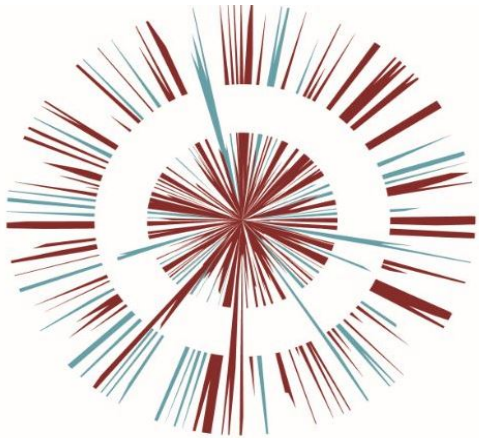




# OMEGA ZONE 8, ST HELENS

Omega St Helens Ltd / T J Morris Ltd



Landscape & Ecology Management Plan – INFRA  
INFRA DOC. 2.

Ecological Assessments

Environmental Statements (Biodiversity)

Species Surveys

Phase I Habitat Survey

National Vegetation Classification

Planning Guidance

Habitat Regulation Assessment

Protected Species Licensing

42020 CEMP: Biodiversity

BREEAM LE01 - 05


# Landscape & Ecology Management Plan (LEMP): Plot 1 - Infrastructure



**Plot 1, Omega Zone 8**  
St Helens, WA5 3UG



### REPORT STATUS

Issue/revision	Issue 1: DRAFT TO CLIENT	Issue 2: FINAL	Issue 3: AMENDED FINAL
Project No.	169-03		
Report Ref.	16903-LEMP(Infra)_A		
Date	20 <sup>th</sup> March 2020	26 <sup>th</sup> March 2020	
Prepared by	JC	AA	
Signature			
Reviewed by	AA/CLIENT		
Signature			

# INTRODUCTION

## BACKGROUND

1. The following report has been prepared on behalf of Omega Warrington Ltd and provides a Landscape & Management Plan (LEMP) for works to be undertaken at Plot 1 (Infrastructure), Omega Zone 8, St Helens ('The Site'). This document has been prepared following the British Standard 42020:20131.

### Location & Site Description

2. The Site forms part of the Omega business estate located west of Warrington, falling just within St Helens District. It is immediately south of the M62, west of Junction 8, and west of the Warrington Borough boundary and Lingley Mere at GR SJ 550905.
3. The Site is dominated by arable land with woodland belts, a network of ponds and ditches improved grassland and scrub habitat present. There is a brook along the Southern boundary of the Site from the northwest. Off-site woodland is present to the south, east and west of the Site.

### Landscaping Proposals

4. A large 8.12ha area has been set aside for habitat creation, allowing mitigation to be identified on site. These proposals will create 3.35ha woodland (including edge mix) together with 1040m of native hedgerow, the remainder set as grassland and 8 ponds & wetlands. A smaller area containing 2 ponds and associated wetland are south of Unit 1. Infrastructure other than habitat creation includes a footpath that

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<sup>1</sup> **The British Standards Institution 2013** BS 42020:2013 Biodiversity - Code of practice for planning and development. Published by BSI Standards Limited 2013. ISBN 978 0 580 77917 6

extends for the entire width of the infrastructure footprint and access arrangements to the east including a roundabout, which links to the neighbouring Omega South. The proposed works should reference the Place on Earth landscape drawings PoE\_199 drawing set.<sup>2</sup>

## DESCRIPTION OF REMAINING ECOLOGICAL FEATURES TO BE MANAGED

### Plain Plantation

5. Plain Plantation is a small, mature woodland (c.1.6 ac) dominated by sycamore (*Acer pseudoplatanus*) and pedunculate oak (*Quercus robur*), with occasional sessile oak (*Quercus petraea*). The understorey consists of mature and immature hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*) and alder (*Alnus glutinosa*) mostly at the woodland edges. However, the understory is dominated by rhododendron (*Rhododendron ponticum*) throughout the core of the woodland with sycamore saplings and hawthorn scattered throughout. A wet ditch extends through Plain Plantation from the northwest corner of the woodland to the south-western extent. A large area of hemlock water dropwort was noted beneath the scattered scrub which is present along the ditch to the north, while becoming sparser.
6. Limited bat activity was noted towards the north of the application site and near the M62, at woodland edges including Plain Plantation. Common pipistrelle and noctule bat species were observed commuting and foraging along Plain Plantations eastern extent. During the bird breeding surveys, a total of 28 species were recorded using the application site, or close to the application site boundary. Of these, at least 18 were considered to be within suitable breeding habitat and/or displayed breeding behaviour.

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<sup>2</sup> Place on Earth, 2019. Detailed Planting Plan. Document No. POE 19\_005\_INFRA DWG et seq.

## Booth's Wood LWS

7. Booth's Wood is a large, mature woodland, mostly located offsite (on-site c.0.4ha) and a Local Wildlife Site. Whittle Brook bisects the woodland along the southern Site boundary. Sycamore occurs most frequently, although a greater heterogenous structure and overall diversity than the other woodland on site was noted. Sessile oak, pedunculate oak, hawthorn, alder and ash were noted as occurring occasionally, with large leaved lime noted as rare. The understorey contains rhododendron (locally abundant), holly (*Ilex aquifolium*) and blackthorn (*Prunus spinosa*) as occasional, with elder, rowan, immature beech and hazel occurring as rare. The woodland contains undulating ground, with natural damp earth mounds containing mosses, although sparsely covering the ground. The ground flora is limited and consists of remote sedge, bramble, bracken (*Pteridium aquilifolium*), wood millet as occasional with nettle (*Urtica dioica*) and broad buckler fern (*Dryopteris dilatata*) occurring as rare. A small number of standing deadwood trees were noted along the woodland edge. A pond is situated east of Whittle Brook on the Site. It was approximately 100m<sup>2</sup> at the time of survey and heavily shaded by bankside trees and rhododendron. There was no macrophyte cover in the pond, and the water appeared largely black from a decaying heavy litter layer. Hemlock water dropwort (*Oenanthe crocata*) was noted on the western pond bank.
8. A limited amount of foraging activity was noted along the northern boundary of Booth's Wood, with only common species being noted. Increased activity was occasionally noted along Whittle Brook, and the southern edge of Booth's Wood exhibited a higher level of activity during some transect surveys. A total of 28 species were recorded using Booth's Wood LWS on the Site.

## DESCRIPTION OF ECOLOGICAL FEATURES TO BE CREATED

9. Landscape design is shown in the Pace on Earth drawing set<sup>2</sup>. The species compositions are provided on the drawings and in Appendix 1, and are shown in Figure 1.

### Woodland

10. There are 3 woodlands to be created: W1, W2 and W3, totalling 3.03ha. Each woodland is first created with whip planting + 10% feathered trees, surrounded by a native woodland mix with 10% feathered trees and each woodland area is planted up with a woodland edge mix. These are shown in Table 9 to Table 13.

### Hedgerows

11. There are 7 hedgerows to be created: H1, H2, H3, H4, H5, H6 and H7 totalling 8345m. *Crataegus* is to be the dominant species within the hedgerow and planted along full length of run with other species to be planted in random scattered groups of 3, 5 or 9no within hedgerow. Refer to Table 15.

### Ponds

12. There are 8 Ponds to be created. Each pond will be planted with DLF Pro Flora 5 Wet Loamy Soils Mix (Table 19)

### Grasslands

13. Wildflower meadow area is to be created using DLF Pro Flora 10 Seed Mix (Country Meadow with Annuals) (Table 17).
14. Wet grassland mix DLF Pro Flora 5 Seed Mix will be used to form the banks of ponds (Table 18).

## **Wildlife Boxes**

15. 17 bat boxes are to be installed in Plain Plantation (7 No.) and Booths Wood (10 No.) to include small colony Schwegler 2FN, large colony Schwegler 1FF and hibernation boxes Schwegler 1FW. No bat boxes are to be fitted within a 50m buffer zone of the motorway.
  
16. 19 bird boxes are to be installed within Plain Plantation (6 No.) and Booths wood (13 No.) to include small hole Schwegler 1B (26mm hole), large hole Schwegler 1B (32mm hole), open fronted bird boxes, starling box Schwegler 3S and owl boxes Schwegler No.5 for tawny owl and Schwegler No. 23 for barn owl. This latter is to be fitted the maximum distance from the M62.



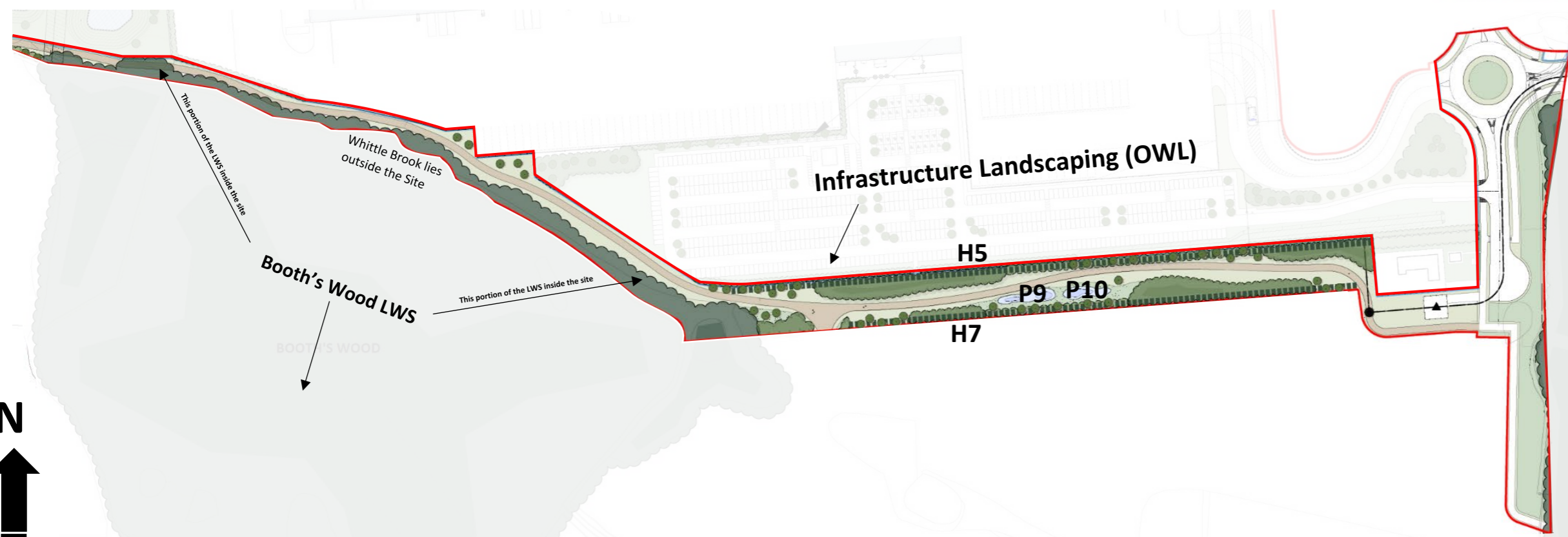
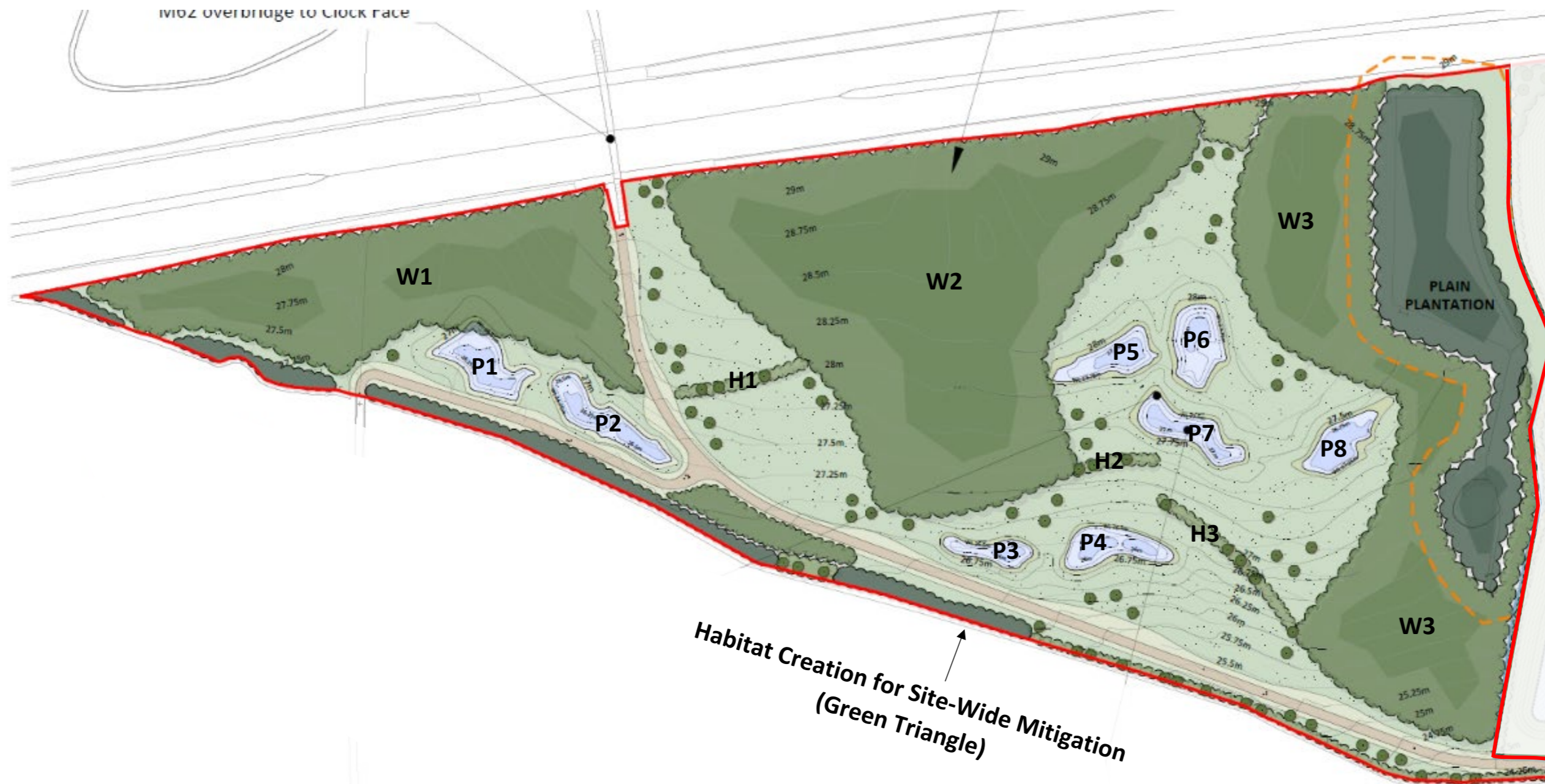
Figure 1  
**Infrastructure & Mitigation Landscaping**

Omega Zone 8, St Helens

**Legend**

Refer to Place on Earth drawing set POE\_199

**PlaceOnEarth**  
 landscape design



Drawings are diagrammatic and not to scale. Refer to architect drawings for exact measurements



Drawing No.: 16903-03LEMP\_A

Revision Dates			
A	B	C	D
21/03/20			

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# LANDSCAPE & ECOLOGY MANAGEMENT

## ECOLOGICAL TRENDS

17. St Helens supports the North Merseyside Biodiversity Action Plan (NMBAP)<sup>3</sup> which identifies the priorities for biodiversity locally to the Site and wider area. Table highlights those relative to the Site.

**Table 1: Habitats and species from North Merseyside BAP.**

Priority Habitat	Priority species
Lowland Mixed Deciduous Woodland	Brown Hare
Ponds	Bats
Field Boundaries	Lapwing
	Grey Partridge
	Song Thrush
	Skylark

## ECOLOGICAL CONSTRAINTS

18. Rhododendron and Himalayan balsam have both been recorded in Plain Plantation and the former in Booth's Wood LWS<sup>4</sup>.
19. The Site lies close to the M62 motorway.

<sup>3</sup> <http://www.merseysidebiodiversity.org.uk/>

<sup>4</sup> **Ecology Practice, 2019.** Phase I Habitat Survey. Omega Zone 8, St Helens. Report No. 16903-P1\_A.

## AIMS AND OBJECTIVES OF MANAGEMENT.

20. The aims and objective of this LEMP are broken down in Table 2 and should be read in conjunction with Table 3 to Table 7.

**Table 2: Aims & Objectives**

Aim	Objective
<b>1. Improve the biodiversity value of existing, remaining woodlands within the Site</b>	WE1 Thinning Plains Plantation
	WE2 Deadwood
	WE3 Replanting thinned areas
	WE4 Understory Management
	WE5 Invasive Species
	WE6 Box Maintenance
<b>2. Increase the biodiversity value of created Woodlands &amp; Hedgerows</b>	WH1 Seed redistribution
	WH2 Replace failed plantings
	WH3 Water planted areas in drought
	WH4 Rotational hedge trimming
	WH5 Rotational edge cut back
<b>3. Improve the biodiversity value of created grassland habitat</b>	G1 Rotational Mowing
	G2 To remove young scrub and tree invasion
	G3 Water seeded areas in drought
	G4 Hibernacula & Refugia
<b>4. Encourage pond biodiversity and protected species colonisation</b>	PO1 Emergent Vegetation
	PO2 Rotational Mowing
	PO3 Shading
	PO4 Vegetation Management
<b>5. Facilitate Access to the newly planted areas</b>	A1 Path maintenance
	A2 Interpretation

## MANAGEMENT PROJECT REGISTER

21. Management tasks for each aim and objective are outlined below and re to be read in conjunction with Table 8.

**Table 3: Aim 1 - Improve the biodiversity value of existing, remaining woodlands within the Site.**

Objective	Tasks
<b>WE1 Thinning</b>	<ul style="list-style-type: none"> <li>a) An arboricultural survey to identify the non-native and/or invasive trees that need to be removed from Plains Plantation &amp; the on-site areas of Booth's Wood LWS.</li> <li>b) Trees to be felled at a rate recommended by the arboriculturist.</li> <li>c) Remaining stumps will require treatment to stop regrowth as advised by Arboriculturist.</li> </ul>
<b>WE2 Deadwood</b>	<ul style="list-style-type: none"> <li>a) A mycological survey will identify piles of deadwood in woodlands to be cleared and move them to Plains Plantation and those areas within Booths Wood that lie within the Omega footprint.</li> <li>b) Trees felled during WE1 should be cut into 2-3m lengths and left within Plains Plantation and in those areas within Booths Wood that lie within the Omega footprint.</li> </ul>
<b>WE3 Replanting</b>	<ul style="list-style-type: none"> <li>a) Areas in existing woodlands that have been thinned (see WE1) will be replanted with native species as informed by the arboricultural survey.</li> <li>b) Trees shall be regularly inspected throughout each of the first five years of establishment, with all supporting stakes and ties, adjusted, repaired or removed as may be required at the time of inspection.</li> </ul>
<b>WE4 Understory</b>	<ul style="list-style-type: none"> <li>a) Bramble and ivy excessive growth to be identified through ecological survey.</li> <li>b) Selectively remove to prevent over shading of ground floor flora and strangling of trees.</li> </ul>
<b>WE5 Invasive Species</b>	<ul style="list-style-type: none"> <li>a) Removal of invasive species Rhododendron and Himalayan balsam in Plains Plantation and Booths Wood following appropriate methods to prevent further spread of invasive plants. See guidance at <a href="https://www.cabi.org/isc/">https://www.cabi.org/isc/</a></li> <li>b) Regular woodland surveys (at least every 3 years) to identify the presence and spread of any invasive species present on the site.</li> <li>c) Method statement will be drawn up to ensure there is no future spread within or outside the site.</li> </ul>
<b>WE6 Box Maintenance</b>	<ul style="list-style-type: none"> <li>a) Clean the box every 5 years using a recognised detergent</li> <li>b) Monitor every 3 years to replace failed and missing boxes</li> </ul>



**Table 4: Aim 2 - Increase the biodiversity value of created Woodlands & Hedgerows.**

Objective	Tasks
<b>WH1 Seeding</b>	a) An ecologist to collect seed from hedgerows and woodland on the Site prior to clearance. b) Store seeds in the appropriate manner (see <a href="https://www.forestresearch.gov.uk/tools-and-resources/seed-storage/">https://www.forestresearch.gov.uk/tools-and-resources/seed-storage/</a> ) c) Sow seeds into new planting areas in the first year of planting
<b>WH2 Replace plantings</b>	a) Failed saplings to be replaced with like for like plants as soon as reasonably possible (see landscape maintenance schedule)
<b>WH3 Watering</b>	a) In cases of drought, trees will require watering every day with freshwater for as long as the drought continues. b) Newly planted hedgerows will require regular watering and monitoring.
<b>WH4 Rotational trimming (hedges)</b>	a) Hedgerows are to be trimmed every 3rd year, on an annual 15m length rotation, trimming towards an A-shaped section and approximately 2-3m minimum bottom width, allowing the shrubs to produce more flowers and berries. b) Annual maintenance actions will include the selective spraying/streaming of weeds along all hedgerows, being careful of damaging any hedgerow or tree roots. c) All hedgerow maintenance actions to take place as late as possible in the autumn, to allow fruit and berries to be available for foraging birds.
<b>WH5 Rotational trimming (woodland edge)</b>	a) Woodland edges are to be trimmed every 5th year, on an annual 15m length rotation, allowing the ecotone shrubs to produce more flowers and berries. b) Annual maintenance actions will include the selective spraying/streaming of weeds along all edges, being careful to avoid damaging any tree roots. c) All maintenance actions to take place as late as possible in the autumn, to allow fruit and berries to be available for foraging birds.

**Table 5: Aim 3 - Improve the biodiversity value of created grassland habitat.**

Objective	Tasks
<p><b>G1</b> <b>Rotational Mowing</b></p>	<p>a) Mowing of bank and bank top vegetation on an annual rotational and compartment basis. In the first year, grassland areas should be cut (between 4-7cm) in October. In subsequent years cuts shall take place in March and September of each year to a height of between 10 and 15cm with localised mowing of tall, invasive ruderals in late-September and March.</p> <p>b) Wildflower areas should not be mown from early April to late July, August or early September. Cutting time is to be varied each year to prevent certain plants becoming dominant. If cutting takes place in July, uncut refuge should be left for invertebrates.</p> <p>c) Where grassland borders by ponds, it is preferable to establish long-grass margins at pond edges, rather than cutting grass right up to the pond edge, as this provides important areas of terrestrial refuge at pond margins.</p> <p>d) Grassland pond margins should be cut on a rotational basis (e.g. 1/3 margin every year), such that there is always an area undisturbed vegetation maintained.</p> <p>e) All arisings from any cut are to be removed or placed in piles close to ponds or woodland edges.</p> <p>f) It may be appropriate to designate non-intervention areas of grassland, where there is no cutting and long grass/scrub is allowed to establish.</p>
<p><b>G2</b> <b>Scrub and tree invasion</b></p>	<p>a) Remove occasional overhanging branches, thin to remove weaker specimens ensuring that scrub and trees do not invade access routes.</p> <p>b) New scrub/tree growth in areas of grassland and pond habitat to be removed by hand, pulling roots out at the same time.</p>
<p><b>G3</b> <b>Watering</b></p>	<p>a) Areas of seeded grassland require watering in times of drought.</p> <p>b) Where areas of grassland die or fail to establish, they should be reseeded and watered until established.</p>
<p><b>G4</b> <b>Hibernacula &amp; Refugia</b></p>	<p>a) Piles of any cut vegetation arising from management operations, such as grass cuttings, brash, logs etc. can provide shelter and refuge.</p> <p>b) Piles should be left at pond edges/ hedgerows/in inconspicuous out of the way places.</p>

**Table 6: Aim 4 - Encourage pond biodiversity and protected species colonisation.**

Objective	Tasks
<b>PO1 Emergent Vegetation</b>	<ul style="list-style-type: none"> <li>a) Ponds on site to be additionally planted with species suitable for GCN egg-laying (refer to Table*).</li> <li>b) Where emergent vegetation fails to establish, replanting with like-for-like species should take place.</li> <li>c) Annual removal of excessive emergents to avoid a pond becoming choked should be carried out using hand tools.</li> <li>d) Any removed plant material should be left on the bankside for at least 24 hours to allow animals (amphibians &amp; invertebrates) to return to the pond.</li> </ul>
<b>PO2 Rotational Mowing</b>	<ul style="list-style-type: none"> <li>a) Pond embankments should be mowed on a rotational basis (1/3 surrounding vegetation every year) such that there is always an area undisturbed vegetation maintained.</li> <li>b) Wet seasonal grass areas should be strimmed and any arisings removed.</li> <li>c) Arisings to be placed in piles along woodland boundary.</li> </ul>
<b>PO3 Shading</b>	<ul style="list-style-type: none"> <li>a) Woodland edges are to be managed to ensure that ponds do not become over shaded by branches or scrub vegetation. Where shading exceeds &gt;70%, scrub and tree removal to be carried out.</li> <li>b) For the first 5 years, restriction of grassland surrounding ponds being invaded by scrub</li> <li>c) Leaf litter in ponds should be moved after every 5 year period.</li> </ul>
<b>PO4 Vegetation Management</b>	<ul style="list-style-type: none"> <li>a) In cases where failed plantings/seeding has taken place, this is to be replaced as soon as reasonably possible with like for like plants/seed mix.</li> <li>b) Annual monitoring to assess plant establishment, and to control blanket weed and duck weed in the first 2 years.</li> <li>c) Careful thinning of pond vegetation both marginal and submerged will be undertaken at three yearly intervals, removing up to a third of all plant material. See P1, P2 and P3 for other required vegetation management practices.</li> </ul>

**Table 7: Aim 5 - Facilitate Access to the Green Triangle.**

Objective	Tasks
<p><b>A1</b> <b>Path</b> <b>maintenance</b></p>	<p>a) Paths created for access through mitigation areas and to newly planted areas are to be maintained in a clean and tidy condition and free from over hanging vegetation.</p> <p>b) Where routes are created to allow access for maintenance works in newly planted areas (i.e. selective felling, strimming, maintenance), these routes should ensure that newly planted area/saplings/trees are not damaged and should be re-used so new ones aren't necessary.</p>
<p><b>A2</b> <b>Interpretation</b></p>	<p>a) A vandal-proof interpretation board design to be prepared by an Ecologist</p> <p>b) One each should be provided at each end of the pathway as it passes into the Green Triangle.</p>





Objective	Task	Activity	Years					Months											
			1	2	3	4	5	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>G1 - Mowing</b>	a	Mowing																	
	b/c	Margins			As required														
	d	Arisings			As required														
	e	Remove overhangs																	
<b>G2 - Scrub and tree invasion</b>	a	Remove new growth																	
	b	Remove new growth																	
<b>G3 - Watering</b>	a/b	Water dry areas			As required														
<b>G4 - Hibernacula &amp; Refugia</b>	a/b	Piles			As required														
<b>PO1 - Emergents</b>	a	Egg-laying plants																	
	b	Re-planting			As required														
	c	Emergent removal																	
	d	Arisings																	
<b>PO2 - Mowing</b>	a	Mowing			As required														
	b	Strimming			As required														
	c	Arisings																	
<b>PO3 - Shading</b>	a	Branch removal																	
	b	Scrub removal																	
	c	Dredging																	
<b>PO4 - Vegetation Management</b>	a	Replanting			As required														
	c	Monitoring			As required														
	c	Vegetation thinning																	
<b>A1 - Path maintenance</b>	a	Branch trimming																	
	b	Path use			As required														
<b>A2 - Interpretation</b>	a	Provide design																	
	b	Install Board																	

\* - Asterix denotes a follow on is likely in the forthcoming 5 years during the Plan review (refer to 28)

## MANAGEMENT PERIOD

22. The management and annual work plan detailing works for all features can be found Table 3 to Table 8 and are valid for 5-years.

## MANAGEMENT RESPONSIBILITIES

23. The implementation of the management plan will be the responsibility of a new Omega West Management Company, funded by occupiers through a service charge. This will account for the funding and legal mechanisms required for the long-term implementation of this landscape and ecology management plan.
24. Any transference of responsibility of this plan should be done so with the appropriate appointment of a competent organisation capable of delivering the measures outlined within this document.

## MONITORING

25. Monitoring is to be undertaken to ensure that the appropriate management actions prescribed in this LEMP are delivering the proposed ecological objectives. Successful delivery of this LEMP will require the ability to modify management actions in response to monitoring outcomes.
26. Monitoring aims to check the success and progress against the aims and objectives and, if required, will provide strategies for implementing remedial measures to be agreed and implemented by the landowner.
27. A review of the LEMP is to be undertaken after 5 years.

# APPENDIX 1

## SPECIES MIXES

**Table 9: Woodland Species Mix**

Name	Latin name	W1	W2	W3	Total
Field Maple	<i>Acer campestre</i>	145	305	285	735
Common alder	<i>Alnus glutinosa</i>	75	155	140	370
Silver Birch	<i>Betula pendula</i>	145	305	285	735
Downy Birch	<i>Betula pubescens</i>	75	155	140	370
Hawthorn	<i>Crataegus monogyna</i>	145	305	285	735
Common Hazel	<i>Corylus avellana</i>	145	305	285	735
Wild Cherry	<i>Prunus avium</i>	115	245	225	585
Sessile Oak	<i>Quercus petraea</i>	30	60	55	145
Common Oak	<i>Quercus robur</i>	365	755	705	1825
Rowan	<i>Sorbus aucuparia</i>	145	305	285	735
Small-leaved Lime	<i>Tilia cordata</i>	75	155	140	370
<b>Total Areas (m2)</b>		<b>1460</b>	<b>3050</b>	<b>2830</b>	<b>7340</b>

**Table 10: Whip Species Mix**

Name	Latin name	WHP1	WHP2	WHP3	Total
Field Maple	Acer campestre	55	150	50	255
Common alder	Alnus glutinosa	30	75	25	130
Silver Birch	Betula pendula	55	150	55	260
Downy Birch	Betula pubescens	30	75	25	130
Hawthorn	Crataegus monogyna	55	150	50	255
Common Hazel	Corylus avellana	55	150	50	255
Wild Cherry	Prunus avium	40	120	45	205
Sessile Oak	Quercus petraea	10	30	10	50
Common Oak	Quercus robur	125	355	135	615
Rowan	Sorbus aucuparia	55	150	50	255
Small-leaved Lime	Tilia cordata	30	75	25	130
<b>Total Areas (m2)</b>		<b>540</b>	<b>1480</b>	<b>520</b>	<b>2540</b>

**Table 11: Feathered Trees Species Mix**

Name	Latin name	W1/ WHP1	W2/ WHP2	W3/ WHP3	Total
Field Maple	Acer campestre	70	155	115	340
Silver Birch	Betula pendula	70	155	115	340
Hawthorn	Crataegus monogyna	45	105	75	225
Wild Cherry	Prunus avium	45	105	75	225
Common Oak	Quercus robur	115	255	190	560
Sessile Oak	Quercus petraea	20	50	40	110
Rowan	Sorbus aucuparia	55	130	95	280
Small-leaved Lime	Tilia cordata	35	75	60	170
<b>Total Areas (m2)</b>		<b>455</b>	<b>1030</b>	<b>765</b>	<b>2,250</b>

\*(Trees (within Woodland (W) and Whip (WHP) areas: 10 % of area))

**Table 12: Individual Trees**

Name	Latin name	Total
Field Maple	Acer campestre	17
Wild Cherry	Prunus avium	10
Common Oak	Quercus robur	27
Small-leaved Lime	Tilia cordata	15
<b>Total No.</b>		<b>69</b>

**Table 13: Woodland Edge Species Mix**

Name	Latin name	WE 1	WE 2	WE 3	WE 4	WE 5	WE 6	WE 7	WE 8	WE 9	WE 10	Total
Field Maple	Acer campestre	585	965	55	700	135	90	50	25	20	100	2725
Common Hazel	Corylus avellana	585	965	55	700	135	90	50	25	20	100	2725
Hawthorn	Crataegus monogyna	975	1615	95	1170	225	150	90	40	30	175	4565
Common Holy	Ilex aquifolium	390	645	40	465	90	60	35	15	15	70	1825
Crab Apple	Malus sylvestris	295	485	30	350	70	45	25	15	10	50	1375
Blackthorn	Prunus spinosa	585	965	55	700	135	90	50	25	20	100	2725
Common Elder	Sambucus nigra	100	160	10	115	20	15	10	5	3	15	453
Dog Rose	Rosa canina	195	325	20	235	45	30	20	10	5	30	915
Guelder Rose	Viburnum opulus	195	325	20	235	45	30	20	10	5	30	915
<b>Total Areas (m2)</b>		<b>3905</b>	<b>6450</b>	<b>380</b>	<b>4670</b>	<b>900</b>	<b>600</b>	<b>350</b>	<b>170</b>	<b>128</b>	<b>670</b>	<b>18,223</b>

**Table 14: Plain Plantation Native Understorey Mix.**

Name	Latin name	Total
Field Maple	Acer campestre	130
Common Hazel	Corylus avellana	130
Hawthorn	Crataegus monogyna	215
Common Holy	Ilex aquifolium	130
Crab Apple	Malus sylvestris	65
Common Elder	Sambucus nigra	20
Dog Rose	Rosa canina	85
Guelder Rose	Viburnum opulus	85
<b>Total No.</b>		<b>860</b>

**Table 15: Native Hedgerow Transplant Planting**

Name	Latin name	H1	H2	H3	H4	H5	H6	H7	Total
Common Hazel	Corylus avellana	20	10	30	90	135	20	110	415
Hawthorn	Crataegus monogyna	330	175	480	1410	2200	360	1730	6,685
Common Holy	Ilex aquifolium	20	10	30	90	135	20	110	415
Dog Rose	Rosa canina	20	10	30	90	135	20	110	415
Guelder Rose	Viburnum opulus	20	10	30	90	135	20	110	415
<b>Total Areas (m2)</b>		<b>410</b>	<b>215</b>	<b>600</b>	<b>1770</b>	<b>2740</b>	<b>440</b>	<b>2170</b>	<b>8,345</b>

**Table 16: Hedgerow Trees**

Name	Latin name	No.
Field Maple	Acer campestre	18
Wild Cherry	Prunus avium	13
Common Oak	Quercus robur	22
Sessile Oak	Quercus petraea	3
<b>Total No.</b>		<b>56</b>

**Table 17: DLF Pro Flora 10 Seed Mix (Country Meadow with Annuals)**

Common name	Species	%
<b>10% wild flowers</b>		
Birdsfoot trefoil	Lotus corniculatus	1
Black knapweed	Centaurea nigra	6
Black medick	Medicago lupulina	2
Common vetch	Vicia sativa	1
Corn cockle	Agrostemma githago	7
Corn flower	Centaurea cyanus	5
Corn marigold	Chrysanthemum segetum	5
Corn poppy	Papaver rhoeas	4
Meadow buttercup	Ranunculus acris	10
Musk mallow	Malva moschata	1
Ox-eye daisy	Leucanthemum vulgare	10
Ribwort plantain	Plantago lanceolata	10
Red campion	Silene dioica	5
Self-heal	Prunella vulgaris	13
Suckling clover	Trifolium dubium	10
White campion	Silene alba	5
Yarrow	Achillea millifolium	5
		<b>100%</b>
<b>90% grasses</b>		
Browntop bent	Agrostis capillaris	5
Red fescue	Festuca rubra	25
Crested dogs tail	Cynosurus cristatus	20
Chewings fescue	Festuca commutata	20
Hard fescue	Festuca trachyphylla	20
Smooth stalked meadow grass	Poa pratensis	10
		<b>100%</b>



**Table 18: DLF Pro Flora 5 Mix (Wetland Grass Mix)**

Common name	Species	%
<b>20% wildflowers</b>		
Betony	<i>Stachys officianlis</i>	1
Black knapweed	<i>Centaurea nigra</i>	15
Gipsywort	<i>Lycopus europaeus</i>	4
Devils bit scabious	<i>Succisa pratensis</i>	4
Greater birdsfoot trefoil	<i>Lotus uliginosus</i>	6
Hemp agrimony	<i>Erigeron acer</i>	4
Marsh mallow	<i>Althaea officinalis</i>	6
Meadow buttercup	<i>Ranunculus acris</i>	12
Meadowsweet	<i>Filipendula ulmaria</i>	6
Ox-eye daisy	<i>Leucanthemum vulgare</i>	8
Purple loosestrife	<i>Lythrum salicaria</i>	4
Ragged robin	<i>Lychnis flos-cuculi</i>	3
Sneezewort	<i>Achillea ptarmica</i>	2
Sq. Stem st. Johns wort	<i>Hypericum tetrapterum</i>	3
Yellow flag iris	<i>Iris psudacorus</i>	8
Yellow rattle	<i>Rhinanthus minor</i>	14
<b>80% grasses</b>		
Browntop bentgrass	<i>Agrostis capillaris</i>	4
Chewings fescue	<i>Festuca rubra commutata</i>	20
Common sedge	<i>Carex nigra</i>	2
Crested dogstail	<i>Cynosurus cristatus</i>	18
Meadow foxtail	<i>Alopecurus pratensis</i>	6
Pendulas sedge	<i>Carex pendula</i>	2
Sheeps fescue	<i>Festuca ovina</i>	5
Slender creeping red fescue	<i>Festuca rubra litoralis</i>	25
Smooth stalked meadow grass	<i>Poa pratensis</i>	11
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	4
Tufted hairgrass	<i>Deschampsia caespitosa</i>	3
		<b>100%</b>

**Table 19: Ponds**

English name	Latin name
Water mint	<i>Mentha aquatica</i>
Water forget-me-not	<i>Myosotis scorpioides</i>
Watercress	<i>Rorippa nasturtium-aquaticum</i>
Flote grass	<i>Glyceria fluitans</i>
Great willowherb	<i>Epilobium hirsutum</i>
Fool's watercress	<i>Apium nodiflorum</i>
Brooklime	<i>Veronica beccabunga</i>
Kingcup	<i>Caltha palustris</i>
Water plantain	<i>Alisma plantago-aquatica</i>
Creeping bent	<i>Agrostis stolonifera</i>
Common club rush	<i>Schoenoplectus lacustris</i>
Bulrush	<i>Typha latifolia</i>
Branched bur-reed	<i>Sparganium erectum.</i>
Hard rush	<i>Juncus inflexus</i>
Soft rush	<i>Juncus effuses</i>
Compact rush	<i>Juncus conglomeratus</i>
Jointed rush	<i>Juncus articulates</i>
Yellow iris	<i>Iris pseudacorus</i>
Cyperus sedge	<i>Carex pseudocyperus</i>
Hairy sedge	<i>Carex hirta</i>
Broad-leaved pondweed	<i>Potamogeton natans</i>
Amphibious bistort	<i>Pericaria amphibian</i>
Hornwort	<i>Ceratophyllum demersum</i>

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