

Ecological Impact Assessment Land off Rockingham Roundabout

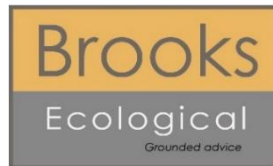
Gregory Projects (Barnsley) Limited

Report Reference: ER-3806-05

29/03/2021

Report Title:	Ecological Impact Assessment Land off Rockingham Roundabout
Report Reference:	ER-3806-05
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Summary

The proposals have engaged with the NPPF Mitigation Hierarchy and have been able to avoid most potential significant effects at the Site.

Residual significant effects can be mitigated and compensated on site and secured via standard conditions provided in the British Standard BS:42020.

Based on the mitigation and compensation strategy, the proposed development delivers a measured net loss for biodiversity.

1. Introduction

- 1.1.1. Brooks Ecological Ltd was commissioned by Gregory Projects (Barnsley) Limited to carry out an Ecological Impact Assessment (EcIA) for a Site referred to as land off Rockingham Roundabout, Hoyland, Barnsley (grid reference SE352007).
- 1.1.2. It is proposed to develop the Site with three industrial units with associated service yards and car parking.
- 1.1.3. The British Standard BS:42020 recommends that a proportional assessment of ecological impacts should be made - such that decision making relating to the NPPF 'mitigation hierarchy', the planning balance', and the use of conditions is suitably informed.
- 1.1.4. The purpose of the EcIA report is to use the information gathered, alongside the proposals for the Site to:
- identify any significant effects associated with the proposed development,
 - set out any mitigation (including monitoring) required to address these effects, and to ensure compliance with legislation and policy,
 - identify suitable enhancement,
 - identify measures required to secure mitigation and enhancement,
 - identify and assess any residual effects and their legal, policy and development management consequences.
- 1.1.5. This report adapts the format set out in the Chartered Institute for Ecology and Environmental Management (CIEEM) guidelines for Ecological Report Writing (December 2017).



Ecological Impact Assessment (EcIA) Checklist



EcIA Criteria (to ensure decisions are based on adequate information in accordance with Clauses 6.2 and 8.1 of BS42020:2013)		Yes No n/a	Paragraph reference number(s)
Pre-app/ scope	1. Where pre-application advice has been received from the Local Planning Authority and/or an NGO and/or statutory body (e.g. NE DAS, NRW DAS), it has been fully accounted for in the EcIA		
	2. The scope, structure and content of the EcIA is in accordance with published good practice ^{6, 10 and 11}		
Surveys, Sites, Species and Habitats	3. Adequate ⁶ and up-to-date ¹⁰ : a. Desk study has been undertaken ¹⁰ b. Phase 1 habitat survey (or equivalent) has been undertaken ¹⁰ c. Phase 2 ecology surveys have been undertaken (where necessary) ¹⁰		
	4. All statutory and non-statutory sites likely to be significantly affected are clearly and correctly identified		
	5. All protected or priority species and priority habitats ¹¹ likely to be significantly affected are clearly and correctly identified, and adequate surveys have been undertaken to inform the baseline		
	6. Any invasive non-native plant species present are clearly and correctly identified		
	7. Where a separate PEA Report states that Phase 2 ecology surveys are required, these have been undertaken in full and results submitted with the application (or lack of such surveys is justified)		
Impacts and Effects	8. The assessment is based on clearly defined development proposals along with relevant drawings/plans (and any plans used are the same version number as those submitted with the application) or		
	9. The residual ecological effects are considered to be not significant at any geographical scale irrespective of the detailed development proposals, and the assessment is based on a worst-case scenario		
	10. The report describes and assesses all likely significant ecological effects (including cumulative effects) clearly stating the geographical scale of significance (where relevant)		
Mitigation, Compensation and Enhancement	11. The mitigation hierarchy has been clearly followed ⁶		
	12. The report: a. Clearly identifies the proposed mitigation and compensation measures, and explains how these will adequately address all likely significant adverse effects b. Includes, where necessary, proposals for post-construction monitoring c. Recommends how proposed measures may be secured through planning conditions/obligations and/or necessary licences		
	13. A summary table of proposed mitigation and compensation measures has been provided		
	14. The need for any mitigation licences required in relation to protected species is clearly identified		
	15. Proposals to deliver ecological enhancement/Biodiversity Net Gain have been provided		
Competence/Good Practice	16. Limitations ¹⁰ of the ecological work have been correctly identified and the implications explained		
	17. All relevant key timing issues (e.g. site vegetation clearance or roof removal) that may constrain or adversely affect the proposed timing of development have been identified		
	18. All ecological work and surveys accord with published good practice methods and guidelines OR deviation from such guidelines is made clear and fully justified, and the implications for subsequent conclusions and recommendations made explicit in the report ¹⁰		
Conclusions	19. All ecologists and surveyors hold appropriate species licences (where relevant) and/or have all necessary competencies to carry out the work undertaken		
	20. The report clearly identifies where the proposed development complies with relevant legislation and policy, highlighting any possible non-compliance issues, and highlighting circumstances where a conclusion cannot be drawn as it requires an assessment of non-ecological issues (such as socio-economic ones)		
	21. The report provides a clear summary of losses and gains for biodiversity, and a justified conclusion of an overall net gain for biodiversity		
	22. Justifiable conclusions ¹⁰ based on sound professional judgement ¹⁰ have been drawn as to the significance of effects on any designated site, protected or priority habitat/species or other ecological feature, and a justified scale of significance has been stated		

2. Method

Scope of Assessment

- 2.1.1. The application site 'the Site' comprises an unused plot of land off Rockingham Roundabout on the Dearne Valley Parkway. The extent of this assessment is the development area within the red line boundary defined in Figure 2.1, overleaf. The actual area surveyed included adjacent habitat to the east to provide context to the site.
- 2.1.2. The assessment uses a 2 km area of search around the Site for records of protected and notable species and locally or nationally designated wildlife sites.
- 2.1.3. The original survey was carried out in February 2019 and followed Phase 1 habitat survey methodology. Subsequent visits to the Site were made throughout 2019 to survey for amphibians, reptiles and bats.
- 2.1.4. Due to the time elapsed since the initial ecological appraisal, the Site was revisited in February 2021. Any significant change in habitat types was noted on this visit, and a habitat condition assessment was carried out. These are provided in Appendix 1.
- 2.1.5. To provide information on the Site's ecological value, the following studies have been carried out; with the relevant reports produced being:
- Preliminary Ecological Appraisal. Brooks Ecological Ltd. R-3806-01-A. March 2019.
 - Great Crested Newt Survey. Brooks Ecological Ltd. R-3806-02. May 2019.
 - Reptile Survey. Brooks Ecological Ltd. R-3806-03. June 2019.
 - Bat Activity Survey. Brooks Ecological Ltd. R-3806-04. November 2019.

Desk Study

- 2.1.6. A full desk study including consideration of local biological records, aerial photographs, local designations and planning guidance has been carried out.

Field Survey

Walkover – Extended Phase 1 Habitat Survey

- 2.1.7. The initial walkover survey was carried out during February 2019 and followed Phase 1 Habitat Survey Methodology (JNCC, 2010). The Site was revisited in February 2021 to re-assess habitats against new UK Habitats classification to aid biodiversity net gain assessment.

Great Crested Newt

- 2.1.8. eDNA testing used sterile kits, supplied by SureScreen Scientifics, and followed the methodology advised in the Natural England Technical Advice Note (WC1067). Two survey visits were carried out prior to a negative eDNA result being obtained. Each visit used a range of methods including egg search, netting, funnel trapping and torch counts in accordance with English Nature GCN Mitigation Guidelines (2001).

Reptile Survey

- 2.1.9. Survey methodology followed The Herpetofauna Worker's Manual (Gent and Gibson, 2003) with seven official reptile survey visits being carried out. Artificial refugia were used in line with guidance issued in Froglife Advice Sheet 10.

Bat Activity Survey

- 2.1.10. Seasonal surveys carried out in Spring, Summer and Autumn 2019 including activity transect and remote monitoring. Carried out in accordance with Bat Conservation Trust Best Practice Guidelines (2016).

Figure 2.1 Site area under assessment (red line).**Assessment Method**

- 2.1.11. In assessing the significance of effects, we refer to Section 5 of CIEEM (2018) - that a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. In relation to ecological features we consider the following factors in combination, including:
- the feature's value on an ascending scale from Site, to international value;
 - the site's position in the local landscape;
 - its current management;
 - its size, rarity or threats to its integrity.
- 2.1.12. There are several tools available to aid this consideration, including established frameworks such as Ratcliffe Criteria or concepts such as Favourable Conservation Status. Also of help is reference to Biodiversity Action Plans in the form of the Local BAP and Section 41 of the NERC Act (2006) to determine if the site supports any Priority Habitats, Habitats of Principal Importance or presents any opportunities in this respect.
- 2.1.13. The assessment considers the development proposals set out below; from which the potential impacts can be summarised as:
- Vegetation and habitat removal.
 - Disturbance, pollution or interference arising from the Site's construction.
 - Disturbance, pollution or interference arising from the Site's operation.
- 2.1.14. This report deals with any significant effects potentially arising from these impacts. It looks at how the mitigation hierarchy can be applied to any effects and the implications of any residual significant effects.

3. Ecology Baseline

- 3.1.1. A summary of the points salient to this assessment are set out below:

Designated Sites and Conservation Areas

- 3.1.2. Impacts on both Statutory (International and National) and Non-Statutory designations or their interests have been ruled out at PEA Stage.

Habitats

- 3.1.3. The Site comprises habitats mapped opposite and described in the table overleaf.

Potential future changes to the baseline

- 3.1.4. The Site's use and ecological baseline will likely be unchanged until the time of the proposed development.
- 3.1.5. In the absence of re-development, it is assumed that the Site will continue to be left unmanaged.
- 3.1.6. This would result in the proportion of tall ruderal vegetation and scrub increasing over time.

Figure 3.1 The Site's habitats



Table 3.1 Summary of Site's Habitats

Code	Habitat Feature	Extent	Notes
u1b g4 310 351	Habitats of low or very low distinctiveness	0.66 ha	Comprising: short length of tarmac path; small section of amenity grassland; area of modified (amenity) grassland now grown over with tall ruderal vegetation; and areas of bare and sparsely vegetated land. These habitats have relevance to biodiversity at this site on the basis of their extent. Mitigation/compensation for any loss of these habitats is dealt with through the Biodiversity Net Gain process and they are not considered further in the EclA.
g3c	Other neutral grassland	2.78 ha	Rank grassland including scattered scrub and rushes across much of the site. This area includes several ditches that are dry for the majority of the year, lined with vegetation that is not significantly different from the surrounding habitat. Habitat of medium distinctiveness in poor condition. Valued at Site level.
w1g	Other woodland - broadleaved	0.55 ha	Band of deciduous woodland along southern boundary, containing a mix of native species. Recently developed habitat less than 20 years old. Bramble shrub layer, with poorly developed ground flora. Habitat of medium distinctiveness in fairly poor condition. Valued at Site level.
	Total area	3.99 ha	
h2	Native hedgerow	0.04 km	Two short lengths of outgrown hawthorn hedge. Valued at Site level.
	Total linear features	0.04 km	

Species and Species Groups

- 3.1.7. Potential constraints relating to relevant groups were investigated through the surveys listed above. Those highlighted are of relevance to the Site and are referenced later in the assessment.

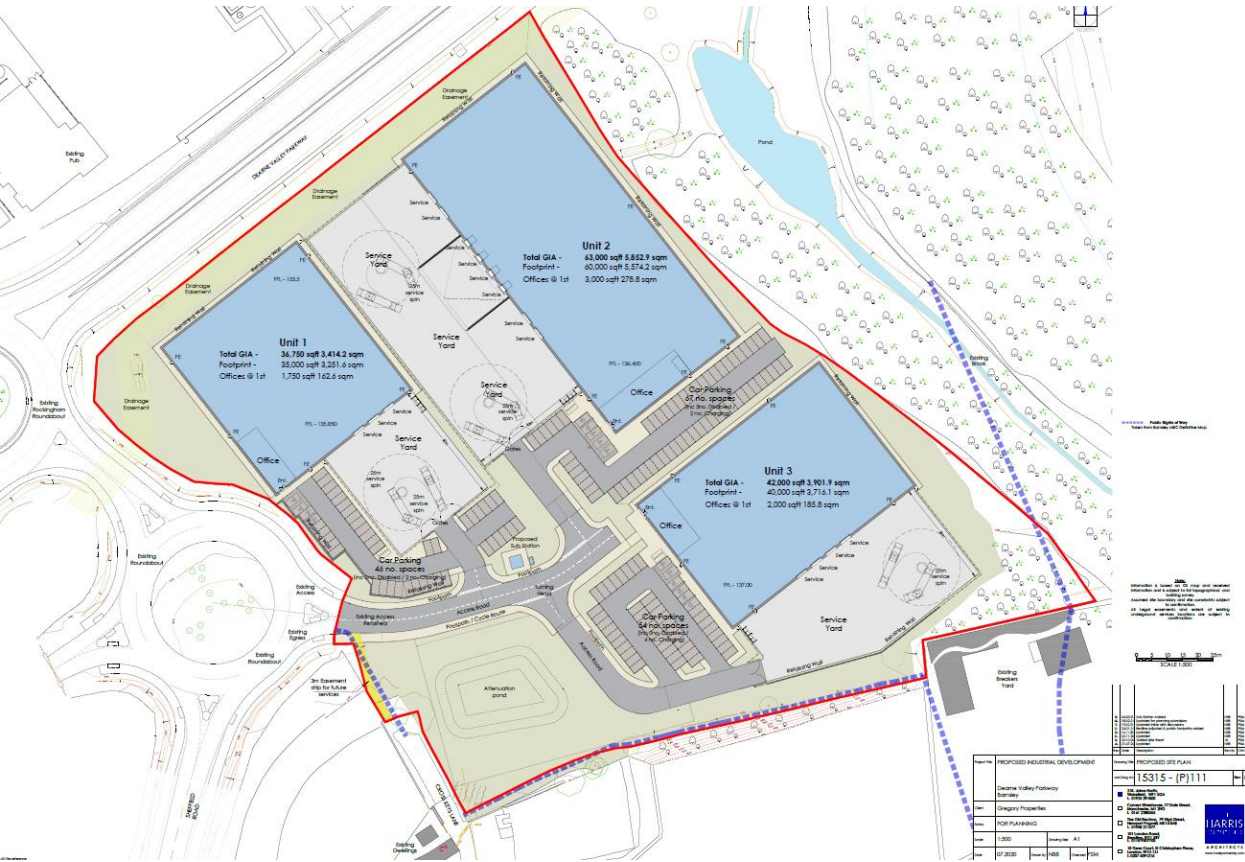
Table 3.2 Summary of relevant faunal issues

Species/Group	Presence	Notes
Bats	<i>Foraging and Commuting</i> Survey by Brooks Ecological Ltd in 2019 demonstrated low levels of activity by common species. Woodland edge habitat along the eastern boundary recorded most activity during transect surveys, with higher levels of activity recorded around the off-site pond. <i>Bat Roost Potential</i> There are no buildings on site. Trees within the southern woodland belt are on the whole young and in good condition. Very low levels of bat activity were noted in this area. Whilst no evidence of roosting is suspected, a detailed examination of each tree has not been carried out.	Valued at Local Level.
Amphibians	Survey by Brooks Ecological Ltd in 2019 demonstrated likely absence of great crested newt from the adjacent pond, with a negative eDNA result following two evening torch surveys. The amphibian survey did identify low numbers of common frog and smooth newt in the off-site pond. A small number of common toad were found on-site during reptile surveys.	No further precaution/assessment required.
Reptiles	Survey by Brooks Ecological in 2019 both on-site and around the adjacent pond demonstrated a likely absence of reptiles.	No further precaution/assessment required.
Birds	Wooded areas and hedgerows are considered to be of better value to birds, and will support a typical range of nesting birds and provide opportunities for foraging and cover. Open areas provided suitable habitat for ground nesting species, however these areas are well used by dog walkers reducing its suitability somewhat.	Valued at Site Level. Standard precaution applies regarding clearance of vegetation.
Other fauna	Hedgehog are recorded in the search area. Habitats on-site and its immediate boundaries offer suitable habitat for foraging and over-wintering. The Sites potential to support other protected or notable fauna was scoped out at the PEA stage.	Precautions to be put in place to avoid harming hedgehogs.
Invasive non-native plant species	Small amount of rhododendron and Japanese rose identified on site.	Precautions apply regarding clearance of INNS vegetation.

4. Description of the Proposed Development

- 4.1.1. A planning application is being submitted for three industrial units with associated service yards and car parking.
- 4.1.2. The majority of the Site will be cleared for development, removing existing habitats.
- 4.1.3. Existing woodland to the south-east corner of the Site will be retained where feasible.

Figure 4.1 Proposed Layout (Drawing Reference 15315-111 Rev H, March 2021, The Harris Partnership).



5. Impacts and Effects on the Proposed Development

- 5.1.1. Figure 5.1 shows the development footprint in relation to the mapped habitats (black hatch).
- 5.1.2. The development footprint shows the sum extent of proposed built development and associated clearance works.
- 5.1.3. This assessment includes areas that are to be developed as green space. These areas will be subjected to vegetation clearance and profiling work resulting in a temporary habitat loss.
- 5.1.4. Post development, a landscaping scheme has been devised that incorporates areas of native grassland, shrub and tree planting to bring benefits to wildlife.

Figure 5.1 Development footprint in relation to existing on-site habitats.



5.1.5. Table 5.1 lists the anticipated Impacts and Effects associated with the proposals.

Table 5.1 Impacts and Effects of the Proposed Development.

	Impact	Stage
1	Habitat will be removed from the Site by clearance and soil stripping using heavy machinery.	Clearance

	Significant Effects - in the absence of mitigation	Acting on	Acting at scale (Maximum)
1a	Direct habitat loss. There will be a loss of habitat generally which will be managed through the Biodiversity Net Gain process. Habitat loss will affect connectivity through and around the Site. Habitat loss will be likely to effect identified features of the Site.	Other Neutral Grassland Other Woodland Broadleaf Hedgerows Birds Bats	Local
1b	Damage to retained habitat such as by storage of clearance machinery or materials in these areas.	Other Woodland Broadleaf	Site
1c	Disturbance. The noise and activity at the Site will render it and areas immediately off-site inhospitable to wildlife during this period. Wildlife in this area is likely to be habituated to noise levels associated with the urban fringe and adjacent roads.	Birds Bats	Local
1d	Pollution. There is the potential for sediment or chemicals to be released from the Site, or into retained habitat during this stage.	Other Woodland Broadleaf Off-Site Pond	Local
1e	Potential effects on Protected / Notable Species. Precautions will be required to avoid potential impacts on nesting birds through the removal of on-site trees and other vegetation. Pre-clearance checks should be carried out on trees within the southern woodland belt, to confirm the absence of roosting bats. Pre-clearance checks should be carried out around areas of scrub and brash to avoid impacting on toads and hedgehogs. The spread of Invasive Non-Native Species (INNS) should be avoided.	Protected Species	Local Criminal Offence

	Impact	Stage
2	Construction activities will take place over an 11 month period. Construction of roads and sewers will be followed by footings and then above ground construction of buildings.	<i>Construction</i>

	Significant Effects - in the absence of mitigation	Acting on	Acting at scale (Maximum)
2a	Damage to retained habitat such as by storage of machinery or materials in these areas.	Other Woodland Broadleaf	Site
2b	Disturbance. The noise and activity at the Site will render it and areas immediately off-site inhospitable to wildlife during this period.	Birds Bats	Local
2c	Pollution. There is the potential for sediment or chemicals to be released from the Site during this stage.	Other Woodland Broadleaf Off-Site Pond	Local
2d	Protected Species. Reasonable avoidance measures should be put in place to avoid impacts on species moving across the site (such as hedgehogs and toads), for example through entrapment in trenches during works.	Priority Species	Local

	Impact	Stage
3	Landscaping activities will take place period during the construction period and will, be phased around completion of roads and housing.	<i>Construction</i>

	Significant Effects - in the absence of mitigation	Acting on	Acting at scale (Maximum)
3a	Damage to retained habitat such as by storage of machinery or materials in these areas. Access will be required to retained areas to commence management and in itself could result in damage.	Other Woodland Broadleaf	Site
3b	Pollution. There is the potential for sediment or chemicals to be released from the Site during this stage.	Off-site Pond	Local
3c	Inappropriate habitat creation or management techniques could mean that the proposals fail to deliver on BNG commitments.	All habitats and species	Local

	Impact	Stage
4	The Site will be occupied. Units will be occupied and utilised, and traffic and services will access the Site regularly. Planning consent is being sought for employment uses as either warehousing or manufacturing with ancillary offices. This is envisaged to allow 24-hour operation. Existing recreational use of the Site will be focused along the public right of way along the southern boundary, with foot traffic potentially increasing here.	Operation

	Significant Effects - in the absence of mitigation	Acting on (feature)	Acting at scale (Maximum)
4a	Damage to retained and created habitat such as by inappropriate use, littering, release of invasive species.	Other Woodland Broadleaf New Landscaped Areas (Mixed Scrub, Native Trees)	Site
4b	Disturbance. Whilst the noise and activity at the Site will be greater than in its unoccupied state, the Site lies next to the Dearne Valley Parkway, a main dual carriageway running through the area carrying traffic day and night. Numerous other industrial, manufacturing and retail units are located along this road. Given the species present on-site, disturbance will likely be tolerable with these species habituated to the conditions prevailing locally. The Site may operate through the night. Lighting could have an adverse impact on birds or bats foraging along the woodland edge to the east of the Site.	Birds Bats	Local Off-site
4c	In the absence of correct management retained and created habitats will not provide the necessary biodiversity units committed to through the BNG process.	All habitats	Local

6. Mitigation & Residual Effects

- 6.1.1. Potential **avoidance** of unnecessary impacts has already been designed into the plan at this stage. The proposals will incorporate the following **mitigation** in relation to the identified **effects** above, as illustrated below and set out in Table 6.1 overleaf.
- 6.1.2. There will be a requirement for the proposals to secure **Biodiversity Net Gain (BNG)** (in accordance with BS: 8683) at a level determined by the Local Planning Authority (LPA) in line with their own policies and guidance in the NPPF. Proposals have been designed to maximise the amount of Biodiversity Units achievable on site, any shortfall in Units will need to be off-set through the creation of Units off-Site by direct works, or through contribution to a strategic fund operated by the LPA or a third party. An agreement detailing any off-setting required would be the subject of a condition of planning. Calculations setting out the position of the proposals in relation to BNG are set out below. These are based on the provided layout and landscaping details available at this time.
- 6.1.3. Themes which will need to be applied to the proposals to achieve the calculated BNG position are set out (and committed to) in the plan below. These themes would need to be the subject of a suitable Biodiversity Management Plan which would provide a means of achieving the required habitats and condition.
- 6.1.4. Achieving the required Biodiversity Net Gain position will ensure that effects relating to habitat loss are addressed - both in respect of the habitats identified as valued features, and also the lower value habitats which would previously have been scoped out of Impact Assessments. Our impact assessment therefore only highlights where habitats present place a particular constraint on the protection of, or delivery of habitats on Site; or on off-set agreements.
- 6.1.5. In addition to any Biodiversity Net Gain agreement, Planning permission for the Site would be anticipated to be subject to standard conditions requiring the production of the following documents:
- A BS:42020 Biodiversity Management Plan (BMP).
 - A BS:42020 Construction Environmental Management Plan (CEMP: Biodiversity), incorporating actions to be taken in respect of the low numbers of invasive weeds.
 - Detailed Landscaping Plans
 - A Lighting Plan

Figure 6.1 Proposed mitigation/compensation measures.

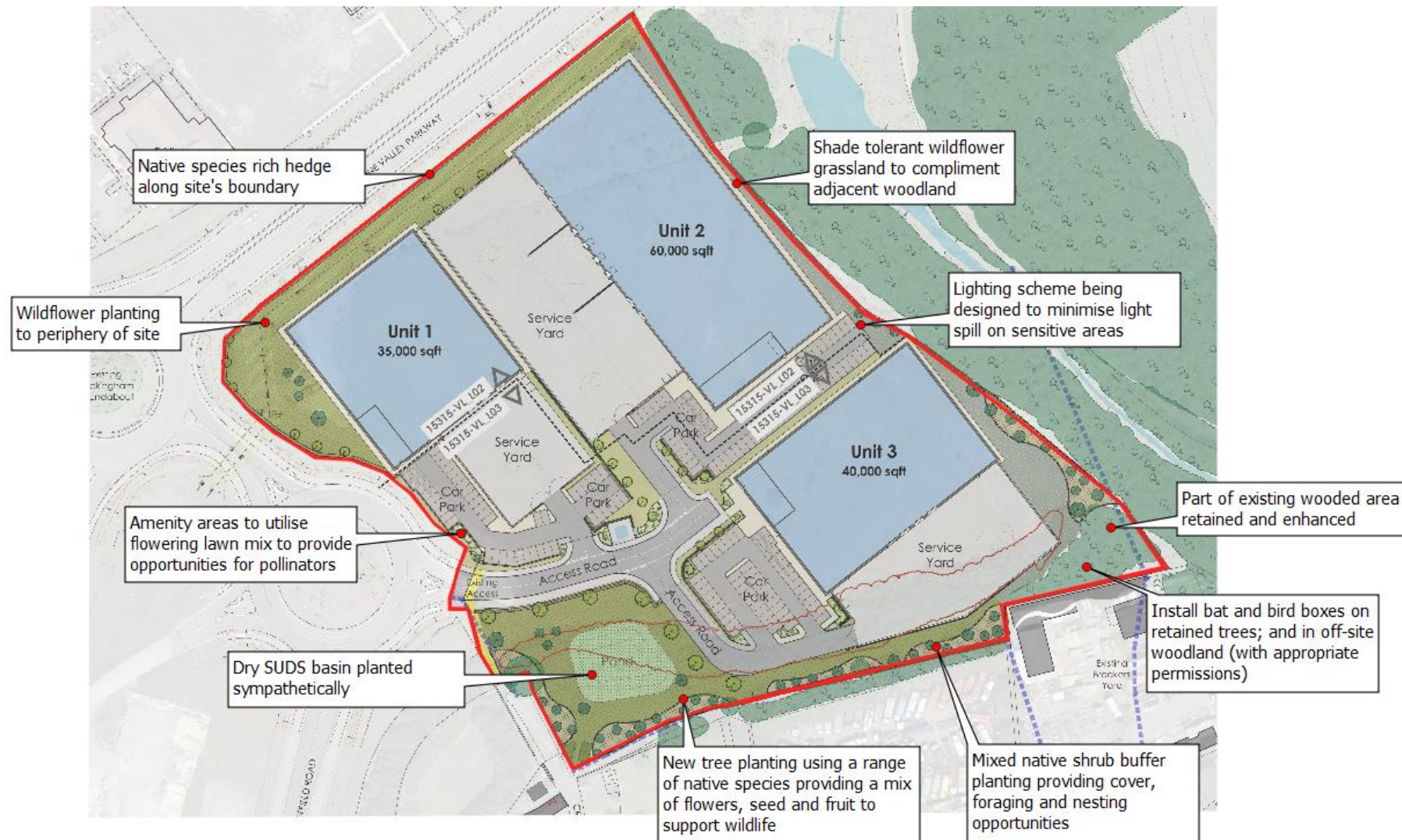


Figure 6.2 Biodiversity Net Gain Calculations - Post Development¹

Habitat creation:

Post development/ post intervention habitats								Habitat units delivered
Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Temporal	Difficulty of creation category	
Urban - Developed land; sealed surface	2.8852	V.Low	N/A - Other	Low	Within area formally identified in local strategy	0	Low	0.00
Grassland - Other neutral grassland	0.096	Medium	Poor	Low	Within area formally identified in local strategy	1	Low	0.43
Urban - Introduced shrub	0.025	Low	Poor	Low	Within area formally identified in local strategy	1	Low	0.06
Grassland - Other neutral grassland	0.698	Medium	Moderate	Low	Within area formally identified in local strategy	10	Low	4.50
Heathland and shrub - Mixed scrub	0.127	Medium	Moderate	Low	Within area formally identified in local strategy	3	Low	1.05
Urban - Street Tree	0.3093	Low	Moderate	Low	Within area formally identified in local strategy	27	Low	0.54
Urban - Sustainable urban drainage feature	0.077	Low	Moderate	Low	Within area formally identified in local strategy	3	Medium	0.21
Totals	3.91							6.79

¹ Our report provides an estimate of the sites post-development value in Biodiversity Units. This is based on thorough assessment at the time of survey and using the information available at this time. In this assessment we have used the latest version of DEFRA's Biodiversity Metric Tool, the UK Habitats Classification and relevant guidance. This assessment requires subjective judgments to be made in terms of habitat type and condition and could be open to other interpretations. Reliance on the Unit Score, or conversion of this into a monetary value, would be at the developer's own risk.

Habitat enhancement:

	Baseline habitats	Change in distinctiveness and condition						Ecological connectivity	Strategic significance	Temporal multiplier	Difficulty multipliers	
Baseline ref	Baseline habitat	Proposed habitat (Pre-populated but can be overridden)	Distinctiveness change	Condition change	Area (hectares)	Distinctiveness	Condition	Ecological connectivity score	Strategic significance	Time to target condition/years	Difficulty of enhancement category	Habitat units delivered
4	Woodland and forest - Other woodland; broadleaved	Woodland and forest - Other woodland; broadleaved	Medium - Medium	Fairly Poor - Fairly Good	0.072	Medium	Fairly Good	Low	Within area formally identified in local strategy	20	Medium	0.61
				Total site area	0.07						Enhancement total	0.61

Hedgerow creation:

		Proposed habitats		Habitat distinctiveness	Habitat condition	Spatial quality		Temporal multiplier	
Baseline ref	New hedge number	Habitat type	Length km	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Time to target condition/years	Hedge units delivered
1		Native Species Rich Hedgerow	0.327	Medium	Moderate	Low	Within area formally identified in local strategy	5	1.69
2		Native Hedgerow	0.084	Low	Poor	Low	Within area formally identified in local strategy	1	0.19
3		Hedge Ornamental Non Native	0.092	V.Low	Poor	Low	Within area formally identified in local strategy	1	0.00
4									
5									
6									
7									
		Creation Length/KM	0.50						1.87

Table 6.1 Mitigation to address the effects identified in Table 5.1

	Impact	Stage
1	Habitat will be removed from the Site by clearance and soil stripping using heavy machinery.	Clearance

	Significant Effects - in the absence of mitigation	Mitigation / Compensation	Residual Magnitude
1a	Direct habitat loss.	Landscaping proposals aim to maximise the ecological value of land outside of the built footprint by reinstating native grassland and through tree and shrub planting. The BMP will detail the provision and management of connective habitat.	Negative
1b	Damage to retained habitat such as by storage of clearance machinery or materials in these areas.	The CEMP will detail installation of barrier fencing to protect retained habitat.	Neutral
1c	Disturbance. The noise and activity at the Site will render it, and areas immediately off-Site, inhospitable to wildlife during this period.	The CEMP will detail time limits to work on Site and the installation of screened fencing to limit visual disturbance of sensitive habitat.	Minor Negative
1d	Pollution. There is the potential for sediment or chemicals to be released from the Site, or into retained habitat during this stage.	The CEMP will detail silt fencing to protect retained habitat and watercourses and the location of bunded compounds for storage of machinery and materials	Neutral
1e	Potential effects on Protected / Notable Species. Precautions will be required to avoid potential impacts on nesting birds through the removal of on-site trees and other vegetation. Pre-clearance checks should be carried out on trees within the southern woodland belt, to confirm the absence of roosting bats. Pre-clearance checks should be carried out around areas of scrub and brash to avoid impacting on toads and hedgehogs. The spread of Invasive Non-Native Species (INNS) should be avoided.	The CEMP will detail necessary pre-works checks for nesting birds, roosting bats, hedgehogs, toads and the removal of INNS. The BMP will detail the provision bird nesting and bat roosting features.	Avoided entirely.

	Impact	Stage
2	Construction activities will take place over an 11 month period. Construction of roads and sewers will be followed by footings and then above ground construction of buildings.	Construction

	Significant Effects - in the absence of mitigation	Mitigation / Compensation	Residual Magnitude
2a	Damage to retained habitat such as by storage of machinery or materials in these areas.	The CEMP will detail installation of barrier fencing to protect retained habitat – creating a Biodiversity Protection Zone.	Neutral
2b	Disturbance. The noise and activity at the Site will render it, and areas immediately off-Site, inhospitable to wildlife during this period.	The CEMP will detail time limits to work on Site and the installation of screened fencing to limit visual disturbance of sensitive habitat.	Minor Negative
2c	Pollution. There is the potential for sediment or chemicals to be released from the Site during this stage.	The CEMP will detail silt fencing to protect retained habitat and watercourses and the location of bunded compounds for storage of machinery and materials	Neutral
2d	Protected Species. Reasonable avoidance measures should be put in place to avoid impacts on species moving across the site (such as hedgehogs and toads), for example through entrapment in trenches during works.	The CEMP will detail measures to avoid direct impacts on notable species. This would involve simple methods such as covering open trenches and/or installing a means of escape so that animals can escape, should they become entrapped.	Neutral

	Impact	Stage
3	Landscaping activities will take place period during the construction period and will, be phased around completion of roads and housing.	Construction

	Significant Effects - in the absence of mitigation	Mitigation / Compensation	Residual Magnitude
3a	Damage to retained habitat such as by storage of machinery or materials in these areas. Access will be required to retained areas to commence management, and in itself could result in damage.	The CEMP will detail installation of barrier fencing to protect retained habitat and any precautions required in accessing the Biodiversity Protection Zone. The BMP will specify habitat creation/management activities.	Neutral
3b	Inappropriate habitat creation or management techniques could mean that the proposals fail to deliver on BNG commitments.	The BMP will detail the planting and management required to achieve BNG commitments, including monitoring to provide evidence or put in place remedial action as required.	Neutral

	Impact	Stage
4	The Site will be occupied. Units will be occupied and utilised, and traffic and services will access the Site regularly. Planning consent is being sought for employment uses as either warehousing or manufacturing with ancillary offices. This is envisaged to allow 24-hour operation. Existing recreational use of the Site will be focused along the public right of way along the southern boundary, with foot traffic increasing here.	Operation

	Significant Effects - in the absence of mitigation	Mitigation / Compensation	Residual Magnitude
4a	Damage to retained and created habitat such as by inappropriate use, littering, release of invasive species.	Landscaping has been designed to accommodate public access and buffering of sensitive habitats has been designed in. Management prescriptions will include removal of accumulated litter.	Neutral
4b	Disturbance. Whilst the noise and activity at the Site will be greater than in its unoccupied state, the Site lies next to the Dearne Valley Parkway, a main dual carriageway in the area carrying traffic day and night. Numerous other industrial, manufacturing and retail units are located along this road. Given the species present on-site, disturbance will likely be tolerable with these species habituated to the conditions prevailing locally. The Site may operate through the night. Lighting could have an adverse impact on bats foraging along the woodland edge to the east of the Site.	Landscaping is designed to provide habitat which groups such as birds can use for cover, and to provide connectivity to existing wooded areas off-site. New nesting (for birds) and roosting (for bats) will be incorporated into the scheme. A lighting scheme is to be designed that will incorporate best practice in respect of bats and lighting, ensuring that sensitive areas are not subject to disturbing levels of light spill.	Minor Negative
4c	In the absence of correct management retained and created habitats will not provide the necessary biodiversity units committed to through the BNG process.	The BMP will provide full details of habitats to be created and their suitable management suitable management. The BMP will include monitoring so that evidence can be provided, or remedial action can put in place as required.	Neutral

7. Biodiversity Net Gain

7.1.1. The proposed development is expected to be able to deliver a net loss for biodiversity, based on proposals as outlined in the latest Landscaping Masterplan (reference 15315-VL_L01, March 2021).

On-site baseline	Habitat units	19.38
	Hedgerow units	0.17
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	7.39
	Hedgerow units	1.87
	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	-11.99
	Hedgerow units	1.70
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	Habitat units	-61.87%
	Hedgerow units	971.61%
	River units	0.00%

8. Timing Issues

- 8.1.1. Other than the standard constraint surrounding nesting birds and vegetation clearance, no specific timing issues are foreseen.

9. Cumulative Effects

- 9.1.1. No in-combination effects have been identified.

10. Offsite Measures or Compensation

- 10.1.1. The scheme is expected to result in a net loss in biodiversity on-site.
- 10.1.2. Off-site measures or compensation may be required by the LPA to mitigate this loss.

11. Enhancement

- 11.1.1. Opportunities to provide enhancement, and how to secure this, have been identified in Figure 6.1 and Table 6.1 above. Detailed planting schemes are provided in the Landscape Masterplan (15315-VL_L01 to L03, March 2021). A BMP should be produced as a standard condition of planning, which will additionally outline faunal enhancements.

12. Monitoring

- 12.1.1. The CEMP document will detail the role of an Ecological Clerk of Works (ECoW) in overseeing protection measures.
- 12.1.2. The BMP document will identify any management specific monitoring which might be required in respect of habitat enhancement proposed.

13. Policy and Legislation

- 13.1.1. Given the implementation of the mitigation set out above, it is anticipated that the proposals will comply with the relevant policy and legislation relating to wildlife and ecology.

14. Conclusion

- 14.1.1. Mitigation to be agreed by standard conditions of planning will be able to address all significant effects resulting from the development.
- 14.1.2. The proposals will deliver a net loss for biodiversity on site in terms of habitat cover, though gains are made for hedgerows,

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Appendix 1

Habitats present on site:

- g3c Other neutral grassland
- 351 Vacant/derelict land
- w1g7 Other woodland broadleaved
- 17 Ruderal vegetation
- g4 Amenity grassland
- u1d Developed land, sealed surface
- h2 Hedgerow

A brief description and the condition assessment follows.

More detailed habitat descriptions are found in the Preliminary Ecological Appraisal Report.

Although formerly used for mining operations, the Site fails to meet the criteria for Open Mosaic on Previously Developed Land. Habitats described are fairly homogenous, lacking significant areas of bare earth and pools. Plant species present are common and hardy, with few stress tolerant plants noted.

g3c-10-14 Other neutral grassland

Rank grassland. Includes scattered scrub (secondary code 10), with rushes (secondary code 14) present across much of the site.

Includes secondary code 191 (ditches) that are dry for the majority of the year. Vegetation is not significantly different from the surrounding habitat.

Defra Metric Condition Assessment **Poor**

All criteria failed.

	Condition Assessment Criteria: Grassland habitat types	Meets criteria?
1	Easily recognisable as a good example of this habitat type and little difference between what is described in the relevant habitat classifications and what is visible on site	Fail
2	The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat with species typical of the habitat representing a significant majority of the vegetation	Fail
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	Fail
4	Undesirable species and physical damage is below 5% cover	Fail
5	Cover of bare ground not greater than 10%	Fail
6	Cover of bracken less than 20%, cover of scrub/bramble less than 5%	Fail



u1b Developed land, sealed surface

Tarmac footpath to south-west of site.

Defra Metric Condition Assessment N/A

No assessment required, scores zero.



w1g7 Other woodland broadleaved

Aerial photographs demonstrate most trees less than 20 years old. Some areas of standing water. Bramble shrub layer, poorly developed ground flora.

Defra Metric Condition Assessment Fairly Poor

Fails 4 out of 12 criteria. Channel straightening, little dead wood, and many trees in same age class.

	Condition Assessment Criteria: Woodland broad habitat type	Meets criteria?
1	Complete canopy cover	Pass
2	Natives dominant. Non-native and invasive species less than 10%	Pass
3	A diverse age and height structure of the trees	Fail
4	Free from bark stripping; browsing; in the last five years, less than 20% of vegetation being browsed	Pass
5	Successful regeneration	Pass
6	Standing and fallen dead wood of over 20 cm diameter present including fallen large dead branches/stems and stumps	Fail
7	Wetland habitat if they exist within the wood has little sign of drainage or channel straightening.	Fail
8	Protected from damage by agricultural and other adjacent operations	Pass
9	No evidence of inappropriate management (e.g. deep ruts, animal poaching or compaction)	Pass
10	Invasive non-native plants are below 5%	Pass
11	No signs of significant nutrient enrichment present	Pass
12	More than 3 different native trees and 3 shrub species in average 10m	Fail

g4-17 Ruderal vegetation

Area of former amenity grassland, now outgrown with tall ruderal vegetation.

Defra Metric Condition Assessment Poor

Fails 5 out of 6 of the criteria.

	Condition Assessment Criteria: Grassland habitat types	Meets criteria?
1	Easily recognisable as a good example of this habitat type and little difference between what is described in the relevant habitat classifications and what is visible on site	Fail
2	The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat with species typical of the habitat representing a significant majority of the vegetation	Fail
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	Fail
4	Undesirable species and physical damage is below 5% cover	Fail
5	Cover of bare ground not greater than 10%	Fail
6	Cover of bracken less than 20%, cover of scrub/bramble less than 5%	Pass



g4-310 Amenity grassland

Very small area of amenity grassland around footpath entrance in south-west corner of Site.

Defra Metric Condition Assessment Poor

All criteria failed.

	Condition Assessment Criteria: Grassland habitat types	Meets criteria?
1	Easily recognisable as a good example of this habitat type and little difference between what is described in the relevant habitat classifications and what is visible on site	Fail
2	The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat with species typical of the habitat representing a significant majority of the vegetation	Fail
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	Fail
4	Undesirable species and physical damage is below 5% cover	Fail
5	Cover of bare ground not greater than 10%	Fail
6	Cover of bracken less than 20%, cover of scrub/bramble less than 5%	Fail



351-17 Vacant/derelict land

Areas of sparsely vegetated land, mostly to the edges of the Site. Low proportion of common forbs such as white clover, lesser trefoil, common stork's-bill, weld, shepherd's purse.

Defra Metric Condition Assessment Moderate

Only parts of the habitat have loose substrate, little evidence of pools. Plant species common early coloniser, not typically stress tolerant.

	Condition Assessment Criteria: Urban habitat type	Meets criteria?
1	Known history of disturbance at the site or evidence	Pass
2	The site contains some vegetation. This will comprise of early successional communities consisting mainly of stress-tolerant species (e.g. indicative of low nutrient status or drought)	Part
3	The site contains unvegetated, loose bare substrate and pools may be present and desirable	Part
4	The site shows spatial variation, forming a mosaic of one or more of the early successional communities plus bare substrate or pools	Fail



h2 Hedgerow

A pair of outgrown hawthorn hedges flanking an apparent former track. Hedgerow A is intact, whilst B comprises a defunct line of shrubs.

Defra Metric Condition Assessment A Good B Poor

With only two fails in total, Hedgerow A returns a 'good' condition rating.

As hedgerow B has four failed criteria, two in the same functional group, it scores as 'poor'.

Favorable condition attributes and criteria: Hedgerows			Meets criteria?	
			A	B
A1	Height	>1.5m average along length	Pass	Pass
A2	Width	>1.5m average along length	Pass	Fail
B1	Gap – hedge base	Gap between ground and base of canopy <0.5m for >90% length	Fail	Fail
B2	Gap – hedge canopy continuity	Gaps make up <10% of total length and No canopy gaps >5m	Pass	Fail
C1	Undisturbed ground and perennial vegetation	>1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length & present on one side of hedge at least	Pass	Pass
C2	Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of area of undisturbed ground	Fail	Fail
D1	Invasive and neophyte species	>90% of hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Pass	Pass
D2	Current damage	>90% of hedgerow of undisturbed ground is free of damage caused by human activities	Pass	Pass