

Weddle Landscape Design

LANDSCAPE ARCHITECTURE

ENVIRONMENTAL PLANNING

Mews Studio, Charnwood House

8 Kenwood Bank, Sheffield S7 1NU

Tel (0114) 2501181 Fax (0114) 2501188

E-mail mail@weddles.co.uk

Web site <http://www.weddles.co.uk>

Church of All Hallows, High Hoyland, South Yorkshire

Biodiversity Impact Assessment

December 2022

TABLE OF CONTENTS

1	INTRODUCTION.....	3
2	ONSITE BASELINE	6
3	ON-SITE POST DEVELOPMENT	9
4	Off-SITE BASELINE.....	11
5	Off-SITE POST-DEVELOPMENT	12
6	HABITAT MANAGEMENT AND MONITORING.....	13
7	EVALUATION	15
	APPENDIX A – EXTRACTS FROM BNG METRIC	16

1 INTRODUCTION

1.1 Summary

Based on the Defra Biodiversity Metric 3.1 calculations, the proposed development will result in an overall change in **Habitat Units of +18.48%** and a change in **Hedgerow units of 0.00%**

The onsite net % change was -3.83%. As such, offsite habitat enhancement has been secured within the client ownership located within the adjacent parcel of land to the south of the application site. This will comprise of a well-being garden measuring approximately 300m² which will be designed both for amenity function and managed in the long-term as a nectar-rich wildflower meadow. This habitat also contributes to meeting Trading Rules by creating 'Other Neutral Grassland' lost as part of the development proposals.

Trading rules were satisfied as part of the proposed development.

It is considered that with the proposed habitat implementation provided with this document and prescribed long-term management strategies, the application site will meet the 10% net gain target provided within the Environment Act (2021).

1.2 Background

CPL Architects have asked Weddle Landscape Design to assess the biodiversity value of the full planning application for the development of a single residential dwelling which will be accessed by a paved driveway.

The assessment will assess the change in ecological value of the proposed development and aid in the decision making for the planning application.

This report has been prepared by John Harvey BA (Hons.), ACIEEM, Consultant Ecologist and checked by Christopher Braine Ba(Hons) MCIHort MLA CMLI with over 13 years ecological field surveying, scoping, protected species surveys and report writing experience.

This report will assess the existing site habitats and includes an assessment of the biodiversity change based upon The Defra Biodiversity Metric 3.1. This measuring tool accounts for biodiversity loss and gains impacted from developmental change.

1.3 Site Description

The planning application site is approximately 0.09ha and is located off Litherop Road (B-Road), within the district of High Hoyland at Grid Reference SE 27488 10675.

The application site pertains to an area of grassland bounded by drystone walls and dense scrub. A static occupied chalet was situated within the site. A number of mature trees were also recorded along the site boundaries. The application site is within the ownership of the Church of All hallows, which is located adjacent to the southern boundary of the site, across a public footpath. The site was situated within an arable crop dominated landscape with patches of mixed deciduous and pine woodland, such as Hoyland Bank situated across Litherop Road to the west and Deep Haigh Wood 400m to the east. Connective vegetative features were recorded within the landscape, comprising field boundary hedgerows, byways, woodland edges and arable field boundaries.

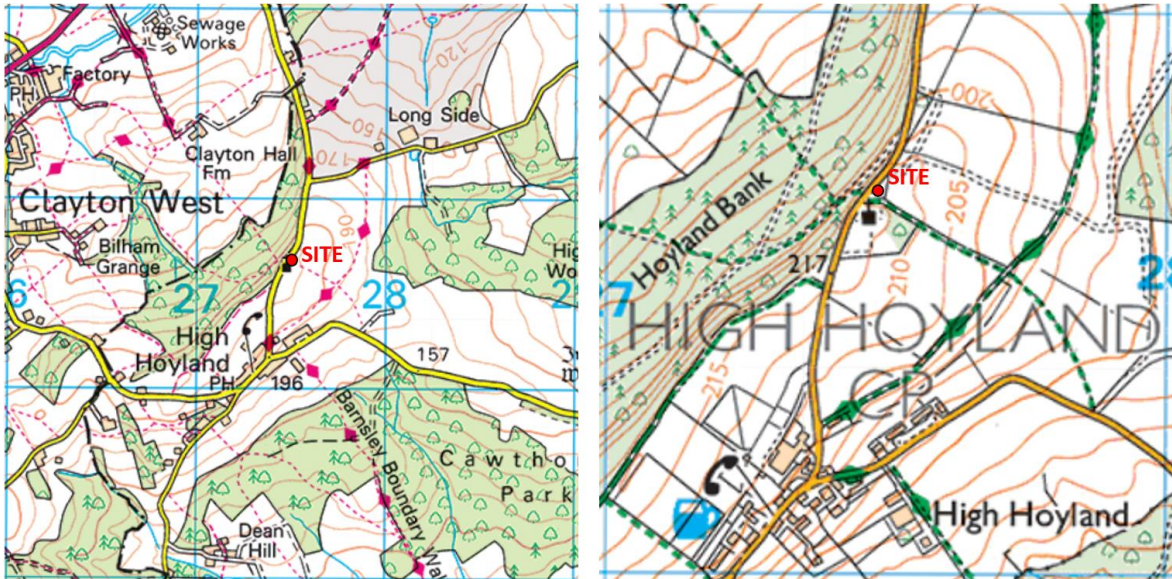


Figure 1: OS Map showing site location



Figure 2: Aerial photograph with development site boundary

1.4 Planning Status

The site is in High Hoyland under the development control of Barnsley Metropolitan Borough Council (BMBC).

The application site is subject to a full planning application for the development of a single residential dwelling which will be accessed by a paved driveway.



Figure 3: Site Proposals

2 ONSITE BASELINE

2.1 A-1 On-site Habitat Baseline

The application site was predominantly 'Moderate' condition Other Neutral Grassland, being approximately 761m² in extent. The grassland supported a varied structure and species composition caused by levels of disturbance and nutrient richness. An overall grass to herb ratio of approximately 80:20 with higher proportion of forbs and ruderals to the south of the site where shading had created patches of nettle beds (*Urtica dioica*). The areas of other neutral grassland succeeded to 'Poor' condition Mixed and Hawthorn scrub along the southern boundary of the application site. Developed land; sealed surface and artificial unvegetated land was created by the temporary chalet structure and associated gravelled area.

Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	Condition Criteria	Baseline Habitat Units (ha)
Other Neutral Grassland	0.0761 (0.0492ha enhanced)	Medium	Moderate	Not in Local Strategy	Passing 3 of 6 (2, 4 and 5)	0.61
Mixed Scrub	0.0030 (0.0030 retained)	Medium	Poor	Not in Local Strategy	Passing 2 of 5 (3 and 4)	0.01
Hawthorn Scrub	0.0026 (0.0026 retained)	Medium	Poor	Not in Local Strategy	Passing 2 of 5 (3 and 4)	0.01
Artificial unvegetated, unsealed surface	0.0075 (0.0075 enhanced)	Very Low	N/A – Other	Not in Local Strategy	N/A	0.00
Developed land; sealed surface	0.0037 (0.0037 enhanced)	Very Low	N/A – Other	Not in Local Strategy	N/A	0.00
Total Habitat Units						0.63

Table 1: Summary of Baseline Habitats

2.2 B-1 On-site Hedge Baseline

Two tree lines were recorded to the north of the application area, along the western and eastern boundaries of the site. Each treeline was composed of mature specimens and including Ash (*Fraxinus excelsior*), Wych elm (*Ulmus glabra*), and Sycamore (*Acer pseudoplatanus*). The canopy of the treelines over-sailed areas of nettle beds, scrub patches along the boundaries, permeable rubble surface and areas of mown / disturbed other neutral grassland.

Both treelines will be retained with supplementary tree planting to compensate for the loss of individual trees being removed to allow for the development.

Hedge Type	Length (km)	Distinctiveness	Condition	Strategic Significance	Condition Criteria	Baseline Hedge Units
Line of Trees (LOT1)	0.039 (0.039 retained)	Low	Moderate	Not in Local Strategy	Passing 4 of 5 (1, 2, 3 and 5)	0.16
Line of Trees (LOT2)	0.033 (0.033 retained)	Low	Moderate	Not in Local Strategy	Passing 4 of 5 (1, 2, 3 and 5)	0.13
Total Hedges						0.19

Table 2: Summary of Onsite Hedge Baseline



Figure 4: UKHabs Map of Baseline site condition

3 ON-SITE POST DEVELOPMENT

3.1 A-2 Habitat Creation

The habitats to be created will be limited to the access drive, building footprint and associated amenity grassland located within the southern parcel of the application area.

Proposed Habitat	Area (ha)	Distinctiveness	Target Condition	Strategic Significance	Condition criteria	Habitat Units Delivered
Modified Grassland	0.0140	Low	Moderate	Not in Local Strategy	Passing 5 of 7 (1, 2, 3, 5 and 7)	0.05
Developed Land: Sealed Surface	0.0234	Very Low	N/A – Other	Not in Local Strategy	N/A	0.00
Total proposed habitat units						0.05

Table 3: Summary of Post-Development Habitat Creation

3.2 A-3 Site Habitat Enhancement

The northern parcels of the application site will be enhanced with the aim of achieving 'Good' condition. A reduced 'Fairly good' condition has been specified due to unknown long-term uncertainties.

Baseline Habitat	Area (ha)	Proposed Habitat	Distinctiveness change	Strategic Significance	Condition change	Condition Criteria	Habitat Units Delivered
Other Neutral Grassland	0.0492	Other Neutral Grassland	Medium → Medium	Not in Local Strategy	Moderate → Fairly Good	Passing 6 of 6	0.47
Developed Land: Sealed Surface	0.0075	Other Neutral Grassland	Very Low → Medium	Not in Local Strategy	N/A – Other → Fairly Good	Passing 6 of 6	0.05
Artificial land; sealed surface	0.0030	Other Neutral Grassland	Very Low → Medium	Not in Local Strategy	N/A – Other → Fairly Good	Passing 6 of 6	0.02
Total proposed habitat units							0.54

Table 4: Summary of Post-Development Habitat Enhancement



Figure 5: UKHabs Map of Post-development site condition

4 OFF-SITE BASELINE

4.1 D-1 Off-site Habitat Baseline

An enclosed area of regularly mown amenity grassland within the adjacent churchyard to the south of the application area within the ownership of the applicant was allocated for habitat enhancement.

Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	Condition Criteria	Baseline Habitat Units (ha)
Modified grassland	0.0300	Low	Poor	Not in Local Strategy	Passing 3 of 6 (2, 4 and 5)	0.06



Figure 6: Location of offsite habitat baseline within the adjacent churchyard

5 OFF-SITE POST-DEVELOPMENT

5.1 D-2 Off-site Habitat Creation

The grassland has been designated for 'Wellbeing Garden with Sacred Space' which has been agreed to incorporate biodiversity enhancements to develop a species-rich wildflower planting strategy aiming to meet 'moderate' condition.

Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	Condition Criteria	Baseline Habitat Units (ha)
Other Neutral grassland	0.0300	Medium	Moderate	Not in Local Strategy	Passing 5 of 6 (1, 2, 4, 5 and 6)	0.20

6 HABITAT MANAGEMENT AND MONITORING

The management period of this impact assessment is 12 years (The length of time taken to reach target condition for highest temporal risk habitat, in this instance, Other Neutral Grassland). During the first five years the quality and quantity of management work completed would be detailed at the end of each year. To ensure that the plan continues to remain appropriate, a review will be undertaken at the end of year 5 and at the end of year 10. Should it be identified that the aims and objectives of this management plan are not being met, remedial action will then be undertaken so the development delivers the biodiversity objectives of the approved management plan.

10-year monitoring should be undertaken by a suitably qualified ecological practitioner who would complete a 'BNG Audit Report' following CIEEM Guidance¹ on years 1, 2, 3, 5 and 10 and sent to Sheffield City Council.

Mixed scrub and Hawthorn scrub have been excluded from this section as they will be retained in their current form post-development. Pruning may be experienced, but this activity may enhance the biodiversity function of this habitat. Furthermore, this habitat will aim to be 'Poor' condition and therefore does not require long-term management.

Developed land; sealed surface does not require a plan for management and monitoring.

6.1 Other Neutral Grassland (onsite)

The other neutral grassland located within the north of the application site will be sown and intermittently managed and monitored for a period up to 10-years to create a species-rich wildflower grassland using seed-mixes suited for the soil type and nutrient status. Seed mixtures should be spread between late-July and early-September, or in March to April.

"Pro Flora 11 – Woodland and shade" should be used throughout the sward and will be applied to suppliers' guidelines.

Bulb planting of Wild garlic (*Alium ursinum*), Lesser celandine (*Ranunculus ficaria*), Wood anemone (*Anemone nemerosa*), Daffodil (*Narcissus sp.*) and complimentary Native bluebell (*Hyacinthoides non-scripta*) is also encouraged.

Operation	Frequency	Seasonal
1. To facilitate grassland establishment the existing grassland sward will be reduced to 3-5cm by close mowing. The area will be scarified using a power harrow or similar, to expose 30-50% of bare ground (The use of herbicides to clear the ground should be avoided but can be used if deemed necessary).	Prior to Year 1	Apr-May
2. Cut meadow grass to 70mm after flowering. Carried out on warm dry days to allow any reptiles to disperse. Remove cuttings.	Annual	Mid-July- Sept
3. Second cut to meadow grass to 70mm if re-growth exceeds 100mm. Remove cuttings.	Annual	Dec
4. Meadow to be kept between 70mm and 100mm through Years 1 and 2	Twice annually (years 1 and 2 only)	Apr-May & Sep-Oct

¹ CIEEM (2021) Biodiversity Net Gain Report and Audit Template, Version 1

5. Meadow regime will commence from Year 3 where a single cut will be undertaken in late summer / Autumn to allow for flower and seed dispersal,	Once annually (year 3 onwards)	Sep-Oct
6. Repeated walkover surveys will be conducted to determine management strategies. If less than 50% of expected germination reseeding with an appropriate 100% flower mixture should be undertaken.	Years 1, 2, 3, 5, 10 & 12.	Apr–Aug

Table 5: Habitat Management Plan for Other Neutral Grassland

6.2 Other Neutral Grassland (offsite)

A nectar-rich wildflower meadow comprising 12 'stations' will be planted within the pre-existing modified grassland churchyard. This sward will be primarily function as a wellbeing garden and will be designed specifically for floral interest for rest and recovery. The flower meadow will also be subjected to a regular landscape and management regime.

The planting design will be completed by a horticultural expert and managed in the long-term by appointed landscape gardeners.

6.3 Modified Grassland

Mown and managed grassland located to the south of the newly proposed residential building. The grassland should be sown with a shade tolerant species mix with high ratio of wildflowers (*Geraniums*, *Veronica*, *Prunella vulgaris*... etc). Annual cut during late autumn or spring to encourage diversity and encourage invertebrates. The grassland sward should aim for a minimum of 6 species per m².

Operation	Frequency	Seasonal
1. Apply slow-release lawn fertiliser: - Spring: 35g/m ² Autumn: 50g/m ² .	Bi-annual	Mar-Apr & Oct- Nov
2. Maintain amenity grass at height of 25mm and trim / re-form edges.	As required within Years 1, 2, 3, 5, 10 & 12.	May-Sep
3. Spiking to all amenity grassed areas; to a depth of 75mm.	Bi-annual	Mar-Apr & Oct- Nov
4. Over-seed patchy grass areas.	Annual	Sep-Oct
5. Supply & apply selective herbicide to manufactures recommendations; to all grassed areas.	Annual	Sep-Oct
6. Scrub encroachment from the southern boundary will be limited by regular pruning and crown control	Annual	May-Sep
7. Physical damage limited where possible. If desire paths start to show, these should be paved or otherwise hardened to reduce soil degrading	Annual	All year
8. Monitoring surveys aimed to determine Bracken and INNS encroachment. Remove as necessary	Annual	May-Sep

Table 6: Habitat Management Plan for Modified Grassland

7 EVALUATION

Based on the Defra Biodiversity Metric 3.1 calculations, the proposed development will result in an overall change in **Habitat Units of +18.48%** and a change in **Hedgerow units of 00.00%**.

Trading Rules were satisfied due to existing 'Medium' distinctiveness broad habitats being either avoided or remediated by additional planting within the land-ownership of the applicant.

On-site baseline	<i>Habitat units</i>	0.63
	<i>Hedgerow units</i>	0.29
	<i>River units</i>	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.61
	<i>Hedgerow units</i>	0.29
	<i>River units</i>	0.00
On-site net % change (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	-3.83%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	0.00%
Off-site baseline	<i>Habitat units</i>	0.06
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.20
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	0.12
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	18.48%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	0.00%
Trading rules Satisfied?	Yes ✓	

Table 7: Headline results from BNG Defra Metric

That said, the design proposals were considered to support the Mitigation Hierarchy as all ecological impacts were avoided in the first instance, compensated for and enhanced.

APPENDIX A – EXTRACTS FROM BNG METRIC

Ref	Habitats and areas			Distinctiveness		Condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline
	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic Significance multiplier		Total habitat units
1	Grassland	Other neutral grassland	0.0761	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	0.61
2	Heathland and shrub	Mixed scrub	0.003	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	0.01
3	Heathland and shrub	Hawthorn scrub	0.0026	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	0.01
4	Urban	Artificial unvegetated, unsealed surface	0.0075	V Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00
5	Urban	Developed land; sealed surface	0.0037	V Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00
6												
7												
8												
9												
10												
Total habitat area			0.09									0.63

Figure 7: Baseline Habitat Scores

Post development/ post intervention habitats									
Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness	Condition	Strategic significance	Temporal multiplier		Difficulty	Habitat units delivered
			Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition/years	Final difficulty of creation	
Grassland	Modified grassland	0.014	Low	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	4	Low	0.05
Urban	Developed land; sealed surface	0.0234	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	0	Medium	0.00
	Total habitat area	0.04							0.05

Figure 8: Site habitat Creation

UK Habitats - existing habitats				Habitat distinctiveness	Habitat condition	Strategic significance	Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value					
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Condition	Strategic significance		Total hedgerow units	Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost
1	LOT1	Line of Trees	0.039	Low	Moderate	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.16	0.039		0.16	0.00	0.00	0.00
2	LOT2	Line of Trees	0.033	Low	Moderate	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.13	0.033		0.13	0.00	0.00	0.00
3														
4														
5														
6														
7														
			0.07					0.29	0.07	0.00	0.29	0.00	0.00	0.00

Figure 12: Site Hedge Baseline