

**Planting Schedule
Proposed Development
33 Church Street,
Pontardawe,
Swansea.
SA8 4LS**

**Prepared for:
Charter Homes
Ref :14657-PS 01
Date :September 2022**

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Introduction

This document has been prepared by Vale Consultancy, on behalf of the Client, using information provided by The Wildlife Trust of South and West Wales who have recommended some native plants that are suitable for use in bioretention areas in the region of South Wales.

The use of planting native species within bioretention areas can help to provide a new quality habitat for wildlife, having a positive contribution to biodiversity in the area. Bioretention areas can also be used to manage surface water runoff and provide runoff interception for small rainfall events, thus reducing surface water discharge from site. The use of planting native species can support local biodiversity by providing habitat and food for invertebrates and birds. The following list of plants have been selected as appropriate for use within the proposed bioretention areas.

1.0 Rain Garden and Planting area

1.1 Proposed Planting schedule

Yellow Flag Iris (*Iris pseudocorus*)

Pendulous Sedge (*Carex pendula*)

Purple Loosestrife (*Lythrum salicaria*)

Water Mint (*Mentha aquatica*)

Hemp agrimony (*Eupatorium cannabinum*)

Ragged Robin (*Lychnis flos-cuculi*)

Marsh Woundwort (*Stachys palustris*)

Soft Rush (*Juncus effusus*)

Royal Fern (*Osmunda regalis*)

Bugle (*Ajuga reptans*)

Chives (*Allium schoenoprasum*)

2.0 Soil Evaluation and Improvements

Soils within the proposed planting areas need to be assessed for suitability in accordance with guidelines set out in BS8545 by a suitably qualified soil scientist, to ensure soils are suitable for plant growth.

For areas where the sowing of wildflower and grass mixes are advised, determining the fertility and acidity of the soil is essential as most productive fertile sites and soils tend to have the least potential for plant diversity. Where possible some earthmoving and land forming on the site may be required to ensure suitable ground is prepared for seed mixes requiring low fertility.

For tree and shrub planting, pits and beds will need to be prepared with the use of onsite soils if suitable or imported soils* if required with the soil profile detailed below.

* Topsoil to be certified to BS 3882:2015 and found via a soil scientists interpretive report to be appropriate for the site-specific landscape functions.

Subsoil to be certified to BS 8601:2013 and found via a soil scientists interpretive report to be appropriate for the site-specific landscape functions. Topsoil to be handled in accordance with annex A BS 3882:2015, the 2009 DEFRA Construction Code of Practice for the Sustainable Use of Soil on Construction Sites and the Cardiff Council Soils and Development Technical Guidance Note.

Subsoil to be handled in accordance with section 6 of BS 8601:2013, the 2009 DEFRA Construction Code of Practice for the Sustainable Use of Soil on Construction Sites and the Cardiff Council Soils and Development Technical Guidance Note.

The characteristics of topsoil and subsoil to be similar in terms of texture and pH and the interface between them mixed lightly or rippled to ensure they 'key in'.

Topsoil and subsoil to be loose-tipped when moist, friable, well-aerated and well-structured and lightly tamped to remove large voids, not overly compacted.

Organic matter additions if required to comprise well-rotted PAS100 compliant compost worked into the top 150mm.

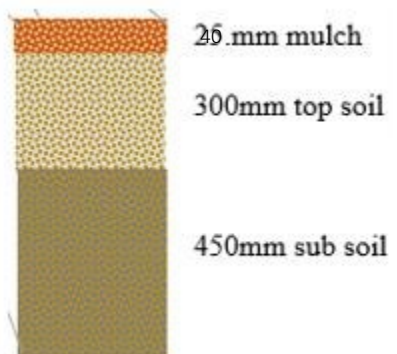
Fertiliser only added if required by the soil scientist and then applied to the top 150-200mm

Imported Topsoil shall not contain weed seeds in quantities that cause noticeable weed infestations in the final planting beds. Imported Topsoil shall meet the following physical and chemical criteria:

- Soil texture: loam, sandy clay loam or sandy loam with clay content between 15 and 25%. And a combined clay/silt content of no more than 55%.
- pH value shall be between 5.5 and 7.0.
- Percent organic matter (OM): 2.0-5.0%, by dry weight.
- Soluble salt level: Less than 2 mmho/cm.
- Soil chemistry suitable for growing the plants specified.

Imported Topsoil shall be a harvested soil from fields or development sites. The organic content and particle size distribution shall be the result of natural soil formation. Manufactured soils where coarse sand, composted organic material or chemical additives has been added to the soil to meet the requirements of this specification section shall not be acceptable. Retained soil peds shall be the same colour on the inside as is visible on the outside. Imported soil must be supplied with Product data and certificates: For each type of

manufactured product, submit data and certificates that the product meets the specification requirements, signed by the product manufacturer.



2.1 Selection of plants:

For the strip of land designated as a swale to the north of the site a meadow mixture for wetlands has been advised in consideration of the need to mow and maintain these areas. For Bio retention areas A-E a wetland meadow seed mix planted with sedges and other native wetland plants has been advised

For the Tree planting pits with storage suitable native trees have been selected. Plants will need to be manageable and low maintenance as well as suitable for location, where possible sourced locally, and provide potential habitat or foraging opportunity for wildlife. In this instance suitable sized trees of suitable habit have been selected. It is essential to ensure plants from reputable nurseries are selected which operate phytosanitary control measures. Imported plants need to have all the correct documentation (plant passports and phytosanitary certificates) which the nursery must supply. If a contractor is employed to undertake supply and planting of trees it is essential that the trees are checked on delivery for signs of disease structural faults and desiccation and rejected if sub-standard diseased or with dried roots.

All trees shall conform generally to BS 3936 Part 1 (Nursery Stock Trees) and BS 4043 (Advanced Nursery Stock Trees) and as further described in the plant

Schedules and Table 1, p.21, BS 8545:2014. In general, all trees shall be strong growing, shall have reasonably straight, upright stems and accord with the dimensions given in the Schedule with evenly balanced and well-developed crowns, with no main branch crossing the crown, and a well-developed fibrous root structure. All batches of single species shall be uniform in character. Tree stems shall be free from abrasions and stem girdling. Stems shall be straight and uniform.

Tree size: Standard 10- 12-m, 3.50-4.25 m height= HS Clear stem to 2.00m

2.2 Plant/ Tree Handling, Storage and Transport

The contractor shall comply with CPSE 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association) Part I, Part II and Part III, paragraphs 1.3.3 to 1.3.6, 3.0, and 4.0. Plants/trees shall be handled with care and protected from frost. Protect from mechanical damage and do not subject to shock, e.g., by dropping from a vehicle. Plants, which are not to be planted on the day of delivery to the site, are to be stored as follows or by other approved methods: Bare root trees that are to be stored for subsequent planting shall be stored on site by laying them horizontally, resting the branches on straw bales and covering the root balls with soil and firming well in to prevent air pockets.

Container grown plant material shall be stored upright be protected from drying winds and watered regularly Rootballed plants that are not to be planted within 24 hours of delivery are to be grouped together and their root balls covered with moist non-peat organic matter suitable for protecting from frost and from drying out.

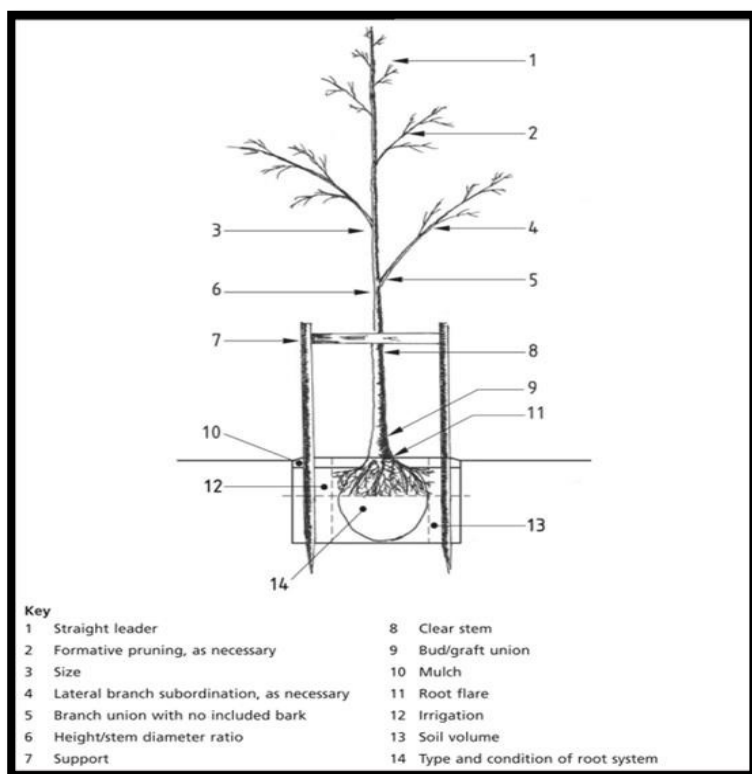
Watering should continue to keep all plant roots moist until planting can commence. The contractor shall allow for all costs associated with undertaking correct storage of plant material. The contractor shall operate a method of “just in time” plant deliveries to minimise plant storage on site available Manganese not exceeding 35ppm. The product shall have been tested in accordance with the requirements of BS4790:1987 for fire resistance.

2.3 Tree support method

Trees can be staked singly (oblique stake to SW side), or with triple stakes or 2 stakes to SW side or with wooden ground anchors as below.

In general, for all Feathered and Nursery Stock (up to 12-14cm girth bareroot stock) a single short stake method should be employed. Position stake close to tree on windward side and drive vertically at least 300mm into bottom of pit before planting. Consolidate material around stake during backfilling. Cut stake to approximately 600mm above ground level. Secure tree firmly but not rigidly to the stake with: Biodegradable tree tie or Hessian strip (obtainable from upholstery suppliers).

Double Staked Method



Once the ground has been cleared and the basin areas formed, drainage installed, and planting undertaken these low areas where water will collect will need to be stone mulched with an inert gravel of 10 20mm diameter with a minimum depth of 100mm around plants to control weed germination. A high density of plants will help to form dense root systems maintaining infiltration capacity and surface porosity. Whereas plants selected have been chosen for the specific areas the planting scheme and numbers of plants are indicative and any further site-specific information from soil studies should be used to determine species as appropriate. A wide range of species helps to increase the chance of success of the scheme and will enable self-selection of the species within the planted areas with more drought tolerant species able to replace those that prefer wetter conditions. Plants will be subject to availability and planting numbers may vary depending on sizes and species chosen.

The planting of shrubs on the drier margins and banks will be less dependent on the resulting water levels that occur in the basin areas, and these can be planted at the same time as the seed mix is spread. It may be

appropriate to delay planting the basin areas after a season to observe and check on the conditions over a year to ensure plants are suitable for the conditions that prevail.

2.4 Rain Garden and Planter Bio-Retention Area

Once the ground has been cleared and the basin areas formed, drainage installed, and planting undertaken these low areas where water will collect will need to be stone mulched with an inert gravel of 10 20mm diameter with a minimum depth of 100mm around plants to control weed germination. A high density of plants will help to form dense root systems maintaining infiltration capacity and surface porosity. Whereas plants selected have been chosen for the specific areas the planting scheme and numbers of plants are indicative and any further site-specific information from soil studies should be used to determine species as appropriate. A wide range of species helps to increase the chance of success of the scheme and will enable self-selection of the species within the planted areas with more drought tolerant species able to replace those that prefer wetter conditions. Plants will be subject to availability and planting numbers may vary depending on sizes and species chosen.

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2.5 Plug planting



2.6 Plants Selection for the Rain garden and Planters

Rain garden plants need to tolerate both wet and dry conditions. This is because rain gardens experience alternate flooding (following a large rainstorm) and drought (during periods of low rainfall). Any combination of flowers, shrubs, grasses or ferns that meet these criteria will do well in a rain garden. Native plants are always recommended for rain gardens because they are well suited to local growing conditions and support local wildlife including birds and butterflies.

There aren't many hard-and-fast rules for how to plant your rain garden, but these are the salient points tips adapted from "*Bray et al's Rain Garden Guide*".

- The rain garden should be planted with a wide range of species, ideally between six and 10 species planted in two to three clumps per square metre.
- Plant the RG garden with nursery-grown vegetation, ideally with one- or two-year-old plants that have developed root systems.
- Avoid species that cannot withstand occasional flooding or that suffer from root rot. Examples would be plants such as Lavender and Azalea.

The following is a list of native wild plants for rain gardens, identified based on the light conditions they grow well in.

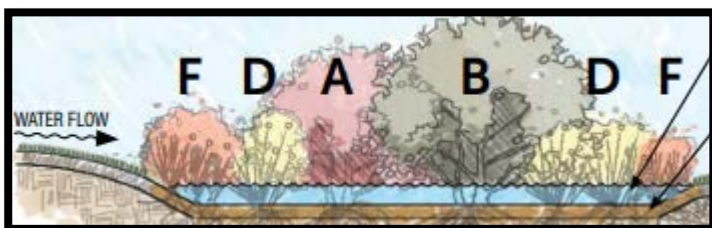
2.6.1 Flowering herbaceous plants

- wild columbine (*Aquilegia canadensis*) – sun, partial sun
- butterfly weed (*Asclepias tuberosa*) – sun
- white turtlehead (*Chelone glabra*) – sun, partial sun, shade
- showy tick-trefoil (*Desmodium canadense*) – sun, partial sun
- spotted Joe-pye weed (*Eupatorium maculatum*) – sun, partial sun
- oxeye sunflower (*Heliopsis helianthoides*) – sun
- wild bergamot (*Monarda fistulosa*) – sun, partial sun
- black-eyed Susan (*Rudbeckia hirta*) – sun, partial sun
- New England aster (*Symphyotrichum novae-angliae*) – sun, partial sun
- swamp milkweed (*Asclepias incarnata*) – sun, partial sun

2.6.2 Shrubs

- red-osier dogwood (*Cornus sericea*) – sun, partial sun
- eastern ninebark (*Physocarpus opulifolius*) – sun, partial sun
- nannyberry (*Viburnum lentago*) – sun
- common elderberry (*Sambucus canadensis*) – sun, partial sun

Proposed Plant list for Planters and Rain Gardens in Shade/Part Shade





2.7 Bio -Retention Area

Grasses

Bio retention area to be sown with Emoorgate Meadow mix EM4@234m2@4g/m2

2.8 Plant Selection for Raised Planters.

The raised planters are a retrofit system with consists of an above ground box system (that can be prefabricated),to manage the runoff from the adjacent roofs, with a specified soil mix and an underdrain to collect the filtered water (Ref Detail Drg No :14697:C 502-D)

- Pieris japonica “Little Heath”
- Sarcococca hookeriana var.humillis
- Dwarf rhododendrons
- Nandina domestica “Fire Power”
- Euonymus
- Dwarf conifers
- Hebe
- Mahonia “Soft Caress”
- Daphne
- Leucothoe.