

Halifax Road, Penistone
Biodiversity Net Gain Assessment

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1 Introduction

Background to commission

- 1.1 BSG Ecology was commissioned in April 2021 by Barratt Homes and David Wilson Homes Yorkshire West to undertake a biodiversity net gain assessment of the proposed development to the south of Halifax Road, Penistone (centred at OS grid reference SE245043); the 'Site'. The assessment reviews the current Planning Layout Masterplan and considers existing baseline survey information of the Site to enable the completion of the Defra Biodiversity Metric 2.0 Calculation Tool (Defra, December 2019). The outcome of this is a calculation of the potential for biodiversity net gain to be delivered by the proposed development.

Site description

- 1.2 The Site comprises three large agricultural grassland fields, as defined by the red line boundary shown in Figure 1. A single mature ash tree is located in the south-west corner, and there are three sections of species-poor native hedgerows on the southern boundary of the Site.

Proposed Development

- 1.3 The proposals for the Site are to construct 402 dwellings with associated infrastructure and Public Open Space. Most of the existing habitats will be removed from the Site as part of the development, with the exception of land behind the tree protection fencing which will be retained.

2 Methods

Stage 1 – Desk based assessment

2.1 A desk based scoping assessment was undertaken including:

- The Barnsley Biological Records Centre (BBRC) was contacted to provide information on non-statutory sites within a 1 km radius of the Site.
- a review of online aerial photographs (such as Google Earth, Bing Maps, and Ordnance Survey Maps) to provide useful supplementary information on the presence of habitats and habitat linkages at the landscape level;
- a planning policy review of the Barnsley Local Plan (Barnsley Metropolitan Borough Council, 2019a) to identify any relevant ecology or strategic significance policies; and
- review of the existing Brooks Preliminary Ecological Impact Assessment Report (Brooks Ecological, 2021), relating specifically to the identification and mapping of habitats and assignment of condition to these.

Stage 2 – Site Walkover

2.2 The Site was visited on 5 May 2021 by Dr Jim Fairclough (Principal Ecologist, BSG Ecology), to undertake a walkover, to confirm the findings of the existing Phase 1 habitat information and baseline assessment provided in the Brooks Ecological Impact Assessment report (Brooks Ecological, 2021) are still accurate. This information was used to establish the baseline habitat types and condition assessment.

Stage 3 – Biodiversity change assessment calculation

2.3 The Defra Biodiversity Metric 2.0 Calculation Tool (Defra, December 2019) was used to make the calculation using the Landscape Masterplan (STEN Architecture, 2020) shown on Figure 1 in Appendix 2.

2.4 Using the information obtained from the botanical survey and supported (as appropriate) by relevant information obtained from the desk-based assessment, the habitats present on Site and their condition were identified, with reference to the UK Habitat Classification (The UK Habitat Classification Working Group, 2018) and the Biodiversity Metric 2.0 Technical Supplement (Crosher *et al.*, 2019), and inputted into the pre-development net gain calculation. This provides an on-site baseline from which the biodiversity value of the Site may be derived, given by the number of biodiversity units.

2.5 The post-development calculation is based on the desired developable area as shown in the Landscape Masterplan, taking into account any habitat retention, enhancement and creation. The post-development scenario for on-site habitat enhancement and creation has been inputted into the calculator to determine the change in biodiversity units as a result of the proposed development of the Site.

Assumptions

2.6 Professional judgement has been applied to suggest realistic habitat type/s and area (in ha) of habitat/s that could potentially be created, what condition they would need to achieve and how they would (broadly) be maintained.

2.7 To conform with the request made by Barnsley Metropolitan Borough Council on 8 April 2021 (email ref. RE: 2020/0274 Halifax Road, Penistone - Updated Ecology Reports), it has been

assumed that the garden areas to be created may not be retained as vegetated areas by residents, and therefore the category 'Urban – Un-vegetated garden' has been used.

- 2.8 For the purpose of the calculator it is assumed that, where residential development is proposed, the proposed tree planting, amenity grassland, beech hedging and streetscape can all be recorded under 'Urban - Suburban/ mosaic of developed/ natural surface'.

3 Results and Recommendations

Desk study

- 3.1 The Barnsley Biological Records Centre (BBRC) identified one non-statutory designated site within 1 km of the Site. Scout Dike Reservoir Local Wildlife Site (LWS) is located approximately 0.8 km west of the Site. This LWS is a reservoir with areas of modified neutral grassland, tall ruderal and scrub habitats and some areas of acid grassland and heath in the surrounding habitats, and an area of coniferous plantation woodland within the LWS. This site is accessible to the public. Given the distance of the Site from the LWS, there are not considered to be any direct or indirect impacts on this site. There are no other statutory or non-statutory designated sites within or adjacent to the proposed development site.

Local plan policy

- 3.2 The Barnsley Local Plan adopted on January 2019 (Barnsley Metropolitan Borough Council, 2019a), includes a reference to the delivery of net gain for biodiversity as follows:
- 3.3 *"In order to support Barnsley's ambitions and vision the Local Plan objectives are.....protect and enhance Barnsley's environmental assets and achieve net gains in biodiversity.*
- 3.4 *Landscaping should be encouraged in all schemes as it has other benefits including biodiversity provision, climate change resilience and carbon absorption. Any new planting should use a variety of native species which are of local provenance where possible as plants from local sources are better adapted to local conditions and using local sources reduces the risk of introducing diseases and pests. Nectar-rich plants and berry producing shrubs incorporated into planting schemes will be encouraged as they will provide valuable food sources for wildlife, and development of other habitats such as wildflower grassland and wetlands should also be considered.*
- 3.5 *Planting should, where possible, be designed to link habitats to form corridors for wildlife with existing hedgerows included within developments. Where they have become patchy or overgrown, existing hedgerows should be restored as part of new developments wherever possible.*
- 3.6 Policy BIO 1 Biodiversity and Geodiversity states that "Development will be expected to conserve and enhance the biodiversity and geological features of the borough by:
- *Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified via Section 41 of the Natural Environment & Rural Communities Act 2006 (for list of the species and habitats of principal importance) and in the Barnsley Biodiversity Action Plan.*
 - *Maximising biodiversity and geodiversity opportunities in and around new developments.*
 - *Encouraging provision of biodiversity enhancements.*
- 3.7 *Development which may harm a biodiversity or geological feature or habitat, including ancient woodland and aged or veteran trees found outside ancient woodland, will not be permitted unless effective mitigation and/or compensatory measures can be ensured.*
- 3.8 The Barnsley Local Plan does not identify the Site as being located within any designated Wildlife Habitat Network (Barnsley Metropolitan Borough Council, 2019b).

Phase 1 habitat survey results

- 3.9 The habitats that make up the Site are as described within the Brooks Ecological Impact Assessment report. There have been no changes on Site since this report was produced, and the results as given in the Ecological Impact Assessment report remain valid.

Modified grassland

- 3.10 The Site comprises three fields of modified grassland, dominated by perennial rye-grass *Lolium perenne* and species-poor. The grassland is of low distinctiveness and is considered to be in poor condition.

Existing trees

- 3.11 A single mature ash *Fraxinus excelsior* tree is located in the south-western corner of the Site, within the field boundary. This tree is considered likely to qualify as an early ancient tree or fully mature transitional veteran (Brooks Ecological, 2021).

Native species-poor hedgerow

- 3.12 Three species-poor native hedgerows are present along the field boundary at the south of the Site. One of the hedgerows is considered to be in poor condition, and two are considered to be in moderate condition (Brooks Ecological, 2021). All three hedgerows are of low distinctiveness.

Biodiversity net gain calculation

- 3.13 The Site is a total of 15.08 ha of which 0.66 ha is proposed for semi-natural habitat creation.
- 3.14 The post-development scenario was inputted into the Defra Metric 2.0, using habitat areas calculated from the previously submitted Landscape Masterplan (ref: BA951LM_Landscaping_AFU_.Landscape Masterplan_1_L). It is likely that further betterment will be provided to the proposed scheme. The existing mature tree and the species-poor hedgerow are expected to be retained and enhanced within the proposals. Approximately 1.5 ha of modified grassland will be retained at the west of the Site, and the remaining areas of modified grassland will be lost as a result of the proposed development of the Site.
- 3.15 The areas of species-rich neutral grassland and amenity grassland in public open space areas, native mixed scrub planting, urban orchard, ornamental shrub planting and the area covered by gardens within the proposed development were measured. The areas covered by the houses, garages, roads and driveways/parking areas were measured separately and included as 'Urban – Developed land; sealed surface'. The streetscaping which includes street trees and beech hedging were included as 'Urban - Suburban/ mosaic of developed/ natural surface'. Trees to be planted outside of the streetscape are calculated separately to the 'Urban - Suburban/ mosaic of developed/ natural surface' as 'Street trees'.
- 3.16 A summary is provided below, detailing the biodiversity outcome for the post-development scenario based on the previously submitted Landscape Masterplan, provided in Figure 1 in Appendix 1. Further betterment of the landscaping scheme will likely lead to an increase in habitat units. Figure 2 shows the headline results of the metric calculation, are provided in Appendix 2.

Biodiversity Net Gain Metric outcome

- 3.1 The Defra Biodiversity Metric 2.0 has been used to quantify biodiversity net gain. With the incorporation of the above habitat creation measures, the following 'habitat unit' scores have been calculated:
- Existing Site baseline = 30.16 Habitat Units
 - Post-development habitat creation outcome = 18.95 Habitat Units
 - Change in Habitat Units = -11.21 Habitat Units, which is equivalent to 37.18% **biodiversity loss**
- 3.2 The following 'linear unit' scores have been calculated:
- Existing Site baseline = 1.40 Hedgerow Units
 - Post-development outcome = 2.19 Hedgerow Units

- Change in Hedgerow Units = +0.79 Hedgerow Units, which is equivalent to 56.41% **gain in hedgerow units.**

- 3.3 Appendix 2 provides a summary overview of the metric calculations. Please note that the full Excel spreadsheet is available on request; the Defra Biodiversity Metric 2.0 has not been devised for use in printed form.
- 3.4 It is recommended that a Landscape and Ecology Management Plan (LEMP) will be prepared and implemented for a period of up to 15 years to provide certainty in delivery of this outcome.

4 References

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- Natural England (2010). Higher Level Stewardship: Farm Environment Plan (FEP) Manual. Technical guidance on the completion of the FEP and identification, condition assessment, and recording of HLS FEP features. Third Edition – March 2010.
- STEN Architecture (2020). Penistone: Planning Layout. Drawing number 2001.01_L. Dated 17/12/20.
- SLR (2020). Halifax Road, Penistone: Landscape Masterplan.
- The UK Habitat Classification Working Group (2018) The UK Habitat Classification: Habitat Definitions Version 1.0 at <http://ecountability.co.uk/ukhabworkinggroup-ukhab>

Appendix 1: Pre-development Site Baseline

Figure 1: Current Landscape Masterplan

20201216_Masterplan_RB.dwg



LEGEND

	CONNECTING VIEWS TO WIDER LANDSCAPE
	BUFFER AREA
	WATER STORAGE TANK
	EXISTING VEGETATION
	EXISTING DRY STONE WALL
	PROPOSED TREES
	PROPOSED ORCHARD
	PROPOSED NATIVE HEDGE
	PROPOSED ORNAMENTAL HEDGE
	PROPOSED CLIPPED BEECH HEDGE
	PROPOSED NATIVE SHRUB PLANTING
	PROPOSED ORNAMENTAL SHRUB PLANTING
	PROPOSED SPECIES-RICH GRASSLAND
	PROPOSED AMENITY GRASSLAND
	PROPOSED DRY STONE WALL
	PROPOSED HOGGIN FOOTPATH
	PROPOSED PLAYGROUND EQUIPMENT AND MATTING
	PROPOSED LOCAL AREA OF PLAY (LAP)
	PROPOSED LOCALLY EQUIPPED AREA OF PLAY (LEAP)
	PROPOSED SEATING

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HALIFAX ROAD, PENISTONE

LANDSCAPE MASTERPLAN

Scale

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Date

DECEMBER 2020

Appendix 2: Metric Calculation

Figure 2: Defra Metric Headline results

On-site baseline	Habitat units	30.16
	Hedgerow units	1.40
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	18.95
	Hedgerow units	2.19
	River units	0.00
Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	Habitat units	-11.21
	Hedgerow units	0.79
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	Habitat units	-37.18%
	Hedgerow units	56.41%
	River units	0.00%