

Whalley's Farm, Preston Road, Charnock Richard, PR7 5HR

## PRELIMINARY ASSESSMENT OF BIODIVERSITY NET GAIN

November 2023

ERAP (Consultant Ecologists) Ltd Reference: 2023-180

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## Document Control

Survey Type:	Surveyors	Survey Date(s)
UK Habitat Classification Survey (including Condition Assessments of habitats)	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM Principal Ecologist	29 <sup>th</sup> September 2023
Reporting	Personnel	Date
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<b>Signature(s)</b>		
<b>Checked</b>	Rachel Brown B.Sc. (Hons)	7 <sup>th</sup> November 2023
<b>Revised and issued by</b>	Victoria Burrows	7 <sup>th</sup> November 2023
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<b>Version Number</b>	1	

## 1.0 INTRODUCTION

### 1.1 Background and Rationale

- 1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned by Barton Civil Engineering to carry out a Preliminary Assessment of Biodiversity Net Gain (BNG) at the land at Whalley's Farm, Preston Road, Charnock Richard (hereafter the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SD 55295 14353. An aerial image of the site and its surrounding habitats is appended at **Figure 1** (source image: ESRI World Imagery).
- 1.1.2 The assessment was requested to inform a planning application proposing the demolition of the workshop building, removal of the timber shed and metal containers and the redevelopment of the site to housing.
- 1.1.3 This report provides an assessment of the biodiversity value of the baseline of the site, a preliminary assessment of the value of post-development habitats based on the parameters outlined on the *Proposed Site Plan* (DC and MG Associates, 2023), and provides guidance in relation to the requirements in accordance with *Biodiversity Net Gain: Good Practice Principles for Development* (CIEEM, 2016).
- 1.1.4 The report advises on the application of the Mitigation Hierarchy in relation to the design of the site and, in accordance with Chapter 15, paragraph 180(d) of the *National Planning Policy Framework* (NPPF) (Ministry of Housing, Communities and Local Government, 2021), advises on how '*opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate*' will be accommodated by the site.

### 1.2 Scope of Study

- 1.2.1 This report has been prepared to accompany a completed assessment of BNG using *The Biodiversity Metric 4.0 Calculation Tool (JP039)* (Natural England, 2023). The completed Microsoft Excel spreadsheet assessment is presented as a separate document, entitled '*ERAP Ltd 2023-180 Biodiversity Metric 4.0 Calculation Tool Whalleys Farm 06.11.23*', hereafter referred to as the 'BNG Metric'.
- 1.2.2 It is intended that this report provides a transparent assessment to demonstrate the calculation of net gain, based on the reasonable parameters assumed for the proposals (refer to **Section 2.3**). This approach has been applied on a number of other sites ERAP (Consultant Ecologists) Ltd has assisted with and has been accepted by the relevant Local Planning Authorities (LPA) and their ecological advisors to enable a planning application to progress.

## 2.0 METHOD OF SURVEY

### 2.1 Habitat Assessment and Mapping

#### Baseline Habitats

- 2.1.1 Condition assessments of the habitats present at the site was carried out by Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM on 29<sup>th</sup> September 2023. Refer to the *Ecological Survey and Assessment* report (ERAP (Consultant Ecologists) Ltd, 2023) for a detailed description of the habitats present at the site, photographs and plant species lists.
- 2.1.2 On site habitat mapping was assisted via use of GPS technology and *ESRI World Imagery* and the topographical survey provided by Barton Civil Engineering.
- 2.1.3 Each of the habitats within the site has been assessed in accordance with the UKHab to determine each habitat type present. This has allowed a reliable classification of habitats in accordance with those used by the BNG Metric.

- 2.1.4 The UKHab has been designed to function at two scales: fine scale (25m<sup>2</sup> or 5 metres length) and large scale (400m<sup>2</sup> or 20m<sup>2</sup> length). It has been considered for the purposes of this survey (where the UKHab has been used to inform the BNG calculation of a relatively small area) that a finer scale of 5m<sup>2</sup> is appropriate for the classification of habitats.
- 2.1.5 A plan showing the baseline habitats present within the site in accordance with UKHab symbology is appended at **Figure 3**.
- 2.1.6 Condition Assessments for each of the habitats present within the site have been completed in accordance with *The Biodiversity Metric 4.0 – Technical Annex 1: Condition Assessment Sheets and Methodology* (Natural England, March 2023) (refer to **Section 7.2**).

### **Post-development Habitats**

- 2.1.7 The post-development habitats have been calculated with reference to the *Proposed Site Plan* (DC and MG Associates, 2023), as presented at **Appendix 2**. As a detailed landscape planting strategy was not available at the time of the assessment, in this instance it has been appropriate to make reasonable assumptions on the habitats to be created, based on the ecological guidance / constraints, and the *Proposed Site Plan*. It is recognised that the BNG Metric will need to be updated when the detailed site proposals and landscape proposals are prepared. This preliminary assessment of BNG therefore provides a series of parameters that should be adhered to during the preparation of the detailed landscape proposals to have confidence in the delivery of BNG.
- 2.1.8 The *Proposed Site Plan* was provided to ERAP (Consultant Ecologists) Ltd as a .pdf file; the file has been converted to .dxf format and inputted into QGIS.
- 2.1.9 A plan showing the proposed habitats in accordance with UKHab symbology is appended at **Figure 4**. Target Condition Assessments for each of the proposed habitats are presented at **Section 7.3**.

## **2.2 Survey and Reporting Limitations**

- 2.2.1 No access restrictions or survey limitations were encountered.
- 2.2.2 All measurements have been either estimated whilst on site, mapped and then measured using QGIS.

## **2.3 Evaluation Methods and Rules Applied**

### **Habitats and Assessment**

- 2.3.1 Habitats have been assessed to determine whether they meet those described in *UK Biodiversity Action Plan: Priority Habitat Descriptions* (Maddock, A (ed), 2008); these lists are used to help draw up the statutory lists of Priority Habitats, as required under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006*. Where suitable, the ecological value of the habitats present have been assessed using the terms outlined in *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).
- 2.3.2 The BNG assessment tool used is *Biodiversity Metric 4.0 (JP039)* (Natural England, 2023). Condition Assessments for each of the habitats present within the site (and the target conditions for the post-development habitats) have been taken from *The Biodiversity Metric 4.0 – Technical Annex 1: Condition Assessment Sheets and Methodology* (Natural England, March 2023).

### **Relevant Guidance**

- 2.3.3 Government advice on wildlife, as set out in the *National Planning Policy Framework* (Ministry of Housing, Communities and Local Government, 2021) and associated government circulars has been taken into consideration.

## Assumptions

- 2.3.4 Vegetated gardens are included in the post-development calculation. It is recognised that there is limited control over what happens to the gardens in the long term; vegetated gardens are scored accordingly in the BNG Metric. Inclusion of vegetated gardens within the metric is in accordance with the guidance in relation to gardens issued during the Greater Manchester Combined Authority / CIEEM Webinar<sup>1</sup>. It is assumed that Chorley Council will also take garden habitats into account in this manner.
- 2.3.5 In the absence of a detailed landscape strategy it has been necessary to make a number of other reasonable assumptions in relation to the post-development habitats, these are:
- The retained tree lines will lie outside the garden habitats and can therefore be classed as 'retained' by the metric;
  - The new tree line at the southern site boundary is composed of native species and will lie outside the vegetated gardens and can therefore be classed as a new habitat by the metric;
  - The new grassland to the north of the access driveway is assumed to be a wildflower grassland (rather than a modified / amenity grassland) and will be managed as a wildflower grassland; and
  - The ornamental hedgerow at the boundary between the yard and the existing bungalow will be retained.
- 2.3.6 Reasonable and realistic assumptions have been made in relation to the condition assessments for the proposed habitats at the site; the proposed condition assessment for each habitat is appended at **Section 7.3**.
- 2.3.7 Long-term management of the proposed habitats is required to secure the proposed condition and will be secured by implementation of actions in a Landscape and Ecological Management Plan, or similar.

## 3.0 BASELINE HABITATS

### 3.1 Site Description

- 3.1.1 The 0.49 hectare site is located on the south side of Preston Road near Charnock Richard and comprises a hard-standing and compacted gravel yard used for the storage of construction vehicles. A workshop (Building 1) and an associated timber shed and three metal containers are present. At the western end of the site is a bungalow bordered by mown amenity grassland with scattered trees. The bungalow will not be directly affected by the proposals and was therefore excluded from the survey. At the north-eastern site boundary is sloping ground colonised by poor semi-improved grassland with a row of planted trees.
- 3.1.2 A plan illustrating the baseline habitats at the site in accordance with the Phase 1 Habitat Survey is presented at **Figure 2**.
- 3.1.3 Photographs of the baseline habitats are appended at **Section 7.1**.

### 3.2 Assessment of Baseline Habitats

- 3.2.1 **Tables 3.1 to 3.3** provide a summary of the habitats present, their condition assessment result and their area / length within the site. Condition assessments for each habitat are appended at **Section 7.2**.

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<sup>1</sup> Advice provided by Natural England in a recent (February 2021) Question and Answer Session on the Greater Manchester Combined Authority / CIEEM Webinar stated 'Q. How should gardens be treated within the metric? As no control of what happens within these areas is possible, should they be excluded? A. Gardens are included in the metric but the metric assumes that a significant number will disappear and decked over etc. over time. So they are scored accordingly. They still generate biodiversity units, but account has been taken of the fact that, as you say, there is limited control over what happens to them [Natural England]' (GMEU / CIEEM, 2021).

**Table 3.1: Summary of Baseline Area Based Habitats within Site**

Habitat Reference	UK Habitat Classification Type	BNG Habitat Equivalent	Condition Assessment Result	Strategic Significance <sup>1</sup>	Area (ha)
<b>Habitat 1</b> Vegetated garden at the bungalow	g4 – modified grassland	Urban – vegetated gardens	N/A	Low	0.08
<b>Habitat 2a</b> Modified grassland near bungalow	g4 modified grassland	Grassland – modified grassland	Poor	Low	0.08
<b>Habitat 2b</b> Grassland on sloping verge	g4 modified grassland	Grassland – modified grassland	Poor	Low	0.04
<b>Habitat 3</b> Tall-herb vegetation	g3c other neutral grassland	Grassland – other neutral grassland	Poor	Low	0.01
<b>Habitat 4</b> Buildings	u1b5 buildings	Urban – developed land; sealed surface	N/A	Low	0.03
<b>Habitat 5</b> Ruderal / ephemeral vegetation around margins of yard	u1b developed land; sealed surface with 17 ruderal / ephemeral	Sparsely vegetated land – ruderal / ephemeral	Poor	Low	0.05
<b>Habitat 6</b> Hard-standing and access road	u1b developed land; sealed surface	Urban – developed land; sealed surface	N/A	Low	0.2
<b>Total:</b>					<b>0.49 ha</b>
<b>Habitat 12</b> Urban trees x 4	N/A	Individual trees – urban tree	Poor	Low	0.0164
<sup>1</sup> 'Low Strategic Significance' = Area / compensation not in local strategy / no local strategy. 'Medium Strategic Significance' = Location ecologically desirable but not in local strategy. 'High Strategic Significance' = Formally identified in local strategy.					

**Table 3.2: Summary of Baseline Hedgerow Habitats within Site**

Habitat Reference	UK Habitat Classification Type	BNG Habitat Equivalent	Condition Assessment Result	Strategic Significance <sup>1</sup>	Length (km)
<b>Habitat 7</b> Hedgerow with trees at Preston Road	H2a hedgerow	Native hedgerow with trees	Poor	Low	0.02
<b>Habitat 8</b> Ornamental hedgerow	H2b other hedgerows	Ornamental hedgerow	Poor	Low	0.03
<b>Habitat 9</b> Tree-line 1	W1g6 line of trees	Line of trees	Poor	Low	0.04
<b>Habitat 10</b> Tree-line 2	W1g6 line of trees	Line of trees	Poor	Low	0.02
<b>Habitat 11</b> Tree-line 3	W1g6 line of trees	Line of trees	Moderate	Low	0.01
					<b>0.12 km</b>
<sup>1</sup> 'Low Strategic Significance' = Area / compensation not in local strategy / no local strategy. 'Medium Strategic Significance' = Location ecologically desirable but not in local strategy. 'High Strategic Significance' = Formally identified in local strategy.					

3.2.2 The baseline BNG score for the site is provided at **Section 5.0**, below.

## 4.0 POST DEVELOPMENT HABITATS

### 4.1 Site Layout and Mitigation Hierarchy

4.1.1 In terms of the consideration of the 'The Mitigation Hierarchy' (i.e. avoid, mitigate, compensate) the Proposed Site Plan have been prepared to take account of:

- a. Retention of Tree Lines 1 to 3 (Habitats 9 to 11)
- b. Retention of the native hedgerow with trees along Preston Road and the ornamental hedgerow (Habitats 7 and 8);
- c. Retention of the modified grasslands (Habitats 2a and 2b) on either side of the access road;
- d. Focus of the proposed developed areas on the hard-standing, buildings and sparsely vegetated land lower ecological value;
- e. Maximised habitat connectivity through the developed site by linked gardens and planting of a new tree line;
- f. Accommodation of an area of neutral wildflower grassland.

### 4.2 Consideration of Target Condition Assessments

4.2.1 Condition Assessments for each of the retained and proposed habitats as specified on the Landscape Layout are presented at **Section 7.3**. A long-term habitat management plan with an appropriate monitoring regime is required to secure the condition of these habitats in the long-term.



### 4.3 Assessment of Post-development Habitats

**Table 4.1: Summary of Area-based Habitats to be Retained, Enhanced and Created at the Site**

Habitat Type	BNG Equivalent Habitat	Target Condition	Strategic Significance <sup>1</sup>	Area (ha)
<b>Retained Habitats</b>				
<b>Habitat 1</b> Vegetated garden at the bungalow	Urban – vegetated gardens	N/A	Low	0.05
<b>Habitat 2a</b> Modified grassland near bungalow	Grassland – modified grassland	Poor	Low	0.07
<b>Habitat 2b</b> Grassland on sloping verge	Grassland – modified grassland	Poor	Low	0.04
<b>Habitat 4</b> Bungalow	Urban – developed land; sealed surface	N/A	Low	0.01
<b>Habitat 12:</b> Individual trees	Individual trees – urban tree	Poor	Low	0.0164
<b>Proposed Habitats</b>				
<b>Habitat A</b> Access road and driveways	Urban – developed land; sealed surface	N/A	Low	0.1
<b>Habitat B</b> Houses	Urban – developed land; sealed surface	N/A	Low	0.05
<b>Habitat C</b> Vegetated gardens	Urban – vegetated gardens	N/A	Low	0.13
<b>Habitat D</b> Wildflower grassland	Grassland – other neutral grassland	Moderate	Low	0.04
			<b>Total</b>	<b>0.49 ha (+0.0164ha for trees)</b>
<sup>1</sup> 'Low Strategic Significance' = Area / compensation not in local strategy / no local strategy. 'Medium Strategic Significance' = Location ecologically desirable but not in local strategy. 'High Strategic Significance' = Formally identified in local strategy.				

**Table 4.2: Summary of Hedgerow Habitats to be Retained and Created at the Site**

Habitat Type	BNG Equivalent Habitat	Target Condition		Length (km)
<b>Retained Habitats</b>				
<b>Habitat 7</b> Hedgerow with trees at Preston Road	Native hedgerow with trees	Poor	Low	0.02
<b>Habitat 8</b> Ornamental hedgerow	Ornamental hedgerow	Poor	Low	0.03
<b>Habitat 9</b> Tree-line 1	Line of trees	Poor	Low	0.04
<b>Habitat 10</b> Tree-line 2	Line of trees	Poor	Low	0.02
<b>Habitat 11</b> Tree-line 3	Line of trees	Moderate	Low	0.01
<b>Proposed Habitats</b>				
<b>Habitat E</b> New tree line	Line of trees	Poor	Low	0.05
			<b>Total</b>	<b>0.17 km</b>
<sup>1</sup> 'Low Strategic Significance' = Area / compensation not in local strategy / no local strategy. 'Medium Strategic Significance' = Location ecologically desirable but not in local strategy. 'High Strategic Significance' = Formally identified in local strategy.				

## 5.0 HEADLINE RESULTS, EVALUATION AND CONCLUSION

5.1 The headline results of the BNG Calculator are presented at **Table 5.1** below.

**Table 5.1: Results of Biodiversity Metric 4.0 Calculation Tool**

<b>On-site Baseline</b>	Habitat units	0.61	
	Hedgerow units	0.27	
	Watercourse units	0.00	
<b>On-site Post Intervention</b>	Habitat units	0.90	
	Hedgerow units	0.35	
	Watercourse units	0.00	
<b>On-site net change (units % percentage)</b>	Habitat units	0.30	49.32%
	Hedgerow units	0.08	30.99%
	Watercourse units	0.00	0.00%
<b>Off-site net change (units % percentage)</b>	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
<b>Combined Net Unit Change</b>	Habitat units	0.30	
	Hedgerow units	0.08	
	Watercourse units	0.00	
<b>Spatial Risk Multiplier (SRM) Reductions</b>	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
<b>Total Net Unit Change</b>	Habitat units	<b>0.30</b>	
	Hedgerow units	<b>0.08</b>	
	Watercourse units	<b>0.00</b>	
<b>Total Net % Change</b>	<b>Habitat units</b>	<b>49.32%</b>	
	<b>Hedgerow units</b>	<b>30.99%</b>	
	<b>Watercourse units</b>	<b>0.00%</b>	

- 5.2 Based on the information entered into the BNG Metric a net gain of 0.30 habitat units and 0.08 hedgerow units can be demonstrated. It is confirmed that the trading rules are satisfied.
- 5.3 The metric does not currently account for any additional tree planting that could be carried out over the retained areas of modified grassland (i.e. land outside of the residential properties). The planting of native trees provides an opportunity to further enhance this score and to provide opportunities for biodiversity.
- 5.4 It is essential that, in addition to the result of the BNG Metric that the measures to be accommodated and implemented at the site to secure gains and betterment for biodiversity that the BNG Metric cannot take account of are also considered.
- 5.5 At this site it is advised that the following measures (as described in **Section 5.0** of the *Ecological Survey and Assessment* (ERAP (Consultant Ecologists) Ltd, 2023)) are also considered as part of the assessment of biodiversity net gain:
- Incorporation of opportunities for roosting bats at the new properties as, although the habitats are suitable for use by foraging bat species such as *Pipistrellus* species, there are no opportunities for roosting bats (particularly maternity roosts) at the site currently and, as such, this is considered to provide additionality;
  - Incorporation of opportunities for use by nesting birds at the new properties. This includes a net increase in opportunities for specific species not currently able to breed at the site such as house sparrow (a red listed and Priority Species);
  - Maintenance of habitat connectivity around the site by the site layout and by the accommodation of gaps beneath fence lines for the movement of hedgehog (Priority Species) and amphibians between gardens and between the site and the wider area; and
  - Preparation and implementation of a Landscape and Ecological Management Plan (or similar) to secure long-term management of the retained and created habitats in accordance with conservation targets and objectives.

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**7.0 APPENDIX 1: SUPPORTING INFORMATION**

**7.1 Photographs of Baseline Habitats (taken September 2023)**



**Photo 1:** Habitat 1: Vegetated Garden



**Photo 2:** Habitat 2a: Modified grassland and Habitat 12: Individual urban trees



**Photo 3:** Habitat 2b: Modified grassland



**Photo 4:** Habitat 3: Tall-herb / other neutral grassland and Habitat 10: Tree-line 2



**Photo 5:** Habitat 4: Buildings



**Photo 6:** Habitat 5: Sparsely vegetated land - ruderal / ephemeral





**Photo 7:** Habitat 6: Hard-standing / developed land / sealed surface



**Photo 8:** Habitat 9: Tree-line 1



**Photo 9:** Habitat 11: Tree-line 3



**Photo 10:** Habitat 7: Native hedgerow



**Photo 11:** Habitat 8: Ornamental hedgerow

## 7.2 Condition Assessments of Baseline Habitats

**Habitat 1:** Vegetated Gardens have a default condition assessment of N/A

**Habitats 4 and 6:** Buildings and developed land; sealed surface have a default condition assessment of N/A

**Table 7.1: Condition Assessments for Modified Grassland Habitats**

Condition Assessment Criteria	Habitat 2a: Amenity / Modified Grassland	Habitat 2b: Poor Semi- improved / Modified Grassland
<p><b>A.</b> There are 6-8 vascular plant species per m<sup>2</sup> present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition.</p> <p>Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m<sup>2</sup> (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.</p>	x (4 species)	X (4 species)
<p><b>B.</b> Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.</p>	x	x
<p><b>C.</b> Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.</p>	✓	✓
<p><b>D.</b> Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.</p>	✓	✓
<p><b>E.</b> Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens<sup>2</sup>.</p>	x	x
<p><b>F.</b> Cover of bracken less than 20%.</p>	✓	✓
<p><b>G.</b> There is an absence of invasive non-native species<sup>3</sup> listed on Schedule 9 of WCA.</p>	✓	✓
<p><b>Good:</b> Passes 6 or 7 of 7 including essential criterion A</p>	x	x
<p><b>Moderate:</b> Passes 4 or 5 criteria including essential criterion A</p>	x	x
<p><b>Poor:</b> Passes 0, 1, 2 or 3 of 7 criteria OR passes 4, 5 or 6 but failing criterion A</p>	✓	✓
<p><b>Footnote 1</b> – Creeping Thistle (<i>Cirsium arvense</i>), Spear Thistle (<i>Cirsium vulgare</i>), Curled Dock (<i>Rumex crispus</i>), Broad-leaved Dock (<i>Rumex obtusifolius</i>), Common Nettle (<i>Urtica dioica</i>), Creeping Buttercup (<i>Ranunculus repens</i>), Greater Plantain (<i>Plantago major</i>), White Clover (<i>Trifolium repens</i>) and Cow Parsley (<i>Anthriscus sylvestris</i>).</p>		
<p><b>Footnote 2</b> – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover.</p>		
<p><b>Footnote 3</b> – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.</p>		

**Table 7.2: Condition Assessments for Tall-herb Vegetation (Medium, High and Very High Distinctiveness)**

Condition Assessment Criteria	Habitat 3: Tall-herb Vegetation
<p><b>A.</b> The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present.</p> <p><i>Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.</i></p>	x
<p><b>B.</b> Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.</p>	x
<p><b>C.</b> Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens<sup>1</sup>.</p>	✓
<p><b>D.</b> Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.</p>	✓
<p><b>E.</b> Combined cover of species indicative of sub-optimal condition<sup>2</sup> 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.</p> <p>If any invasive non-native plant species<sup>3</sup> (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.</p>	x
<b>Additional Group – non-acid grassland types only</b>	
<p><b>F.</b> There are 10 or more vascular plant species per m2 present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count).</p> <p><i>Note - this criterion is essential for achieving Good condition for non-acid grassland types only.</i></p>	x
<b>Acid Grassland Types</b>	
<b>Good:</b> passes 5 of 5 criteria	N/A
<b>Moderate:</b> passes 3 or 4 of 5 criteria	N/A
<b>Poor:</b> passes 0, 1 or 2 of 5 criteria	N/A
<b>Non-acid Grassland Types</b>	
<b>Good:</b> passes 5 or 6 criteria, including essential criteria A and additional criterion F	x
<b>Moderate:</b> passes 3, 4 or 5 criteria, including essential criterion A	x
<b>Poor:</b> passes 0, 1 or 2 of 6 criteria; OR passes 3 or 4 criteria excluding criterion A and F	✓
<b>Additional Information:</b>	
<p><b>Footnote 1</b> – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.</p>	
<p><b>Footnote 1</b> - Species indicative of sub-optimal condition for this habitat type include:</p> <p>Creeping Thistle (<i>Cirsium arvense</i>), Spear Thistle (<i>Cirsium vulgare</i>), Curled Dock (<i>Rumex crispus</i>), Broad-leaved Dock (<i>Rumex obtusifolius</i>), Common Nettle (<i>Urtica dioica</i>), Creeping Buttercup (<i>Ranunculus repens</i>), Greater Plantain (<i>Plantago major</i>), White Clover (<i>Trifolium repens</i>), Cow Parsley (<i>Anthriscus sylvestris</i>).</p>	
<p><b>Footnote 3</b> – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.</p>	



**Table 7.3: Condition Assessments for Urban Areas**

Condition Assessment Criteria	Habitat 5: Sparsely Vegetated Land /- Ruderal / Ephemeral
<b>A.</b> 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.	x
<b>B.</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.	x
<b>C.</b> Invasive non-native plant species (listed on Schedule 9 of WCA1) and others which are to the detriment of native wildlife (using professional judgement) <sup>2</sup> cover less than 5% of the total vegetated area <sup>3</sup> . <i>Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than &lt;5% cover).</i>	✓
<b>Additional Criteria – only applicable to OMH</b>	
<b>D1.</b> The site shows spatial variation, forming a mosaic of at least four early successional communities (a) to (h) PLUS bare substrate AND pools. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland.	N/A
<b>D2.</b> The parcel contains pools of water such as permanent and ephemeral waterbodies.	N/A
<b>Additional Criteria – only applicable to Bioswale and SUDS</b>	
<b>E1.</b> Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife <sup>4</sup> .	N/A
<b>E2.</b> The vegetation is comprised of plant species suited to wetland or riparian situations.	N/A
<b>Additional Criterion – only applicable for Intensive green roofs</b>	
<b>F.</b> The roof has a minimum of 50% native and non-native wildflowers. 70% of the roof area is soil and vegetation (including water features).	N/A
<b>Additional Criterion – only applicable for Biodiverse green roofs</b>	
<b>G.</b> The roof has a varied depth of 80 – 150 mm; at least 50% is at 150 mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. <i>Note – to achieve Good condition some additional habitat, such as sand piles, stones, logs etc are present.</i>	N/A
<b>If only 3 core Criteria Assessed (All except OMH, Bioswale, SuDS and green roofs):</b>	
<b>Good:</b> Passes all 3 core criteria; AND Meets the requirements for Good condition within criterion C.	x
<b>Moderate:</b> Passes 2 of 3 core criteria; OR Passes 3 of 3 core criteria but does not meet the requirements for Good condition within criterion C.	x
<b>Poor:</b> Passes 0 or 1 of 3 core criteria	✓
<b>Results for Green roofs (requiring assessment of 4 criteria only - core criteria plus additional criterion specified for habitat type):</b>	
<b>Good -</b> Passes all 3 core criteria; AND meets the requirements for Good condition within criterion C; AND Passes additional criterion relevant to specific habitat type (F or G).	N/A
<b>Moderate-</b> Passes 2 or 3 of 4 criteria; OR Passes 4 of 4 criteria but does not meet the requirements for Good condition within criterion C.	N/A
<b>Poor -</b> Passes 0 or 1 of 4 criteria	N/A
<b>Results for Open mosaic habitat on previously developed land, Bioswale or SuDS (requiring assessment of 5 criteria - core criteria plus additional criteria specified for habitat type):</b>	
<b>Good -</b> Passes all 3 core criteria; AND Meets the requirements for Good condition within criterion C; AND Passes all additional criteria relevant to specific habitat type (Group D or Group E)	N/A
<b>Moderate -</b> Passes 3 or 4 of 5 criteria; OR Passes 5 of 5 criteria but does not meet the requirements for Good condition within criterion C.	N/A
<b>Poor -</b> Passes 2 or fewer of 5 criteria.	N/A
<b>Additional notes:</b>	
<b>Footnote 2</b> – Sources of information about detrimental non-native species can be found on the GB Non-native Species Secretariat (GBNNS) website: Home » NNS (nonnativespecies.org) and Natural England Access to Evidence page should also be checked for up-to-date information: Horizon-scanning for invasive non-native plants in Great Britain - NECR053 (naturalengland.org.uk).	
For criterion C – For green roof habitat types only – <i>Buddleia (Buddleja davidii)</i> should be assessed alongside Schedule 9 species. This species impairs the health of the local ecosystem and reduces the biodiversity potential of the roof. It is also a sign that a roof has not been planted and seeded correctly in subsequent years.	
<b>Footnote 3</b> – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.	
<b>Footnote 4</b> – Use professional judgement. Sources of information about non-native species that are not detrimental to native wildlife can be found on the GBNNS website: Alternative plants » NNS (nonnativespecies.org).	



**Table 7.4: Condition Assessments for Individual Trees**

Condition Assessment Criteria	Individual Tree 1	Individual Tree 2	Individual Tree 3	Individual Tree 4
<b>A.</b> The tree is a native species (or more than 70% within the block are native species)	x	x	x	x
<b>B.</b> 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.	✓	✓	✓	✓
<b>C.</b> The tree is mature (or more than 50% within the block are mature).	x	x	x	x
<b>D.</b> 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.	x	x	x	x
<b>E.</b> Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	x	x	x	x
<b>F.</b> More than 20% of the tree canopy area is oversailing vegetation beneath	✓	✓	✓	✓
<b>Good:</b> Passes 5 or 6 of 6 criteria	x	x	x	x
<b>Moderate:</b> Passes 3 or 4 of 6 criteria	x	x	x	x
<b>Poor:</b> Passes 0, 1 or 2 of 6 criteria	✓	✓	✓	✓
<b>Additional information / definitions:</b>				
<b>Footnote 1</b> - See gov.uk standing advice on ancient and veteran trees. Available from: <i>Keepers of time: ancient and native woodland and trees policy in England</i> (publishing.service.gov.uk) and <i>Ancient woodland, ancient trees and veteran trees: advice for making planning decisions</i> (www.gov.uk)				

**Table 7.5: Condition Assessments for Hedgerows**

Condition Assessment Criteria	Habitat 7: Hedgerow (Native)
<p><b>A1. Height:</b>            &gt;1.5m average along length            The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees.            Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of 4 years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is &gt; 1.5 m height).</p>	✓
<p><b>A2. Width:</b>            &gt;1.5m average along length.            The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.            Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they &gt;0.5 m in height.            Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of 4 years (if undertaken according to good practice<sup>4</sup>)</p>	x
<p><b>B1. Gap - hedge base.</b>            Gap between ground and base of canopy &lt;0.5, for &gt;90% of length (unless line of trees).            This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (e.g. a Hazel dominated hedgerow or where the hedgerow is affected by shading from other vegetation such as woodland, see page 65 of <i>Hedgerow Survey Handbook</i> (Defra, 2007)).</p>	✓
<p><b>B2. Gap - hedge canopy continuity.</b>            Gaps make up less than 10% of total length and no canopy gaps are greater than 5m. Gates and access points are not subject to the &gt;5m criterion.            This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).            Access points and gates contribute to the overall gappiness, but are not subject to the &gt;5 m criterion (as this is the typical size of a gate).</p>	✓
<p><b>C1. Undisturbed ground and perennial vegetation.</b>            &gt;1m width ground with perennial herbaceous vegetation for &gt;90% of length, as measured from outer edge of the hedgerow, and is present on at least 1 side of the hedgerow.            This is the level of disturbance (excluding wildlife disturbance) at the base of the hedge. Undisturbed ground should be present for at least 90% of the hedgerow length, greater than 1m in width and must be present along at least one side of the hedge. This criterion recognises the value of the hedge base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.</p>	x
<p><b>C2. Nutrient-enriched perennial vegetation.</b>            Plant species indicative of nutrient enrichment of soils do not dominate more than 20% cover of the ground area of undisturbed ground.            The indicator species used are nettles (<i>Urtica</i> spp.), Cleavers (<i>Galium aparine</i>) and docks (<i>Rumex</i> spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.</p>	x
<p><b>D1. Invasive and neophyte species.</b>            &gt;90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA) and recently introduced species.            Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website, as well as the BSBI website where the 'Online Atlas of the British and Irish Flora' contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website.</p>	✓
<p><b>D2. Current damage.</b>            &gt;90% of the hedgerow or undisturbed ground is free of damaged caused by human activities.            This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes.            This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting).</p>	✓

Condition Assessment Criteria	Habitat 7: Hedgerow (Native)
<b>Additional group – ONLY if trees are present</b>	
<b>E1. Tree Class</b> There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient <sup>8</sup> ), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow. This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.	x
<b>E1. Tree health</b> At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity. This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.	✓
<b>Hedgerows Without Trees</b>	
<b>Good:</b> No more than 2 failures in total; AND no more than 1 in any functional group.	N/A
<b>Moderate:</b> No more than 4 failures in total; AND does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition).	N/A
<b>Poor:</b> Fails a total of more than 4 attributes; OR fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	N/A
<b>Hedgerows With Trees</b>	
<b>Good:</b> No more than 2 failures in total; AND no more than 1 failure in any functional group.	x
<b>Moderate:</b> No more than 5 failures in total; AND does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1, C2 & E1 = Moderate condition).	x
<b>Poor:</b> Fails a total of more than 5 attributes; OR fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	✓

Note: An ornamental hedgerow (Hedgerow 2: Habitat 8) is 'poor' condition by default

**Table 7.6: Condition Assessments for Lines of Trees**

Condition Assessment Criteria	Habitat 9: Tree Line 1	Habitat 10: Tree Line 2	Habitat 11: Tree Line 3
<b>A.</b> More than 70% of trees are native species.	✓	✓	✓
<b>B.</b> Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	✓	✓	✓
<b>C.</b> One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.	x	x	x
<b>D.</b> There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice <sup>2</sup> .	x	x	x
<b>E.</b> At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	x	x	✓
<b>Good:</b> passes 5 of 5 criteria	x	x	x
<b>Moderate:</b> passes 3 or 4 of 5 criteria	x	x	✓
<b>Poor:</b> passes 0, 1 or 2 of 5 criteria	✓	✓	x
<b>Additional information / definitions:</b>			
<b>Footnote 1</b> – DEFRA (2007) Hedgerow Survey Handbook: A standard procedure for local surveys in the UK. 2nd ed [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).			
<b>Footnote 2</b> – Where ancient and veteran trees are present, see gov.uk standing advice on ancient and veteran trees. Available from <i>Keepers of time: ancient and native woodland and trees policy in England</i> (publishing.service.gov.uk) and <i>Ancient woodland, ancient trees and veteran trees: advice for making planning decisions</i> (www.gov.uk)			

### 7.3 Target Condition Assessments of Post-Development Habitats

**Note:** Habitats A (access roads and driveways, B (houses) and C (vegetated gardens) have a default condition assessment of N/A.

**Table 7.7: Condition Assessments for Wildflower Grassland**

Condition Assessment Criteria	Habitat D: Wildflower grassland
<p><b>A.</b> The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present.</p> <p><i>Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.</i></p>	✓
<p><b>B.</b> Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.</p>	x
<p><b>C.</b> Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens<sup>1</sup>.</p>	x
<p><b>D.</b> Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.</p>	✓
<p><b>E.</b> Combined cover of species indicative of sub-optimal condition<sup>2</sup> 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.</p> <p>If any invasive non-native plant species<sup>3</sup> (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.</p>	✓
<b>Additional Group – non-acid grassland types only</b>	
<p><b>F.</b> There are 10 or more vascular plant species per m<sup>2</sup> present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count).</p> <p><i>Note - this criterion is essential for achieving Good condition for non-acid grassland types only.</i></p>	✓
<b>Acid Grassland Types</b>	
<b>Good:</b> passes 5 of 5 criteria	N/A
<b>Moderate:</b> passes 3 or 4 of 5 criteria	N/A
<b>Poor:</b> passes 0, 1 or 2 of 5 criteria	N/A
<b>Non-acid Grassland Types</b>	
<b>Good:</b> passes 5 or 6 criteria, including essential criteria A and additional criterion F	x
<b>Moderate:</b> passes 3, 4 or 5 criteria, including essential criterion A	✓
<b>Poor:</b> passes 0, 1 or 2 of 6 criteria; OR passes 3 or 4 criteria excluding criterion A and F	x
<b>Additional Information:</b>	
<p><b>Footnote 1</b> – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.</p>	
<p><b>Footnote 1</b> - Species indicative of sub-optimal condition for this habitat type include:</p> <p>Creeping Thistle (<i>Cirsium arvense</i>), Spear Thistle (<i>Cirsium vulgare</i>), Curled Dock (<i>Rumex crispus</i>), Broad-leaved Dock (<i>Rumex obtusifolius</i>), Common Nettle (<i>Urtica dioica</i>), Creeping Buttercup (<i>Ranunculus repens</i>), Greater Plantain (<i>Plantago major</i>), White Clover (<i>Trifolium repens</i>), Cow Parsley (<i>Anthriscus sylvestris</i>).</p>	
<p><b>Footnote 3</b> – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.</p>	

**Table 7.8: Condition Assessments for New Line of Trees**

Condition Assessment Criteria	Habitat E: New Line of Trees
A. More than 70% of trees are native species.	✓
B. Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	✓
C. One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.	x
D. There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice <sup>2</sup> .	x
E. At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	x
<b>Good:</b> passes 5 of 5 criteria	x
<b>Moderate:</b> passes 3 or 4 of 5 criteria	x
<b>Poor:</b> passes 0, 1 or 2 of 5 criteria	✓
<b>Additional information / definitions:</b>	
<p><b>Footnote 1</b> – DEFRA (2007) Hedgerow Survey Handbook: A standard procedure for local surveys in the UK. 2nd ed [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).</p>	
<p><b>Footnote 2</b> – Where ancient and veteran trees are present, see gov.uk standing advice on ancient and veteran trees. Available from <i>Keepers of time: ancient and native woodland and trees policy in England</i> (publishing.service.gov.uk) and <i>Ancient woodland, ancient trees and veteran trees: advice for making planning decisions</i> (www.gov.uk)</p>	

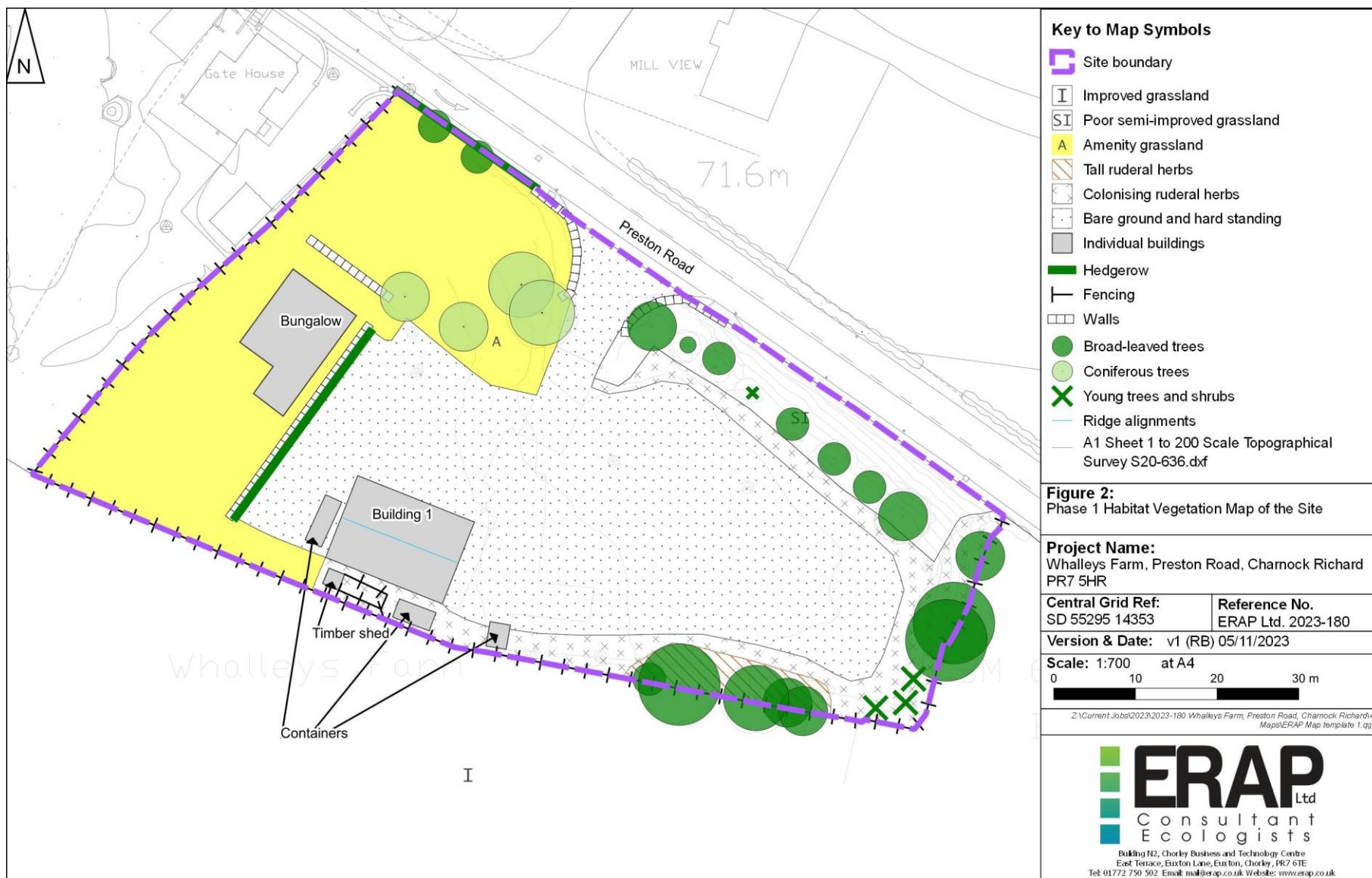


## 7.4 Figures

**Figure 1: Aerial Image of the Site and its Surroundings**



**Figure 2: Phase 1 Habitat and Vegetation Map**





**Figure 3: UKHab: Baseline Habitats**



**Figure 4: UKHab: Post-development Habitats**





**8.0 APPENDIX 2: PROPOSED SITE PLAN**

