Land West of Garstang Road, Broughton PR3 5JJ

ASSESSMENT OF BIODIVERSITY NET GAIN

July 2021

[ERAP (Consultant Ecologists) Ltd ref: 2021-104b]

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1.0 INTRODUCTION

1.1 Background and Rationale

1.1.1 ERAP (Consultant Ecologists) Ltd has carried out a full scope of relevant ecological survey and assessment at the land west of Garstang Road, Broughton to inform a planning application for a residential development. It is proposed to develop the site to housing with associated roads and hard standing and sustainable attenuation ponds; the proposed development is presented at the *Land West of Garstang Road, Broughton. Illustrative Masterplan* (Hollins Strategic Land, 2021), hereafter the 'Illustrative Masterplan'.

1.1.2 The need for a development proposal to achieve, secure and deliver gains for biodiversity is established in accordance with paragraph 175d of the *National Planning Policy Framework* (NPPF) (Ministry of Housing, Communities and Local Government, 2019) which states that, when determining planning applications, local planning authorities should encourage opportunities to incorporate biodiversity improvements in and around developments, especially where this can secure measurable net gains for biodiversity.

1.1.3 Ecological guidance, based on the baseline surveys, has been provided to the design team throughout the preparation of the Illustrative Masterplan. This approach has ensured that the layout (and the open space proposals) have, as much as possible, been ecology-led to achieve a sympathetic scheme which avoids features of ecological interest (where possible) and seeks to minimise and mitigate adverse effects where avoidance is not possible.

1.1.4 This report has been prepared to accompany a completed assessment of Biodiversity Net Gain (BNG) using *The Biodiversity Metric 2.0 Calculation Tool Beta Test Final* (Natural England, 2019). The completed excel spreadsheet assessment is presented as a separate document, named '*Biodiversity Metric 2.0 Calculation Tool 07.07.21*'.

1.1.5 As the planning application is made in outline, and only an Illustrative Masterplan based on a number of parameters is available at this time, it is the intention 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 2.2**). 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 progress.

2.0 METHODS AND APPROACH

2.1 Vegetation and Habitats

2.1.1 The vegetation and habitats, as reported in *2021-104 Land West of Garstang Road, Broughton PR3 5JJ. Ecological Survey and Assessment* (ERAP (Consultant Ecologists) Ltd, 2021), hereafter the '*Ecological Survey and Assessment*', are referenced as the habitats baseline.

2.1.2 Condition Assessments of each habitat in accordance with those presented in *The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement* (Crosher, et al., July 2019) have been determined and are presented at **Appendix 1**. These were completed during the surveys described in the *Ecological Survey and Assessment*.

2.1.3   The habitats present have been described in accordance with the *UK Habitat Classification* (UK Habitat Classification Working Group, 2018) System (UKHab) in order that the appropriate habitat classification is used in the subsequent assessment under the BNG Calculator[1]. A plan showing the habitats as assessed under the UKHab is appended at **Figure 1**, and a corresponding plan showing the habitats as presented by the Phase 1 Habitat Survey methodology is appended at **Figure 2**.

2.1.4   Results of the BNG Assessment tool are presented within this report, however the separate excel sheet (Biodiversity Metric 2.0 Calculation Tool 07.07.21) should be referred to for the full calculation.

2.2   Evaluation Methods, Parameters and Rules Applied

Habitats and Assessment

2.2.1   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*.

2.2.2   The BNG Assessment tool used is *The Biodiversity Metric 2.0 (JP029)* (Natural England, 2019). Condition Assessments for each of the habitats present within the site have been taken from *The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement* (Crosher, et al., July 2019).

2.2.3   QGIS has been used to calculate the total area of each baseline habitat present within the site. *Appendix 5: Tree Constraints Plan. Land off Garstang Road, Broughton AWA3718* (AWA Tree Consultants, 2021) has been used as a base plan to map the habitats within the site*; as this plan was not provided in a format which included embedded geographical information it has been digitally resized by ERAP (Consultant Ecologists) Ltd to match satellite imagery of the site and wider area.

2.2.4   It is confirmed that the site area (In hectares to 2 decimal places) calculated by ERAP (Consultant Ecologists) Ltd matches the site area provided by Hollins Strategic Land (i.e. 2.60 hectares, or 'ha').

2.2.5   The areas of landscape planting / habitat creation both in the retained habitats and in the areas of public open space were provided by Hollins Strategic Land and are based on the Illustrative Masterplan (refer to **Figure 3**, **Appendix 2**).

Parameters, Rules Applied / Assumptions and Omissions

2.2.6   For the purposes of completion of the calculator the following realistic parameters and rules / assumptions have been applied:

Baseline Assessment

a.   The site area is 2.60ha;

b.   The baseline habitats, their condition and the areas covered are provided at **Tables 3.1** and **3.2**;

c.   **Figure 1** shows the habitats present in accordance with the UK Habitats Classification (UK Habitat Classification Working Group, 2018) and **Figure 2** shows a Phase 1 Habitat Survey map of the site in

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[1] For this assessment ERAP (Consultant Ecologists) have used *The Biodiversity Metric 2.0 Calculation Tool Beta Test Final* (Natural England, 2019)

accordance with the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC, 2010).

Application of Ecological Guidance Accommodated by the Illustrative Masterplan

d. As advised in the *Ecological Survey and Assessment* and achieved by the Illustrative Masterplan all hedgerows, scrub and boundary tree lines will be retained except for the removal of 20 metres of Hedgerow 2 to create an access from Garstang Road and removal of 3 metres of the tree line at the northern site boundary to create a link to the Guild Wheel. These losses are incorporated into the calculation;

e. Pond 1 (a dry pond) will be removed and compensated for by a purpose-designed wildlife pond, works undertaken will comprise excavation to a suitable profile, introduction of native plants, construction of hibernacula and creation of wetland / wildflower grassland in the buffer;

f. All arable land will be removed;

Post-Development

g. The Sustainable Urban Drainage System (SuDS) pond is designed to support open water / wetland to cover an area of 0.08ha;

h. The Illustrative Masterplan shows the accommodation of 51 properties. Based on the likely number of gardens and the public open space available it is considered that 92 street trees (51 in gardens and 41 in open space) can be accommodated (this can be adjusted as needed). The area of street trees is calculated from the Street Tree Helper on the 'Main Menu' tab of the Calculation Tool and is based on the provision of medium tree sizes;

i. Hollins Strategic Land has advised that 64% of the total site area (i.e. 1.65ha) will be developed land (properties including gardens, hard-standing and roads). The area of vegetated gardens is assumed to be 40% of the developed area (i.e. 40% of 1.65ha = 0.66ha). Vegetated gardens have been included in the calculation. It is recognised that there is limited control over what happens to the gardens and therefore vegetated gardens are scored accordingly and this is in accordance with the guidance in relation to gardens issued during the Greater Manchester Biodiversity Unit Webinar[2];

j. Accounting for the retained scrub (0.03ha) then the remaining 0.92ha of the site will be habitat creation / public open space (including 0.08ha of SuDS and 0.05ha for the wildlife pond). To achieve an attractive and functional areas with biodiversity benefits the areas of public open space (POS) will comprise 0.40ha wildflower grassland and the remainder will be split between species-rich flowering lawn which will be managed as a shorter sward (0.30ha) and native scrub (0.09ha). These notes are provided in the 'Assessor Comments' column on the relevant calculator worksheets; and

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[2] This is in accordance with the advice provided by Natural England in a recent (February 2021) Question and Answer Session on the Greater Manchester Biodiversity Unit Webinar which 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]'* (Balfour Beatty / WSP / CIEEM , 2021)

k. To compensate for the unavoidable loss of 20 metres of boundary hedgerow and 3 metres of tree line to create the site accesses, a minimum length of at least 150 metres of native hedgerow will be accommodated at the site.

Habitat Connectivity / Connectivity Calculation Tool

2.2.7   In terms of habitat connectivity, in accordance with current guidance, the Connectivity Calculation Tool is to be used only to calculate ecological connectivity for habitats with a 'high' or 'very high' distinctiveness value. No such habitats are present within the site. Current guidance also states (Natural England, 2019):

'For all other distinctiveness categories continue to apply the interim approach set out in the 'User Guide'.'

2.2.8   In accordance with The Biodiversity Metric 2.0: auditing and accounting for biodiversity value. User guide, Beta Version (Crosher, et al., July 2019):

'In the beta version of the metric, low distinctiveness habitats should be afforded a connectivity score of 'low' and high and very high distinctiveness habitats afforded a connectivity score of 'medium'. A connectivity tool is being developed and will be available in future updates.'

2.2.9   Consequently, the ecological connectivity of each feature has been determined as 'low', and in each instance the 'strategic significance' multiplier has been set to '*Area / compensation not in local strategy / no local strategy*'.

3.0   BASELINE CONDITIONS

3.1   Existing Ecological Baseline and Assessment of Habitat Types, Areas and Condition Assessments

3.1.1   **Figures 1** and **2**, appended, describe the existing habitats at the site (as recorded in May 2021).

3.1.2   **Tables 3.1** and **3.2** below provide a summary of the habitats present, their condition assessment result (refer to **Appendix 1**) and their area / length within the site. Note that individual compartments of equal habitat type and condition have been combined for ease of reference.

Table 3.1: Summary of Habitats Baseline within Site

Habitat Reference	UK Habitat Classification Type	BNG Habitat Equivalent	Phase 1 Habitat Equivalent	Condition Assessment Estimate	Area (ha)
Habitat 1 Arable	c1c arable and horticulture – cereal crops	Cropland – Cereal Crops	J1.1 cultivated / disturbed land - arable	N/A	2.4ha
Habitat 2 Marginal semi-improved grassland	g4 grassland – modified grassland	Grassland - Modified Grassland	B6 Poor semi-improved grassland	Poor	0.12ha
Habitat 3 Marginal scrub	h3h mixed scrub	Heathland and scrub – Mixed scrub	A2 Scrub	Poor	0.03ha
Habitat 4 Hard-standing	u1b developed land sealed surface	Urban - Developed Land; Sealed Surface	N/A	N/A	0.04ha
Habitat 5 Pond 1	r1a6 other eutrophic standing waters	Lakes – Temporary lakes, ponds and pools	G1 Standing water	Poor	0.01ha[3]
				Total Area	**2.60ha**

Table 3.2: Summary of Linear Habitats within Site

Habitat Reference	UK Habitat Classification Type	BNG Habitat Equivalent	Phase 1 Habitat Equivalent	Condition Assessment Estimate	Length (km)
Hedgerow 1	h2a hedgerow – Priority habitat	Native Hedgerow	J2.3 Native hedgerow	Good	0.22
Hedgerow 2	h2a hedgerow – Priority habitat	Native Hedgerow with trees	J2.3 Native hedgerow with trees	Good	0.15
Northern Tree Line	w1g6 Line of trees - no secondary codes were noted	Line of native trees and shrubs	A11 Broad-leaved woodland	Good	0.12
				Total Length	**0.49km**

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[3] Pond 1's area is 41m^2 (0.0041ha) and is therefore too small to register at in terms of hectares rounded to 2 decimal places. The pond has therefore been rounded up to 0.01ha, i.e. the minimum area possible. Due to the rounding of the other habitat areas (to meet the hectares to 2 decimal places format required) matching the 2.6ha total site area has not required any subtraction of other habitat areas to accommodate the inclusion of the pond into the metric.

4.0 POST-DEVELOPMENT CONDITION

4.1 As shown on **Figure 3** (**Appendix 2**), and in accordance with the ecological guidance provided during the preparation of the planning application and the Illustrative Masterplan, the following habitats presented at **Table 4.1** will be retained, enhanced or created.

4.2 It is important to note that this is the area of habitat to be created as secured by the Illustrative Masterplan, and therefore represents the maximum number of habitat units to be lost. As the detailed site layouts and landscape planting schedules for the development are prepared at the Reserved Matters stage the calculator can be adjusted accordingly, as needed.

Table 4.1: **Summary of Habitat Areas Retained, Enhanced or Created at Site**

Habitat	Notes on Retained, Enhanced and Created Habitats	BNG Equivalent Habitat	Target Condition Assessment	Area (ha)
Buildings and hardstanding	New development	Urban – Developed land; sealed surface	N/A	0.99ha
Gardens	Created throughout development	Urban – vegetated gardens	Poor	0.66ha
SuDS feature	With connectivity to the new pond	Urban - Sustainable urban drainage feature	Moderate	0.08ha
New wildlife pond	With connectivity to habitats in the POS and the wider area	Lakes - Ponds (Non-Priority Habitat)	Moderate	0.05ha
Wildflower grassland	To be created along the eastern margin of the site, around Pond 1, around the SuDS and over part of the POS	Grassland – other neutral grassland	Moderate	0.40ha
Species-rich lawn mix	To be seeded over the functional / accessible areas of POS	Grassland – other neutral grassland	Moderate	0.30ha
New scrub	Within the POS	Heathland and scrub – Mixed scrub	Poor	0.09ha
Retained mixed scrub	Scrub at the western site boundary	Heathland and scrub – Mixed scrub	Poor (no change)	0.03ha
			Total area	**2.60ha**
Street trees[4]	Medium size street trees x 92	Urban – Street Tree	Moderate	0.37ha

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[4] Note that street trees are considered additional to the total site area by the BNG calculator, and therefore do not contribute to the total area presented in **Table 4.1**.

Table 4.2: **Summary of Linear Habitats Retained or Created at Site**

Habitat	Notes on Retained and Created Habitats	BNG Equivalent Habitat	Current / Target Condition Assessment	Length Lost (km)	Length (km)
Hedgerow 1	Whole length retained	Native Hedgerow with trees	Good	0.00km	0.22
Hedgerow 2	Whole length retained with the exception of loss of 20 metres to create an access from Garstang Road	Native Hedgerow with trees	Good	0.02km	0.13
Tree line at northern site boundary	Whole length retained with the exception of loss of 3 metres to create pedestrian link to Guild Wheel	Line of native trees and shrubs	Good	0.003km	0.12
			Total length	**0.02km**	**0.47km**
New native hedgerow	Native hedgerow to be planted at the margins of the POS	Native Hedgerow	Moderate	-	0.15

Table 4.3: **Results of Biodiversity Metric 2.0 Calculation (from Headline Results Tab of Appendix 3)**

On-site Baseline	Habitat units	5.22
	Hedgerow units	3.66
	River units	0.00
On-site Post Intervention	Habitat units	6.96
	Hedgerow units	4.04
	River units	0.00
Off-site Baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total Net Unit Change	Habitat units	**1.74**
	Hedgerow units	**0.38**
	River units	0.00
Total Net % Change	**Habitat units**	**33.34%**
	Hedgerow units	**10.44%**
	River units	**0.00%**

4.3   As demonstrated at **Table 4.3**, the Biodiversity Metric 2.0 Calculation Tool confirms that net gain can be achieved by the proposals. However, it is essential that the other measures for biodiversity to be implemented at the site, as annotated on **Figure 3**, are taken into consideration.

4.4   Please note, just as an exercise, if vegetated gardens <u>were not</u> counted in the calculation (and 1.65ha of the site was developed land) the site can achieve a Total Net % Change of 8.94% for habitat units and 10.44% for hedgerow units.

5.0　REFERENCES

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6.0   APPENDIX 1: CONDITION ASSESSMENTS

Table 6.1: Condition Assessment for Grassland Habitats

Condition Assessment Criteria	Semi-improved Grassland
1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site.	No
2. The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat [i.e. as described by either the Phase 1 Habitat Classification or the UK Habitat Classification], with species typical of the habitat representing a significant majority of the vegetation	No
3. Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency. See relevant Habitat Classification for details of indicator species for specific habitat.	No
4. Undesirable species and physical damage is below 5% cover.	Yes
5. Cover of bare ground greater than 10% (including localised areas, for example, rabbit warrens).	No
6. Cover of bracken less than 20% and cover of scrub and bramble less than 5%.	Yes
Good: • Species-rich Grassland of all Priority Habitat Types. Of high to moderate quality. • Wildflower and sedges above 30% excluding White Clover (*Trifolium repens*), Creeping Buttercup (*Ranunculus repens*) and injurious weeds. • Meets all the condition criteria with only minor variation. • None of the indicators of poor condition are present (4, 5 & 6).	No
Moderate: • Semi-improved grassland occurs on a wide range of soils and may be derived from higher quality Priority Habitat grassland habitats in poor condition. Often as they deteriorate following nutrient inputs. Typical grasses include: Cock's-foot, Common Bent, Creeping Bent, Crested Dog's-tail, False Oat-grass, Meadow Fescue, Meadow Foxtail, Red Fescue, Sweet Vernal-grass, Timothy, Tufted Hair-grass and Yorkshire-fog. • Total cover of wildflowers and sedges less than 30%, excluding White Clover, Creeping Buttercup and injurious weeds. • Rye-grass cover is less than 25% including amenity grasslands. • OR clearly fails at least 1 of the condition criteria. • OR The grassland type has some differences between what is described in the relevant habitat classifications and what is visible on site. It is a Lower Quality Priority Habitat, but clearly recognisable as such. • Potentially restorable to grassland Priority Habitat with improved management. • Cover of undesirable species at 5- 15%.	No
Poor: • Agricultural grasslands characterised by vegetation dominated by a few fast-growing grasses on fertile, neutral soils, frequently characterised by an abundance of Rye-grass (above 25% cover) and White Clover. These grasslands are typically either managed as pasture or mown regularly for silage production or in non-agricultural contexts for recreation and amenity purposes; they are often periodically re-sown and are maintained by fertiliser treatment and weed control. They may also be temporary and sown as part of the rotation of arable crops but they are only included in this broad habitat type if they are more than one year old. • Amenity and Road verge grasslands with similar species to description for agriculture grasslands. • OR Most of the condition criteria are being failed. • Cover of undesirable species above 15%, usually resulting in a dense scrub or tree cover, or high cover of exotic species.	Yes

Table 6.2: Condition Assessment for Scrub

Condition Assessment Criteria	Mixed Scrub
1. 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 100% cover).	No
2. There is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs.	No
3. Pernicious weeds and invasive species make up less than 5% of the ground cover.	Yes
4. The scrub has a well-developed edge with un-grazed tall herbs.	Yes
5. There are many clearings and glades within the scrub.	No
Good: • Meets all of the 5 criteria with only minor variation. • Scrub type of high biodiversity value in good condition. • None of the indicators of poor condition are present.	No
Moderate: • The single woody species cover is greater than 75%. • The age range is missing some size classes. • Scrub type of high biodiversity value in poor condition. • The scrub type has minor differences between what is described in the relevant habitat classifications and what is visible on site. • Cover of undesirable and invasive species at 5-20%.	No
Poor: • The single woody species cover is greater than 75%. • The age range is missing some size classes. • Scrub type of high biodiversity value in poor condition. • The scrub type has minor differences between what is described in the relevant habitat classifications and what is visible on site. • Cover of undesirable and invasive species at 5-20%. • Single-age scrub present. • Potentially restorable to improved scrub habitat with improved management. • All of the condition criteria are being failed. • The scrub type has major differences between what is described in the relevant habitat classifications and what is visible on site. • Cover of undesirable and invasive species above 20% [see below]. • All Rhododendron stands will be in this condition.	**Yes**

Additional Information:

Scrub of high (distinctiveness) environmental value such as:

• Common Juniper or Box scrub.
• Scrub on calcareous soils with three or more of Wayfaring-tree.
• Wild Privet, Dogwood, Buckthorn, Hawthorn and Spindle.
• Native Sea Buckthorn scrub (on the east coast).
• Hazel.
• Scrub on peat soils with two or more of Alder Buckthorn, Eared Willow, Goat Willow, Grey Willow, Bay Willow, Purple Willow and Osier.
• It excludes montane scrub (above 600 m altitude) which is covered under Heathland.
• South facing bracken stands with violets, when associated with UK priority butterfly species; high brown
fritillary, pearl-bordered fritillary and small pearl-bordered fritillary.

Scrub of lower (distinctiveness) environmental value such as:

• The majority of bracken stands.
• Bramble.
• Blackthorn, Hawthorn.
• Gorse (unless as a low growing component of heathland habitat).
• Mixed scrub.

Table 6.3: Condition Assessment for Pond 1

Condition Assessment Criteria	Pond 1
1. Area of good water quality, with clear water (substrate can be seen) and no obvious sign of pollution in the water body.	No
2. The water body should have semi natural riparian land for at least 10 m from the pond edge.	No
3. Non-woodland ponds should be dominated by plants, be they submerged or floating (note dominance of duckweed is a sign of eutrophication).	No
4. Non-woodland ponds [i.e. that have always been open] should not be shaded more than 50%	No
5. Many ponds will be fishless, those which naturally contain fish should not be stocked and should contain a native fish assemblage.	Yes
6. Ponds should not be artificially connected to other water bodies, e.g. ditches.	Yes
7. Pond water levels should be able to fluctuate naturally throughout the year.	Yes
8. Non-native species should be absent.	Yes
9. Less than 10% of the pond should be covered with duckweed or filamentous algae.	Yes
Good: • Meets the majority of the criteria with only minor variation. • Few of the indicators of poor condition are present.	No
Moderate: • Fails a number of the criteria above. • Where non-native species comprise more than 10% of the vegetation. • There is only moderate water quality. • There is insufficient extent of semi natural riparian land. • Water levels are subject to some control. • There are some artificial connections to other water bodies, but they are not delivering water of poor water quality or preventing water level fluctuations. • Fish have been stocked at a low density, but they are native species and there is sufficient aquatic plants and habitat heterogeneity to reduce the effects of predation. • Moderate shading of non-woodland ponds. • Submerged and floating plants are limited but still presence.	No
Poor: • **Ponds in poor health.** • **Fails the majority of criteria.** • **Poor water quality present.** • Extensive filamentous algae or duckweed. • Absence of semi-natural riparian land. • No natural fluctuations in water levels. • Extensive non-native species. • High density of stocked fish. • **Absence of submerged and floating plants (unless naturally a shaded woodland pond).** • **Non-woodland ponds completely over-grown with trees and scrub.**	**Yes as dries out**
Additional Information: *Undesirable species:* • Any non-native species. • Frequently observed non-native plant species include Water Fern, Australian Swamp Stonecrop, Parrot's Feather, Floating Pennywort and Japanese Knotweed and Giant Hogweed (on the banks). • Frequently occurring non-native animals include signal crayfish, zebra mussels, killer and demon shrimp and carp. • Cover of more than 10% of duckweeds or filamentous algae are signs of eutrophication.	

Condition Assessment Criteria	Hedgerow 1	Hedgerow 2
A1. Height: >1.5m average along length (estimated from base of stem to the top of shoots, excluding any bank and any gaps or isolated trees). Newly laid or coppiced hedgerows are Illustrative of good management and pass this criterion for up to a maximum of 4 years (if undertaken in accordance with good practice). A newly planted hedgerow does not pass this criterion.	No	Yes
A2. Width: >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 assessment when they are >0.5m in height. Laid, coppiced, cut and newly cut hedgerows are Illustrative of good management and pass this criterion for up to a maximum of 4 years (if undertaken in accordance with good practice).	Yes	Yes
B1. Gap - hedge base. Gap between ground and base of canopy <0.5, for >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.	Yes	Yes
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.	Yes	Yes
C1. Undisturbed ground and perennial vegetation. >1m width ground with perennial herbaceous vegetation for >90% of length. Measured from outer edge of the hedgerow. May be present on only 1 side of the hedgerow.	Yes	Yes
C2. Lack of undesirable perennial vegetation. Plant species Illustrative 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, cleavers and docks.	No	No
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.	Yes	Yes
D2. Current damage. >90% of the hedgerow or undisturbed ground is free of damaged caused by human activities. This could include evidence of pollution, piles or manure or rubble, inappropriate management (e.g. excessive cutting).	Yes	Yes
Good: No more than 2 failures in total, and no more than 1 in any group (A, B, C D)	**Yes**	**Yes**
Moderate: No more than 4 failures in total and fails both attributes in a maximum of one functional group	No	No
Poor: Fails a total of more than 4 attributes or both attributes in more than 1 functional group.	No	No
Additional Information: No additional information		

Table 6.5: Condition Assessment for Tree Line

Condition Assessment Criteria	Tree Line 1
1. Ecologically valuable – mainly comprising native species in a mature state with a well-developed possibly continuous canopy along the length of the line.	Yes
2. Not ecological valuable - does not match the description above (for example, an over-grown or derelict hedge, or a line of Lombardy Poplar.	No
3. Ecologically valuable & associated with a ditch or bank	No
4. Not ecologically valuable & associated with a ditch or bank	
Good: Mature trees within a continuous canopy	**Yes**
Moderate: Continuous canopy	No
Poor: Broken canopy	No
Additional information / definitions: Mature being at least 1/3 expected fully mature age; Continuous meaning gaps make up less than 10% of total length, and there are no gaps greater than 5 metres; and Broken meaning gaps make up more than 10% of total length, and / or there are gaps greater than 5 metres.	

Figure 1: UK Habitat Classification Maps Showing Habitats Pre-Development

Figure 1:
UK Habitat Classification Map showing Habitats Pre Development

Project Name:
Land west of Garstang Road, Broughton PR3 5JJ

Central Grid Ref: SD 52477 34687

Reference No. ERAP Ltd. 2021-104

Version & Date: v1 (LA) 07/07/2021

Scale: 1:1,750 at A4

0   15   30   45   60   75 m

W:\Current Jobs\2021\2021-104 Garstang Road, Broughton\4. Maps\ERAP Map template 1.qgs

Building N2, Chorley Business and Technology Centre
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Key to Map Symbols

- Site boundary
- Street trees [18]
- Grassland - Modified Grassland
- Heathland And Shrub - Mixed Scrub
- Cropland - Cereal Crops
- Urban - Developed Land; Sealed Surface
- Lakes - Ponds (non-Priority Habitat)
- Hedgerow - Native Hedgerow With Trees
- Hedgerow - Native Hedgerow
- Line Of Trees - Line Of Trees

Figure 2: Phase 1 Habitat and Vegetation Map

Key to Map Symbols

- Site boundary
- Broad-leaved trees
- Scattered scrub, young trees and shrubs
- SI Poor semi-improved grassland
- A Arable
- Ponds
- Bare ground and hard standing
- Hedgerow
- Fencing
- Ditch
- Indian Balsam

Figure 2:
Phase 1 Habitat and Vegetation Map

Project Name:
Land west of Garstang Road, Broughton PR3 5JJ

Central Grid Ref: SD 52477 34687	Reference No. ERAP Ltd. 2021-104

Version & Date: v1 (LA) 07/07/2021

Scale: 1:1,750 at A4

0   15   30   45   60   75 m

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Figure 3: Plan to Show Ecological Enhancement Recommendations

Within the Residential Environment

Built environment / new properties to accommodate opportunities for roosting bats and nesting birds, including Priority Species.

Habitat connectivity through the residential area to be permeable for wildlife such as hedgehog, a Priority Species, by leaving gaps between and beneath fence panels and gates.

Lighting to be sympathetic and appropriate; excessive lighting over retained and new habitats to be avoided as this may deter use by bats.

Maximised use of native species and species known to be of value for the attraction of wildlife in the plot landscape planting schemes.

Maximised use of trees as stepping stones to encourage movement of wildlife through the site.

Public Open Space and Habitat Creation

Extensive area of public open space to accommodate:

- New permanent wildlife pond;
- Sustainable urban drainage system with associated wetland and wildflower grassland habitats;
- Tree planting, including fruit trees;
- Planting of mixed scrub composed of native species;
- Wildflower grasslands;
- Species-rich lawn mix.

Habitats to be managed in accordance with nature conservation objectives and will work towards achieving biodiversity net gains.

Hedgerow 1

Retain hedgerow.

Tree Line and Trees with Bat Roost Suitability

Tree line to be retained and protected during construction.
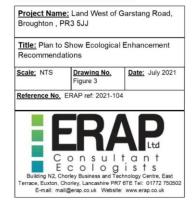
Small area of loss to accommodate link to Guild Wheel.

Hedgerow 2

Retain hedgerow with the exception of the site access. Loss to be compensated for by planting of native hedgerow planting elsewhere.

Compensatory Native Hedgerow Planting

Native species-rich hedgerow planting to be provided to compensate for section of Hedgerow 2 to be removed to accommodate site access and visibility splay.

Base plan extracted from Illustrative Masterplan

Project Name: Land West of Garstang Road, Broughton , PR3 5JJ

Title: Plan to Show Ecological Enhancement Recommendations

Scale: NTS	Drawing No. Figure 3	Date: July 2021

Reference No. ERAP ref: 2021-104

![ERAP Ltd. Consultant Ecologists logo]

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8.0   APPENDIX 3: THE BIODIVERSITY METRIC 2.0 - CALCULATION TOOL 07.07.21

Separate Microsoft Excel worksheet