

Date: 5th November 2021

Castleoak Care Developments Limited – BIODIVERSITY NET GAIN ASSESSMENT

RPS was commissioned by Castleoak Care Developments Limited, to undertake an assessment of Biodiversity Net Gain (BNG), of the proposed new retirement community, along with associated hard and soft landscaping.

Biodiversity Net Gain Definition and Methods

Biodiversity Net Gain is defined in Baker *et al* (2019)¹ as:

"Development that leaves biodiversity in a better state than before"

The requirement for developments to seek to achieve BNG arises from the National Planning Policy Framework (NPPF), which states in Para. 170 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."

There is no single set method for quantifying the assessment of BNG, but one method is the use of biodiversity calculators to assess the biodiversity value of habitats pre- and post-development based on habitat type, distinctiveness and condition.

A biodiversity index is derived for the baseline and for the proposed development, and BNG is considered to be achieved where an increase in value is delivered (on or offsite), and where habitats of a higher value are not replaced exclusively with habitats of a lower value.

Defra made available its beta test update of its BNG assessment tool in December 2019, which was subsequently updated in July 2021 (to version 3).

This tool has been used for the assessment in this report. The tool and associated documents were downloaded from <http://nepubprod.appspot.com/publication/6049804846366720>

Biodiversity Net Gain Assessment

The baseline for assessment of BNG used the Phase 1 Habitat Survey for the site produced as part of the original Preliminary Ecological Appraisal (RPS, 2019). This report identified that the site comprises a number of habitats including semi-improved neutral grassland, amenity grassland, ruderal vegetation hardstanding and buildings.

The extent, distinctiveness and condition of the baseline habitats present on site is provided in the BNG excel spreadsheet, attached to this assessment.

Description of pre-development habitats

The application site covers an area of 5.8 ha in size and comprised semi-improved neutral grassland, amenity grassland, ruderal vegetation, scattered trees, hardstanding and buildings. Beyond this, the wider site environs are a mosaic of rural habitat and the town of St Albans.

r, J., Hoskins, R. & Butterworth, T. (2019). *Biodiversity Net Gain – good practice principles for development*. Ciria, London.

All of the pre-development habitats have been allocated a habitat condition, in line with the Natural England guidance (July 2021). A summary of the habitats and their conditions have been provided, below.

An illustrative figure of these habitats (and their areas) is presented in Figure 1 (pre-development habitats).

Buildings and hardstanding

There were a number of buildings present on site. There are two large corrugated asbestos sheds which were extensively used until recently, one as a chemical store. There are also two large derelict greenhouses, a wooden shed and a portacabin on site. By default, these habitats are not given a distinctiveness, nor condition.

Amenity grassland

Small areas of amenity grassland were present on site, these were generally associated with the highway verges where the new junction is proposed. The gardens were short mown and appeared to be in a poor condition with patches of bare ground. As the grass was frequently short mown, it would most comfortably fit the poor habitat condition type following Natural England technical guidance.

Ruderal vegetation

A patch of tall ruderals exists within the centre of the grassy field and is made up of nettles, docks and ragwort. It would most comfortably fit the fairly poor habitat condition type following Natural England technical guidance.

Neutral grassland

The eastern half of the site comprises an unmanaged field of long, tussocky semi-improved grassland. The field was previously heavily fertilised but at the time of the survey appeared to be disused. Species present included perennial rye-grass *Lolium perenne*, false oat grass *Arrhenatherum elatius* and fescue *Festuca sp.*, with other species including common vetch *Vicia sativa*, dock *Rumex sp.*, brambles *Rubus sp.*, white clover *Trifolium repens*, meadow vetchling *Lathyrus pratensis*, dandelion, cocks foot *Dactylis glomerata*, red clover *Trifolium pratense*, tall fescue *Festuca arundinacea*, oak *Quercus* saplings, Yorkshire-fog *Holcus lanatus*, ragwort *Jacobaea vulgaris* and daisy *Bellis perennis*. Given several undesirable species are present within the habitat (dock and white clover) it would most comfortably fit in the 'moderate' condition type.

Species-poor hedgerow

A hedgerow is present along part of the north-western boundary. The hedgerow appears to be planted and consist predominantly of laurel *Laurus sp.*. A small number of trees are also present including ash *Fraxinus Excelsior* trees.

Ditch

A ditch is present in the eastern corner of the site. The ditch is approximately 2-3m wide and is overgrown with bramble scrub, willowherb species and ivy *Hedera helix*. The ditch has steep banks and was holding water approximately 5cm deep at the time of survey. This feature is to be retained in the proposed plans.

Scattered Trees

Five coniferous trees were present within the development site, covering an area of 0.02 ha, using the 'Urban Tree Helper' within the Defra metric and would most comfortably fit the moderate habitat condition type following Natural England technical guidance.

Description of proposed habitats *on-site* with biodiversity benefits and outline management

Of the 5.8 ha covered by the site, it is anticipated that circa 3.6 ha will comprise hardstanding and buildings (i.e., developed land with a sealed surface); with the remaining comprising amenity grassland, sustainable urban draining features (SUDs), introduced shrubs, meadow grassland, species-rich grassland, scattered trees and woodland planting. 0.22 ha will comprise amenity grassland whilst the remainder of the site will be set aside for biodiversity.

Meadow grassland

The grassland will comprise Emorsgate EM4 mix -Meadow mix for clay soils. All wildflower mixes will be managed via annual mowing to no less than 15 cm height, in late summer, once flowers have set seed. All arisings will be removed offsite. The meadow grassland will provide habitat for birds, invertebrates, reptiles and amphibians.

Species-rich grassland

The grassland will comprise Wildflower turf Rich 26 mix or similar. All wildflower mixes will be managed via annual mowing to no less than 15 cm height, in late summer, once flowers have set seed. All arisings will be removed offsite. The meadow grassland will provide habitat for birds, invertebrates, reptiles and amphibians.

Sustainable urban draining feature

0.27 ha of swale and attenuation areas combined with marginal planting will provide a good habitat feature, this will be of particular benefit to mobile wildlife such as birds, bats and invertebrates, and will provide a significant enhancement over the situation that is currently present (a semi-improved grassland field). The grassland will comprise Emorsgate EM8 Meadow grass mixture for wet soils and further planting will include greater pond sedge *Carex riparia*, flag iris *Iris pseudacorus*, marsh marigold *Caltha palustris*, soft rush *Juncus effusus* and bulrush *Typha latifolia*.

Woodland and woodland edge planting

The native woodland and shrub planting will provide flowers and fruit/berries/seeds, as but also cover for a variety of species. Opportunities will include roosting/foraging for bats and birds. Species will comprise of dogwood *Cornus sp.*, hazel *Corylus avellana*, wayfinding tree *Viburnum lantana*, wood spurge *Euphorbia amygdaloides Robbiae*, wood anemone *Anemone nemerosa*, primula *Primula vulgaris* and bluebell *Hyacinthoides non scripta*.

Introduced shrubs

Further planting will be provided in raised beds, along the road edges, within the residential gardens, within the car park to provide amenity value and flowers and fruit/berries/seeds for a variety of species and nesting opportunities for breeding birds.

Native species-rich hedgerow

Hedgerow planting will be provided within the proposed development plans comprising of holly *Ilex aquifolium*, field maple *Acer campestre*, guelder rose *Viburnum opulus*, hawthorn *Crataegus monogyna*, hazel *Corylus avellana* and Dog rose *Rosa canina*. These hedgerows will provide amenity value and flowers and fruit/berries/seeds for a variety of species and nesting opportunities for breeding birds

Ornamental hedgerow

Formal hedgerows will be planted around the car parks and residential gardens and will comprise of hornbeam *Carpinus betulus* and burkwood osmanthus *Osmanthus burkwoodii* retrospectively, providing suitable nesting habitat for breeding birds.

Scattered Trees

New tree planting will be included around the site and will provide flowers and fruit/berries/seeds and opportunities will include roosting/foraging for bats and birds. Species will comprise swamp Spanish oak *Quercus palustris*, northern red oak *Quercus rubra*, wild cherry *Prunus avium*, small leaved lime *Tilia cordata* 'Green Spire', Rowan *Sorbus aucuparia*, field maple *Acer campestre* 'Elsrijk', European hornbeam *Carpinus betulus*, Erman's birch *Betula ermanii*, scot's pine *Pinus sylvestris*, crabapple tree *Malus evereste*, Tibetan Cherry *Prunus serrula* and east Asian cherry *Prunus accolade*.

Summary

The site, pre-development comprised a number of low-moderate quality habitats, namely the semi-improved neutral grassland, amenity grassland, ruderal vegetation hardstanding and buildings. Considering all of the above, the pre-development score for the site is calculated to be **4.61** biodiversity habitat units and **0.09** biodiversity hedgerow units.

The post-development plans for the site include the planting of higher quality habitat (i.e. – SUDs, meadow grassland, species-rich grassland, scattered trees and woodland planting), which accounts for the majority of the post development score.

In line with the BNG Metric V3.0, the overall score for the site is a gain of **137.12%** of the pre-development habitat score and **7616.25%** of the pre-development hedgerow score.

It is recommended that a Landscape and Ecological Management Plan (LEMP), be conditioned as part of the planning approval, to cover not only the habitat creation, but also the ongoing management of the habitats for biodiversity. The LEMP should cover a 25–30-year period.

Do let me know if you require any further information.

Yours sincerely,
for RPS Consulting Services Ltd



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Our ref: Castleoak Care Developments Limited



Figure 1 – Pre-development Plans



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- Application boundary
- Phase 1 habitat - polygon features**
- Habitat code**
- Hard standing
- A A A Amentiy grassland
- Buildings
- Neutral grassland - semi-improved
- Tall ruderal
- Phase 1 habitat - line features**
- Dry ditch
- Fence
- Hedge with trees - species-poor
- Phase 1 habitat - point features**
- Scattered tree - coniferous
- ⊙ Target notes

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Rev	Description	By	CB	Date

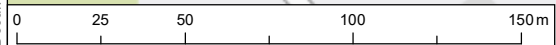
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Client **CastleOak Care Developments Ltd**
 Project **Burston Garden Centre**
 Title **Phase 1 habitat map**

Status **Draft** Drawn By **RN** PM/Checked By **HK**
 Project Number **ECO00892** Scale @ A3 **1:2,250** Date Created **19/09/19**
 Figure Number **1** Rev **-**

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Document: Z:\Current Projects\B ECO00892 Burston Garden Centre\Tech\Drawings\ECO00892_fig3.3_phase1_01.mxd



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Figure 2 – Post-development Plans



- | | |
|--|--|
| <ul style="list-style-type: none"> H1 - Mixed Native Hedge 1800mm high
1000m² H2 - Mixed Native Hedge 1100mm high
220m² H3 - Formal Hedge to Carpark 1100mm high
592m² H4 - Formal Hedge to garden/boundary 1100mm high
237m² G1 - Amenity Grass
1400m² G2 - Species Rich Turf
1110m² G3 - Wildflower and grass meadow
1030m² G4 - hard wearing turf for reinforced grass
474m² G5 - Wet meadows for swales and attenuation areas
2382m² | <ul style="list-style-type: none"> Planting Mix 1 Raised beds to private patios
374m² Planting Mix 2 Road Edges
966m² Planting Mix 3 Defensible planting to Burston Lane
376m² Planting Mix 4 Residential gardens to care home
347m² Planting Mix 5 Eastern car parks and cottages
452m² Planting Mix 6 Productive gardens
110m² Planting Mix 7 Raised Beds - care home
30m² Planting Mix 8 Woodland understorey to boundaries
256m² Planting Mix 9 Ornamental garden
184m² Planting Mix 10 Marginal plants to swales and attenuation basins
621m² |
|--|--|

The contractor is responsible for checking dimensions, tolerances and references. Any discrepancy to be verified with the Architect before proceeding with the works. Where an item is covered by drawings at different scales the larger scale drawing is to be worked to.
Do not scale drawing. Figured dimensions to be worked to in all cases.

Where products have been specified, PRP have reviewed applicable products available in the UK at the time of writing the specifications, from which products named in the specification have been selected. Where the contractor wishes to propose alternative products, representative samples and a full technical appraisal should be submitted by the contractor to the employer demonstrating that their proposed alternative has equal or better performance. Any alternative products are subject to design team, building control, warranty provider and employer acceptance.

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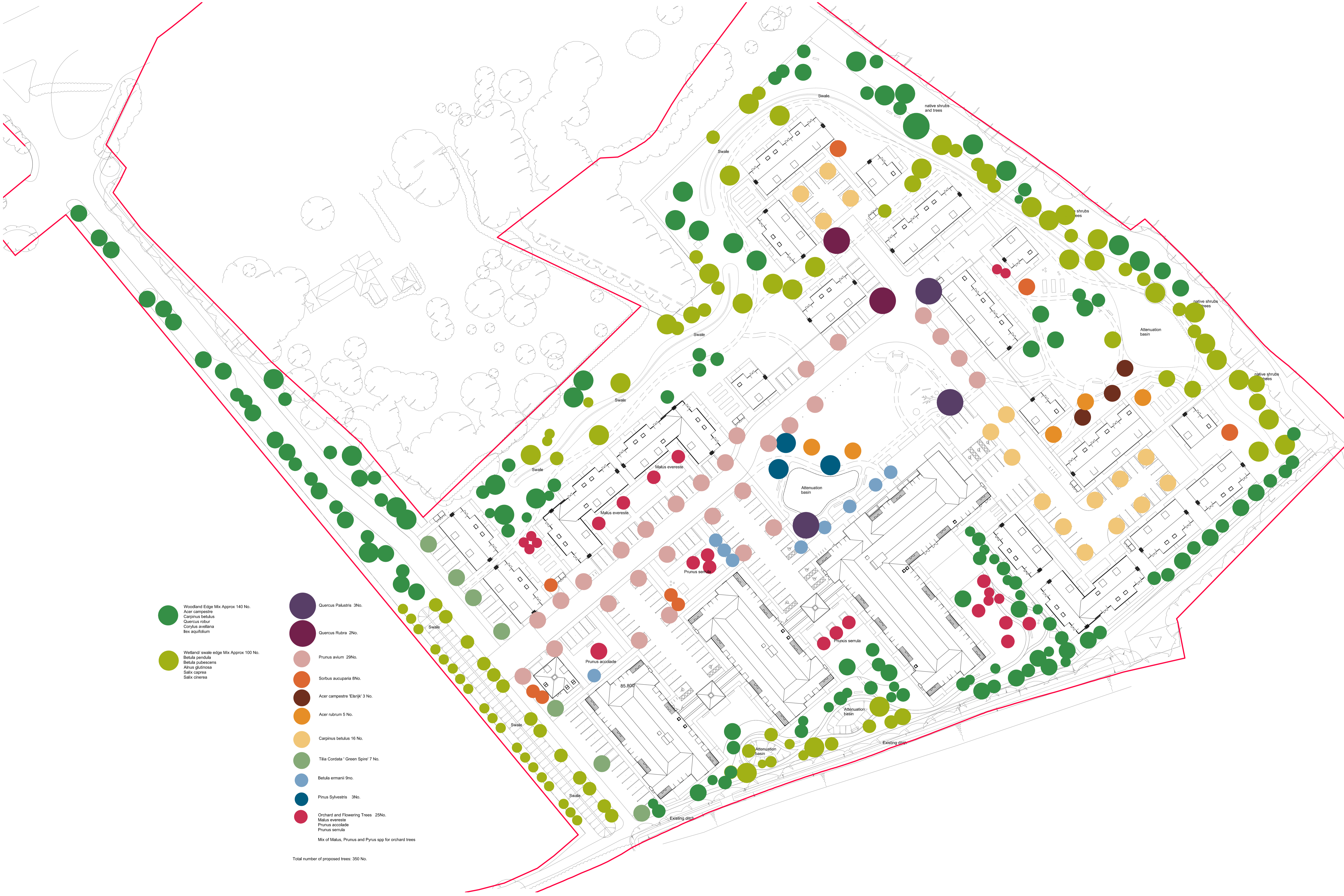
Rev	Date	Description
A	28/10/2021	Issued for information
B	09/11/2021	Existing ditch added to drawing

Dwn	Ckd	Drawn	MY
MY	HS		
MY	HS		
MY	HS		

Checked HS
Date 28/10/2021
Scale @ A1 1:500

Burston Garden Retirement Village 0653-00-SL-PL-L-G7-019
Planting Strategy
REV B
FOR INFORMATION

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- Woodland Edge Mix Approx 140 No.
Acer campestre
Carpinus betulus
Quercus robur
Corylus avellana
Ilex aquifolium
- Wetland/ swale edge Mix Approx 100 No.
Betula pendula
Betula pubescens
Alnus glutinosa
Salix caprea
Salix cinerea
- Quercus Palustris 3No.
- Quercus Rubra 2No.
- Prunus avium 29No.
- Sorbus aucuparia 8No.
- Acer campestre 'Elsrijk' 3 No.
- Acer rubrum 5 No.
- Carpinus betulus 16 No.
- Tilia Cordata 'Green Spire' 7 No.
- Betula ermanii 9no.
- Pinus Sylvestris 2No.
- Orchard and Flowering Trees 25No.
Malus evereste
Prunus avocoidae
Prunus serrula
Mix of Malus, Prunus and Pyrus spp for orchard trees

Total number of proposed trees: 350 No.

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B	02/11/2021	Existing ditch added to drawing

Dwn	Ckd	Drawn	MY
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MY	HS	MY	HS
MY	HS	MY	HS

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Burston Garden Retirement Village 0653-00-SL-PL-L-G7-020
Tree Planting Strategy
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