
**LAND AT BISHOPSTONE, BROADCHALKE
ROAD, BISHOPSTONE, WILTSHIRE**

**LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN
FOR
PROPOSED RESIDENTIAL DEVELOPMENT**

Prepared by:
WHLandscape

On behalf of:
Cherrington Planning

Project Reference: 24.1835

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APPOINTMENT

WH Landscape Consultancy Ltd (WHLandscape) has been appointed by Cherrington Planning to produce a Landscape and Ecological Management Plan (LEMP) for the residential development of land at Bishopstone, Broadchalke Road, Bishopstone, Wiltshire.

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1. INTRODUCTION

1.1 This document, along with the associated illustrative material, provide the landscape and ecological management detail to support the proposed erection of nine dwellings and associated infrastructure (application ref. PL/2026/00843) on land at Bishopstone, Wiltshire.

1.2 This document has been compiled by WHLandscape in conjunction with Enims. The document should be read alongside existing ecological documents (EC1973 Broadchalke Road, Bishopstone - Ecological Appraisal_v3, Enims Ltd, January 2026; EC1973 Broadchalke Road, Bishopstone - reptile Survey Report, Enims Ltd, October 2024) and information including the landscape plans prepared by WHLandscape (included within the illustrative material).

1.3 Appointment of a suitably qualified contractor(s) to complete the role of implementing the landscape scheme, and the management of the landscaping thereafter will be undertaken by the client/project manager prior to the commencement of development. This document refers to a Management Company/Agency in terms of maintenance of the landscape proposals. However, at this stage a contractor has not been appointed, therefore, this refers to the owner/applicant.

1.4 The specification tables included below show the total number of plants for the whole site, both public and private realm as well as the ecological enhancement area. Furthermore, it is important to note that the specification tables show the sizes of vegetation at planting. Their eventual size will depend on growing conditions and appropriate management.

1.5 LANDSCAPE PROPOSALS

1.5.1 New planting will focus on supplementing existing vegetation and the proposed landscape scheme, as well as introducing distinct structural elements around the site boundary and creating structure within the development itself. The aim is to not only integrate the proposed development into the landscape but also provide landscape and ecological enhancements through a comprehensive scheme of new planting and management using native species characteristic of the area, as well as select domestic species where appropriate.

1.5.2 The site has been split into three distinct areas:

- Residential Area – communal areas around the new dwellings

- Biodiversity and Wildlife Zone – area to the north of the new dwellings designed to achieve Biodiversity Net Gain (BNG) uplift
- PTP Area – enhancement area to achieve BNG uplift

1.5.3 The planting and habitat creation within the Biodiversity and Wildlife Zone should be implemented prior to the commencement of building works and managed as detailed in this document. All vegetation, whether retained or new, will be protected as detailed in section 2. All other planting will be undertaken during the first planting season after the completion of the proposed development and the implementation of hard landscaping proposals. Phasing areas are shown on drawing DWG-1835-01: Landscape Masterplan – Rev E.

RESIDENTIAL AREA

1.5.4 New native tree planting will take place along the hedgerows and within the site to create structure and break up views of the new built form. All retained trees will be maintained as detailed in section 4.1.

1.5.5 The existing hedgerow along the site frontage will be removed and replaced with a mixed native hedgerow beyond the visibility splays, and a new hedgerow will be established along the western boundary with Whitlock Rise. Single species hedgerow will be used within the development to define ownership boundaries.

1.5.6 Hardwearing grass will be established in the private gardens, whilst a wildflower mixture tolerant of frequent mowing will be used for public spaces.

1.5.7 Areas have been indicated for domestic shrub planting, however, the choice of species is at the applicant's discretion.

BIODIVERSITY AND WILDLIFE ZONE

1.5.8 This area will include native tree planting along the hedgerows, as well as the establishment of a traditional orchard. A small copse with understorey scrub will be established in the north-western corner. Additional native scrub areas will be established within this area. All retained trees will be maintained as detailed in section 4.1.

1.5.9 The existing hedgerow to the north and east of the Biodiversity and Wildlife Zone will be repaired, enhanced, and maintained as detailed in section 4.2.

1.5.10 The existing grassland will be retained and managed in accordance with the details in 3.4.12 below. At Year 12, the copse will be sown with a wildflower mixture tolerant of shaded areas as detailed in section 5.8.

PTP AREA

1.5.11 No new planting is proposed in this area. However, a wetland scrape will be created, and the area will be managed as per the details in sections 3.4.15 – 18.

TREE ROOT BARRIERS

1.5.12 Where necessary, to protect services, structures and surfaces Root barriers (GreenBlue Urban or similar approved) will be used. Root barriers are to be installed as directed by the Project Structural Engineer where trees are proposed within 3.00m of services, structures and surfaces or are located closer to site features than the offsets recommended in Table A.1 of BS 5837:2012 'Trees in Relation to Design, Demolition and Construction'. However, in the first instance the location of trees and services should be designed to minimise conflicts.

1.5.13 Root barriers are to be installed to supplier specification on the tree side along the back edge of the kerb/edging restraint to the adjacent hardstanding and are to extend a minimum 3.00m in each direction from a point taken perpendicular from the tree trunk to the kerb/edging face.

1.5.14 The following root barriers specifications outlined below are to be used, dependent on the depth of underground services:

- Where no services present – GreenBlue Urban – ReRoot300 (or similar approved)
- For services 450mm deep – GreenBlue Urban – ReRoot600 (or similar approved)
- For services 800mm deep – GreenBlue Urban – ReRoot1000 (or similar approved)
- For services deeper than 800mm – GreenBlue Urban – ReRoot2000 (or similar approved)

1.5.15 For locations where a hardstanding with or without underground services exists on both sides of the tree (e.g. grass verges), then a root barrier is to be installed against both kerb/edging faces.

2. PROTECTION OF EXISTING VEGETATION

2.1 The retained trees and hedgerows are vulnerable to damage during demolition and construction and shall be protected during the construction period. Trees and hedges will be protected in accordance with the requirements of BS5837 (2012) taking account of the Root Protection Areas (RPAs) calculated by Bernie Haverson Arboricultural Consultant.

- Protection Barriers will be used to provide a Construction Exclusion Zone (CEZ) to prevent construction activity within the RPAs of the retained trees and hedging both on-site and off-site directly boarding construction areas.
- The protection barriers are to be constructed from weldmesh panels of at least 2.00m height and securely fixed with wire or scaffold clamps fixed to a rigid framework. This framework must be constructed from horizontal and vertical scaffold tubes during the construction period, in accordance with the requirements of BS5837:2012.
- Where protection fencing falls outside of the RPAs of the retained trees and other vegetation, a robust high visibility plastic mesh barrier is recommended in place of the above-mentioned fencing. This will create a visual deterrent and signify the extent of the CEZ.
- All services should be directed outside the retained tree's RPAs.
- No unplanned construction activity whatsoever must be allowed within the RPAs of trees to be retained. This includes the storage of materials, unplanned re-routing of underground services or incursions by vehicles or site operative unless specified and accompanied by specialist protection measure.
- Mixing of concrete or cement, or the storage of fuels must not take place within 10m of the retained trees, nor in any location where a slope in the ground could lead to the contamination of the RPA of any tree to be retained.
- Fires must not be lit in a position where flames could extend within 10m of the foliage, branch framework or trunk of any tree to be retained.
- Landscape works undertaken within the RPAs must be done so as not to damage shallow roots and are to be agreed by the arboricultural consultant. Heavy mechanical cultivation of the soil must not be undertaken within the RPAs of trees to be retained.
- Changes in soil levels should not be undertaken within the RPAs of retained trees, unless otherwise agreed in writing with the Local Planning Authority (LPA). This is in order to ensure that the rooting systems, including the delicate non-woody roots, are not inadvertently severed, or the rooting zones are not compromised by compaction.

2.2 The undertaking of the above measures will ensure that the biodiversity of the site is protected in accordance with the Wildlife and Countryside Act 1981.

3. ECOLOGY

3.1 ECOLOGICAL BASELINE

3.1.1 The majority of the land within the main development site is species poor modified grassland with a small wooded area and areas of concrete and buildings in the east. The area to the south of the road where the package treatment plant is to be located comprised species poor modified grassland, however, is a component habitat of Coastal and Floodplain Grazing Marsh priority habitat. There are no notable or invasive habitats or plants within the development site.

3.1.2 None of the buildings or structures within the development site are being used by bats for roosting or as a place of rest, and they all provide no/negligible future opportunities for roosting bats given the physical and environmental conditions of the buildings. However, the site is likely being used by foraging and commuting bats.

3.1.3 Brown hare has been observed on site and given the semi-rural (residential and farmland) setting there is potential for other mammals to use or traverse the site, particularly hedgehog.

3.1.4 Birds could use the buildings, trees or shrubs for nesting.

3.1.5 The site, both area to the north and south of the road, has potential for reptiles to use the habitats for foraging, refuge and hibernation.

3.2 OBJECTIVES

3.2.1 The overall aim of creation and management of semi-natural habitats is to establish and/or enhance a range of nationally and locally important habitats that will potentially allow a wider diversity of wildlife to inhabit and use the application site, including areas of Public Open Space.

3.2.2 The main objective of habitat creation and management during the first 5 years is to ensure the successful establishment of the different habitat types defined below.

3.2.3 Longer-term management objectives deal mainly with maintaining a species- and structurally-diverse, robust and maturing habitat mosaic for the benefit of a wide range of wildlife.

Vegetated habitats created and enhanced within the Biodiversity and Wildlife Zone and the PTP Area are considered 'significant' under BNG and will therefore require a 30 year management and monitoring.

3.2.4 The specific ecology objectives of the landscape proposals are:

RESIDENTIAL AREA

- Maintain and enhance, where appropriate, existing boundary woody vegetation (including hedgerow and trees) to ensure continued habitat connectivity providing places of shelter as well as movement corridors and foraging resources for wildlife.
- Domestic tree and shrub planting appropriate to the development and of benefit to pollinating insects. Wildflower lawn and insect/bee nest bricks to provide further resources for pollinating insects.
- Provision of bat roosting and bird nesting features on buildings

BIODIVERSITY AND WILDLIFE ZONE

- Maintain and enhance, where appropriate, existing boundary woody vegetation (including hedgerow and trees) to ensure continued habitat connectivity providing places of shelter as well as movement corridors and foraging resources for wildlife.
- Creation of habitats to compensate for those types lost from the residential area including woodland and mixed scrub
- Opportunities for reptiles through development of tussock grassland, habitat mosaic and provision of hibernaculum.

PTP AREA

- Create a wetland scrape to provide temporary open water habitat characteristic of the priority habitat type.
- Improve the species diversity of the grassland through long term management

3.2.5 The above objectives will be achieved by the establishment and growth / maturity of individual trees, shrubs, planted and seeded areas, through appropriate management operations as detailed in the chapters below.

3.3 LANDSCAPE AND ECOLOGICAL FEATURES

3.3.1 Provided below is a summary of the landscape and ecological features currently on site that are to be retained, protected and managed, as well as those that are to be created as part of the development.

RESIDENTIAL AREA

3.3.2 Retained habitats to be protected and managed are:

- Hedgerows
- Woodland

3.3.3 New habitats/features to be created, protected and managed are:

- Individual trees (domestic)
- Mixed native hedgerows
- Native (broadleaf) single species hedgerows
- Domestic shrubs and perennial planting
- Wildflower lawn amenity open space
- Bat boxes
- Swift bricks
- Insect bricks

BIODIVERSITY AND WILDLIFE ZONE

3.3.4 Retained habitats to be protected and managed are:

- Trees
- Hedgerows
- Scrub
- Modified grassland

3.3.5 New habitats/features to be created, protected and managed are:

- Traditional orchard
- Mixed native hedgerows
- Native broadleaved woodland
- Native mixed scrub

PTP AREA

3.3.6 Retained habitats to be protected and managed are:

- Trees
- Coastal and Floodplain Grazing Marsh – Modified grassland

3.3.7 New habitats/features to be created, protected and managed are:

- Coastal and Floodplain Grazing Marsh - Wetland scrape

3.4 HABITAT CONDITION TARGETS

TREES

3.4.1 Given the nature of the development, the target condition for tree planting in the Residential Area has been set at ‘Poor’ through achieving 2 of the criteria listed below. However, there is potential to achieve ‘moderate’ condition in the longer term (20+ years) by achieving 3 or 4 criteria.

1. The tree is a native species.
2. The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).
3. The tree is mature (or more than 50% within the block are mature). **Longer-term management aim.**
4. There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.
5. Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark. **Longer-term management aim.**
6. More than 20% of the tree canopy area is oversailing vegetation beneath.

3.4.2 Retained trees will be managed to maintain their current ‘good’ condition, achieving 5 or 6 of the listed criteria.

NATIVE HEDGEROW

3.4.3 All native hedgerow across the site will be managed to at least 'moderate' condition. The hedgerows must achieve no more than 4 failures in total and does not fail both attributes in more than 1 functional group (A-D) of the following components:

- A1. *Height*. Has a greater than 1.5m average height along length.
- A2. *Width*. Has a greater than 1.5m average width along length.
- B1. *Gap – hedge base*. Gap between ground and base of canopy <0.5m for 90% of length.
- B2. *Gap – hedge canopy continuity*. Gaps make up <10% of total length and no canopy gaps >5m
- C1. *Undisturbed ground and perennial vegetation*. >1m width of undisturbed ground with perennial herbaceous vegetation for >90% length (from outer edge of hedge on at least one side)
- C2. *Nutrient-enriched perennial vegetation*. Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.
- D1. *Invasive and neophyte species*. >90% of the hedgerow and undisturbed ground is free of invasive, non-native plant species (including those listed on Schedule 9 of the WCA) and recently introduced species.
- D2. *Current damage*. >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.

3.4.4 The retained, gappy, native hedgerow on the southern boundary will be planted up with a mix of native shrubs to enhance the hedgerow. The hedgerow will have at least 5 native species in each 30m section to become a species-rich native hedgerow.

WOODLAND

3.4.5 The new native, broadleaved woodland created in the Biodiversity and Wildlife Zone will target 'moderate' condition although there is potential to achieve 'good' condition depending on the success of long-term management.

3.4.6 The woodland will comprise at least 5 native species and include no non-native or invasive species. A woodland ground flora will also be established in Year 12, as per the details in section 5.7.

3.4.7 Management will aim to achieve:

- 0 – 20% temporary open space (glades, areas of clear-fell etc)

- All three regeneration classes present – trees 4-7cm DBH, saplings and seedlings or advanced coppice growth
- Tree mortality 10% or less, no pests or diseases and no crown die back
- Vertical structure – at least 2 storeys
- Provision of deadwood – standing and fallen, large dead branches and stems, stumps and abundance of small cavities
- No nutrient enrichment or damage to ground

MIXED SCRUB

3.4.8 All retained and created scrub across the site will be managed to at least ‘moderate’ condition by meeting 3 or 4 of the following criteria:

1. At least 80% of scrub is native, and there are at least three native woody species
2. Seedlings, saplings, young shrubs and mature (or ancient or veteran²) shrubs are all present.
3. There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA4) and species indicative of sub-optimal condition make up less than 5% of ground cover.
4. The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.
5. There are clearings, glades or rides present within the scrub, providing sheltered edges.

GRASSLAND

3.4.9 The amenity grassland within the Residential Area will comprise a wildflower grass mix containing at least 10 wildflower species that can tolerate regular mowing with the grass species not being dominated by perennial rye grass.

3.4.10 To achieve a ‘moderate’ condition status the management of the species-rich grassland will aim to meet 3 to 5 the following six components including criterion A:

- A. Supports a consistently high proportion of characteristic indicator species based on the UKHab description and is not dominated by species indicative of suboptimal condition.

- B. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
- C. Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.
- D. Cover of bracken (*Pteridium aquilinum*) is less than 20% and cover of scrub (including bramble (*Rubus fruticosus* agg.) is less than 5%.
- E. Combined cover of species indicative of suboptimal conditions (see below) and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. **(If any invasive non-native plant species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed).**
- F. There are 10 or more vascular plant species per m² present, including only forbs that are characteristic of the habitat type.

3.4.11 Species indicative of suboptimal condition for this habitat type (do not contribute to components A and F) include: creeping thistle (*Cirsium arvense*), spear thistle (*Cirsium vulgare*), curled dock (*Rumex crispus*), broad-leaved dock (*Rumex obtusifolius*), common nettle (*Urtica dioica*), creeping buttercup (*Ranunculus repens*), greater plantain (*Plantago major*), white clover (*Trifolium repens*) and cow parsley (*Anthriscus sylvestris*). There may be additional relevant species local to the region and or site, as well as species listed on Schedule 9 of the Wildlife & Countryside Act 1981.

3.4.12 Modified grassland within the Biodiversity and Wildlife Zone will be managed to develop a tussocky grassland to benefit reptiles and other wildlife. Rotational cutting every 2-3 years will achieve this, control scrub encroachment and ensure that grassland refuge areas are always available.

TRADITIONAL ORCHARD

3.4.13 A traditional orchard will be created in the Biodiversity and Wildlife Zone comprising apple species native to the local area. Management will target 'moderate' condition by:

- Ensuring less than 5% of fruit trees are smothered by scrub
- Undertaking formative and/or restorative pruning to maintain longevity of trees
- Preventing overgrazing of grassland (no more than 10% of trees poached under the canopy)

- Maintaining an absence of invasive non-native plant species and controlling sub optimal species so they make up less than 10% of ground cover.

3.4.14 Species indicative of suboptimal condition for this habitat type include:

- creeping thistle (*Cirsium arvense*)
- spear thistle (*Cirsium vulgare*)
- curled dock (*Rumex crispus*)
- broad-leaved dock (*Rumex obtusifolius*)
- common nettle (*Urtica dioica*)

COASTAL AND FLOODPLAIN GRAZING MARSH

3.4.15 The coastal and floodplain grazing marsh habitat will be enhanced within the PTP Area through the improvement of grass species diversity and the creation of a shallow scrape in the lowest part. This will enhance the area from 'poor' to 'moderate' condition by becoming a better example of the Priority habitat type.

3.4.16 To achieve a 'moderate' condition for coastal and floodplain grazing marsh the enhancement work will meet points 2, 4, 5 and 6 of the following 7 components:

1. The water table is at, or near the surface throughout the year - this could be open water or saturation of soil at the surface. There is no artificial drainage, unless specifically to maintain water levels as specified.
2. The parcel represents a good example of its specific habitat type - the appearance and composition of the vegetation closely matches its UKHab description, with vascular and non-vascular characteristic indicator species consistently present.
3. The water supplies (groundwater, surface water and or rainwater) to the wetland are of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.
4. Cover of scrub and scattered trees are less than 10%.
5. Cover of bare ground is less than 5%.
6. There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition (see below) make up less than 5% of ground cover.
7. All ditches recorded within the habitat achieve Good condition as assessed using the Ditch condition sheet.

3.4.17 To improve the diversity of the grassland emphasis will be on reducing the thickness and grass dominance of the sward over time. This is most likely to be achieved by a combination of hay cuts and grazing during the winter months.

3.4.18 A scrape will be created in the south of the PTP Area, at the lowest point within the site boundary to provide temporary open water habitat. The features of the scrape are:

- Shallow gradients
- Maximum depth 0.5m. Multiple depths are beneficial so there are smaller pools left as water levels drop.
- Margins sinuous and irregular to increase perimeter.
- A rough lumpy finish to the base of the scrape is desirable
- No spoil mounds around the perimeter.

3.5 RESPONSIBILITIES AND GENERAL MAINTENANCE

3.5.1 Upon practical completion of each landscape area, the Landscape Contractor will hand over to the Management Agency who will be responsible for implementation of the management and maintenance measures detailed in this document.

3.5.2 A formal record/log of management activities undertaken will be kept, along with details of vegetation establishment (and any informal records of associated wildlife use where appropriate), which should be used to inform and provide suitable justification for any alterations to the management activities undertaken. An annual summary of the measures undertaken, and any snags or deviations should be prepared. Should measures not have been undertaken in line with the requirements, or other issues identified, the annual summary should include actions to remedy these, including dates, timelines and responsibility. A copy of the annual summary should be kept with the log/record and made available upon request for inspection.

3.5.3 All landscape maintenance operations, where they do not conflict with ecology operations, will be conducted in accordance with BS 4428:1989 'Code of practice for general landscape operations'. Ongoing landscape maintenance operations are to be in accordance with sound ecological principles, and where relevant to be in accordance with BS 7370-4:1993 'Grounds Maintenance Recommendations for maintenance of soft landscape'.

3.5.4 All relevant Acts of Parliament and the manufacturer's instructions must be followed, and containers and other contaminated equipment must be cleared from the site after each day's work.

3.5.5 During routine maintenance visits, the Management Agency shall:

- Check all plants for damage, security, firmness, fixing and support, and replant in an upright position and re-firm if required;
- Keep all planting areas free from weed growth and hoe over and level all cultivated areas and remove weeds to tip, reinstating mulch as necessary;
- Remove encroaching scrub growth from grassland areas;
- Re-fix displaced, ease where necessary, or replace where damaged, tree ties and tree and shrub shelters; and
- Remove any waste or surplus discarded materials from the above within planted areas including grassland areas.

3.5.6 At the end of each growing season, an inspection of all new planting areas shall be carried out to identify plants that are dead/dying or are failing to thrive. Any dead plants shall be removed and replaced with plant material of the same size and species as specified in Section 5 Landscape and Ecological Enhancement.

3.5.7 Replacement tree and shrub planting shall be carried out by the Management Agency in the current/first planting season following the discovery of the defect.

3.5.8 Any waste created as part of the general or habitat specific landscape management operations will either be disposed of appropriately off-site, composted on-site or used to create discrete brash piles or used to restock existing habitat piles.

4. MANAGEMENT OF EXISTING VEGETATION AND HABITATS

4.1 TREES

4.1.1 There are several trees located around the site boundary and within the site itself. In order to accommodate the development, the proposals will see the removal of two tree groups and two individual trees as well as the partial removal of Group 1. The trees within Group 3 (to be removed) have been identified as U-grade ash (*Fraxineus excelsior*) and is growing against one of the redundant agricultural buildings due to be demolished.

4.1.2 All other on-site trees will be retained and managed as detailed below, with them being integrated into the landscape scheme for the proposed development.

TREES UNDER THE CONTROL OF APPLICANT/LANDOWNER

Existing Trees – Maintenance Operations

- a. All trees will be inspected before development begins on the site, and remedial work, (e.g. thinning, crown raising, etc), will be undertaken where necessary in the interest of site safety and general management.
- b. Removal of any trees marked for felling will take place before any demolition or development takes place on site.
- c. Post-construction any trees within or bordering publicly accessible areas must be checked at least once every two years, and after severe inclement weather, for signs of deterioration or distress, and the appropriate actions taken where a potential safety hazard is identified.
 - Heavy branches should be removed in sections and undercut to avoid the tearing of the bark, and thereafter lowered by slings. No branch stumps should be left and no cuts should be capable of holding water.
 - Any dense ivy infestation should be removed if evident on site or during the maintenance period.
 - All diseased wood, pruning's and rubbish should be removed from the site, and the site left clean and tidy.
- d. All works shall be carefully carried out to avoid damage to the tree being treated, or neighbouring trees. No trees to be retained shall be used for anchorage or winching.
- e. Under the terms of the Wildlife and Countryside Act 1981 (as amended), the Countryside Rights of Way Act 2000 and the Conservation of Habitats and Species Regulations 2010, it is an offence to disturb any protected species, including their habitat or resting place. It may,

therefore, be necessary to obtain expert ecological advice prior to the commencement of any works. This is particularly relevant to nesting birds, bats and their roosts. Contractors must be reminded of their responsibilities and should contact the relevant authorities if any signs of bats are found.

- f. The nesting season for most birds runs from 1st March to 31st August. However, this can vary depending on the species and location. During these months, careful inspection must be made before any work commences and works must be postponed if active nests are found.
- g. All tree works will be undertaken by a suitably qualified arborist in accordance with the BS 3998:2010 British Standard Tree Work - Recommendations. Proof of experience and insurance provision will be required. All work shall be undertaken at the appropriate time and with the consent of the applicant.

OFF-SITE TREES NOT UNDER THE CONTROL OF THE APPLICANT/LANDOWNER

4.1.3 Branches of off-site trees overhanging the site, can be subject to cutting back to the ownership boundary without prior consent, unless within the designated Conservation Area or covered by a Tree Preservation Order. However, no trespass must occur, including climbing the tree or accessing the adjacent land without consent. Furthermore, as these trees lie outside of the site, their retention is at the discretion of the relevant landowners. As previously notes, under the terms of the Wildlife and Countryside Act 1981 (as amended), the Countryside Rights of Way Act 2000 and the Conservation of Habitats and Species Regulations 2010, it is an offence to disturb any protected species, including their habitat or resting place.

4.2 HEDGEROWS

4.2.1 Hedgerow cover is found in conjunction with the site boundaries. In order to accommodate the required visibility splays, the entirety of the southern hedgerow fronting the residential development will need to be removed.

4.2.2 All other on site hedgerows will be retained and managed as detailed below, with them being integrated into the landscape scheme for the proposed development.

Existing Hedges – Maintenance Operations

- a. All hedges will be inspected before development begins on the site, and remedial work, (e.g. pruning, etc), will be undertaken where necessary for general management.

- b. Post-construction any hedges within or bordering publicly accessible areas will be checked annually, and after severe inclement weather, for signs of deterioration or distress, and the appropriate actions taken.
- c. Where hedgerow plants have grown to ‘tree sized proportions’, they will be reduced to 1.75m, allowing for managed hedge regrowth, and for the identification of areas to be repaired.
- d. Where hedgerow repair is necessary, planting will be undertaken as described in Section 5.4 of this document, using the detailed Mixed Native Hedge Species Mix. Any gaps smaller than 1.00 m are to be gapped up with hawthorn (*Crataegus monogyna*).
- e. Pruning will be required to ensure the growth of strong, dense hedging, with the hedgerow being grown and maintained at a minimum of 2.50m in height.
- f. Hedgerow management taking place between mid-December and early March. This will avoid the dormice active period and bird-nesting season and allow berries to be used for foraging wildlife.
- g. In order to encourage wildlife mixed native hedgerows must only receive a light pruning and will be cut in an “A” shape or a “topped A” shape to create tall bushy hedges with maximum wildlife potential.

OFF-SITE HEDGES NOT UNDER THE CONTROL OF THE APPLICANT/LANDOWNER

4.2.3 Branches of off-site hedges overhanging the site, can be subject to cutting back to the ownership boundary without prior consent. However, no trespass must occur, including climbing onto hedges or accessing the adjacent land without consent. Furthermore, as these hedges lie outside of the site, their retention is at the discretion of the relevant landowners. As previously notes, under the terms of the Wildlife and Countryside Act 1981 (as amended), the Countryside Rights of Way Act 2000 and the Conservation of Habitats and Species Regulations 2010, it is an offence to disturb any protected species, including their habitat or resting place.

5. LANDSCAPE AND ECOLOGICAL ENHANCEMENT

5.1 LANDSCAPE AND HABITAT ENHANCEMENT

5.1.1 Management practices are proposed that will safeguard and enhance key habitats (e.g. hedgerows and mature trees) for the benefit of wildlife. The design and long-term management of the land seeks to provide enhanced green infrastructure connections between the existing site boundary planting with the vegetation of the wider landscape, as well as encouraging species diversity around the site.

5.2 PRELIMINARIES

GENERAL

- Planting will be undertaken in line with phased planting stated in paragraph 1.5.3.
- Failure of Plants (pre-practical completion): the Contractor entirely at his own cost shall replace any trees, shrubs or other plants other than those found to be missing or maliciously damaged.
- Malicious Damage or Theft prior to Practical Completion: the Contractor at his own expense shall make all loss and damages arising from theft or malicious damage prior to practical completion of the entire project good.
- Post Practical Completion: the Contractor will carry out the maintenance of trees, shrubs and grasslands after the date of practical completion until the responsibility is transferred to the new owners or by the appointed management company.
- Replacements of plants shall take place as many times as is necessary in order to maintain a complete cover of plants and to maintain the scheme as designed by the Landscape Architect, and within the correct season for the type of plant, tree, shrub and grassland mix.
- Appointment of a suitably qualified contractor(s) to complete the role of implementing the landscape scheme, and the management of the landscaping thereafter will be undertaken by the client/project manager prior to the commencement of development.
- The developer shall ensure that any landscape contractor employed by the developer shall carry out the periodic maintenance of all planted areas, other than any areas for which the appointed Management Company becomes responsible during the said Maintenance Period. Inspection checks shall be carried out at monthly intervals and the appropriate work carried out.

- The developer shall ensure that any landscape contractor employed by the developer shall carry out in all areas any tree, shrub, grass and other plants replacements that may be necessary until transfer of responsibility to the Management Company.
- The Management Company shall be responsible for all periodic maintenance (as detailed in this document) and replacement thereafter for all planted areas to which its management agreement relates and shall ensure that any landscape contractor employed by it carries out periodic maintenance of all such areas in accordance with the general management details provided. Either inspection checks shall be carried out by a competent person, a member of British Association of Landscape Industries (BALI) or the Landscape Institute (LI), acting for the Management Company, at minimum monthly intervals and the appropriate work carried out.
- No existing, trees shrubs or grass shall be removed or cut without specific instructions from the Contract Administrator and written agreement of the Wiltshire Council Tree Officer. Any existing trees on the site are to be retained, protected and undisturbed throughout the contract.
- On hand-over to the new domestic owners of the properties an outline of the management plan should be made available to provide the principles of the landscaping and encourage the future management of the domestic setting in perpetuity.
- Any landscaping beyond the boundaries of domestic ownership will be maintained in perpetuity by the Management Company(ies).

LITTER REMOVAL

- The Contractor will ensure that the site is kept free of litter and other debris through a regular programme of monitoring, collection and disposal, carried out in accordance with the Code of Practice on Litter and Refuse issued under Section 89 of the Environment Protection Act (1990).
- Litter removal will coincide with visits to maintain vegetation.
- Particular care will be taken to remove all broken bottles, glass, tins, sharp objects and other items likely to constitute a hazard to the public.
- All litter and debris shall be removed off site to an authorised tip specified by the Contractor.

IRRIGATION

5.2.1 This document is not able to give precise recommendations with regard to species-specific watering requirements; however, the following should be considered in respect of watering for all new planting:

- Use a watering can with a rose attachment on the end to water or a sprinkler or other such method that will administer water slowly and at a low pressure, mimicking rainfall.
- Water should be applied to the base of the plant, evenly distributed over the entirety of the root-ball to encourage even root development.
- Ensure that water is draining well away after 10 minutes of application of water.
- A newly planted tree/shrub should be watered in when planted, and at the point of bud burst in the spring and should be continued throughout the spring and summer until the leaves have fallen in autumn (for deciduous trees).
- Watering is advised for the first 3 summers after planting, further to this the trees and shrubs should be able to access water from the surrounding soil. (**Note:** *Be mindful that newly planted trees do need watering, even if it has been raining as often rainwater will not reach the rootball*).
- Evergreens may need to be watered a little during the winter months if it is particularly dry, this does not need to be done routinely and can be a response to a period of dry weather.
- Use organic mulch at the base of the plants to help retain water, prevent weed growth and also give you an indication of where you need to water.

5.2.2 The table (below) provides a guide to the necessary irrigation period.

Irrigation Schedule: Years 1 to 3		
Size of nursery stock	Irrigation Frequency	Irrigation Rates**
<50mm girth (Shrubs & hedge plants)	Daily for 2 weeks; every other day for 2 months; weekly for the first three years.	Water will be applied to trees at a rate of 8-12 litres of water per 25mm of trunk diameter; Water will be applied to shrubs at a rate of 4-8 litres of water per 25mm of trunk diameter.
50-100mm girth (Standard trees)	Daily for 1 month; every other day for 3 months*; weekly for the first three years.	
>100mm girth (Selected Standard + trees)	Daily for 6 weeks; every other day for 5 months*; weekly for the first three years.	
* When planting in winter, the irrigation frequency can be reduced to 2-3 times each week (after the initial period of daily watering) instead of every other day. ** During the period between May to September weekly watering rates will be no less than 20 litres per tree and 10 litres per individual shrub/linear metre of hedgerow unless ample rainfall renders this unnecessary. During extended dry periods (i.e. 10 days with no rain), plants will be watered every other day.		

5.3 WOODLAND PLANTING AND MANAGEMENT

Ground Preparation and Planting

- a. Planting will take place during the first planting season following completion of development (i.e. between November and March) when the ground is neither frozen nor waterlogged.
- b. All invasive and pernicious weeds will be removed from the site before works commence. Clearance will be restricted to non-residual herbicide in accordance with manufacturers specifications and hand weeding. All planting areas will be free from weeds and waste materials.
- c. If the ground is dry, the plants will be watered to ground capacity on planting.

Tree Planting

- d. All trees are to be pit-planted in an area cleared of all vegetation within 1.00m² around each tree and all trees will comprise pot grown or bare-rooted stock.
- e. Trees are to be planted at 4.00/6.00m (densities listed in the Planting Specifications table) centres, in square pits, avoiding a 'grid structure'.
- f. Planting pits for trees will be square and will be 200mm wider in diameter and 200mm deeper than the root spread.
- g. All trees will be individually staked using (Ht) 75cm (Dia) 2.5cm square tree stakes.
- h. All trees will be guarded with spiral guards to prevent damage by vermin.
- i. All trees will be watered in once planted.

Shrub Planting

- j. Shrubs will be planted amongst the trees (at minimum distance of 1.00m) at 1.50/2.00m centres (densities listed in the Planting Specifications table) grouping 4-7 specimens of the same species and avoiding a 'grid structure'.
- k. Shrubs will be notch planted.
- l. All shrubs will be staked using (Ht) 60cm bamboo canes.
- m. All shrubs will be guarded with spiral guards to prevent damage by vermin.

Planting Specifications

Woodland Copse Species Mix – Total Area: 996.1m²								
Scientific name	Common name	Specification	Girth (cm)	Approx. height (cm)	Density (m ²)	%	C/U*	No.
Trees								
<i>Acer campestre</i>	Field maple	Whip	-	90-120cm	-	20	C/T	20
<i>Betula pendula</i>	Silver birch	Whip	-	90-120cm	-	15	U/T	15
<i>Carpinus betulus</i>	Hornbeam	Light Standard	6-8	2.50/3.00	1.50/1.75	25	U/T	20
<i>Prunus avium</i>	Wild cherry	Whip	-	90-120cm	-	15	U/T	12
<i>Tilia cordata</i>	Small leaved lime	Light Standard	6-8	2.50/3.00	1.50/1.75	25	C/T	20
Tree Total:								87
Shrubs								
<i>Cornus sanguinea</i>	Dogwood	Transplant	-	60-80cm	-	15	U	38
<i>Corylus avellana</i>	Hazel	Transplant	-	60-80cm	-	35	U	88
<i>Crataegus monogyna</i>	Hawthorn	Whip	-	90-120cm	-	20	U	50
<i>Euonymus europaeus</i>	Spindle	Transplant	-	60-80cm	-	7.5	U	25
<i>Ilex aquifolium</i>	Holly	Pot-grown (3L)	-	30-40cm	-	7.5	U	19
<i>Ligustrum vulgare</i>	Wild Privet	Transplant	-	60-80cm	-	7.5	U	19
<i>Rosa canina</i>	Dog Rose	Transplant	-	60-80cm	-	7.5	U	25
Shrub Total:								225
* Canopy/Understory (T – Tree)								

Maintenance Operations

- a. The planting will be checked at regular intervals throughout five years and any damaged stakes, canes and ties replaced. Plants will be firmed up following planting and, if necessary, until established. Any plants which die, become diseased or damaged will be replaced.
 - Years 0 – 2: Woodland plants will be checked quarterly and after inclement weather.
 - Years 3 – 5: Tree will be checked annually and shrubs will be checked every six months; all plants will be checked after inclement weather.
 - Years 5+: Trees will be checked at least once every two years and shrubs will be checked annually; all plants will be checked after severe inclement weather.
- b. Any losses will be replaced during the following planting season to achieve a stocking rate of 95% by the end of the 5-year period.
- c. The stakes and guards will be removed when the trees are established, after 3 to 5 years.

- d. For the first three years, plants within the woodland area will be watered at the frequency and the rates stated in Sections 5.2.2 of this document.
- e. For subsequent years (years 4 and 5), during extended dry periods (i.e. 10 days with no rain), plants will be watered to ground capacity on a weekly basis until dry conditions are alleviated.
- f. Weeding around trees will be carried out monthly by hand or by the spot application of glyphosate, taking care not to spray the tree stems, until the plants are well established.

Tree Pruning

- g. Limited formative pruning will be necessary to ensure healthy and balanced crowns develop, avoiding 2 weeks either side of bud burst and leaf fall, at which time the stakes, guards and tree ties will be checked to ensure that the trees are not being damaged by them.
- h. Mature and established trees will be inspected at least once every two years and after severe inclement weather, and any necessary remedial work performed.
- i. Trees in close proximity to the existing overhead power lines to the south of the site will be managed to ensure there are no conflicts between the canopies and the wires.

Shrub Pruning

- j. Pruning will be required to ensure the growth of strong shrub planting and will be carried out once the plants are well established, normally after 2 years but dependent on growth rates.
- k. Established shrubs will be inspected annually and after severe inclement weather, and any necessary remedial work performed.
- l. Pruning will take place in February to maximise retention of any berries for bird foraging.

5.4 INDIVIDUAL TREE PLANTING AND MANAGEMENT

5.3.1 All tree locations and species must be taken into consideration by the Project Structural Engineer to ensure that foundation design accords with the specifications set out under Chapter 4.2 of the NHBC Standards. It is the Contractors responsibility to ensure that all underground services have been located and identified in advance of tree pit excavation. Root barriers are to be installed as directed by the Project Structural Engineer where trees are within 3.00m of services, structures and surfaces or are located closer to site features than the offsets recommended in Table A.1 of BS 5837:2012 'Trees in Relation to Design, Demolition and Construction'. Supply and aftercare of trees shall be in accordance with BS 8545: 2014 'Trees: from nursery to independence in the landscape', with aftercare proposals detailed below.

5.3.2 All tree pits must be backfilled with topsoil in accordance with BS 3882: 2015 'Specification for topsoil' and BS 8601:2013 'Specification for subsoil and requirements for use'. If soil has not been supplied by site then approved soil must be imported to site, all certificates must be handed to the Site Manager on delivery. All trees will comprise pot grown or root-balled stock.

Ground Preparation and Planting

General

- a. All trees are to be pit-planted in minimum 1.00m² square pits, which have been cleared of all vegetation. The base and side (unless root barriers are being used) of tree pits are to be 'broken' to assist root penetration and improve drainage.
- b. Trees will be planted during the first planting season following completion of development (i.e. between November and March) when the ground is neither frozen nor waterlogged. If the ground is dry, the plants will be watered to ground capacity on planting.
- c. Trees are to be planted a minimum of 3.00m from any existing and proposed drainage channels and service runs that cross the site. (The precise routes of drainage, and any service points, are to be determined before planting commences to prevent conflicts.)
- d. Trees are to be planted a minimum of 1.00m from any fencing or boundary walls to prevent future conflicts.
- e. Root barriers (GreenBlue Urban or similar approved) should be used where necessary to protect services, structures and surfaces if trees cannot be suitably repositioned in their immediate locality (see 1.3.12 – 15 for full details).
- f. All trees will be watered to capacity once planted.

Trees Within The Residential Area – Tree Pits

- a. Tree pits are to be excavated to a depth of 750mm (900mm in previously developed areas) and backfilled with:
 - 300mm of good quality subsoil (450mm if planting within a previously developed area cleared to 900mm) to meet the specification as set out in BS 8601:2013 'Specification for subsoil and requirements for use'.
 - 450mm depth of topsoil to meet the specification as set out in BS 3882:2015 'Specification for topsoil'.
- b. A general-purpose slow-release fertiliser (at the rate of 75gm/m²) and Tree Planting and Mulching Compost (at the rate of 20litres/m²) are to be incorporated into the top 150mm of topsoil during its final cultivation.

Staking

- a. All trees will be single staked using (Ht) 1200mm (Dia) 100mm tree stakes. Trees are to be secured with tree buckle and rubber block, attached to the stakes with flat headed wood nails.
- b. All trees will be mesh guarded to prevent damage by vermin.

Planting Specifications

Tree Species							
Plan Ref.	Scientific name	Common name	Specification	Girth (cm)	Approx. height (m)	Clear stem height (m)	No.
Ac	<i>Acer campestre</i>	Field Maple	Standard	8-10	2.50/3.00	1.75/2.00	9
Cm	<i>Crataegus monogyna</i>	Hawthorn	Light Standard	6-8	2.50/3.00	1.50/1.75	8
Ms	<i>Malus sylvestris</i>	Crab apple	Standard	8-10	2.50/3.00	1.75/2.00	8
Pa	<i>Prunus avium</i>	Wild cherry	Standard	8-10	2.50/3.00	1.75/2.00	8
Pc	<i>Pyrus communis</i>	Wild pear	Standard	8-10	2.50/3.00	1.75/2.00	8
St	<i>Sorbus torminalis</i>	Wild service tree	Selected Standard	10-12	3.00/3.50	Min 2.00	4
Total:							45

Fruit Tree Species for Orchard							
Plan ref	Scientific name	Common name	Specification	Root-stock*	Approx. height (m)	Clear stem height (m)	No.
O-Md	<i>Malus domestica</i>	Apple	Standard	M25	Min 1.50	Min 0.80	4
O-Pc	<i>Pyrus communis</i>	Pear	Standard	Quince A	Min 1.50	Min 0.80	4
Total:							8
* The chosen rootstocks will allow for the creation of an orchard three rows deep, with plants spaced at 8.00m centres.							
Note: The specific mix and varieties of fruit trees are to be chosen by applicant depending on the type of orchard they ultimately wish to create. However, the following recommendations should be taken into account: • Ideally heritage tree that are native to the local area should be chosen. • Varieties should be chosen that grow to between 3.50m – 5.00 in height.							

Maintenance Operations

- a. The planting will be checked at regular intervals and any damaged stakes, canes and ties replaced. Plants will be firmed up following planting and, if necessary, until established. Any plants which die, become diseased or damaged will be replaced.
 - Years 0 – 2: Tree will be checked quarterly and after inclement weather.
 - Years 3 – 5: Tree will be checked annually and after inclement weather.
 - Years 5+: Trees will be checked at least once every two years and after severe inclement weather.
- b. For the first three years, trees will be watered. For subsequent years (years 4 and 5), during extended dry periods (i.e. 10 days with no rain), trees will be watered to ground capacity on a weekly basis until dry conditions are alleviated.
- c. Weeding around trees will be carried out monthly by hand until the plants are well established. Mulch will be applied annually, using 50mm of matured wood bark, or wet straw, for the first three years after planting to suppress weed growth and contain the moisture.
- d. Limited formative pruning will be necessary to ensure that healthy and balanced crowns develop, avoiding 2 weeks either side of bud burst and leaf fall, at which time the stakes, guards and tree ties will be checked to ensure that the trees are not being damaged by them.
- e. Stakes and guards will be removed when the trees are established, after approximately 3 to 5 years depending on species.
- f. Any losses will be replaced during the following planting season to achieve a stocking rate of 100% by the end of the 5-year period.
- g. Mature and established trees will be inspected at least once every two years and after severe inclement weather, and any necessary remedial work performed.

5.4 HEDGE PLANTING AND MANAGEMENT

Ground Preparation and Planting

- a. Bare-rooted hedging material will be planted during the first planting season following completion of development (i.e. between November and March) when the ground is neither frozen nor waterlogged. If the ground is dry, the plants will be watered to ground capacity on planting.
- b. All invasive and pernicious weeds will be removed from the site before works commence. Clearance will be restricted to non-residual herbicide in accordance with manufacturers specifications and hand weeding. All planting beds will be free from weeds and waste materials.

- c. Planting beds are to be excavated to a depth of 500mm (600mm in previously developed areas) and backfilled with:
 - 200mm of good quality subsoil (300mm if planting within a previously developed area cleared to 600mm) to meet the specification as set out in BS 8601:2013 'Specification for subsoil and requirements for use'.
 - 300mm depth of topsoil to meet the specification as set out in BS 3882:2015 'Specification for topsoil'.
- d. Mixed native hedging material to be planted on the western boundary will be planted as bare-rooted transplants and are to be planted in a double staggered row at 45cm centres using 5 plants per linear metre, taking care to ensure species are mixed and not heavily grouped.
- e. Instant mixed native hedging to be planted on the southern boundary will be planted as trough grown stock at approximately 3 plants per linear metre.
- f. Deciduous broadleaf hedging material (*Carpinus betulus*) will be planted as bare-rooted whips and are to be planted in a double staggered row at 45cm centres using 5 plants per linear metre.
- g. Planting areas will be mulched using 50mm of matured wood bark, or wet straw
- h. Plants will be individually staked using (Ht) 600mm bamboo canes and guarded with spiral guards to prevent damage by vermin.
- i. All hedgerow plants will be watered in once planted.

Planting Specifications

Mixed Native Hedge Species – Total Length: 134.2m						
Plan Ref.	Scientific name	Common name	Specification	Approx. height (cm)	%	No.
1	<i>Acer campestre</i>	Field maple	1+ 1 Transplant	60-80	5	30
	<i>Cornus sanguinea</i>	Dogwood	1+ 1 Transplant	60-80	5	30
	<i>Corylus avellana</i>	Hazel	1+ 1 Transplant	60-80	10	60
	<i>Crataegus monogyna</i>	Hawthorn	1+ 1 Transplant	60-80	45	268
	<i>Euonymus europaeus</i>	Spindle	1+ 1 Transplant	60-80	5	30
	<i>Ilex aquifolium</i>	Holly	Pot-grown (3ltr)	60-80	5	30
	<i>Malus sylvestris</i>	Crab apple	1+ 1 Transplant	60-80	5	30
	<i>Prunus spinosa</i>	Blackthorn	1+ 1 Transplant	60-80	10	60
	<i>Rosa canina</i>	Dog rose	1+ 1 Transplant	60-80	5	30
	<i>Viburnum opulus</i>	Guelder rose	1+ 1 Transplant	60-80	5	30
Total Plants:						596
Hedge to be planted in a double staggered row at 45cm centres using 5 plants per linear metre.						

Mixed Native Instant Hedge Species Mix – <u>Total Length: 122.9m</u>					
Plan ref.	Scientific name	Common name	Specification	%	No.
2	<i>Acer campestre</i>	Field maple	Trough grown stock (1m lengths grown as a single row with approximately 3 plants per linear m). At approximately 1.50/1.80m in height.	5	18
	<i>Cornus sanguinea</i>	Dogwood		5	18
	<i>Corylus avellana</i>	Hazel		10	37
	<i>Crataegus monogyna</i>	Hawthorn		45	166
	<i>Euonymus europaeus</i>	Spindle		5	18
	<i>Ilex aquifolium</i>	Holly		5	18
	<i>Malus sylvestris</i>	Crab apple		5	18
	<i>Prunus spinosa</i>	Blackthorn		10	37
	<i>Rosa canina</i>	Dog rose		5	18
	<i>Viburnum opulus</i>	Guelder rose		5	18
Total Plants:					369

Single Species Broadleaf Hedging						
Plan Ref.	Scientific name	Common name	Specification	Approx. height (cm)	Total Length (m)	No.
3	<i>Carpinus betulus</i>	Hornbeam	Whip	80-100	369.3	1641
Hedge to be planted in a double staggered row at 45cm centres using 5 plants per linear metre.						

Maintenance Operations

- a. The planting will be checked at regular intervals and any damaged stakes, canes and ties replaced. Plants will be firmed up following planting and, if necessary, until established. Any plants which die, become diseased or damaged will be replaced.
 - Years 0 – 2: Hedging plants will be checked quarterly and after inclement weather.
 - Years 3 – 5: Hedging plants will be checked biannually and after inclement weather.
 - Years 5+: Hedging plants will be checked annually and after severe inclement weather.
- b. For the first three years, hedge plants will be watered. For subsequent years, during extended dry periods (i.e. 10 days with no rain), plants will be watered to ground capacity on a weekly basis until dry conditions are alleviated.
- c. Weeding around hedges will be carried out monthly by hand until the plants are well established. Mulch will be applied annually, using 50mm of matured wood bark, or wet straw, for the first three years after planting to suppress weed growth and contain the moisture.
- d. Pruning will be required to ensure the growth of strong, dense hedging and will be carried out once the plants are well established, normally in the second year, but dependant on growth rates.
- e. Hedgerow management will take place between mid-December and early March. This will avoid the dormice active period and bird-nesting season and allow berries to be used for foraging wildlife.
- f. All mixed native hedging will be maintained at a minimum of 2.00m in height once established.
- g. The ultimate height of the domestic hedging is at the discretion of the property owner; however, the following is recommended:

Carpinus betulus - 1.50-2.00m in height at maturity
- h. Guards and stakes will be removed once the plants are well established.
- i. Any losses will be replaced during the following planting season to achieve a stocking rate of at least 95% by the end of the 5-year period.
- j. Established hedges will be inspected annually and after severe inclement weather, and any necessary remedial work performed.

5.5 NATIVE SHRUB PLANTING AND MANAGEMENT

Ground Preparation and Planting

- a. Bare-rooted shrubs will be planted during the first planting season following completion of development (i.e. between November and March) when the ground is neither frozen nor waterlogged. If the ground is dry, the plants will be watered to ground capacity on planting. Note: Container-grown plants can be planted at any time of the year but are easier to care for if planted in autumn, as they need less watering than those planted in spring or summer.
- b. All invasive and pernicious weeds will be removed from the site before works commence. Clearance will be restricted to non-residual herbicide in accordance with manufacturers specifications and hand weeding. All planting beds will be free from weeds and waste materials.
- c. Planting beds are to be excavated to a depth of 500mm.
- d. Plants to be planted at densities as shown in the planting specifications below, grouping 2-3 specimens of the same species in swathes and avoiding a formal 'grid structure'
- e. Plants will be individually staked using (Ht) 600mm bamboo canes and guarded with spiral guards to prevent damage by vermin.
- f. All shrubs will be watered in once planted.

Planting Specifications

Native Shrub Species Mix – Total Area: 1266.50m²						
Scientific name	Common name	Specification	Approx. height (cm)	Density (m ²)	%	No.
<i>Cornus sanguinea</i>	Dogwood	Transplant	60-80cm	0.5	15	95
<i>Corylus avellana</i>	Hazel	Transplant	60-80cm	0.5	35	222
<i>Crataegus monogyna</i>	Hawthorn	Whip	90-120cm	0.5	20	127
<i>Euonymus europaeus</i>	Spindle	Transplant	60-80cm	0.66	7.5	63
<i>Ilex aquifolium</i>	Holly	Pot-grown (3L)	30-40cm	0.5	7.5	47
<i>Ligustrum vulgare</i>	Wild Privet	Transplant	60-80cm	0.5	7.5	47
<i>Rosa canina</i>	Dog Rose	Transplant	60-80cm	0.66	7.5	63
Total Plants:						569

Maintenance Operations

- a. The planting will be checked at regular intervals and any damaged stakes, canes and ties replaced. Plants will be firmed up following planting and, if necessary, until established. Any plants which die, become diseased or damaged will be replaced.
 - Years 0 – 2: Shrubs will be checked quarterly and after inclement weather.
 - Years 3 – 5: Shrubs will be checked biannually and after inclement weather.
 - Years 5+: Shrubs will be checked annually and after severe inclement weather.
- b. For the first three years, shrubs will be watered. For subsequent years, during extended dry periods (i.e. 10 days with no rain), plants will be watered to ground capacity on a weekly basis until dry conditions are alleviated.
- c. Weeding around planted areas will be carried out monthly by hand until the plants are well established.
- d. Pruning will be required to ensure the growth of strong, dense shrubs and will be carried out once the plants are well established, normally in the second year, but dependant on growth rates.
- e. Shrub management will take place between mid-December and early March. This will avoid the dormice active period and bird-nesting season and allow berries to be used for foraging wildlife.
- f. In order to encourage wildlife shrub must only receive a light pruning.
- g. Guards and stakes will be removed once the plants are well established.

- h. Any losses will be replaced during the following planting season to achieve a stocking rate of at least 95% by the end of the 5-year period.
- i. Established shrubs will be inspected annually and after severe inclement weather, and any necessary remedial work performed.

5.6 FLOWERING PUBLIC OPEN SPACE PLANTING AND MANAGEMENT

Ground Preparation

5.6.1 To prepare the seed bed weeds must first be removed using repeated cultivation or a non-residual herbicide. The ground should be ploughed or dug to bury any unwanted ground cover, then cultivated with a rotovator, finally the soil should be harrowed or raked to produce a medium tilth. It may be necessary to return to site even after seeding in order to remove any invasive species such as docks, thistles, mare's tail or brambles; these should either be manually removed or individually chemically treated.

5.6.2 Where excavation is required within previous developed areas, the land will be stripped to a depth of 600mm and backfilled with soil taken from elsewhere on site (as opposed to topsoil). This will keep the nutrients within the soil at an appropriate low level for the establishment of the seed.

5.6.3 Once prepared the ground should be raked and tamped, moving soil if needed to smooth out minor humps and depressions, to produce a firm surface. The final raking and tamping should produce a seed bed with a medium-fine tilth ready for seeding. Cultivation work will be carried out when the soil moisture level is reasonably low, allowing the soil to crumble.

Sowing Specifications

Flowering Amenity Grass Seed Mix – Total Area: 1025.20m²			
Seed Mix	Sowing Rate (g/m²)	%	Quantity (g)
Naturescape N14 (or equivalent)	5	100	≈5126

Sowing

- a. Seed is best sown in the autumn or spring but can be sown at other times of the year if there is sufficient warmth and moisture in the soil. Moisture may be supplied artificially by watering but must be thorough enough to penetrate at least 100mm and continued after sowing if dry weather follows.

- b. Seed will be surface sown onto a freshly prepared seed bed and can be applied by machine or broadcast by hand (do not drill). To get an even distribution, divide the seed into two or more parts and sow in overlapping sections.
- c. After sowing do not incorporate or cover the seed, but firm in with a roll, or by treading, to give good soil/seed contact.

Maintenance Operations

- a. Protect the newly sown seed from birds and prevent public access onto the soil. Weed the area by hand, removing any weeds before they flower.
- b. Newly sown seed must always remain moist unless conditions are naturally damp. Seed will be watered with sprinklers twice per day (morning and late afternoon) for 5 to 10 minutes each time so as not to oversaturate the soil. Watering will continue for 3-4 weeks, depending on weather conditions. Once germination occurs and green grass shoots are visible, reduce watering unless conditions are very dry.
- c. Once seed has germinated, the frequency of watering will be slowly reduced to a single long soak of approximately 40 minutes in late afternoon on alternate days, depending on weather conditions.
- d. Once seedling grasses are established and 50-80mm in height, (typically in good growing conditions after about three to four weeks), lightly roll or tread to firm and level the soil around the grass roots ready for the first cut. Do not roll if the ground is saturated with water.
- e. When the grass has picked up again (typically after a few days) the first cut can be undertaken with the mower set on a high setting (50mm +). The aim is to trim the sown grass back by about one-third of its height and cut back any weeds. The watering regime continued until the next cut.
- f. Growth and establishment of some wildflowers and grasses may be slow initially. There will often be a flush of annual weeds from the soil in the first growing season, however this can be controlled through repeated mowing.
- g. After the second cut the grassland can be mown regularly as needed, to a minimum of 50mm.
- h. Mowing can be reduced from late June to allow flowering. Cut again after 4-8 weeks. To allow cowslips to flower, mowing can be reduced earlier.
- i. Dense cuttings should be removed.

- j. A new sown grassland will take a full year or more to reach full strength and ground cover and knit together. It can be walked on during establishment but heavy use that might cause wear and tear will be avoided.

5.7 LAWN GRASS PLANTING AND MANAGEMENT

Ground Preparation

5.7.1 To prepare the seed bed the ground must be excavated to a depth of 300mm (600mm in previously developed areas) and backfilled with:

- 150mm of good quality subsoil (450mm if planting within a previously developed area cleared to 600mm) to meet the specification as set out in BS 8601:2013 'Specification for subsoil and requirements for use'.
- 150mm depth of topsoil to meet the specification as set out in BS 3882:2015 'Specification for topsoil'.

The soil will be raked and rolled to produce a medium tilth and a level bed. After the soil has been spread and levelled the ground will be left to settle for several days/weeks; this gives another opportunity to control any residual weeds which emerge during this time, such as docks, thistles, mare's tail or brambles.

5.7.2 To achieve an even surface, the ground will be lightly re-cultivated, and any large stones or bricks removed from the surface. Once prepared the ground will be raked and rolled, moving soil if needed to smooth out minor humps and depressions, to produce a firm surface. The final raking and rolling will produce a seed bed with a medium-fine tilth ready for seeding. Cultivation work will be carried out when the soil moisture level is reasonably low, allowing the soil to crumble.

Sowing Specifications

Private Lawns (Fine Grass Seed Mix) – Total Area: 1852.60m²			
Seed Mix	Sowing Rate (g/m²)	%	Quantity (g)
Emorsgate EG21 (or equivalent)	25	100	≈46315

Sowing

- a. Seed will be sown in spring when there is sufficient warmth and moisture in the soil. Moisture will be supplied artificially by watering if the soil is dry, however it must be thorough enough to penetrate at least 100mm.

- b. Seed will be surface sown onto a freshly prepared seed bed and can be applied by machine or broadcast by hand (do not drill). To get an even distribution, divide the seed into two or more parts and sow in overlapping sections.
- c. After sowing lightly rake or harrow the surface to settle the seed in. Take care not to bury the seed at depth. Firm with a roller, or by treading, to give good soil/seed contact.

Maintenance Operations

- a. Protect the newly sown seed from birds and prevent public access onto the soil. Weed the area by hand, removing any weeds before they flower.
- b. Newly sown grass seed must always remain moist unless conditions are naturally damp. Seed will be watered with sprinklers twice per day (morning and late afternoon) for 5 to 10 minutes each time so as not to oversaturate the soil. Watering will continue for 3-4 weeks, depending on weather conditions. Once germination occurs and green grass shoots are visible, reduce watering unless conditions are very dry.
- c. Once grass seed has germinated, the frequency of watering will be slowly reduced to a single long soak of approximately 40 minutes in late afternoon on alternate days, depending on weather conditions.
- d. Once seedling grasses are established and 50-80mm in height, (typically in good growing conditions after about three to four weeks), lightly roll or tread to firm and level the soil around the grass roots ready for the first cut. Do not roll if the ground is saturated with water.
- e. When the grass has picked up again (typically after a few days) the first cut can be undertaken with the mower set on a high setting (50mm +). The aim is to trim the sown grass back by about one-third of its height and cut back any weeds. The watering regime continued until the next cut.
- f. After the second cut the lawn can be mown regularly as needed (when grass reached 50-80mm in height), progressively reducing the mowing height over its first spring/summer to the desired height. The grass will be watered weekly at a rate of 40 minutes per day in late afternoon, depending on weather conditions. When there are extended dry periods (i.e. 10 days with no rain), the lawn will be watered to saturation twice a week until dry conditions are alleviated.
- g. A new sown lawn will take a full year or more to reach full strength and ground cover and knit together as a turf. It can be walked on during establishment but heavy use that might cause wear and tear will be avoided.

5.8 WOODLAND GROUND FLORA PLANTING AND MANAGEMENT

Ground Preparation

The ground should have at least 50% gaps, including bare soil, leaf litter or moss. If not, carefully clear any unwanted vegetation from areas to be sown and open up gaps. Cultivation close to established trees and shrubs can be damaging to root systems, so care must be taken to dig too deep and keep disturbance to the minimum required to expose fresh soil.

Sowing Specifications

Woodland Ground Flora – Total Area: 500.10m²			
Seed Mix	Sowing Rate (g/m²)	%	Quantity (g)
Naturescape N10F (or equivalent)	2	100	~1000

Sowing

- Seed is best sown in autumn or early spring.
- Seed should be surface sown onto a freshly prepared seed bed and can be applied by machine or broadcast by hand (do not drill). To get an even distribution, divide the seed into two or more parts and sow in overlapping sections.
- After sowing do not incorporate the seed but roll to firm it in and get good soil/seed contact.

Maintenance Operations

Management

- Established woodland or copse planting that has been under-sown with a woodland mixture requires little management during establishment.
- In the long-term, ground flora will benefit from good tree and coppice management.
- Open or young woodland/copse planting with higher light levels will produce more growth. In these conditions an annual cut mid-summer may be beneficial for a more managed appearance and to keep perennial weeds of semi-shade such as nettles and brambles in check.

6. FAUNA SPECIFIC FEATURE CREATION AND MANAGEMENT

6.1 BATS

CREATION

6.1.1 To enhance the site for roosting bats, nine integrated bat roosting boxes (also known as bat bricks or bat tubes) will be installed within the fabric of external walls on the new buildings (5 houses and 3 garages). The nine bat boxes will be installed as close to the roof apex/ under eaves on southerly facing elevations.

MANAGEMENT

6.1.2 The bat boxes are fully integrated into the fabric of the buildings and are self-cleaning. The bat boxes require no specific maintenance.

6.2 BIRDS

CREATION

6.2.1 To provide an enhancement for nesting birds integrated swift nesting boxes, which fit into the fabric of an external cavity wall, will be incorporated into the scheme. As swifts are colony nesters, double chamber boxes will be installed, or two single chamber swift bricks installed together at each location. Boxes will be installed on the nine houses as close to the roof apex or under eaves at least 5m above ground on elevations which will not receive full sunlight to avoid overheating nests.

MANAGEMENT

6.2.2 The bird boxes are fully integrated into the fabric of the buildings and require no specific maintenance.

6.3 POLLINATING INSECTS

CREATION

6.3.1 To provide nesting opportunities for pollinating insects, four insect and/or bee bricks will be integrated into the walls of three garage buildings. They will be installed at least 1m above ground level on southerly elevations.

MANAGEMENT

6.3.2 The insect/bee bricks are fully integrated into the fabric of the buildings and require no specific maintenance themselves. Vegetation will be kept clear from the entrance to maintain clear access for insects.

6.4 HIBERNACULUM

CREATION

6.4.1 As mitigation for the loss of reptile habitat, a hibernaculum will be constructed in the Biodiversity and Wildlife Zone near the northern boundary. This will take place prior to clearance of ground level vegetation and ground works and the exact positioning advised by the project ecologist.

6.4.2 The hibernaculum will comprise a mix of logs, branches, clean rubble/rocks at least 1m x 1m and 0.5m to 1m high and capped with earth. The construction will utilise material from above ground tree/shrub clearance where possible.

6.4.3 In addition to refuge habitat for reptiles, these decaying wood piles provide ideal habitat for saproxylic invertebrates (feed on deadwood), fungi and mosses, while also providing shelter for a variety of wildlife including small mammals and common amphibians.

MANAGEMENT

6.4.4 The habitat piles are reasonably long lasting, and their gradual decay is important to ensure they continue to provide benefits to a range of wildlife. As such, they do not require regular ongoing maintenance. Nonetheless, the habitat piles should be inspected every 3-5 years and topped up with woody arisings as required.

TABLES

TABLE 1: WOODY PLANTS LANDSCAPE MANAGEMENT (1)

Year/Season/ Month	Tree
Planting <i>October</i> - <i>March</i>	Plant new trees to specification. Irrigate as necessary. If planted in November – December check plants twice before Spring (March). If planted in January – February check plants once before Spring (March).
Year 1 <i>Spring</i> (<i>March – May</i>)	Action: Weed. Check trees (including stakes and guards). Check for damage. Irrigate new planting as necessary in dry weather. Frequency: Monthly
<i>Summer</i> (<i>June – August</i>)	As Spring Year 1 Be aware of additional irrigation requirements in dry conditions.
<i>Autumn</i> (<i>September – November</i>)	As Spring Year 1 Check existing (pre-development) trees for damage and prune as needed following guidance in section 4.
<i>Winter</i> (<i>December – February</i>)	Action: Check all trees and replace failures. Check guards and stakes. Frequency: Monthly
Year 2 <i>Spring</i> (<i>March – May</i>)	As Spring Year 1 Continue irrigation schedule for new planting.
<i>Summer</i> (<i>June – August</i>)	As Summer Year 1 Continue irrigation schedule for new planting, being aware of additional irrigation requirements in dry conditions.
<i>Autumn</i> (<i>September – November</i>)	As Autumn Year 1 Check existing (pre-development) trees for damage and prune as needed following guidance in section 4.
<i>Winter</i> (<i>December – February</i>)	As Winter Year 1 Prune all deciduous trees apart from maple and birch in February.
Year 3 <i>Spring</i> (<i>March – May</i>)	Action: Weed. Continue irrigation schedule for new planting. Frequency: Monthly
<i>Summer</i> (<i>June – August</i>)	As Spring Year 3 Be aware of additional irrigation requirements in dry conditions.
<i>Autumn</i> (<i>September – November</i>)	As Spring Year 3 Formative pruning of maple and birch in October. Check existing (pre-development) trees for damage and prune as needed following guidance in section 4.

<i>Winter</i> (December – February)	Action: Check all trees and replace failures. Check guards and stakes. Remove guards and stakes on vigorous plants. Prune all deciduous trees apart from maple and birch in February.
	Frequency: Monthly
Year 4 – 5 <i>Spring</i> (March – May)	Action: Weed Only Irrigate during extended dry periods (i.e. 10 days with no rain), when plants will be watered every other day.
	Frequency: Monthly
<i>Summer</i> (June – August)	As Spring Year 4 Be aware of additional irrigation requirements in dry conditions.
<i>Autumn</i> (September – November)	As Spring Year 4 Pruning of maple and birch in October. Check existing (pre-development) trees for damage and prune as needed following guidance in section 4.
<i>Winter</i> (December – February)	Check all trees and replace failures. Check guards and stakes. Remove guards and stakes on vigorous trees in year 4 and any remaining guards and stakes in year 5.
Years 5 – 10	Weed monthly from Spring to Autumn. Only Irrigate during extended dry periods (i.e. 10 days with no rain), when plants will be watered every other day. Established trees will be checked in winter every two years, starting in year, and any necessary remedial work will be performed in winter. Existing (pre-development) trees checked annually in autumn and pruned as needed following guidance in section 4.
Years 10 – 30	Weed monthly from Spring to Autumn and replace failures. Established trees will continue to be checked in winter every two years, and any necessary remedial work will be performed in winter. Existing (pre-development) trees checked annually in autumn and pruned as needed following guidance in section 4.

TABLE 2: WOODY PLANTS (2) – LANDSCAPE MANAGEMENT SCHEDULE

Year/Season/ Month	Hedges	Scrub
Planting <i>November - March</i>	Plant new hedges to specification. Irrigate as necessary. If planted in November – December check plants twice before Spring (March). If planted in January – February check plants once before Spring (March). Repair existing (pre-development) hedgerow.	Plant new shrub plants to specification. Irrigate as necessary. If planted in November – December check plants twice before Spring (March). If planted in January – February check plants once before Spring (March).
Year 1 <i>Spring</i> <i>(March – May)</i>	Action: Weed. Check hedges (including stakes and guards). Check for damage. Irrigate new planting as necessary in dry weather.	Action: Weed. Check hedges (including stakes and guards). Check for damage. Irrigate new planting as necessary in dry weather.
	Frequency: Monthly	Frequency: Monthly
<i>Summer</i> <i>(June – August)</i>	<u>As Spring Year 1</u> Be aware of additional irrigation requirements in dry conditions.	<u>As Spring Year 1</u> Be aware of additional irrigation requirements in dry conditions.
<i>Autumn</i> <i>(September – November)</i>	<u>As Spring Year 1</u> Firm plants as necessary.	<u>As Spring Year 1</u> Firm plants as necessary.
<i>Winter</i> <i>(December – February)</i>	Action: Check all hedging plants and replace failures. Check guards and stakes. Check existing (pre-development) hedgerow and prune as needed following guidance in section 4.	Action: Check all scrub plants and replace failures. Check guards and stakes. Carry out formative pruning if required
	Frequency: Monthly	Frequency: Monthly
Year 2 <i>Spring</i> <i>(March – May)</i>	<u>As Spring Year 1</u> Continue irrigation schedule for new planting.	<u>As Spring Year 1</u> Continue irrigation schedule for new planting. Trimming of dead or damaged branches can be undertaken
		Frequency: Monthly
<i>Summer</i> <i>(June – August)</i>	<u>As Summer Year 1</u> Continue irrigation schedule for new planting, being aware of additional irrigation requirements in dry conditions.	<u>As Summer Year 1</u> Continue irrigation schedule for new planting, being aware of additional irrigation requirements in dry conditions.
<i>Autumn</i> <i>(September – November)</i>	<u>As Autumn Year 1</u>	<u>As Autumn Year 1</u>
<i>Winter</i> <i>(December – February)</i>	<u>As Winter Year 1</u> Lightly trim top growth from mid-December to encourage dense low growth.	<u>As Winter Year 1</u> Carry out pruning as necessary.

	Check existing (pre-development) hedgerow and prune as needed following guidance in section 4.	
Year 3 <i>Spring</i> (March – May)	Action: Weed Continue irrigation schedule for new planting.	Action: Weed Continue irrigation schedule for new planting.
	Frequency: Monthly	Frequency: Monthly
<i>Summer</i> (June – August)	<u>As Spring Year 3</u> Action: Check hedges (including stakes and guards). Check for damage. Be aware of additional irrigation requirements in dry conditions.	<u>As Spring Year 3</u> Be aware of additional irrigation requirements in dry conditions.
	Frequency: Monthly	
<i>Autumn</i> (September – November)	<u>As Spring Year 3</u>	<u>As Spring Year 3</u>
<i>Winter</i> (December – February)	Action: Check all hedging plants and replace failures. Check guards and stakes. Remove guards and stakes on vigorous plants. Lightly trim top growth from mid-December to encourage dense low growth. Check existing (pre-development) hedgerow and prune as needed following guidance in section 4.	Action: Check all scrub plants and replace failures. Check guards and stakes. Remove guards and stakes on vigorous plants. Carry out pruning as necessary.
	Frequency: Monthly	Frequency: Monthly
Year 4 – 5 <i>Spring</i> (March – May)	Action: Weed Only Irrigate during extended dry periods (i.e. 10 days with no rain), when plants will be watered every other day.	Action: Weed Only Irrigate during extended dry periods (i.e. 10 days with no rain), when plants will be watered every other day.
	Frequency: Monthly	Frequency: Monthly
<i>Summer</i> (June – August)	<u>As Spring Year 4</u> Action: Check hedging plants (including stakes and guards). Remove guards and stakes on vigorous hedging plants in year 4 and year 5. Be aware of additional irrigation requirements in dry conditions.	<u>As Spring Year 4</u> Action: Check plants (including stakes and guards). Remove guards and stakes on vigorous scrub plants in year 4 and year 5. Be aware of additional irrigation requirements in dry conditions.
	Frequency: Monthly	Frequency: Monthly
<i>Autumn</i> (September – November)	<u>As Spring Year 4</u>	<u>As Spring Year 4</u>

<i>Winter (December – February)</i>	Check all hedging plants including guards and stakes. Remove guards and stakes on vigorous hedging plants in year 4 and any remaining guards and stakes in year 5. Trim hedge to shape annually from mid-December and gap up as necessary to achieve a minimum 95% stocking rate. Check existing hedgerow (pre-development) and prune as needed following guidance in section 4.	Check all plants including guards and stakes. Remove guards and stakes on vigorous hedging plants in year 4 and any remaining guards and stakes in year 5. Carry out pruning as necessary and replace failures
<i>Years 5 – 30</i>	Weed monthly from Spring to Autumn and replace failures as necessary to achieve a minimum 95% stocking rate. Only Irrigate during extended dry periods (i.e. 10 days with no rain), when plants will be watered every other day. Established hedges will be inspected on an annual basis in winter, and any necessary remedial work will be performed from mid-December to March. Check existing (pre-development) hedgerow and prune as needed in winter following guidance in section 4.	Weed monthly from Spring to Autumn and replace failures as necessary to achieve a minimum 95% stocking rate. Only Irrigate during extended dry periods (i.e. 10 days with no rain), when plants will be watered every other day. Established scrub will be inspected on an annual basis in winter, and any necessary remedial work will be performed from mid-December to March.

TABLE 3: SEED MIXES LANDSCAPE MANAGEMENT (1)

Year/Season/ Month	Flowering Public Open Space	Lawn Grass
Planting <i>September - March</i>	In September, prepare soil to specification. Second cultivation if needed. Sow seed and rake or harrow and firm with roller. Protect seed from birds and prevent public access. Irrigate as necessary.	In September, prepare soil to specification. Second cultivation if needed. Sow seed and rake or harrow and firm with roller. Protect seed from birds and prevent public access. Irrigate as necessary.
Year 1 <i>Spring (March – May)</i>	Weed by hand. Prevent public access Irrigate as necessary. Prepare for first cut and trim to 50mm+ once seedling grasses are established and 50-80mm in height. Undertake a second cut, after which grassland can be mown regularly as needed (when grass reached 50-80mm in height), progressively reducing the mowing height. Remove clippings for the first four cuts.	Weed by hand. Prevent public access Irrigate as necessary. Prepare for first cut and trim to 50mm+ once seedling grasses are established and 50-80mm in height. Undertake a second cut, after which grassland can be mown regularly as needed (when grass reached 50-80mm in height), progressively reducing the mowing height. Remove clippings for the first four cuts.
<i>Summer (June – August)</i>	Weed by hand. Allow public access but limit heavy use. From June mowing can be reduced to every 4 – 8 weeks, cutting the grass to 50mm+ (to allow cowslips to flower, mowing can be reduced earlier). Remove cuttings as required. Irrigate as necessary, being aware of additional irrigation requirements in dry conditions.	Weed by hand. Allow public access but limit heavy use. From June establish a regular mowing regime as required, cutting the grass to 50mm+. Remove cuttings as required. Irrigate as necessary, being aware of additional irrigation requirements in dry conditions.
<i>Autumn (September – November)</i>	Weed by hand. Top all plant growth in September if required. Remove cuttings as required. Irrigate grass as necessary. Sow fresh seed in any bare patches.	Weed by hand. Top all plant growth in September if required. Remove cuttings as required. Irrigate grass as necessary. Sow fresh seed in any bare patches.
<i>Winter (December – February)</i>	Weed by hand. Irrigate as necessary.	Weed by hand. Irrigate as necessary.
Year 2 <i>Spring (March – May)</i>	Weed by hand. From April, mow as necessary (Approximately every 4 - 8 weeks). Remove cuttings as required. Irrigate as necessary. Sow fresh seed in any bare patches.	Weed by hand. From April, mow as necessary (Approximately every two weeks). Remove cuttings as required. Irrigate as necessary. Sow fresh seed in any bare patches.
<i>Summer (June – August)</i>	Weed by hand. Mow as necessary (Approximately every 4-8 weeks), until November.	Weed by hand. Mow as necessary (Approximately every two weeks), until November.

	Remove cuttings as required. Irrigate as necessary, being aware of additional irrigation requirements in dry conditions.	Remove cuttings as required. Irrigate as necessary, being aware of additional irrigation requirements in dry conditions.
<i>Autumn (September – November)</i>	Weed by hand. Mow as necessary (Approximately every 4-8 weeks), until November. Remove cuttings as required. Irrigate as necessary. Sow fresh seed in any bare patches.	Weed by hand. Mow as necessary (Approximately every two weeks). Remove cuttings as required. Irrigate as necessary. Sow fresh seed in any bare patches.
<i>Winter (December – February)</i>	Weed by hand. Irrigate as necessary.	Weed by hand. Irrigate as necessary.
<i>Years 3 - 30</i>	<u>As Year 2</u>	<u>As Year 2</u>

TABLE 4: SEED MIXES LANDSCAPE MANAGEMENT (2)

Year/Season/ Month	Woodland Ground Flora
<i>Planting</i> <i>September - March</i>	Prepare soil. Weed control. Second cultivation.
<i>Year 1*</i> <i>Spring</i> <i>(March – May)</i>	Sow seed. do not incorporate but roll to firm in. Protect seed from birds and prevent public access.
<i>Summer</i> <i>(June – August)</i>	Protect seed from birds and prevent public access
<i>Autumn</i> <i>(September – November)</i>	N/A
<i>Winter</i> <i>(December – February)</i>	Do not cut or disturb until mid-august.
<i>Year 2</i> <i>Spring</i> <i>(March – May)</i>	If light levels are high, cut in August and remove cuttings.
<i>Summer</i> <i>(June – August)</i>	As Year 2.
<i>Autumn</i> <i>(September – November)</i>	As Year 2
<i>Winter</i> <i>(December – February)</i>	As Year 2.
<i>Years 3 - 18</i>	<u>As Year 2</u>

*NB implementation will take place in Year 12 of the overall management of the Biodiversity and Wildlife Zone.

ILLUSTRATIVE MATERIAL

Native Shrub Species Mix – Total Area: 1266.50m ²							
Scientific name	Common name	Specification	Approx. height (cm)	Density (m ²)	%	No.	
<i>Cornus sanguinea</i>	Dogwood	Transplant	60-80cm	0.5	15	95	
<i>Corylus avellana</i>	Hazel	Transplant	60-80cm	0.5	35	222	
<i>Crataegus monogyna</i>	Hawthorn	Whip	90-120cm	0.5	20	127	
<i>Euonymus europaeus</i>	Spindle	Transplant	60-80cm	0.66	7.5	63	
<i>Ilex aquifolium</i>	Holly	Pot-grown (3L)	30-40cm	0.5	7.5	47	
<i>Ligustrum vulgare</i>	Wild Privet	Transplant	60-80cm	0.5	7.5	47	
<i>Rosa canina</i>	Dog Rose	Transplant	60-80cm	0.66	7.5	63	
Total Plants:						569	
Tree Species							
Plan Ref.	Scientific name	Common name	Specification	Girth (cm)	Approx. height (m)	Clear stem height (m)	No.
Ac	<i>Acer campestre</i>	Field Maple	Standard	8-10	2.50/3.00	1.75/2.00	9
Cm	<i>Crataegus monogyna</i>	Hawthorn	Light Standard	6-8	2.50/3.00	1.50/1.75	8
Ms	<i>Malus sylvestris</i>	Crab apple	Standard	8-10	2.50/3.00	1.75/2.00	8
Pa	<i>Prunus avium</i>	Wild cherry	Standard	8-10	2.50/3.00	1.75/2.00	8
Pc	<i>Pyrus communis</i>	Wild pear	Standard	8-10	2.50/3.00	1.75/2.00	8
St	<i>Sorbus torminalis</i>	Wild service tree	Selected Standard	10-12	3.00/3.50	Min 2.00	4
Total:							45
Mixed Native Hedge Species – Total Length: 134.2m							
Plan Ref.	Scientific name	Common name	Specification	Approx. height (cm)	%	No.	
1	<i>Acer campestre</i>	Field maple	1+ 1 Transplant	60-80	5	30	
	<i>Cornus sanguinea</i>	Dogwood	1+ 1 Transplant	60-80	5	30	
	<i>Corylus avellana</i>	Hazel	1+ 1 Transplant	60-80	10	60	
	<i>Crataegus monogyna</i>	Hawthorn	1+ 1 Transplant	60-80	45	268	
	<i>Euonymus europaeus</i>	Spindle	1+ 1 Transplant	60-80	5	30	
	<i>Ilex aquifolium</i>	Holly	Pot-grown (3ltr)	60-80	5	30	
	<i>Malus sylvestris</i>	Crab apple	1+ 1 Transplant	60-80	5	30	
	<i>Prunus spinosa</i>	Blackthorn	1+ 1 Transplant	60-80	10	60	
	<i>Rosa canina</i>	Dog rose	1+ 1 Transplant	60-80	5	30	
<i>Viburnum opulus</i>	Guelder rose	1+ 1 Transplant	60-80	5	30		
Total Plants:						596	
Hedge to be planted in a double staggered row at 45cm centres using 5 plants per linear metre.							



Fruit Tree Species for Orchard							
Plan ref	Scientific name	Common name	Specification	Root-stock*	Approx. height (m)	Clear stem height (m)	No.
O-Md	<i>Malus domestica</i>	Apple	Standard	M25	Min 1.50	Min 0.80	4
O-Pc	<i>Pyrus communis</i>	Pear	Standard	Quince A	Min 1.50	Min 0.80	4
Total:							8
* The chosen rootstocks will allow for the creation of an orchard three rows deep, with plants spaced at 8.00m centres.							
Note: The specific mix and varieties of fruit trees are to be chosen by applicant depending on the type of orchard they ultimately wish to create. However, the following recommendations should be taken into account:							
• Ideally heritage tree that are native to the local area should be chosen.							
• Varieties should be chosen that grow to between 3.50m – 5.00 in height.							

Woodland Cope Species Mix – Total Area: 996.1m ²									
Scientific name	Common name	Specification	Girth (cm)	Approx. height (cm)	Density (m ²)	%	C/U*	No.	
Trees									
<i>Acer campestre</i>	Field maple	Whip	-	90-120cm	-	20	C/T	20	
<i>Betula pendula</i>	Silver birch	Whip	-	90-120cm	-	15	U/T	15	
<i>Carpinus betulus</i>	Hornbeam	Light Standard	6-8	2.50/3.00	1.50/1.75	25	U/T	20	
<i>Prunus avium</i>	Wild cherry	Whip	-	90-120cm	-	15	U/T	12	
<i>Tilia cordata</i>	Small leaved lime	Light Standard	6-8	2.50/3.00	1.50/1.75	25	C/T	20	
Total:									87
Shrubs									
<i>Cornus sanguinea</i>	Dogwood	Transplant	-	60-80cm	-	15	U	38	
<i>Corylus avellana</i>	Hazel	Transplant	-	60-80cm	-	35	U	88	
<i>Crataegus monogyna</i>	Hawthorn	Whip	-	90-120cm	-	20	U	50	
<i>Euonymus europaeus</i>	Spindle	Transplant	-	60-80cm	-	7.5	U	25	
<i>Ilex aquifolium</i>	Holly	Pot-grown (3L)	-	30-40cm	-	7.5	U	19	
<i>Ligustrum vulgare</i>	Wild Privet	Transplant	-	60-80cm	-	7.5	U	19	
<i>Rosa canina</i>	Dog Rose	Transplant	-	60-80cm	-	7.5	U	25	
Total:									225
* Canopy/Understory (T – Tree)									

Mixed Native Instant Hedge Species Mix – Total Length: 122.9m					
Plan ref.	Scientific name	Common name	Specification	%	No.
2	<i>Acer campestre</i>	Field maple	Trough grown stock (1m lengths grown as a single row with approximately 3 plants per linear m). At approximately 1.50/1.80m in height..	5	18
	<i>Cornus sanguinea</i>	Dogwood		5	18
	<i>Corylus avellana</i>	Hazel		10	37
	<i>Crataegus monogyna</i>	Hawthorn		45	166
	<i>Euonymus europaeus</i>	Spindle		5	18
	<i>Ilex aquifolium</i>	Holly		5	18
	<i>Malus sylvestris</i>	Crab apple		5	18
	<i>Prunus spinosa</i>	Blackthorn		10	37
	<i>Rosa canina</i>	Dog rose		5	18
	<i>Viburnum opulus</i>	Guelder rose		5	18
Total Plants:					396

Single Species Broadleaf Hedging						
Plan Ref.	Scientific name	Common name	Specification	Approx. height (cm)	Total Length (m)	No.
3	<i>Carpinus betulus</i>	Hornbeam	Whip	80-100	369.3	1641
Hedge to be planted in a double staggered row at 45cm centres using 5 plants per linear metre.						

Woodland Ground Flora – Total Area: 500.10m ²			
Seed Mix	Sowing Rate (g/m ²)	%	Quantity (g)
Naturescape N10F (or equivalent)	2	100	≈1000

Flowering Amenity Grass Seed Mix – Total Area: 1025.20m ²			
Seed Mix	Sowing Rate (g/m ²)	%	Quantity (g)
Naturescape N14 (or equivalent)	5	100	≈5126

Private Lawns (Fine Grass Seed Mix) – Total Area: 1852.60m ²			
Seed Mix	Sowing Rate (g/m ²)	%	Quantity (g)
Emorsgate EG21 (or equivalent)	25	100	≈46315

KEY:

- Site
- Building to be demolished
- Vegetation to be removed
- Area to be planted before commencement of development

Existing vegetation

- Tree
- Hedgerow
- Scrub
- Grassland

Proposed vegetation

- Mixed native copse
- Native tree
- Orchard tree
- Domestic tree
- Domestic hedgerow
- Instant mixed native hedgerow
- Mixed native hedgerow
- Domestic grassed area
- Public wildflower grass area
- Domestic shrub and perennial planting

Other

- Paved area

This drawing has been prepared in accordance with the scope of work and/or the agreement with the client and is subject to the terms and conditions of that agreement.

We warrant that we have the necessary rights to use the information provided by the client and that we have not used any confidential information in the preparation of this drawing.

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Red line provided by WH architects.

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Field at Bishopstone

On behalf of: Cherrington Planning

Drawing No: DWG-1835-01
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Scale: 1:400 @ A1

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Rev: ES Date: June 26
Rev: WH