

Land at Parkfield House, Manchester Old Road, Middleton

Assessment of Biodiversity Net Gain

March 2023

Parkfield House, Middleton M24 4EB

ASSESSMENT OF BIODIVERSITY NET GAIN

March 2023

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Document Control

Survey Type:	Surveyors	Survey Date(s)
UK Habitat Classification Survey (including Condition Assessments of habitats)	Brian Robinson B.Sc. (Hons) MCIEEM Senior Ecologist	26 th January 2023
Reporting	Personnel	Date
Author	Brian Robinson B.Sc. (Hons) MCIEEM Senior Ecologist	22 nd March 2023
Signature(s)		
Checked by	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM	22 nd March 2023
Revised and issued by	Brian Robinson B.Sc. (Hons) MCIEEM	24 th March 2023
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1.0 INTRODUCTION

1.1 Background and Rationale

1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned by Muller Property Group to carry out an assessment of Biodiversity Net Gain (BNG) at Parkfield House, Middleton M24 4EB (hereafter the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SD 86268 05569.

1.1.2 The assessment was requested in connection with a planning application proposing the redevelopment of the site to a care home and residential housing.

1.1.3 In accordance with Chapter 15, paragraph 180(d) of the *National Planning Policy Framework* (NPPF) (Ministry of Housing, Communities and Local Government, 2021)

'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'.

1.1.4 This report has been prepared to provide an assessment of the biodiversity value of the baseline habitats within the site, an assessment of the value of post-development habitats based on the site proposals and landscape strategy and provides guidance in relation to the requirements to attain a net gain for biodiversity in accordance with the biodiversity metric calculation tool and the *Biodiversity Net Gain: Good Practice Principles for Development* (CIEEM, 2016).

1.2 Site Description

1.2.1 An aerial image of the site is appended at **Figure 1**.

1.2.2 The total site area is **1.11 hectares**¹. The habitats present within the site are described and assessed in *2022-345 Parkfield House, Middleton M24 4EB, Ecological Survey and Assessment* (ERAP (Consultant Ecologists) Ltd, 2022), hereafter referred to as the 'ecology report'. A summary of the habitats present within the site is presented at **Section 3.1** of this report.

1.3 Proposed Development Description

1.3.1 The assessment has been requested to inform a planning application for a residential and care home development at the site. The proposals are presented at *Parkfield House – Landscape Proposals, Sheets 1 and 2, Dwg Nos 7082.01 and 7082.2 Rev E* (TBA Landscape Architecture, 2023) hereafter the 'landscape proposals'.

1.4 Scope of Study

1.4.1 This report has been prepared to accompany a completed assessment of BNG using *The Biodiversity Metric 3.1 Calculation Tool Beta Test* (Natural England, 2022). The completed Microsoft Excel spreadsheet assessment is presented as a separate document, named '*ERAP Ltd 2022-345 Biodiversity Metric 3.1 Parkfield House 22.03.23*', hereafter referred to as the 'BNG Metric'.

1.4.2 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.

¹ As measured by ERAP (Consultant Ecologists) Ltd; detail on the methods used to measure the area of the site are presented at **Section 2.0**.

2.0 METHOD OF SURVEY

2.1 Habitat Assessment and Mapping

- 2.1.1 A Phase 1 Habitat Survey including an assessment in accordance with the UKHab and condition assessments of the habitats present was carried out by Brian Robinson B.Sc. (Hons) MCIEEM on 26th January 2023. The weather was dry and overcast, with a light air (Beaufort scale 1) and an air temperature of 7°C.
- 2.1.2 On site habitat mapping was assisted via use of GPS technology and QField on-site mapping software, using *Parkfield House, Middleton: Topography and Drainage Report (Rev A)* (40Seven, 2021), hereafter the 'topography plan', and *ESRI World Imagery* as base plans. These plans have been provided to ERAP (Consultant Ecologists) Ltd as spatially referenced .dwg files; the files have been converted to .dxf format and inputted into QGIS.
- 2.1.3 The post development habitats have been calculated using the landscape proposals. These plans have been provided to ERAP (Consultant Ecologists) Ltd as .pdf's; an affine transformation was completed on the .pdfs in order that they were in accordance with the topography plan and *ESRI World Imagery*.
- 2.1.4 Each of the habitats within the site and the off-site compensation area 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.
- 2.1.5 The UKHab has been designed to function at two scales: fine scale (25m² or 5 metres length) and large scale (400m² or 20m² 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 5m² is appropriate for the classification of habitats.
- 2.1.6 A plan showing the baseline habitats present within the site in accordance with UKHab symbology is appended at **Figure 2**. A plan showing the proposed habitats (both on and off-site areas) in accordance with UKHab symbology is appended at **Figure 3**.
- 2.1.7 Condition Assessments for each of the habitats present within the site have been completed in accordance with *The Biodiversity Metric 3.1: Auditing and accounting for biodiversity: technical supplement* (Panks, et al., April 2022).

2.2 Survey and Reporting Limitations

- 2.2.1 All measurements have been either estimated whilst on site or measured using QGIS.
- 2.2.2 It is understood via communication with the client that wildflower grassland is proposed within the site along the site frontage; this area has been assessed as wildflower grassland ahead of the forthcoming revised landscape proposals.
- 2.2.3 The survey was completed in winter when plant species may be in a dormant state; the surveyor is experienced in identifying plant species from their vegetative characteristics however, and a reliable assessment of the habitats present was possible.

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 has 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 QGIS has been used to calculate the total area of each baseline habitat present within the site.
- 2.3.3 The BNG assessment tool used is *Biodiversity Metric 3.1* (JP039) (Natural England, 2022). 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 3.1: Auditing and accounting for biodiversity: technical supplement* (Panks, et al., April 2022).
- 2.3.4 Existing and retained urban trees have been measured using their root protection areas. Proposed urban trees have been measured using their specification on the landscape proposals plans and the Urban Tree Calculator provided within the BNG Metric.

Relevant Guidance

- 2.3.5 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

- 2.3.6 It is assumed that vegetated gardens will be 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 Webinar². It is assumed that Rochdale Borough Council will also take garden habitats into account in this manner.
- 2.3.7 Reasonable 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 7.2**. Long-term management of the proposed habitats is required to secure the proposed condition.

² 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).

3.0 SURVEY RESULTS

3.1 Site Description

On Site Habitats

3.1.1 Refer to **Figure 2**. The site is described in the ecology report as follows:

'The approximately 1.11 hectares site remains as described in the 2021 report, is located within a suburban area of Middleton, and supports a disused former office building (Building 1), an electricity substation (Building 2), areas of unmanaged former amenity grassland, tree lines and ornamental planting and hard standing with locally frequent colonising ruderal herbs.'

3.2 Assessment of Baseline Habitats

3.2.1 **Tables 3.1** and **3.2** provide a summary of the habitats present, their condition assessment result and their area within the site. Condition assessments for each habitat are appended at **Section 7.1**.

Table 3.1: Summary of Baseline Area Based Habitats within Site

Habitat Reference	UK Habitat Classification Type	BNG Habitat Equivalent	Phase 1 Habitat Equivalent	Condition Assessment Result	Area (ha)*
Habitat 1 Unmanaged former amenity grassland	g4 modified grassland with the secondary codes 10 scattered scrub, 11 scattered trees and 77 neglected (unmanaged for 3 to 10 years).	Grassland – modified grassland	J1.2 Cultivated/disturbed land - amenity grassland	Moderate	0.07
Habitat 2 Amenity grassland	g4 modified grassland with the secondary codes 10 scattered scrub, 11 scattered trees, 76 recent management (i.e. within 3 years) and 64 mown	Grassland – modified grassland	J1.2 Cultivated/disturbed land - amenity grassland	Poor	0.26
Habitat 3 Tall-herb vegetation	g3c other neutral grassland with the secondary code 77 neglected (unmanaged for 3 to 10 years).	Grassland – other neutral grassland	C3.1 Other tall-herb and fern - tall ruderal	Poor	0.01
Habitat 4 Mixed scrub	h3h mixed scrub - no secondary codes were noted	Heathland and shrub – mixed scrub	A2.1 Dense continuous scrub	Poor	0.01
Habitat 5 Ornamental shrubs	h3h mixed scrub with the secondary code 48 non-native.	Urban – introduced shrub	J1.4 Introduced shrub	N/A	0.06
Habitat 6 Bare ground with colonising herbs	u1b6 other developed land with the secondary code 17 ruderal / ephemeral.	Urban – vacant / derelict land / bare ground	J1.3 Cultivated/disturbed land - ephemeral/short perennial	Poor	0.01
Habitat 7 Bare ground without colonising herbs	u1b6 other developed land - no secondary codes were noted.	Urban - developed land, sealed surface	J4 Bare ground	N/A	0.58
Habitat 8 Buildings	u1b5 buildings.	Urban - developed land, sealed surface	J3.6 Buildings	N/A	0.11**
Total:					1.11

Habitat Reference	UK Habitat Classification Type	BNG Habitat Equivalent	Phase 1 Habitat Equivalent	Condition Assessment Result	Area (ha)*
Habitat 9 Urban trees – good condition	N/A	Urban – urban tree	N/A	Good	0.12
Habitat 10 Urban trees – moderate condition	N/A	Urban – urban tree	N/A	Moderate	0.06
Total:					0.18
*Areas with an asterisk have been rounded down					
**Areas with two asterisks have been rounded up.					

Table 3.2: Summary of Baseline Hedgerow Habitats within Site

Habitat Reference	UK Habitat Classification Type	BNG Habitat Equivalent	Phase 1 Habitat Equivalent	Condition Assessment Result	Length (km)
Habitat 11 Tree Line 1	w1g6 line of trees - no secondary codes were noted	Line of Trees	N/A	Moderate	0.08
Habitat 12 Tree Line 2	w1g6 line of trees - no secondary codes were noted	Line of Trees	N/A	Moderate	0.08
Total					0.16

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

4.0 POST DEVELOPMENT HABITATS

4.1 Consideration of Target Condition Assessments

4.1.1 Condition Assessments for each of the retained, enhanced and proposed habitats detailed on the landscape proposals are presented at **Section 7.2**. A long-term habitat management plan with an appropriate monitoring regime is required to secure the condition of these habitats in the long-term.

4.2 Consideration of Proposed Habitats

4.2.1 The proposals plan demonstrates that 0.08 hectares of the urban trees assessed to be of 'good' condition and 0.03 hectares of the trees assessed to be of 'moderate' condition will be retained by the proposals. The proposals will create 0.31 hectares of Public Open Space, which will comprise areas of wildflower grassland, amenity grassland and introduced shrubs. Urban tree planting is proposed within the POS.

4.2.2 The remainder of the site will be developed to buildings, hard standing and vegetated gardens.

4.2.3 A summary of the habitats retained and proposed at the site is presented at **Table 4.1**.

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

Habitat Type	BNG Equivalent Habitat	Target Condition	Area (ha)
Retained Habitats			
<i>Building 2</i>	Urban – developed land, sealed surface	N/A	0.00 ³
<i>Retained Urban trees (good condition)</i>	Urban – urban trees	Good	0.08 ⁴
<i>Retained Urban trees (moderate condition)</i>	Urban – urban trees	Moderate	0.03
Proposed Habitats			
Habitat A Wildflower grassland (Emorsgate EH1 seed mix)	Grassland – other neutral grassland	Good	0.10
Habitat B Amenity grassland	Grassland – modified grassland	Moderate	0.18
Habitat C Ornamental shrubs	Urban – introduced shrub	N/A	0.03
Habitat D Vegetated gardens	Urban – vegetated garden	N/A	0.16
Habitat E Buildings and hard standing	Urban – developed land, sealed surface	N/A	0.64
Total			1.11
Habitat F <i>Proposed Urban trees (16, small size)</i>	Urban – urban trees	Moderate	0.07 ⁵

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

Habitat Type	BNG Equivalent Habitat	Target Condition	Length (km)*
Retained Habitats			
Habitat 11: Tree Line 1	Line of Trees	Moderate	0.06
Habitat 12: Tree Line 2	Line of Trees	Moderate	0.04
Total			0.10
Proposed Habitats			
Habitat G Ornamental hedgerow	Ornamental hedgerow, non-native	Poor	0.23
Habitat H Native hedgerow	Native hedgerow	Moderate	0.16
Total			0.39

³ Building 2, the electricity substation, will be retained by the proposed development. The 25m² building is too small to register in terms of its size in hectares to 2 decimal places; the 25m² has been added to the proposed areas of developed land.

⁴ Due to the way urban trees are calculated they do not contribute to the overall area of the site post development.

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 3.1 Calculation Tool

On-site Baseline	Habitat units	2.94
	Hedgerow units	1.28
	River units	0.00
On-site Post Intervention	Habitat units	3.25
	Hedgerow units	1.56
	River units	0.00
On-site net % change	Habitat units	10.39%
	Hedgerow units	21.68%
	River units	0.00%
Total Net Unit Change	Habitat units	0.31
	Hedgerow units	0.28
	River units	0.00
Total On-site Net % Change	Habitat units	10.39%
Plus Off-site Surplus	Hedgerow units	21.68%
	River units	0.00%

5.2 A net gain for area-based habitats and hedgerow habitats is demonstrated by the BNG Metric.

5.3 Note that any habitats managed within the site will be subject to a long-term habitat management plan.

5.4 It is essential that, in addition to the result of the BNG Metric, the assessment of biodiversity net gain takes into account 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.

5.5 At this site it is advised that the following measures 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 significant opportunities for roosting bats (particularly maternity roosts) at the site currently (this is considered to provide additionality);
- Incorporation of opportunities for use by nesting birds at the developed site including in both the public open space by landscape planting and at the new properties. This includes a net increase in opportunities for specific species not currently able to breed at the site such as swift (a red-listed bird species⁵) and house sparrow and starling (both red listed and Priority Species) at the new properties;
- Eradication / control of invasive plant species from the site including Indian Balsam, Rhododendron and Entire-leaved Cotoneaster; 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.

⁵ In accordance with the BOCC: Birds of Conservation Concern (Stanbury, et al., 2021).

6.0 REFERENCES

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7.0 APPENDIX: CONDITION ASSESSMENTS AND FIGURES

7.1 Condition Assessments of Baseline Habitats

Habitats 7 and 8 (i.e. hard standing with no colonising herbs and buildings): No condition assessment required.

Table 7.1: Condition Assessments for Habitats 1 and 2: Unmanaged Former Amenity Grassland and Amenity Grassland

Condition Assessment Criteria	Habitat 1 Unmanaged former amenity grassland	Habitat 2 Amenity grassland
1. There must be 6-8 species per m2. Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving moderate condition.	✓	X
2. 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.	X	X
3. 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.	X	✓
4. 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.	✓	✓
5. Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	X	X
6. Cover of bracken less than 20%.	✓	✓
7. There is an absence of invasive non-native species listed on Schedule 9 of <i>Wildlife and Countryside Act 1981</i> (as amended).	✓	✓
Good: Passes 6 or 7 of 7 including essential criterion 1	X	X
Moderate: Passes 4 or 5 of 7 criteria; OR passes 4 of 5 criteria including essential criteria 1	✓	X
Poor: Passes 0, 1, 2 or 3 of 7 criteria OR passes 4, 5 or 6 but failing criterion 1	X	✓

Table 7.2: Condition Assessments for Habitat 3: Tall-herb Vegetation

Condition Assessment Criteria	Habitat 3: Tall-herb vegetation
1. The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. <i>NB – this criterion is essential for achieving moderate condition for non-acid grassland types only.</i>	X
2. 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.	✓
3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	X
4. Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	✓
5. There is an absence of invasive non-native species listed on Schedule 9 of <i>Wildlife and Countryside Act 1981</i> (as amended). Combined cover of undesirable species ¹ 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.	✓
6. <i>Additional Group – non-acid grassland types only</i> There are greater than 9 species per metre squared. <i>NB – this criterion is essential for achieving good condition (non-acid grassland types only)</i>	X
Acid Grassland Types	
Good: passes 5 of 5 criteria	N/A
Moderate: passes 3 or 4 of 5 criteria	N/A
Poor: passes 0, 1 or 2 of 5 criteria	N/A
Non-acid Grassland Types	
Good: passes 5 of 6 criteria, including essential criteria 1 and 6	X
Moderate: passes 3 or 4 of 6 criteria, including essential criterion 1	X
Poor: passes 0, 1 or 2 of 6 criteria; OR passes 3 or 4 criteria excluding criterion 1 and 6	✓
Additional Information: ¹ Footnote 1: Species considered undesirable for this habitat type include: 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>).	

Table 7.3: Condition Assessments for Habitat 4: Mixed Scrub

Condition Assessment Criteria	Habitat 4: Mixed Scrub
1. Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).	X
2. There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.	X
3. There is an absence of invasive non-native species listed on Schedule 9 of <i>Wildlife and Countryside Act 1981</i> (as amended) and undesirable species ¹ make up less than 5% of ground cover.	✓
4. The scrub has a well-developed edge with scattered scrub and tall grassland and / or herbs present between the scrub and adjacent habitat(s).	X
5. There are clearings, glades or rides present within the scrub, providing sheltered edges.	X
Good: passes 5 of 5 criteria	X
Moderate: passes 3 or 4 of 5 criteria	X
Poor: passes 0, 1 or 2 of 5 criteria	✓
Additional Information: ¹ Species considered undesirable for this habitat type include: Creeping Thistle (<i>Cirsium arvense</i>), Common Nettle (<i>Urtica dioica</i>), Cherry Laurel (<i>Prunus laurocerasus</i>), Snowberry (<i>Symphoricarpos</i> spp.), Buddleia (<i>Buddleja</i> spp.), Cotoneaster (<i>Cotoneaster</i> spp.), and Spanish Bluebell (<i>Hyacinthoides hispanica</i>) (or hybrids).	

Table 7.4: Condition Assessments for Habitats 5 and 6: Introduced Shrubs and Hard Standing with Colonising Vegetation (i.e. Urban Habitats)

Condition Assessment Criteria	Habitat 5: Ornamental shrubs	Habitat 6: Bare ground with colonising herbs
1. Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area.	X	X
2. There is a diverse range of flowering plant species, providing nectar sources for insects. These species may be either native, or non-native but beneficial to wildlife. <i>NB - To achieve GOOD condition, criterion 2 must be satisfied by native species only (rather than non-natives beneficial to wildlife).</i>	X	X
3. Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area. <i>NB - To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).</i>	✓	X
Additional Criteria – only applicable to OMH 4a. 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	N/A
Additional Criteria – only applicable to Bioswale and SUDS 4b. The water table is at or near the surface throughout the year. This could be open water or saturation of soil at the surface.	N/A	N/A
If 3 Criteria Assessed:		
Good - Passes 3 of 3 core criteria; and meets the requirements for good condition within criteria 2 and 3	X	X
Moderate - Passes 2 of 3 core criteria; or passes 3 of 3 core criteria but does not meet the requirements for good condition within criteria 2 and 3	X	X
Poor - Passes 0 or 1 of 3 core criteria	✓	✓
If 4 Criteria Assessed:		
Good : Passes 3 of 3 core criteria; and meets the requirements for good condition within criteria 2 and 3; and passes additional criterion 4a or 4b	N/A	N/A
Moderate : passes 2 of 3 of 4 criteria; or passes 4 of 4 criteria but does not meet the requirements for good condition within criteria 2 and 3	N/A	N/A
Poor - Passes 0 or 1 of 4 criteria	N/A	N/A

Table 7.5: Condition Assessments for Habitats 9 and 10: Good and Moderate Condition Urban Trees

Condition Assessment Criteria	Urban Tree 1	Urban Tree 2	Urban Tree 3
1. The tree is a native species (or more than 70% within the block are native species)	X	X	X
2. Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	X	✓	✓
3. More than 50% of trees are mature ² or veteran ³ .	✓	✓	X
4. There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height.	✓	✓	✓
5. Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark	✓	✓	X
6. More than 20% of the tree canopy area is oversailing vegetation beneath.	✓	✓	✓
Good : Passes 5 or 6 of 6 criteria	X	✓	X
Moderate : Passes 3 or 4 of 6 criteria	✓	X	✓
Poor : Passes 0, 1 or 2 of 6 criteria	X	X	X

Condition Assessment Criteria	Urban Tree 4	Urban Tree 5	Urban Tree 6
1. The tree is a native species (or more than 70% within the block are native species)	X	✓	✓
2. Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	✓	✓	✓
3. More than 50% of trees are mature ² or veteran ³ .	X	✓	X
4. There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height.	✓	✓	X
5. Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark	X	✓	✓
6. More than 20% of the tree canopy area is oversailing vegetation beneath.	✓	✓	✓
Good: Passes 5 or 6 of 6 criteria	X	✓	X
Moderate: Passes 3 or 4 of 6 criteria	✓	X	✓
Poor: Passes 0, 1 or 2 of 6 criteria	X	X	X

Condition Assessment Criteria	Urban Tree 7	Urban Tree 8	Urban Tree 9
1. The tree is a native species (or more than 70% within the block are native species)	X	✓	✓
2. Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	✓	✓	✓
3. More than 50% of trees are mature ² or veteran ³ .	X	✓	✓
4. There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height.	✓	✓	✓
5. Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark	X	X	X
6. More than 20% of the tree canopy area is oversailing vegetation beneath.	✓	✓	✓
Good: Passes 5 or 6 of 6 criteria	X	✓	✓
Moderate: Passes 3 or 4 of 6 criteria	✓	X	X
Poor: Passes 0, 1 or 2 of 6 criteria	X	X	X

Additional information / definitions:

Footnote 1 - This covers all trees in artificial urban habitats such as private gardens, private land, institutional land and land used for transport functions; roads, streets, canals, rail, footpaths etc. Trees in urban areas can under the right conditions provide a large range of habitat opportunities, supporting lichens, invertebrates and birds. Tree planting in urban areas has for over two hundred years also introduced non-native species into towns and cities. In the context of biodiversity native species are the preferred option. However, non-native tree species can contribute positively to biodiversity richness particularly in relation to providing a seasonal food source for nectar feeders and other invertebrates as well as supporting vertebrates that feed on species that are hosted by non-native trees. Examples are early and late flowering species of Prunus and aphids on varieties of Acer providing food for species higher up the food chain. The species of trees (native or non-native) together with the intensity and type of management they are subject to will determine the biodiversity value of the trees in question. Trees in urban areas provide opportunistic sites for biodiversity to colonise and re-colonise, increasing connectivity and contributing to biodiversity critical mass between already established patches or sites. This is especially so where transport corridors are populated with mixed native species

Footnote 2 - A mature tree in this context is one that is at least 2/3 expected fully mature height for the species.

Footnote 3 - All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:

1. Rot sites associated with wounds which are decaying >400cm²;
2. Holes and water pockets in the trunk and mature crown >5 cm diameter;
3. Dead branches or stems >15 cm diameter;
4. Any hollowing in the trunk or major limbs;
5. Fruit bodies of fungi known to cause wood decay.

Table 7.6: Condition Assessments for Habitats 11 and 12: Tree Lines 1 and 2

Condition Assessment Criteria	Tree Line 1	Tree Line 2
1. More than 70% of trees are native species.	X	✓
2. Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	✓	X
3. Includes one or more mature ¹ or veteran ² tree.	✓	✓
4. 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 anthropogenic operations.	X	X
5. At least 95% of the 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.	✓	✓
Good: passes 5 of 5 criteria	X	X
Moderate: passes 3 or 4 of 5 criteria	✓	✓
Poor: passes 0, 1 or 2 of 5 criteria	X	X
Additional information / definitions: ¹ A mature tree in this context is one that is at least 2/3 expected fully mature height for the species. ² All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features: 1. Rot sites associated with wounds which are decaying >400 cm ² 2. Holes and water pockets in the trunk and mature crown >5 cm diameter 3. Dead branches or stems >15 cm diameter 4. Any hollowing in the trunk or major limbs 5. Fruit bodies of fungi known to cause wood decay		

7.2 Condition Assessments of Retained, Enhanced and Created Habitats

Retained Habitats 9 and 10: Good and Moderate Condition Urban Trees: Current conditions are to be maintained.

Proposed Habitat C, D, E and G (Ornamental shrubs, vegetated gardens, buildings and hard standing, and non-native ornamental hedgerows): No condition assessment required.

Retained Habitats 11 and 12 (Tree Lines 1 and 2): Current conditions are to be maintained.

Table 7.7: Condition Assessment for Proposed Habitat A: Wildflower Grassland

Condition Assessment Criteria	Habitat A: Wildflower Grassland
1. The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. <i>NB – this criterion is essential for achieving moderate condition for non-acid grassland types only.</i>	✓
2. 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.	✓
3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	X
4. Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	✓
5. There is an absence of invasive non-native species listed on Schedule 9 of <i>Wildlife and Countryside Act 1981</i> (as amended). Combined cover of undesirable species ¹ 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.	✓
6. <i>Additional Group – non-acid grassland types only</i> There are greater than 9 species per metre squared. <i>NB – this criterion is essential for achieving good condition (non-acid grassland types only)</i>	✓
Acid Grassland Types	
Good: passes 5 of 5 criteria	N/A
Moderate: passes 3 or 4 of 5 criteria	N/A
Poor: passes 0, 1 or 2 of 5 criteria	N/A
Non-acid Grassland Types	
Good: passes 5 of 6 criteria, including essential criteria 1 and 6	✓
Moderate: passes 3 or 4 of 6 criteria, including essential criterion 1	X
Poor: passes 0, 1 or 2 of 6 criteria; OR passes 3 or 4 criteria excluding criterion 1 and 6	X
Additional Information:	
¹ Footnote 1: Species considered undesirable for this habitat type include: 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>).	

Table 7.8: Condition Assessment for Proposed Habitat B: Amenity Grassland

Condition Assessment Criteria	Habitat B: Amenity Grassland
1. There must be 6-8 species per m2. Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving moderate condition.	X
2. 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.	X
3. 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.	✓
4. 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.	✓
5. Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	✓
6. Cover of bracken less than 20%.	✓
7. There is an absence of invasive non-native species listed on Schedule 9 of <i>Wildlife and Countryside Act 1981</i> (as amended).	✓
Good: Passes 6 or 7 of 7 including essential criterion 1	X
Moderate: Passes 4 or 5 of 7 criteria; OR passes 4 of 5 criteria including essential criteria 1	✓
Poor: Passes 0, 1, 2 or 3 of 7 criteria OR passes 4, 5 or 6 but failing criterion 1	X

Table 7.9: Condition Assessment for Proposed Habitat F: Urban Trees

Condition Assessment Criteria	Habitat F: Urban Trees
1. The tree is a native species (or more than 70% within the block are native species)	✓
2. Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	✓
3. More than 50% of trees are mature ² or veteran ³ .	X
4. There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height.	✓
5. Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark	X
6. More than 20% of the tree canopy area is oversailing vegetation beneath.	✓
Good: Passes 5 or 6 of 6 criteria	X
Moderate: Passes 3 or 4 of 6 criteria	✓
Poor: Passes 0, 1 or 2 of 6 criteria	X

Table 7.10: Condition Assessments for Proposed Habitat H: Native Species Hedgerow

Condition Assessment Criteria	Habitat H: Native hedgerow
A1. Height: >1.5m average along length <i>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.</i> <i>Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).</i> <i>A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height).</i>	✓
A2. Width: >1.5m average along length. <i>The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.</i> <i>Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height.</i> <i>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 practice⁴).</i>	X
B1. Gap - hedge base. Gap between ground and base of canopy <0.5, for >90% of length (unless line of trees). <i>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 the Hedgerow Survey Handbook (Defra, 2007)).</i>	X
B2. Gap - hedgerow canopy continuity. 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 >5m criterion. <i>This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).</i> <i>Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate).</i>	✓
C1. Undisturbed ground and perennial vegetation. >1m width ground with perennial herbaceous vegetation for >90% of length. <i>Measured from outer edge of the hedgerow.</i> <i>May be present on only 1 side of the hedgerow.</i> <i>This is the level of disturbance (excluding wildlife disturbance) at the base of the hedge.</i> <i>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.</i> <i>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.</i>	X
C2. Lack of undesirable perennial vegetation. Plant species indicative of nutrient enrichment of soils do not dominate more than 20% cover of the ground area of undisturbed ground. <i>The indicator species used are nettles (Urtica spp.), cleavers (Galium aparine) and docks (Rumex spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.</i>	✓
D1. Invasive and neophyte species. >90% of the hedgerow and undisturbed ground is free of invasive and neophyte species. Neophytes are plants which have naturalised since AD 1500.	✓
D2. Current damage. >90% of the hedgerow or undisturbed ground is free of damaged caused by human activities. <i>This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes.</i> <i>This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting).</i>	✓
E1. Tree Age (if trees are present) At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species. <i>This criterion addresses if there are sufficient mature trees (within the scope of planning timescales) which are of higher value to biodiversity.</i>	N/A
E1. Tree health (if trees are present) 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.	N/A

Condition Assessment Criteria	Habitat H: Native hedgerow
<i>This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.</i>	
Hedgerows Without Trees	
Good: No more than 2 failures in total; and no more than 1 in any functional group.	X
Moderate: 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).	✓
Poor: 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).	X
Hedgerows With Trees	
Good: No more than 2 failures in total; and no more than 1 failure in any functional group.	N/A
Moderate: 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).	N/A
Poor: 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).	N/A

7.3 Figures

Figure 1: Aerial Image of the Site and its Surroundings and Topographical Plan of the Site

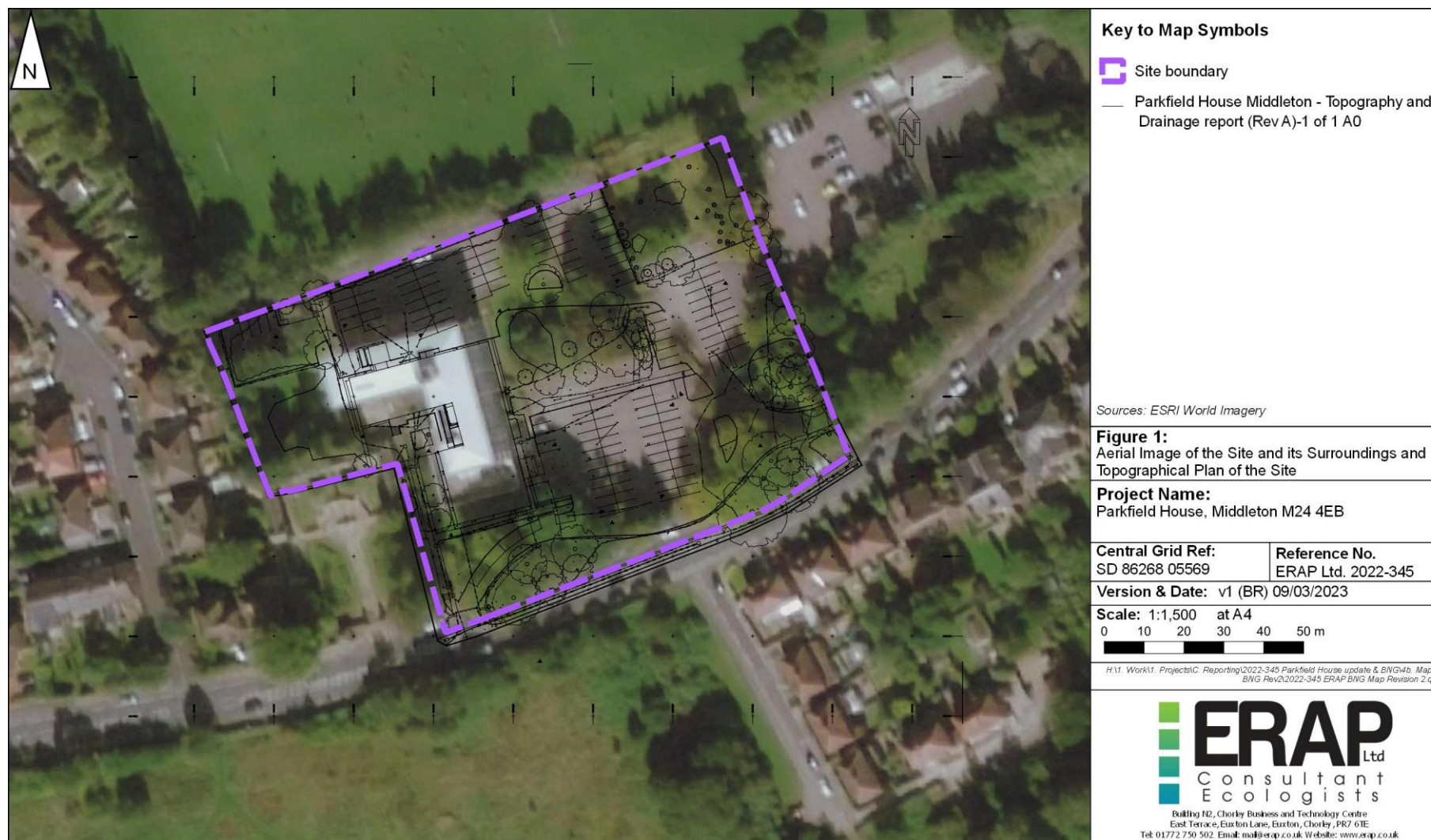
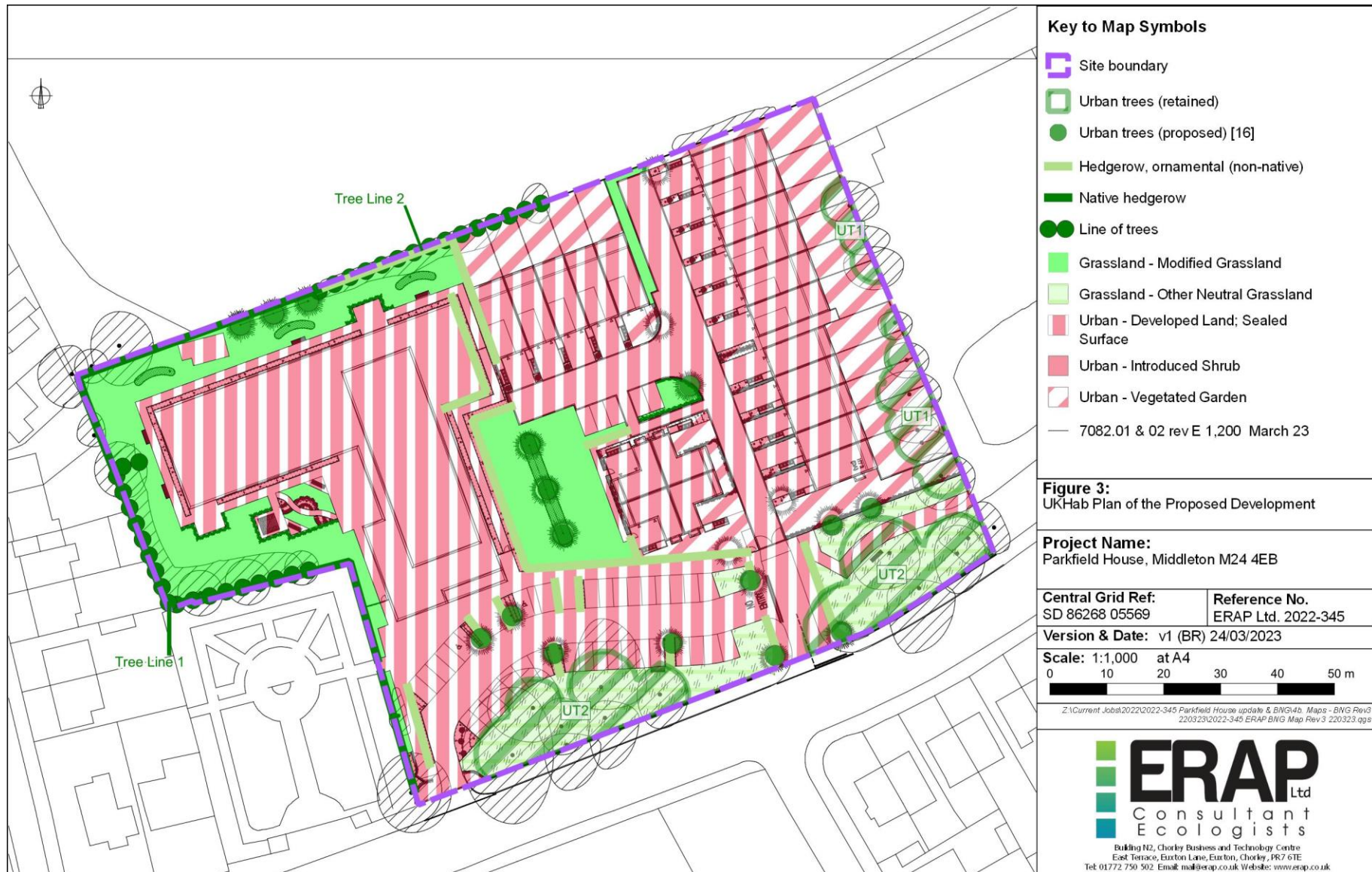


Figure 2: UKHab Plan of the Baseline Habitats Within the Site



Figure 3: UKHab Plan of the Proposed Development





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