent cutting (minimum): Every 2 weeks or as required to cut to a height of 50mm, until September/October
- d. Mowing regularly will control the annual weed growth.
- e. Remove cuttings to avoid smothering the sward.

Second growing season and beyond

- a. Time of main cut: Summer hay cut in late July / August after flowering. Flowering grassland should not be cut between spring and late July / August to give the sown species an opportunity to flower.
- b. Height of cut: to 100 mm.
- c. Leave the 'hay' to dry and shed seed for 1-7 days and then remove from site.
- d. Time of second cut: Cut re-growth in late autumn/ winter.
- e. Height of cut: to 100 mm.
- f. Control invasive weed species by further cutting if required. Problem perennial weeds in established grassland can be controlled by carefully targeted applications of a suitable herbicide, this will take the form of either spot spraying or by weed wiping with a wick applicator.

6. GENERAL SOFT LANDSCAPE MAINTENANCE OPERATIONS

- 6.1 The following describes (but may not be limited to) the type of operations the maintenance contractor may reasonably be expected to undertake during the course of his duties on site. Additional works may be as instructed by the MC at their specific request.

General Maintenance Operations

General Pruning Operations – Existing and Proposed Planting

- 6.2 Pruning operations for trees and shrubs shall have the following objectives:
- a. To remove any dead, dying or diseased wood, rubbing/crossing/broken branches and stems, and/or potentially weak or tight forks.
 - b. To maintain clearances above and within footpaths, seating/car parking/grassed areas and building lines to a height of 2.5m.
 - c. To achieve satisfactory shape and extent of growth: trees, well balanced head suitable to form of tree whether ex-current or de-current; shrubs, healthy bushy growth that promotes ornamental features such as flowers, fruit, autumn/stem colour, etc.
 - d. To remove suckers or other unwanted growth.
 - e. As the trees mature, lifting and thinning of crowns may become necessary.
- 6.3 Prune in accordance with good horticultural and arboricultural practice at the appropriate time of year having regard to the species taking care to observe the following objectives:
- a. When removing branches do not damage or tear the stem or bark.
 - b. Keep wounds as small as possible and cut cleanly back to sound wood.
 - c. Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.
 - d. Prune larger branches neither flush, nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide in accordance with BS 3998: 2010, Section 7, taking care to remove in small sections and lower to ground with ropes and slings.
 - e. Formatively prune by means of thinning, trimming and carefully shaping each specimen appropriately to species, location, season, and stage of growth, in order to leave a well-balanced natural appearance.
 - f. Use clean sharp secateurs, hand saws or other approved tools and trim off ragged edges of bark or wood with a sharp knife.
 - g. Do not prune: young trees during the late winter/early spring sap flow period; woodland whips or feathered trees, leave to attain full height; hedge plants possessing a leading shoot best left to obtain their planned height (e.g.) *Fagus sylvatica*, *Carpinus betulus*, *Taxus baccata* *Thuja* spp., most columnar conifers and *Ilex* spp. However, lateral branches of these species should be cut back moderately to ensure a dense habit.

General Landscape Softworks Maintenance Operations – Proposed Planting

- 6.4 All newly planted landscapes and plant materials therein, shall be managed in accordance with the prescriptions identified below:
- a. *Replacements* – At the end of the growing season, check all plants and remove all dead foliage, dead wood and broken or damaged branches and stems.
 - b. Any dead or dying plants will be replaced with equivalent stock and planted during the next planting season replaced for five years from scheme completion for planning compliance. Continual failures of a particular species at a particular locality may suggest general unsuitability

for the location. Thereafter plant and replace to ensure continuity of cover. All plant stock to be sourced from a supplier certified to be pest and disease free and in accordance with Plant Passport / Animal and Plant Health Agency (APHA) and current DEFRA requirements. Supplier information / certification to be retained for a period of not less than 12 years and must be made available upon request.

- c. *Plant Support Systems and Protection* – Stakes, ties and guards will be checked regularly and adjusted, repaired or replaced and removed upon successful establishment. Stakes will be removed following a test on sample trees. To test whether trees are root-firm, sample trees within a group (say 10%) shall be untied in spring and monitored over the next growing season. When firmness is proven, remove all remaining stakes and ties, and fill in resulting post holes and remove surplus materials. Where stakes and ties are still necessary, further inspections will be required to adjust and maintain them in good order, ensuring that stems are not damaged.
- d. *Pest and disease* - Treat as necessary/appropriate. Monitor and act up on findings. Where planting shows signs of stress (chlorosis, etc.), identify any underlying problems or signs of stress, disease or damage and take appropriate remedial action. In some instances it may be necessary to use alternative species better suited to the local conditions.
- e. *Watering* – The Contractor shall ensure that there is no delay in the execution of watering by obtaining all necessary licences and permissions from water companies for the efficient execution of watering. The Contractor shall water all planting undertaken under the Contract, at the frequency necessary to ensure establishment and survival, until all planting works are completed. Plant materials shall be watered immediately after planting. Carry out regular feeding and watering throughout the growing season to promote healthy growth, taking care not to over water or over feed using a fine hose or sprinkler until full depth of topsoil is saturated. Extra Heavy standard/semi mature trees are to be watered weekly from the beginning of the growing season (April/May) and throughout the summer, during the first year of establishment. This can be adjusted depending on the weather. During the establishment period all trees are to be monitored by the management team for signs of die back and dehydration. The CA shall be informed of any apparent signs of overdue stress. Additional watering may be required in periods of drought/dry weather to ensure plant survival. After 10 continuous days without rain during the growing season the trees shall be watered twice a week as above.
- f. *Re-firming* – Ensure that the plant materials remain firmly bedded after strong winds, frost heave and other disturbances. Re-firm by treading around base.
- g. *Weeding* – General: Remove weeds entirely, including roots with minimum quantity of soil and disturbance to plants. Trees: Weed 1m diameter around each plant. Maintain as required to achieve an 80% weed free area to the base of each tree for a period of 5 years, to ensure the trees satisfactory establishment and development. Shrubs and hedges: Base of plant materials to be kept clear of all pernicious weeds and invasive species by hand weeding/spraying/cultivation on a monthly basis. Ensure mulch mats are replaced or repaired as necessary. Remove weeds encroaching mulch mats or coming through planting split/hole. Remove weeds entirely, including roots with minimum quantity of soil and disturbance to plants.
- h. *Mulching* – remove all weeds and maintain mulch to 75mm, by topping up twice a year until superfluous: 1m diameter to tree planting; retained within planting bed for ornamental shrubs and hedging. Rake to a neat, clean condition.
- i. *Fertiliser* –Apply late winter/spring granular fertiliser (a 20:10:10 spring fertiliser at 30g/m²) to ornamental plant stock [only as required] to help establish healthy plant stock. All fertilisers are to be stored and applied in accordance with the manufacturer’s instructions. Depending on the vigour and health of the plant, fertiliser applications may be suspended as part of the regular inspection programme.
- j. *Weeds and Herbicide Application* - For all other grassland, spot removal of perennial weeds or cutting of annual weeds and invasive species will be carried out by cutting, hoeing or hand pulling, with the use of chemicals kept to a bare minimum. If significant patches of persistent

weed species (including coarse grasses such as couch or False Oat Grass) occur, an approved folia-acting systemic translocated herbicide or lawn herbicide as appropriate can be used. A selective herbicide (for general application) or non-selective herbicide (for spot treatment) shall be applied in accordance with the manufacturer's instructions taking care not to damage surrounding plants and grass from spray drift. A glyphosate based product approved by Natural England and the Environment Agency as suitable on weeds in or near water bodies can be used (Refer to "Guidelines for the use of herbicides on weeds in or near waterbodies" (PB2289) 1995; this document is available from the Health and Safety Executive (HSE) and prior to commencing contractors should check for updates on approved products). Comply with all current COSHH and Control of Pesticides Regulations guidelines and/or requirements.

- k. *Burning of arisings* - not permitted on site at any time.
- l. *Mammalian pest control* - to be completed by a specialist firm with suitable experience in dealing with the particular pest.
- m. *Removal of arisings* – any infected (diseased or pest) prunings or timber arisings shall be removed off site immediately after cutting and burned or buried at a depth of no less than 2.0m in a location to be approved in writing by the Overseeing Organisation, except diseased arisings affected by diseases described in Arboriculture Research Notes or Arboriculture Research and Information notes issued by the Arboricultural Advisory and Information Service, which shall be dealt with in accordance with the advice published in these notes. Healthy arisings shall be removed from site to a suitable composting facility or utilised as windrowed brush / creation of reptile hibernacula at the specific direction of the Project Ecologist.
- n. *Litter clearance* - The contractor shall maintain the site to a clean and litter free standard by removing all litter at intervals highlighted within the Schedule.
- o. *Cleanliness* - The site is to be maintained in a clean and tidy manner after any maintenance operations. All arisings are to be removed from hard surfaces so as to avoid any potential slip hazard. Collect accumulations of drifted leaves from the vicinity and from planting beds.

Health and Safety

- 6.5 All works shall be carried out in accordance with the Authority's and the Contractor's own Health and Safety Policy and in accordance with all current Statutory Obligations.
- 6.6 All landscape maintenance operations shall be subject to the preparation and approval of a project specific Risk Assessment and Method Statement prior to commencing any works on site. Copies of these shall be made readily available to each team vehicle attending the Premises. A full copy shall be forwarded [and approved by] the MC, prior to visiting the site.
- 6.7 The contractor shall exercise all reasonable care and consideration towards visiting members of the public in order to provide protection against hazards caused by the required maintenance operations. Examples include [but may not be limited to]:
 - a. Appropriate signage used to warn members of the public of the operations taking place.
 - b. Appropriate barriers/method of cordoning off the work site to prevent access by the public may be required for certain maintenance operations.
 - c. Special care and attention shall be exercised by the contractor when working near parked cars.
- 6.8 COSHH assessments shall be completed for all substances hazardous to human health that are to be used on site. These may include [but not necessarily be limited to]: herbicides, pesticides, fertilisers and fuel. Copies shall again be forwarded to the MC for approval prior to commencing works on site.
- 6.9 The Contractor shall also note the following whilst on site:
 - a. All personnel are to check in and out of the compound upon arrival/departure.

- b. The correct PPE appropriate to the maintenance operation to be carried out is to be worn at all times when on site. High visibility waistcoats shall be worn at all times.
- c. Vehicles and trailers shall be parked in locations so as not to cause parking issues for visiting members of the public.
- d. No machinery shall be left unattended at any time. All machinery shall be in a serviceable condition and be fit for its purpose.
- e. Smoking on site shall be allowed in designated areas only.
- f. No audible music to be played whilst on site.
- g. No alcohol to be consumed whilst on site.
- h. All defective and vandalised areas shall be reported with photographic evidence supplied immediately. Areas that may cause harm shall be cordoned off and made safe.
- i. All contractor's workwear and vehicles shall bear their employer's name upon them.
- j. Contractors will be allowed access to on site comfort facilities.
- k. Contractors are required to supply a periodic work schedule for the duration of the rectification period and landscape maintenance period to the Site Duty Manager.
- l. Contractors must make contact with the MC (Site Duty Manager) in advance of pending visits/attendances.
- m. Any incidents arising as a result of the contractor carrying out his duties under contract must be reported to the Site Duty Manager with immediate effect.

7. MANAGEMENT OF PROPOSED HARD LANDSCAPE TREATMENTS – OPEN SPACES

- 7.1 This incorporates all ‘publicly accessible/accessible to all’ hard surfacing and boundary treatments (where applicable) including paving, street furniture and other publicly accessible structures and / or features.

General Management Aims and Objectives

- 7.2 To provide and maintain an attractive/visually appealing and robust landscape setting to the development all year round.
- 7.3 To maintain furniture in a safe and good condition.
- 7.4 To maintain health and safety requirements to all publicly accessible areas of public open space for all residents and visitors. Maintaining surfaced paths in a safe condition.
- 7.5 Create a litter free environment.
- 7.6 The contractor should maintain the visual appearance and safety of play structures, play hard surfaces and play elements in accordance with original design intention.

Surfacing

General Management Prescriptions

- 7.7 Standards of maintenance and procedures shall be generally in accordance with BS7370 Part 2: 1994 “Recommendations for the Maintenance of Hard Areas (excluding sports surfaces)” category C.
- a. Weekly inspections to determine the need for maintenance operations.
 - b. Sweeping and litter collection – every 7-14 days.
 - c. Stain removal – complete within 7-14 days.
 - d. Remove leaves from paths, hard surfaces and play areas upon leaf fall.
 - e. Weed and moss growth control – so that it doesn’t exceed 3% of paved area and 10% of the length of joints within it. Spot spray weeds with non-residual herbicide to remove pernicious weeds. Use strictly in accordance with manufacturer’s instructions and comply with all current COSHH and Control of Pesticides Regulations guidelines or requirements.

Kerbs and Edge Restraints

- 7.8 Maintenance of all the hard surfaces shall include making good the kerb or edge restraint. If any such units are loose, broken or out of line or level by 6mm or more, the restraint shall be lifted and reset to the original alignment replacing units as necessary.

Slab & Block Paving

- 7.9 The block paving should be identified as ‘Setts and Cobbles’ and the slab paving as ‘Precast Concrete Slab Paving’ within Table A1 inspection and maintenance checklist.
- 7.10 If the paving become loose, fill gaps to original specification of either sharp sand or mortar and reset.
- 7.11 If any repair is required as a result of damage or settlement or units are loose, broken or no longer true to line, form and level by 6mm or more, the paving slabs shall be made good by resetting to the original alignment in accordance with the original detail specification. Broken units shall be replaced on a like-for-like basis.

- 7.12 For flexible paving - brush over annually with sharp sand until superfluous and joints become effectively sealed.

Proprietary Sport Surfaces (MUGA) – Porous Asphalt or similar

- 7.13 Carry out specific maintenance requirements as directed by the surfacing supplier.
- 7.14 Keep surface clean by sweeping or vacuuming regularly and removing leaves, flowers and other detritus from the surface and surrounding fence line.
- 7.15 Deal with any moss or algae growth as it appears and apply moss killer annually.
- 7.16 Annually wash the surface with a mild cold water detergent taking care not to dislodge any of the surface.

Bridleway and other Self binding Surfaces

- 7.17 The pathway should be identified as 'Self binding / gravels / hoggin' within table A1 inspection and maintenance checklist.
- 7.18 A newly laid path will require regular maintenance by watering with a hose fitted with a rose sprayer, or similar method, plus rolling with a non-vibratory roller as necessary until the surface is entirely consolidated. Drag matting or brushing should also be carried out if necessary. Any depressions should be de-consolidated, additional material added, re-rolled and made good as per the original specification.
- 7.19 Any depressions should be made good with additional surfacing as necessary (to be topped up and rolled to fill all hollows to stop puddling).
- 7.20 Maintenance of the established surface will include spiking the surface to improve drainage if any puddling should occur.
- 7.21 If any repair or replacement is required as a result of damage or settlement, top up the gravel surface within the affected area in accordance with the original landscape specification.

Bound Safety Surfacing

- 7.22 This surfacing should be identified in BS7370 Part 2: 1994 as 'Safety, artificial and continuous surfaces' within table A1 'Checklist for Inspection and Maintenance'.
- a. Regularly brush the bound safety surface once a month to remove debris and litter.
 - b. Repair any damage or seams/joints as required in accordance with the manufacturer's recommendations.

Loose Safety Surfacing

- 7.23 The Safety surfacing should be identified as 'Safety surfaces: loose materials including bark' within table A1 inspection and maintenance checklist.
- 7.24 Regular maintenance should be carried out to include:
- a. Visual inspection in compliance with ROSPA guidelines: daily.
 - b. Regular raking: weekly (inspection to be carried out for any sharp objects or animal mess that should be removed and disposed of safely).
 - c. Top up to original depth: annually.

- d. Top up underneath the structures as required.

Reinforced Grass Surfacing

- 7.25 For amenity grass maintenance follow item 5.78-5.85 Amenity Grass.
- 7.26 Repair any damaged cells by lifting as required in accordance with the manufacturer's recommendations.

Furniture

General Management Prescriptions

- 7.27 The contractor should maintain visual appearance and safety of all furniture and structures in accordance with original design intention. The Contractor shall:
 - a. Inspect for sign of splits and splinters. Splits over 5mm to be filled. Splinters to be sanded out and re-stained/re-treated in accordance with the original specification or manufacturer's guidance where required.
 - b. All fixings to be checked regularly and re-tightened if necessary.
- 7.28 Cleaning of seats, standard bollards, cycle stands and other structures shall form part of the routine maintenance programme. Water and mild detergent should be used for washing down and the recommendations in Table 4 in BS 7370: Part 2 for specific stains and graffiti, etc.
- 7.29 Signage shall be inspected monthly for damage or vandalism and repaired as necessary in consultation with the original manufacturer.
- 7.30 Refer to the original manufacturer for specific guidance on repairs.
- 7.31 Waste from litter and dog bins to be removed off site on a weekly basis to a licensed location.

Public Boundary Treatments (Stone Pillars, Fencing and Gates)

General Management Prescriptions

- 7.32 Standards of maintenance and procedures shall be generally in accordance with BS7370 Part 2: 1994 "Recommendations for the Maintenance of Hard Areas (excluding sports surfaces)", Section 5.2 to 5.9.
- 7.33 The contractor should maintain visual appearance and safety of all boundary treatments and structures in accordance with the original design intention. The Contractor shall:
 - a. Carry out regular inspection of the timber cleft post and rail fence, timber kneerail, estate railings and gates for corrosion or weathering and ensure that any mechanisms function properly.
 - b. Apply clear wood preservative every 5 years to softwood fence and gates as necessary to ensure adequate protection.
 - c. Repair any corroded parts with a rust preventative ready for subsequent painting to match the specified finish.
 - d. Inspect stone pillars and repair as necessary in accordance with original specification.

- e. Refer to the original manufacturer for specific guidance on repairs as necessary.

Play Areas

General Management Prescriptions

- 7.34 The contractor should maintain the visual appearance and safety of structures, hard surfaces and play elements in accordance with the original design intention.
- 7.35 All play areas should be maintained and inspected at a frequency to comply with current legislation and safety regulations. Where defective equipment cannot be repaired immediately it shall be cordoned off with high visibility hazard tape and a warning sign.
- 7.36 Cleaning of play equipment, related surfaces and other structures shall form part of the routine maintenance programme. Water and mild detergent should be used for washing down and the recommendations in Table 4 in BS 7370: Part 2 for specific stains and graffiti, etc.
- 7.37 General maintenance operations will include:
 - a. Sweep up of loose debris and litter collection every 7-14 days.
 - b. Remove excess lubricants (wax, grease) which may have been applied to slides within 7 days.
 - c. Remove any cans or glass from the area within 7 days.

Water Feature

General Management Prescriptions

- 7.38 The contractor should maintain the visual appearance and safety of water features in accordance with the original design intention.
- 7.39 Carry out specific maintenance requirements as directed by the supplier.
- 7.40 Operations may include but not limited to the following:
 - a. Maintain the water feature pump in good working condition. Remove any dead leaves and other debris to prevent the pump from getting clogged.
 - b. If water is re-circulated, the water level shall be monitored particularly during dry summer months when water can evaporate more quickly. Top up the water level as required to maintain an optimum water level and prevent the water pump from overworking.
 - c. Drain and clean the water feature every 6 months to remove dirt, scale, rust and other debris build up. Use appropriate cleaning products as recommended by the manufacturer.
 - d. Regular monitoring and testing of the water quality will be required as part of a general health and safety check of the water feature.

8. MANAGEMENT OF PROPOSED HARD LANDSCAPE TREATMENTS – CAR PARK

Management Aims and Objectives

- 8.1 Maintain car park surface in a safe condition.
- 8.2 Create a litter free environment.

Surfacing

General Management Prescriptions

- 8.3 Standards of maintenance and procedures shall be generally in accordance with BS7370 Part 2: 1994 “Recommendations for the Maintenance of Hard Areas (excluding sports surfaces)” category C.
 - a. Weekly inspections to determine the need for maintenance operations.
 - b. Sweeping and litter collection – every 7-14 days.
 - c. Stain removal – complete within 7-14 days.
 - d. Remove leaves from hard surfaces upon leaf fall.
 - e. Weed and moss growth control – so that it doesn’t exceed 3% of paved area. Spot spray weeds with non-residual herbicide to remove pernicious weeds. Use strictly in accordance with manufacturer’s instructions and comply with all current COSHH and Control of Pesticides Regulations guidelines or requirements.

Kerbs and Edge Restraints

- 8.4 Maintenance of all the hard surfaces shall include making good the kerb or edge restraint. If any such units are loose, broken or out of line or level by 6mm or more, the restraint shall be lifted and reset to the original alignment replacing units as necessary.

Asphalt Paving

- 8.5 The tarmacadam should be identified as ‘bituminous surfacing’ within Table A1 inspection and maintenance checklist.
- 8.6 The weeds should be removed by the application of an approved herbicide once a year and regrowth spot treated as necessary.
- 8.7 Repair asphalt as required to the original specification.

Reinforced Porous Gravel Surfacing

- 8.8 Repair any damaged cells by lifting as required in accordance with the manufacturer’s recommendations.

9. SUDS SCHEME OPERATION AND MAINTENANCE MANUAL

Proposed SUDs Scheme

- 9.1 In accordance with the SUDs Manual¹ chapter 32, the preparation of an Operation and Maintenance Manual for the SUDs features on site is required to ensure the future management meets the needs of the original design intent and details the maintenance prescriptions required. This section covers the management and maintenance requirements for the SUDs as part of the wider landscape management plan.
- 9.2 The site incorporates three SUDs components controlling water across the site through infiltration trenches, swales and ponds.
- 9.3 A plan indicating the location of the SUDs features is provided (Drawing '2832-4-5-DR 5705-S4-P1_S106 SUDs Layout Plan' – David Jarvis Associates Ltd. (01/12/20) and highlights the infiltration trenches located along the western site boundary and adjacent to the proposed housing along the entrance road. The swales are located within the central open space, along the northern and eastern boundary and the main SUDs ponds within the south of the large open space area.
- 9.4 The SUDs are designed to manage the surface water across the site within the landscape setting. It controls the water levels and flow of water through the site, whilst promoting the landscape surroundings for the residents and improving the biodiversity potential of the area.

The SUDs Scheme

- 9.5 The design of the SUDs scheme includes a variety of drainage techniques throughout the site, influenced by underlying geology, outfalls, and flow routing, this in turn has influenced the layout of the site and open spaces. The SUDs techniques utilised on this scheme, include Porous Pavements, Swales, infiltration basins, infiltration trenches, attenuation ponds, filter strips and soakaways. The design of the SUDs scheme utilises all the above either in a combined treatment train or individually for localised drainage.
- 9.6 The SUDs approach to drainage controls the runoff from the development so that it mimics greenfield runoff and manages the natural drainage patterns, as far as possible. For example, the main drainage for the site, which drains the majority of the roads and approximately 1/3rd of the housing, initiates as a 'traditional' piped scheme to collect the water, but then outfalls via a series of ponds and swales, which acts as a treatment train to help clean and store the water before final outfall to the existing Surface Water sewer to the south of the site. This principally is within the central third of the site where infiltration is negligible due to the underlying soils, however, they have been left unlined to allow low flows to infiltrate if possible. The final outfall attenuation pond has been designed as a wet pond to encourage biodiversity and amenity. Elsewhere within the site, where the underlying geology allows infiltration, infiltration basins, filter strips and swales have been introduced to take adjacent drives and roof water, allow soakage back into the ground as would normally occur on a greenfield site, keeping the water away from the 'traditional' drainage network, so not increasing runoff to the outfall. Finally, again where underlying geology allows, crate soakaways have been used to drain roof water, where the runoff is relatively unpolluted and sediment loads are low.
- 9.7 The SUDs within the site have been designed in accordance with CIRIA C753 The SUDs Manual. The site has been designed to mimic greenfield characteristics, keeping the flow rate into the receiving drainage system at Q_{bar} of 2.7l/s, Q_{bar} is the peak rate of flow from a catchment for the mean

¹ The SUDs Manual (C753) – CIRIA 2015 Version 6

annual flood (a return period of approximately 1:2.3 years). All storms up to and including a 100-year event, with a further 40% allowance for climate change and a further 10% allowance for 'urban creep' to allow for potential increase in development with minor extensions etc over time. As discussed earlier the central 1/3rd of the site which is largely underlain by clay, is positively drained via the drainage system, and is restricted in its outfall to the 2.7l/s by a hydrobrake control device, into Thames Water sewer within a S104 Adoption agreement. The other 2/3rd of the site, utilized infiltration techniques to keep the water as close as possible to the source, again mimicking greenfield characteristics.

- 9.8 As discussed, allowances within the design include for climate change and urban creep as additional flows over and above the current design, any infiltration has been designed with Factors of Safety commensurate with the size of catchment and location in accordance with CIRIA document C753. Flood exceedance routes throughout the site, have been designed in such a way that should there be any exceedance issue that the road corridors act as a conduit to allow the flows to be directed away from housing and into areas of POS and attenuation. With the POS itself designed to encourage any overland flows into the infiltration ponds should there be an exceedance event, protecting off site downstream land.
- 9.9 Landscape – The swales and ponds include wet meadow grassland sown with a mixture of wildflowers and grasses suitable for wet soil conditions. A few of the swales have additional herbaceous and shrub planting proposed on their slopes. Occasional proposed trees are situated close to the SUDs features but not on the slopes themselves.

Health and Safety

- 9.10 Information in the site health and safety file will provide details of the risks associated with the SUDs and their future maintenance including the Sustainable Drainage Risk Assessment (SHE Form 86- Feb 2020). Any health and safety risks shall be managed during the future maintenance operations in accordance with this information. The risk information shall be monitored and reviewed as necessary to be relevant to the SUDs feature going forward.
- 9.11 The Maintenance Contractor is deemed to be conversant with his obligations applicable under all relevant health and safety legislation at the time of the works on site and shall be fully compliant with them. They should take all appropriate precautions for maintenance activities and complete risk assessments as necessary.

Monitoring and Review

- 9.12 An annual review of the management of the SUDs shall be part of the wider AMMR (Including an inspection for the Risk Register) of the whole open space landscape as detailed in section 10. This will cover the landscape features and SUDs structures. However, in order to ensure the effectiveness of the SUDs features they will also require a regular monthly inspection, particularly of any inlets/outlets or other associated structures. A checklist of items for a regular inspection is given in table B.25 (Appendix B) in The SUDs Manual.

SUDs Management Aims and Objectives

Water Management

- 9.13 Cleaning of water inlets, outlets and other integral parts should be undertaken as required to prevent blockages.

9.14 Sediment build up shall be managed so as not to interfere with water flow control.

9.15 Repair damage to SUDs feature to ensure it continues to meet the design targets.

Landscape

9.16 The SUDs grassland shall be managed less intensively in order to provide a more diverse sward with greater biodiversity value and habitat potential.

9.17 The management shall be reviewed and amended as necessary if the conditions become variable generating areas that are either only seasonally wet or areas that are permanently waterlogged or boggy.

9.18 Prevent the spread of undesirable species

9.19 Prevent soil enrichment by removing mowing arisings.

9.20 Undertake an annual maintenance visit in July/August to monitor vegetation and remove undesirable weeds by hand.

9.21 Keep area litter free and remove excessive fallen leaves regularly.

9.22 Review the management aims and maintenance requirements if the bankside grassland and vegetation varies and matures into a marginal / bankside habitat and / or the presence of future wildlife into the area requires alternative methods of maintenance.

Maintenance Plan

9.23 In accordance with the SUDs Manual the maintenance tasks for each SUDs feature have been categorised into the following four sections:

- a. Establishment maintenance
- b. Regular maintenance
- c. Occasional maintenance
- d. Remedial maintenance

General Requirements

9.24 Sections 5.78-5.80 (grassland) and section 6 (planting) of this report provide details of general grassland and planting maintenance operations in respect of the SUDs swales and ponds. All other specific maintenance requirements are listed below.

9.25 Refer to the landscape maintenance schedule (section 11) for a summary of maintenance tasks.

9.26 The following tasks are required across all the SUDs components.

Regular Maintenance	Frequency
Collect litter and debris and remove from site	Monthly

Swales

9.27 In accordance with Chapter 17.12 of the SUDs Manual the following maintenance prescriptions apply.

Establishment Maintenance	Frequency
<p><u>Wet Meadow Grassland</u></p> <p>Regular mowing/ topping in the first year will generally control the annual weed growth and can be cut at least 8 weeks after sowing to a height of 50mm. However, hand weed residual perennial weeds.</p> <p>Following an autumn sowing the grass shall not be cut in spring or early summer in order to allow any sown annuals such as yellow rattle to flower. Instead the first cut shall take place in midsummer before the annual flowers can die back and set seed and the arisings removed. Mowing / topping regularly can then continue.</p> <p><i>First growing season</i></p> <ol style="list-style-type: none"> Time of first cut: Midsummer Height of first cut: to 50 mm. Frequency of subsequent cutting (minimum): Every 2 weeks or as required to cut to a height of 50mm, until September/October Mowing regularly will control the annual weed growth. Remove cuttings to remove nutrients and pollutants. 	Fortnightly
<p><u>Planting Areas</u></p> <p>Refer to section 5.58-5.71 for maintenance requirements for shrub / herbaceous planting. Avoid use of weedkillers and pesticides, to prevent chemical pollution.</p>	As required
Regular Maintenance	Frequency
<p><u>Wet Meadow Grassland</u></p> <p>Mow grassland to maintain a height of 75-100mm in order to prevent a risk of flattening during run-off events.</p> <p><i>Second growing season and beyond</i></p> <ol style="list-style-type: none"> Time of main cut: Summer hay cut in late July / August after flowering. Flowering grassland should not be cut between spring and late July / August to give the sown species an opportunity to flower. Height of cut: to 100 mm max. Leave the 'hay' to dry and shed seed for 1-7 days and then remove from site. Time of second cut: Cut re-growth in late autumn/ winter. Height of cut: to 100 mm max. Control invasive weed species by further cutting if required. Problem perennial weeds to be hand picked. 	Seasonally

Allow naturally colonizing species to emerge if appropriate but remove invasive 'weed' species. Avoid use of weedkillers and pesticides, to prevent chemical pollution.	Seasonally and as required
Planting Areas Refer to section 5.58-5.71 for maintenance requirements for shrub / herbaceous planting. Avoid use of weedkillers and pesticides, to prevent chemical pollution.	As required
Inspect inlets / outlet / overflows for blockages and clear as necessary.	Monthly
Inspect for ponding, compaction and silt accumulation in the swale and record.	Monthly and as required
Inspect inlets / outlet / overflows for silt accumulation and record.	Every 6 months
Occasional Maintenance	Frequency
Remove sediment (once exceeded 25mm depth) and dispose of following guidance from the Engineer / EA.	As required
Any damage from the silt removal above to be repaired and reseeded.	As required
Remedial Maintenance	Frequency
Repair erosion or damage to the swale and reseed with the original specification mix.	As required
Relevel uneven surfaces if impacting on the effectiveness of the swale or the growth of the grassland / planting. Return to original levels.	As required
Scarify and spike topsoil layer to improve infiltration, break up silt deposits and prevent compaction of the soil surface.	As required
Remove and dispose of oils or petrol residues using safe standard practices and in accordance with advice from the Engineer / EA	As required

Ponds

- 9.28 In accordance with Chapter 23.12 of the SUDs Manual the following maintenance prescriptions apply.

Establishment Maintenance	Frequency
Wet Meadow Grassland Regular mowing/ topping in the first year will generally control the annual weed growth and can be cut at least 8 weeks after sowing to a height of 50mm. However, hand weed residual perennial weeds. Following an autumn sowing the grass shall not be cut in spring or early summer in order to allow any sown annuals such as yellow rattle to flower.	Fortnightly

<p>Instead the first cut shall take place in midsummer before the annual flowers can die back and set seed and the arisings removed. Mowing / topping regularly can then continue.</p> <p><i>First growing season</i></p> <ul style="list-style-type: none"> f. Time of first cut: Midsummer g. Height of first cut: to 50 mm. h. Frequency of subsequent cutting (minimum): Every 2 weeks or as required to cut to a height of 50mm, until September/October i. Mowing regularly will control the annual weed growth. j. Remove cuttings to remove nutrients and pollutants. 	
Regular Maintenance	Frequency
<p><u>Wet Meadow Grassland</u></p> <p>Mow grassland to maintain a height of 75-100mm in order to prevent a risk of flattening during run-off events.</p> <p><i>Second growing season and beyond</i></p> <ul style="list-style-type: none"> g. Time of main cut: Summer hay cut in late July / August after flowering. Flowering grassland should not be cut between spring and late July / August to give the sown species an opportunity to flower. h. Height of cut: to 100 mm max. i. Leave the 'hay' to dry and shed seed for 1-7 days and then remove from site. j. Time of second cut: Cut re-growth in late autumn/ winter. k. Height of cut: to 100 mm max. l. Control invasive weed species by further cutting if required. Problem perennial weeds to be hand picked. 	Seasonally
<p>Allow naturally colonizing species to emerge if appropriate but remove invasive 'weed' species or nuisance marginal/bankside vegetation e.g Bullrush. Avoid use of weedkillers and pesticides, to prevent chemical pollution.</p>	Seasonally and as required
<p>Inspect inlets / outlet / overflows for blockages or damage and clear as necessary.</p>	Monthly
<p>Inspect the pond water quality</p>	Monthly (May-October)
<p>Inspect for silt accumulation and record. Under advice from the Engineer / EA test the silt for contamination to inform the management and disposal options.</p>	Every 6 months
Occasional Maintenance	Frequency
<p>Remove sediment as directed by the Engineer / EA.</p>	As required

Any damage from the silt removal above to be repaired and reseeded.	As required
Remedial Maintenance	Frequency
Repair erosion or damage and reseed with the original specification mix.	As required
Repair or reinstate inlets, outlets and overflows.	As required
During winter months, clear a third of the permanent open water area to ensure the water body and its margins do not become choked with accumulating plant debris and emergent vegetation. No more than one third of the surface area of the permanent water area will be cleared during a single operation.	As required
After 3 years, review the pond for colonising emergent / bankside vegetation. If established, annually on rotation, a third of emergent/ marginal should be cleared between September and November, where necessary, and by hand (or mechanical means) and vegetation should be left to re-grow naturally to promote species diversity and a variation in structure. Any dense stands of single species that colonise can also be selectively thinned as required.	Annually as required

- 9.29 Note: Any vegetation removal shall take place between September and November to minimise disturbance to wildlife. Any aquatic vegetation removed will be left on the ground near to the pond for at least two days to enable any wildlife present to return to the water prior to its removal and disposal.

Infiltration Trenches

- 9.30 In accordance with Chapter 13.12 of the SUDs Manual the following maintenance prescriptions apply.

Regular Maintenance	Frequency
Inspect for sediment and debris within the trench and clean out the inspection pipe.	Monthly in the first year and then annually
Occasional Maintenance	Frequency
Remove any sediment and dispose of following guidance from the Engineer / EA.	As required based on inspections
Hand pull or spot treat individual weed growth, as necessary, ensuring that weedkiller does not enter the trench.	As required
Remedial Maintenance	Frequency
Reconstruct infiltration trench or parts thereof if it deteriorates or fails to meet the design requirements.	As required

Adjacent Construction works close to SUDs features

- 9.31 In the event that excavations are required near to a SUDs feature e.g. by a service company, which could impact on the effectiveness of the SUDs or cause potential contamination of the SUDs, advice should be sought from the Engineer prior to works commencing.

Spillages / Pollutants / Failures

- 9.32 In the event that pollution is seen, follow these guidelines to contain the pollutant and contact the Environment Agency and Cherwell District Council Environmental Health immediately:
- Environment Agency national Incident Hotline - 0800 80 70 60
 - Cherwell District Council Environmental Health - 01295 227990
- 9.33 If there is a concern of failure regarding a SUDs feature then please contact the Management Company.

10. GENERAL MAINTENANCE AND MANAGEMENT PROCEDURE AND MONITORING

Responsibilities

- 10.1 The management and maintenance of the public open spaces, car park and SUDs will be the responsibility of the Landscape Contractor during the maintenance period in the first year following practical completion.
- 10.2 Beyond the first year the responsibility for management will fall to a Management Company appointed by Barratt David Wilson Homes. They will be responsible for co-ordinating all management and maintenance operations in accordance with the objectives and prescriptions in this LMMP. Any revisions of the LMMP would be undertaken prior to handover to the MC.
- 10.3 All management contracts will be agreed and reviewed by the management company.

Funding

- 10.4 Future management will be fully funded through a service charge to be collected from each property owner who each become a member of the MC when they purchase a property and are obligated to pay a service charge thereafter for the maintenance of the open spaces, car park and SUDs. The service charge is used to administer the MC and to fulfil its maintenance obligations and would be set out in the legal transfer documents for each property.

Procedure and Monitoring

- 10.5 The management company will control general landscape maintenance operations through an Annual Management and Maintenance Review (AMMR) undertaken at the end of October. It is suggested that this process can be used both prior to and post adoption and can be agreed with the Local Authority.
- 10.6 Prior to the AMMR, an inspection of the open spaces, car park and SUDs will be carried out to inform the AMMR of potential future action required.
- 10.7 The purpose of the annual autumn review is to provide a singular point in time whereby precedents and priorities for management and maintenance requirements pertaining to the development can be decided, broadly, for the year ahead, at a time (should more immediate need for rectification of defects be required) when impacts upon vegetation and ecology can be minimised as they enter their dormant phase over the winter months.
- 10.8 The inspection shall determine the nature and extent of the following and be recorded on the Risk Register (RR) (timing as Management Review):
- a. General appearance and condition of existing and proposed plant material and tree stock for planting disease, damage or health.
 - b. Vandalism.
 - c. General appearance and condition.
 - d. Any invasive species.
 - e. Any evidence of protected species.
 - f. Works required under the AMP.
- 10.9 Completion of the risk register (RR) by the Contractor should be undertaken by the contractor's onsite representatives.

- 10.10 Items brought to the MC's attention, through the process of monitoring and recording on the Risk Register or through third parties that identify and place members of the general public at medium to high risk, should be actioned immediately rather than waiting for the AMMR.
- 10.11 It is proposed that the timing of the RR be discussed at the AMMR to allow for adjustment as required by site conditions (including after major weather events such as storms, high winds, snowfall etc.) and the MC's Public Liability Insurance policies. If required, the frequency of items within the RR would be revised (not less than annually), to better manage the risk to the public. Forthcoming maintenance operations would therefore be adjusted accordingly.
- 10.12 AMMR's will continue to take place beyond and into the medium and long-term timeframes. An assessment of the prevailing situation and conditions on site will determine the need for any further changes to the management plan or operations.
- 10.13 Safety issues reported by the general public shall also be investigated as soon as practicably possible and remedial works undertaken as necessary. Annual reviews of tree planting shall take place in October/November prior to tree work being carried out.

Report to the MC

- 10.14 A reporting, booking in and out procedure and pro-forma are to be agreed with the client/MC prior to the commencement of any maintenance contract and/or works in order to ensure proper compliance with procedures on site and Health and Safety legislation.

Management Review

- 10.15 Recognise, acknowledge and act upon any items arising from monitoring by amending the maintenance operations listed above or by instructing agreed and discreet works packages.

11. LANDSCAPE MAINTENANCE SCHEDULE

ITEM		ROUTINE							FREQUENCY												
Suggested month																					
Alternative months																					
1st growing season only		2nd growing season only and beyond							SPRING			SUMMER			AUTUMN			WINTER			
ST=Short term MT=Med. term LT=Long term																					
		DAILY	WEEKLY	FORTNIGHTLY	MONTHLY	SEASONALLY	ANNUALLY	X-YEARLY	AS REQUIRED	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH
REF	GENERAL																				
SITE INSPECTION & MONITORING																					
ANNUAL LANDSCAPE MANAGEMENT & MAINTENANCE REVIEW																					
ANNUAL TREE SAFETY SURVEY WITH ADDITIONAL INSPECTION AS REQUIRED FOLLOWING EXTREME WEATHER																					
REF	DURATION	SOFT LANDSCAPE																			
EXISTING TREES																					
ST-LT	Bat Survey undertaken prior to any tree works or tree pruning																				
MT-LT	Prune trees and other remedial tree work - bats present																				
MT-LT	Prune trees and other remedial tree work - no bats present																				
MT-LT	Annual review visit to determine any required tree work																				
EXISTING HEDGEROW																					
ST-LT	Strim, cut down or mow hedgerow margin to create a rough grassland habitat																				
ST-LT	Annual cut of hedgerow adjacent to paths																				
ST-LT	2-3 year rotational trim to allow plants to fruit																				
ST-LT	Plant up gaps in hedgerow as required																				
ST-LT	Laying/ trimming/coppicing to reduce gaps and prevent turning into a line of trees																				
EXISTING TREE GROUPS																					
ST-LT	Bat Survey undertaken prior to any tree works or tree pruning																				
ST-LT	Prune trees and other remedial tree work - bats present																				
ST-LT	Remedial tree work subject to bat survey - no bats present																				
ST-LT	Strim, cut down or mow woodland edge buffer on 3 year rotation to prevent unwanted spread of scrub																				

ST-LT	Apply summer herbicide if necessary				*	*																				
ST-LT	Apply winter herbicide if necessary					*	*																			
	New / young regenerating planting																									
ST-LT	Inspect for weed growth around young or new planting and hand weed as necessary					*																				
ST-MT	Check and repair / replace ties, guards and canes. Remove as required (medium term)					*																				
ST-MT	Inspect and refirm planting as required					*																				
PROPOSED NATIVE TREE AND SHRUB MIX PLANTING																										
ST	Water plants as necessary for the first year			*																						
ST-MT	Check and repair/ replace mulch mats as required					*																				
ST-MT	Check and repair / replace ties, guards and canes. Remove as required (medium term)					*																				
ST-MT	Inspect and refirm planting as required					*																				
ST	Inspect for weed growth and hand weed as necessary					*																				
MT-LT	Inspect for weed growth and hand weed as necessary						*																			
ST-LT	Apply summer herbicide if necessary																									
ST-LT	Apply winter herbicide if necessary																									
ST-MT	Remove snow from light limbed trees to prevent limbs breaking and branches splaying																									
ST-LT	Replace dead or damaged plants - Evergreen																									
ST-LT	Replace dead or damaged plants - Deciduous																									
ST-MT	Prune trees and shrubs						*	*																		
MT	Reduce density of planting by selective thinning on rotation once good establishment of planting achieved						*	*																		
MT-LT	Annual review visit to determine any required tree work, particularly at edges and close to public areas						*	*																		
LT	Selective felling and replanting on a 5 year rotation (edges) and 10 year rotation (centre)						*	*																		
LT	Bat Survey undertaken prior to any tree works or tree pruning																									
LT	Remedial tree work subject to bat survey - no bats present																									
LT	5 Yearly review of selective thinning programme																									

PROPOSED NATIVE FIELD HEDGEROW PLANTING											
ST	Water plants as necessary for the first year	*									
ST	Heavy prune hedge immediately after planting to encourage bushy side growth				*	*					
ST-MT	Check and replace mulch mats or top up loose mulch as required			*							
ST-MT	Check and repair / replace ties, guards and canes. Remove as required (medium term)			*							
ST-MT	Inspect and refirm planting as required			*							
ST	Inspect for weed growth and hand weed as necessary (first 3 years)			*							
ST-LT	Strim, cut down or mow hedgerow margin to create a rough grassland habitat			*							
MT-LT	Inspect for weed growth and hand weed as necessary			*							
ST-LT	Inspect and treat any pests and diseases									*	
ST-LT	Replace dead or damaged plants									*	
ST-LT	Inspect hedgerow after extreme weather to ensure it is safe									*	
MT-LT	Cut hedge in subsequent seasons on a 3 year rotation and cut no more than a third of the hedgerow at one time.				*						
MT	Reduce density of planting by selective thinning on rotation once good establishment of planting achieved				*	*					
LT	Lay hedgerow to reduce gaps and prevent turning into a line of trees									*	
LT	Plant up gaps in the hedgerow using similar local species - Deciduous									*	
INDIVIDUAL TREES - NEWLY PLANTED											
ST	During dry periods water trees twice a week as necessary	*twice								*	
ST	Individual trees - water once a week during the first year	*									
ST	Individual trees - outside of growing season only water to establish healthy growth									*	
ST	Monitor tree growth when watering for signs of overdue stress and overwatering	*									
ST	Inspect and top up mulch as required			*							
ST	Inspect for weed growth and hand weed as necessary			*							
ST-MT	Inspect and refirm planting as required			*							

ST	Formative pruning to 30cm height following planting					*once													
ST	1st summer -Trim side branches lightly					*once													
ST	2nd season -Cut hedgerow growth back by half					*once													
ST	2nd season -Trim side branches to create a taper					*once													
ST	2nd season -Trim the leader shoot					*once													
MT-LT	Maintenance -Trim top and side branches					*													
	Pruning - Deciduous hedges (stocky / bushy plants)																		
ST	Prune leading and side shoots by a third following planting					*once													
ST	2nd season - Prune leading and side shoots by a third					*once													
MT-LT	Maintenance -Trim top and side branches after flowering to required height that tapers at the top					*													
	Pruning - Evergreen hedges (conifers and others evergreens)																		
ST	Uprights - prune all stems by one third after planting and the following year					*													
ST	Other evergreens, conifers - Prune side shoots following planting and in the summer					*													
MT-LT	Uprights -Trim top and side branches after flowering to required height					*													
MT-LT	Other evergreens, conifers -Trim hedge and leading shoot to required height					*													
ORNAMENTAL SHRUBS, GROUNDCOVER, HERBACEOUS AND GRASSES																			
	General																		
ST	During dry periods water plants once a week as necessary	*				*													
ST	Water plants once a week during the first year. Adjust to prevent overwatering.	*																	
ST-LT	Remove litter and fallen leaves		*																
ST-LT	Inspect and top up mulch as required			*															
ST	Inspect and re-attach / refirm mulch matting as required			*															
ST	Inspect for weed growth and hand weed or cultivate as necessary			*															
MT-LT	Inspect for weed growth and hand weed or cultivate as necessary				*														
ST-MT	Inspect and refirm planting as required			*															

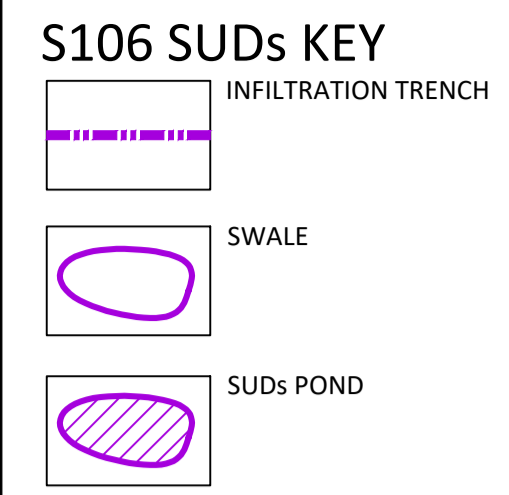
Frequency	Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ST-MT	Check and repair / replace guards and canes. Remove as required			*									
ST-MT	Remove snow from light limbed shrubs and conifers to prevent limbs breaking												
ST-LT	Remove frost damage from plants					*							
ST-MT	Replace dead or damaged plants - Evergreen												
ST-MT	Replace dead or damaged plants - Deciduous												
MT-LT	Reduce density of planting by selective thinning once good establishment of planting achieved												
	Shrub & Groundcover Planting												
ST-LT	Apply spring fertiliser on an individual species basis					*							
	Deciduous early flowering												
ST	Lightly trim and shape plant after flowering												
ST	2nd season - Lightly trim and shape plant after flowering												
MT-LT	Maintenance - Prune after flowering					*							
	Deciduous summer flowering												
ST	Lightly trim and shape plant												
ST	2nd season - Lightly trim and shape plant												
MT-LT	Maintenance - Prune last years flowering stems					*							
	Evergreen shrubs												
ST	Lightly trim and shape plant before new growth												
ST	2nd season - Lightly trim and shape plant before new growth												
MT-LT	Maintenance - Only clip formal planting to shape and remove dead/diseased/damaged shoots from all other planting					*							
	Winter flowering shrubs												
ST	Lightly trim and shape plant												
ST	2nd season - Lightly trim and shape plant												
MT-LT	Maintenance - Prune					*							
	Coloured stem / large foliage plants												

ST-LT	Pick litter, stones larger than 25mm dia prior to cutting				*																					
ST	Water as necessary during the summer					*																				
ST	Cut first time after sowing to 25-50mm high					*																				
ST-LT	Cut subsequently to 25mm high (max allowed height 50mm)		*																							
ST-LT	If bulbs in grass area cut grass as per BULBS section																									
ST-LT	Roll grassland				*																					
ST-LT	Aerate grassland			*		*																				
ST-LT	Inspect for weed growth and hand weed or cultivate as necessary			*																						
ST-LT	Inspect for weed growth and apply herbicide as necessary					*																				
ST-LT	Oversow grass as necessary following final cut and cuttings removed				*	*																				
ST-LT	Repair eroded areas by rotovating, adding topsoil and reseeded					*																				
ST-LT	Apply a spring fertiliser					*																				
ST-LT	Apply a winter fertiliser					*																				
SPECIES RICH GRASSLAND																										
ST	First growing season - cut to 50mm high and then every 2 weeks (remove cuttings)		*																							
ST	First growing season - final cut - cut to 50mm high (after flowering) - remove cuttings				*																					
ST	Water as necessary during the summer					*																				
ST-LT	Second growing season - 1st cut - hay cut to 100mm high after flowering (leave arisings on ground for 1-7 days, then remove)				*																					
ST-LT	Second growing season - 2nd cut - cut regrowth to 100mm high				*																					
ST-LT	Remove litter and fallen leaves		*																							
ST-LT	Aerate grassland			*		*																				
ST-LT	Inspect for weed growth and hand weed or cultivate as necessary			*																						
ST	Inspect for weed growth and apply herbicide after sowing																									
MT-LT	Inspect for weed growth and apply herbicide as necessary					*																				
ST-LT	Scarify grassland				*	*																				

REF	DURATION	HARD LANDSCAPE																									
	ST-LT	Oversow grass as necessary following final cut and cuttings removed					*	*																			
	ST-LT	Repair eroded areas by rotovating and reseed						*																			
SURFACES - ALL																											
	ST-LT	Inspect surfacing to determine need for maintenance operations		*																							
	ST-LT	Litter Collection, \remove graffiti, stains, sweeping etc.		*																							
	ST-LT	Inspect and repair/ reinstate kerbs, edging and paved surfaces					*																				
	ST-LT	Inspect for weed growth and moss and hand weed as necessary					*																				
	ST-LT	Inspect for weed growth and moss and apply herbicide as necessary						*																			
	ST-LT	Remove arising following herbicide treatment					*																				
	ST-LT	Check surface for damage or settlement and repair as required						*																			
SURFACES - PEDESTRIAN																											
		Slab & Block Paving																									
	ST-LT	Carry out regular cleaning of paving to prevent algae build up					*																				
	ST-LT	Brush over with sharp sand annually					*																				
	ST-LT	Pressure wash paving if particularly dirty					*	*																			
	ST-LT	Replace chipped, cracked and damaged units to the original specification						*																			
	ST-LT	Check surface for settlement, sinking, depressions, waterpooling and wheel ruts. Relevel, rebed and replace surface as required					*	*																			
	ST-LT	Repoint or replace jointing sand as required to the original specification						*																			
		Proprietary Sports Surfaces - Porous Asphalt MUGA or similar** TO MANUFACTURER'S REQUIREMENTS**																									
	ST-LT	Remove leaves, flowers and detitus from surface and fenceline		*																							
	ST-LT	Sweep or vacuum surface		*																							
	ST-LT	Remove moss and treat					*	*																			
	ST-LT	Wash surface					*	*																			

	ST-LT	Apply a wood preservative to timber components where not pressure treated				5x													
	ST-LT	Inspect stone pillars and schedule repairs				*													
		Litter Bins																	
	ST-LT	Empty bins and dispose of at a licensed location		*															
PLAY AREAS																			
	ST-LT	Remove cans or glass		*															
	ST-LT	Inspect for equipment's safety and repair accordingly if possible		*															
	ST-LT	Litter Collection, remove graffiti, stains, sweeping etc.		*															
	ST-LT	Wash play equipment with water and mild detergent and remove excess lubricants from slides.			*														
	ST-LT	Cordon off with high visibility hazard type and warning sign if immediate repair of equipment not possible																	
WATER FEATURE																			
		Proprietary Water feature** TO MANUFACTURER'S REQUIREMENTS**																	
	ST-LT	Monitor water feature for debris, water levels and water quality and clean/repair as appropriate			*														
	ST-LT	Remove any dead leaves and other debris from the water pump																	
	ST-LT	Top up water levels as required																	
	ST-LT	Drain and clean water feature thoroughly				6x													
REF	DURATION	SUDs MAINTENANCE																	
PROPOSED SUDs (SWALE, PONDS & INFILTRATION TRENCH)																			
	ST-LT	Annual review visit to monitor vegetation growth				*													
		Wet Meadow Grassland																	
	ST	First growing season - cut to 50mm high and then every 2 weeks (remove cuttings)			*														
	ST	First growing season - final cut - cut to 50mm high (after flowering) - remove cuttings																	
	ST	Water as necessary during the summer																	
	ST-LT	Second growing season - 1st cut - hay cut to 75-100mm high after flowering (leave arisings on ground for 1-7 days, then remove)				*													
	ST-LT	Second growing season - 2nd cut - cut regrowth to 75-100mm high				*													

		General																	
ST-LT	Remove litter and fallen leaves			*															
ST-LT	Inspect and clean water inlets/ outlets/ overflows / inspection pipes			*		*													
ST-LT	Inspect for ponding/ compaction / silt accumulation and record			*		*													
ST-LT	Inspect inlets/ outlets/ overflows for silt accumulation and record			*		*													
ST-LT	Inspect for weed growth and hand weed or cultivate as necessary			*		*													
ST-LT	Clear sections of bankside vegetation by mechanical or manual means on a 3yr rotation. Remove cuttings					*	*												
ST-LT	Inspect pond water quality					*													
ST-LT	Clear a third of open water area of algae growth and plant debris.					*	*												
ST-LT	Selectively thin any dense stands of single species					*	*												
ST-LT	Remove silt and sediment and dispose of						*												
ST-LT	Repair any damage following silt removal						*												
ST-LT	Repair eroded areas by rotovating and reseeding						*												
ST-LT	Relevel uneven surfaces						*												
ST-LT	Scarify and spike topsoil layer to improve infiltration, break up silt deposits (swale)						*												
ST-LT	Remove and dispose of oils or petrol residues						*												
ST-LT	Repair or reinstate inlets, outlets and overflows.						*												
ST-LT	Reconstruct trench if fails						*												



Refer to the following drawings for further SUDs information
Infrastructure Design Drawings:

- 957-07-01 Rev G - Private Drainage Layout Sheet 1
- 957-07-02 Rev H - Private Drainage Layout Sheet 2
- 957-07-03 Rev F - Private Drainage Layout Sheet 3
- 957-07-04 Rev H - Private Drainage Layout Sheet 4
- 957-07-05 Rev F - Private Drainage Layout Sheet 5
- 957-07-06 Rev F - Private Drainage Layout Sheet 6
- 957-07-07 Rev F - Private Drainage Layout Sheet 7
- 957-07-08 Rev F - Private Drainage Layout Sheet 8
- 957-07-09 Rev F - Private Drainage Layout Sheet 9
- 957-07-10 Rev F - Private Drainage Layout Sheet 10
- 957-07-11 Rev F - Private Drainage Layout Sheet 11
- 957-07-12 Rev G - Private Drainage Layout Sheet 12
- 957-04-12 Rev C - SUDs Profile Drawing Sheet 1
- 957-04-13 Rev A - SUDs Profile Drawing Sheet 2
- 957-04-14 Rev A - SUDs Profile Drawing Sheet 3

LEAP & LAP (REFER TO PLAY AREA DESIGNS BY OTHERS)

Cricknet Ground

Notes

Related Drawings: S1A Drawing based on 2832-2-500 LANDSCAPE MASTERPLAN

Issue: Drawn by David Jarvis Associates Limited (CROWN COPYRIGHT). ALL RIGHTS RESERVED 2020 LICENCE NUMBER 0100031. This drawing is for planning purposes only. Do not use this drawing for construction. The information contained in this drawing should be used as a guide to the final forms and features of the landscape scheme. Any revisions to be approved by the Client and Local Authority.

Setting out: Do not take this drawing, lay given dimensions only.

Setting out: refer to Engineers for information regarding setting out. In the event of discrepancy refer to Engineers in the first instance.

Survey: Original survey provided by the Client.

Services: Where possible these are identified on the drawings but, for the avoidance of doubt all services/utility locations should be considered indicative until identified on site. To ensure these services / utilities shown are correct refer to the original survey provider or utilities designer or Client for confirmation and further information regarding easements. In the event of new services being installed refer to the approved Engineer. It is recommended that board warning tape (space electric cable/danger services) to be installed over all service routes (to remain on site) to current BS guidelines (BS7671).

Lighting: Refer to lighting engineer drawings.

Planting: Plant species are selected and located in line with consideration of the site conditions, NERC guidelines and discussions with the Local Authority and design team. All plants and planting procedure to conform to the David Jarvis Associates Limited landscape Specifications that will accompany the Construction Issue drawings. No species or plant location to be varied without prior consent of the Landscape Architect.

Biorecology: All plant stock to be sourced from a supplier certified to be pest and disease free and in accordance with Plant Passport / Animal and Plant Health Agency (APHA) and current DEFRA requirements. Supplier information / certification to be retained for a period of not less than 12 years and must be made available upon request.

Foundations: Developers / Contractors to ensure that all foundations (building and external walling) are designed and constructed to take into account, at the time of installation, any existing or proposed trees, underground or other obstructions in the subsoil and to take into account the risk of subsidence and any trees listed or designated.

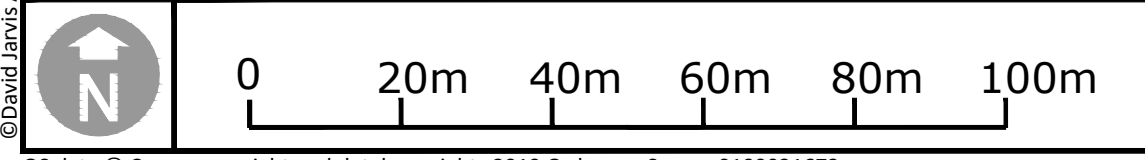
Drainage Levels: Refer to Engineers where design levels are not shown.

CDM: Drawings to be read in conjunction with Designers risk assessment. Potential risks above that of those associated with the general construction typical to the drawing are identified below;

Drawing Revision

Rev.	Date	Description	DWN	CKD
P1	01/12/2020	First issue.	LT	BS

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Status **PLANNING**

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Project
WHITE POST ROAD, BODICOTE

Drawing Title
S106 - SUDs LAYOUT PLAN

Scale 1:1000	Sheet Size A1	Date DEC 2020
Client Ref. -	Drawing Ref. 2832-4-5	Drawing No. DR-5705
		Status S4-P1