Katie Whitfield BSc (Hons) MSc
Graduate Ecologist
katiewhitfield@arbtech.co.uk
Arbtech Consulting Ltd
arbtech.co.uk

Biodiversity Net Gain Assessment

Site Address:

Quarry Site Adjacent to, Household Recycling Centre, Bigby Road, Barnetby Le Wold, North Lincolnshire, DN38 6EB

Client:

Sandstop Quarries Ltd

Assessment Date:

3rd July 2025

Project:

This report is prepared to inform a planning application with the North Lincolnshire Council. The proposal is described as:

'The erection of a porta cabin with associated vehicle parking and storage. Along with the existing quarry to be re-quarried'

BNG assessment methodology and legislation can be found in the Arbtech Supplement: **BNG Methodology and Legislation – 2025.**

The results and recommendations contained within this report are valid for 18 months. An updated site visit and BNG assessment may be required if the report is to be used any longer than 18 months after completion.

Version Control			
Status	**Issue**	**Name**	**Date**
Draft	0.1	Katie Whitfield BSc (Hons) MSc, Graduate Ecologist	03/07/2025
Reviewed	0.2	Mel Reid BSc (Hons) MRes AMRSB, Principal Ecologist	07/07/2025
Final	1.0	Katie Whitfield BSc (Hons) MSc, Graduate Ecologist	08/07/2025
Updated	2.0	Katie Whitfield BSc (Hons) MSc, Graduate Ecologist	12/11/2025

Limitations and Copyright

Legal

Arbtech Consulting Limited has prepared this report for the sole use of the above-named client or their agents in accordance with our General Terms and Conditions, under which our services are performed. It is expressly stated that no other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us. This report may not be relied upon by any other party without the prior and express written agreement of Arbtech Consulting Limited. The conclusions and recommendations contained in this report are based upon information provided by third parties. Information obtained from third parties has not been independently verified by Arbtech Consulting Limited.

Arbtech cannot be held responsible for any project management failures, delays or unforeseen costs arising from failure to read and ensure understanding of the content with in, nor is Arbtech responsible for any adverse outcomes arising from failure to account for ecological advice given at any stage throughout the project collaboration.

© This report is the copyright of Arbtech Consulting Limited. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

Site Location and Context

A baseline habitat map is provided in **Appendix 1a/1b**, a post development habitat map in **Appendix 2**, a proposed development plan in **Appendix 3**, headline BNG results in **Appendix 4**, and condition assessments in **Appendix 5**.

The site is centred at National Grid Reference TA 06597 09959 and has an area of approximately 1.2ha. The site is characterised by sparsely vegetated land, other neutral grassland, bramble scrub and scattered trees. The site is surrounded by arable fields. The wider landscape comprises extensive agricultural fields which are predominantly arable.

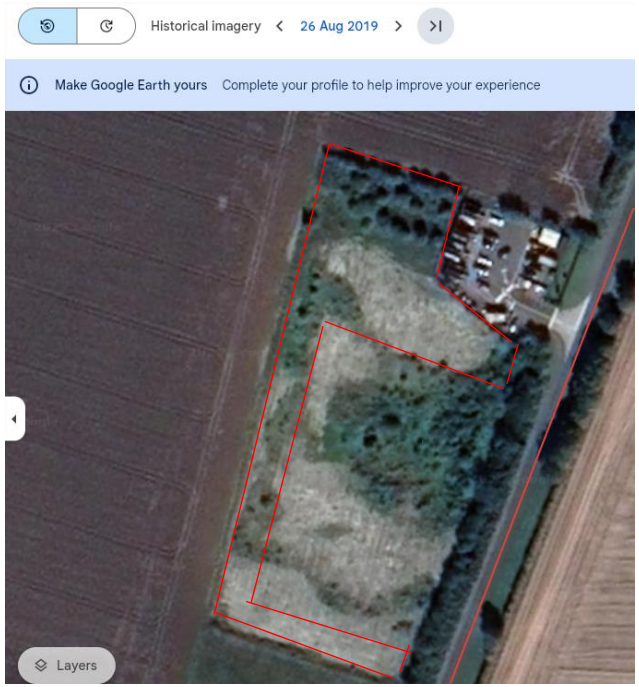
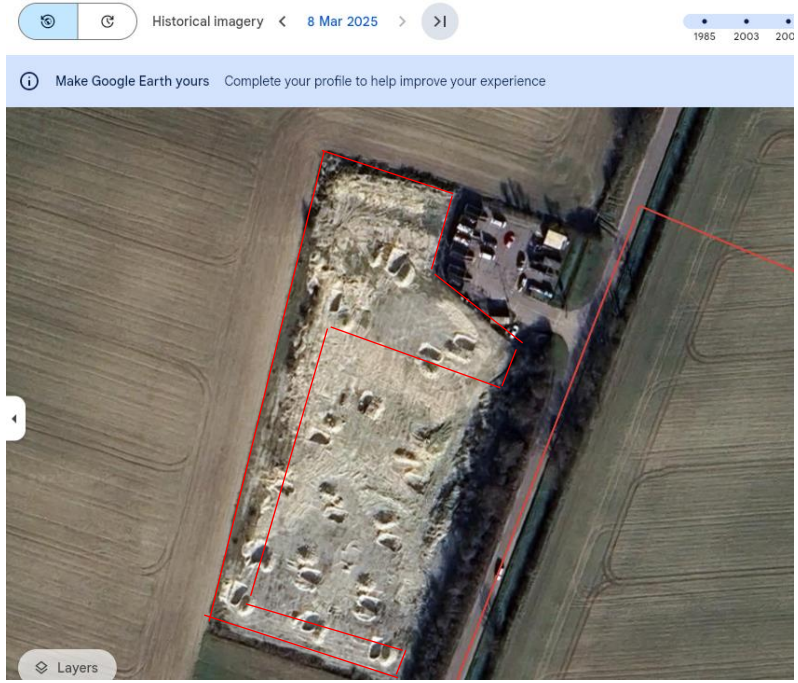
This report should be read in conjunction with the following documents:

- Statutory BNG Metric – Quarry Site, DN38 6EB – v1 (Arbtech Consulting Ltd., 2025)
- Proposed Plan (Keir Architecture, 2025)
- Preliminary Ecological Appraisal (PEA) – Quarry Site adjacent to Household Recycling Centre, DN38 6EB – v1 (Arbtech Consulting Ltd., 2025)

Executive Summary

- The current landscaping proposal generates a net gain of area-based habitat units (+10.32%). As such, the proposed development is compliant with current legislation (Environment Act 2021) and planning policies (National Planning Policy Framework, 2024) as a minimum biodiversity net gain of +10% was achieved for both area- and linear-based habitat units.
- All trading conditions have been satisfied.
- A Biodiversity Gain Plan (BGP) and Habitat Management and Monitoring Plan (HMMP) must be produced for the site. This should include recommendations for the implementation, management and monitoring of the site for at least 30 years to ensure that biodiversity net gain is delivered.

Introduction

BNG Informative		
Habitat Degradation Statement	Date reflected by BNG calculations	30th April 2025
	The baseline biodiversity value of the site is not derived from the site as observed during the PEA field survey (Arbtech Consulting Ltd., 2025) as evidence of habitat degradation had occurred. Therefore, the baseline biodiversity value of the site is derived from assumptions inferred from historic satellite imagery (i.e. GoogleEarth) and street view imagery.  
Irreplaceable Habitat Statement	No irreplaceable habitats as listed under the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations (2024) are currently present nor were present before 30th January 2020.	

<table>
<tr><td>Metric Version & Publication Date</td><td colspan="3">Statutory Biodiversity Metric Calculation Tool first published 29th November 2023 with last updates to metric tools and user guides on 23rd July 2024.</td></tr>
<tr><td>BNG Target Uplift</td><td colspan="3">+10%</td></tr>
<tr><td>National Character Area (NCA)</td><td colspan="3">43 – Lincolnshire Wolds</td></tr>
<tr><td>Strategic Significance</td><td colspan="3">Lincolnshire County Council, the responsible authority for drafting the Local Nature Recovery Strategy (LNRS) for North Lincolnshire Council, has yet to adopt a comprehensive LNRS. As such, the following documents from the adopted North Lincolnshire Local Development Framework (including Supplementary Planning Documents, SPDs) as well as the UK Biodiversity Action Plan (BAP), were used to determine strategic significance:
❖ The Core Strategy, adopted in June 2011 (https://www.northlincs.gov.uk/planning-and-environment/planning-policy-local-development-framework/#1591178700859-b856fc83-069c)
❖ Lincolnshire BAP (chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.nelincs.gov.uk/wp-content/uploads/2016/02/201110-LincolnshireBAP-3rd-edition.pdf)
❖ UK BAP (https://jncc.gov.uk/our-work/uk-bap-priority-habitats/)</td></tr>
<tr><td></td><td>Habitat</td><td>Baseline / Post-Development</td><td>Justification</td></tr>
<tr><td></td><td>Rural trees (Trees T1 to T4)</td><td>Baseline and post-development</td><td>Such trees create an ecological stepping stone within native hedgerows connected through the local arable landscape and as such contribute to the natural connectivity of such habitats in its location.
As such trees T1-T4 and proposed trees have ‘medium’ strategic significance.</td></tr>
<tr><td colspan="4">Limitations</td></tr>
<tr><td colspan="4">Since 2020, this area of land has undergone degradation, resulting in sparsely vegetated ground. Within the parcel, areas of other neutral grassland and 17 scattered trees were identified. Based on historical aerial imagery, street view data, and consistency with vegetation elsewhere on site, the trees are considered to be small common hawthorns.
A detailed condition assessment of the trees is not possible; therefore, for the purposes of this assessment, they are assumed to be in good condition as a precautionary worst-case scenario. The areas of other neutral grassland are considered to be in poor condition, consistent with retained grassland sections elsewhere on the site.</td></tr>
</table>

Baseline

Baseline Biodiversity Value: On-Site				
Area-Based Habitats (A-1)				
Habitat	**Area (ha)**	**Description**	**Condition Assessment**	**Strategic Significance**
Developed land; sealed surface	0.0326ha	Concrete surfaces are found to the northeast of the site.	Habitat condition pre-determined as '***N/A***' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	**Low** Strategic Significance
Sparsely vegetated land	0.2451ha	The majority of the site comprises sparsely vegetated land with ~40% vegetation cover and ruderal species. The habitat parcel is found on a disused quarry with permeable exposed chalk/limestone. Exposed areas of chalk/limestone are interspersed within due to recent digging, with piles of chalk/limestone adjacent. To the east is a strip of sparsely vegetated land comprising a mixture of soils and gravel. Species assemblage includes **abundant** weld *Reseda luteola*, creeping thistle *Cirsium arvense*, **frequent** common ragwort *Jacobaea vulgaris*, rosebay willowherb *Chamaenerion angustifolium*, common nettles*Urtica dioica*, **occasional** dandelion *Taraxacum officinale agg*, hairy willowherb *Epilobium hirsutum*, ground ivy *Glechoma hederacea*, oxeye daisy *Leucanthemum vulgare*, bramble sp., *Rubus fruticosus* and **rare** scarlet pimpernel *Anagallis arvensis*. Common hawthorn *Crataegus monogyna* saplings are interspersed within the habitat parcel.	***Poor**: passes 3 of 4 criteria.* Assessed using the 'Sparsely Vegetated Land' habitat type condition sheet.	**Low** Strategic Significance
Other neutral grassland (part-retro)	0.2072ha	A strip of unmanaged grassland is found to the west of the site comprising **abundant** creeping bent, perennial rye grass, **frequent** common tansy *Tanacetum vulgare*, **occasional** hairy willowherb, common nettle, dandelion agg., ribwort plantain *Plantago lanceolata* and **rare** coltsfoot *Tussilago farfara*. Sward height is >7cm for ~70% and >12cm for ~30% of habitat. There are 3no scattered trees within the habitat parcel including common hawthorn and common hawthorn saplings within. Areas of bare ground are evident where gravel is observed.	***Poor**: passes 3 of 6 criteria excluding essential criterion A and F.* Assessed using the 'Grasslands Med/High/V High Distinctiveness' habitat type condition sheet.	**Low** Strategic Significance
Scattered trees	Moderate: 0.0163ha	There are four scattered trees found to the west of the site. These are all 'small sized' with a Diameter at Breast Height (DBH) between 7.5cm and 29.9cm. A further 17 scattered trees were located to the north of site, and are assessed	***Moderate**: passes 4 of 6 criteria.* 4no. small (T1-T4)	

		retrospectively due to degradation of the site prior to the PEA survey. See PEA for more information.	Assessed using the 'Individual Trees' habitat type condition sheet.	**Medium** Strategic Significance
	Good: 0.0692ha		***Retrospectively good*** 17no. small (T5-T21) Assessed using the 'Individual Trees' habitat type condition sheet.	
Bramble scrub	0.0058ha	Patches of bramble scrub are found to the northwest of the site dominated by dense bramble sp. Within this habitat parcel are 2no scattered trees comprising of common elder Sambucus nigra. See PEA for more information.	Habitat condition pre-determined as '***N/A***' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	**Low** Strategic Significance

Post-Development

Post-Development Biodiversity Value: On-Site					
Area-Based Habitats					
	Habitat	**Area (ha)**	**Description**	**Condition Assessment**	**Strategic Significance**
Retained (A-1)	Developed land; sealed surface	0.0326ha	Sealed surfaces retained in full.	**N/A**	**Low** Strategic Significance
	Rural tree	0.0163ha	Rural trees T1 – T5 are retained.	***Moderate*** *condition.*	**Low** Strategic Significance
	Bramble scrub	0.0058ha	Bramble scrub retained in full.	**N/A**	**Low** Strategic Significance
Created (A-2)	Artificial unvegetated, unsealed surface	0.2433ha	The site will be re-quarried resulting in permeable chalk/limestone surfacing throughout.	Habitat condition pre-determined as '***N/A***' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	**Low** Strategic Significance
	Other neutral grassland	0.2045ha	Along the western boundary will be newly planted grassland with the baseline grassland being dug up to accommodate the reseeding of land. This will include species such as creeping bent, Yorkshire fog, cocks-foot grass, creeping buttercup, ribwort plantain, ox-eye daisy, nettles and thistles.	***Poor****: Passes 3 of 6 criteria including essential criterion A and excluding essential criterion F.* Assessed using the 'Grassland Med/High/V High Distinctiveness' habitat type condition sheet.	**Low** Strategic Significance
	Rural tree	0.4072ha	100no. small sized native trees to be provisioned on site within areas of proposed other neutral grassland and retained scrub. Trees will be planted individually or in small groups of single and multi-stemmed varieties. Individual trees, due to their composition, species or multi-	***Moderate****: Passes 3 or 4 of 6 criteria.*	**Medium** Strategic Significance

			stemmed nature, will note meet the criteria of formal lines of trees, so have been considered individually.	Assessed using the 'Individual Trees' habitat type condition sheet.	

Change of Biodiversity Value

		Biodiversity Units		
		Area-Based	**Linear-Based**	**Watercourse-Based**
On-Site	Baseline	**2.40** ❖ Sparsely vegetated land of poor condition (0.49) ❖ Other neutral grassland of poor condition (0.83) ❖ Bramble scrub (0.02) ❖ Rural trees of moderate condition (0.14) and rural trees of good condition, retrospectively (0.91 units) ❖ Developed land; sealed surface (no value)	N/A	N/A
	Post-Development	**2.91** ❖ Retention of bramble scrub (0.02) ❖ Retention of rural trees of moderate condition (0.14) ❖ Retention of sealed surfaces (no value) ❖ Creation of artificial unvegetated, unsealed surfaces (no value) ❖ Creation of other neutral grassland (1.37) ❖ Creation of 100 trees (1.37)		
Overall Net Change		**+0.51 (21.09%)**		

Results, Discussion, and Next Steps

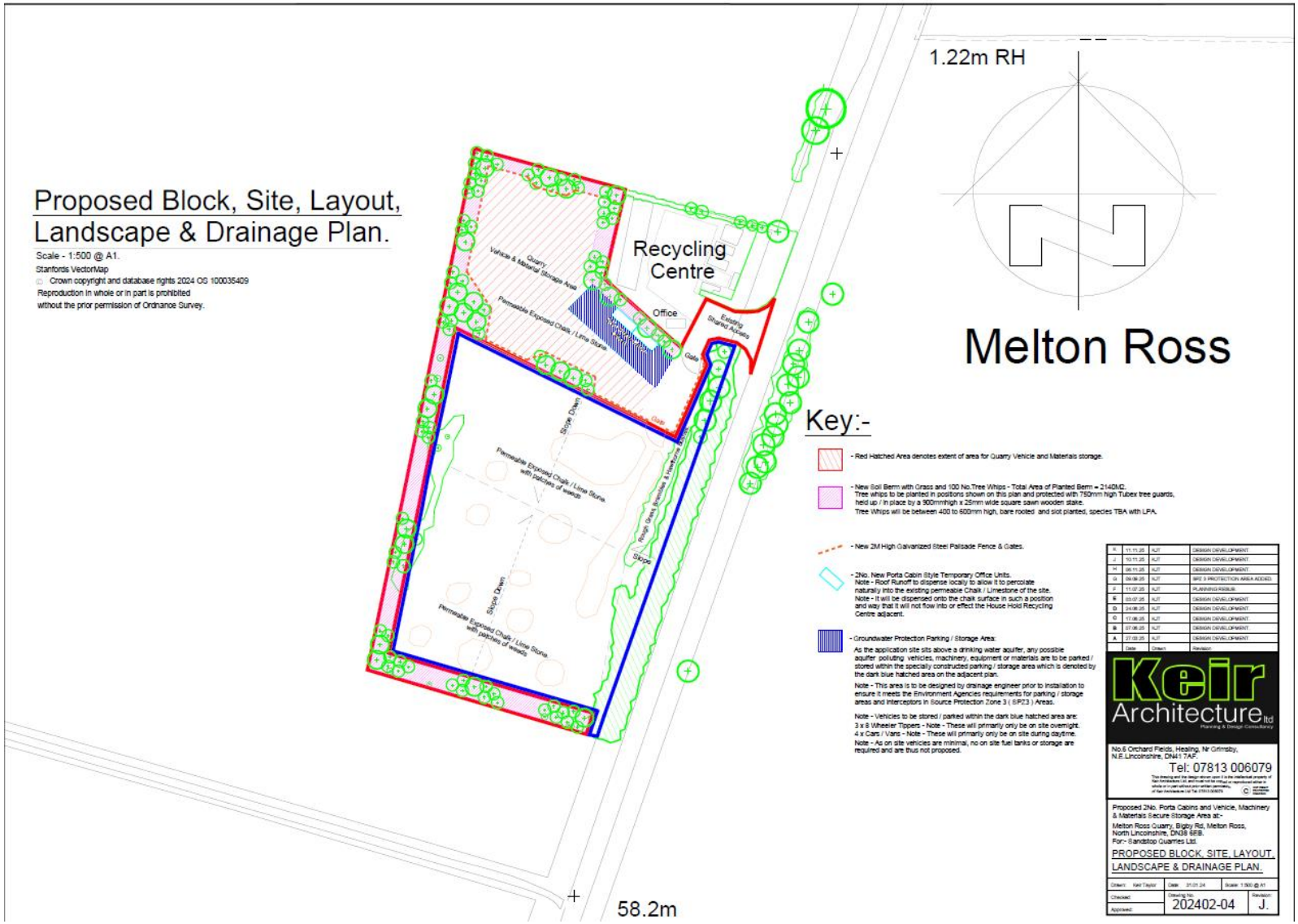
BNG Informative	
Results and Next Steps	The current landscaping proposal generates a net gain of area-based habitat units (+21.09%). As such, the proposed development is compliant with current legislation (Environment Act 2021) and planning policies (National Planning Policy Framework, 2024) as a minimum biodiversity net gain of +10% was achieved for both area- and linear-based habitat units. All trading conditions have been satisfied. A Biodiversity Gain Plan (BGP) and Habitat Management and Monitoring Plan (HMMP) must be produced for the site. This should include recommendations for the implementation, management and monitoring of the site for at least 30 years to ensure that biodiversity net gain is delivered.
BNG Mitigation Hierarchy	
Avoidance	Impacts to priority habitats (i.e., native hedgerow within the ownership boundary) have been avoided in full.
Minimisation	Impacts to other notable habitats (i.e., trees) have been minimised with 4/4 trees remaining on site being retained, and those lost prior to the survey compensated for in full.
Mitigation	Creation of other neutral grassland of moderate condition and 100 trees of moderate condition have been provisioned to satisfy trading rules.
Offset	N/A: net gain is achieved within the red line boundary

Appendix 1a: Baseline Habitat Plan prior to degradation

Appendix 1b: Baseline Habitat Plan post degradation

Appendix 2: Post-Development Habitat Plan

Appendix 3: Proposed Development Plan



Appendix 4: Headline BNG Results

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	0.51
	Hedgerow units	0.00
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	21.09%
	Hedgerow units	0.00%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	2.40	2.64	0.00	No additional area habitat units required to meet target ✓
Hedgerow units	10.00%	0.00	0.00	0.00	No additional hedgerow units required to meet target ✓
Watercourse units	10.00%	0.00	0.00	0.00	No additional watercourse units required to meet target ✓

Appendix 5a: Baseline Habitat Condition Assessment Sheets

Sparsely vegetated land; assessed using 'Sparsely Vegetated Land' habitat type condition sheet:

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The parcel represents a good example of its specific sparsely vegetated habitat type - the appearance and composition of the vegetation closely matches its UKHab description, with characteristic indicator species consistently present.[1]	Y	Appearance and composition of the vegetation closely matches its UKHab description.
B	The cover of bracken *Pteridium aquilinum*, scrub and trees is less than 25%.	Y	Cover of bracken, scrub and trees is <25%.
C	There is an absence of invasive non-native plant species[2] (as listed on Schedule 9 of WCA[3]) and species indicative of suboptimal condition[4] make up less than 5% of vegetated ground cover.	N	There is an absence of invasive non-native plant species. Species indicative of suboptimal condition make up ~40% of habitat parcel.
D	Vegetation cover of vascular and non-vascular plants is between 5 and 50%.	Y	Vegetation cover is ~40%.
Number of criteria passed		3	
Condition Assessment Result (out of 4 criteria)	**Condition Assessment Score**	**Score Achieved ×/✓**	

Passes 4 criteria	Good (3)		
Passes 3 criteria	Moderate (2)	✓	
Passes 2 or fewer criteria	Poor (1)		

Other Neutral Grassland; assessed using 'Grasslands Medium/High/Very High Distinctiveness' habitat type condition sheet:

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes/Justification
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relative to the specific habitat type. **Note – this criterion is essential for achieving moderate or good condition for non-acid grassland types only.**	N	Parcel is not a good example of its habitat type due to lack of indicator species in a high proportion.
B	Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Y	Varied sward height.
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.	N	Cover of bare ground is ~10%.
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	Y	Cover of bracken is <20% and cover of scrub is <5%.
E	Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.	Y	No physical damage or invasive non-native plant species evident.
Additional Criterion - must be assessed for all non-acid grassland types			
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). **Note – this criterion is essential for achieving good condition for non-acid grassland types only.**	N	There are ~5 vascular plant species per m2.
Essential criterion for good condition achieved (for non-acid grassland) (Yes or No)		N	
Number of criteria passed		3	

Condition Assessment Result	Condition Assessment Score	Score Achieved ✓
Non-acid grassland types (result out of 6 criteria)		
Passes 5 or 6 criteria, including essential criterion A and additional criterion F	Good (3)	
Passes 3 - 5 criteria, including essential criterion A	Moderate (2)	✓
Passes 2 or fewer criteria OR Passes 3 or 4 criteria excluding criterion A and F	Poor (1)	

Rural trees; assessed using the 'Individual Trees' habitat type condition assessment sheet:

A. The tree is a native species.
B. Predominately continuous tree canopy, with gaps in canopy cover making up <10% of total area and no individual gap >5m wide; individual trees automatically pass this criterion.
C. The tree is considered mature.
D. There is little or no evidence of adverse anthropogenic impact on tree health so that trees retain >75% of expected canopy for their age range and height.
E. Natural ecological niches for vertebrates and invertebrates are present.
F. More than 20% of the tree canopy area is oversailing vegetation beneath.

Criterion	T1	T2	T3	T4
A	✓	✓	✓	✓
B	✓	✓	✓	✓
C				
D	✓	✓	✓	✓
E				
F	✓	✓	✓	✓
Total	**4**	**4**	**4**	**4**
Condition	**Moderate: 4/6 criteria**			

Appendix 5b: Post-Development Habitat Condition Assessment Sheets

Other Neutral Grassland; assessed using 'Grasslands Medium/High/Very High Distinctiveness' habitat type condition sheet:

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes/Justification
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relative to the specific habitat type. **Note – this criterion is essential for achieving moderate or good condition for non-acid grassland types only.**	Y	Indicator species anticipated to be present in a high proportion via reseeding with appropriate seed mixes.
B	Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Y	Varied sward height of such specifications anticipated.
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.	N	Cover of bare ground anticipated to exceed 5%.
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	Y	Management anticipated to control bracken cover, if present.
E	Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.	N	Physical damage anticipated to exceed 5% of total area. No invasives anticipated.
Additional Criterion - must be assessed for all non-acid grassland types			
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). **Note – this criterion is essential for achieving good condition for non-acid grassland types only.**	N	Species composition of seed mixes suggests there will likely be less than 10 vascular plant species per m^2.
Essential criterion for good condition achieved (for non-acid grassland) (Yes or No)		N	
Number of criteria passed		3	

Condition Assessment Result	Condition Assessment Score	Score Achieved ✓
Non-acid grassland types (result out of 6 criteria)		
Passes 5 or 6 criteria, including essential criterion A and additional criterion F	Good (3)	
Passes 3 - 5 criteria, including essential criterion A	Moderate (2)	✓
Passes 2 or fewer criteria OR Passes 3 or 4 criteria excluding criterion A and F	Poor (1)	

Rural Trees; assessed using 'Individual Trees' habitat type condition sheet:

Condition Assessment Criteria		Condition Achieved (Y/N)	Notes/Justification
A	The tree is a native species (or more than 70% within the block are native species).	Y	Trees anticipated to be of native origin.
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Y	Trees are individual trees and thus automatically pass this criterion.
C	The tree is mature (or more than 50% within the block are mature).	N	No mature trees on site, all trees newly planted.
D	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.	N	Trees not anticipated to retain >75% of expected canopy due to close proximity of each proposed tree.
E	Natural Ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	N	None anticipated due to being newly planted.
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y	Anticipated to over sail >20% of vegetation in the form of other neutral grassland and bramble scrub.
		Number of criteria passed	3

Condition Assessment Result	Condition Assessment Score	Score Achieved ✓
Passes 5 or 6 of 6 criteria	Good (3)	
Passes 3 or 4 of 6 criteria	Moderate (2)	✓
Passes 0, 1 or 2 of 6 criteria	Poor (1)	