Six 56 Warrington

10682_R04b_Biodiversity Net Gain Summary

1.0 Introduction

1.1 This note has been prepared by Tyler Grange Group Ltd on behalf of Langtree PP and Panattoni. It sets out the results of a Biodiversity Net Gain calculation for a parcel of land to the south of Grappenhall Lane, Grappenhall (approximate site centroid SJ 656 845). An outline planning application has been submitted to Warrington Borough Council (WBC) for warehouse development and associated infrastructure, which is referred to as 'Six 56 Warrington'.

1.2 The National Planning Policy Framework (NPPF), published February 2019, states that planning and decisions should contribute to and enhance the natural environment by, amongst others, "*identifying and pursuing opportunities for securing measurable net gains for biodiversity*".

1.3 Policy QE5 of WBC Local Plan Core Strategy (adopted 2014) requires that measures are implemented to "*ensure the protection and enhancement of the site's nature conservation interest and/or to provide appropriate compensatory measures.*" However, there is currently no policy requirement for biodiversity net gain.

1.4 Policy DC4 of the Proposed Submission Version Local Plan (March 2019, unadopted) states that, "*The Council will work with partners to protect and where possible secure a net gain for biodiversity across the Plan area",* and that this will be guided by the principles of the NPPF. Also that development proposals which affect features of ecological importance, "*should be accompanied by information proportionate to their nature conservation value including…proposals for compensating for features damaged or destroyed during the development process, including mitigation through off-site habitat creation to achieve a net gain in biodiversity/geodiversity assessed against the DEFRA metric."*

1.5 Comments received from Suzanne Waymont of Greater Manchester Ecology Unit (GMEU) in March 2020, via the WBC planning officer Alison Gough, included that the Defra metric be used to provide the baseline position and to ultimately demonstrate that there would be no net loss in biodiversity value within the site as a result of development.

1.6 Following this request, Tyler Grange used baseline data and the illustrative landscape design to undertake an initial metric calculation, as described below.

2.0 Methodology

2.1 The DEFRA Biodiversity Metric 2.0 (JP029) was published on the 29th July 2019[1]. This calculator is used to "*measure and account for biodiversity losses and gains resulting from development*". The calculator requires baseline data as well as information on habitats lost and created in order to calculate the total number of biodiversity 'units' on site.

[1] http://publications.naturalengland.org.uk/publication/5850908674228224

2.2 The calculator automatically assigns distinctiveness scores to each habitat, and the user inputs scores for condition, ecological connectivity, strategic significance and total area (in hectares), as per the associated DEFRA guidance.

2.3 Baseline: an extended Phase I habitat survey of the site was undertaken by Tyler Grange in 2017 and updated in February 2020. The data from these surveys was used to determine the area and type of habitats currently on site (the 'baseline'). This data was then transposed into UK Habs[2] classifications for use within the metric (see **Plan 10682/P01b**).

2.4 Retained / replacement habitats: the Landscape General Arrangement (ref. 133-LYR-XX-XX-DWG-L-1000-06) and accompanying planting schedule was used in combination with the baseline data, to calculate the areas and type of retained and replacement habitats on site post-development. See **Appendix 1.**

2.5 Existing habitats on site are given condition scores between poor and moderate based on DEFRA guidance and professional judgement. No condition score is required for developed land/sealed surface or cropland.

2.6 For the purpose of these calculations, it is assumed that all baseline and post-development habitats that are of high distinctiveness are also of 'medium' ecological connectivity and all other habitats are of 'low' ecological connectivity as suggested in the DEFRA guidance. No connectivity score is required for developed land/hardstanding.

2.7 None of the land within or adjacent to the development site is identified as having strategic significance in local planning policy, therefore a 'low' strategic significance is assumed for all habitats both baseline and post-development.

2.8 Baseline habitats on site including woodland, grassland, ponds, ditches and hedgerow will be enhanced to either improve their condition or create a more distinctive habitat (i.e. native hedgerow to native species-rich hedgerow) through supplementary planting and habitat management. Retained improved grassland within the proposed ecological mitigation area and around the Scheduled Ancient Moment (SAM) will be enhanced via a combination of planting/sowing of more species-rich meadow mixes and low intensity management to enhance the condition of the improved / modified grassland from poor to moderate/good. It is considered that this is a more suitable approach for the retained grassland on site which has been intensively farmed and cattle-grazed for many years, rather than creation / enhancement to neutral grassland.

2.9 Other post-development enhancement of baseline habitats includes:

- Broadleaved Woodland *(Woodland and forest – Other woodland; broadleaved)* – enhancement to moderate condition;
- Rough meadow (Grassland - modified grassland) – enhancement to moderate condition;
- Ponds (Lakes - ponds; non-priority habitat) – enhancement to good condition;
- Ditches (Lakes – ditches) – enhancement to moderate condition; and
- Hedgerow (*Native species-rich hedgerow*) – enhancement to good condition (from moderate condition native hedgerow).

[2] UK Habitat Classification Working Group (2018) *UK Habitat Classification – Habitat Definitions V1.0*

2.10 Post-development habitats within the proposed ecological mitigation area also includes scattered scrub planting for the benefit of great crested newts (enhancement from modified grassland). For the purposed of these calculations it has been assumed that scrub will cover 25% of the area of 5 ha of land available (i.e. 1.25 ha).

2.11 Post-development creation of habitats shown on the Landscape General Arrangement include (*allocated DEFRA metric habitat type in parentheses*):

- Trees (Urban – Street tree) – moderate condition;
- Native ground cover (Heathland and shrub - mixed scrub) – good condition;
- Dense and Scattered Scrub (Heathland and shrub - mixed scrub) – good condition;
- Rough meadow (Grassland - modified grassland) – moderate condition;
- Wildflower meadow (Grassland - modified grassland) – moderate condition;
- Permanent Ponds (Lakes - ponds; non-priority habitat) – moderate condition;
- Attenuation ponds (SUDs) – moderate condition; and
- Hedgerow (*Native species-rich hedgerow*) – good condition.

2.12 The Urban Street Tree habitat type and 'Street Tree Helper' tool was used to calculate post-development scattered tree planting (based on a total number of new trees of 4,655) as no other more suitable habitat classification is available within the calculator.

2.13 New planting to create new, and enhance existing habitats comprise a range of native species appropriate to the site and habitat type. Further information on the proposed planting specification and species mixes is detailed on the planting schedule which accompanies the Landscape general arrangement plan (see **Appendix 1**).

2.14 An Ecological Management Plan (EcMP) will be prepared at the detailed planning stage to specify management practices to maintain and enhance the condition of created, retained and enhanced habitats over a minimum period of 10 years. To enhance retained habitats (woodland, grassland, ponds), these will include, but not be limited to:

- Selective thinning of woodland canopy to encourage a more diverse age structure;
- Phased removal of Rhododendron from woodland understorey and re-planting of native species;
- Cessation of grazing and relaxed cutting regime of grassland habitat; and
- Measures such as removal of fish, re-profiling of banks or sensitive removal of over-shading branches to enhance existing pond habitat.

2.15 Biodiversity units: the information above was then inputted into the Defra 2.0 metric, to determine the number of biodiversity units at baseline and at post-development (i.e. a combined score for based on habitat retention, creation and enhancement). The calculator then uses all these data to produce the total net unit and percentage change.

3.0 Results

3.1 The areas of habitats and corresponding biodiversity unit value on site at 'baseline' and at post-development are provided in **Table 1** and **Table 2**, below.

Table 1. Areas of retained, lost and newly created habitats on site.

Phase I Habitat Type *(DEFRA metric category)*	**Baseline area (ha)**	**Area Retained (ha)**	**Area Lost (ha)**	**Area Enhanced (ha)**	**Area Created (ha)**
Buildings and Hardstanding *(Urban - developed Land)*	5.88	0.06	5.82	0	59.97
Ponds *(Lakes - ponds; non-priority habitat)*	0.80	0	0.46	0.34	1.14
Broadleaved Plantation *(Woodland and forest - other woodland; broadleaved)*	0.24	0	0.24	0	0
Dense Scrub *(Heathland and shrub - mixed scrub)*	0.22	0	0.22	0	11.64
Semi-natural Broadleaved Woodland *(Woodland and forest - other woodland; broadleaved)*	3.62	0	0	3.62	0
Introduced Shrubs *(Urban - introduced shrub)*	0.13	0	0.13	0	0
Tall Ruderals *(Grassland - tall herb communities)*	0.07	0	0.07	0	0
Amenity Grassland *(Urban – amenity grassland)*	0.39	0	0.39	0	0
Improved Grassland *(Grassland – modified grassland)*	66.21	0	58.02	8.19[#]	10.97
Arable *(Cropland – cereal crops)*	20.18	0	20.18	0	0
Ditches (Lakes – ditches)	0.1	0	0	0.1	0
Attenuation Features *(Urban – SUDS feature)*	-	-	-	-	1.81
Scattered Trees *(Urban – Street Tree)**					2.1*
Totals	**97.84**	**0.06**	**85.53**	**12.25**	**85.53**

**Area calculated using 'Street Tree Helper' tool, does not count towards total area.*
[#]Including 1.25 ha enhanced to Mixed Scrub within Ecological Mitigation Area.

Table 2. Habitat units at baseline and at post-development.

Habitat Type (DEFRA metric category)	**Baseline units**	**Units Retained**	**Units Lost**	**Units Enhanced***	**Units Created**
Buildings and Hardstanding *(Urban - developed Land)*	0	0	0	0	0
Ponds *(Lakes - ponds; non-priority habitat)*	7.92	0	4.55	3.02	2.49
Broadleaved Plantation *(woodland and forest - other woodland; broadleaved)*	0.96	0	0.96	0	0
Dense Scrub *(heathland and shrub - mixed scrub)*	1.32	0	1.32	0	108.85
Semi-natural Broadleaved Woodland *(woodland and*	21.72	0	0	2.84	0

forest - other woodland; broadleaved)					
Introduced Shrubs *(Urban - introduced shrub)*	0.26	0	0.26	0	0
Tall Ruderals *(Grassland - tall herb communities)*	0.92	0	0.92	0	0
Amenity Grassland *(Urban – amenity grassland)*	0.78	0	0.78	0	0
Improved Grassland *(Grassland –modified grassland)*	132.42	0	116.04	19.46[#]	30.73
Arable *(Cropland – Cereal crops)*	40.36	0	40.36	0	0
Ditches (Lakes – Ditches)	0.4	0	0	0.22	0
Attenuation Features *(Urban – SUDS feature)*	-	-	-	-	4.36
Permanent Ponds *(Lakes – ponds; non-priority habitat)*	-	-	-	-	11.74
Scattered Trees *(Urban – Street Tree)*					3.21
Totals	**207.06**	**0**	**165.19**	**25.54**	**161.38**
*Net total of additional units = (Units delivered through enhancement) minus (Habitat baseline unit value). [#]Including 9.74 units of poor condition Modified Grassland enhanced to Mixed Scrub within Ecological Mitigation Area.					

3.2 The length of hedgerows (and other linear features) and corresponding biodiversity unit value on site at 'baseline' and at post-development are provided in **Table 3** and **Table 4**, below.

Table 3. Length of retained, lost and newly created hedgerows on site.

Hedgerow Type (DEFRA metric category)	**Baseline length (km)**	**Length Retained (km)**	**Length Lost (km)**	**Length Enhanced (km)**	**Length Created (km)**
Line of Trees *(Line of trees)*	0.54	0.54	0	0	0
Species-rich Hedgerow along Bradley Book (*Native species rich hedgerow – associated with bank or ditch)*	1.39	1.39	0	0	0
Species-rich Hedgerow *(Native species rich hedgerow)*	0.62	0.62	0	0	2.61
Species-poor Hedgerow *(Native hedgerow)*	6.04	0	4.4	1.64[#]	0
Totals	**8.59**	**2.55**	**4.4**	**1.64**	**2.61**
[#]Length of Native Hedgerow 'enhanced' to Native Species-rich Hedgerow.					

Table 4. Hedgerow biodiversity units at baseline and at post-development.

Habitat Type (DEFRA metric category)	Baseline units	Units Retained	Units Lost	Units Enhanced*	Units Created
Line of Trees *(Line of trees)*	2.16	2.16	0	0	0
Species-rich Hedgerow along Bradley Book (*Native species rich hedgerow – associated with bank or ditch)*	18.35	18.35	0	0	0
Species-rich Hedgerow *(Native species rich hedgerow)*	4.96	4.96	0	0	14.70
Species-poor Hedgerow *(Native hedgerow)*	24.16	0	17.6	6.56[#]	0
Totals	**49.63**	**25.47**	**17.6**	**6.56**	**14.70**
*Net total of additional units = (Units delivered through enhancement) minus (Baseline unit value) [#]Units of Native Hedgerow 'enhanced' to Native Species-rich Hedgerow.					

3.3 A summary of the overall outcome of the biodiversity net gain calculations for habitats and hedgerow is provided in **Table 5, based on the following calculation:**

= [**Baseline value**] – [**Units Lost**] + [**Units Enhanced (net)**] **+** [**Units Created**]

Table 5. Biodiversity Net Gain Summary Table

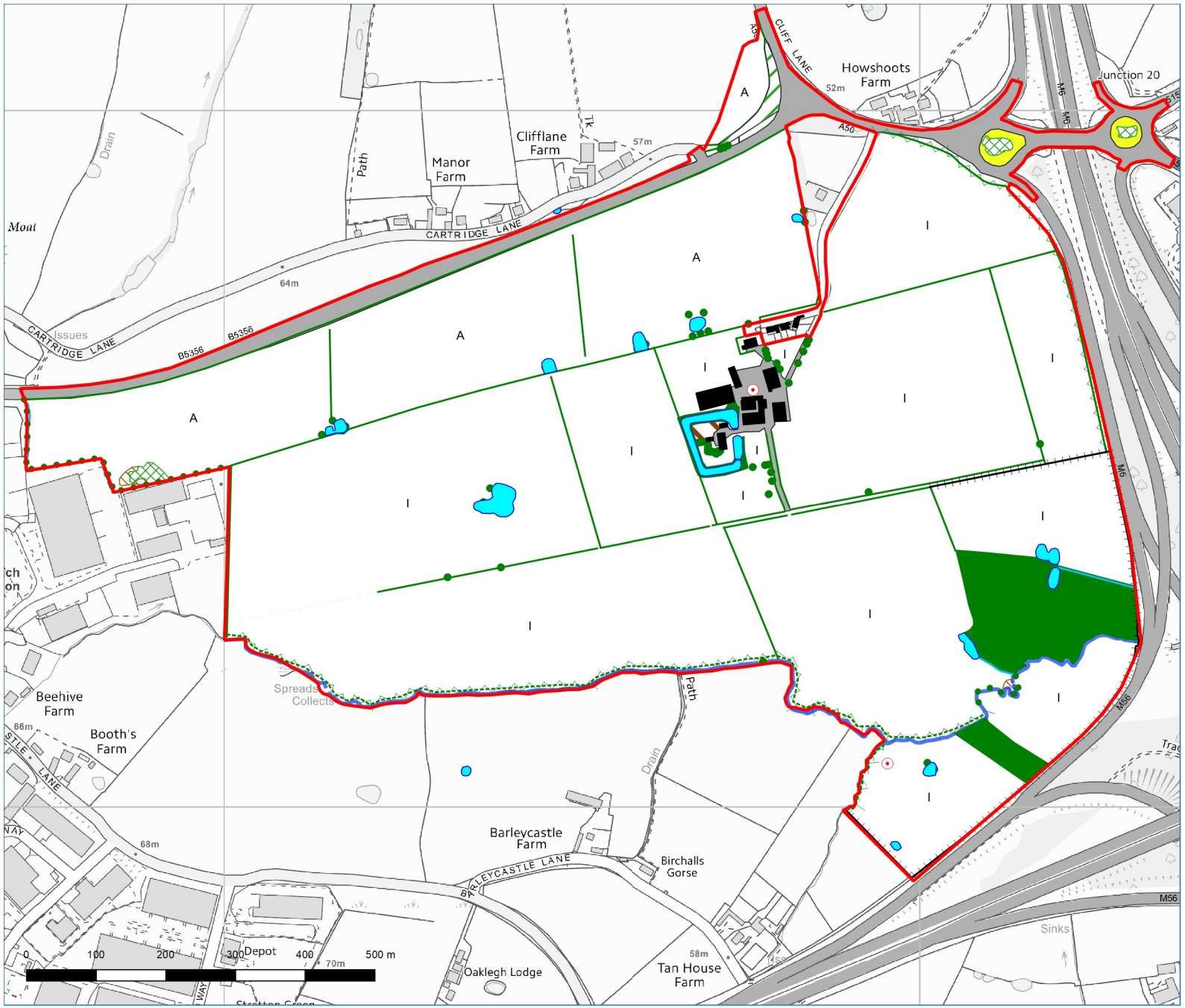
	Habitats	Hedgerows
Baseline value	207.06	49.63
Post-development value	228.79	52.88
Unit change	+21.73	+3.25
% change in biodiversity	**+10.49% Net Gain**	**+6.55% Net Gain**

4.0 Conclusion

4.1 The calculator demonstrates an overall net gain in biodiversity on site for area habitats of 10.49% and for hedgerows (and other linear habitats) of 6.55% which complies with the NPPF and GMEU's request for 'no net loss', along with compliance of draft Local Policy DC4.

Plan

Habitat Features
10682/P01b February 2019 JD/LJD



N

Project	Six56 Warrington
Drawing Title	**Habitat Features**
Scale	As Shown (Approximate)
Drawing No.	10682/P01b
Date	February 2019
Checked	JD/LJD

Tyler Grange
3 Jordan Street, Manchester, M15 4PY
T: 0161 236 8367 E: info@tylergrange.co.uk W: www.tylergrange.co.uk

Appendix 1: Landscape General Arrangement (ref. 133-LYR-XX-XX-DWG-L-1000-06) and Planting Schedule

NOTES:

1. DO NOT SCALE FROM THIS DRAWING. ALWAYS WORK TO NOTED DIMENSIONS.
2. ALL SETTING OUT, LEVELS AND DIMENSIONS TO BE CHECKED ON SITE PRIOR TO THE INSTALLATION OF MATERIALS AND ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE CONTRACT ADMINISTRATOR IMMEDIATELY.
3. THIS DRAWING MUST BE READ WITH THE RELEVANT SPECIFICATION DOCUMENTS AND DETAIL DRAWINGS. ANY DISCREPANCIES MUST BROUGHT TO THE ATTENTION OF THE CONTRACT ADMINISTRATOR IMMEDIATELY.
4. THIS DRAWING IS COPYRIGHT PROTECTED AND MAY NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN AUTHORITY.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

THIS DRAWING WAS PLOTTED ON:
05/05/20

REVISION HISTORY

DATE	REV	ZONE	DESCRIPTION	CHK
20/03/20	4		Updated site plan and bunding	ST
26/03/20	5		Amendment to PROW's	ST
05/05/20	6		Amended to reflect ecologist comments	ST

BOUNDARIES

PLANNING APPLICATION BOUNDARY

HARDWORKS

TARMACADAM
to road and car parking areas
Vehicular Loading

PAVEMENT TARMACADAM
to road and building areas
Pedestrian and Vehicular loadings

EXISTING TRACK / DRIVE
to be retained
Pedestrian and Vehicular loadings

VEGETATED RETAINING WALL
To engineers detial

SOFTWORKS

EXISTING TREES TO BE RETAINED
Approximate group location

PROPOSED TREE PLANTING
to landscaped areas
Refer to Planting Schedule

NATIVE GROUNDCOVER PLANTING
Refer to Planting Schedule

SCRUB PLANTING
to ecological mitigation areas
Refer to Planting Schedule

ROUGH MEADOW PLANTING
to landscaped areas
Refer to Planting Schedule

WILDFLOWER MEADOW PLANTING
Refer to Planting Schedule

HEDGEROW PLANTING
Refer to Planting Schedule

PROPOSED WATER BODY / ATTENUATION POND
Subject to engineers future detail

MISCELLANEOUS

SCHEDULED MONUMENT
0.78 ha surrounding farmhouse building
Bradley Hall Moated Site

EXISTING PUBLIC RIGHT OF WAY
Comprising of Appleton FP23 and Appleton FP28.
Route amended for Appleton FP28 to incorporate the proposed scheme
Total distance within the Site = 2,272.40m

PROPOSED ADDITION TO PROW
Addional route surrounding the Scheduled Monument, connecting to Appleton FP23 & Appleton FP28.
Total distance within the Site = 207.35m

ACCOUSTIC SCREEN
To engineers specification

ORIGINATOR
LAYER LANDSCAPE ARCHITECTURE
E hello@layer-ing.com
W www.layer-ing.com
T +44 (0)1625 523 157

CLIENT
LANGTREE PROPERTY PARTNERS

PROJECT
SIX56, WARRINGTON

DRAWING TITLE
LANDSCAPE GENERAL ARRANGEMENT

DRAWING NUMBER	REV	STATUS
133-LYR-XX-XX-DWG-L-1000	6	PLANNING

SCALE	CREATED BY	CHECKED BY
1:2500	O KINGSHOTT	S TUBGY

PLANTING PALETTE

Abr.	Species	Height (cm)	Girth / Size (cm)	Root Ball	Pot Size	Density
	CLEAR STEM & MULTI-STEM TREES					
Ap	*Acer pseudoplatanus*	450 - 500	16 - 18	-	WRB	-
Ag	*Alnus glutinosa*	450 - 500	16 - 18	-	WRB	-
Bp	*Betula pendula*	400 - 450	14 - 16	-	WRB	-
Bj	*Betula jacquemontii*	400 - 450	14 - 16	-	WRB	-
Fs'P'	*Fagus sylvatica 'Purpurea'*	400 - 450	16 - 18	-	WRB	-
Qr	*Quercus robur*	450 - 500	18 - 20	-	WRB	-
Ps	*Pinus sylvestris*	400 - 450	-	-	WRB	-
Sf	*Salix fragilis*	400 - 450	14 - 16	-	WRB	-
	HEDGEROW					
-	*Acer campestre*	150 - 175	-	*Full Pot*	15L	2/lin m
-	*Crataegus monogyna*	150 - 175	-	*Full Pot*	15L	5/lin m
-	*Corylus avellana*	150 - 175	-	*Full Pot*	15L	2/lin m
-	*Ilex aquifolium*	150 - 175	-	*Full Pot*	15L	2/lin m
-	*Prunus spinosa*	150 - 175	-	*Full Pot*	15L	2/lin m
	NATIVE PLANTING					
	Whip Planting					
Ac	*Acer campestre*	80 - 100	6 - 8	-	WRB	1/m2
Ag	*Alnus glutinosa*	80 - 100	6 - 8	-	WRB	1/m2
Bp 'W'	*Betula pendula*	80 - 100	6 - 8	-	WRB	1/m2
Co	*Corylus avellana*	60 - 80	-	-	WRB	1/m2
Cm	*Crataegus monogyna*	60 - 80	-	-	WRB	1/m2
Io	*Ilex aquifolium*	60 - 80	-	-	WRB	1/m2
Pr s	*Prunus spinosa*	60 - 80	-	-	WRB	1/m2
Rc	*Rosa canina*	60 - 80	-	-	WRB	1/m2
Sc	*Salix caprea*	80 - 100	6 - 8	-	WRB	1/m2
Su	*Salix viminalis*	80 - 100	6 - 8	-	WRB	1/m2
So	*Sorbus aucuparia*	80 - 100	6 - 8	-	WRB	1/m2
	Understorey					
-	*Corylus avellana*	60 - 80	60 - 80D	*Full Pot*	3L PG	2/m2
-	*Ilex aquifolium*	60 - 80	60 - 80D	*Full Pot*	3L PG	3/m2
-	*Prunus spinosa*	60 - 80	60 - 80D	*Full Pot*	3L PG	2/m2
-	*Viburnum opulus*	40 - 60	40 - 60D	*Full Pot*	3L PG	2/m2
	SCRUB PLANTING					
-	*Ulex europaeus*	30 - 40	30 - 40D	*Full Pot*	3L PG	3/m2
-	*Crataegus monogyna*	60 - 80	60 - 80D	*Full Pot*	3L PG	2/m2
-	*Hedera helix*	40 - 60	40 - 60D	*Full Pot*	2L PG	3/m2
-	*Prunus spinosa*	40 - 60	40 - 60D	*Full Pot*	3L PG	2/m2
-	*Sambuscus nigra*	40 - 60	40 - 60D	*Full Pot*	2L PG	2/m2
-	*Ulex europaeus*	30 - 40	30 - 40D	*Full Pot*	3L PG	3/m2
	MARGINAL / AQUATIC PLANTING					
-	*Butomus umbellatus*	-	-	*Full Pot*	3L PG	6/m2
-	*Caltha palustris*	-	-	*Full Pot*	3L PG	6/m2
-	*Ceratophyllum demersum*	-	-	*Full Pot*	3L PG	2/m2
-	*Fontinalis antipyretica*	-	-	*Full Pot*	2L PG	2/m2
-	*Iris pseudacorus*	-	-	*Full Pot*	3L PG	6/m2
-	*Juncus inflexus*	-	-	*Full Pot*	3L PG	6/m2
-	*Lythrum salicaria*	-	-	*Full Pot*	3L PG	6/m2
-	*Mentha aquatica*	-	-	*Full Pot*	3L PG	6/m2
-	*Myosotis scorpioides*	-	-	*Full Pot*	3L PG	6/m2
-	*Ranunculus flammula*	-	-	*Full Pot*	3L PG	6/m2
-	*Sparganium erectum*	-	-	*Full Pot*	3L PG	6/m2
-	*Stratiotes aloides*	-	-	*Full Pot*	3L PG	2/m2
-	*Veronica beccabunga*	-	-	*Full Pot*	3L PG	6/m2
	ROUGH MEADOW PLANTING					
-	*Pictorial Meadows - Gaudi - Annual Meadow Mix*					
	WILDFLOWER MEADOW					
-	*Pictorial Meadows - Perennial Seed Mixed (Purple Haze)*					