

Hard & Soft Landscape Management Plan

Tesla Engineering - Light Industrial Scheme

Water Lane Industrial Estate, Storrington, West Sussex



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1.0 INTRODUCTION

1.1 Background: Tesla Engineering (Phase 02)

- 1.1.1 On the 17th November 2017 Horsham District Council (HDC) approved a planning application for: *The erection of two new industrial buildings and ancillary storage building with associated parking and landscaping* to the Tesla Engineering works off Water Lane, Storrington. As part of the planning approval a number of conditions were imposed including Number 11: *Prior to the occupation of the building in each phase as shown on the phasing plan dated the 27th July 2017, a landscape management plan in relation to that phase (including long term design objectives, management responsibilities, a description of landscape components, management prescriptions, maintenance schedules and accompanying plan delineating areas of responsibility) for all landscaped areas shall be submitted to and approved in writing by the Local Planning Authority. The landscape areas shall thereafter be managed and maintained in accordance with the approved details.*
- 1.1.2 Tesla Engineering is located north-east of Storrington, West Sussex to the edge of an existing industrial estate which lies east and west of Water Lane. As part of a phased expansion scheme, new units were proposed (forming Phase 02 & 03 of the planned works) north and east of the existing buildings which formed Tesla Engineering.
- 1.1.3 This hard and soft landscape management plan has been updated to include Phase 03 of the scheme [Unit 12] which lies to the north of the proposed site area.
- 1.1.4 The proposed hard and soft landscape design is based on the HDC approved Masterplan – refer to: *John Etchells Consulting / Landscape Proposals / JEC/459/01.*
- 1.1.5 This Landscape Management Plan specifically addresses the HDC Planning Condition No. 11 – it is assumed Tesla Engineering will be responsible for all management responsibilities with regard to the establishment and long-term care of the proposed hard & soft landscape design. Refer to the accompanying tables for a schedule of the proposed maintenance prescriptions.

1.2 Site Context

- 1.2.1 The proposed development site was formerly an agricultural field and lies to the north-east of Water Lane and immediately north of an Tesla Engineering unit (Phase 01). To the northern and eastern edges of the proposed development site lie dense shrubs and trees – to the western edge lies a PROW: Footpath.
- 1.2.2 To the south lie the light industrial buildings which form Water Lane Industrial Estate with Storrington further south. The landscape to the north is characterised by agricultural fields which are edged with trees, shrubs and hedgerows.

1.3 Existing Trees and Hedgerows

- 1.3.1 The existing trees and shrubs to the northern and eastern boundaries of the proposed development site are all proposed to be retained within the phased development programme.

1.4 Proposed Soft Landscape Scheme

- 1.4.1 The soft landscape scheme enhances the western boundary (adjacent to the PROW: Footpath) with a mixed, native species hedgerow and hedgerow trees which would soften and filter views from locations to the footpath. A more informal mix of native shrub understorey shrubs and tree planting edges a proposed sub-station. Grass seeded areas adjacent to new hedgerows have a more relaxed regime of cutting to allow foraging opportunities and cover for invertebrates.
- 1.4.2 To the eastern boundary, the existing field edge trees and shrubs are to be retained. A bund would be constructed to the north-east comprising excavated material from completed phases of the development scheme and is proposed to be planted with understorey shrubs and tree specimens mix. An easement corridor runs north-south through the site [South East Water SWS High Pressure Pumping Main].
- 1.4.3 To the southern boundary, an existing tree line (formed of immature specimens) lies to the northern edge of the Phase 01 works. Within the proposed development site, car parking areas are edged with hedgerow planting and tree specimens.
- 1.4.4 For further details refer to:
- *RCo266 / 01 / Hard and Soft General Arrangement [Phase 02];*
 - *RCo266 / 101 / Soft Landscape Layout [Phase 03];*
 - *RCo266 / 02 / Detailed Planting Plan [Phase 02];*
 - *RCo266 / 102 / Detailed Planting Plan [Phase 03];*
 - *RCo266 / 03 / Tree Planting Section [Phase 02];*
 - *RCo266 / 03 / Tree Planting Section [Phase 03];*
 - *RCo266 / Detailed Plant Schedule and Specification [Phase 02];*
 - *RCo266 / Detailed Plant Schedule and Specification [Phase 03].*

1.5 Responsibilities

- 1.5.1 The appointed landscape maintenance contractor ('The Contractor') is to make a pre-implementation site visit and take note of all existing conditions including existing levels, condition of vegetation, soil conditions and access. Great care will be taken to avoid interference with the established levels and contours of the ground, and to avoid damage to footpaths, roads, drains, manholes and existing structures and vegetation (existing hedgerows, shrubs and tree specimens).

- 1.5.2 All work will be carried out by appropriately experienced / qualified site operatives who will be in possession of the required training certificates to undertake the works. All works detailed in the following specifications are to be carried out in accordance with good horticultural practice - using materials, plant and machinery appropriate to the task and undertaken in such a way damage and/or nuisance to the site and surroundings are avoided. Any plant material that dies as a result of the appointed contractor's neglect is to be replaced at their cost.
- 1.5.3 The Contractor is to provide details of all necessary insurances and certification (prior to commencement of maintenance operations) to carry out the works specified in this management plan. It is the responsibility of the appointing authority to ensure all submitted insurances and certificates are up to date and the appropriate level of cover for the specified works has been reviewed and approved.
- 1.5.4 All works undertaken on site by contractors must comply with the appropriate legislation relating to health and safety.
- 1.5.5 No pesticides/herbicides are permitted to be used. Weed removal is to be manual [hand weeding] or by an organic method approved by the LPA.
- 1.5.6 Should the landscape contract be for a 1 no. year maintenance and defects period, a nominated organisation / individual is to be named and responsible for ensuring the maintenance prescriptions are carried out in full for years 2-5.
- 1.5.7 Horticultural peat is not to be used (in any form) as mulch or soil conditioner / improver. All plants are to be sourced from peat free nurseries. All arisings from the site should be recycled (where appropriate) and / or removed from the site and taken to an approved tip or registered green compost facility.
- 1.5.8 Watering operations will be carried out as specified in this management document. A water source will be identified by the appointing authority / client and if no water source is available alternative watering provision (ie. bowser) will be made in advance.
- 1.5.9 The client / appointing authorities will provide a copy of any relevant ecological report / information to the Contractor (in advance of any site operations) to ensure they are aware of the ecological recommendations / implications for the site. The Contractor should comply with all current environmental legislation if protected species are suspected or found prior to or during works - if required, professional advice should be sought.
- 1.5.10 All soils to be reused are to be tested for suitability as a planting medium to the specifications as per *BS3882: Specification for topsoil [General Multi-Purpose Topsoil]* - all recommendations are to be carried out in full.
- 1.5.11 All imported topsoils are to have appropriate certification / Declaration of Analysis in accordance with the requirements within *BS 3882 Specification for Topsoil*.

Subsoil is to be as per the recommendations as laid out within *BS 8601 Specification for subsoil and requirements for use*.

- 1.5.12 Typically soil profiles should be as per the recommendations laid out within the *BS 3882 Specification for Topsoil*: 300mm (min) depth (medium grade) top soil with suitable (loosened) subsoil to provide the remainder of the minimum rooting depth for general planting areas. 150mm (min) for grass seeded areas over a minimum of 300mm subsoil [to *BS 8601: Specification for subsoil and requirements for use - multipurpose subsoil*].

2.0 SOFT LANDSCAPE MANAGEMENT PRESCRIPTIONS

2.1 Management Prescriptions

- 2.1.1 Management prescriptions for the soft landscape scheme are as follows:

- *P 1 - Existing Mature Trees;*
- *P 2 - Proposed Tree Planting;*
- *P 3 - Native Understorey Shrub Planting;*
- *P 4 - Proposed Native Hedgerow Planting;*
- *P 5 – Amenity Grass / Long Grass*

2.2 P 1 – Existing Mature Trees

Existing Tree Retention and Protection Proposals

- 2.2.1 The proposed scheme seeks to retain all the boundary trees and shrubs in accordance with the requirements of *BS5837: 2012 – Trees in Relation to Design, Demolition and Construction*.

Protection and Retention of Existing Vegetation

- 2.2.2 The Contractor is to exercise extreme care when performing operations within designated Tree Root Protection Areas or beneath the crowns/canopies of existing trees and vegetation designated for protection and avoid at all times damage to the roots, trunk and branches.

Protective Fencing

- 2.2.3 All vegetation to be retained on site is to be protected with temporary fencing in accordance with *BS5837: 2012 - Trees in Relation to Design, Demolition and Construction* for the duration of the contract period.
- 2.2.4 The fencing is to be erected prior to the commencement of all works on site and retained in place throughout the construction phase. The fencing is to comprise of either 2.4m wooden site hoarding or 2.0m high (min), herras weld mesh fencing and is to be securely installed. Notices stating: TREE PROTECTION ZONE - KEEP OUT are to be attached to every fifth panel. Any repositioning of the protective fencing

during the course of the contract as works progress should be agreed on site with the Landscape Architect.

- 2.2.5 At the end of the contract period the contractor is to remove the protective fencing from the site. All retained vegetation is to be healthy and thriving at the handover date. Within the protected area the following activities must not take place:
- *No vehicles are to be used in the fenced off areas;*
 - *No materials are to be stockpiled or stored;*
 - *No chemicals are to be stored;*
 - *No excavation or increase in the soil level shall occur;*
 - *No fires are to be lit on site.*

Manual Excavation

- 2.2.6 Within the designated Root Protection Areas, all excavation is to be undertaken by hand. All roots will be cut cleanly with a hand saw or secateurs. All excavations, cultivation and grading within the Tree Root Protection Areas is to be carried out using hand tools, taking care not to damage or disturb any existing tree roots.

Tree Surgery

- 2.2.7 Any significant defects found in existing trees / hedgerows during the course of the scheduled work is to be reported to a suitably qualified / experienced arboriculture consultant. All tree work is to be undertaken by an approved and qualified Tree Surgeon in accordance with *BS3998: 2010 – Recommendations for Tree Work*. Care should be taken to avoid damage to neighbouring trees to be retained. Branches in confined spaces are to be removed and taken down in sections - all arisings are to be transported and disposed of away from site to an approved tip.

Tree Monitoring

- 2.2.8 Existing trees should be checked annually for significant wounds, disease, infections and dead/dying/damaged branches during the spring of each year. Any dead and dying branches should be removed. Tree Surgery works are to be undertaken in accordance with *BS3998: 2010*. The condition of the existing mature trees is to be monitored each year to identify any early signs of disease, dead or dying branches or any areas of significant areas of die-back.

Existing Trees and Shrubs – Management Objectives

- 2.2.9 Existing trees and shrubs are to be managed to ensure safety, healthy growth and longevity.

Existing Mature Trees – Management Prescriptions

- 2.2.10 The following management prescriptions are to be implemented with regard to the existing trees and shrubs:
- 2.2.11 ***P 1 – Existing Mature Trees: Management Prescription (Refer to Table 01):***
- *Monitoring: The condition of the existing mature trees is to be monitored each year in Spring by an appropriately qualified arboriculture professional/tree surgeon to identify any major defects*

including infection/disease, dead or dying branches, significant wounds, areas of significant die-back etc. Any dead, dying, or damaged branches should be removed by an appropriately qualified Tree Surgeon.

- *Existing hedgerows are to be maintained to a maximum height of 1.20 metres and should be hard-trimmed every year between the dates of Oct 1st – Feb 28th (outside breeding bird season). The hedgerow should be trimmed to an 'A' shape and form to maintain a bushy base and provide the most benefits for wildlife.*

2.3 P 2 – Proposed Tree Planting

Proposed Tree Specimens

- 2.3.1 The proposed scheme includes tree specimens to the boundaries and adjacent to parking areas and features the following native and ornamental species:

- *Acer campestre* (Field Maple);
- *Acer campestre Elegant*;
- *Acer campestre Elsrijk*;
- *Alnus glutinosa* (Common Alder);
- *Carpinus betulus* (Hornbeam);
- *Crataegus monogyna* (Hawthorn);
- *Malus sylvestris* (Crab Apple);
- *Quercus robur* (English Oak).

- 2.3.2 Trees are to be Standard Selected Stock / 10-12cm Girth Size / 3.0-3.0m height / 1.75-2.0m Clear Stem. All trees are to be sourced and planted according to *BS8545 - Trees: from nursery to independence in the landscape – Recommendations*.

- 2.3.3 It is recommended following establishment, all tree specimens are inspected every 5 years by a qualified Arboriculturist to survey and identify any problems and required arboricultural work.

Tree Planting - Specification

- 2.3.4 All tree planting pits are to be cut square after removing all existing grass / vegetation. Tree planting *positions* are shown on *RCo266 / 01 / Hard & Soft General Arrangement Drawing & RCo266 / 101 / Soft Landscape Layout*.
- 2.3.5 The size of tree planting pits is to be 800 x 800 x 400 or 20% wider in any direction than the rootball. Pits are to be backfilled with the existing excavated topsoil. [Refer to *RCo476 / 02 / Tree planting Detail*] Any additional soil ameliorants proposed by the landscape contractor to aid establishment are to be approved in advance by the Landscape Architect.

Tree Planting – Staking: Standard Selected Specimens

- 2.3.6 Tree staking is to be single-staked for standard select tree specimens. The stake is to be positioned close to the tree on the windward side and driven 300mm (minimum) into the bottom of the pit at a slight angle. The stake is to extend above

ground level to a distance between 0.75 and 1.0 metre. The top of the stake is to be no more than 40 mm away from the stem of the planted tree. The tree is to be firmly secured with two adjustable rubber lock ties plus spacer collars with 25 mm long galvanised clout nails securing the ties to the stake.

Tree Planting - Tree Stakes and Ties

- 2.3.7 All stakes, tree ties and spacers should be checked four times a year for the first 2 years. Tree ties should be fitted so that the tree is stable without any chafing or rubbing. Replace and refit rubber tree ties / stakes if necessary. All tree stakes / ties are to be collected and removed 3-5 years (approx) following successful establishment.

Tree Planting - Protection

- 2.3.8 Where rabbits are known to be present, tree specimens are to be protected with mesh guarding: Height: 600mm (min): Support: one bamboo cane - to have rubber cap stake topper / protector to prevent accidental injury. Native tree mesh guard shelters are to be carefully placed around the tree stem and the entire base of the tree to prevent mammalian browsing.
- 2.3.9 All tree mesh guards are to be collected and removed 3-5 years following successful establishment.

Tree Planting - Weeding

- 2.3.10 Trees should be maintained with a weed and grass-free area at the base of each tree. A 500 - 700 mm diameter weed / grass-free zone should be achieved by hand-weeding. Tree planting should be kept weed-free on a monthly visit between February-November for the first two years, then six times a year for 3 years.

Tree Planting - Organic Mulch

- 2.3.11 Organic mulch comprising well-composted organic material, wood chips, or bark is to be free of pests, disease, fungus, weeds and foreign material. The organic mulch is to be matured for a minimum of 16 weeks. Organic mulch is to consist of graded fines to a maximum particle size of 40 mm with approximately 70 % particle size 5 mm to 40mm, 30 % particle size less than 5 mm.

Tree Planting - Mulch Top Up

- 2.3.12 Clear all weeds, water soil thoroughly and mulch all planting pits to an even depth of 75 mm after settlement. Pit planted trees positions are to be mulched around the base of the trees to a 500-700 mm diameter circle (a collar of 10-12 cm around tree stem to be kept clear of mulch to prevent trunk from rotting) and mulch levels maintained for 2 years from planting by checking and topping up as required in Spring and Autumn.

Mulching on Slopes

- 2.3.13 Where trees are proposed to slopes steep enough that loose mulching material would not be practicable – a mulch mat could be considered. Mulch mats are to be Ecomatt Weed Control Fabric Mats supplied by Greentech [or equal & approved]

and are to be 0.5m x 0.5m x 750g. Matts are to be pinned in place with 4 no. timber stakes [nominally 250mm x 30mm].

Tree Planting - Strimming

- 2.3.14 No strimming should be undertaken around the base of the proposed tree planting. A 500 – 700mm diameter weed-free zone should be achieved by other means.

Tree Planting - Watering

- 2.3.15 In order to establish newly planted Standard-Select Trees, they should be watered fortnightly in May, June, July, August and September for the first two years. Tree irrigator bags are to be supplied with each tree and should be filled at each watering visit. Subsequent watering to be undertaken during prolonged dry spells as required.

Tree Planting - Pruning

- 2.3.16 Tree specimens should be checked for dead, dying, or damaged branches and stems twice per year. Trees should also be checked for shape, form, and size within the site areas. Trees should be pruned accordingly during the Spring and Autumn for the first two years and then annually whilst the trees are still in leaf. Pruning will not take place on trees with nesting birds until the chicks have fledged.

Tree Planting - Defects

- 2.3.17 Replace all dead / dying plant material within the first 5 years of establishment as required. Replacement planting should be undertaken on an annual basis with an equivalent specimen.

Tree Planting – Management Objectives

- 2.3.18 To ensure successful establishment and to promote healthy growth and an attractive form. To provide new nesting and foraging habitat for wildlife, including birds and bats and soften long-distance views of new buildings.

- 2.3.19 ***P 2 – New Tree Planting: Management Prescriptions (Refer to Table 02):***

- ***Tree Stakes / Ties:*** Checked four times per year (Winter, Spring, Summer, Autumn) for the first 3 years / Collect and responsibly dispose of all associated supports after 5 years;
- ***Tree Guards:*** To be checked and refitted to all trees, where required, twice per year (Spring and Autumn) for the first two years. Tree guards to be collected and responsibly disposed of 3-5 years following successful establishment;
- ***Weeding:*** Check and keep tree planting areas weed-free on a monthly visit between Feb-November for first 2 years, then six times a year for 3 years;
- ***Mulching:*** Trees within grassland should be maintained with a mulch zone 500 – 700mm diameter to the base of the trees. Mulch layer to be checked in Spring and Autumn for the first 2 years following planting;

- **Watering:** Fortnightly throughout May, June, July, August, September for first year. Tree irrigator bags to be filled at each visit, subsequent watering to be undertaken during prolonged dry spells as required;
- **Pruning:** Trees should be checked for dead, dying or damaged branches and stems and pruned twice per year (Spring and Autumn) for the first 3 years and then annually;
- **Defects:** Replace dead trees with equivalent specimens as required in the first 5 years.

2.4 P 3 – Proposed Native Understorey Shrub Planting

Native Understorey Shrub Planting

- 2.4.1 The native understorey shrub planting stock is to be implemented into existing soft areas with all existing grass / weeds to be removed. Shrub planting areas are shown on RCo266 / 01 / Hard & Soft General Arrangement Drawing & RCo266 / 101 / Soft Landscape Layout.

Transplant Shrubs - Planting

- 2.4.2 The shrub transplants are to be set out at 1.0 metre centres throughout the designated native understorey shrub planting areas. Plant species are to be grouped randomly in 3-5 of the same species (where feasible).

- 2.4.3 The Contractor is to form a planting notch for bare rootstock to a sufficient depth and width to allow roots to spread without cutting or bending. The shrub plant material is to be inserted into the planting pit, firming the soil by treading with the heel, ensuring that the plant material remains in an upright position.

Feathered Shrubs [1.5-1.75m ht] - Planting Pits

- 2.4.4 The typical size of the Feathered Whip Shrub planting pits is to be 300 x 300 x 300mm - or 20% wider in any direction than the root ball, whichever is the greater and positioned as shown.

Feathered Shrubs [1.5-1.75m ht] - Staking

- 2.4.5 Feathered shrubs are to have a single stake. The stake is to be positioned close to the Feathered shrub on the windward side and driven vertically 300mm into the bottom of the pit prior to planting – stakes are to be 50mm diameter. The stake is to extend above ground level to a maximum of one third the total Feathered shrub height. The top of the stake is to be no more than 40mm away from the stem of the planted tree and firmly secured with one adjustable tie plus spacer within 50mm of the top of the stake with a 25mm long galvanised clout nail.
- 2.4.6 All stakes and ties and spacers should be checked four times a year for the first 2 years. All shrub stakes / ties are to be collected and removed 3-5 years (approx) following successful establishment.

Transplant Shrubs - Protection

- 2.4.7 Where rabbits are known to be present transplant and feathered shrub guards are to be protected with shrub shelters: '*Green-tech Rainbow Tree Spiral Guard*' or equal and approved: Height: 750mm height / Diameter: circular in section: 50 mm / Colour: Clear / support to be 1 no. bamboo cane. Shrub shelters are to be carefully placed around the shrub plant material and the entire base. All canes are to have rubber cap stake topper / protector to prevent accidental injury.

Feathered Shrubs [1.5-1.75m ht] - Protection

- 2.4.8 Feathered shrubs are to be protected with: '*Green-tech Rainbow Tree Spiral Guard*' or equal and approved. Height - 750mm / Diameter – 50mm diameter circular in section: Colour: clear. Shrub shelters are to be carefully placed around the shrub plant material and the entire base.

Transplant / Feathered Shrubs - Guards

- 2.4.9 All shrub guards should be checked and refitted where necessary to all shrubs. Shrub guards should be checked twice per year for the first 2 years and refitted where necessary. All shrub guards are to be collected and removed 3-5 years following successful establishment or sooner if:
- *The plants have successfully established and are of sufficient size to withstand casual grazing by mammalian pests;*
 - *The shelters are impeding the natural growth of the shrub specimens.*

Shrub Planting - Weeding

- 2.4.10 Native understorey shrub plant positions are to be kept clear of all weeds to an area measuring 500 – 700mm diameter at the base of the planted material. The native shrub plant material is to be kept weed-free by hand weeding. Native shrub planting areas should be kept weed-free on a monthly visit between February - November for the first 2 years, then six times a year for 3 years.

Shrub Planting - Organic Mulch

- 2.4.11 Organic mulch comprising well-composted organic material, wood chips, or bark to be free of pests, disease, fungus, weeds and foreign material and to be laid to the base of the shrub plant material. The organic mulch is to be matured for a minimum of 16 weeks. Organic mulch to consist of graded fines to a maximum particle size of 40mm with approximately 70% particle size 5mm - 40mm, 30% particle size less than 5mm.
- 2.4.12 Clear all weeds, water soil thoroughly and mulch all native shrub planting positions to an even depth of 75mm after settlement. All shrub positions are to be mulched around the base of the plant material to a 500 - 700mm diameter circle.

Shrub Planting - Mulch Top-Up

- 2.4.13 The base of the shrubs should be topped up with an organic bark mulch to assist with the suppression of weeds. An organic mulch top-up should be undertaken and checked twice per year (Spring and Autumn) for the first 2 years. Organic mulch levels should be maintained at a consistent depth of 75mm.

Mulching on Slopes

- 2.4.14 Where shrubs are proposed to slopes steep enough that loose mulching material would not be practicable – a mulch mat could be considered. Mulch mats are to be Ecomatt Weed Control Fabric Mats supplied by Greentech [or equal & approved] and are to be 0.5m x 0.5m x 750g. Mats are to be pinned in place with 4 no. timber stakes [nominally 250mm x 30mm].

Shrub Planting - Watering

- 2.4.15 In order to establish the native shrub planting, the transplants should be watered fortnightly during May, June, July, August and September for the first two years following planting. Quantity of water to be 10 litres per m² during each visit for the first year of establishment only. Subsequent watering to be undertaken during prolonged dry spells as required.

Shrub Planting - Trimming and Pruning

- 2.4.16 During the first three years of establishment, the native shrub transplants should be lightly trimmed to maintain shape and form. Light trimming should encourage vigorous and dense, bushy growth. Trimming during the first 3 years of establishment should be undertaken twice per year (Spring and Autumn) to maintain size, shape, and vigorous growth. Pruning will not take place on shrubs with nesting birds until the chicks have fledged. Cuttings will be removed from site and disposed at an approved tip.

Native Understorey Shrub Planting – Long-Term Management

- 2.4.17 After three years of establishment and light trimming, the native understorey shrub plant material should be maintained to a maximum height of 2.0 metres and should be hard-trimmed twice per year during Autumn and Spring to achieve this goal. Shrubs with nesting birds will not be hard-trimmed until the chicks have fledged.
- 2.4.18 Native understorey shrub planting areas, once established, are to be thinned on a regular and routine basis (5 years). The proposed native understorey shrub planting mix includes a number of larger shrub species and should be selectively thinned out to allow a selection of tree / shrub specimens to emerge and establish as the dominant native understorey specimens. Selective tree / shrub thinning should be undertaken every 5 years to assist native understorey tree / shrub establishment. This will take place outside of breeding bird season (generally March-September inclusive).
- 2.4.19 Replace all dead / dying plant material within the first 5 years of establishment as required. Replacement planting should be undertaken on an annual basis with equivalent specimens.

Native Understorey Shrub Planting – Management Objectives

- 2.4.20 Long-term, the management objective for the native understorey shrub plant material should be to achieve a dense native planting thicket approximately 2.0 metres in height with a rich diversity of native species.

2.4.21 **P 3 – Proposed Native Understorey Shrub Planting: Management Prescriptions**
(Refer to Table 03):

- **Shrub Stakes / Ties:** Checked four times per year (Winter, Spring, Summer, Autumn) for the first 3 years / Collect and responsibly dispose of all associated supports after 5 years;
- **Weeding:** Check and keep shrub planting areas weed-free on a monthly visit between Feb-November annually for first 2 years, then six times a year for 3 years;
- **Shrub Guards:** To be checked and refitted (where required) to all shrubs twice per year (Spring and Autumn) for the first 2 years. All shrub guards are to be collected and removed 3-5 years following successful establishment;
- **Mulch Top-Up:** Planting pits / areas should be topped up with an organic bark mulch. Mulch levels should be maintained at a consistent depth of 75 mm. Mulch top-up should be undertaken and checked twice per year (Spring and Autumn) for the first 2 years;
- **Watering:** Fortnightly during May, June, July, August and September for establishment of new shrub planting during the for the first two years following planting. Quantity of water to be 10 litres per metre square during each visit. [Subsequent watering to be undertaken during prolonged dry spells as required];
- **Trimming and Pruning:** During the first 3 years of establishment, the native shrubs should be lightly trimmed to encourage vigorous and dense re-growth. Trimming should be undertaken twice per year in Spring and Autumn;
- **Hard-Trimming:** After 3 years of establishment and trimming, the native shrub plant material should be maintained to a maximum height of 2.0 metres and should be hard-trimming twice per year during early Spring and late Autumn;
- **Thinning:** Native understorey shrub species should be selectively thinned out every five years;
- **Defects:** Replace dead shrubs as required with equivalent specimens within the first 5 years.

2.5 **P 4 – Proposed Native Hedgerow Planting**

Proposed Native Hedgerow Planting

2.5.1 The proposed scheme includes native, mixed species hedgerows comprising the following species:

- *Acer campestre* (Field Maple);
- *Cornus sanguinea* (Dogwood);
- *Corylus avellana* (Hazel);
- *Crataegus monogyna* (Hawthorn);
- *Ilex aquifolium* (Holly).

Native Hedgerow Planting - Specification

- 2.5.2 All hedge planting areas are to be cut by removing the existing grass or vegetation. Hedge planting areas are shown on *RCo266 / 01 / Hard & Soft General Arrangement Drawing & RCo266 / 101 / Soft Landscape Layout*.

Hedgerow - Transplant Hedge Stock

- 2.5.3 Hedgerow planting is to be formed with shrub transplants: 60 - 90cm height and to be planted in two staggered rows [400mm apart] at 400mm centres or 5 no per m². Shrubs are to be planted in groups of 3-5 of the same species.

- 2.5.4 Transplant hedge planting is to be implemented by creating a planting notch for bare rootstock of sufficient depth and width to allow roots to spread without cutting or bending. Shrubs are to be inserted into the notch and the soil is to be firmed by treading with the heel, ensuring that the shrubs remain in an upright position.

Native Hedgerow - Shrub Protection

- 2.5.5 Where rabbits are known to be present transplant shrub guards are to be protected with shrub shelters: '*Green-tech Rainbow Tree Spiral Guard*' or equal and approved: Height: 750mm height / Diameter: circular in section: 50 mm / Colour: Clear / support to be 1 no. bamboo cane. All canes are to have rubber cap stake topper / protector to prevent accidental injury. Shrub shelters are to be carefully placed around the shrub plant material and the entire base.

Native Hedgerow - Shrub Guards

- 2.5.6 All hedgerow shrub guards should be checked and refitted where necessary to all shrubs. Shrub guards should be checked twice per year for the first 2 years and refitted where necessary. All shrub guards are to be collected and removed 3-5 years following successful establishment or sooner if:
- *The plants have successfully established and are of sufficient size to withstand casual grazing by mammalian pests;*
 - *The shelters are impeding the natural growth of the shrub specimens.*

Native Hedgerow - Weeding

- 2.5.7 Hedgerow transplants are to be planted in mulched beds which should be kept clear of all weeds at the base of the plant material by hand weeding. Native shrub planting areas should be kept weed-free on a monthly visit between February - November for the first 2 years, then six times a year for 3 years.

Native Hedgerow - Organic Mulch

- 2.5.8 Organic mulch comprising well-composted organic material, wood chips, or bark to be free of pests, disease, fungus, weeds and foreign material and to be laid to the base of the hedge plant material. The organic mulch is to be matured for a minimum of 16 weeks. Organic mulch to consist of graded fines to a maximum particle size of 40mm with approximately 70% particle size 5mm - 40mm, 30% particle size less than 5mm.

- 2.5.9 Clear all weeds, water soil thoroughly and mulch all native hedgerow planting positions to an even depth of 75mm after settlement. Hedge positions are to be mulched around the entire base of the hedgerow (1.0m width min).

Native Hedgerow - Mulch Top Up

- 2.5.10 The native hedgerow plant material is to be located within mulched planting beds. The beds should be topped up with an organic mulch to assist with the suppression of weeds to the hedgerow planting areas. An organic mulch top-up should be undertaken and checked twice per year in Spring and Autumn for the first 2 years. Organic mulch levels should be maintained at a consistent depth of 75mm.

Native Hedgerow - Watering

- 2.5.11 In order to establish the hedgerow planting, transplants should be watered fortnightly in May, June, July, August and September for the first two years following planting. 10 litres per square metre should be applied during each visit. Subsequent watering to be undertaken during prolonged dry spells as required.

Native Hedgerow - Trimming and Pruning

- 2.5.12 During the first 3 years of native hedgerow establishment, the hedgerow transplants should be lightly trimmed to maintain shape and form. Light trimming should encourage vigorous and dense, bushy growth. Hedgerow trimming during the first 3 years of establishment should be undertaken annually during early Spring to maintain size, shape and vigorous growth. Hedges should be checked for nesting birds prior to pruning. Cuttings will be removed from site and disposed at an approved tip.

Native Hedgerow – Long-Term Management

- 2.5.13 After 3 years of establishment and light trimming, the hedgerows should be maintained to a maximum height of 1.20 metres and should be hard-trimmed every year between the dates of Oct 1st – Feb 28th (outside breeding bird season). The hedgerow should be trimmed to an 'A' shape and form to maintain a bushy base and provide the most benefits for wildlife.
- 2.5.14 Replace all dead / dying plant material within the first 5 years of establishment as required.

Native Hedgerow - Management Objectives

- 2.5.15 Long-term, the management objective for the hedgerow planting should be to achieve a dense, healthy hedgerow approximately 1.20 metres height which contributes to green infrastructure and provides opportunities for wildlife.
- 2.5.16 ***P 4 – Proposed Native Hedgerow Planting: Management Prescriptions [Refer to Table 04]:***
- *Shrub Guards: Check and refit, where necessary, all hedgerow shrub guards twice per year (Spring and Autumn) for the first 2 years. All shrub guards are to be collected and removed 3-5 years following successful establishment.*

- *Weeding: Check and keep shrub planting areas weed-free on a monthly visit between Feb-November for first two years, then six times a year for 3 years;*
- *Organic Mulch Top-Up: Check and maintain organic mulch to all hedgerow planting areas twice per year (Spring and Autumn) for the first 2 years;*
- *Watering: Fortnightly during May, June, July, August and September for the first two years following planting. Apply 10 litres per square metre at each watering visit;*
- *Trimming and Pruning: Light trimming of hedgerow transplants in early Spring and late Autumn for first 3 years to stimulate vigorous and dense growth;*
- *Hard-Trimming: Following establishment - trim annually between the dates of Oct 1st – Feb 28th to maintain hedgerows at 1.20 metre height;*
- *Defects: Replace dead hedgerow shrubs with equivalent specimens as required within first 5 years.*

2.6 P 5 – Amenity Grass / Long Grass

Amenity Grass Areas - Cutting

- 2.6.1 Amenity Grass Areas grass should be maintained to a height of 30mm approx - cutting regime to be;
- *Allow turf sward or amenity seeded areas to establish to a minimum height of 35mm before first cut. Once established, maintain to a height of 30mm by cutting fortnightly or as necessary through the growing*
 - *season and as required during the winter months (to maintain height of 30mm approx.). Arisings to be collected and removed from site.*
 - *Final Yearly Cut: November – to tidy Grassed Areas 40 – 50mm height.*
- 2.6.2 Remove all litter including fallen leaves from grass areas prior to mowing. Do not use mowers / trimmers within 100mm of woody tree / shrub stems - use nylon filament rotary cutters or other hand-held machinery to avoid damage to tree and shrub stems. Strim around any obstructions.

Amenity Grass Areas – Bare Patches

- 2.6.3 Grass seeded areas which fail to establish or become bare due to wear should be top dressed with sandy loam topsoil and re-seeded with Grass Seed Mix as specified. Any reseeded areas should be temporarily fenced off to enable establishment. Re-seeding to be in March / April or September / October. The Grassed Areas should be checked for bare patches twice per year for the first 5 years: Spring and Autumn.

Amenity Grass Areas – Fertiliser: Spring / Autumn

- 2.6.4 A fertiliser application should be made twice per year to grass seeded areas during Spring and Autumn:

- *In March apply Greentech Sportsmaster Spring Summer - 9-7-7 + 13%S Pre-Seeder/ General fertilizer at 35 - 70 g / m² or equal and approved;*
- *In September apply Greentech Sportsmaster Autumn Winter - 4-12-12 + 7%S fertilizer at 35-70 g / m² or equal and approved.*

Long Grass Areas - Cutting

- 2.6.5 In the first year, long grass areas should be managed more intensively to prevent the intrusion of invasive ground flora and allow a diverse flora to develop. The first cut should occur when the grass reaches approximately 100mm, then 75mm, followed by subsequent cuts every 6 weeks down to 50mm throughout the first growing season.
- 2.6.6 Arisings should be removed after the first and last cut of the year, otherwise left on site. Long grass areas from year 2 onwards will be maintained with a twice yearly cut in May/June and in September. All arisings should be allowed to lay in-situ for 24 hours before being removed from site in order to allow any wildlife to disperse.

Watering

- 2.6.7 New grass seeded / turfed areas are to be watered fortnightly from May to Sept for the first two years with sufficient to fully moisten the top 75-100mm of topsoil but avoiding any pooling [standing water].

Grassed Areas – Management Objectives

- 2.6.8 Ensure amenity short-mown grass areas are suitably managed in order to maintain an attractive and tidy appearance. Maintain longer grass areas to encourage opportunities for foraging and cover (mammals and invertebrates).
- 2.6.9 **P 5 - Grassed Areas: Management Prescriptions [Refer to Table 05]:**
- *Amenity Grass Cutting; Initial cut early Spring; Regular cutting fortnightly during April / May / June / July / August / September / October - Final Cut: November;*
 - *Amenity Grass - Bare Patches: Re-seeding twice per year (where required) - Spring and Autumn;*
 - *Amenity Grass - Fertiliser: twice per year - Spring and Autumn for the first three years;*
 - *New grass seeded / turfed areas to be watered fortnightly from May to Sept for the first two years;*
 - *Long Grass Cutting: first year – first cut following establishment at 100mm, then 75mm, followed by subsequent cuts every 6 weeks down to 50mm throughout the first growing season;*
 - *Long Grass Cutting - from year 2 onwards maintained with a twice yearly cut in May/June and in September. All arisings should be allowed to lay in-situ for 24 hours before being removed from site.*

3.0 PROPOSED HARD LANDSCAPE SCHEME

3.1 Introduction

- 3.1.1 The proposed hard landscape scheme would enhance and build upon the existing service yard and carparking facilities. Linking the two units together with car parking either side of a central spine road.
- 3.1.2 To the western boundary, the existing field edge trees and shrubs are proposed to be retained screening the new access road and parking area. To the north, the access road would extend around the northern edge of Unit 12 to a parking area.
- 3.1.3 For further details refer to the Evans & Langford Drawings and specifications.

4.0 HARD LANDSCAPE MANAGEMENT PRESCRIPTIONS

4.1 Management Prescriptions

- 4.1.1 Management prescriptions for the hard landscape scheme are as follows:
 - *P 1 – Hard Standing*

4.2 H 1 – Hard Standing

- 4.2.1 To be maintained as required. Ensure all hard surfaces are maintained free from debris, litter and fallen leaves through regular sweeping and remove any arisings from site.
- 4.2.2 Undertake annual inspections to ensure that all hard surfaces are sound and free from cracks or trip hazards. Patchy, worn areas or where the hard surface finish has visibly failed, are to be clearly fenced-off and repaired as new as soon as feasibly possible.

4.3 H 2 – Retaining Wall

- 4.3.1 Periodic visual inspections to detect damage or abnormalities. Any damage detected should be reported and advice on repair should be sought by the supplier. These would be typically annually but will vary depending on the location. No requirement for any cleaning is anticipated. The catch-pit, manhole or soakaway within the development should be checked annually to ensure this can still flow.

4.4 H 3 – Cycle Shelters

- 4.4.1 To maximise life expectancy the product should be visually inspected, on a regular basis, for any signs of damage, vandalism, breakdown of surface finish, build-up of salt, dirt or atmospheric residue, and loose fixings.
- 4.4.2 In the event of serious damage to any main, or structural, component then the supplier should be contacted immediately for detailed technical advice. In addition to the visual inspection, a regular cleaning regime is also required. The required frequency of visual inspection and cleaning will be dependent on the environment in which the product is situated. In rural and urban environments (C1 – C3) the products should be visually inspected monthly, and cleaned every 3 months.

