
Appendix 11.2

Substation Application - Landscape Statement

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Herbata Data Centre Campus – ESB Substation

Landscape Design Statement

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**Brady Shipman
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**Built.
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Landscape Design **Built Environment**

Client:

Herbata Limited

Date:

27 May 2024

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Client: Herbata Limited

Project Name: Herbata Data Centre Campus – ESB Substation

Report Name: Landscape Design Statement

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Table of Contents

1	Introduction	1
2	Site Context.....	1
2.1	Subject Site.....	2
2.2	Tree Protection	4
3	Pre-App Consultation.....	Error! Bookmark not defined.
4	Landscape Proposals.....	5
4.1	Landscape Principals	5
4.2	Landscape Masterplan	5
4.3	Integrated Landscape Surface Water Management....	Error! Bookmark not defined.
4.4	Landscape Boundary Treatments	Error! Bookmark not defined.
4.5	Internal Site Areas	Error! Bookmark not defined.
4.6	Landscape Construction Phasing.....	Error! Bookmark not defined.
4.7	Landscape Maintenance.....	8
5	Outline Landscape Specification.....	10
5.1	PROTECTION.....	10
5.2	EARTHWORKS / SOIL WORKS / CULTIVATION WORKS.....	10
5.3	PLANTING	10
5.4	GRASS SEEDING.....	13
5.5	AFTERCARE.....	15



1 Introduction

This Landscape Design Report is submitted as part of the planning application for the proposed ESB Substation at the proposed Herbata Date Centre Campus at Haleverstown, Naas, Co. Kildare.

This report comprises a landscape design statement prepared to accompany the Strategic Infrastructure Development (SID) application to An Bord Pleanala.

A separate planning application for the data centre campus has been separately lodged to Kildare County Council.

This report should be read with the following landscape drawings and reports:-

1.1 Drawing Title	Drawing Number	Size
Landscape Master Plan	BSM-ZZ-ZZ-DR-L-0301_LandscapeMasterplanSID	A0
Landscape Plan	BSM-ZZ-ZZ-DR-L-0302_LandscapePlanSID	A0
Landscape Sections and Elevations	BSM-ZZ-ZZ-DR-L-0401_LandscapeSectionsElevationsSID	A1

The architect’s and engineers’ drawings and reports which accompany the application should also be read in conjunction with the landscape proposals.

2 Site Context

The proposed development subject lands are approximately 3.15ha in extent and are located to the west of the M7 motorway. The site is adjoined to the north by the R409 road which provides a direct link to the centre of Naas, c.2.5km to the east.

Refer to **Figure 1**.

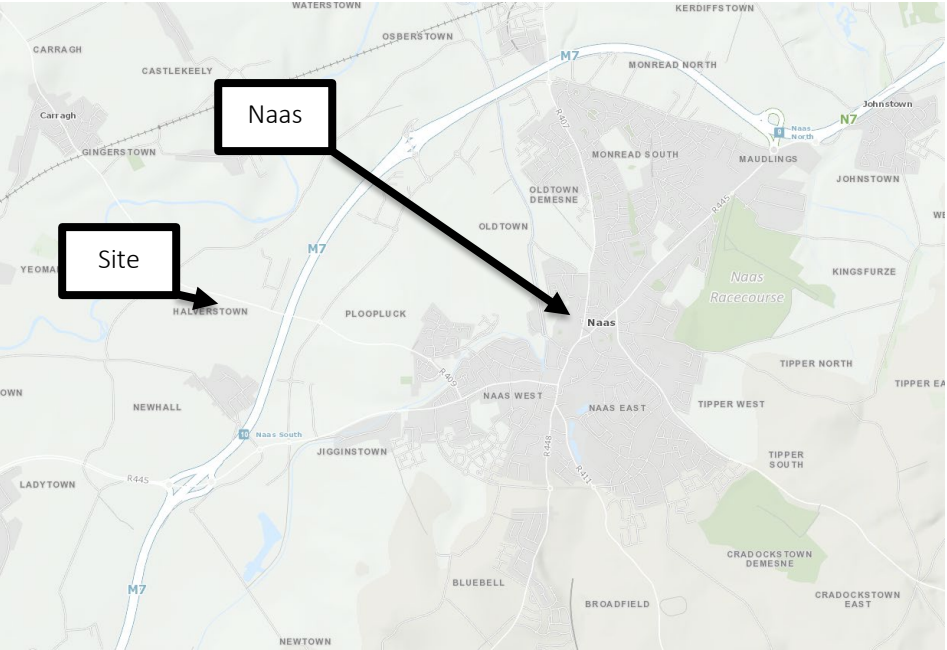


Figure 1 Site Location and context

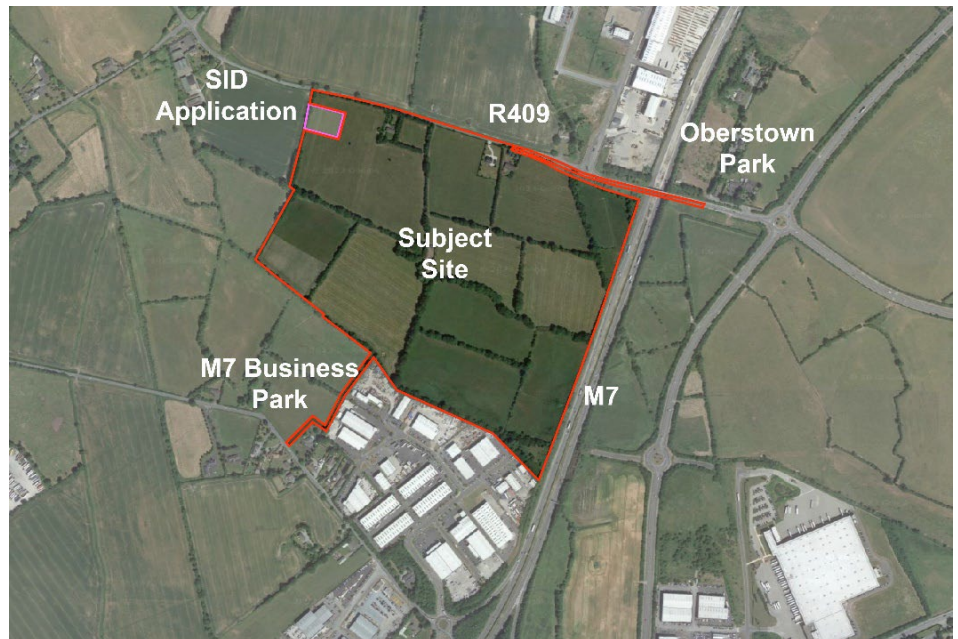


Figure 2 Site Existing conditions

The site is currently under agricultural use and the surrounding area is characterised by its flat landscape, containing a mixture of agricultural, commercial, and industrial development clusters, modern road infrastructure and a network of high voltage overhead powerline infrastructure. Developments are set within the landscape and sub-divided by layers of traditional treeline / hedgerows and more recent boundary typologies. R409 Road and Newhall Road to the north and west of the site respectively are more traditional rural roads with narrow carriageways and roadside treelines and hedgerows providing visual containment along the roads.

2.1 Subject Site

The site for the proposed development is currently in agricultural use. The site falls at a generally even grade from north to south. The site is bounded by an established and mature hedgerow to the west, with a smaller hedge to the R409.

The site is within the administrative area of Kildare County Council and the Kildare Development Plan 2023-2029 provides the statutory planning framework for its development.

The site is Zoned *P: Data Centre (C7)*, as a central part of the digital economy and to provide added economic benefit across the value chain (see Figure 3). It is one of two areas nominated for data centres within the Naas Local Area Plan (2021-2027).

To the north and south of the site is land zoned *H: Industry & Warehousing (C2.2)*. Further north is land zoned *U: Utilities / Services (N)* which encompasses the Osberstown Wastewater Treatment Plant.

To the north west, west and south west of the site sits agricultural land, with intermittent residential plots.

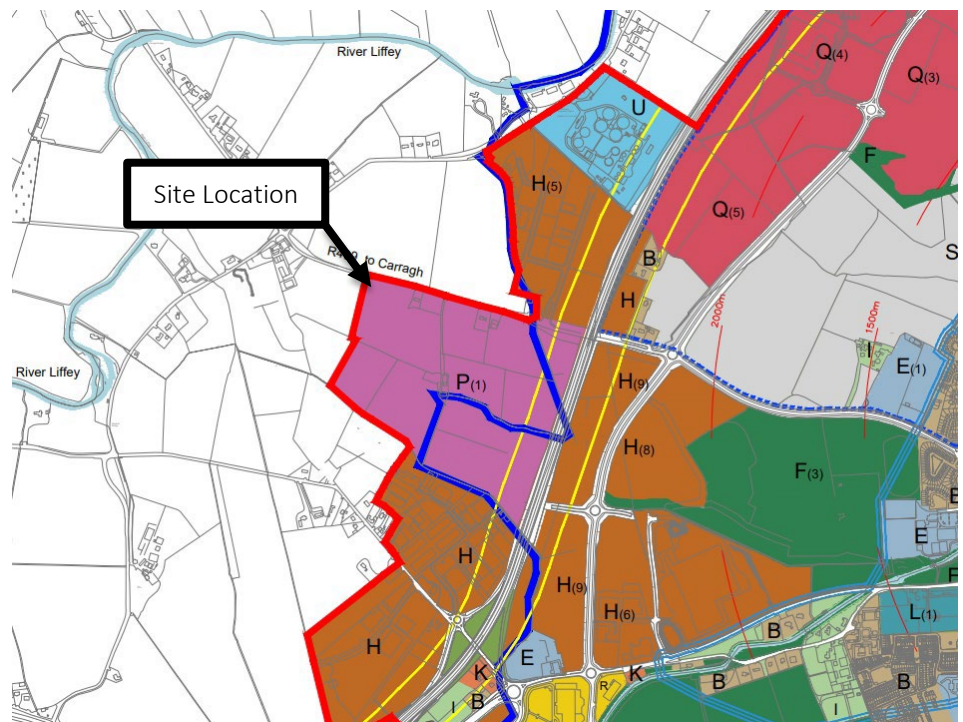


Figure 3 Land use zoning – extract from Naas Local Area Plan 2021-2027, Land Use Zoning Map Oct 2021 (Kildare County Council, Oct 2021)

The topography of the site is gradually sloping from north to south. Within the site and along the boundaries, there are a number of existing hedgerows.

Within the Naas Local Area Plan 2021 – 2027 Green Infrastructure Map (DWG 200/21/1135) as shown in Figure 4 there are nominated significant hedgerows in green lines. There is a section of significant hedgerow to the south of the site, to the north of the M7 Business park, running along the Bluebell stream and southwards towards Newbridge Rd which is being retained within the landscape proposal.

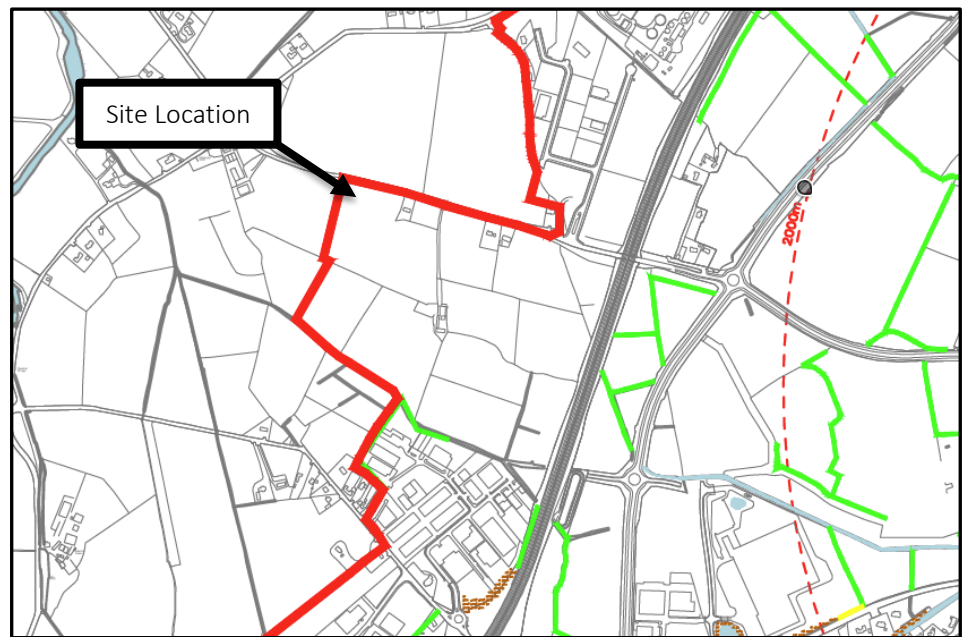
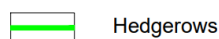


Figure 4 Naas Local Area Plan Green Infrastructure Map (Naas Local Area Plan 2021 – 2027, Kildare County Council, Oct 2021)



2.2 Tree Protection

The existing treeline and hedgerows to the west of the site is proposed to have tree protective fencing to BS 5837:2012 erected. The layout of the site has been developed to ensure as much existing trees and hedgerows are maintained amongst proposed utilities, services, buildings, roads, fences and other required infrastructure. The smaller existing hedge to the north adjoining the R409 will be removed as part of the Herbata Data Centre application, which includes the provision of adequate sightlines to access the site and provision of 4m high planted mounds.

Any services to be installed within the protected area to be carried out following a specialised construction methodology under the supervision of the Project Landscape Architect/Arborist. Sturdy tree protection fencing will be erected outside the existing hedge immediately west of the site to prevent construction activity and machinery encroaching into the root protection areas (RPAs) of the trees and hedges to be retained. The fencing will be erected as soon as the tree and hedge removal works have been completed and will not be removed or moved unless authorised by a qualified arborist;

- Where works/site machinery has to encroach the RPAs of the trees to be retained for reasons unforeseen and unavoidable; suitable ground protection will be put in place to prevent any significant soil compaction or root damage near the trees; this should take the form of suitable strength ground protection mats or cellular confinement system capable of supporting the appropriate weight. Any works will be carried out in accordance with Arboriculture Association 'Guidance Note 12 - the use of cellular confinement systems near trees';
- Any new underground services such as electricity cables, water pipes etc. will be routed away from the root protection areas of the trees to be retained; where this is not possible for reasons unforeseen, the services will be

installed using specialist methodology (such as Airspade excavation or Mole drilling) that ensures minimal impact on any tree roots;

- All site offices, materials storage, staff parking etc. will be located outside of the RPAs of the trees; there is ample space on the site to accommodate these facilities outside the RPAs of the retained trees and hedges;
- The tree protection measures and specialist work methods will be overseen by a qualified arborist; the arborist should also make regular visits to the site during the construction process to ensure compliance and be available to provide advice and guidance where necessary; and
- The retained trees will be assessed by a qualified arborist following the completion of the construction works.

3 Landscape Proposals

3.1 Landscape Principals

The guiding principals of this landscape proposal include:

- **Visual screening and integration** of the proposed development into the landscape;
- **Retention, protection and enhancement** of the boundary hedgerow and tree lines to the western boundaries;
- **Integration** of landscape treatments with proposed utilities and substation proposals.

Following the above landscape principals, a Landscape Masterplan has been prepared to accompany the development. The plan is accompanied by a series of supporting drawings outlined in the Introduction (refer section 1.1).

3.2 Landscape Masterplan

A landscape masterplan has been prepared for the Herbata Data Centre Campus and for the proposed electrical substation development (refer to Figure 3-1 below).

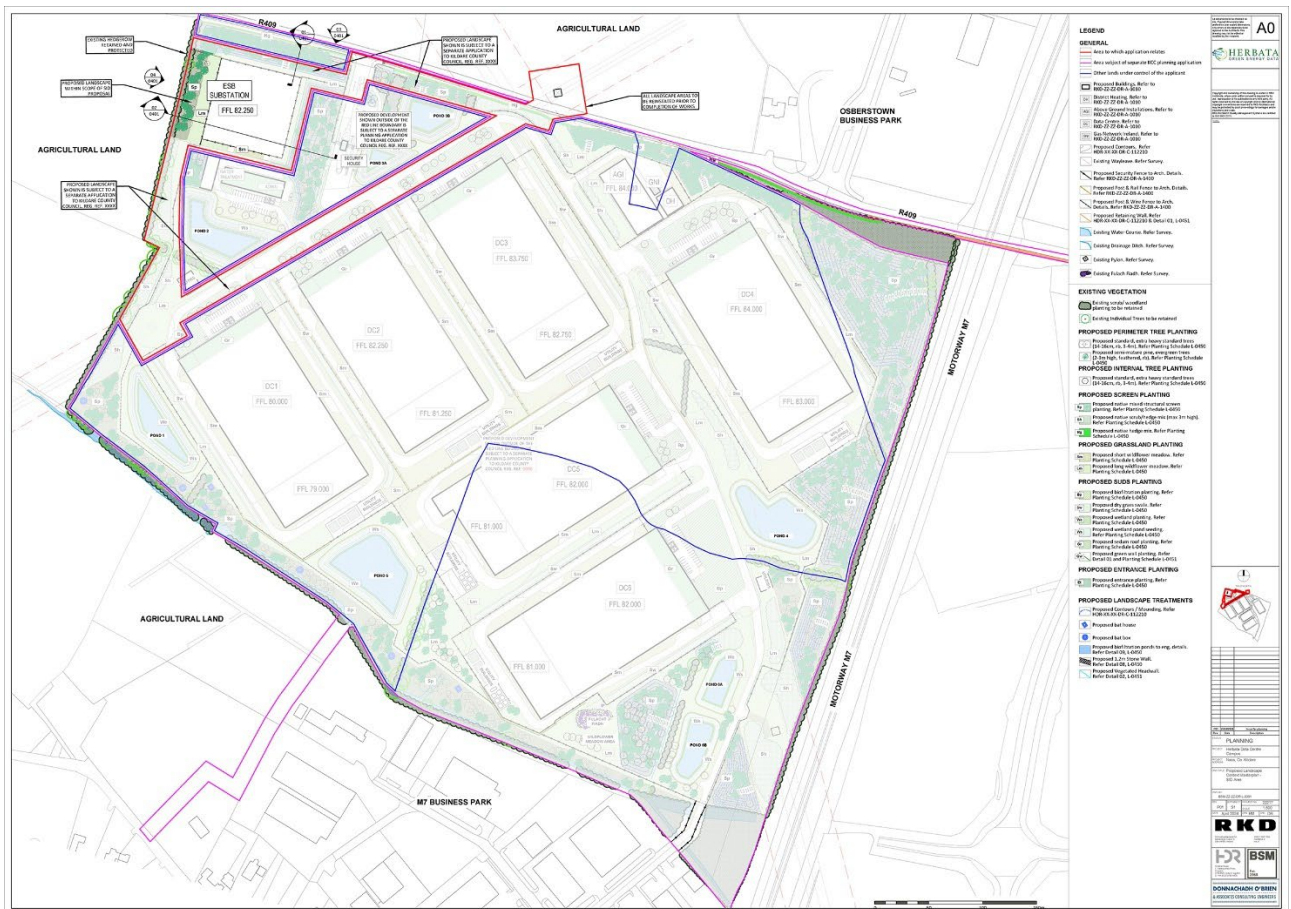


Figure 3-1 - Overall Landscape Masterplan. Refer drawing BSM-ZZ-ZZ-DR-L-0301

The landscape masterplan seeks to develop a well screened and enclosed area for the proposed new substation development.

Landscape mitigation measures include:

- **Protection** of existing trees and hedgerows during construction;
- **Mounding** and **native woodland planting** to visually screen the substation from surrounding areas.
- Native low maintenance, **biodiverse wildflower planting** outside the substation compound.

The perimeter treatment of the north and east of the substation compound will have mounding (up to 4m tall) and native woodland planting as part of the adjoining data centre site development to visually screen the substation and further increase the existing biodiversity of the local area and the site.

The landscape design has been prepared by a qualified landscape architect who will also supervise the implementation of all works relevant to the landscape design.

Planting is proposed immediately west of the ESB Substation compound (see Figure 3-2 and Figure 3-3 below), and will generally be established in line with normal landscape planting techniques, i.e., 'whips' and 'feathered trees' which adapt readily to disturbed ground conditions. These will be planted at average 1m centres. A minimum of 10-15% of evergreen trees and shrubs will be mixed through the planting to minimise impact during winter months. Evergreen plants will be supplied as container grown stock.

Larger 'standard' and semi-mature trees (up to 5m tall) will be used closer to the building and footpaths to give a more immediate impact. Semi-mature Pine trees (3-4m tall) will be planted to the in groups along the mounds to augment visual screening of the built development.

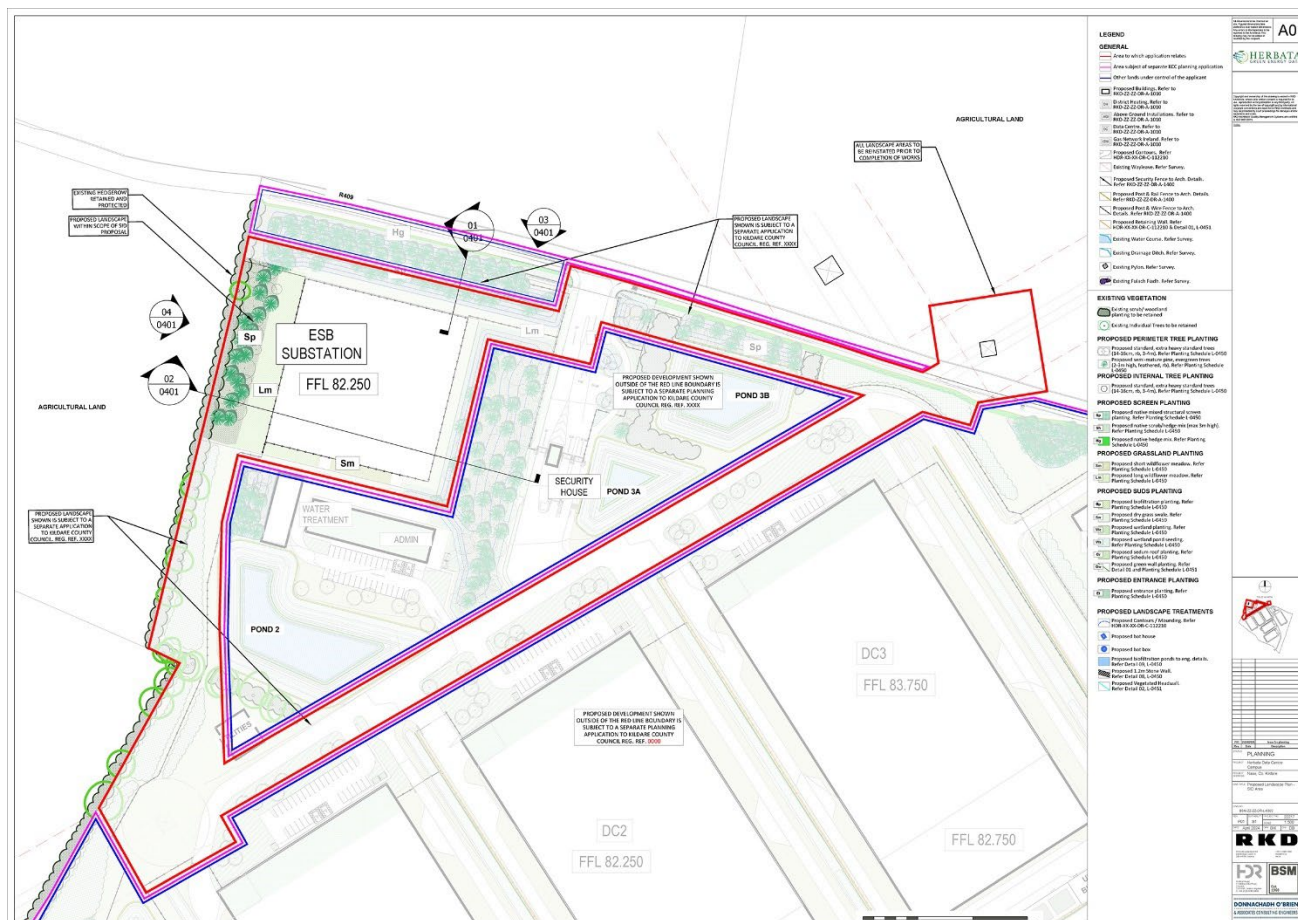


Figure 3-2 Landscape Plan to Substation Refer drawing BSM-ZZ-ZZ-DR-L-0302_LandscapePlanSID

Table 4-1 Proposed woodland species.

Tree Planting			
Alder	<i>Alnus glutinosa</i>	Pine	<i>Pinus sylvestris</i>
Willow	<i>Salix spp.</i>	Birch	<i>Betula pubescens</i>
Birch	<i>Betula pendula</i>	Blackthorn	<i>Prunus spinosa</i>
Hawthorn	<i>Crataegus monogyna</i>	Oak	<i>Quercus robur</i>
Wild cherry	<i>Prunus avium, P. padus</i>	Beech	<i>Fagus sylvatica</i>
Understorey Planting			
Hazel	<i>Corylus avellana</i>	Dogwoods	<i>Cornus sanguinea</i>
Wild Rose	<i>Rosa spp.</i>	Holly	<i>Ilex aquifolium</i>
Guelder rose	<i>Viburnum opulus</i>	Elder	<i>Sambucus nigra</i>
Ivy	<i>Hedera helix</i>	Rowan	<i>Sorbus aucuparia</i>

Within the 220kv powerline wayleave, a native scrub planting (hawthorn, blackthorn, hazel, holly with maximum height of 3m) is proposed. A corridor of 4 metres will be left clear as meadow grassland for ESB maintenance access from within the site. See below table for specified species.

Table 4-2 Native scrub/ hedge mix.

Native Scrub Planting			
Hazel	<i>Corylus avellana</i>	Honeysuckle	Lonicera periclymenum
Spindle / Peg Bush	<i>Euonymus europaeus</i>	Blackthorn	<i>Prunus spinosa</i>
Dogwood	<i>Cornus sanguinea</i>	Elder	<i>Sambucus nigra</i>
Dog Rose	<i>Rosa canina</i>	Guelder Rose	<i>Viburnum opulus</i>
Wild Rose	<i>Rosa rubiginosa</i>		

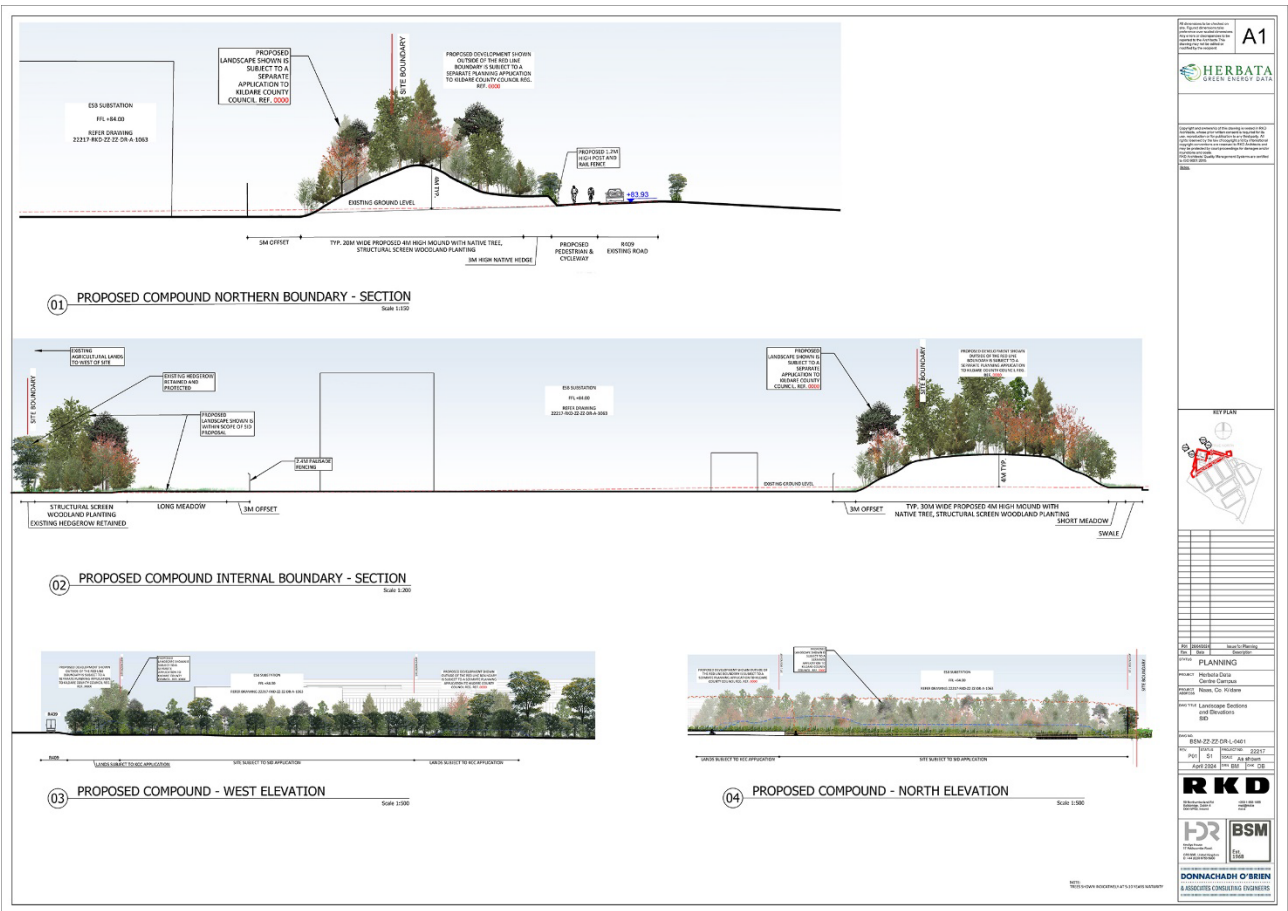


Figure 3-3 - Landscape Sections and Elevations

3.3 Landscape Maintenance

Please see Section 4, Outline Landscape Specification for further details.

Landscape works are to be undertaken by an ALCI approved landscape contractor and in accordance with BS 4428:1989 Code of Practice for general landscape operations. All planting works are to be carried out to BS8545:2014 (Trees from nursery to independence in the landscape). Good quality topsoil to BS3882:2015. All tree works are to be carried out to BS3998:2010 (Tree Work Recommendations). The proposed mixed woodlands planting will establish a closed canopy within five years.

Any failures in planting within the first year will be replaced by the appointed landscape contractor. All planting areas will be maintained weed free to help the

establishment of the tree cover with the objective of providing full canopy cover of the planting areas within the first five years. The landscape will be implemented, managed and maintained for five years to ensure 100% coverage of the site. The planting is to be carried out within the first planting season (November-March) after construction work.

4 Outline Landscape Specification

4.1 PROTECTION

4.1.1 Introduction

Landscape works shall have full regard to guidance, recommendations and requirements of:

- The final Landscape Design Report and associated Landscape Drawings;
- The Tree Survey and related Report and Drawings;
- The Planning Authority

4.1.2 Trees and Hedgerows

Trees to be retained within the site, shall be fenced off in accordance with BS 5837: 2012, prior to commencement of the works. The fence will be removed at the end of the works.

4.2 EARTHWORKS / SOIL WORKS / CULTIVATION WORKS

4.2.1 General

Works will also involve general site preparation and landscape reinstatement within landscape areas and open spaces.

4.2.2 Weather and Soil Conditions

Normally all work involving soil shall be carried out only when soil is dry and in dry weather. Soil shall not be stripped or moved when frozen or waterlogged.

4.2.3 Topsoil

Generally excavations, re-grading *etc.* shall only take once topsoil has been removed. Therefore topsoil shall be stripped initially and stored separately for re-use within gardens and open space.

4.2.4 Grading

The full extent of landscape areas shall be re-graded in a series of initial operations followed by decompaction, secondary grading and final grading.

Grading and re-profiling of the landscape shall leave a free-flowing and draining surface, free of humps and hollows.

4.3 PLANTING

4.3.1 Standards of Workmanship and Materials

All landscape works to be carried out to comply with BS 4428:1989 (General Landscape Operations) and all plants to conform to BS 3936 (Nursery Stock).

4.3.2 Unsuitable Weather

Cultivation, planting and other works will be suspended in wet weather and when conditions are unsuitable.

4.3.3 Plants generally

All new plants shall be well grown, sturdy and bushy according to type and free from all diseases and defects.

4.3.4 Materials

All plant material shall be good quality nursery stock, free from fungal, bacterial or viral infection, Aphis, Red Spider or other insect pest, and physical damage. It shall comply with the requirements of the appropriate sections of BS 3936, Specification for Nursery Stock, where applicable.

All plants shall have been nursery grown in accordance with good practice and shall be supplied through the normal channels of the wholesale nursery trade. They shall have the habit of growth that is normal for the species.

4.3.5 Species

All plants supplied shall be exactly true to name.

4.3.6 Specimen Trees, Larger Trees and Standard Trees

Trees shall conform to appropriate standards for sizes as proposed. All trees shall have a well-balanced, branching head. Trees shall be well furnished with lateral and fibrous roots, and shall be lifted without severance of major roots. Roots shall be of the habit normal for the species and size.

4.3.7 Whips

Whips shall have a well-defined, straight and upright leader and stout, straight stem and be well furnished with strong lateral branches of balanced, feathered habit. Plants shall have been twice transplanted and shall have an extensive fibrous root system. Roots shall be of the habit normal for the species.

4.3.8 Conifers

Conifers shall be supplied root balled or container grown, with a good fibrous root system. Plants shall conform to specified height with well-developed, uniform branching systems.

4.3.9 Hedging, Shrubs and Climbers

Hedge plants, climbers and shrubs shall be of the minimum size specified, with several stems originating from or near ground level and of reasonable bushiness, healthy, well grown, and with a good root system. Roots shall not be deformed or restricted.

4.3.10 Damage

All plants are to be adequately and carefully packed and protected to survive transport, by whatever means, to the site, without damage in loading, transit or unloading.

4.3.11 Planting Generally

All planting operations shall be carried out in accordance with BS 4428 and good horticultural practice. Particular attention must be paid to correct depth of planting ensuring the soil is firmed in around the roots.

4.3.12 Herbicides

Unless unavoidable, no herbicides shall be used on the site. Where required, a natural-based herbicide as approved shall be used on the site.

4.3.13 Tree Pits

Tree pits shall be excavated 150mm all round larger than the natural spread of the roots/rootball of the plant. The base of the pit shall be thoroughly forked to a depth of 300mm to allow roots to penetrate below the pits.

4.3.14 Planting of Trees

All trees shall be planted according to the general directions on planting given above.

4.3.15 Stakes

Stakes shall be turned and pointed at one end. Sizes shall be as follows:-

- For Specimen / larger trees: 2 x 2400mm long x 75mm dia.
- For Standard trees: 1800mm long x 50mm dia.
- For other trees/conifers generally: 1200mm long x 50mm dia.

Set stake(s) vertically in the pit, to the western side of the tree station. Drive stake(s) before planting to secure firmly and to leave between 600-900mm above ground. Drive stake(s) with a drive-all, wooden maul or cast iron headed mell, not with a sledge hammer.

4.3.16 Tree Ties

Tree ties shall be of rubber, PVC or proprietary fabric laminate composition, and shall be strong and durable enough to hold the tree securely in all weather conditions for a period of three years. They shall be flexible enough to allow proper tightening of the tie. Ties shall be minimum 35mm wide for standard trees.

4.3.17 Soil Conditions

Planting shall not be carried out while the ground is frozen or waterlogged.

4.3.18 Watering

All root balled and pot grown plants shall be well-soaked before planting. All planting shall be watered after planting, to consolidate soil around the roots, unless ground is so wet as to make additional water unnecessary.

4.3.19 Planting Specimen, Larger and Standard Trees

Excavate tree pits to 150mm all round larger than the natural spread of the roots of the plant. The base of the pit shall be broken up to a depth of 150mm and glazed sides roughened. Supply and drive the stake(s) as scheduled.

Trees shall be planted at the same depth as in the nursery, as indicated by the soil mark on the stem of the trees. They shall be centred in the planting pit and planted upright. The roots shall be spread to take up their normal disposition. Clean a neat circle 500 mm dia. of all grass.

4.3.20 Whip and Transplant Planting

Excavate tree pits to 150mm all round larger than the natural spread of the roots of the plant.

Place tree in pocket at same depth as in the nursery, spreading out roots to their natural configuration. Backfill pocket carefully incorporating ameliorated soil mix from stockpile on site.

Firm soil around roots, and firm thoroughly on completion. Any surplus soil shall be spread evenly over the surrounding area.

4.3.21 Planting of Shrubs and Climbers

All shrubs and climbers to be planted in excavated pits to give 100mm minimum growth space to accommodate root spread. Climbers to be fixed with adjustable ties to walls.

4.3.22 Planting of Hedges

All hedge plants to be planted in an excavated pit or trench to give 100mm minimum growth space to accommodate root spread. Hedgerows to be established as double staggered row. Plants to be randomly dispersed within mixed species hedgerows.

4.3.23 Workmanship

Whips Transplants: Leave ground free of superficial debris including all stones and debris over 35mm diameter and grass / weed within 500mm of plant.

Shrubs and Mixed Transplants/Shrubs: Leave surface reasonably even, free of all stones and debris over

35mm diameter, free of grass / weed free within 500mm of plant.

4.3.24 Replacements

The planting will be inspected in spring and again in the September following planting. Any tree or shrub found to have died shall be replaced to the original specification.

4.4 GRASS SEEDING

4.4.1 Grass Requirements

DW01 Short Cut Floral Lawn: A closely knit, native grassland mix of even density, height.

DW03 Tall Wildflowers: A native Irish mix of larger wildflowers of thick density and bright colours.

EC05 Wetland Wild Flora: A vigorous, medium tall mixture made for moist soils.

4.4.2 Seed Mixture: DW01 Short Cut Floral Lawn

The general high-quality low-maintenance seed mixture shall be used for verges and areas of frequent maintenance access within the development area, or an equivalent product of similar performance.

4.4.3 Seed Mixture: DW03 Tall Wildflowers

The general high-quality low-maintenance seed mixture shall be used for large open spaces and detention basins within the development area, or an equivalent product of similar performance.

4.4.4 Seed Mixture: EC05 Wetland Wild Flora

EC05 is a vigorous, medium tall mixture which can compete with the often fertile wetland soils on which many wetlands are situated. It shall be used for open dry swales and detention ponds in the development area.

4.4.5 Weather

Work to soil shall be carried out in dry weather and when the soil can be reduced to a friable condition, avoiding smearing or panning, and rutting and compaction.

4.4.6 Final Grading

Where required, areas to be grassed will be graded during cultivation with a light blade grader to bring them to a uniform and even grade to tie into surrounding levels and to remove all minor hollows and ridges.

4.4.7 Cultivation and Stone Burying

Cultivate the surface using rotavators so as to break up the top 100mm of soil by two passes in transverse directions to provide a fine tilth up to 25mm suitable for grass seeding. All landscape areas shall be stone-buried to remove stones and debris over 35mm from the final seeding surface.

4.4.8 Seeding

Grass seed shall be sown at the rates appropriate to the seed mix (refer planting schedule for more information). Seeding shall only be carried out on areas where cultivation and preparatory work has been approved.

Seeding shall be carried out during suitable calm weather conditions using an efficient broadcast machine for large areas or by hand in small areas and confined spaces. The operation will be carried out in equal sowings in transverse directions. After sowing, the ground will be rolled with a light-weight roller.

4.4.9 Quality

Grass sward shall be even and consistent in terms of height, density and growth of each sward type. Re-cultivate and reseed any areas that fail to germinate or are of poor quality.

4.4.10 Defects / Making Good

All damaged / failed grass seeded areas to be reseeded in spring and late summer following seeding, in accordance with this specification.

4.5 AFTERCARE

4.5.1 Period

All landscape works, including planting and seeded areas, shall be maintained for a minimum period of 5 years from practical completion.

4.5.2 Performance Standards

4.5.2.1 Plants / Planting Areas

All plants shall be alive, healthy, free of minor defects and free of weedkiller or cultivation damage.

Planting areas shall be free of weeds and debris.

4.5.2.2 Amenity Grass

Amenity grassland describes all natural and semi-natural grassland used for amenity/recreation purposes.

Grassed areas shall be managed for the visual amenity and enjoyment of staff and visitors and encourage biological diversity.

4.5.2.3 Maintenance Objectives

All grass areas on the site will be managed to follow the All-Ireland Pollinator Plan 2021-2025¹ which aims to that aims to help bees, other pollinating insects, our wider biodiversity and reduce resource consumption. All grass areas will be managed to enhance biodiversity as grassland meadows though the following measures:

- Reduction in the frequency of mowing to provide short and long height meadows;
- For short grass areas, this will entail:
- Delay cutting the grass until mid-April to allow the Dandelion flowers to bloom.
- Mowing the grass every six weeks to allow flowers like Clover to bloom;
- Removing all arisings from the grassland, after each cut reducing fertility and preventing nutrients building up.
- Non-use of pesticides (herbicides, fungicides, insecticides) and fertilisers in the grass meadow areas.

¹ <https://pollinators.ie/aipp-2021-2025/>

The mowing regime will allow common pollen-rich wildflowers such as Dandelions, Clovers, Knapweed, and Bird's-foot-trefoil naturally colonise and grow among longer grass, providing food for pollinators and other insects.

4.5.2.4 Maintenance Actions

Grass areas will be broken down into different maintenance zones with varying actions.

Zone A - Regular grass mowing with differential mowing height to edges; every 2 weeks.

Location:

2m wide perimeter buffer edge to paths and planting areas will be maintained as ornamental amenity grass with two differential grass cutting heights with regular cutting.

Specification:

- No use of fertilisers and weedkillers;
- First lower cut to border to edge, boundary, or path, or open area within though meadow. Height 30-35mm, minimum width 1.07m (42") wide;
- Second slightly higher cut/border to higher meadow (as per photo below). Height 40/75mm, width 0.5m (21") wide;
- Allow for yearly decompaction in areas of high pedestrian footfall.



Figure 5 Differential grass maintenance

Zone B - Short flowering grass meadow; every 6 weeks.

Location:

Road verges (min. 2m from the back of road verge), building edges, adjoining pathways.

Specification:

- No use of fertilisers and weedkillers;
 - Cut grass meadows to 100mm height at six weeks intervals throughout the year, allowing more flowers to get a chance to grow and provide food source for pollinators amongst the grass, following outline mowing regime in Figure 13;
 - Collect and dispose of arisings off-site.
- Install signage to communicate intent/raise public awareness (artwork available from National Biodiversity Data Centre or custom graphics/signage).

[illegible]

Figure 4-1 - Typical grass cutting regime of short flowering grass meadow.



Figure 6 Signage

Zone C - Annual cut (Long flowering grass meadow); Once a year.

Location:

All remaining grassland area outside short flowering grass meadow areas and existing planting areas, providing both food and shelter for insects.

Specification:

- No use of fertilisers and weedkillers;

- Leave the area grow, with one cut per year;
- Cut once a year in September, 100mm high;
- Leaving arisings for 1 week to dry and drop seed head;
- Collect and dispose of arisings;
- Draw chain harrow over area detach grass and create opportunities for native flower seeds to germinate amongst grass;
- Over seed area with native Yellow rattle, Ox Eye Daisy, Knapweed, Vetches, annual cornflowers/poppies, etc. (@5g/sq.m). See Figure 15 below.



Figure 7 Long Flowering Grass Meadow Reference Image

4.5.3 New Tree Planting

Young trees need regular monitoring and attention in the first number of years to ensure establishment.

4.5.3.1 Maintenance Objectives

Establish a stable and healthily growing tree with a well-shaped framework for future growth.

Guards will be used to protect the plant against rabbits, etc. The most important operation is to keep the soil around the base of the tree free from weeds or grass and to ensure secure and correct staking.

4.5.3.2 Maintenance Actions

Protect foliage of all plants during applications of herbicides. No plant, foliage or stem, shall be directly sprayed, even in winter. Any plants affected by herbicide shall be replaced.

- Maintain a 1m diameter circle of plant-free soil around the base of each isolated tree by 75mm deep bark mulch and hoeing or the use of approved herbicide other than a residual. Avoid strimming around the base of standard trees to avoid damage to young bark.

- Allow for hoeing up of soil once every 4 weeks in the growing season (5 times per year). Allow for herbicide treatment once in the winter or spring and 3 additional treatments. Note: In some areas this operation may be replaced by the application of bark mulch as ground cover.
- Cut back any tall vegetation that is threatening to shade or smother the young tree (i.e. taller vegetation growing from outside the 1 m weed free area). Allow for cutting back regularly (3/4 times a year).
- If required, water the newly planted trees throughout the summer months (May to August) as required after any period of 4 weeks without significant rainfall (less than 5 mm). Apply sufficient water to thoroughly wet the top 150 mm of soil around the tree roots. This will normally require approximately 10 litres for a seedling or whip and 20 litres for a standard tree. Supply/transport of water will be the responsibility of the Landscape Contractor.
- Check stakes and ties for firmness and support and adjust as necessary. Allow for checking twice a year, preferably in late spring and late summer.
- Firm the soil around the roots to ensure that the plant is securely planted in the ground and upright. Allow for firming once in the spring after planting.
- Formative prune to remove any dead, diseased or damaged shoots and create a balanced form for future growth. Allow for pruning once in the season after planting.
- Where tree guards, stakes, ties, strimmer guards, rabbit guards and temporary fencing is no longer deemed necessary, the contractor shall allow for removing and discarding of these elements appropriately off site.

4.5.3.3 Maintenance Objectives

Regularly clip hedges to maintain a uniform and tidy appearance (according to the type of hedge and situation) and a well-developed cover of vegetation over the whole of the hedge surface. Control any weed or grass growth at the base of the hedge so that it does not detract from the overall appearance or adversely compete with the hedge.

As wildlife often relies on the berries and nesting spots provided by the Hawthorn, it is recommended that they are pruned during the summer and autumn months, after the plant has flowered. Pruning during these seasons will encourage a fuller growth of flowers the following year, although this will also reduce the volume of berries the hedge is able to produce that winter. Avoid cutting the Hawthorn hedge before it is established, typically this is around 2 years after planting when the hedge has reached around c. 1.2 to 1.5m feet tall.

During the second year of planting, between February and March, is the recommended time for hard pruning Hawthorn hedges. Cut back growth by half during these months to encourage new growth. Remove dead, diseased or broken branches first to keep your hedge looking neat and stimulate new growth. Be careful to avoid cutting these branches flush with the trunk as this can make the trunk susceptible to decay. Removing any cross branches from inside your Hawthorn hedge will also help to prevent diseases as this improves circulation within the hedging. Pruning at this time of year while your hedge is dormant will also cause the

least disruption to the wildlife that rely on your Hawthorn, as it will not interfere with the nesting season or the volume of berries.

4.5.3.4 Maintenance Actions

- Clip the top and sides of the hedge to maintain true and even levels and using suitable mechanical cutters to maintain the shape and height. Remove any cuttings lodged in the surface of the hedge and rake up and remove all arisings.
- Allow the operation to be carried out to suit the species and position of the hedge.
- Maintain weed free 750mm wide band at the base of the hedge (weeds at a maximum height of 100mm and a maximum ground cover of 10%) by mulch, regular hand removal, hoeing or by the use of approved herbicide. Allow for control once every 6 weeks in the main growing season (4 times per year).

4.5.3.5 Maintenance Objective

Maintain shrub growth to cover as much as possible of the border area and allowing the individual plants to achieve as nearly as possible their natural form. Maintain the borders free of visible grasses and shape and prune the shrubs to avoid obstructing pathways or blocking light to, or adhering to windows.

4.5.3.6 Maintenance Operations

After planting, if appropriate and in season for the species involved, prune shrubs to remove dead or dying and diseased wood and suckers, to promote healthy growth and natural shape and to develop their desirable ornamental characteristics. At the same time remove intermediate plants that are restricting the natural and attractive development of their neighbours. Remove all arisings from site.

Lightly cultivate the surface soil, to a depth of approximately 50 mm, remove or bury all annual weed or natural litter and break any surface capping. Take special care to avoid unnecessary damage to the shrub plants and ensure that all the shrubs are firmly bedded in the soil. Leave the surface with a fine and even tilth with soil crumbs of less than 50 mm in diameter.

Note: This operation is only essential where the soil is compacted or as a means of incorporating mulch. Not required where the areas are mulched.

Maintain the soil surface substantially free of not planted grasses by hand removal. Spot treatment at approximately four-weekly intervals throughout maintenance period.

Note: As an alternative the borders can be regularly hand-hoed at up to two-weekly intervals in the main growing season, to 6 times per year. This procedure is recommended for the first year after planting when the plants may be more sensitive to contact herbicide damage and residual herbicides may not be used.

Apply slow release fertiliser to all planted areas in Autumn (NPK 0:20:30) at 25g/sq.mm to encourage strong root structure and winter hardiness.

Water as necessary to ensure the establishment and continued thriving of all planting. Water using a fine rose or sprinkler until full depth of topsoil is saturated.

4.5.4 Programme

The landscape shall be reviewed quarterly during the maintenance period and any defects made good immediately thereafter.

4.5.5 Weed killing (only if no viable alternative)

Protect foliage of all plants during applications of herbicides. No plant, foliage or stem, shall be directly sprayed, even in winter. Any plants affected by herbicide shall be replaced.

4.5.6 Watering

Water all planting as necessitated by dry weather. Apply water as a fine spray, to moisten full depth of root run.

Avoid washing or compaction of the soil surface.

4.5.7 Tidiness and Clearance

All landscape areas shall be maintained free from debris, including free from all aftercare debris.

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