



Barns Adjacent to Fooden Hall, Bolton by Bowland

Biodiversity Net Gain Statement V2

November 2025

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Executive Summary

This report presents the findings of a Biodiversity Net Gain Assessment of an area of land (approximately 0.14 ha) to the west of Bolton by Bowland, (NGR: SD 80024 48979) which was commissioned by Brian Dent Ltd to inform proposals for the re-development of the barns into two residential dwellings with associated car parking and vehicular access.

The headline figures propose an overall¹ net-loss of **-26.78 % (unit deficit of - 0.16 habitat units)**, due to the loss of modified grassland and sparsely vegetated land. This loss can either be compensated for through an agreement to pay for the unit deficit or off-site habitat creation/enhancement subject to agreement with the LPA. Hedgerow units show an increase of **0.15** units under the current proposals. No percentage is given as no hedgerows were present at baseline. The detailed calculation evidence is outlined in Section 3 of this statement.

The current plans (Appendix C) intend to remove the modified grassland and sparsely vegetated land and create areas of neutral grassland and a species rich native hedgerow.

Any planned on-site gains will be implemented in-line with a Habitat Management Monitoring Plan (HMMP) to ensure that proposed habitat creation and/or enhancements will be implemented and managed appropriately.

¹ The minimum 10% increase in biodiversity units for BNG must be achieved for each habitat module independently with the lowest value being considered the overall percentage score.

1. Introduction

- 1.1 Bowland Ecology Ltd was commissioned by Brian Dent Ltd to undertake a Biodiversity Net Gain Assessment of an area of land (approximately 0.14 ha) to the west of Bolton by Bowland, (NGR: SD 80024 48979) to inform proposals for the construction of two residential dwellings with associated car parking and vehicular access.
- 1.2 The site is approximately 0.14 ha in size and contains modified grassland, sparsely vegetated land with barns, sheds and former farmyard areas situated within the centre. The site is immediately north of the River Ribble with the wider landscape comprising of managed pastures with some small pockets of woodland to the north and south.
- 1.3 The BNG Metric is a tool centred around the quantification of a sites ecological value, and forecasts the future biodiversity value of a site, providing a way of calculating biodiversity gains and losses.
- 1.4 This BNG assessment was undertaken in line with Department for Environment, Food and Rural Affairs (DEFRA) Statutory Biodiversity Metric calculator and guidance, hereafter referred to as the 'Metric' (DEFRA 2024). This report details the calculation and results and provides evidence and justification for the inputted data.
- 1.5 The metric excel spreadsheet has been submitted along with this summary document. The following pdf documents are also appended to the current report:
 - Landscape masterplan;
 - Pre and Post-intervention BNG plans; and
 - Condition Assessment Sheets
- 1.6 The BNG assessment follows the UK's Good Practice Principles for Biodiversity Net Gain (CIEEM, CIRIA & IEMA, 2016, DEFRA 2024) including the 10 Principles of Biodiversity Net Gain and CIEEM's Biodiversity Net Gain and Audit Templates (CIEEM, 2021), and follows British Standard BS 8683:2021: *Process for designing and implementing Biodiversity Net Gain. Specification.*
- 1.7 A summary of UK legislation can be found on the JNCC website, and how legislation and policy relates to Biodiversity Net Gain is set out in Technical note 3 (page 114) of the Biodiversity Net Gain. Good practice principles for development.

2. Methodology

- 2.1 The Metric uses information about baseline (pre-intervention) habitats (Appendix B) and proposed (post-intervention) habitats (Appendix A and C) to calculate the overall change in biodiversity units. Individual habitat areas are assigned a score of biodiversity units, generated in accordance with the Statutory Biodiversity Metric User Guide (DEFRA 2024). Criteria for baseline habitats comprise habitat area, distinctiveness, condition, and strategic significance. Post-intervention habitats are also scored based on the above criteria, in addition to the difficulty of creating or restoring habitat and the time taken to reach target condition.
- 2.2 Habitat area is calculated using QGIS shapefiles with distinctiveness determined by UKHab habitat type and inputted to the Metric calculator. Strategic significance is based on mapped desk-based information, extracted from MAGIC.gov.uk and Local Plans. The methodology for assigning condition scores followed the standard methodology as identified in the most up-to-date guidelines from Natural England/ DEFRA (2024), which classify habitats from good to poor against a series of criteria.
- 2.3 The site falls under Lancashire County Council, which does not yet have a finalised Local Nature Recovery Strategy (LNRS) (the strategy was in draft as of August 2025). If an LNRS is in place and the site does not fall within a priority habitat identified within it, habitats are automatically recognised as having 'no strategic significance'. However, where there is no finalised LNRS professional judgment must be used. As the site is within the Forest of Bowland national landscape strategic significance for baseline and post intervention has been set to, 'Location ecological desirable but not in local strategy'.
- 2.4 The baseline BNG assessment has been undertaken in line with British Standard BS 8683:2021: Process for designing and implementing Biodiversity Net Gain. Specification. The assessment has been undertaken by a suitable qualified person as defined in BS 8683:2021. Relevant CIEEM good practice guidance and standards have also been followed (CIEEM 2016 & CIEEM 2019).

UKHab Survey

- 2.5 An assessment was made of all areas of vegetation within the site boundaries, based on the standardised UKHab survey methodology (Butcher *et al.* 2020). This involved a walkover survey to identify vegetation types, which were then classified against those types set out in UKHab classification system V2.0 (UKHab Ltd, 2023). All habitats within the site boundary were mapped and described (Appendix B and E and Table 1).
- 2.6 In addition, evidence of and potential for legally protected and notable species was noted, in particular:
- The presence of the most common invasive plant species subject to strict legal control including: Japanese knotweed (*Fallopia japonica*), giant knotweed (*F. sachalinensis*), hybrid knotweed (*F. x bohemica*), giant hogweed (*Heracleum mantegazzianum*), rhododendron (*Rhododendron ponticum*, *R. ponticum* x *R. maximum* and *R. luteum*), and Himalayan balsam (*Impatiens glandulifera*).
- 2.7 The survey was carried out by Helena Davies BSc (Hons), ACIEEM, MIFM (Ecologist) on the 24th of September 2025. The weather was warm, at around 16 °C with a slight northeasterly wind (2 Beaufort scale.) It was dry with only partial cloud.

Condition Assessment

- 2.8 The condition assessment is used to measure the biological working order of a habitat type, judged against the perceived ecological optimum state for that particular habitat. It assesses each parcel of the same habitat type individually, considering key physical characteristics and a habitat's ability to support typical flora and fauna. Condition assessments can be used to assess the condition of pre-intervention or baseline habitats to inform baseline biodiversity unit calculations, assess the condition of post-intervention habitats as part of ongoing monitoring requirements, and inform habitat creation and enhancement interventions by defining what each condition state would look like for the habitat in question.
- 2.9 Methodology for assigning condition scores followed the standard methodology as identified in the most up-to-date guidelines from Natural England/Defra (Panks *et al.* 2022). Condition assessments were made for each applicable habitat type. Each habitat parcel was assessed against a standard set of criteria, for which the habitat received a 'pass' or 'fail' for each individual criterion. Upon completion of applicable criteria, a result is assigned of either 'good', 'moderate', or 'poor'.
- 2.10 Baseline calculations within the metric, including condition scores, have been informed by site surveys. The post intervention calculations are based on the most recent Landscape Proposals plan (Appendix A).

Limitations

- 2.11 The metric is a tool that can be used to help inform plans and decisions. It is important, however, to be aware of its limitations and to conduct assessments in accordance with the recommended principles and rules. Limitations, principles and rules are detailed within the guidance for the metric (DEFRA 2024).
- 2.12 The Metric is recognised as a tool that enables developers to assess the present and forecast the future biodiversity value of a development site, providing a way of calculating biodiversity gains and losses. There are, however, a number of considerations that should be taken into account when using the Metric. In particular, it is based on a set of basic habitat characteristics which are used to assess the overall biodiversity value of a particular area of land. It then employs a relatively simple calculation method to take account of changes in each habitat type. The outputs are not absolute values – they provide a proxy for the relative biodiversity worth of a site pre- and post-intervention and should be seen as a guide. The metric does not take account of species specific enhancement features such as bat boxes.

3. Results

UKHab

- 3.1 Habitats recorded during the UKHab survey are mapped in Appendix B and representative photos are presented in Appendix E. Each habitat type is described below in Table 1 with their corresponding UKHab codes.

Table 1: The habitats identified at barns adjacent to Fooden Hall Barns.

UKHab Code	Condition	Habitat Reference on Appendix B	Habitat Description
g4 – modified grassland	Poor	H1	Grassland to the east of barns, lush sward approximately 30cm tall dominated by cocksfoot grass (<i>Dactylus glomerata</i>) and red fescue (<i>Festuca rubra</i>), common nettle (<i>Urtica dioica</i>) dominant with dense stands of common hogweed (<i>Heracleum sphondylium</i>), dandelion (<i>Taraxacum</i> sp.), common mouse-ear (<i>Cerastium fontanum</i>), thistle sp. (<i>Cirsium</i> sp.) and hard rush (<i>Juncus inflexus</i>). Recent heavy rainfall likely caused adjacent brook to flood and flow over the land rather than through culvert, depositing leaf litter, twigs and some litter throughout the habitat. Some piles of stones stored on habitat.
g4	Poor	H2	The grassland west of barns is dominated by perennial ryegrass (<i>Lolium perenne</i>), with cocksfoot, broadleaved dock (<i>Rumex obtusifolius</i>), germander speedwell (<i>Veronica chamaedrys</i>), cinquefoil (<i>Potentilla</i> sp.), silverweed (<i>Potentilla anserina</i>), ribwort plantain (<i>Plantago lanceolata</i>), common nettle and red clover (<i>Trifolium pratense</i>) also present. Some of the grassland is growing through old gravel track. A farm track is also located adjacent this habitat.
g4	Moderate	H3	Grassland to the northeast of site, could be enhanced to other neutral grassland as there are more varied grass species and less evidence of nutrient enrichment. Dominant grass is crested dogs tail (<i>Cynosurus cristatus</i>), other species include cocksfoot, red clover, false oat (<i>Arrhenatherum elatius</i>), smooth meadow grass (<i>Poa pratensis</i>), creeping buttercup (<i>Ranunculus repens</i>), red fescue, tufted hair grass (<i>Deschampsia cespitosa</i>), ragwort

			(<i>Jacobaea vulgaris</i>), perennial ryegrass, bramble, hard rush, soft rush (<i>Juncus effusus</i>), thistle sp. and sweet vernal grass (<i>Anthoxanthum odoratum</i>), with young hawthorn (<i>Crataegus monogyna</i>) scrub encroaching to the north. There are approximately seven species per meter squared including suboptimal species.
u1b – Developed Land Sealed Surface	N/A	H4	Sealed surface to the back of the barns
u1b5 - Buildings	N/A	H5	The buildings onsite including the barns.
u1f – Sparsely Vegetated Urban Land	Poor	H6	This patch is dominated by feathermoss (<i>Hypnoides</i> sp.), and species poor.
u1f	Moderate	H7	Sparsely vegetated urban land with a variety of species present including; feather moss which is dominant within habitat parcel, common nettle, Yorkshire fog (<i>Holcus lanatus</i>), herb Robert (<i>Geranium robertianum</i>), cranesbill sp. (<i>Geranium</i> sp.), bramble (<i>Rubus fruticosus</i>), red fescue, willowherb sp. (<i>Epilobium</i> sp.), thistle sp., smooth meadow grass and cocksfoot grass.
r2b - other rivers and streams 851 – Rivers and culverts	N/A	r2b - other rivers and streams	The culvert runs underground towards the east of the site, it emerges for approximately 5 m then runs back underground. The UKHab 851 defines a culvert as 'a structure that channels water past an obstacle or to a subterranean waterway'. The culvert is approximately 5 m to the east of the site it has artificial banks and a rocky substrate, with potential to support aquatic species. Where the culvert emerges the artificial stone banks support mosses, grass species and a small tree. The stonework is gappy providing refugia for amphibians and reptiles. The channel has shallow sloping banks allowing aquatic species to easily access the culvert. As only one bank is fully artificial, part of the culvert is exposed to one side potentially allowing access for larger mammals, further demonstrating the ecological benefits it could provide for the local wildlife

Metric Calculation

- 3.2 Within the proposals (Appendix A) part of the northwest patch of modified grassland (H3) will be retained and enhanced to other neutral grassland. H1 will be converted to urban vegetated garden. Three trees present will be removed for the development, and 12 trees will be planted to replace those that are lost. Further, approximately 0.070 km of hedgerows will be planted along the east and west of the site. H2 will largely be lost with two small areas retained and enhanced to other neutral grassland. Due to the size of these habitats, they will be limited in what condition they will be able to achieve.
- 3.3 There will be no direct impacts to either the closed or open sections of the culvert. The habitats onsite which are closest to the culvert will be enhanced as part of the project. The proposed habitat enhancements are expected to reduce bank encroachment by reducing surface run-off and improving the vegetation structure. As culverts are defined as having no riparian zones, in line with BNG user guidance, and the feature itself is not within the site boundary, it has not been included within the BNG metric calculation.
- 3.4 There are no irreplaceable habitat types on site. The highest value habitat types, in terms of Biodiversity Units per hectare, are modified grassland. These habitats have been retained, enhanced or re-created wherever possible, however due to the extent of habitats on site and nature of development proposals, impacts could not avoid these entirely. The metric calculation is based on the BNG baseline and post intervention Plans (Appendix B & C), which has been informed by the UKHab survey, in addition to condition assessments (Appendix D), as discussed above. The headline results are displayed in Table 2 below. Overall, there is a predicted net loss on site, equating to **- 26.78 %**.

Table 2: Headline BNG metric results.

Type	On-site baseline (units)	On-site post-intervention (units)	Total net unit change	Total net % change (net unit change / on-site baseline units)
Habitats	0.43	0.32	-0.12	- 26.78 %
Hedgerow	0.00	0.15	0.15	N/A

- 3.5 When the score is broken down, the loss of units is primarily attributed to the removal of modified grassland and sparsely vegetated land in varying conditions, ranging from good to poor. There are also limitations regarding the quality of the proposed created neutral grassland due to the relatively small size of these areas. In addition, trading rules are not met under the current proposals, with insufficient units provided to offset the loss of these habitats.

Table 3: Detailed BNG results.

Habitat area type	On-site Baseline (units)	On-site post-intervention (units)	Net change
Medium distinctiveness habitats			
Rural tree	0.05	0.16	+ 0.11
Other neutral grassland	0.00	0.10	+ 0.10
Trading rules satisfied for habitat units?*		Yes	
Low distinctiveness habitats			
Developed land,sealed surface	-	-	-
Urban Vegetated Garden	-	0.05	+0.05
Sparsely vegetated land	0.11	0	- 0.11

Modified grassland	0.23	0	- 0.23
Trading rules satisfied? *		No	

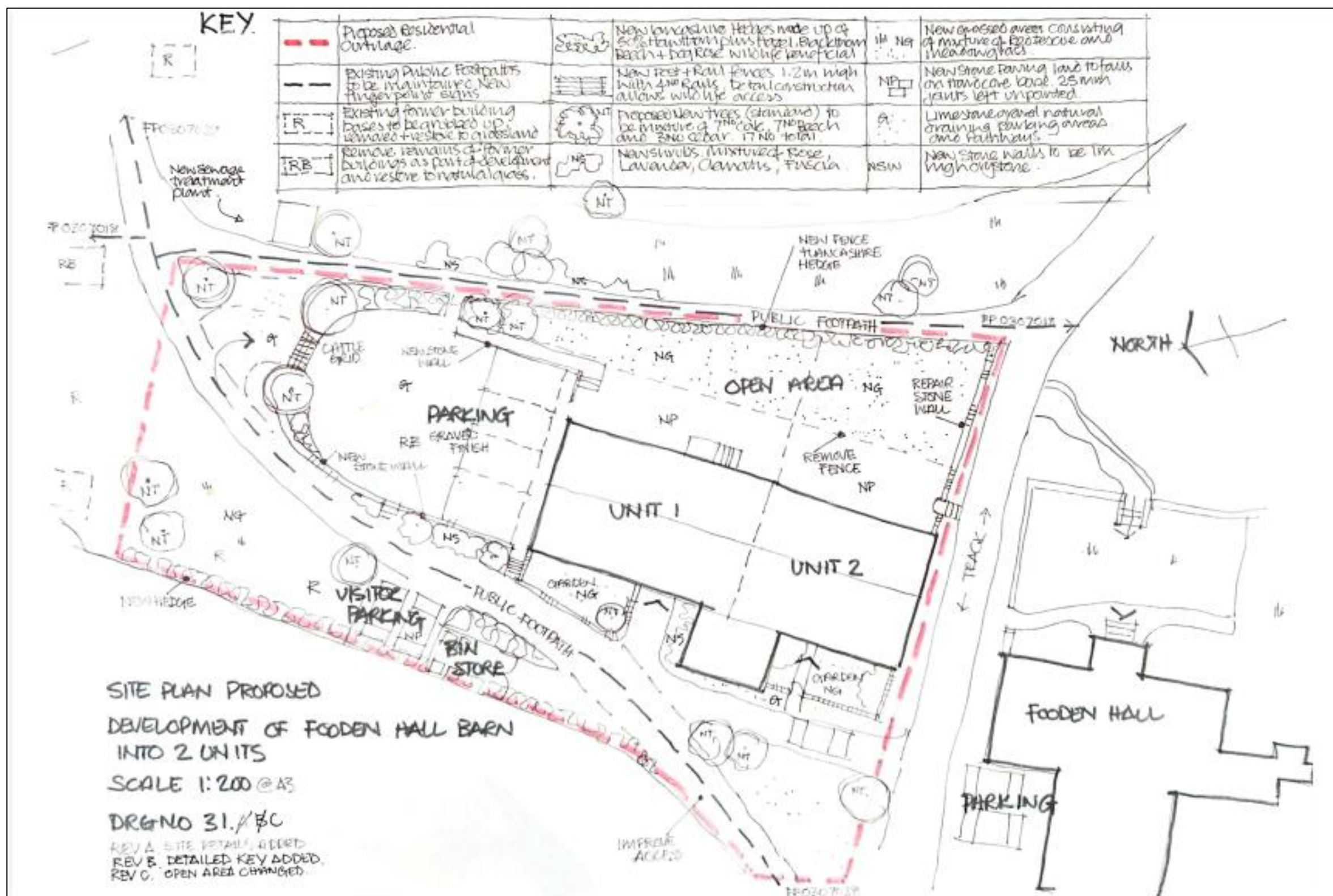
Habitat linear type	On-site Baseline (units)	On-site post-intervention (units)	Net change
Low distinctiveness linear feature			
Native hedgerow with trees	0	0.15	+ 0.15
Trading rules satisfied for linear units?*		Yes	
Notes: *To satisfy trading rules, low distinctiveness habitat losses must be compensated for by: the same distinctiveness or better habitat; medium distinctiveness habitats must be compensated for by the same habitat type, same broad habitat type or <u>higher</u> distinctiveness. Habitat losses cannot be compensated for by units generated by lower distinctiveness post-intervention habitats. Post-development units generated by linear habitats cannot offset units generated by baseline area habitats or vice versa (Panks et al. 2022a; DEFRA 2024).			

- 3.6 The Statutory Biodiversity Metric results reflect the loss of modified grassland and sparsely vegetated land. The development has been positioned on as much existing developed land sealed surface as feasibly possible whilst trying to avoid higher value habitat (including surrounding large trees and higher quality grassland).
- 3.7 Creation opportunities at the site are limited due to the small size of the developmental footprint. Many of the created habitats are small in area, limiting the potential biodiversity value they can reach. Similarly with the current plans there are limited opportunities to improve existing habitats. To enhance the condition of retained or created grasslands an appropriate cutting regime should be introduced to allow for a varied sward height and encourage diversity, in addition to planting local native seeds mixes to encourage the growth of native grasses and flowering plants. Species which are prone to dominate grasslands such as nettles, perennial ryegrass and creeping thistle (*Cirsium arvense*) should be removed/ controlled along with scrub.
- 3.8 The creation of a hedgerow onsite (0.073 km), along with the planting of 12 trees, will improve opportunities for biodiversity at the site. To encourage biodiversity and enhance the condition of the hedgerow, gaps should be avoided and vegetation, approximately 1 m, should be left undisturbed around the base. Hedgerows should be cut into an A shape on a 2–3-year rotation, ensuring cutting avoid breeding bird season. Trees should be allowed to grow naturally with limited intervention.
- 3.9 The current loss of **- 26.78 %** (unit deficit of - 0.16 habitat units), can either be compensated for through an agreement to pay for this unit loss through statutory credits or off-site habitat creation/enhancement subject to agreement with the LPA. A Habitat Management Monitoring Plan (HMMP) will be required. Created habitats and additional species measures would be managed in line with the HMMP.
- 3.10 To ensure trading rules are met, the purchase or creation of units must specifically offset the loss of lower-value habitats, including modified grassland and sparsely vegetated land. These may be replaced with any broad habitat type of equal or higher distinctiveness (e.g., scrub, grassland, woodland, or ponds). To achieve the mandatory 10% net gain requirement, a total of 0.16 habitat units will be required.
- 3.11 Habitat creation will follow recommendations set out in the EcIA and will be implemented in-line with the HMMP to ensure that proposed habitat creation and/or enhancements will be protected, fulfilled and managed appropriately.

References

- CIEEM (2021). Biodiversity Net Gain Report and Audit Templates. Chartered Institute of Ecology and Environmental Management, Winchester, UK.
- DEFRA (2024). The Statutory Biodiversity Metric User Guide . Available at: https://assets.publishing.service.gov.uk/media/65c60e0514b83c000ca715f3/The_Statutory_Biodiversity_Metric_-_User_Guide_.pdf
- Lancashire County Council (2025). Local Nature Recovery Strategy. Available at [lancashire-local-nature-recovery-strategy.pdf](#) [Accessed: 10th October 2025]
- Natural England (2024) Biodiversity Metric Supporting Documents/Tools Including data/GIS Templates. Available at: <https://publications.naturalengland.org.uk/publication/6049804846366720>
- Panks S et al, (April, 2022a). Biodiversity metric 3.1: Auditing and accounting for biodiversity User Guide. Natural England.
- Panks S et al, (April, 2022b). Biodiversity metric 3.1: Auditing and accounting for biodiversity, Technical Supplement. Natural England.
- UKHab Ltd (2023). UK Habitat Classification Version 2.0 (at <https://www.ukhab.org>)

Appendix A – Landscape Plan (draft)

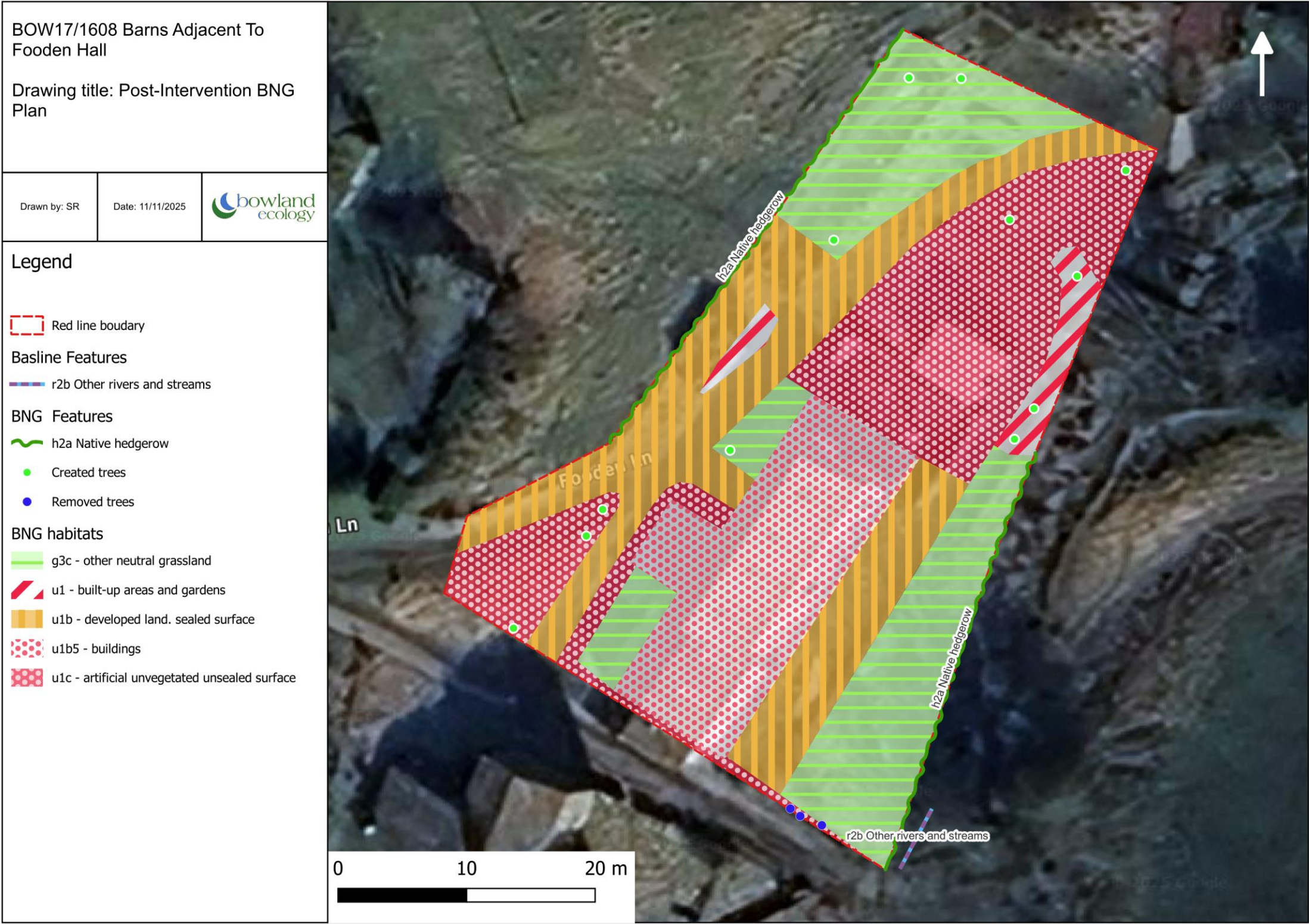


Appendix B – Baseline BNG Plan and Condition





Appendix C – Post-intervention BNG Plan



Appendix D – Baseline Condition Assessment Sheets

Modified Grassland

The condition assessment criteria for low distinctiveness grassland are as follows:

- A. There are 6-8 vascular plant species per m² present, including at least 2 forbs (these may include those listed in Footnote 1). **Note – this criterion is essential for achieving Moderate or Good condition.**
Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet
- B. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.
- C. Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus* agg. may be present).
Note – patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.
- D. Physical damage is evident in less than 5% of total grassland area. Example of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.
- E. Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).
- F. Cover of bracken *Pteridium aquilinum* is less than 20%.
- G. There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA).

Habitat reference	Habitat code	Comments	Condition
g4	h1	Passes criteria C, E, F, G	Poor
g4	h2	Passes criteria B, C, F, G	Poor
g4	h3	Passes criteria A, B, F, G	Moderate

Sparsely Vegetated land

The condition assessment criteria for sparsely vegetated land are as follows:

- 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
- B. The cover of bracken *Pteridium aquilinum*, scrub and trees is less than 25%.
- C. There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA3) and species indicative of suboptimal condition make up less than 5% of vegetated ground cover.
- D. Vegetation cover of vascular and non-vascular plants is between 5 and 50%.

Habitat reference	Habitat code	Comments	Condition
u1f	h6	Passes criteria C	Poor
u1f	h7	Passes criteria A, B and C	Moderate

Individual Trees

The condition assessment criteria for individual trees are as follows:

- A. The tree is a native species (or at least 70% within the block are native species).
- 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).
- C. The tree is mature (or more than 50% within the block are mature).
- D. There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.
- E. Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.
- F. More than 20% of the tree canopy area is oversailing vegetation beneath.

Habitat reference	Habitat code	Comments	Condition
Rural Planted Trees	T1, T2, T3	Passes criteria A, B and D	Moderate

Appendix E – Site Photographs

Description	Photograph
24 September 2025 +53.936482 -2.306198 Fooden Hall Barns Farm track 	The track currently running through the site, with limited vegetation.
	Buildings on the site with sealed roofs and limited internal vegetation.
	The grassland (H1) to the east of the barns, showing recent flood damage.
24 September 2025 +53.936800 -2.305710 Fooden Hall Barns Ruderal/ephemeral pool 	One patch of sparsely vegetated land (H6) within the boundary. The photograph shows limited vegetation with piles of rubble.

	Modified grassland (H3) in good condition to the north west of the barns with some young hawthorn plants.
	H7, a patch of moderate quality sparsely vegetated land.
	Young trees present on site.
	The culverted watercourse within close proximity to the site.