

HABITAT MANAGEMENT AND MONITORING PLAN

**at
Longley Farm
Longley Lane
Huddersfield
West Yorkshire
HD9 2JD**

**Client:
J & E Dickinson**

**Client Address:
Longley Farm
Longley Lane
Huddersfield
HD9 2JD**

**Client Contact:
01484465500 (Tel)**

**JCA Ref:
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Quality Assurance

JCA Ref	Version	Report Completed		Checked	
		Date	Name	Date	Name
22888k/JF	001	11/06/2026	James Foster	15/06/2026	Alex Donovan
				30/06/2026	Liz Davies

This report has been prepared and provided in accordance with the *British Standard 42020: Biodiversity – Code of practice for planning and development* and the *CIEEM's Code of Professional Conduct*.

Contents

Contents	3
Site Overview	4
1. Introduction.....	5
1.1 Purpose and Scope of the Report	5
1.2 Terms of Reference.....	5
1.3 Site Description and Baseline Site Use	5
1.4 Proposed Site Use	6
1.5 Roles and Responsibilities	6
2. Baseline and Environmental Information.....	8
2.1 Biological Records.....	8
2.2 Baseline Habitat Surveys	9
3. Habitat Retention, Enhancement and Loss.....	13
3.1 Retention, Enhancement and Loss of Habitats	13
3.2 Protection of Retained Features.....	14
4. Habitat Creation and Enhancement.....	15
4.1 Summary of Habitat & Hedgerow Creation	15
4.2 Summary of Habitat Enhancement.....	15
5. Management Prescriptions.....	16
5.1 Other neutral Grassland	16
5.2 Sparsely Vegetated Urban Land Habitat (Bare Ground)	21
5.3 Individual Trees	27
5.4 Mixed Scrub	31
5.5 Native Hedgerow.....	35
5.6 Pond (non-priority).....	39
6. Monitoring.....	45
6.1 Monitoring Strategy	45
6.2 Ecological Monitoring	45
7. References	47
Appendix 1: Baseline UKHab Habitat Map	49
Appendix 2: Proposed UKHab Habitat Map	51
Appendix 3: Proposed Development Landscape Map	53
Appendix 4: Author Qualifications.....	55

Site Overview

Project type	On-site
Development name and adress	Longley Farm, Longley Lane, Huddersfield, West Yorkshire, HD9 2JD
Author organisation	JCA Limited
Landowner	JR Dickinson
Land manager	J&E Dickinson
Responsible person/organisation for creating or enhancing habitats	J&E Dickinson
Period covered this management plan	June 2026 – June 2056
Planning authority	Kirklees Council
Planning reference (if applicable)	2026/90174
BNG register reference (if applicable)	N/A
Central OS grid reference	SE 14527 06157
Metric revision/title	Biodiversity Accounting Assessment 22888/JF R1 Statutory Biodiversity calculation tool
Are any Irreplaceable Habitats present on-site?	No

1. Introduction

1.1 Purpose and Scope of the Report

- 1.1.1 In May 2026, JCA Ltd were commissioned by J & E Dickinson to produce a **Habitat Management and Monitoring Plan (HMMP)** for the construction of an extension of the existing cottage cheese unit, extension of the existing track and new areas of hardstanding at **Longley Farm, Longley Lane, Huddersfield, West Yorkshire HD9 2JD**, hereafter referred to as 'the site'.
- 1.1.2 The proposed development at the site will result in the removal of a large proportion of on-site modified grassland, mixed scrub and individual trees. The ecological features present on-site, and the ecological impact of the development has previously been assessed in the Ecological Impact Assessment (EclA) (22888g/JF) and Biodiversity Accounting Assessment (BAA) (22888b/JF R1), produced by JCA Ltd.
- 1.1.3 This HMMP will aim to fulfil the planning conditions set by Kirklees Council, with the aim of enhancing the site's value to wildlife, through the retention of any existing features of value to wildlife, the creation of new habitats and enhancement of existing habitats for a minimum monitoring period of 30 years.

1.2 Terms of Reference

- 1.2.1 The following reports and plans have been used in the production of the HMMP and should be read in conjunction with this report:
- JCA Ltd. – Amphibian Survey and Report, June 2025 (22888b/GB).
 - JCA Ltd. - Bat Emergence Survey Report, July 2025 (22888/RPS).
 - JCA Ltd. – Ecological Impact Assessment (EclA), January 2025 (22888g/JF).
 - JCA Ltd. – Ecological Design Strategy (EDS), February 2026 (22888h/JF).
 - JCA Ltd. – Construction Environmental Management Plan (CEMP), May 2026 (22888j/JF).
 - JCA Ltd. – Biodiversity Accounting Assessment (BAA), June 2026 (22888b/JF R1).

1.3 Site Description and Baseline Site Use

- 1.3.1 The site is situated to approximately 2km south of Holmfirth, at grid reference: SE 14527 06157.
- 1.3.2 The site currently consists of other neutral grassland, modified grassland, rhododendron scrub, aquatic marginal vegetation, ruderal vegetation, introduced shrub, developed land; sealed surface, artificial unvegetated, unsealed surface, buildings, sparsely vegetated urban land, pond and a non-native and ornamental

hedgerow.

- 1.3.3 The site is located in a rural area and is bordered on all sides by agricultural pastureland with the River Ribble, which is located approximately 500m to the east.

1.4 Proposed Site Use

- 1.4.1 The development proposed is the construction of an extension of the existing cottage cheese unit, extension of the existing track and new areas of hardstanding.

- 1.4.2 The proposed development will result in the loss of modified grassland, other neutral grassland, mixed scrub, ponds (non-priority), ruderal/ephemeral, artificial unvegetated, unsealed surface, bare ground habitats and a large tree on-site.

- 1.4.3 The post development habitats will consist of the following on-site and off-site habitats, post-development:

1.4.4 On-site Habitat Creation

- 0.0286 ha other neutral grassland, moderate condition.
- 0.0073 ha artificial unvegetated; unsealed surface, N/A condition.
- 0.0993 ha bare ground, moderate condition.
- 0.1014 ha developed land; sealed surface, N/A condition.
- 14 small sized, native urban trees, managed to be in moderate condition.

1.4.5 On-site Habitat Enhancement

- 0.0848 ha poor condition modified grassland enhanced into moderate condition other neutral grassland.
- 0.0827 ha rhododendron scrub enhanced into moderate condition mixed scrub.
- 0.2638 ha pond (non-priority) will be enhanced into moderate condition.

1.4.6 On-site Hedgerow Creation

- 0.106 km native hedgerows, poor condition.

1.5 Roles and Responsibilities

1.5.1 Ecologist Responsible for HMMP

JCA Ltd. are the organisation responsible for the production of this HMMP. All surveys and reports are undertaken and compiled in accordance with CIEEM's Professional Code of Conduct and the relevant survey guidance.

1.5.2 **Landowner and Land Manager**

The landowner and manager responsible for the site is J & E Dickinson.

1.5.3 **Management Organisation(s)**

(J & E Dickinson) is responsible for the implementation of the HMMP and ongoing management throughout the 30-year period.

1.5.4 **Local Planning Authority (LPA)**

Kirklees Council are the LPA responsible for reviewing and auditing the HMMP. There are also the body responsible for reviewing Monitoring Reports throughout the 30-year monitoring period.

1.5.5 **Monitoring**

J & E Dickinson is responsible for instructing a suitably qualified ecologist to carry out monitoring of the site in years 1-5, 10, 15, 20, 30 (**Section 6.1**), and providing the Monitoring Reports to Kirklees Council.

2. Baseline and Environmental Information

2.1 Biological Records

2.1.1 Internationally important sites

There are two statutory internationally important conservation sites within the search area.

- South Pennine Moors, Special Area of Conservation (SAC). Located 1860m southwest of the site. Annex 1 habitats: European dry heaths, blanket bog (Priority Feature), Old sessile oak woods with Ilex and Blechnum, Northern Atlantic wet heaths with Erica tetralix and Transition mires and quaking bog.
- South Pennine Moors Phase 1 & 2, SPA. Located 1860m southwest of the site. Supports an internationally important assemblage of birds. During the breeding season the area regularly supports: Asio flammeus 0.3% of the GB breeding population, Falco columbarius 2.2% of the GB breeding population. Count as at 1995. and Pluvialis apricaria [North-western Europe - breeding] 1.3% of the GB breeding population. No count period specified.

2.1.2 Nationally important sites

There are two nationally important Sites of Special Scientific Interest (SSSIs) within the search area.

- South Pennine Moors SSSI. Located 1860m southwest. Regionally important diversity of upland plant communities and the fauna it supports.
- Dark Peak SSSI. Located 1860m southwest. Blanket bog, woodlands, willow carr, mire, flush, wet/dry heaths and acid grassland habitats that supports a full range of breeding birds found in the south Pennines, such as golden plover, dunlin, merlin, curlew, short-eared owl and twite.

2.1.3 County important sites

There are three locally important Local Wildlife Sites (LWS) within the search area.

- Morton Wood, located 1040m east of the site. Ancient woodland with areas of wet woodland that supports bluebells.
- Wild Boar Clough located 1080m east of the site. Neutral and acid grassland and mire with a stream that supports brown hare.
- Malkin House Wood, located 1680m northwest of the site. Acid woodland that supports nesting birds and bluebells.

The Local Wildlife Habitat Network (LWHN) is located approximately 260m east of the site. It is proposed to plant individual trees, native hedgerows and create mixed scrub (through habitat enhancement) on site. The creation of these new habitats will increase habitat connectivity of the LWHN.

2.2 Baseline Habitat Surveys

JCA Ltd undertook the baseline habitat survey and biodiversity metric calculation for the site during the EclA (22888g/JF) and BAA (22888b/JF R1) on 02/12/2025.

2.2.1 Habitat Degradation

Historical imagery reveals that Habitat Degradation has occurred on this site prior to the date of the survey visit but after January 2020.

The following habitats were found to have been removed within approximately the last 12 months (**Appendix 1**).

Other neutral grassland: Areas on the east of the site have been cleared and replaced with a gravel track. During the survey visit the majority of this grassland area was still present, the lost grassland was judged to be of the same type, composition and condition than the existing grassland. The lost other neutral grassland has been included in the baseline.

Other neutral grassland: Area on the north of the site. There is an area present on historical imagery that was not present at time of survey visit. The grassland has been degraded into a modified grassland and contained a small number of species with a consistently short sward height. This grassland was judged to be of the same type, composition and condition than the existing grassland on the east of the site. The lost other neutral grassland has been included in the baseline.

Scrub: There are two areas to the south of the site that have been cleared and replaced with bare ground or artificial unsealed surface. The lost scrub has been included in the baseline as mixed scrub and given a condition score of good as a precautionary measure.

Bare ground: Areas on the south of the site. These areas have recently been cleared potentially leading to degradation of condition. The bare ground has been included in the baseline and given a score of good as a precaution.

2.2.2 Baseline Habitat Descriptions and Condition

Table 1 & Table 3 provide details on the relevant baseline habitat and hedgerow information, using condition assessment criteria from the Statutory Biodiversity Metric.

Table 1: On-site baseline habitat description and condition.

Biodiversity Metric Reference Number	Biodiversity Metric 4.0 Habitat Type	Total Area on-site (Ha)	Distinctiveness	Condition	Strategic Significance	Ecological Baseline Habitat Unit
1	Modified grassland	0.0025	Low	Poor	Area/compensation not in local strategy/ no local strategy	0.01
2	Modified grassland	0.0848	Low	Poor	Area/compensation not in local strategy/ no local strategy	0.17
3	Other neutral grassland	0.8204	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	6.56
4	Mixed scrub	0.0477	Medium	Good	Area/compensation not in local strategy/ no local strategy	0.57
5	Rhododendron scrub	0.0827	Low	N/A	Area/compensation not in local strategy/ no local strategy	0.17
6	Ponds (non-priority habitat)	0.0234	Medium	Poor	Area/compensation not in local strategy/ no local strategy	0.09
7	Ponds (non-priority habitat)	0.2638	Medium	Poor	Area/compensation not in local strategy/ no local strategy	1.06
8	Ruderal/Ephemeral	0.0055	Low	Moderate	Area/compensation not in local strategy/ no local strategy	0.02
9	Artificial unvegetated, unsealed surface	0.0362	V.Low	N/A	Area/compensation not in local strategy/ no local strategy	0.00
10	Bare ground	0.003	Low	Good	Area/compensation not in local strategy/ no local strategy	0.02
11	Developed land; sealed surface	0.4582	V.Low	N/A	Area/compensation not in local strategy/ no local strategy	0.00
12	Introduced shrub	0.0029	Low	N/A	Area/compensation not in local strategy/ no local strategy	0.01
13	Urban tree	0.1669	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	1.34
	Total (area excl. trees)	1.83	–	–	–	10.01

2.2.3 The modified grassland on-site was found to be in poor condition as the grassland failed criteria A (6-8 species per m²) and criteria B (varied sward height). The grassland was surveyed using 1 m x 1 m quadrats and 10 sample points (due to the small area). The modified grassland on-site has an average species diversity of 3.8 species per m².

2.2.4 The other neutral grassland on-site was found to be in moderate condition as the grassland failed criteria C (bare ground) and criteria F (10 species per m²). The other neutral grassland on the centre of site (west and north to the pond on site) has an average species diversity of 3.2 species per m² from 10 sample points. The other neutral grassland on the east of site has an average species diversity of 3.2 species per 5.3 m² from 10 sample points.

2.2.5 The pond (non-priority) on-site was found to be in poor condition as the pond failed

criteria A (water quality), criteria B (semi-natural habitat for 10m from pond edge), criteria E (fluctuating water levels) and criteria H (emergent, submerged or floating plants).

2.2.6 The ruderal/ephemeral habitat on-site was found to be in moderate condition as the habitat failed criteria A (vegetation structure is varied).

2.2.7 The urban trees on-site were found to be in moderate condition as the trees failed criteria A (native species: failed by 2 trees), criteria C (mature tree: failed by 6 trees and 1 tree group), criteria D (>75% canopy for age range and height: failed by 1 tree) and criteria E (natural ecological niches).

Table 2: Urban trees on-site.

Tree Reference Number	Species	Size class	Number of trees	Condition
T1	Poplar <i>Populus sp.</i>	Large	1	Moderate
G2	Goat Willow <i>Salix caprea</i>	Small	5	Moderate
T4	Ash <i>Fraxinus excelsior</i>	Medium	1	Moderate
T5	Goat Willow <i>Salix caprea</i>	Medium	1	Moderate
T6	Ash <i>Fraxinus excelsior</i>	Medium	1	Moderate
T7	Beech <i>Fagus sylvatica</i>	Small	1	Moderate
T8	Spruce <i>Picea sp.</i>	Medium	1	Moderate
G9	Goat Willow <i>Salix caprea</i> Rowan <i>Sorbus aucuparia</i>	1 Medium 6 Small	7	Moderate

Tree Reference Number	Species	Size class	Number of trees	Condition
	Holly <i>Ilex aquifolium</i>			

2.2.8 The mixed scrub and bare ground have been given a condition assessment score of good due to habitat degradation.

2.2.9 Rhododendron scrub and introduced shrub do not have relevant condition assessment criteria and are automatically assigned a score by the calculation tool.

2.2.10 Artificial unvegetated, unsealed surface and developed land; sealed surface are both habitats of null biodiversity value.

Table 3: On-site baseline hedgerow description and condition.

Biodiversity Metric Reference Number	Biodiversity Metric 4.0 Hedgerow Type	Total Length on-site (Km)	Distinctiveness	Condition	Strategic Significance	Ecological Baseline Habitat Unit
1	Non-native and ornamental hedgerow	0.028	V.Low	Poor	Area/compensation not in local strategy/ no local strategy	0.03
	Total	0.03	–	–	–	0.03

2.2.11 Non-native and ornamental hedgerow does not have relevant condition assessment and is automatically assigned a score by the calculation tool.

3. Habitat Retention, Enhancement and Loss

3.1 Retention, Enhancement and Loss of Habitats

As detailed within BAA and metric, the loss, retention and enhancement of on-site habitats and hedgerows are quantified in **Tables 3 and 4**.

Table 4: Summary of on-site baseline habitat biodiversity value through retention, creation, and enhancement.

Biodiversity Metric Reference Number	Statutory Biodiversity Metric Habitat Type	Baseline Units Retained		Baseline Units Enhanced		Baseline Units Lost	
		Area (ha)	Unit	Area (ha)	Unit	Area (ha)	Unit
1	Modified grassland	0.00	0.00	0.00	0.00	0.00*	0.01
2	Modified grassland	0.00	0.00	0.0848	0.17	0.00	0.00
3	Other neutral grassland	0.7021	5.62	0.00	0.00	0.12	0.95
4	Mixed scrub	0.00	0.00	0.00	0.00	0.05	0.57
5	Rhododendron scrub	0.00	0.00	0.0827	0.17	0.00	0.00
6	Ponds (non-priority habitat)	0.00	0.00	0.00	0.00	0.02	0.09
7	Ponds (non-priority habitat)	0.00	0.00	0.2638	1.06	0.00	0.00
8	Ruderal/Ephemeral	0.00	0.00	0.00	0.00	0.01	0.02
9	Artificial unvegetated, unsealed surface	0.00	0.00	0.00	0.00	0.04	0.00
10	Bare ground	0.00	0.00	0.00	0.00	0.00*	0.02
11	Developed land; sealed surface	0.4582	0.00	0.00	0.00	0.00	0.00
12	Introduced shrub	0.0029	0.01	0.00	0.00	0.00	0.00
13	Urban tree	0.1303	1.04	0.00	0.00	0.04	0.29
	Total (area excl. trees)	1.16	6.67	0.43	1.39	0.24	1.95

*The area is so low it has been rounded down to 0.00 ha by the calculation tool.

Table 5: Summary of on-site baseline hedgerow biodiversity value through retention, creation, and enhancement.

Biodiversity Metric Reference Number	Statutory Biodiversity Metric Hedgerow Type	Baseline Units Retained		Baseline Units Enhanced		Baseline Units Lost	
		Length (Km)	Unit	Length (Km)	Unit	Length (Km)	Unit
1	Non-native and ornamental hedgerow	0.028	0.03	0.00	0.00	0.00	0.00
	Total	0.03	0.03	0.00	0.00	0.00	0.00

3.2 Protection of Retained Features

- 3.2.1 Protective Heras fencing, at least 1.8m in height, is to be installed around the development area. This fence is to be retained for the duration of the works to prevent construction works causing any damage to retained and surrounding habitats close to construction. The fence should be inspected regularly and repaired as necessary for the duration of the works.
- 3.2.2 Lighting should not fall onto retained or surrounding habitats close to construction.
- 3.2.3 If plant operations are unavoidably close to retained or surrounding habitats close to construction, they should only be done with light machinery (up to 20 tonnes tracked machinery) to avoid pollution, excessive noise and vibration spilling into the surrounding environment. The use of dust suppression equipment is also required.
- 3.2.4 To prevent any possible chemicals from entering surrounding habitats and retained habitats close to construction, use on site must be limited where possible. If chemical use and refuelling is unavoidable, the appropriate preventative measures must be in place to prevent any possible spills, this includes a plan to quickly combat any chemical or fuel spill that may occur.
- 3.2.5 The use of herbicides should also be limited where possible. This is to limit possible herbicide runoff into the surrounding habitats and retained habitats close to construction.

4. Habitat Creation and Enhancement

4.1 Summary of Habitat & Hedgerow Creation

4.1.1 The site contains habitats of low and medium conservation value. The proposed created/enhanced habitats will offset for the loss of baseline habitats. The following habitats and hedgerows will be created on-site to facilitate the proposed development:

- 0.0286 ha other neutral grassland, moderate condition, delivering 0.18 habitat units.
- 0.0073 ha artificial unvegetated; unsealed surface, N/A condition, delivering 0.00 habitat units.
- 0.0993 ha bare ground, moderate condition, delivering 0.20 habitat units.
- 0.1014 ha developed land; sealed surface, N/A condition, delivering 0.00 habitat units.
- 14 small sized, native urban trees, managed to be in moderate condition, delivering 0.17 habitat units.
- 0.106 km native hedgerows, poor condition, delivering 0.20 hedgerow units.

4.1.2 Artificial unvegetated; unsealed surface and developed land, sealed surface does not have relevant condition assessment criteria and is a habitat of null biodiversity value.

4.2 Summary of Habitat Enhancement

4.2.1 The Proposed Development will see the enhancement of the following habitats on site.

- 0.0848 ha poor condition modified grassland enhanced into moderate condition other neutral grassland, delivering 0.53 BU.
- 0.0827 ha rhododendron scrub enhanced into moderate condition mixed scrub, delivering 0.58 BU.
- 0.2638 ha pond (non-priority) will be enhanced into moderate condition, delivering 1.67.

5. Management Prescriptions

5.1 Other neutral Grassland

5.1.1 Description

0.0848 ha poor condition modified grassland will be enhanced into moderate condition other neutral grassland and 0.0286 ha other neutral grassland; moderate condition will be created on-site.

Species-rich grasslands require much less management than amenity grassland as they only require mowing or grazing twice a year, whilst providing more valuable areas for wildlife, particularly pollinating insects.

5.1.2 Target Condition and Management Summary

To be classed as the 'other neutral grassland' habitat type, the enhanced areas must meet the UKHab (Version 2.01) habitat definition:

A neutral grassland that does not meet the definition of either g3a (acid grassland) or g3b (calcareous grassland) AND that meets at least 3 out of 4 of the following criteria:

- 20% cover of broadleaved herbs and sedges.
- >8 species per m² (including forbs, grasses, sedges, and rushes, and excluding bryophytes).
- ≥1 grass species that is not generally sown for intensive agricultural production (i.e. rye-grasses *Lolium* sp., timothy *Phleum pratense*, cock's-foot *Dactylis glomerata*, Meadow fescue *Festuca pratensis*) is at least abundant.
- Cover of rye-grasses *Lolium* sp. and white clover *Trifolium repens*, where present, is <30%.

The other neutral grassland to be created on-site has been given a target condition of moderate. To achieve this target condition at least three of the following condition assessment criteria must be passed. It is advised to target criteria A, C, D or E.

- Criteria A: The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.
- Criteria B: Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.

- Criteria C: Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.
- Criteria D: Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.
- Criteria E: Combined cover of species indicative of suboptimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.
- Criteria F (for non-acid grassland only): There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type. Note - this criterion is essential for achieving Good condition for non-acid grassland types only.

5.1.3 Species Selection and Specification

It is important that the correct plant species are selected that are adapted to the local site conditions and resemble the semi-natural plant communities of the local area.

Providing a good tilth can be prepared, the optimal time for seed sowing is in late summer/early autumn, which means the seeds are not exposed to rising soil temperatures but will be exposed to cold moist temperatures over winter, which can help break dormancy of some species. If sown too late in autumn, seedlings may be killed off by frosts. The months of March/April can also be suitable for sowing in areas of land that are prone to winter flooding.

5.1.4 Proposed seed mixes

- Emorsgate, Native Meadow - General Mix EM2, Standard General Purpose Meadow Mixture. Sowing rate 1.5g/m². Sown in steep areas and hydroseeded to ensure establishment. This seed mixture contains a variety of different species that are characteristic of traditional meadows across a broad range of soil types.

5.1.5 Implementation of Other Neutral Grassland

The key to creating sustainable, species-rich grasslands is to begin with a nutrient-poor base and then manage the land correctly. Species-rich grasslands require much less management than amenity grassland. As they only require mowing or grazing twice a year, they will save a considerable amount of money in the long term.

It is recommended that enhancement of existing grassland is implemented after the completion of the development. In the grasslands' current state, it is likely that the soil fertility is too high to allow for a habitat of ecological value to establish.

For example, low soil fertility is important for meadow establishment. The level of available phosphorous is the most important nutrient that influences grassland diversity.

It may take several years for the soil's fertility to be appropriate for enhancement. Therefore, it may be necessary to remove the topsoil as high fertility soil tends to promote the growth of more vigorous grasses and weeds.

On completion of construction, if the area of ground to be converted into grassland is unvegetated, then the following instructions should be implemented:

- At most sites, it is likely that the soil will have at one point been fertilised. To reduce fertility, remove the top 15 to 20 cm of topsoil to reveal the nutrient-poor subsoil. The nutrient rich topsoil should then be relocated elsewhere on site.
- Alternatively, a layer of the unearthed subsoil can be excavated and placed over the topsoil. This method will inhibit the growth of any weeds present in the topsoil. Another option is to dilute the topsoil by mixing in poor quality material such as crushed builders' rubble or spoil. Then, using a fork, break up the soil and rake the proposed seedbed to produce a fine, firm tilth. Remove any large stones and any root fragments.
- Weed species such as docks *Rumex* sp., thistles *Cirsium* sp., nettles *Urtica dioica*, and vigorous growing grasses, should be removed prior to seed bed cultivation.

A summary of ground preparation for fertile sites is listed below:

- Remove existing weed species, including grasses.
- Shallow cultivate site with a rotovator to improve aeration and drainage.
- Repeat removal of weed species, including grasses.
- Power harrow to create fine surface tilth.
- Final spray if required.
- Surface sow the seed and roll.
- Alternatively, if old meadow grasses are present, expose 30% bare earth and sow 100% wildflower seed into existing vegetation.

Once the ground has been prepared, the seed mix should be sown during Spring (March to April) or early autumn (late August/ September). The seed mixtures should be sown at the rate specified. The seed must be surface sown and can be applied by machine or by hand. For an even distribution divide the seed into two or more parts and sow in overlapping sections. Do not incorporate seed and lightly roll or tread the ground to settle the seeds in the soil.

5.1.6 First Year Management of Other Neutral Grassland

The grassland should remain nutrient poor, therefore, do not add fertilisers at any point. The majority of species included within the seed mix are perennial and are slow

to establish. There will be an abundance of annual weeds which offer protection to sown seedlings. Mow the grassland mid to late summer (early August) to a height no shorter than 5cm and remove the arisings. Remove any residual weeds present in the grassland.

5.1.7 Management Once Established

Once the grassland is fully established it should only be cut or grazed twice per year; once in Spring (early March to early April) and once in mid to late summer (August). The grassland should be cut to a height no shorter than 5cm and arisings are to be removed to prevent nutrients returning to the soil.

Following sowing, remove any annual and perennial weeds that appear. The grassland should remain nutrient poor, therefore, do not add fertilisers at any point. The grassland should be cut or grazed once in the spring (between early March and early April) and all arisings should be immediately removed to prevent the nutrients returning to the soil. Sheep manure is considered to be a low intensity fertilizer, which should help maintain low nutrient levels. A second cut or graze should take place in late summer (between late June and the end of August). The arising should be left in-situ for one to seven days before being removed to allow the seeds to re-enter the soil. The grassland should be cut no shorter than 5cm.

This cutting/grazing regime will prevent the grassland from succeeding into scrub and woodland, whilst allowing the flowers to set seed for the following year, thus producing a sustainable and viable habitat.

5.1.8 Monitoring

Monitor annually from years one to five and then every five years after. Monitoring is to take place between May and September. It is recommended to monitor the parcel using a quadrat to identify the habitats type and establish the number of species present.

5.1.9 Grassland Implementation, Management and Monitoring Schedule

Table 6: Prescriptions for the implementation, management, and monitoring of other neutral grassland.

	Year	Action	Prescriptions	Time of year
Implementation	0	Ground preparation	<u>Recently cleared ground:</u> To reduce fertility, remove the top 15 to 20 cm of topsoil to reveal the nutrient-poor subsoil. The nutrient rich topsoil should then be relocated elsewhere on Site, i.e. in the garden spaces and shrub beds. Alternatively, a layer of the unearthed subsoil can be excavated and placed over the topsoil. This method will inhibit the growth of any weeds present in the topsoil. Another option is to dilute the topsoil by mixing in poor quality material such as crushed builders' rubble or spoil. Then, using a fork, break up the soil and rake the proposed seedbed to produce a fine, firm tilth. Remove any large stones and any root fragments.	Aug - Sep
			<u>Existing grassland:</u> During September or October cut the grass very short and rake the land over vigorously to create patches of bare ground. When the grassland is cut, the cuttings must be removed from the Site to prevent the nutrients being returned.	Autumn
	0	Sow seed	Seed should be sown in spring (March to April) or early Autumn (late August to September) at a rate specified by the seed mix.	Mar - Apr or Aug - Sep
First Year Management	1	Mow/graze grassland	Mow/graze the grassland mid to late summer to a height no shorter than 5cm and remove the arisings. Remove any residual weeds present in the grassland.	Aug
Annual Management	2 - 30	Mow/graze grassland twice per year	Mow/graze grassland in Spring no shorter than 50mm.	All year
Monitoring	1 - 5, 10, 15, 20 & 30	Monitor grassland	Undertake monitoring surveys of other neutral grassland following criteria listed in the Statutory Biodiversity Metric Conditions Assessment Sheets	May - Sep

5.2 Sparsely Vegetated Urban Land Habitat (Bare Ground)

5.2.1 Description

0.0993 ha bare ground to be created on-site has been given a target condition of moderate.

To facilitate occasional servicing of the proposed extension, an access track able to support Heavy Goods Vehicles (HGV) is required. It is proposed to utilise a reinforced cell system (heavy duty HGV trafficable cell system - Geo synthetics TTE) which will withstand HGV access and allow for growing vegetation creating a sparsely vegetated urban land habitat (bare ground).

5.2.2 Target Condition and Management Summary

To be classed as sparsely vegetated urban land habitat type, the created habitat must meet the UKHab (Version 2.01) habitat definition:

“Urban land with vegetation cover 10-50%”

Inclusions

Abandoned or derelict land, usually constructed permeable but can be impermeable where succession is taking place.”

The bare ground to be created on-site has been given a target condition of moderate. To achieve this target condition at least two of the following condition assessment criteria must be passed. It is advised to target criteria B & C.

- Criteria A: Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.
- Criteria B: The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.
- Criteria C: Invasive non-native plant species (listed on Schedule 9 of WCA) and others which are to the detriment of native wildlife (using professional judgement) cover less than 5% of the total vegetated area. Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).

5.2.3 Species Selection and Specification

Proposed seed mix

The species selected are adapted to low nutrient, shallow, compacted soils with good drainage and are slow and low growing, which will not overwhelm the track mesh and bare ground areas. These species also offer ecological value to a variety of native pollinators throughout the year.

Table 7: Proposed seed mix for sparsely vegetated urban land habitat.

Botanical Name	Common Name	Sowing rate (g/m ²)	Composition (%)
<i>Achillea millefolium</i>	Yarrow	2	10
<i>Anthyllis vulneraria</i>	Kidney Vetch	3	15
<i>Armeria maritima</i>	Thrift	1.5	7.5
<i>Galium verum</i>	Lady's Bedstraw	1.5	7.5
<i>Hippocrepis comosa</i>	Horseshoe Vetch	2	10
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	1	5
<i>Matricaria discoidea</i>	Pineappleweed	1	5
<i>Pilosella officinarum</i>	Mouse-ear Hawkweed	1	5
<i>Prunella vulgaris</i>	Selfheal	3	15
<i>Sedum acre</i>	Biting Stonecrop	2	10
<i>Thymus serpyllum</i>	Wild Thyme	1	5
<i>Trifolium dubium</i>	Lesser trefoil	1	5

5.2.4 Implementation of Sparsely Vegetated Urban Land Habitat (Bare Ground)

It is recommended that new seed and plug planting is implemented after the completion of the development. The following instructions should be implemented:

- During September or October cut the grass very short and scrape away the topsoil over vigorously to create areas of bare ground. All arisings must be removed from the Site to prevent the nutrients being returned.
- Shallow cultivate site with a rotovator to improve aeration and drainage.
- Repeat removal of weed species, including grasses.
- Power harrow to create fine surface tilth.
- Sow seeds at rate specified.
- Rake seeds to improve seed to soil contact.
- Situated track mesh reinforcement.
- Plant plugs.
- Protect newly sown seeds and plugs.

In order to prepare the ground, the topsoil and vegetation should be removed, this can be done by scraping using an excavator. All arisings should be removed from the site to stop nutrients returning to the area.

The area should then be shallow cultivated, this will leave the deeper soils intact whilst improving aeration, drainage and forcing germination of the existing seedbank within the soil. This should be done in autumn or early to mid-Spring.

Once the area has been cultivated, any weeds or grasses should be removed.

It is recommended that the seedbed is prepared using a power harrow. The power harrow will break up any soil clumps, creating a fine, crumbly tilth.

Once the ground has been prepared, the seed mix should be sown during Spring (March to April) or early autumn (late August/ September). The seeds should be sown sparsely at the rate specified in **Table 7**. For seeds with a very light sowing rate (1 g/m²) a mixing agent should be used, such as dry builder's sand to bulk out the volume. This will prevent clumping and allow for even distribution of the seeds.

The seed should be surface sown and can be applied by machine or by hand. For an even distribution divide the seed into two or more parts and sow in overlapping sections.

In order to improve seed to soil contact and successful germination of the seeds. The area recently sown should be lightly raked. This will cover the seed lightly without burying them too deeply. This can be done using a power harrow set at a shallow depth.

The track mesh reinforcement can now be laid and secured over the newly sown area.

Once the wire mesh has been positioned, plugs can be planted. Plant plugs are young plants with established root systems. Plugs are advantageous over seeds because they do not have to germinate, have higher survival rates and mature faster. It is recommended to plant 10% of the area with plugs and 40% of the area with seeds. Using a mixture of seeds and plugs will increase the likelihood of establishment and inform future management of the habitat in the long-term.

Plugs should be planted during Spring (March to April), once the threat of frost has passed. Plugs have established root systems and are much more likely to establish in the long-term. Plugs should be planted individually in gaps in the mesh.

5.2.5 First Year Management

Slow growing plants are easily out competed by fast growing weeds such as docks, nettles and thistles during the first year. Therefore, following sowing and planting, remove any annual and perennial weeds that appear. The habitat should remain nutrient poor, therefore, do not add fertilisers at any point.

The track should not be utilised until the seeds have germinated and the young plants have established root systems. This can take up to at least 6 weeks. It is recommended to fence off this area to reduce any unnecessary erosion from foot traffic and vehicles.

5.2.6 Management Once Established

Once established, mow/trim as required. This cutting regime will prevent the habitat from succeeding into grassland and scrub. Cuttings should be collected and removed from the site.

To permit flowering, it is highly recommended to reduce mowing/trimming regime from late June and cut every 4-6 weeks. This cutting regime will prevent succession, whilst allowing the flowers to set seed for the following year, thus producing a sustainable and viable habitat.

5.2.7 Monitoring

Monitor annually from years one to five and then every five years after. Monitoring is to take place between May and September.

5.2.8 Sparsely Vegetated Urban Land Habitat (Bare Ground) Implementation, Management and Monitoring Schedule

Table 8: Prescriptions for the implementation, management, and monitoring of Sparsely Vegetated Urban Land Habitat (Bare Ground)

	Year	Action	Prescriptions	Time of year
Implementation	0	Ground preparation	During September or October cut the grass very short and scape away the topsoil over vigorously to create areas of bare ground. All arisings must be removed from the Site to prevent the nutrients being returned.	Autumn
			Shallow cultivate site with a rotovator to improve aeration and drainage.	Autumn or Mar - May
			Remove any annual and perennial weeds that appear.	As required
			It is recommended that the seedbed is prepared using a power harrow. The power harrow will break up any soil clumps, creating a fine, crumbly tilth.	Mar - May
		Sow seed / plant plugs	Once the ground has been prepared seeds should be sown in spring (March to April) or early Autumn (late August to September) at a rate specified. Plugs should be planted in spring (March to April), once the risk of frost has passed.	Mar - Apr or Aug - Sep
		Lay track mesh reinforcement	The track mesh reinforcement can now be laid and secured over the newly sown area.	Mar - Apr or Aug - Sep
First Year Management	1	Mow/strim	Mow/strim as required during first year of establishment. Cut to a height of 40mm and remove the cuttings to prevent nutrients returning to the soil. To permit flowering, reduce mowing/strimming regime from late June and less than every 4-6 weeks.	As required
	1	Remove weeds	Remove any annual and perennial weeds that appear.	As required
Annual Management	2 - 30	Mow/strim	Mow/strim as required during first year of establishment. Cut to a height of 40mm and remove the cuttings to prevent nutrients returning to the soil. To permit	As required

			flowering, reduce mowing/trimming regime from late June and less than every 4-6 weeks.	
	2 - 30	Remove weeds	Remove any annual and perennial weeds that appear.	As required
	2 - 30	Re-sow/ replant plugs	Further seed sowing and plug planting if vegetation coverage of habitat fails to establish. Seed should be sown in spring (March to April) or early Autumn (late August to September) at a rate specified. Plugs should be planted in spring (March to April), once the risk of frost has passed.	Mar - Apr or Aug - Sep
Monitoring	1 - 5, 10, 15, 20 & 30	Monitor sparsely vegetated urban land (bare ground)	Undertake monitoring surveys of sparsely vegetated urban land (bare ground) following criteria listed in the Statutory Biodiversity Metric Conditions Assessment Sheets.	May - Sept

5.3 Individual Trees

5.3.1 Description

14 small sized, native urban trees, managed to be in moderate condition are due to be planted on-site.

5.3.2 Target Condition and Management Summary

The urban trees to be planted on-site have been given a target condition of moderate. At least three of the following criteria must be passed. It is advised to target criteria A, B, D or F.

- Criteria A: the tree is a native species (or at least 70% within the block are native species).
- Criteria B: the tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).
- Criteria C: the tree is mature (or more than 50% within the block are mature).
- Criteria D: there is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.
- Criteria E: natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.
- Criteria F: more than 20% of the tree canopy area is oversailing vegetation beneath.

5.3.3 Species Selection and Specification

The majority of chosen species are all native to Britain. The species selected have a range of life expectancies to provide the site with long term tree cover. Poisonous species have been avoided, as have species which commonly drop branches. Where appropriate trees have been planted to provide useful screening.

Trees must be positioned where they will provide the highest amenity possible and are unlikely to conflict with other trees or structures as they attain their mature height and spread.

Trees should be container-grown and selected according to guidelines BS: 3936: Part 1: 1992 - Nursery Stock. This will ensure that they are of good form and in healthy condition. **Table 8** table details the specification for the individual trees. Consideration is given to availability, immediate impact, ease of installation and likelihood of successful establishment.

Table 9: Proposed deciduous trees.

Botanical Name	Common Name	Size at Purchase
<i>Acer campestre</i>	Field maple	Standard
<i>Alnus glutinosa</i>	Alder	Standard
<i>Fagus sylvatica</i>	Beech	Standard
<i>Salix babylonica pendula</i>	Weeping willow	Multi-stem

5.3.4 Implementation of Individual Trees

It is recommended that the tree planting scheme is implemented after the completion of the development. This will avoid damage to new trees from construction hazards such as re-grading of soils near roots and mechanical damage to tree crowns and roots.

Tree planting should take place between November and March. Before planting, loosen the soil to eliminate compaction and improve drainage. If the existing topsoil is of poor quality, a fertile, freely draining soil with neutral or slightly acidic pH should be imported.

A planting hole will be excavated by hand and will be twice the diameter of the rootball and of equal depth. The sides and bottom of the hole should be roughened with the spade or fork. The new tree should be offered into the hole and backfilled using the original soil material. Before planting, loosen the soil to eliminate compaction and improve drainage. Soil amendments such as compost should not be added as this has been shown to be detrimental to successful establishment. All newly planted trees are to be thoroughly watered immediately after planting.

Staking will be required to secure the tree and prevent losses within the first years of establishment. It may be necessary to angle the stakes to avoid damaging the rootball. All trees are to be staked at a height of no more than 1 m. Spiral type guards are to be incorporated around the base of each stem to reduce pest damage throughout the winter months and to prevent mechanical damage from strimmers and mowers. Adjustable and flexible tree ties will be used. These are to be attached at a point no more than one third of the way up the stem.

Woodchip mulch should be applied around the base of each tree to a depth of no more than 75 mm. This will conserve water close to the soil surface and inhibit weed growth.

5.3.5 First Year Management of Individual Trees

Newly planted trees and shrubs are to receive 50 litres of water per week between the months of April and August for the first three years.

New bark mulch should be applied around the base of each tree to a depth of no more than 75mm, each year for at least the first three years. This will conserve water close to the soil surface and inhibit weed growth.

Any weeds found growing around the newly planted trees and shrubs should be removed annually in subsequent years after planting. This will ensure the uptake of

valuable resources such as water, nutrients, and light. This should be done by manually without the use of herbicides.

5.3.6 Management Once Established

Remove tree stakes, guards, and ties when they are no longer needed.

After completing any future tree works such as pruning or felling, all deadwood should be retained on-site and positioned into log piles in suitable and sheltered positions. This will then provide habitat for flora and fauna such as fungus, invertebrates, and amphibians.

5.3.7 Monitoring

Monitor annually from years one to five and then every five years after. Monitoring is to take place between May and September. It is recommended to monitor the establishment of newly planting shrub and trees and to replace dead trees as necessary.

5.3.8 Individual Tree Implementation, Management and Monitoring Schedule

Table 10: Prescriptions for the implementation, management, and monitoring of individual trees.

	Year	Action	Prescriptions	Time of year
Implementation	0	Tree planting	All newly planted trees are to be thoroughly watered immediately after planting. Woodchip mulch should be applied around the base of each tree to a depth of no more than 75mm. This will conserve water close to the soil surface and inhibit weed growth.	Nov - Mar
	0 - 3	Watering	Newly planted trees to receive 50 litres of water per week for the first three years.	Apr - Aug
Management of Newly Planted Trees	0 - 30	Weeding	Any weeds found growing around the newly planted trees should be removed annually in subsequent years after planting. This should be done by manually without the use of herbicides.	Aug - Sep
	0	Mulching	New bark mulch should be applied around the base of each tree to a depth of no more than 75mm	Mar - Apr
	0 - 30	Replacement of dead trees	Replace dead trees, as necessary.	Nov - Mar
	2 - 3	Remove stakes & ties	Remove stakes, guards and ties when they are no longer needed. This is usually done in year 2 and 3 but may be later if trees need additional time to establish.	All year
Monitoring	1 - 5, 10, 15, 20 & 30	Monitoring of newly planted trees	Undertake monitoring surveys of trees following criteria listed in the Statutory Biodiversity Metric Conditions Assessment Sheets.	May - Sep

5.4 Mixed Scrub

5.4.1. Description

0.0827 ha rhododendron scrub will be enhanced into moderate condition mixed scrub.

5.4.2. Mixed Scrub Target Condition and Management Summary

To be classed as the 'mixed scrub' habitat type, the scrub areas must meet the UKHab (Version 2.01) habitat definition for primary code h3h:

"Dense scrub comprising a mixture of species without a single species dominant or stands with a dominant species not listed in h3a-h3k" (blackthorn, hazel, sea buckthorn, bramble, gorse, hawthorn, rhododendron, willow, or juniper)".

N/A condition rhododendron scrub will be enhanced into moderate condition mixed scrub. To achieve this target condition at least three of the following condition assessment criteria must be passed. It is advised to target criteria A, C, D or E.

- Criteria A: The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). At least 80% of scrub is native, there are at least three native woody species and no single species comprises more than 75% of the cover (except hazel *Corylus avellana*, common juniper *Juniperus communis*, sea buckthorn *Hippophae rhamnoides* or box *Buxus sempervirens*, which can be up to 100% cover).
- Criteria B: Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.
- Criteria C: There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.
- Criteria D: The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.
- Criteria E: There are clearings, glades or rides present within the scrub, providing sheltered edges.

5.4.3. Species Selection and Specification

All shrubs will be procured and planted in accordance with British Standards BS 8545:2014.

The following tables detail the specification of species for the newly planted mixed scrub and native hedgerows.

Table 11: Proposed mixed scrub species

Botanical Name	Common Name	% Mix
<i>Corylus avelana</i>	Hazel	10
<i>Crataegus monogyna</i>	Common Hawthorn	25
<i>Ligustrum vulgare</i>	Wild Privet	10
<i>Prunus spinosa</i>	Blackthorn	15
<i>Rubus fruticosus</i>	Bramble	5
<i>Sambucus nigra</i>	Elder	10
<i>Salix caprea</i>	Goat Willow	5
<i>Salix fragilis</i>	Crack Willow	5
<i>Ulex Europaeus</i>	Gorse	5
<i>Viburnum opulus</i>	Guelder-rose	10

5.4.4. Implementation of Mixed Scrub

It is recommended that scrub planting is implemented after the completion of the development. This will avoid damage to scrub from construction hazards such as re-grading of soils near roots and mechanical damage to newly planted shrubs. Care should be taken during development to ensure that soils surrounding the scrub are not contaminated with cement or any other building materials.

Shrub planting should take place between November and March. Before planting, loosen the soil to eliminate compaction and improve drainage. If the existing topsoil is of poor quality, a fertile, freely draining soil with neutral or slightly acidic pH should be imported.

The shrubs should be planted at 1 m x 1 m spacing.

A planting hole will be excavated by hand and will be twice the diameter of the root ball and of equal depth. The sides and bottom of the hole should be roughened with the spade or fork. The new tree should be offered into the hole and backfilled using the original soil material. Before planting, loosen the soil to eliminate compaction and improve drainage. Soil amendments such as compost should not be added as this has been shown to be detrimental to successful establishment. All newly planted shrubs are to be thoroughly watered immediately after planting.

Staking will be required to secure the tree and prevent losses within the first years of establishment. It may be necessary to angle the stakes to avoid damaging the root ball. All trees are to be staked at a height of no more than 1m. Spiral type guards are to be incorporated around the base of each stem to reduce pest damage throughout the winter months and to prevent mechanical damage from mowing/strimming. Adjustable and flexible tree ties will be used. These are to be attached at a point no more than one third of the way up the stem.

Woodchip mulch should be applied around the base of each shrub to a depth of no more than 75mm. This will conserve water close to the soil surface and inhibit weed growth.

5.4.5. First Year Management of Mixed Scrub

Newly shrubs are to receive 15 litres of water per week between the months of April and August for the first three years.

New bark mulch should be applied around the base of each tree to a depth of no more than 75mm, each year for at least the first three years. This will conserve water close to the soil surface and inhibit weed growth.

Any weeds found growing around the newly planted trees and shrubs should be removed annually in subsequent years after planting. This will ensure the uptake of valuable resources such as water, nutrients, and light. This should be done manually without the use of herbicides.

5.4.6. Management Once Established

Remove tree stakes, guards, and ties when they are no longer needed.

The scrub is to be split into coups and coppiced on rotation every 7 to 15 years depending on growth rate of shrubs. The best time to cut scrub is during late winter.

5.4.7. Monitoring

Monitor annually from years one to five and then every five years after. Monitoring is to take place between May and September. It is recommended to monitor the establishment of newly planting shrub and trees and to replace dead shrubs as necessary.

5.4.8. Mixed Scrub Implementation, Management and Monitoring Schedule

Table 12: Prescriptions for the implementation, management, and monitoring of mixed scrub and native hedgerows.

	Year(s)	Action	Prescriptions	Time of year
Implementation	0	Scrub planting	The scrub should be planted at 1m x 1m spacing. All newly planted trees and shrub are to be thoroughly watered immediately after planting. Woodchip mulch should be applied around the base of each shrub to a depth of no more than 75mm. This will conserve water close to the soil surface and inhibit weed growth.	Nov - Mar
Management of Newly Planted Scrub	1 - 3	Watering	Newly planted shrubs to receive 15 litres of water per week for the first three years.	Apr - Aug
	1 - 3	Weeding	Any weeds found growing around the newly planted trees should be removed annually in subsequent years after planting. This should be done by manually without the use of herbicides.	Aug - Sep
	1 - 3	Mulching	New bark mulch should be applied around the base of each whip to a depth of no more than 75mm	Mar - Apr
	1 - 5	Replacement of dead shrubs	Replace dead shrubs, as necessary.	Nov - Mar
	2 - 3	Remove stakes & ties	Remove stakes, guards and ties when they are no longer needed. This is usually done in year 2 and 3 but may be later if trees need additional time to establish.	All year
Management Once Established	10, 20 & 30	Coppicing	Coppice scrub on rotation every 7 to 15 years. This is to be undertaken outside of bird nesting season (February to September).	Nov - Jan
Monitoring	1 - 5	Inspection of newly planted shrubs	Inspect newly planted shrubs.	May - Sep
	1 - 5, 10, 15, 20 & 30	Monitor scrub	Undertake monitoring surveys of scrub following criteria listed in the Statutory Biodiversity Metric Conditions Assessment Sheets.	May - Sep

5.5 Native Hedgerow

5.5.1. Description

0.106 km native hedgerows, poor condition, will be created on-site.

5.5.2. Native Hedgerow Target Condition and Management Summary

The native hedgerow to be created on-site has been given a target condition of poor. None of the relevant condition assessment criteria are needed to be passed in order to achieve this target condition. However, as a measure of best practice the hedgerow will aim to meet the following criteria and the habitat must meet its definition as per the UKHab Habitat classification system (2023).

- “A hedgerow with >80% canopy cover of UK native species or archaeophyte woody species”.
- The hedgerow should aim to be over 1.5 metres in average height along the length.
- The hedge should have a gap between the ground and base of the canopy of 1m width undisturbed ground with perennial herbaceous vegetation on at least one side of the hedgerow.
- There should be no invasive non-native species present.

5.5.3. Species Selection and Specification

All shrubs will be procured and planted in accordance with British Standards BS 8545:2014.

The following tables detail the specification of species for the newly planted mixed scrub and native hedgerows.

Table 13: Proposed native hedgerow species

Botanical Name	Common Name	% Mix
<i>Acer campestre</i>	Field Maple	15
<i>Carpinus betulus</i>	Hornbeam	10
<i>Cornus sanguinea</i>	Dogwood	10
<i>Corylus avellana</i>	Hazel	10
<i>Crataegus monogyna</i>	Common Hawthorn	20
<i>Ilex aquifolium</i>	Holly	10
<i>Ligustrum vulgare</i>	Wild Privet	5
<i>Malus sylvestris</i>	Crab Apple	5
<i>Prunus spinosa</i>	Blackthorn	10
<i>Rose canina</i>	Dog Rose	5

5.5.4. Implementation of Native hedgerow

It is recommended that native hedgerow planting is implemented after the completion of the development. This will avoid damage to the hedgerow from construction hazards such as re-grading of soils near roots and mechanical damage to newly planted shrubs. Care should be taken during development to ensure that soils surrounding the hedgerow are not contaminated with cement or any other building materials.

Hedgerow shrub planting should take place between November and March. Before planting, loosen the soil to eliminate compaction and improve drainage. If the existing topsoil is of poor quality, a fertile, freely draining soil with neutral or slightly acidic pH should be imported.

The shrubs should be planted in double staggered rows of 5 planters per m² in groupings of 2 – 3 same species.

A planting hole will be excavated using hand tools and will be twice the diameter of the root ball and of equal depth. The sides and bottom of the hole should be roughened with the spade or fork. The new tree should be offered into the hole and backfilled using the original soil material. Before planting, loosen the soil to eliminate compaction and improve drainage. Soil amendments such as compost should not be added as this has been shown to be detrimental to successful establishment. All newly planted shrubs are to be thoroughly watered immediately after planting.

Staking will be required to secure the tree and prevent losses within the first years of establishment. It may be necessary to angle the stakes to avoid damaging the root ball. All trees are to be staked at a height of no more than 1 m. Spiral type guards are to be incorporated around the base of each stem to reduce pest damage throughout the winter months and to prevent mechanical damage from strimmers and mowers. Adjustable and flexible tree ties will be used. These are to be attached at a point no more than one third of the way up the stem.

Woodchip mulch should be applied around the base of each shrub to a depth of no more than 75mm. This will conserve water close to the soil surface and inhibit weed growth.

5.5.5. First Year Management of Native Hedgerows

Newly planted shrubs are to receive 5 - 10 litres of water per meter per week between the months of April and August for the first three years.

New bark mulch should be applied around the base of each shrub to a depth of no more than 75mm, each year for at least the first three years. This will conserve water close to the soil surface and inhibit weed growth.

Any weeds found growing around the newly planted trees and shrubs should be removed annually in subsequent years after planting. This will ensure the uptake of valuable resources such as water, nutrients, and light. This should be done manually without the use of herbicides.

5.5.6. Management Once Established

Remove tree stakes, guards, and ties when they are no longer needed.

The hedgerow should be cut in rotation every 7 to 15 years depending on growth rate of shrubs. The best time to cut hedgerows is during late winter.

After completing any future hedgerow works such as pruning or felling, all deadwood should be retained on Site and created into log piles in suitable and sheltered positions. This will then provide habitat for flora and fauna such as fungus, invertebrates, amphibians and reptiles.

5.5.7. Monitoring

Monitor annually from years one to five and then every five years after. Monitoring is to take place between May and September. It is recommended to monitor the establishment of newly planting shrub and trees and to replace dead shrubs as necessary.

5.5.8. Native Hedgerows Implementation, Management and Monitoring Schedule

Table 14: Prescriptions for the implementation, management, and monitoring of native hedgerows.

	Year(s)	Action	Prescriptions	Time of year
Implementation	0	Hedgerow planting	The hedgerow whips should be planted in double staggered rows of 5 planters per m ² in groupings of 2 – 3 same species between November and March. All newly planted whips are to be thoroughly watered immediately after planting. Woodchip mulch should be applied around the base of each whip to a depth of no more than 75mm. This will conserve water close to the soil surface and inhibit weed growth.	Nov - Mar
Management of Newly Planted Scrub	1 - 3	Watering	Newly planted whips to receive 5 - 10 litres of water per meter per week for the first three years.	Apr - Aug
	1 - 3	Weeding	Any weeds found growing around the newly planted whips should be removed annually in subsequent years after planting. This should be done by manually without the use of herbicides.	Aug - Sep
	1 - 3	Mulching	New bark mulch should be applied around the base of each whip to a depth of no more than 75mm	Mar - Apr
	1 - 5	Replacement of dead trees	Replace dead trees, as necessary.	Nov - Mar
	2 - 3	Remove stakes & ties	Remove stakes, guards and ties when they are no longer needed. This is usually done in year 2 and 3 but may be later if trees need additional time to establish.	All year
Management Once Established	10, 20 & 30	Coppicing	Cut hedgerow on rotation every 7 to 15 years. This is to be undertaken outside of bird nesting season (February to September).	Nov - Jan
Monitoring	1 - 5	Inspection of newly planted whips	Inspect newly planted whips.	May - Sep
	1 - 5, 10, 15, 20 & 30	Monitor hedgerow	Undertake monitoring surveys of hedgerow following criteria listed in the Statutory Biodiversity Metric Conditions Assessment Sheets.	May - Sep

5.6 Pond (non-priority)

5.6.1. Description

0.2638 ha pond (non-priority) will be enhanced into moderate condition.

It is proposed to regrade the edge of the pond with accessible stable gradients. Coir rolls and reinforced mesh will be used to stabilise and secure the banks. Additionally, both treatments will be hydro-seeded to create further wetland/aquatic habitat increasing biodiversity and providing further stabilisations.

The design also proposes an aquatic floating system to create a vegetated island in the pond, to allow animals such as birds and mammals to shelter from predators. This created pontoon will be vegetated with wetland planting (**see Table 15**), which will have the additional benefit of treating the water to improve water quality. The wetland pontoon will be able to adapt to the changing water level as the pond attenuates stormwater. In addition, a wading pool with marginal vegetation will be created at the edge of the pond will allow animals to easily access the pond and provide a shelter habitat for breeding.

5.6.2. Target Condition and Management Summary

Poor condition pond (non-priority) will be enhanced into moderate condition. To achieve this target condition at least six of the following condition assessment criteria must be passed. It is advised to target criteria A, C, F, G, H & I.

- Criteria A: The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.
- Criteria B: There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.
- Criteria C: Less than 10% of the water surface is covered with duckweed *Lemna* spp. or filamentous algae.
- Criteria D: The pond is not artificially connected to other waterbodies, such as agricultural ditches or artificial pipework.
- Criteria E: Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams², pumps or pipework.
- Criteria F: There is an absence of listed non-native plant and animal species.
- Criteria G: The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.

- Criteria H: Emergent, submerged or floating plants (excluding duckweed) cover at least 50% of the pond area which is less than 3 m deep.
- Criteria I: The pond surface is no more than 50% shaded by adjacent trees and scrub.

5.6.3. Species Selection and Specification

5.6.4. Proposed seed mix

Pond Edge Mixture EP1. Sowing rate 4g/m². This seed mix contains a variety of different wildflower and grass species which are suitable for sowing on wet margins of ponds, streams and ditches.

Table 15: Aquatic Marginal species proposed for planting on pontoon and wading pool.

Botanical Name	Common Name	% Mix
<i>Alisma plantago-aquatica</i>	Water Plantain	10
<i>Caltha palustris</i>	Marsh Marigold	15
<i>Carex acutiformis</i>	Lesser Pond Sedge	10
<i>Carex pseydocyperus</i>	Cyperus Sedge	5
<i>Carex rostrata</i>	Bottle Sedge	5
<i>Eleocharis palustris</i>	Common Spike-rush	10
<i>Filipendula ulmaria</i>	Meadowsweet	5
<i>Iris pseudacorus</i>	Yellow Flag Iris	10
<i>Juncus effusus</i>	Soft Rush	15
<i>Juncus inflexus</i>	Hard Rush	5
<i>Schoenoplectus lacustris</i>	Common Club-rush	10

5.6.5. Implementation of Pond (non-priority) Enhancement

It is recommended that new seed planting is implemented after the completion of the development. The following instructions should be implemented:

- During September or October cut the grass very short and rake the land over vigorously to create patches of bare ground. When the grassland is cut, the cuttings must be removed from the Site to prevent the nutrients being returned to the pond or the marginal habitat.
- Remove existing weed species, including grasses.
- Shallow cultivate site with a rotovator and roll to consolidate ground to keep in moisture.
- Repeat removal of weed species, including grasses.
- Power harrow to create fine surface tilth.
- Final spray if required.

- Surface sow the seed and roll.

Once the ground has been prepared, the seed mix should be sown during Spring (March to April) or early autumn (late August/ September). The seeds should be sown sparsely at a rate of 4g/m². The seed must be surface sown and can be applied by machine or by hand. For an even distribution divide the seed into two or more parts and sow in overlapping sections. Do not incorporate or cover the seeds.

Establishment of emergent pond vegetation (e.g. reeds) and other aquatic plants is best achieved using established plants. The emergent and aquatic species should be planted in mid spring to early summer.

Compost suitable for planting should be medium to heavy loam.

5.6.6. First Year Management

The habitat should remain nutrient poor, therefore, do not add fertilisers at any point. The majority of species included within the seed mix are perennial and are slow to establish especially on sites prone to flooding. In the first year annual weed growth should be cut back in October or November to encourage the establishment of perennial ground cover.

5.6.7. Management Once Established

The value of a pond edge habitat is determined by the variety of vegetations structures present. The greater the variety of the vegetation structure the greater the value to biodiversity. Suitable management can increase the biodiversity value of the pond edge.

Variation in vegetation structure can be achieved by removing short sections of vegetation by cutting every 2-3 years in rotation. The final aim is to have areas of dense tussocky stands and bare and recently colonised ground. The vegetation should be removed as a wedge. Dense stands of single species should be selectively thinned.

If algae forms, thin more regularly to allow more light and oxidization to take place.

In order to minimise disruption to wildlife vegetation removal should be conducted between September and November.

Light grazing by livestock such as horses and cattle in late summer will cause less disruption to wildlife than mechanical clearance.

Care should be taken using machines and heavy equipment on wet sites to avoid damage to soil and vegetation.

Regularly remove yellowing or dead leaves to prevent organic matter decaying in the water. Remove any debris, litter or excessive leave litter, that may block out light. Prune dead or decaying foliage, removing arising from the site. Lift and Divide plants in spring if required.

5.6.8. Monitoring

Monitor annually from years one to five and then every five years after. Monitoring is to take place between May and September. It is recommended to monitor the establishment of new planting and to replace dead plants as necessary.

5.6.9. Pond (non-priority) Implementation, Management and Monitoring Schedule

Table 16: Prescriptions for the implementation, management, and monitoring of pond (non-priority).

	Year(s)	Action	Prescriptions	Time of year
Implementation	0	Ground Preparation on pond edges.	<u>Bare ground:</u> To reduce fertility, remove the top 15 to 20 cm of topsoil to reveal the nutrient-poor subsoil. The nutrient rich topsoil should then be relocated elsewhere on Site, i.e. in the garden spaces and shrub beds. Alternatively, a layer of the unearthed subsoil can be excavated and placed over the topsoil. This method will inhibit the growth of any weeds present in the topsoil. Another option is to dilute the topsoil by mixing in poor quality material such as crushed builders' rubble or spoil. Then, using a fork, break up the soil and rake the proposed seedbed to produce a fine, firm tilth. Remove any large stones and any root fragments.	Sept - Oct
			<u>Existing grassland:</u> During September or October cut the grass very short and rake the land over vigorously to create patches of bare ground. When the grassland is cut, the cuttings must be removed from the Site to prevent the nutrients being returned.	
		Seed sowing on pond edges	The seeds should be sown in spring (March – April) or early autumn (late August/ September) at a rate of 4g/m ² . The seed must be surface sown and can be applied by machine or by hand. For an even distribution divide the seed into two or more parts and sow in overlapping sections. Do not incorporate or cover the seeds.	Mar – Apr Or late Aug/ Sept
		Planting of emergent and aquatic plant species	Plant emergent and aquatic species on the floating pontoon and wading pool during mid spring to early summer.	Mid spring to early summer
Management Once Established	1 - 30	Removal of weeds	Cut back annual weed growth to encourage establishment of perennial ground cover.	Oct - Nov
	1 - 30	Removal of dead vegetation from pond	Regularly remove yellowing or dead leaves to prevent organic matter decaying in the water. Remove any debris, litter or excessive leave litter, that may block out light. Prune dead or decaying foliage, removing arising from the site. Lift and Divide plants in spring if required.	Jun - Mar
	2 – 3 then every 2 – 3 years	Remove areas of vegetation to increase vegetation structure	Vegetation should be removed as a wedge and dense stands of single species should be selectively thinned by cutting every 2-3 years in rotation. Vegetation removal should be conducted between September and November. This can be done mechanically or by grazing horses or cattle.	Sept - Nov

Monitoring	1 - 5, 10, 15, 20 & 30	Monitor pond and pond edge vegetation	Undertake monitoring surveys of pond following criteria listed in the Statutory Biodiversity Metric Conditions Assessment Sheets.	May - Sep
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6. Monitoring

6.1 Monitoring Strategy

Ongoing ecological monitoring and HMMP review is required for the successful delivery of BNG targets. The monitoring of habitats will be undertaken by a suitably qualified Ecologist with the findings presented in monitoring reports to be submitted to Kirklees Council.

Table 17: Details of when monitoring surveys and reports will be undertaken and submitted.

Project Year	Month Report to be Submitted	Month HMMP to be Reviewed	Comments
1 - 5	September	October	Update in the establishment of habitats
10, 15, 20 & 30	September	October	Habitats to be assessed using the Statutory Biodiversity Metric Condition Sheets & any necessary changes to the HMMP for habitats to achieve proposed condition.

6.2 Ecological Monitoring

Table 18 sets out contingency measures in the event that management prescriptions do not deliver as expected.

Table 18: Summary of adaptive management approaches.

Habitat	Risk Factor	Adaptive Management
Other Neutral Grassland	The grassland is not a good example of the habitats type and has low species diversity.	Review maintenance regime, this may help to the habitat parcel to meet the criteria of other neutral grassland and to improve sward diversity. Additional seeding may be required.
	Lack of varied sward height	Review cutting regime to allow more variation in the sward.
	Cover of bare ground does not meet to condition assessment criteria	Additional seeding may be required if bare ground exceeds 5%.
	Cover of bracken exceeds 20% and/or cover of scrub exceeds 5%	Targeted removal of the scrub and/or bracken.
	Presence of Schedule 9 invasive non-native species (INNS)	A survey is to be undertaken to map the extent of the INNS and a method statement to be produced for its safe removal and management.
Sparsely Vegetated Urban Land (Bare Ground)	Cover of bare ground is <50%	Remove vegetation to ensure bare ground is greater than 50%
	Seeds failing to establish and cover of bare ground is >50%	Additional seeding/planting may be required to ensure that the habitat contains a variety of different species beneficial for wildlife.
	Presence of Schedule 9 invasive non-native species (INNS)	A survey is to be undertaken to map the extent of the INNS and a method statement to be produced for its safe removal and management.
Individual Trees	Trees fail to establish	Newly planted trees to be monitored closely and dead shrubs to be replaced.
	The tree has been impacted by human activities.	Replace any damaged trees and consider installing protection whilst the trees establish.

Mixed Scrub	Shrubs fail to establish	Newly planted shrubs to be monitored closely and dead shrubs to be replaced.
	Presence of Schedule 9 invasive non-native species (INNS)	A survey is to be undertaken to map the extent of the INNS and a method statement to be produced for its safe removal and management.
	Poorly developed edge habitats between scrub adjacent habitats	Coppice shrubs along the edge of the scrub to create a well-developed edge habitat.
	Lack of structural diversity with a lack of clearings and rides	Review coppicing regime. Addition of shrub planting to created more a diversity, if necessary.
Native Hedgerow	The height and width of the hedgerow is less than 1.5m	Relax cutting regime of the hedgerow.
	Gap between ground and base of canopy greater than 0.5m and canopy gap cover more than 10% of the hedgerow and single gaps exceed 5m	Replacement of any dead shrubs to fill any gaps within the hedgerow.
	INNS are present within the hedgerow and damaged by human activities	A survey is to be undertaken to map the extent of the INNS and a method statement to be produced for its safe removal and management. Replace any damaged shrubs and consider installing protection whilst the hedgerow establishes.
Pond (non-priority)	Poor water quality in pond is low and turbidity is high	Additional planting of aquatic species known to filter and improve water quality.
	>10% of water surface is covered with <i>Lemna</i> sp. or algae	Remove <i>Lemna</i> sp. or algae from water surface
	Presence of Schedule 9 invasive non-native species (INNS)	A survey is to be undertaken to map the extent of the INNS and a method statement to be produced for its safe removal and management.
	Emergent, submerged or floating plants (excluding <i>Lemna</i> sp.) cover <50% in pond area <3m deep	Additional planting of aquatic species.
	Pond surface >50% shaded by trees and scrub.	Prune adjacent vegetation to decrease shading of pond surface to <50%.

7. References

Reports:

JCA Ltd. – *Amphibian Survey and Report*, June 2025 (22888b/GB).

JCA Ltd. – *Bat Emergence Survey Report*, July 2025 (22888/RPS).

JCA Ltd. – *Ecological Impact Assessment (EcIA)*, January 2025 (22888g/JF).

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Guidance:

Ausden, M. (2007) *Habitat management for conservation: A handbook of techniques*. Oxford, United Kingdom: Oxford University Press, USA.

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British Standards Institute (BSI), (2013) *BS 42020:2013, Biodiversity - Code of practice for planning and development*. London.

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DEFRA (2024). *The Statutory Biodiversity Metric Calculations Tool*.

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Emorsgate Seeds (2023). Available at <https://wildseed.co.uk/>

UKHab Ltd (2023) *UK Habitat Classification Version 2.01*. Available at <https://www.ukhab.org>.

Appendices

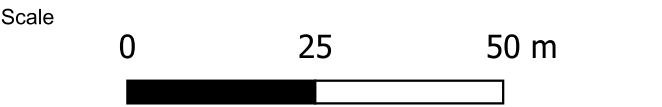
Appendix 1: Baseline UKHab Habitat Map



Site name & address
**Longley Farm, Longley Lane,
Huddersfield, West Yorkshire
HD9 2JD**

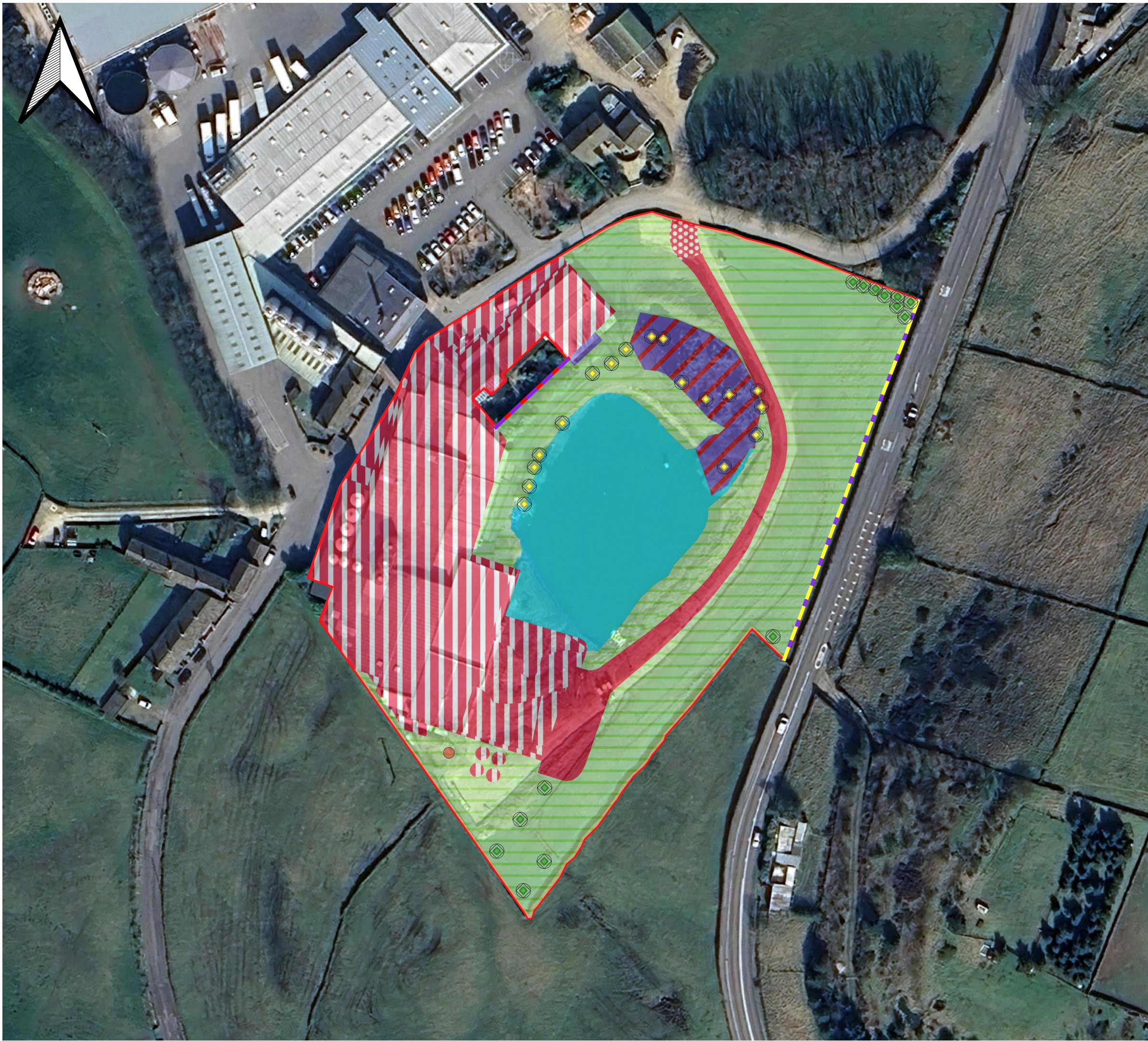
Key

- Red Line Boundary
- Individual tree Baseline
 - Existing Large Urban Tree
 - Existing Medium Urban Tree
 - Existing Small Urban Tree
- Hedgerow Baseline
 - Non-native and ornamental hedgerow
- Habitats Baseline
 - Artificial unvegetated, unsealed surface
 - Bare ground
 - Developed land; sealed surface
 - Introduced shrub
 - Mixed scrub
 - Modified grassland
 - Other neutral grassland
 - Ponds (non-priority habitat)
 - Rhododendron scrub
 - Ruderal/Ephemeral



Site Longley Farm	Client J & E Dickinson
Project Biodiversity Accounting Assessment	Author JF
Plan ref 22888b/JF R1	Revision 1

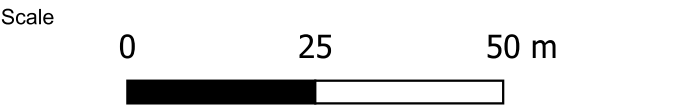
Appendix 2: Proposed UKHab Habitat Map



Site name & address
**Longley Farm, Longley Lane,
Huddersfield, West Yorkshire
HD9 2JD**

Key

- Red Line Boundary
- Individual tree Proposed
 - Proposed Small Urban Tree
 - Retained Medium Urban Tree
 - Retained Small Urban Tree
 - Lost Urban Tree
- Hedgerows Proposed
 - Non-native and ornamental hedgerow
 - Native hedgerow
- Habitats Proposed
 - Artificial unvegetated, unsealed surface
 - Bare ground
 - Developed land; sealed surface
 - Introduced shrub
 - Mixed scrub
 - Other neutral grassland
 - Ponds (non-priority habitat)



Site Longley Farm	Client J & E Dickinson
Project Biodiversity Accounting Assessment	Author JF
Plan ref 22888b/JF R1	Revision 1

Appendix 3: Proposed Development Landscape Map

Appendix 4: Author Qualifications

Adam West, Principal Ecologist

BSc (Hons) Animal and Wildlife Management

Adam joined JCA to lead the expanding ecology department. Having returned to education as a mature student, Adam studied Countryside Management for two years before undertaking a Bachelor's degree, for which he was awarded First Class Honours. Adam has many years' experience in ecological consultancy, working on projects ranging from individual planning applications to national infrastructure projects. Adam holds a Natural England Level 1 great crested newt survey class licence, a Natural England Level 2 bat survey class licence (and the Scottish and Welsh equivalents) and a CSCS card.

James Foster, Assistant Ecologist

BSc (Hons) Biology

James gained his undergraduate degree in biology in 2012 from University of Leeds. James has plenty of experience in ecology, having worked countless projects of different scales all over the north and midlands. James has over 11 years of experience surveying anything from reptiles to hedgerows and holds a Great crested newt licence level 1 and is working towards his bat licence and barn owl licence.

Alex Donovan, Assistant Ecologist

MBiol BSc (Hons) Biology (Industrial), MRSB.

Alex joined JCA in 2023 after graduating from the University of Leeds with a First Class Honours Integrated Master's degree in Biology, including an industrial placement year working in the Uplands Research Department of the Game and Wildlife Conservation Trust. Alex is a Qualifying Member of CIEEM, a Member of the Royal Society of Biology, and a member of the BTO's Bird Ringing Scheme and Nest Record Scheme. Alex holds Natural England licences for barn owls (CL29) and great crested newts (level 1, CL08) and is working towards additional survey licences for bats.

The Information and advice which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and bona fide opinions.

Signed



.....

James Foster *BSc (Hons)*

11/06/2026

Reviewed by



.....

Alex Donovan *MBiol BSc (Hons), MRSB*

15/06/2026

Approved by



.....

MBiol BSc (Hons)

30/06/2026

For and on behalf of **JCA Ltd**

Registered Office:

**Unit 80
Bowers Mill
Branch Road
Barkisland
Halifax
HX4 0AD**

Tel. 01422 376335

Fax. 01422 376232

Email: info@jcaac.com

Web: www.jcaac.com



ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes
- Butterfly & Insect Surveys

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)
- Planting Schemes
- Monitoring of bird or bat boxes.

ARBORICULTURAL SERVICES

Guidance for Architects & Developers

- British Standard 5837 Surveys
- Arboricultural Implications Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control



HEAD QUARTERS

Unit 80 Bowers Mill,
Branch Road,
Barkisland
Halifax, HX4 0AD

Company Reg No: 05005041
VAT No: 686 4674 78

