



LIZARD

Landscape Design and Ecology

RURAL ASSOCIATES

GTR FACTORY

ARUNDEL ROAD, FONTWELL, WEST SUSSEX

Landscape Management Plan

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1.0 INTRODUCTION AND SITE DESCRIPTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned to prepare a Landscape Management Plan (*LMP*) for the proposed GTR Factory within Fontwell. The LMP for the development has been prepared by Ed Zapp - *Lizard Landscape Design and Ecology, Worthing*.
- 1.2 The development proposals within the GTR Factory include areas of soft landscape for the attention of maintenance throughout the year. The planting is designed to provide enhanced visual amenity and increased biodiversity within the Site and surrounding area.
- 1.3 The Site has been the subject of several environmental surveys including an Arboricultural Impact Assessment and Ecological Appraisal, which identify the value of the existing habitats and ecological features on the site. Subsequently, a soft landscape scheme has been developed with the aim of providing enhanced visual amenity and providing the creation of new habitats within the site. This LMP incorporates the recommendations of the surveys and provides management and maintenance prescriptions for the areas of soft landscape and habitat creation.

2.0 THE SITE AND SURROUNDING

- 2.1 The location proposed for commercial development (*hereinafter referred to as 'the Site'*) encompasses land to the south of Arundel Road in Fontwell (*Grid Reference: SU 95112 06997*). The Site is located to the north of Fontwell Village, with Arundel Road running adjacent to the northern Site boundary.
- 2.2 The regular shaped parcel of land currently comprises a grassed field and lies within an enclosed landscape with suburban development to the surrounding area. The Site falls in a south-west direction from some 30.0m above Ordnance Datum (*aOD*) in the north western corner to some 23.0m *aOD* to the eastern corner.
- 2.3 The regular shaped parcel of land lies within a suburban setting in which the well trafficked Fontwell West roundabout and A27, locally dominate. The Fontwell Racecourse lies some 120m to the west of the Site, with the Fontwell services to the North.
- 2.4 Access to the Site is gained along Arundel Road which runs adjacent to the northern boundary within the north eastern corner of the Site.

Development Proposal

- 2.5 The development proposal (*hereinafter referred to as 'the Scheme'*) comprises the construction of a new GTR factory some 7.4m in height, with associated parking. The proposed factory building is to be constructed into the existing landform of the Site using cut and fill techniques. The Scheme proposes to relocate the existing Site entrance further east along the northern boundary.
- 2.6 The proposed Site layout would incorporate a 5m vegetated landscape buffer to the east and southern boundaries, including the enhancement to the existing northern and western boundaries. The enhancements to the boundaries would consist of native tree and shrub planting and flowering meadow areas.
- 2.7 A SuDs attenuation pond feature is proposed within the Scheme located to the west of the proposed factory building, providing drainage mitigation and enhancement measures.

Purpose of the Plan

- 2.8 The purpose of the LMP is to provide details of the proposed mitigation and habitat enhancement measures in terms of the works to be carried out; to which parts of the site / which habitats / which vegetation type they shall be implemented; when specific tasks are to be undertaken; and the method of undertaking the prescribed tasks.
- 2.9 The LMP will additionally specify subsequent management and monitoring for the soft landscape areas. It is intended that the LMP functions as a 'living document', with a process for continually reviewing, monitoring, revising, editing and updating. The LMP has been prepared in advance of the proposed construction works.

Drawings and Reports

- 2.10 The Landscape Management Plan is accompanied by, and should be read alongside, the following documentation:
- *LLD1773-LAN-DWG-100 - Hard and Soft Landscape General Arrangement;*
 - *LLD1773-LAN-DWG-200 - Detailed Planting Plans - Infrastructure Planting;*
 - *LLD1773-LAN-DWG-201 - Detailed Planting Plan - Ornamental Planting;*
 - *LLD1773-LAN-DWG-202 - Detailed Planting Plan - Ornamental Planting;*
 - *LLD1773-LAN-SCH-001 Planting Schedule and Specification;*
 - *LLD1773-LAN-SPE-001 NBS Hard and Soft Landscape Specification;*
 - *LLD1773-LPL-REP-001 Landscape and Visual Appraisal.*

3.0 SPECIFICATION FOR PROPOSED PLANTING AREAS

Proposed Planting Areas

3.1 Existing boundary habitats of hedgerows with trees are proposed to be retained; with further native understory shrub planting, native tree planting, and native wildflower planting proposed to bolster existing vegetation. The proposed planting would increase the overall area of existing habitats and improve connectivity for protected species.

3.2 The proposed soft landscape scheme includes the following elements:

- P1 – Proposed Native Species Tree Planting;
- P2 – Proposed Native Single Species Hedgerow;
- P3 – Proposed Native Mixed-Species Hedgerow Planting;
- P4 – Proposed Native Understory Shrub Planting;
- P5 – Proposed Native Wildflower Grassland;
- P6 – Proposed Ornamental Planting.

3.3 Existing soft landscape elements include:

- P7 – Existing Trees;
- P8 – Existing Hedgerow.

3.4 For planting details, species selection, habitat creation and enhancement proposals **P1 – P6**; refer to drawing and documentation:

- *LLD1773-LAN-DWG-200-202 Detailed Planting Plans;*
- *LLD1773-LAN-SCH-001 Planting Schedule and Specification;*
- *LLD1773-LAN-SPE-001 NBS Hard and Soft Landscape Specification.*

P1 - Proposed Native Species Tree Planting

- 3.5 Native tree planting is proposed to the site boundaries. The native tree planting proposed would increase habitat potential for birds and invertebrates and contribute to the enhanced visual amenity throughout the scheme.
- 3.6 Native trees proposed within the scheme consist of:
- *Acer campestre* (Field Maple)
14 - 16 cm Girth Size; 4.0 m - 4.5 m height; Standard (*Extra Heavy*). Minimum 1.75 - 2.0m clear stem height;
 - *Betula pubescens* (Downy Birch)
12 - 14 cm Girth Size; 3.5 m - 4.0 m height; Standard (*Heavy*). Minimum 1.75 - 2.0m clear stem height;
 - *Prunus avium* (Sweet Cherry)
14 - 16 cm Girth Size; 4.0 m - 4.5 m height; Standard (*Extra Heavy*). Minimum 1.75 - 2.0m clear stem height;
 - *Prunus padus* (Bird Cherry)
12 - 14 cm Girth Size; 3.5 m - 4.0 m height; Standard (*Heavy*). Minimum 1.75 - 2.0m clear stem height
 - *Sorbus aria* (Whitebeam)
14 - 16 cm Girth Size; 4.0 m - 4.5 m height; Standard (*Extra Heavy*). Minimum 1.75 - 2.0m clear stem height;

Tree Planting Preparation

- 3.7 For trees planted in grassland; all grass seeded areas shall be cut before any pit preparation is undertaken to a maximum height of 75 mm. All tree planting pits are to be cut by removing the existing grass or vegetation. Planting pits shall be dug by hand and any major existing tree or shrub roots found within the pits shall not be severed prior to seeking arboricultural advice (*in accordance with BS5837:2012*).
- 3.8 Refer to '*BS 8545: 2014 - Trees: from Nursery to Independence in the Landscape - Recommendations*' for details on tree planting. Any source of topsoil (*including soils to be retained on site*), whether natural or manufactured, should be investigated carefully with respect to its suitability for the intended use, and certified in accordance with *BS 3882:2015*.

Planting

- 3.9 Planting shall take place any time from mid-autumn until late winter, while the trees are without leaf. Planting is best undertaken when soil can be worked easily; delay planting if the ground is frozen or waterlogged.

Tree Planting Pits

3.10 Proposed specimen tree planting shall be in accordance with the following guidance:

- Planting pits should be excavated to the same depth as the tree root system with the root flare / root collar to be level with the surface of surrounding soil;
- The planting pit shall have a slightly raised centre and be broken up to a depth of 150 mm. The width of the tree pit should be excavated to be 150 - 300 mm larger than the root ball or container;
- If the tree pit sides are compacted, smooth or smeared they should be scarified to loosen the soil. During excavation the soil should be separated into topsoil and subsoil in order that during backfilling the soil can be replaced in the same order;
- The trees root system should be lightly wetted prior to planting;
- The tree should be planted at the correct depth ensuring the root flare is just visible above the soil level and allowance made for any settling of soil levels;
- Backfilling should be added gradually in layers of 150mm ensuring the tree is held upright;
- Each layer should be firmed down to remove air pockets within the soil and to aid tree stability but not to excessively compact the soil. The final layer of backfilling should not be consolidated but should be of a sufficient depth to allow for settlement and mulching.

Tree Staking

3.11 Stakes are an aid to the successful establishment of new tree planting; ensuring the tree retains good root / soil contact, which might be otherwise compromised through lateral movement of the canopy normally caused by strong wind.

Staking for Standard Native Tree Stock

- 3.12 Tree staking is to be Long Double Staking for Standard 'Heavy' and Standard 'Extra Heavy' trees with stakes driven vertically to a minimum of 300mm into bottom of pit on either side of tree position before planting. The stakes should be placed to allow the fixing of the cross bar to the windward side of the tree and as close to the stem as possible. Backfilling should seek to consolidate material around stakes. The stake shall extend above ground level to a maximum 600mm. The crossbar shall be no more than 40mm away from the stem of the planted tree and the tree shall be tied firmly but not rigidly to the cross bar with one adjustable tie plus spacer with 50mm of the top of the stake and secured in place with a 25 mm long galvanised clout nail.
- 3.13 The tree stakes should be removed following successful establishment, whereby the roots have extended within the surrounding soils and the tree is self-supporting. Failure to remove the tree stakes may lead to stem abrasion and potential failure.

Tree Protection

- 3.14 Tree shelters shall be provided for all new native tree plant material to the site edges. Shelters shall be '*Acorn Planting Products Shelter guard Plus for Shrubs*' or equal and approved; Height; 600mm; Diameter; 130 - 200mm diameter circular in section; Colour; specially blended green; Material; UV stabilised polypropylene; Support; one hardwood stake; 1200mm x 25mm x 25mm, attached to the shelter with 1 no. nylon ratchet tie. Whip / tree shelters shall be carefully placed over the plant and the entire base pushed a minimum of 25mm into the ground.

Watering

- 3.15 A newly planted tree should be watered in when planted; apply 10 to 20 litres of water to the root ball area - depending on climatic / ground conditions (*i.e. if rain is expected and ground conditions are moist, apply approx. 10 litres; if rain is not expected and ground conditions are dry, apply approx. 20 litres*)

Mulching

- 3.16 Tree planting shall be planted within mulched planting beds, maintained at a consistent depth of 75mm.

P2 - Proposed Single-species Hedgerow Planting

- 3.17 Proposed single-species hedgerow planting has been proposed to enhance visual amenity. The areas of hedgerow divide a large area of open space with the operational building and parking area.
- 3.18 Native single-species hedgerow proposed within the scheme would consist:
- *Carpinus betulus* (Hornbeam); 60 – 90cm height; Transplant.
(Hedging 2no. staggered rows set 400mm apart @ 400 mm centres)

Preparation

- 3.19 Hedgerow multi-branched hedging stock shall be planted in mulched beds; wildflower meadow; or grass seeded areas, which should be kept clear of all weeds at the base of the plant material.

Planting

- 3.20 Planting shall take place any time from mid-autumn until late winter, while the plants are without leaf. Planting is best undertaken when soil can be worked easily; delay planting if the ground is frozen or waterlogged.
- 3.21 The contractor shall form a planting pit for bareroot stock to sufficient depth and width to allow roots to spread without cutting or bending. The hedging 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.

Watering

- 3.22 Newly planted hedging stock should be watered in when planted; apply 5 to 10 litres of water per metre square depending on climatic / ground conditions (*i.e. if rain is expected and ground conditions are moist, apply approx. 5 litres; if rain is not expected and ground conditions are dry, apply approx. 10 litres*).

Mulching

- 3.23 Hedgerow plant material beds should be topped up with an ornamental bark mulch to assist with the suppression of weeds to these hedgerow planting areas. Mulch levels should be maintained at a consistent depth of 75mm.

P3 - Proposed Native Mixed-species Hedgerow Planting

- 3.24 Proposed Native Mixed-Species Hedgerow has been proposed to enhance visual amenity. The areas of hedgerow divide a large area of open space with the operational building and parking area.
- 3.25 Native mixed-species hedgerow proposed within the scheme would consist of:
- *Cornus sanguinea* (Common Dogwood); 60-90 height; Transplant;
 - *Corylus avellana* (Hazel); 60-90 height; Transplant;
 - *Crataegus monogyna* (Common hawthorn); 60-90 height; Transplant;
 - *Ilex aquifolium* (Common Holly); 60-90 height; Transplant;
 - *Viburnum lantana* (Wayfaring Tree); 60-90 height; Transplant.
- (Hedging to be 2 no. staggered rows; set 400 mm apart @ 400 mm centres (Refer to planting plans)).

Preparation

- 3.26 Multi-branched hedging stock shall be planted in mulched beds; wildflower meadow; or grass seeded areas, which should be kept clear of all weeds at the base of the plant material.

Planting

- 3.27 Planting shall take place any time from mid-autumn until late winter, while the plants are without leaf. Planting is best undertaken when soil can be worked easily; delay planting if the ground is frozen or waterlogged.
- 3.28 The contractor shall form a planting pit for bareroot stock to sufficient depth and width to allow roots to spread without cutting or bending. The hedging 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.

Watering

- 3.29 Newly planted hedging plants should be watered in when planted; apply 5 to 10 litres of water per metre square depending on climatic / ground conditions (*i.e. if rain is expected and ground conditions are moist, apply approx. 5 litres; if rain is not expected and ground conditions are dry, apply approx. 10 litres*).

Mulching

- 3.30 Hedgerow plant material beds should be topped up with an ornamental bark mulch to assist with the suppression of weeds to these hedgerow planting areas. Mulch levels should be maintained at a consistent depth of 75mm.

P4 – Proposed Native Understory Shrub Planting

- 3.31 Areas within the site will be planted up with native understory shrub planting to provide areas of new habitat within the site. The planting would also reinforce boundaries providing enhanced ecological connectivity.
- 3.32 Native understory shrub planting proposed within the scheme would consist of:
- *Acer campestre* (Field Maple)
60-90 height; Multi-branched; Transplant;
 - *Alnus glutinosa* (Black Alder)
60-90 height; Multi-branched; Transplant;
 - *Cornus sanguinea* (Common Dogwood)
60-90 height; Multi-branched; Transplant;
 - *Corylus avellana* (Hazel)
60-90 height; Multi-branched;
 - *Crataegus monogyna* (Common hawthorn)
60-90 height; Multi-branched; Transplant;
 - *Euonymus europaeus* (European Spindle)
60-90 height; Multi-branched; Transplant;
 - *Ilex aquifolium* (Common holly)
60-90 height; Multi-branched;
 - *Viburnum lantana* (Wayfaring Tree)
60-90 height; Multi-branched; Transplant.

Planting

- 3.33 Planting shall take place any time from mid-autumn until late winter, while the plants are without leaf. Planting is best undertaken when soil can be worked easily; delay planting if the ground is frozen or waterlogged.
- 3.34 The contractor shall form a planting pit for bareroot stock to enough 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.

Native Shrub Planting Pits

3.35 The size of shrub planting pits shall be as follows;

- Whips / Transplant / Shrubs 300 x 300 x 300mm;
- Or 20% wider in any direction than the root ball whichever is the greater.

Watering

3.36 Newly planted native shrubs should be watered in when planted; apply 5 to 10 litres of water per meter square (depending on climatic / ground conditions i.e. if rain is expected and ground conditions are moist, apply approx. 5 litres; if rain is not expected and ground conditions are dry, apply approx. 10 litres).

P5 – Proposed Native Wildflower Grassland

- 3.37 Proposed wildflower planting within the Site has been proposed to provide habitat opportunity, ecologically enhancing the native boundary planting. This will additionally provide enhanced visual amenity and ecological diversity to areas of open space. The proposed seed mixes are as follows: *‘EM5 – Meadow Mixture for Loamy Soils’ supplied by Emorsgate (or equally approved)*
- 3.38 Through reference to guidance provided on the Emorsgate Seeds website, information on soil preparation and sowing wildflower grassland seed are provided below.

Soil Preparation – ‘EM5 – Meadow Mixture for Loamy Soils’

- 3.39 Areas of ground proposed for wildflower grassland seeding should not be highly fertile. Additionally, these areas should be free of perennial weeds; good preparation is essential to success - aim to control weeds and produce a good quality seed bed before sowing. Use repeated cultivation or consider controlling weeds by spot application of appropriate herbicides, in accordance with manufacturer's instructions and by a certified user if required, to eradicate perennial weeds. Plough or dig the soil to bury the surface vegetation; then harrow or rake to produce a medium tilth; then roll or tread to produce a firm surface. Loamy soils are easily worked and can usually be prepared for seeding in either the autumn or spring.

Seed Sowing - ‘EM5 – Meadow Mixture for Loamy Soils’

- 3.40 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. August-September and March-April usually produce the best conditions for sowing meadow wildflower and grass species.
- 3.41 The seed must be surface sown. The seed shall be applied by machine or broadcast by hand. The seed must not be incorporated within the soil, or covered by the soil, but should be firmed in with a roller. This will result in optimum soil / seed contact.

P6 – Proposed Ornamental Planting

- 3.42 Ornamental planting has been proposed around the car park and building within the scheme to enhance visual amenity across the site.
- 3.43 Ornamental planting is proposed within the drawings LLD1773-LAN-DWG-201-202 Detailed Planting Plans – Ornamental Planting and LLD1773-LAN-SCH-001 Planting Schedule and Specification.

Planting

- 3.44 Planting is best undertaken between October and April. Planting is best undertaken when soil can be worked easily; delay planting if the ground is frozen or waterlogged.
- 3.45 The contractor shall form a planting pit to sufficient depth and width. The plant material is to be inserted into the planting pit, backfilled with topsoil, firming the soil gently ensuring that the plant material remains in an upright position.

Soil Preparation

- 3.46 The addition of compost or aged manure would help improve drainage and lighten heavy soils. Soil shall be tested and certified by a Soil Scientist, and advice sought on how the soil onsite may best be improved prior to and during planting.

Watering

- 3.47 Newly planted ornamental shrubs should be watered in when planted; apply 5 to 10 litres of water per metre square (depending on climatic / ground conditions i.e. if rain is expected and ground conditions are moist, apply approx. 5 litres; if rain is not expected and ground conditions are dry, apply approx. 10 litres).

Mulching

- 3.48 Planting areas are to be mulched with an ornamental bark mulch, checked and maintained to a consistent depth of 75mm. The mulch cover should assist with suppressing weed growth and reduce evaporation from soil. Mulch layer should be checked and topped up annually in the Autumn.

P9 - Existing Trees

- 3.49 The site contains several existing trees to the Site boundaries; with a small cluster of trees within the center of the Site. All mature trees are proposed to be retained and protected through the proposals, in accordance with *BS 5837:2012 - Trees in relation to design, demolition and construction. Recommendations.*

P10 - Existing Hedgerows

- 3.50 In some locations the site is surrounded by native hedgerow of varying quality, with the most notable being a hedge located along the northern and western boundaries of the site.

4.0 MANAGEMENT PRESCRIPTIONS

- 4.1 A range of management prescriptions are to be employed within the site aimed at successfully establishing the Landscape Scheme as set out in the previous section. These include all measures required for the management and aftercare period of 1-5 years with respect to landscape planting, newly created habitats and management aimed at maximising the landscape and biodiversity value of the newly created habitats within the site.
- 4.2 Monitoring would be undertaken on an annual basis by a landscape architect to ensure that the newly created and enhanced planting has established successfully and that the tree, shrub, hedgerow and wildflower grassland planting is in a healthy condition. The results of the annual monitoring would be used to inform any necessary changes to the management which would be incorporated into subsequent versions of the LMP.

P1 - Proposed Native Species Tree Planting – Management

Water

- 4.3 In order to ensure successful establishment, the newly planted native trees must be watered for a minimum of three years following planting. Watering should occur weekly throughout the early to late summer period; May / June / July / August / September with 10 litres applied at each watering visit. Thereafter, water as deemed necessary only where natural precipitation levels are insufficient in order to maintain healthy dense growth.

Tree Works

- 4.4 The trees are to be inspected every year during the spring for dead, dying, or damaged branches; including any diseased wood or wounds. Any dead, dying, or damaged branches should be removed from the tree trunk by a Qualified Tree Surgeon, removing all dead wood back to the tree trunk; the works shall be conducted in accordance with *BS3998: 2010 Tree Work – Recommendations*.

Tree Ties

- 4.5 All rubber tree ties should be checked bi-annually; Spring / Autumn. Tree ties should accommodate the tree girth and should not draw the tree stake into the trunk of the tree, potentially causing abrasion. Tree ties should be fitted so that the tree trunk and tree stake are located comfortably side by side and aligned. Replace and refit rubber tree ties / tree stakes and tree guards if necessary.

Pruning

- 4.6 Trees should be checked bi-annually for shape, form and should be formatively pruned accordingly during the Spring and Autumn, whilst they are still in leaf. Pruning tools should be clean and sterile to prevent potential spread of disease between specimens; and carried out in such a manner as to avoid excessive damage / wounding which would be detrimental to the health and vigour of the tree.

Weeding

- 4.7 A 500 - 700mm diameter weed / grass-free zone should be achieved by either hand-weeding or application of a non-residual herbicide. This should be undertaken bi-annually; Spring / Autumn. The use of a suitable mulch may additionally assist.

Mulching

- 4.8 Tree planting may be located within mulched planting beds. Beds should be topped up with a bark mulch to assist with the suppression of weeds to these planting areas. A mulch top-up should be undertaken and checked annually in the autumn. Mulch levels should be maintained at a consistent depth of 75mm.

Litter Collection

- 4.9 Tree planting areas should be checked on a fortnightly basis for litter and leaf collection. All planting areas should be maintained clear of litter.

Long Term Management

- 4.10 The proposed trees once established after the first 3 – 5 years, all temporary fencing and tree stakes should be removed to ensure there is no restrictions for the tree's growth. This is to be done unless specified by the landscape architect. The tree stakes should be removed following successful establishment, whereby the roots have extended within the surrounding soils and the tree is self-supporting. Failure to remove the tree stakes may lead to stem abrasion and potential failure.

1 - 3-year check

- 4.11 Tree planting shall be checked at least twice a year by a landscape contractor during years 1 – 3. The visit would be aimed at ensuring successful establishment and to monitor the developing structure of the vegetation.

Defects

- 4.12 Replace all failures: irrecoverably damaged, diseased / dead trees within the next planting season with stock of similar size and species.

P1 – Proposed Specimen Tree Planting Management Prescriptions:

- Watering: Water Tree Planting weekly throughout May / June / July / August / September; and as deemed necessary after the establishment period, only where natural precipitation levels are insufficient; provide 10 ltr / tree / visit;
- Tree Stakes and Tree Ties: Check position and fitting of tree stakes and rubber tree ties; check bi-annually in Spring / Autumn and after strong winds; remedy and replace where necessary;
- Pruning: Prune dead and damaged branches bi-annually; Spring and Autumn whilst the trees are still in leaf;
- Weeding: Maintain a weed / grass free zone at the base of the tree; weeding should be undertaken bi-annually; Spring / Autumn;
- Mulching: Trees should be maintained with a mulch zone 500 – 700mm diameter to the base of the trees. Mulch layer to be checked annually; maintained at a consistent depth of 75mm;
- 1 - 3 year check: Tree planting shall be checked at least twice a year by a landscape contractor during years 1 – 3. The visit would be aimed at ensuring successful establishment and to monitor the developing structure of the vegetation.

- Defects: Replace failed / dead / and irrecoverably damaged trees.
- Litter collection: All planting areas should be maintained clear of litter and checked on a fortnightly basis.
- Long Term Management: once established after the first 3 – 5 years, all temporary fencing and tree stakes should be removed to ensure there is no restrictions for the tree's growth.

P2 - Proposed Native Single-species Hedgerow Planting – Management

Mulching

- 4.13 Hedgerow plant material beds should be topped up with an ornamental bark mulch to assist with the suppression of weeds to these hedgerow planting areas. A mulch top–up should be undertaken and checked annually in the Autumn. Mulch levels should be maintained at a consistent depth of 75mm.

Watering

- 4.14 To ensure establishment, the plants should be watered fortnightly throughout the summer season in the first two years of establishment during May / June / July / August / September. Quantity of water to be 10 litres per metre square during each visit. Thereafter, water as necessary where natural precipitation levels are insufficient in order to maintain healthy dense growth.

Trimming / Pruning

- 4.15 Hedge planting should be lightly trimmed to maintain shape and form. Light trimming shall encourage vigorous and dense growth. Formative trimming during the first three years of establishment should be undertaken annually during the late Winter (early February to mid-March). Long-term maintenance pruning should be carried at the same time of the year to avoid bird nesting season and enable successful flowering and fruit formation to encourage local wildlife.

Weeding

- 4.16 Hedge planting areas should be kept clear of all weeds at the base of the plant material. The hedge planting should be kept weed free by hand weeding twice a year in the Spring and Autumn.

Litter Collection

- 4.17 Hedgerow Planting should be checked on a fortnightly basis for litter and leaf collection. All planting areas should be maintained clear of litter.

Long-Term Management

- 4.18 Where the hedgerow is a newly established feature the management objective for the hedgerow planting should be to achieve a dense hedgerow of approximately 1.5 metres height.

1 - 3 year check

- 4.19 Hedgerow planting shall be checked at least twice a year by a landscape contractor during years 1 – 3. The visit would be aimed at ensuring successful establishment and to monitor the developing structure of the vegetation.

Defects

- 4.20 Replace all dead / dying plant material. Replacement planting should be undertaken on an annual basis.

P2 - Proposed Native Single - species Hedgerow Planting Management

Prescriptions:

- Mulching: Maintain mulching to hedge planting areas at a consistent depth of 75 mm. Mulch layer to be checked annually; Autumn;
- Watering: Water fortnightly during May / June / July / August / September for the first two years of establishment; and as deemed necessary after the establishment period, only where natural precipitation levels are insufficient; provide 10 ltr/ m2/ visit;
- Pruning: Carry out formative pruning annually; February to mid-March;
- Weeding: Maintain hedge planting areas as weed free; check and weed bi-annually, Spring / Autumn;
- 1 - 3 year check: Hedgerow planting shall be checked at least twice a year by a landscape contractor during years 1 – 3. The visit would be aimed at ensuring successful establishment and to monitor the developing structure of the vegetation;
- Defects; Replace all dead / dying plant material. Replacement planting should be undertaken on an annual basis;
- Long-term Management: Maintain hedgerow at 1.5m height; check annually; Prune February to mid-March.
- Litter collection: All planting areas should be maintained clear of litter and checked on a fortnightly basis.

P3 - Proposed Native Mixed-species Hedgerow Planting – Management

Mulching

- 4.21 Hedgerow plant material beds should be topped up with an ornamental bark mulch to assist with the suppression of weeds to these hedgerow planting areas. A mulch top–up should be undertaken and checked annually in the Autumn. Mulch levels should be maintained at a consistent depth of 75mm.

Watering

- 4.22 To ensure establishment, the plants should be watered fortnightly throughout the summer season in the first two years of establishment during May / June / July / August / September. Quantity of water to be 10 litres per metre square during each visit. Thereafter, water as necessary where natural precipitation levels are insufficient in order to maintain healthy dense growth.

Trimming / Pruning

- 4.23 Hedge planting should be lightly trimmed to maintain shape and form. Light trimming shall encourage vigorous and dense growth. Formative trimming during the first three years of establishment should be undertaken annually during the late Winter (*early February to mid-March*). Long-term maintenance pruning should be carried at the same time of the year to avoid bird nesting season and enable successful flowering and fruit formation to encourage local wildlife.

Weeding

- 4.24 Hedge planting areas should be kept clear of all weeds at the base of the plant material. The hedge planting should be kept weed free by hand weeding twice a year in the Spring and Autumn.

Litter Collection

- 4.25 Hedgerow Planting should be checked on a fortnightly basis for litter and leaf collection. All planting areas should be maintained clear of litter.

Long-Term Management

- 4.26 Where the hedgerow is a newly established feature the management objective for the hedgerow planting should be to achieve a dense hedgerow of approximately 1.5 metres height.

1 - 3 year check

- 4.27 Hedgerow planting shall be checked at least twice a year by a landscape contractor during years 1 – 3. The visit would be aimed at ensuring successful establishment and to monitor the developing structure of the vegetation.

Defects

- 4.28 Replace all dead / dying plant material. Replacement planting should be undertaken on an annual basis.

P3 - Proposed Native Mixed-species Hedgerow Planting Management

Prescriptions:

- Mulching: Maintain mulching to hedge planting areas at a consistent depth of 75 mm. Mulch layer to be checked annually; Autumn;
- Watering: Water fortnightly during May / June / July / August / September for the first two years of establishment; and as deemed necessary after the establishment period, only where natural precipitation levels are insufficient; provide 10 ltr/ m2/ visit;
- Pruning: Carry out formative pruning annually; February to mid-March;
- Weeding: Maintain hedge planting areas as weed free; check and weed bi-annually, Spring / Autumn;
- 1 - 3 year check: Hedgerow planting shall be checked at least twice a year by a landscape contractor during years 1 – 3. The visit would be aimed at ensuring successful establishment and to monitor the developing structure of the vegetation;
- Defects; Replace all dead / dying plant material. Replacement planting should be undertaken on an annual basis;
- Long-term Management: Maintain hedgerow at 1.5m; check annually; Prune February to mid-March.
- Litter collection: All planting areas should be maintained clear of litter and checked on a fortnightly basis.

P4 – Proposed Native Understory Shrub Planting – Management

Watering

- 4.29 In order to establish the native shrub planting, the transplants should be watered fortnightly throughout the summer season in the first year of initial establishment during May / June / July / August / September. Quantity of water to be 10 litres per metre square during each visit, for the first initial year of establishment only.

Weeding

- 4.30 Native Understory Shrub plant material would be planted in planting pits, which should be kept clear of all weeds at the base of the plant material. The Native shrub plant material should be kept weed free by either hand weeding or application of a non-residual herbicide application, taking care not to spray or scorch existing plant material. The Native Shrub plant material to the site boundaries should be cleared of all weeds bi-annually; Spring and Autumn.

Pruning

- 4.31 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 growth. Trimming during the first three years of establishment should be undertaken annually; during the January and February to maintain size, shape, and vigorous growth.

Litter Collection

- 4.32 Understory shrub planting areas should be checked on a fortnightly basis for litter and leaf collection. All planting areas should be maintained clear of litter.

Long-Term Management

- 4.33 Long-term, the management objective for the Native Understory Shrub plant material should be to achieve a boundary screen / habitat area approximately 2.5 metres height. After three years of establishment and light trimming, the Native Understory Shrub plant material should be managed on a rotational basis. Hard pruning only some of the plants annually, over a 3 – 4 year management period, would mean fruit would be retained as much as possible.
- 4.34 Native Understory Shrub plant material should be trimmed in winter months, preferably January or February, to retain fruit for wildlife, unless ground conditions prevent this.
- 4.35 Native understory shrub planting areas once established are to be thinned on a routine basis. The proposed native shrub planting mix includes a number of larger shrub species. The native shrub species should be selectively thinned out to allow a selection of shrub specimens to emerge and establish as the dominant understory specimens. Selective shrub thinning should be undertaken every five years to assist establishment.

1 - 3 year check

- 4.36 Shrub planting shall be checked at least twice a year by a landscape contractor during years 1 – 3. The visit would be aimed at ensuring successful establishment and to monitor the developing structure of the vegetation.

Defects

- 4.37 Replace all dead / dying plant material. Replacement planting should be undertaken on an annual basis.

P4 - Native Understory Shrub Planting Management Prescriptions

- Watering; transplants should be watered fortnightly throughout the summer season in the first year of establishment during May / June / July / August / September. Quantity of water to be 10 liters per metre square during each visit;
- Weeding; mulched planting pits to be kept clear of weeds to the base of each plant. Planting pits to be cleared of weeds bi-annually; Spring and Autumn;
- Pruning; during the first three years of establishment the native shrubs should be lightly trimmed to encourage vigorous and dense re-growth. Trimming during the first three years of establishment should be undertaken annually; during January or February, to retain fruit for wildlife.
- 1 - 3 year check: Shrub planting shall be checked at least twice a year by a landscape contractor during years 1 – 3. The visit would be aimed at ensuring successful establishment and to monitor the developing structure of the vegetation;
- Defects; Replace all dead / dying plant material. Replacement planting should be undertaken on an annual basis.
- Long-Term Management; Native Understory Shrub plant material should be trimmed in winter months, preferably January or February, to retain fruit for wildlife, unless ground conditions prevent this;
- Long-Term Management; Hard-Trimming; after three years of establishment and light trimming, shrub plant material should be maintained to a maximum height of 2.5 metres; Shrub plant material should be managed on a rotational basis. Hard pruning only some of the plants annually, over a 3 - 4 year management period, would mean fruit would be retained as much as possible;
- Long-Term Management; Thinning; planting areas to be thinned on a routine basis. Native understory tree and shrub species should be selectively thinned out. Selective shrub thinning should be undertaken every five years.
- Litter collection: All planting areas should be maintained clear of litter and checked on a fortnightly basis.

P5 – Proposed Native Wildflower Grassland – Management

- 4.38 Through reference to guidance provided on the Emorsgate Seeds website, information on management of wildflower grassland areas are provided below.

First Year Management – ‘EM5 – Meadow Mixture for Loamy Soils’

- 4.39 Most sown meadow wildflower and grass species are perennial; they will be slow to germinate and grow and will not usually flower in their first growing season. There may be a flush of annual weeds from the soil in the first growing season, which grow up and encompass the meadow seedlings beneath. This annual weed growth is easily controlled by topping or mowing.
- 4.40 Newly sown meadows shall be mown regularly throughout the first year of establishment to a height of 40-60mm, removing cuttings. This will control annual weeds and help maintain balance between faster growing grasses and slower developing wildflowers.
- 4.41 Residual perennial weeds such as docks shall be carefully dig out or spot treated with a suitable herbicide.

Management Once Established - ‘EM5 – Meadow Mixture for Loamy Soils’

- 4.42 In the second and subsequent years EM5 sowings can be managed in a number of ways which, in association with soil fertility, will determine the character of the grassland. The best results are usually obtained by traditional meadow management based around a main summer hay cut in combination with autumn and possibly spring mowing.
- 4.43 Meadow grassland shall not be cut from spring through to late July / August to give the sown species an opportunity to flower. After flowering in July or August take a 'hay cut': cut back with a scythe, petrol strimmer or tractor mower to 50mm.
- 4.44 Mow the re-growth through to late autumn/winter to c 50mm and again in spring if needed.

Arisings - 'EM5 – Meadow Mixture for Loamy Soils'

- 4.45 After a 'hay cut', arisings may be left to dry and shed seed for 1-7 days, after which they shall be removed to lower the fertility of the soil. All other cuts where seed heads have not yet developed shall be removed immediately after cutting.

Litter Collection

- 4.46 Seeded areas should be checked on a fortnightly basis for litter and leaf collection. All planting areas should be maintained clear of litter.

Subsequent Years

- 4.47 Management shall be dependent on the results of monitoring. If growth is vigorous or dominated by invasive species by dock and nettle, then the management prescription for the establishment year to be repeated until the desired sward is established.
- 4.48 Consideration shall be given to controlling noxious weeds by the spot application of appropriate herbicides in accordance with manufacturer's instructions and by a certified user if needed.

P5 – Wildflower Meadow Management Prescriptions

- '*EM5 – Meadow Mixture for Loamy Soils*'; Management Year 1; Control annual weed growth by topping or mowing;
- '*EM5 – Meadow Mixture for Loamy Soils*'; Management Year 1; Newly sown meadows shall be mown regularly throughout the first year of establishment to a height of 50mm;
- '*EM5 – Meadow Mixture for Loamy Soils*'; Management Once Established; After flowering, a 'hay cut' shall be carried out (likely to be in August);
- '*EM5 – Meadow Mixture for Loamy Soils*'; Arisings: The 'hay' shall be left to dry and shed seed for 1-7 days before it is completely removed from the site.
- Litter Collection: Seeded areas should be checked on a fortnightly basis for litter and leaf collection

P6 – Proposed Ornamental Shrub Planting Management

Pruning

4.49 Pruning and trimming should be undertaken, according to individual species requirements, generally this is as follows:

- Shrubs flowering in Winter – prune in Spring;
- Shrubs flowering in Spring and early Summer – prune immediately after the flowering period;
- Shrubs flowering in Summer and Autumn – prune back to old wood in Winter.

Weeding

4.50 Planting areas should be maintained weed free throughout the maintenance period. It is recommended that shrub planting areas should be cleared of all weed growth either by hand weeding. Maintain planting areas weed free from Spring to Autumn; March / April / May / June / July / August / September / October.

1 – 3 year check

4.51 Planting shall be checked at least twice a year by a landscape contractor during years 1 – 3. The visit would be aimed at ensuring successful establishment and to monitor the developing structure of the vegetation.

Defects

4.52 Replace all dead / dying plant material. Replacement planting should be undertaken on an annual basis.

Litter Collection

4.53 Ornamental planting areas should be checked on a fortnightly basis for litter and leaf collection. All planting areas should be maintained clear of litter.

Long Term Management

4.54 Ornamental planting to be continually monitored in accordance with the LMP and maintained through reference to the management prescriptions and guidance from the Royal Horticultural Society (*RHS*).

P6 – Ornamental Planting Management Prescriptions

- Watering: Water all plant material fortnightly during the summer season for the first year of establishment and as deemed necessary after the establishment period where natural precipitation levels are insufficient; provide 10 ltr/ m2/ visit;
- Pruning: prune plant material; Winter - flowering shrubs – prune in Spring; Shrubs flowering in Spring and early Summer – prune immediately after the flowering period; Shrubs flowering in Summer and Autumn – prune back to old wood in Winter;
- Weeding: Maintain planting areas weed free; Spring to Autumn. Hand-weed throughout the Spring / Summer; March / April / May / June / July / August / September / October; repeat where necessary;
- Mulching: Organic Mulch Top Up; Maintain organic mulch to all planting areas; check annually; Autumn;
- 1 – 3 Year Checks: Planting shall be checked at least twice a year by a landscape contractor during years 1 – 3. The visit would be aimed at ensuring successful establishment and to monitor the developing structure of the vegetation.
- Defects; Replace all dead / dying plant material. Replacement planting should be undertaken on an annual basis.
- Litter collection: All planting areas should be maintained clear of litter and checked on a fortnightly basis.
- Long Term Management: Ornamental planting to be continually monitored in accordance with the LMP and maintained through reference to the management prescriptions.

5.0 MONITORING

5.1 Monitoring shall be undertaken on an annual basis to ensure that the new planting, is in a state of good condition and has successfully established.

5.2 The results of monitoring would be used to adjust and adapt the management and aftercare as required and would be incorporated fully into subsequent versions of the LMP. Monitoring would comprise the following:

- Tree, hedgerow, shrub and wildflower planting to be checked at least twice a year by a landscape contractor during years 1 - 3 aimed at ensuring successful establishment. These checks would be undertaken at the same time as weed control measures and replacement of failures.

5.3 Monitoring of existing trees to the development site boundaries and within the LEAP Area is to be undertaken once a year to check their condition and to identify any dead or dying branches within the existing canopy, or any areas of significant die-back.

APPENDIX A – MANAGEMENT SCHEDULE

Provisional Management Tasks Implementation

Operation	Frequency	Implementation												Year 2	Year 3	Year 4	Year 5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
P1 - Native Tree Planting																	
Tree planting – including: preparation / staking / protective shelters / initial watering / mulching	Once during implementation of soft landscape scheme	x	x								x	x	x	x	x	x	x
P2 – Single Species Hedgerow Planting																	
Hedge planting – including: preparation / initial watering / mulching	Once during implementation of soft landscape scheme	x	x								x	x	x		x	x	x
P3 - Native Mixed-species Hedgerow Planting																	
Hedge planting – including: preparation / initial watering / mulching	Once during implementation of soft landscape scheme	x	x								x	x	x		x	x	x
P4 – Native understory shrub planting																	
Native understorey shrub planting – including: preparation / watering /	Once during implementation of soft landscape scheme	x	x								x	x	x		x	x	x

Operation	Frequency	Implementation												Year 2	Year 3	Year 4	Year 5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
P7 – Native Wildflower Grassland																	
Preparation of the Seed Bed	Once before Sowing (either autumn or spring)				✕ (preferred timing)						✕				✕	✕	✕
Sow wildflower mix	Once (either autumn or spring)				✕						✕				✕	✕	✕
P6 – Ornamental Planting																	
Ornamental planting – including preparation / watering /	Once during implementation of soft landscape scheme	✕	✕	✕	✕						✕	✕	✕		✕	✕	✕

APPENDIX B - MANAGEMENT FOR AFTERCARE PERIOD 1 - 5 YEAR PERIOD

Operation	Frequency	Year 1												Year 2	Year 3	Year 4	Year 5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
P1 - Native Species Tree Planting																	
Watering	1 x every week					✕	✕	✕	✕	✕				✕	✕	As demanded	As demanded
Weeding	2 x year				✕						✕			✕	✕	✕	✕
Mulching	1 x year										✕			✕	✕	✕	✕
Checking Tree Ties / Stakes	2 x year				✕						✕			✕	✕	✕	✕
Pruning native trees: dead or damaged branches	2 x year				✕						✕			✕	✕	✕	✕
Monitoring visit / check	2 x year				✕						✕			✕	✕		
Litter Collection	1 x every 2 weeks	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
P2 - Native single-species Hedgerow Planting																	
Watering	1 x every 2 weeks					✕	✕	✕	✕	✕				✕	As demanded	As demanded	As demanded
Weeding	2 x year				✕						✕			✕	✕	✕	✕
Mulching	1 x year										✕			✕	✕	✕	✕
Pruning	1 x year		✕											✕	✕	Maintain to 1.5m height for internal residential areas	
Monitoring visit / check	2 x year				✕						✕			✕	✕		
Litter Collection	1 x every 2 weeks	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕

Operation	Frequency	Year 1												Year 2	Year 3	Year 4	Year 5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
P3 - Native Mixed-species Hedgerow Planting																	
Watering	1 x every 2 weeks					✕	✕	✕	✕	✕				✕	As demanded	As demanded	As demanded
Weeding	2 x year				✕						✕			✕	✕	✕	✕
Mulching	1 x year										✕			✕	✕	✕	✕
Pruning	1 x year		✕											✕	✕	Maintain to 1.5m height thereafter	
Monitoring visit / check	2 x year				✕						✕			✕	✕		
Litter Collection	1 x every 2 weeks	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
P4 - Native Understory Shrub Planting																	
Watering	1 x every 2 weeks					✕	✕	✕	✕	✕				As demanded	As demanded	As demanded	As demanded
Weeding	2 x year				✕						✕			✕	✕	✕	✕
Trimming / Pruning	1 x year		✕											✕	✕	Maintain to 2.5m to height thereafter	Manage on a rotational basis so fruit can be retained.
Selective Thinning			✕														✕
Monitoring visit / check	2 x year				✕						✕			✕	✕		
Litter Collection	1 x every 2 weeks	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕

Operation	Frequency	Year 1												Year 2	Year 3	Year 4	Year 5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
P5 - Native Wildflower Grassland																	
<i>‘EM5 – Meadow Mixture for Loamy Soils’</i> Year 1	Cut regularly in Year 1					✕	✕	✕	✕	✕	✕						
<i>‘EM5 – Meadow Mixture for Loamy Soils’</i> Once Established	Cut 1 x a year								✕					✕	✕	✕	✕
Litter Collection	1 x every 2 weeks	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
P6 - Ornamental Planting																	
Watering	1 x every 2 weeks					✕	✕	✕	✕	✕				As demanded	As demanded	As demanded	As demanded
Weeding	2 x year				✕						✕			✕	✕	✕	✕
Trimming / Pruning (in accordance with RHS Guidance)	2 x year		✕									✕		✕	✕	✕	✕
Selective Thinning			✕														✕
Monitoring visit / check	2 x year				✕						✕			✕	✕		
Litter Collection	1 x every 2 weeks	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕

Monitoring

Operation	Frequency	Year 1												Year 2	Year 3	Year 4	Year 5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
P7 - Existing Trees																	
Monitoring of existing trees	1 x year				✕									✕	✕	✕	✕
P8 - Existing Native Hedgerow Planting																	
Monitoring of existing native hedgerow planting	3 x year			✕				✕				✕		✕	✕	✕	✕



L I Z A R D

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