Biodiversity Net Gain Assessment

Project: Former COMAG Works, Tavistock Road, West Drayton (1006546)

Technical Note TN01: Biodiversity Net Gain Assessment Using Defra Biodiversity Metric 3.1 Calculation Tool

Date: 8th August 2022

1. Introduction

1.1. Aspect Ecology was commissioned by Bellway Homes Limited (North London) in June 2022 to undertake ecological survey work and a Biodiversity Net Gain Assessment (BNGA) for the proposed redevelopment of land at the former COMAG Works, Tavistock Road, West Drayton. The proposals are for the construction of 105 residential units, with associated landscaping.

1.2. The DEFRA 3.1 Biodiversity Impact Calculation Tool has been used to conduct the BNGA. This note accompanies the BNGA Calculator and provides a summary of the results and rationale for the choice of habitat types and conditions.

2. Policy

2.1. The National Planning Policy Framework (NPPF)[1] takes forward the Government's strategic objective to halt overall biodiversity loss, as set out at Paragraph 174, which states that planning policies and decisions should contribute to and enhance the natural and local environment by: '*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*'

2.2. The Environment Bill received Royal Assent in November 2021, such that it is now an Act of Parliament with a mandate for development in England to achieve a net gain in biodiversity. The Act sets out the need to achieve a minimum 10% gain, calculated using an approved metric (calculation tool), with habitat obligations secured for at least 30 years. However, secondary legislation is required to implement these commitments to Biodiversity Net Gain which is not expected to be passed until late 2023. The 10% biodiversity net gain requirement set out in the Act is therefore not yet law, such that it is not applicable to the proposals.

2.3. Policy EM7 of the London Borough of Hillingdon Council Local Plan 2011 – 2031 (adopted in 2018) states that the biodiversity of Hillingdon will be preserved and enhanced, with particular attention given to *'the provision of biodiversity improvements from all development, where feasible.'*

[1] Ministry of Housing, Communities & Local Government (2021) '*National Planning Policy Framework*'

3. Approach and Methodology

Habitat Survey

3.1. The site was surveyed in June 2022 in order to ascertain the general ecological value of the land contained within the boundaries of the site and to identify the main habitats and ecological features present.

3.2. The site was surveyed based on standard Phase 1 Habitat Survey methodology[2], whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. The site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified. The nomenclature used for plant species is based on the Botanical Society for the British Isles (BSBI) Checklist.

Biodiversity Net Gain

3.3. To quantify the level of biodiversity net gain that can be delivered under the proposed development, the change in biodiversity value resulting from the scheme has been calculated using the Defra Biodiversity Metric 3.1 calculation tool and associated user guide[3]. This takes account of the size, distinctiveness and ecological condition of existing and proposed habitat areas to provide a proxy measure of the present and forecast biodiversity value of a site, and therefore determine the overall change in biodiversity value. These calculations are provided in the accompanying metric spreadsheet.

3.4. To establish the habitat baseline, broad habitat areas have been identified based on the survey work undertaken at the site, the results of which are shown on Plan 6546/BNGA1. Habitat conditions have then been assigned based on the guidance set out in the Technical Supplement[4], other appropriate guidance and professional judgement.

3.5. The post-development information used to inform the DEFRA 3.1 Biodiversity Metric Calculation Tool has been taken from the landscape planting plans (see Plan 6546/BNGA2 and Appendix 6546/1).

4. Biodiversity Net Gain Assessment

4.1. The following section provides a systematic review of the input information, rationalising the habitat categories and their condition chosen from the drop-down menus of the BNGA calculator. The completed DEFRA 3.1 Biodiversity Impact Assessment Calculation Tool accompanies this report.

[2] Joint Nature Conservation Committee (2010, as amended) *'Handbook for Phase 1 habitat survey: A technique for environmental audit.'*
[3] Natural England (July 2021) *Natural England Joint Publication JP039. Biodiversity Metric 3.0: auditing and accounting for biodiversity – User Guide.*
[4] Natural England (July 2021) *Natural England Joint Publication JP039. The Biodiversity Metric 3.0: auditing and accounting for biodiversity – Technical Supplement.*

A-1 Site Habitat Baseline (Pre-development)

Habitat	Rationale for Habitat Type	Condition	Rationale for Condition
Urban – Artificial Unvegetated, Unsealed Surface	The majority of the site comprises bare ground with rubble and spoil mounds, and few colonising botanical species present, typical of disturbed ground in urban areas.	N/A	No assessment required.
Urban – Developed Land; Sealed Surface	A small area of hardstanding is present.	N/A	No assessment required.
Heathland and Shrub – Mixed Scrub	Small areas of relatively dense scrub at the site boundaries, largely comprising Buddleja, with Maple *Acer* sp., *Rosa* sp., Elder *Sambucus nigra* and Ash *Fraxinus excelsior*.	Poor	The mixed scrub habitat fails all condition assessment criteria (5), on the basis that this habitat comprises > 75% cover by one single, and undesirable, species (Buddleja). The mixed scrub does not comprise a good age range, nor does it have a well-developed edge, or clearings, glades or rides present.

A-2 Site Habitat Creation (Post-development)

Habitat	Target Condition	Rationale for Condition
Urban – Developed Land; Sealed Surface	N/A	No assessment required.
Grassland – Modified Grassland	Poor	Areas of amenity grassland will be created on the first-floor roof area. The amenity grassland will comprise a turf designed for amenity purposes which is suitable for regular mowing. The grassland will not contain high levels of scrub or Bracken and will not include non-native invasive species. However, the grassland will likely fail other condition assessment criteria and therefore is likely to achieve 'poor' condition.
Urban – Introduced Shrub	Poor	No assessment required
Urban – Urban Tree	Poor	Thirteen small street trees will be incorporated within the landscape planting. Many of the trees are non-native species. The trees will not form a continuous canopy and will primarily be managed for amenity purposes rather than ecologically. As such the trees are likely to only achieve 'poor' condition.

5. Biodiversity Net Gain Assessment – Results

5.1. In summary, the DEFRA 3.1 Biodiversity Impact Assessment Calculator indicates that the development will result in a **net gain of 711.6% habitat units (0.31 units).** There are no hedgerows or river/stream features present within the site and, as such, no score is generated for these sections.

	Change in Units	% Change
Habitats	+0.31	+711.6%
Hedgerows	N/A	N/A
Rivers/Streams	N/A	N/A

5.2. In addition to the measurable habitat benefits described above, it is anticipated that the development will deliver a number of faunal benefits; however, it is not possible to quantify these benefits with the DEFRA 3.1 Biodiversity Impact Assessment Calculator. The faunal specific benefits of the proposed development include installation of enhancements targeted to specific species, such as bat boxes, which would provide new roosting opportunities for a number of both National and Local Priority Species such as Soprano Pipistrelle *Pipistrellus pygmaeus*, in addition to bird boxes.

Plans and Appendices:

- Plan 6546/BNGA1: Existing Habitats Measurements
- Plan 6546/BNGA2: Proposed Habitats Measurements
- Appendix 6546/1 – Landscape Planting Plans (Aspect Landscape Planning, 2022)

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Legal Guidance

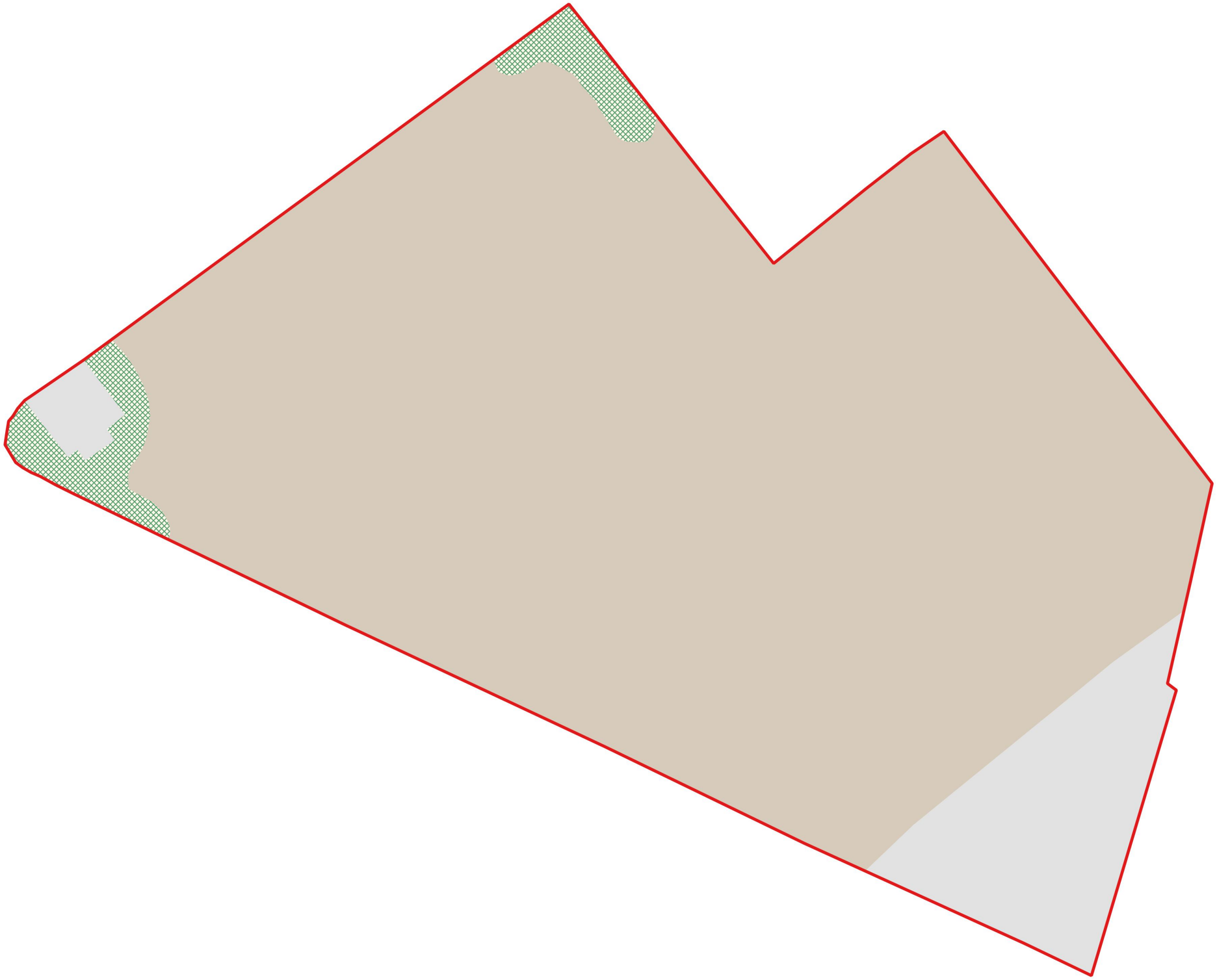
The information set out within this report in no way constitutes a legal opinion on the relevant legislation (refer to the original legislation). The opinion of a legal professional should be sought if further advice is required.

Liability

This report has been prepared for the exclusive use of the commissioning client and unless otherwise agreed in writing by Aspect Ecology, no other party may use, or rely on the contents of the report. No liability is accepted by Aspect Ecology for any use of this report, other than for the purposes for which it was originally prepared and provided. No warranty, express or implied, is made as to the advice in this report.

Plan 6546/BNGA1:

Pre-development Habitat Measurements



Key:

- Site Boundary
- Developed land; sealed surface (0.03ha)
- Mixed scrub (0.01ha)
- Artificial unvegetated, unsealed surface (0.3ha)

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Comag Works, Tavistock Road, West Drayton, UB7 7QE	PROJECT
Pre-development Habitat Measurments	TITLE
6546/BNGA1	DRAWING NO.
A/IK	REV
August 2022	DATE

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Plan 6546/BNGA2:

Post-development Habitat Measurements

Key:

- Site Boundary
- Podium Area
- Roof Area
- Developed land; sealed surface (0.25ha)
- Introduced shrub (0.06ha)
- Modified grassland (0.04ha)
- Tree

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Comag Works, Tavistock Road, West Drayton, UB7 7QE	PROJECT
Post-development Habitat Measurments	TITLE
6546/BNGA2	DRAWING NO.
A/IK	REV
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Appendix 1:

Landscape Planting Plans (Aspect Landscape Planning)

PLANTING SCHEDULE

Trees

Number	Abbreviation	Species	Specification	Girth	Height
1 -	ACE CAL	Acer campestre 'William Caldwell'	Advanced Nursery Stock :Clear Stem min. 200 :RB	18-20cm	4.0-5.0m
Total :1 -					

Shrubs

Number	Abbreviation	Species	Specification	Height	Pot Size	Density
20 -	EfEnG	Euonymus fortunei 'Emerald 'n' Gold'	Bushy :3/4 brks	30-40cm	10L	3/m²
30 -	HEBGG	Hebe 'Green Globe'	Bushy :3/4 brks	20-30cm	10L	4/m²
49 -	HEBMW	Hebe 'Mrs Winder'	Bushy :5/6 brks	30-40cm	10L	3/m²
8 -	ILECR	Ilex crenata	Bushy: Clipped Holly box ball :3/6 brks	40-60cm	10L	Counted
42 -	LaH	Lavandula angustifolia 'Hidcote'	Bushy :3/4 brks	30-40cm	10L	4/m²
4 -	LAU NOB	Laurus nobilis	Half standard clipped ball top :5/6 brks	125-150cm	15-20L	Counted
2 -	LAU NOB	Laurus nobilis	Bushy: Clipped bay cone :5/6 brks	100-125cm	15-20L	Counted
20 -	PITTEPU	Pittosporum tenuifolium 'Purpureum'	Bushy :5/6 brks	30-40cm	10L	3/m²
20 -	SANCH	Santolina chamaecyparissus	Bushy :3/4 brks	20-30cm	10L	5/m²
25 -	SARCO	Sarcococca confusa	Bushy :3/4 brks	60-80cm	10L	3/m²
13 -	SjRu	Skimmia japonica 'Rubella'	Bushy :5/6 brks	30-40cm	10L	3/m²
45 -	VIBPRIA	Viburnum tinus 'Eve Price'	Bushy :5/6 brks	40-60cm	10L	3/m²

Herbaceous

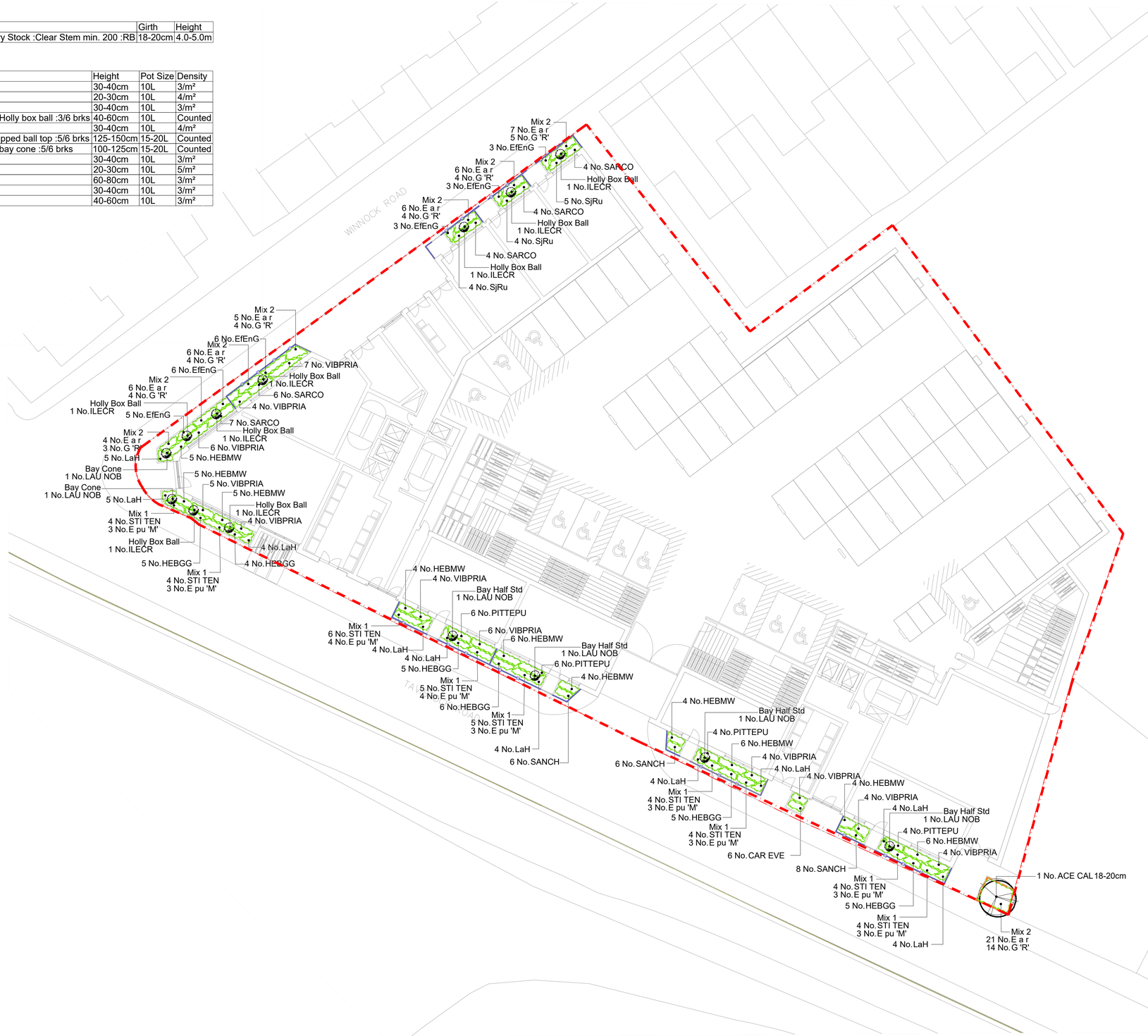
Number	Abbreviation	Species	Pot Size	Density
56 -	E a r	Euphorbia amygdaloides robbiae	10L	5/m²
29 -	E pu 'M'	Echinacea purpurea 'Magnus'	10L	5/m²
38 -	G 'R'	Geranium Rozanne	10L	5/m²

Grasses

Number	Abbreviation	Species	Pot Size	Density
6 -	CAR EVE	Carex oshimensis 'Evergold'	10L	5/m²
40 -	STI TEN	Stipa tenuissima	10L	5/m²
Total :46 -				

NB: Species within planting mixes to be planted in groups or 3, 5, and 7's in random positions ensuring that contrasting blocks are provided.

50mm bark mulch to be added around planting



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0m 2m 4m 8m

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KEY:

- Site Boundary
- Proposed Trees
- Proposed Feature Shrubs
- Proposed Ornamental Shrubs
- Proposed Root Barrier (ReRoot 1000 or equivalent)
- 1.1m Railings (Black) - Spec TBC

PLANTING NOTES

All plants to be supplied in accordance with the HTA 'National Plant Specification' and from a HTA certified nursery. All plants and trees to be planted in accordance with BS3936 and BS8545. Delivery and handling of all plant material to be in accordance with BS4428/JCLI/CPSE Code of Practice for 'Handling and Establishing Landscape Plants' Parts I, II and III and BS8545.

Planting Pit and Trench Preparation

Tree pits in soft landscape to be excavated to 1mx1mx1m depth prior to topsoiling and all shrub planting areas excavated to 450mm depth. All proposed hedge planting trenches to be excavated to 600mm depth.Unless otherwise specified, all tree pits in hard landscape to be 2mx2mx1m, backfilled with compacted Urban Tree Soil.

The preparation of planting pits, bed or trenches shall comply with the appropriate British Standards, namely BS4043, BS4428, BS5837 and BS8545.

Excavation of planting pits, beds or trenches shall not take place when the ground is frozen or waterlogged such that damage may occur to the structure of the soil. All excavated areas to be backfilled with either site won topsoil or imported topsoil to be BS3882-General purpose grade. All topsoiled areas to be clear of rocks and rubble larger than 50mm diameter and any other debris that may interfere with the establishment of plants. The Contractor shall break up and cultivate at the base of the trenches or planting pits. The sides of the trenches or planting pits shall be loosened with a fork or other similar implement. All stones and the like over 75mm in any dimension, deleterious matter, weeds and weed roots brought to the surface by any cultivation or excavation shall be removed off site. The Contractor shall remove off site the excavated subsoil/fill material when preparing planting pits. The imported topsoil should make up any deficiencies caused by the removal of the subsoil/fill material. Trenches and pits shall have the topsoil and any subsoil/fill material thoroughly broken up and mixed prior to backfilling.

All trees shall be supplied root balled, unless otherwise stated. Root balled trees shall be well grown, healthy and with a compact, contained rootball. They shall be nursery grown and have been regularly watered. Prior to planting, all plant material shall be stored and sorted at in accordance with best practice.

Planting

All plants shall be planted in a random fashion avoiding formal regimented lines at densities indicated in the schedule, unless otherwise specified. Unless otherwise specified, all hedgerows shall be planted in single rows and hedgerow mixes shall be planted in groups of 7, 9 & 13s at densities indicated on the schedule. Ornamental shrub planting mixes shall be planted in groups of 5, 7 & 11s and native shrub planting mixes shall be planted in groups of 9, 13 & 15s, with a cane and protective spiral guard included to all native planting. The selection, procurement, handling, storage and planting operations of all proposed trees shall be in accordance with BS8545:2014 - Trees: from nursery to independence in the landscape, recommendations.

Planting and associated operations shall comply with BS4043, BS4428, BS5837 and BS8545. Unless otherwise stated planting shall be carried out during the period of 1 Nov to 31 March when the ground is not frozen or water logged. If planting is required outside this period agreement shall be sought and all bare root plants shall be substituted with container grown stock.

Provide Bamboo cane support and "Treebio Biodegradeable Spiral Guards' (Green-tech Product code: 160PS1031-PRO) or similar to all native shrubs and hedgerows, young sapling trees, whips and feather planting, ensuring that the main or terminal bud is protruding out above the top of the spirals.

Watering

All plants shall be watered in to field capacity immediately after planting and mulched with 50mm depth of medium grade crushed mulch. The Contractor shall water the trees, shrubs and hedges once planted so that the entire tree pit or planted area is moistened to field capacity, i.e. "the amount of water retained by previously saturated soil once full drainage has ceased". Watering to field capacity shall continue frequently and on a regular basis as considered necessary by the landscape contractor and as necessary to ensure the successful establishment and continued thriving of all planting. Additional watering shall be undertaken during summer months and/or periods of drought. Post planting management and maintenance specifically for new tree planting shall include ongoing irrigation and formative pruning as outlined in BS8545. The period over which regular irrigation required for transplanted trees is likely to be at least two full growing seasons to ensure successful establishment. As the root system develops the frequency of irrigation can be reduced.

Staking

All trees within soft landscape areas to be double staked with cross bar and tied, using 1.5m long, 75mm diameter rounded tree stakes 75mm brace, rubber tie and spacer block. Stakes not to extend more than 650mm above ground level. All trees within hardstanding/highways visibility splays to be clear stem to 1.5m high unless otherwise specified. Trees within hardstanding / specific pits to be underground guyed unless otherwise specified.

Root Barriers

Root barriers (ReRoot 1000 or equivalent) to be included adjacent to buildings and services where necessary. Landscape contractor shall check all planting operations comply with appropriate standards and that in the absence of detailed surveys, any necessary underground investigations are undertaken to ensure there are no conflicts with existing or proposed utilities, services or foundations.

PROTECTION OF EXISTING VEGETATION TO BE RETAINED

Existing trees to be retained shall be protected in accordance with BS5837, from commencement to completion of all works on site.

N.B. All planting proposals including tree planting have been developed in order to create a high quality environment and gain planning consent for the development. All tree species have been reviewed in line with NHBC guidance (2017) and in the absence of any building foundation depths or detailed soil analysis information for the site. Where possible only low and moderate water demand species are proposed in close proximity to new buildings. A number of varied cultivars of these species as well as ornamental species that have a smaller overall mature height (which are not currently assessed within NHBC guidance 2017) are proposed to provide variety in the scheme and engineer's should consider these locations & species. Where necessary new building foundation depths shall be designed to accommodate the approved tree species, site specific soil shrinkage and tree water demand in line with NHBC standards 2017 (Chapter 4.2 - Building Near Trees). Planting plans have been prepared for planning purposes and in the absence of fully detailed ground investigations, geological or hydrological surveys and planting design or species choice may be subject to change - suitability should be confirmed on site by the landscape contractor. Detailed site specific soil analysis and suitable site drainage should be checked by landscape contractor to ensure planting can be implemented in accordance with approved drawings prior to implementation.

REV	DATE	NOTE	Drawn	Chk'd
-				

aspect landscape planning

TITLE

Former Comag Works, West Drayton Planting Plan - Ground Floor

CLIENT

Bellway Homes Limited (North London)

SCALE	DATE	DRAWN	CHK'D
1:200@A1	JUN 2022	PC	CW

DRAWING NUMBER	REVISION
7943.GF.PP.1.0	

PLANTING SCHEDULE - PODIUM

Trees

Number	Abbreviation	Species	Specification	Height
5 -	BETALBS	Betula albosinensis var. septentrionalis	Advanced Nursery Stock: Multistem 3 stems :Clear Stem min. 150 :C	3.5-4.0m
Total :5 -				

Shrubs

Number	Abbreviation	Species	Specification	Height	Pot Size	Density
2 -	AMELAM	Amelanchier lamarckii	Multistem 3 stems :3/5 brks :C	175-200cm	15-20L	Counted
59 -	CORSAMF	Cornus sanguinea 'Midwinter Fire'	Branched :3/5 brks	60-80cm	10L	3/m²
124 -	EfSQ	Euonymus fortunei 'Silver Queen'	Bushy :3/4 brks	30-40cm	10L	3/m²
13 -	EUOJAAURM	Euonymus jap. 'Aureomarginatus'	Bushy :2/3 brks	20-30cm	10L	3/m²
15 -	FAJA	Fatsia japonica	Branched :4/6 brks	100-125cm	15L	Counted
50 -	HEBGG	Hebe 'Green Globe'	Bushy :3/4 brks	20-30cm	10L	4/m²
29 -	PIEJAVA	Pieris japonica 'Variegata'	Bushy :2/3 brks	20-30cm	10L	3/m²
64 -	SARHOHU	Sarcococca humilis	Bushy :3/4 brks	40-60cm	10L	3/m²
66 -	SjRu	Skimmia japonica 'Rubella'	Bushy :3/4 brks	30-40cm	10L	3/m²

Herbaceous

Number	Abbreviation	Species	Specification	Pot Size	Density
125 -	E a r	Euphorbia amygdaloides robbiae	4 Buds :Full Pot	5L	6/m²
126 -	GERMAG	Geranium magnificum	4 Buds :Full Pot	10L	4/m²
146 -	LIRMUM	Liriope muscari 'Majestic'	4 Buds :Full Pot	5L	6/m²
50 -	MISSISI	Miscanthus sinensis 'Silberturm'	7 Buds :Full Pot	10L	3/m²
95 -	STABY	Stachys byzantina	4 Buds :Full Pot	5L	6/m²
151 -	T c	Tiarella cordifolia	4 Buds :Full Pot	5L	6/m²

Ferns

Number	Abbreviation	Species	Specification	Pot Size	Density
303 -	BLESP	Blechnum spicant	Full Pot	3L	7/m²
53 -	POLSE	Polystichum setiferum	Full Pot	3L	7/m²

Box hedge

Number	Abbreviation	Species	Specification	Height	Pot Size	Density
284 -	Bse	Buxus sempervirens	Bushy :3/4 brks:Clipped Level 0.3m high	30-40cm	10L	5/m

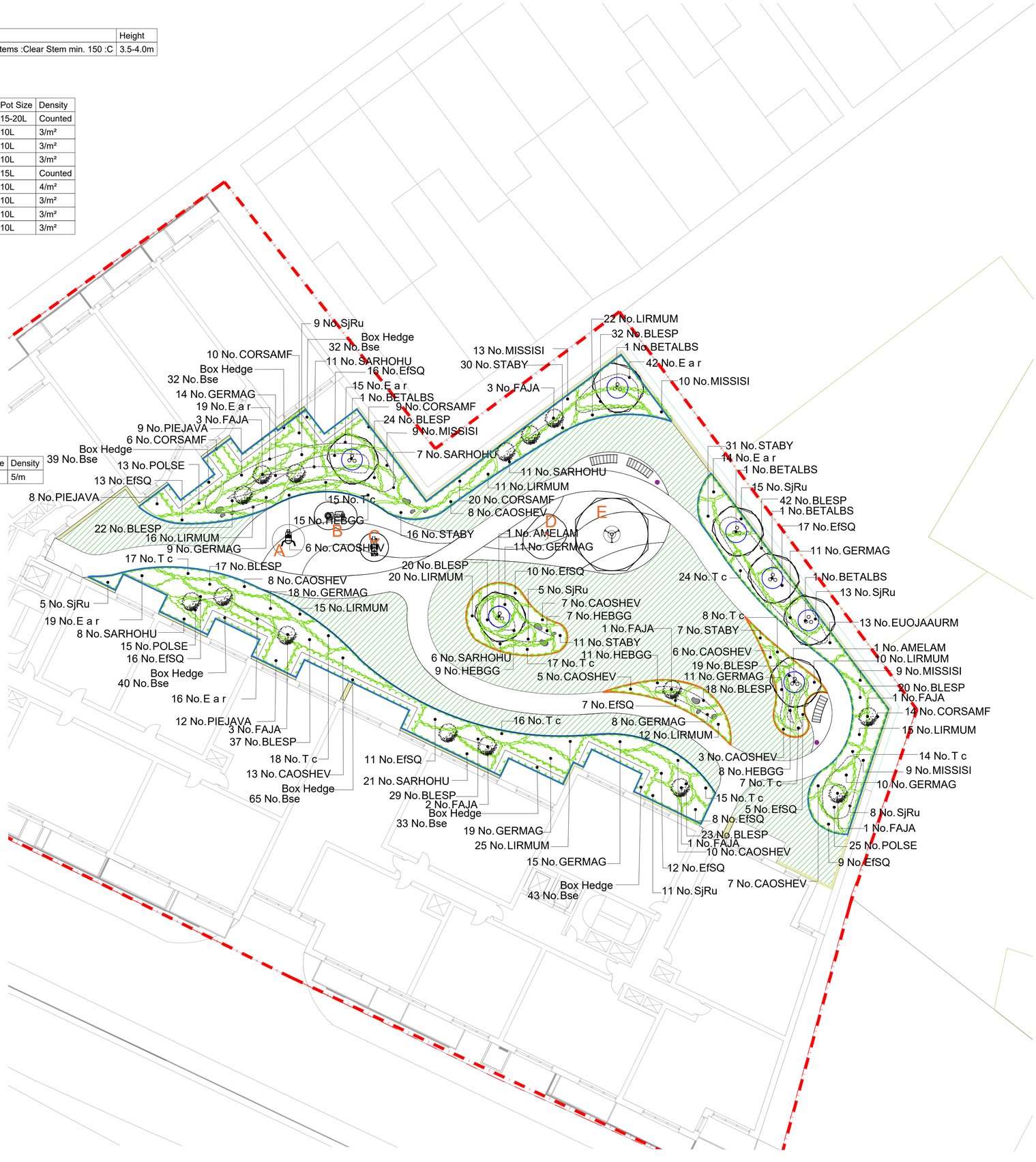
Amenity Turf

Rolawn Medallion Turf or Similar

NB: Species within planting mixes to be planted in groups or 3, 5, and 7's in random positions ensuring that contrasting blocks are provided.

200mm min gravel strip with metal edge to be installed along house.
30mm decorative gravel to be agreed and laid over geotextile membrane.

50mm bark mulch to be added around planting



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All trees shall be supplied root balled, unless otherwise stated. Root balled trees shall be well grown, healthy and with a compact, contained rootball. They shall be nursery grown and have been regularly watered. Prior to planting, all plant material shall be stored and sorted at in accordance with best practice.

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Watering

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N.B. All planting proposals including tree planting have been developed in order to create a high quality environment and gain planning consent for the development. All tree species have been reviewed in line with NHBC guidance (2017) and in the absence of any building foundation depths or detailed soil analysis information for the site. Where possible only low and moderate water demand species are proposed in close proximity to new buildings. A number of varied cultivars of these species as well as ornamental species that have a smaller overall mature height (which are not currently assessed within NHBC guidance 2017) are proposed to provide variety in the scheme and engineer's should consider these locations & species. Where necessary new building foundation depths shall be designed to accommodate the approved tree species, site specific soil shrinkage and tree water demand in line with NHBC standards 2017 (Chapter 4.2 - Building Near Trees). Planting plans have been prepared for planning purposes and in the absence of fully detailed ground investigations, geological or hydrological surveys and planting design or species choice may be subject to change - suitability should be confirmed on site by the landscape contractor. Detailed site specific soil analysis and suitable site drainage should be checked by landscape contractor to ensure planting can be implemented in accordance with approved drawings prior to implementation.

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KEY:

- Site Boundary
- Proposed Multistem Trees
  Tree to be underground guyed support
- Proposed Feature Shrub
- Proposed Ornamental Shrubs
- Proposed Amenity Grass Turf
  Rolawn Medallion Turf Rolls or Similar to plot frontages
- Powder Coated Metal Edge
  - 10mm thicknes
  - 300 mm height above path level
  - Colour orange RAL 2000
- Powder Coated Metal Edge
  - 10mm thicknes
  - 600 mm height above path level
  - Colour grey RAL 7016
- Powder Coated Metal Edge
  - 10mm thicknes
  - 900 mm height above path level
  - Colour black RAL 9005
- Proposed Warwick Curved Bench
  Supplier: Bollard Street
  Finish: Grade 304 Stainless Steel
  Size/: L1800mm W605mm H465mm
  Fixing: Base plate
  Weight: 71kg
  Ref: SE.WA.BCH.SS.RD
- Proposed Weyburn Open Top Litter Bin 45L
  Supplier: Broxap
  Finish: Stainless Steel
  Size/: D300 H850mm
  Ref: BX50S 203/LB
- Small 30mm Decorative Gravel overlaid over geotextile membrane
  (Gravel to be agreed with Bellway before Instillation and include a timber edge)
- Proposed Glacial Boulders
  Supplier: CEDstone
  Size: aprox. dia 600mm and 400mm
- Proposed Soil Mound
  Mound to provide min 900mm soil depth where trees are indicated in the planter.

Outdoor gym equipment

- A Hydraulic Butterfly R37-UBX-208B - PROLUDIC
- B Pendulum and Hip Twister R37-UBX-232B - PROLUDIC
- C Elliptical Trainer R37-UBX-203C - PROLUDIC

Play equipment

- D Springer J841 - PROLUDIC
- E Rotating equipment J2401 - PROLUDIC

REV	DATE	NOTE	Drawn	Chk'd

aspect landscape planning

TITLE

Former Comag Works, West Drayton
Planting Plan - First Floor

CLIENT

Bellway Homes Limited (North London)

SCALE	DATE	DRAWN	CHK'D
1:150@A1	JUN 2022	PC	CW

DRAWING NUMBER	REVISION
7943.FF.PP.1.1	

PLANTING SCHEDULE

Trees

Number	Abbreviation	Species	Specification	Girth	Height
6 -	BETALBS	Betula albosinensis var. septentrionalis	Advanced Nursery Stock: Multistem 3 stems :Clear Stem min. 150 :C		3.5-4.0m
Total :6 -					

Shrubs

Number	Abbreviation	Species	Specification	Height	Pot Size	Density
3 -	AMELAM	Amelanchier lamarckii	Multistem 3 stems :3/5 brks :C	175-200cm	15-20L	Counted
8 -	ROSOF	Rosmarinus officinalis	Bushy :3/4 brks	20-30cm	5L	6/m²

Herbaceous

Number	Abbreviation	Species	Specification	Pot Size	Density
8 -	FRAVES	Fragaria vesca	Full Pot	5L	6/m²
8 -	MENSU	Mentha suaveolens	Full Pot	5L	6/m²
4 -	THYCIARG	Thymus citriodorus 'Archer's Gold'	Full Pot	5L	6/m²

Grasses

Number	Abbreviation	Species	Specification	Pot Size	Density
29 -	MISSIML	Miscanthus sinensis 'Morning Light'	Grade 3/+ :C	10L	Counted

Bulbs

Number	Abbreviation	Species	Specification	Density
4 -	ALL SCH	Allium schoenoprasum	Top size	6/m²

Climbers

Number	Abbreviation	Species	Specification	Height	Pot Size
6 -	TRAJA	Trachelospermum jasminoides	Several Shoots :3/5 brks: Fixed onto fan trellis	100-150cm	5-7.5L
Total :6 -					

Elaeagnus Hedge

Number	Abbreviation	Species	Specification	Height	Pot Size	Density
214 -	EeGE	Elaeagnus ebbingei 'Gilt Edge'	Bushy :3/4 brks	60-80cm	10L	4/m

Planting Mix 1

Number	Abbreviation	Species	Specification	Height	Pot Size	Density	%
37 -	ECH PUR	Echinacea purpurea	Grade 3/+ :C		5L	8/m²	25%
37 -	EUOFOEG	Euonymus fortunei 'Emerald Gaiety'	1+1 :Bushy :C	15-20cm	5L	8/m²	25%
37 -	LAVANHI	Lavandula angustifolia 'Hidcote'	Branched :2/3 brks :C	20-30cm	5L	8/m²	25%
37 -	STI TEN	Stipa tenuissima	Full Pot		3L	8/m²	25%
Total :148 -							

Planting Mix 2

Number	Abbreviation	Species	Specification	Height	Pot Size	Density	%
37 -	ECH PUR	Echinacea purpurea	Grade 3/+ :C		5L	8/m²	25%
37 -	EUOFOEG	Euonymus fortunei 'Emerald Gaiety'	1+1 :Bushy :C	15-20cm	5L	8/m²	25%
37 -	LAVANHI	Lavandula angustifolia 'Hidcote'	Branched :2/3 brks :C	20-30cm	5L	8/m²	25%
37 -	STI TEN	Stipa tenuissima	Full Pot		3L	8/m²	25%
Total :148 -							

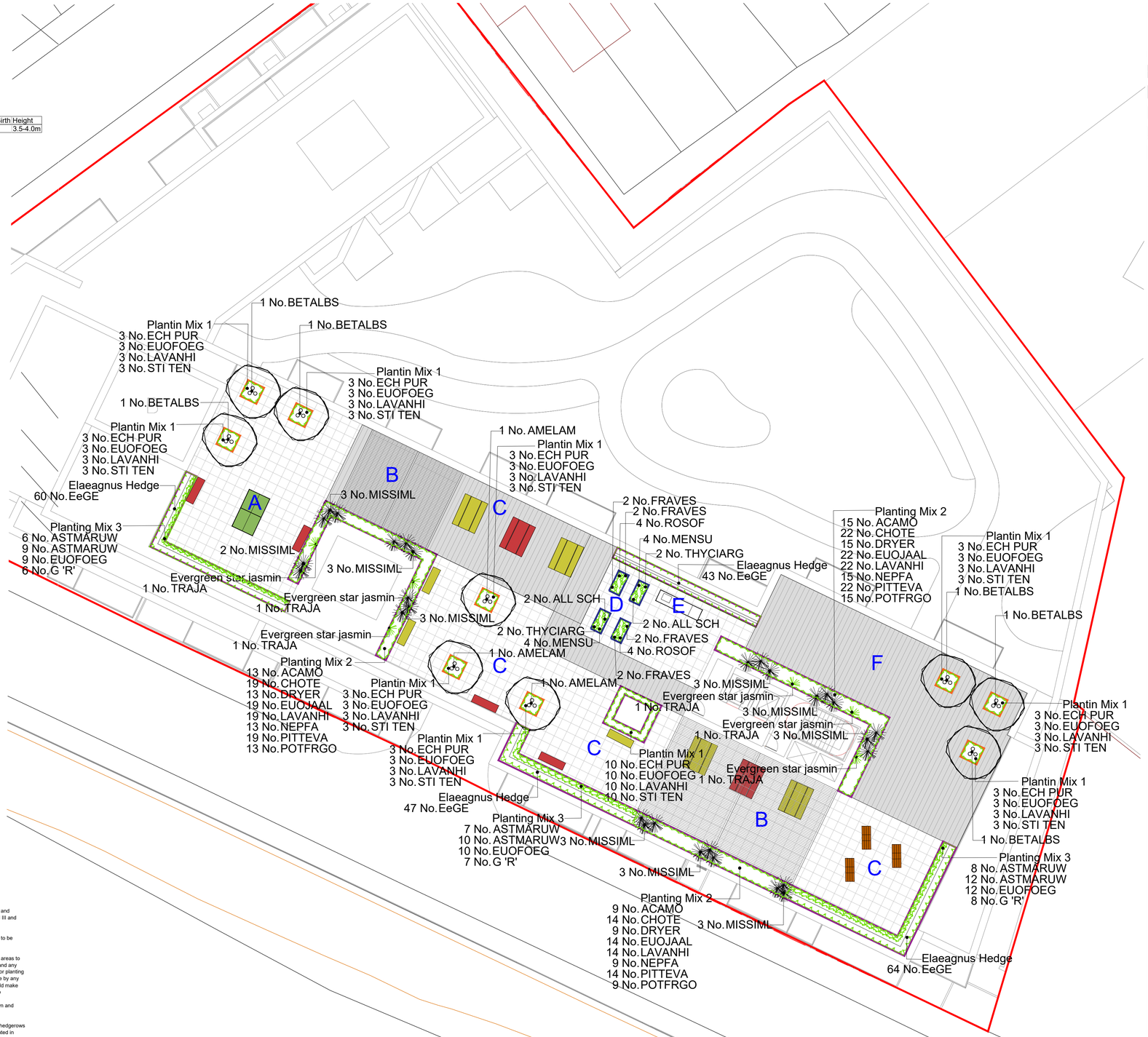
Planting Mix 3

Number	Abbreviation	Species	Specification	Height	Pot Size	Density	%
37 -	ECH PUR	Echinacea purpurea	Grade 3/+ :C		5L	8/m²	25%
37 -	EUOFOEG	Euonymus fortunei 'Emerald Gaiety'	1+1 :Bushy :C	15-20cm	5L	8/m²	25%
37 -	LAVANHI	Lavandula angustifolia 'Hidcote'	Branched :2/3 brks :C	20-30cm	5L	8/m²	25%
37 -	STI TEN	Stipa tenuissima	Full Pot		3L	8/m²	25%
Total :148 -							

NB: Species within planting mixes to be planted in groups or 3, 5, and 7's in random positions ensuring that contrasting blocks are provided.

Climbers to be trained onto treated timber fan trellis. Dimensions (H1055 x W614mm) or Similar to be proportional with proposed wall.

50mm bark mulch to be added around planting



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KEY:

- Site Boundary
- Proposed Multistem Trees
  Tree to be underground guyed support.
- Proposed Feature Shrub
- Proposed Ornamental Shrubs
- Proposed Climbers
  (Fixed onto pressure-treated golden brown timber fan trellis - Dimensions: (H)1800 x (W)945 x (D)30mm. Supplier and Product Code: Grange; HDFAN)
- Powder Coated Metal Tree Planter
  - 10mm thicknes
  - 1000 mm height above path level
  - Colour orange RAL 2000
  - Size 1200x1200mm
- Powder Coated Metal Planter
  - 10mm thicknes
  - 400 mm height above path level
  - Colour grey RAL 7016
  - Size 750 x1500mm
- Powder Coated Metal Planter
  - 10mm thicknes
  - 600 mm height above path level
  - Colour black RAL 9005

A Outdoor Tennis Table
B Aluminium Pergola
C Seating Area
D Herb Garden
E Outdoor Kitchen
F Yoga Area

PLANTING NOTES

All plants to be supplied in accordance with the HTA 'National Plant Specification' and from a HTA certified nursery. All plants and trees to be planted in accordance with BS3936 and BS8545. Delivery and handling of all plant material to be in accordance with BS4428/JCLI/CPSE Code of Practice for 'Handling and Establishing Landscape Plants' Parts I, II and III and BS8545.

Planting Pit and Trench Preparation

Tree pits in soft landscape to be excavated to 1mx1mx1m depth prior to topsoiling and all shrub planting areas excavated to 450mm depth. All proposed hedge planting trenches to be excavated to 600mm depth.Unless otherwise specified, all tree pits in hard landscape to be 2mx2mx1m, backfilled with compacted Urban Tree Soil.

The preparation of planting pits, bed or trenches shall comply with the appropriate British Standards, namely BS4043, BS4428, BS5837 and BS8545.

Excavation of planting pits, beds or trenches shall not take place when the ground is frozen or waterlogged such that damage may occur to the structure of the soil. All excavated areas to be backfilled with either site won topsoil or imported topsoil to be BS3882-General purpose grade. All topsoiled areas to be clear of rocks and rubble larger than 50mm diameter and any other debris that may interfere with the establishment of plants. The Contractor shall break up and cultivate at the base of the trenches or planting pits. The sides of the trenches or planting pits shall be loosened with a fork or other similar implement. All stones and the like over 75mm in any dimension, deleterious matter, weeds and weed roots brought to the surface by any cultivation or excavation shall be removed off site. The Contractor shall remove off site the excavated subsoil/fill material when preparing planting pits. The imported topsoil should make up any deficiencies caused by the removal of the subsoil/fill material. Trenches and pits shall have the topsoil and any subsoil/fill material thoroughly broken up and mixed prior to backfilling.

All trees shall be supplied root balled, unless otherwise stated. Root balled trees shall be well grown, healthy and with a compact, contained rootball. They shall be nursery grown and have been regularly watered. Prior to planting, all plant material shall be stored and sorted at in accordance with best practice.

Planting

All plants shall be planted in a random fashion avoiding formal regimented lines at densities indicated in the schedule, unless otherwise specified. Unless otherwise specified, all hedgerows shall be planted in single rows and hedgerow mixes shall be planted in groups of 7, 9 & 13s at densities indicated on the schedule. Ornamental shrub planting mixes shall be planted in groups of 5, 7 & 11s and native shrub planting mixes shall be planted in groups of 9, 13 & 15s, with a cane and protective spiral guard included to all native planting. The selection, procurement, handling, storage and planting operations of all proposed trees shall be in accordance with BS8545:2014 - Trees: from nursery to independence in the landscape, recommendations.

Planting and associated operations shall comply with BS4043, BS4428, BS5837 and BS8545. Unless otherwise stated planting shall be carried out during the period of 1 Nov to 31 March when the ground is not frozen or water logged. If planting is required outside this period agreement shall be sought and all bare root plants shall be substituted with container grown stock. Provide Bamboo cane support and 'Treebio Biodegradeable Spiral Guards' (Green-tech Product code: 160PS1031-PRO) or similar to all native shrubs and hedgerows, young sapling trees, whips and feather planting, ensuring that the main or terminal bud is protruding out above the top of the spirals.

Watering

All plants shall be watered in to field capacity immediately after planting and mulched with 50mm depth of medium grade crushed mulch. The Contractor shall water the trees, shrubs and hedges once planted so that the entire tree pit or planted area is moistened to field capacity, i.e. "the amount of water retained by previously saturated soil once full drainage has ceased". Watering to field capacity shall continue frequently and on a regular basis as considered necessary by the landscape contractor and as necessary to ensure the successful establishment and continued thriving of all planting. Additional watering shall be undertaken during summer months and/or periods of drought. Post planting management and maintenance specifically for new tree planting shall include ongoing irrigation and formative pruning as outlined in BS8545. The period over which regular irrigation required for transplanted trees is likely to be at least two full growing seasons to ensure successful establishment. As the root system develops the frequency of irrigation can be reduced.

Staking

All trees within soft landscape areas to be double staked with cross bar and tied, using 1.5m long, 75mm diameter rounded tree stakes 75mm brace, rubber tie and spacer block. Stakes not to extend more than 650mm above ground level. All trees within hardstanding/highways visibility splays to be clear stem to 1.5m high unless otherwise specified. Trees within hardstanding / specific pits to be underground guyed unless otherwise specified.

Root Barriers

Root barriers (ReRoot 1000 or equivalent) to be included adjacent to buildings and services where necessary. Landscape contractor shall check all planting operations comply with appropriate standards and that in the absence of detailed surveys, any necessary underground investigations are undertaken to ensure there are no conflicts with existing or proposed utilities, services or foundations.

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aspect landscape planning

TITLE

Former Comag Works, West Drayton
Planting Plan - Top Roof Garden

CLIENT

Bellway Homes Limited (North London)

SCALE	DATE	DRAWN	CHK'D
1:150@A1	JUL 2022	PC	CW

DRAWING NUMBER	REVISION
7943.TRG.PP.1.2	

ecology • landscape planning • arboriculture

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