



Ecological Impact Assessment Land off Barugh Green Road, Barnsley

Countryside Properties UK Ltd.

Report Reference: ER-4661-02A

17/01/2022

Report Title:	Ecological Impact Assessment Land off Barugh Green Road, Barnsley
Report Reference:	ER-4661-02A
Written by:	Victoria Baker BSc (Hons) MSc ACIEEM Ecologist
Technical Review:	Christopher Shaw BSc (Hons) MCIEEM Senior Ecologist
QA:	Olivia Benson BSc (Hons) Assistant Ecologist
Approved for Issue:	Christopher Shaw BSc (Hons) MCIEEM Senior Ecologist
Date:	17.01.2022

Brooks Ecological Ltd has prepared this report for the sole use of Countryside Properties UK Ltd.. The information which we have prepared and provided is in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions. This report does not constitute legal advice. The report is in accordance with the agreement under which our services were performed. No warranty, express or implied, is made as to the advice in this report or any other service provided by us. This report may not be relied upon by any other party except the person, company, agent or any third party for whom the report is intended without the prior written permission of Brooks Ecological Ltd. This report presents a snapshot of the site at the date it was surveyed; the conditions and the species recorded present, or likely absent, can change rapidly. Resurvey is recommended to any third-party seeking reliance on this report. The content of this report may, in part, be based upon information provided by others and on the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from any third party has not been independently verified by Brooks unless otherwise stated in the report. This report is the copyright of Brooks Ecological Ltd. Unauthorised reproduction or usage by any person is prohibited.



Unit A, 1 Station Road, Guiseley,
Leeds, LS20 8BX
01943 884451
admin@brooks-ecological.co.uk
www.brooks-ecological.co.uk
Registered in England Number 5351418



Contents

1. Introduction.....	5
2. Method	6
Scope of Assessment.....	6
Desk Study	6
Field Survey.....	6
Assessment Method.....	7
3. Ecology Baseline	8
Designated Sites and Conservation Areas	8
Habitats	8
Species and Species Groups	12
4. Description of the Proposed Development.....	13
5. Impacts and Effects of Development.....	14
6. Mitigation & Residual Effects	18
7. Biodiversity Net Gain.....	22
8. Timing Issues	25
9. Cumulative Effects.....	25
10. Offsite Measures or Compensation	25
11. Enhancement	25
12. Monitoring	25
13. Policy and Legislation	25
14. Conclusion	25

Summary

The proposals have avoided some potential significant effects, through engaging with the NPPF Mitigation Hierarchy.

Residual significant effects can be mitigated and compensated on site through a Construction Environmental Management Plan (CEMP: Biodiversity) and Biodiversity Management Plan (BMP).

Despite on-site habitat creation, the proposed development is still expected to result in a net loss overall, both in Habitat Units and Hedgerow Units. Some form of Biodiversity Offsetting may be required to address this shortfall.

1. Introduction

- 1.1.1. Brooks Ecological Ltd was commissioned by Countryside Properties UK Ltd. to carry out an Ecological Impact Assessment (EcIA) for a Site referred to as Land off Barugh Green Road, Barnsley (grid reference SE31810783).
- 1.1.2. 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.
- 1.1.3. 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.
- 1.1.4. 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 ^{i, ii and iv}		
Surveys, Sites, Species and Habitats	3. Adequate ^v and up-to-date ^{vi} : a. Desk study has been undertaken ^{vi} b. Phase 1 habitat survey (or equivalent) has been undertaken ^{vi} c. Phase 2 ecology surveys have been undertaken (where necessary) ^{vii}		
	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 ^{vi} 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		
Impacts and Effects	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)		
	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		
Mitigation, Compensation and Enhancement	10. The report describes and assesses all likely significant ecological effects (including cumulative effects) clearly stating the geographical scale of significance (where relevant)		
	11. The mitigation hierarchy has been clearly followed ^{iv}		
	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 ^v 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 ^{vi}		
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 ^{viii} based on sound professional judgement ^{viii} 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' consists of pasture fields, bordered in part by hedgerow, located on the north-western outskirts of Barnsley. The extent of this assessment is the development area within the red line boundary defined in Figure 2.1, overleaf.
- 2.1.2. The assessment uses a 2km area of search around the Site for records of protected and notable species and locally or nationally designated wildlife sites.
- 2.1.3. Ecological surveys and reports informing this assessment comprise of the following:
- Preliminary Ecological Appraisal (PEA) carried out by Brooks Ecological in February 2020. ER-4661-01A March 2020
 - eDNA survey carried out by Brooks Ecological in 2021. SI-4661-01 April 2021
 - Climbed endoscopic inspection carried out by Brooks Ecological in 2021. SI-4661-02 April 2021

Desk Study

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

Field Survey

- 2.1.5. The following dedicated field has been carried out at the site. Full details of the methodologies used and the results obtained are contained in the relevant documents referenced opposite. Unless

stated otherwise these followed the relevant survey guidelines referenced in reports.

- Walkover / Extended Phase 1 Habitat Survey
- eDNA survey (Great Crested Newt)
- Bat survey of trees

Figure 2.1 Site area under assessment (red line)



Assessment Method

2.1.6. 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 and
- its size, rarity or threats to its integrity

2.1.7. 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.

2.1.8. 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

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.

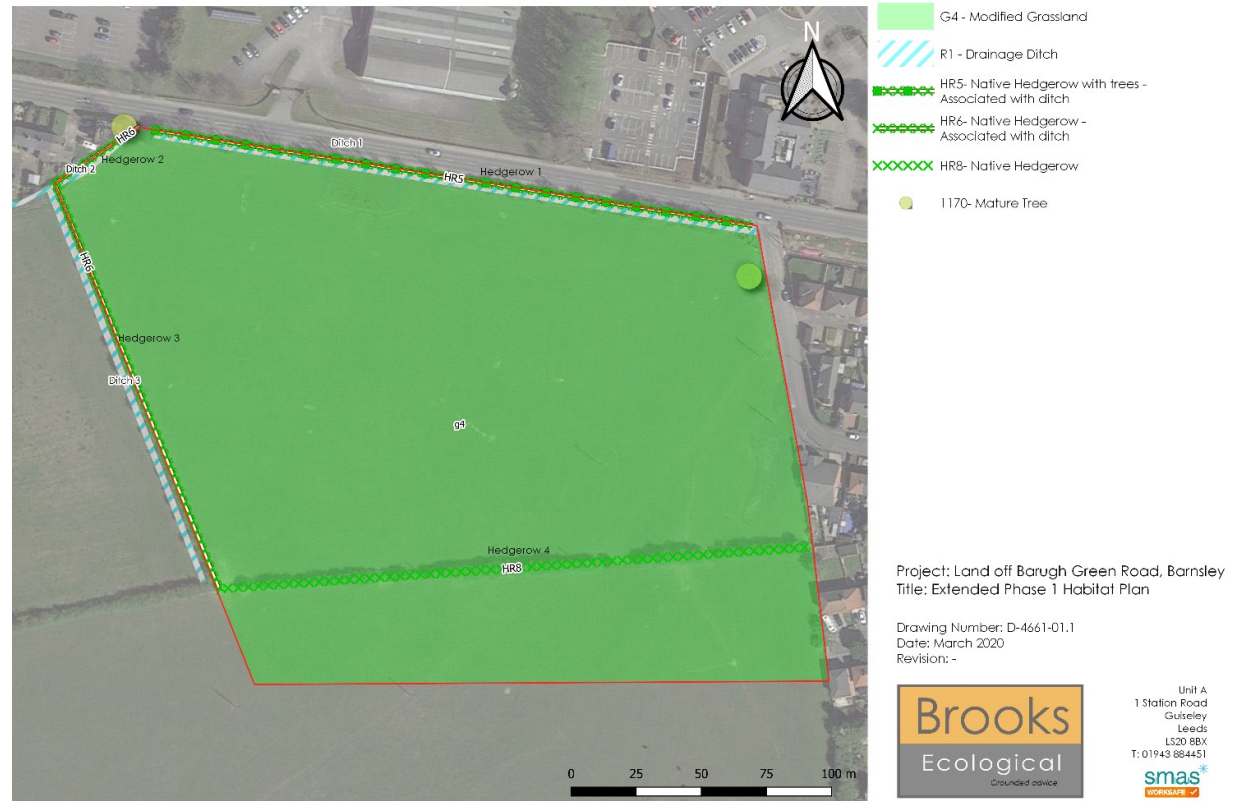
Habitats

- 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. If left un-managed/un-grazed, the habitats on site would likely succeed to taller ruderal vegetation and native scrub over time.

Figure 3.1 The Site's habitats



3.1.6. The table below sets out the habitats at this site and their relevance in this assessment.

Table 3.1 Site Habitats Summary

Codes	Habitat Feature	Notes	Valued at what scale
g4	Habitats of Low Distinctiveness.	Modified grassland- this habitat covers the majority of the Site, being well-managed neutral grassland, currently grazed by horses. These fields have been improved through seeding and fertilization, with subsequent horse grazing leaving a short sward, poached and waterlogged. This habitat has relevance to biodiversity at this site on the basis of its extent – mitigation / compensation for any loss of this habitat is dealt with through the Biodiversity Net Gain process and it is not considered further in the EclA process.	Site Level
r1	Ditch	Found running alongside three of the hedgerows, one of which is off-Site. At the time of the survey, these held water with a slow flow along the two on-Site ones. Although, given the lack of submerged, floating or emergent plants, it is thought likely that these only hold water post heavy rainfall. This is a common habitat type locally and it does not support rare or otherwise notable species here. Loss will be mitigated / compensated through the Biodiversity Net Gain process.	Site Level
1170	Mature trees	A semi-mature oak is found to the east and displays lighting damage. A mature ash is rooted off-Site to the west and overhangs the boundary. These add to the local tree scape. They do not support and rare or otherwise notable species. Avoidance of impacts on these two trees have been recommended.	Local Level
hr5, hr6 & hr8	Hedgerows	Hedgerow forms the northern and western boundaries, with a fourth cutting through the southern portion of the Site. All are dominated by hawthorn. These would meet the criteria for Habitat of Principle Importance under Section 41 of the NERC Act 2006. The Site is mapped as being subject to 'surface mining- past and current' on the Coal Authority interactive map and as such assessment of the on-site hedgerows under the Hedgerow Regulations 1997 is not required. This is a common habitat type locally and it does not support rare or otherwise notable species here, but does provide useful connectivity through the site for wildlife. Loss could be mitigated / compensated through the Biodiversity Net Gain process - which would need to target new hedgerows on/off site. However, avoidance of impacts on this habitat have been recommended where possible.	Local Level

3.1.7. The table below shows the site's habitats in terms of their measured Extent (ha or km) and Biodiversity Value (Habitat Units)- this is an excerpt from the DEFRA Biodiversity Metric 2.0 Spreadsheet Calculator. As per guidance, the Metric 2.0 version has continued to be used rather than the updated 3.0.

Figure 3.2 Site Habitats as defined in Biodiversity Net Gain calculations – Site Baseline¹.

Land off Barugh Green, Barnsley									
A-1 Site Habitat Baseline									
Condense / Show Columns		Condense / Show Rows							
Main Menu		Instructions							
Habitats and areas				Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Ecological baseline
Ref	Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance		Total habitat units
1	Grassland	Grassland - Modified grassland	4.71	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	9.42
2	Lakes	Lakes - Ditches	0.27	Medium	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	1.08
3	Woodland and forest	Woodland and forest - Wood-pasture and parkland	0.04	High	Moderate	Low	Area/compensation not in local strategy/ no local strategy	Same habitat required	0.48
4									
5									
6									
7									
8									
Total site area ha			5.02					Total Site baseline	10.98

¹ Our report provides an estimate of the sites baseline 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 2.0 metric rather than updating the original calculations as per 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.

Land off Barugh Green, Barnsley

B-1 Site Hedge Baseline

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

Baseline ref	Hedge number	UK Habitats - existing habitats		Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Ecological baseline
		Hedgerow type	length KM	Distinctiveness	Condition	Ecological connectivity	Strategic significance		Total hedgerow units
1	H1	Native Hedgerow with trees - Associated with bank or ditch	0.23	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	Like for like or better	1.84
2	H2 and H3	Native Hedgerow - Associated with bank or ditch	0.21	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	Like for like or better	1.68
3	H4	Native Hedgerow	0.24	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.96
4									
5									
6									
7									
8									
Total Site length/KM			0.68					Total Site baseline	4.48

Species and Species Groups

3.1.8. 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 (Feature)	Notes	Valued at what scale
Bats	Climbed endoscopic inspection of the on-site tree and overhanging off-site tree have not identified any evidence of roosting bats. The hedgerows offer the only features of value to commuting and foraging bats, although these are considered to be only of very limited value.	Local Level
Amphibians	eDNA of on-site ditches and off-site waterbodies within a 500m radius found the likely absence of great crested newt. The Site is deemed to be of limited value to other amphibian populations.	N/A
Birds	The hedgerows and trees will offer feeding and nesting opportunities for common garden / farmland species. Given the Site's proximity to housing, it is unlikely to be of any significant importance to ground nesting species, due to the likely high density of domesticated cats. No records relate to the Site, the closest details a little owl recorded c.100m north in 2012. The closest record of skylark is a four figure grid reference c.130m north-east and as such does not relate to the Site. No evidence of little owl (through climbed endoscopic inspection of trees) or any other rare or notable species or assemblages have been identified on any of the various survey visits. Standard precautions apply regarding clearance of vegetation.	Local Level

4. Description of the Proposed Development

- 4.1.1. The planning application seeks planning permission for 140 dwellings alongside associated access roads, parking and public open space.
- 4.1.2. The eastern oak tree, the majority of the northern and part of the western hedgerow will be retained, with all other land cleared for development.
- 4.1.3. Proposals have had the opportunity to respond to the findings of the PEA and have built in all potential avoidance - in terms of layout. The following sections examine impacts resulting from the proposals which could not be avoided.
- 4.1.4. Impacts are assessed on the basis of the Effects which result on the valued habitats, species or Site's which have been identified above.

Figure 4.1 Planning Layout (Drawing Reference SKPY-004-A-PL-01, April 2020).



5. Impacts and Effects of Development

- 5.1.1. Figure 5.1 shows the development footprint (black hatch) in relation to the mapped habitats.
- 5.1.2. The development footprint shows the sum extent of proposed built development and associated clearance works.
- 5.1.3. The entire Site, with the exception of part of the northern & western hedgerow and ditch and the eastern oak tree, will be cleared.

Figure 5.1 Development footprint in relation to existing on-Site habitats



Table 5.1 Lists the anticipated Impacts and Effects associated with the proposals.

	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 effect connectivity through and around the Site. Habitat loss will be likely to effect identified features of the Site.	Modified grassland Ditches Hedgerows Birds Bats	Local
1b	Damage to retained habitat such as by storage of clearance machinery or materials in these areas.	Hedgerows Eastern oak tree and off-site tree Ditches	Local
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.	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.	Hedgerows Trees Ditches	Local
1e	Potential effects on Protected Species. Precautions will be required to ensure that impacts on nesting bird can be avoided.	Protected Species	Criminal Offence

	Impact	Stage
2	Construction activities. 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	Acting on	Acting at scale (Maximum)
2a	Damage to retained habitat such as by storage of machinery or materials in these areas.	Hedgerows Ditches Trees	Local
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.	Off-site	Local

	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	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.	Hedgerows Ditches Trees	Local
3b	Pollution. There is the potential for sediment or chemicals to be released from the Site during this stage.	Off-site	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 populated. Units will be inhabited, and traffic and services will access the Site regularly. Pedestrian access across the Site and along rights of way will increase. Presence of domestic pets will increase. Retained and created habitat will be managed by the Site Management Company.	<i>Operation</i>

	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.	Hedgerows Ditches Trees	Local
4b	Disturbance. The noise and activity at the Site will be present of a lower order and will likely be tolerable to species habituated to the urban conditions prevailing locally. The presence of dogs and cats will result in some predation and displacement, but this area will already be affected by these species to a lesser degree.	Birds	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. Where feasible, the **avoidance** of unnecessary impacts has been considered at the design stage and worked into the Planning Layout. 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. Habitat creation and management 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 which would provide a means of achieving the required habitats and condition.
- 6.1.3. 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.
- 6.1.4. 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).
 - Lighting plan

Table 6.1 Lists the mitigation put in place 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.	Complies with Biodiversity Net Gain policy. The BMP will detail the provision and management of connective habitat, including access features for small animals such as hedgehog. The BMP will detail the provision bird nesting and bat roosting features.	Neutral / Minor Positive (once offsetting is implemented)
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 Species. Precautions will be required to ensure that impacts nesting birds can be avoided.	The CEMP will detail necessary pre-works checks for nesting birds.	Avoided entirely.

	Impact	Stage
2	Construction activities. 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

	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 and 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. This will include monitoring so that evidence can be provided, or remedial action can put in place as required.	Neutral

	Impact	Stage
4	The Site will be populated. Units will be inhabited, and traffic and services will access the Site regularly. Pedestrian access across the Site and along rights of way will increase. Presence of domestic pets will increase.	<i>Operation</i>

	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.	Neutral
4b	Disturbance. The noise and activity at the Site will be present of a lower order and will likely be acceptable to species habituated to the urban conditions prevailing locally. The presence of dogs and cats will result in some predation and displacement.	Landscaping is designed to maximise the amount of habitat which groups such as birds can use for cover, and to provide connectivity. New nesting (for birds) and roosting (for bats) will be included in the BMP.	Neutral
4c	In the absence of correct management retained and created habitats may 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. 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).
- 7.1.2. Any shortfall in Units may 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.
- 7.1.3. Calculations setting out the position of the proposals in relation to BNG are set out below. These are based on the Planning Layout (Countryside Properties-SKPY-004-A-PL-01) and Landscape Masterplan (TPM Landscape-3612-101-C) available at this time, with areas and lengths supplied by the client. Habitat types which will need to be applied to the proposals to achieve the calculated BNG position are set out (and committed to) in the plan opposite.
- 7.1.4. 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 historically have been scoped out of Impact Assessments.

Net Gain Calculations

- 7.1.5. The proposals will lead to an overall net loss in habitat and hedgerow units, with a shortfall of 3.27 Habitat Units (-29.75%) and 1.88 Hedgerow Units (-42.05%) predicted.
- 7.1.6. The client has been provided with a full copy of the Biodiversity Metric 2.0 Calculation Tool

Figure 7.1 Post development habitat types

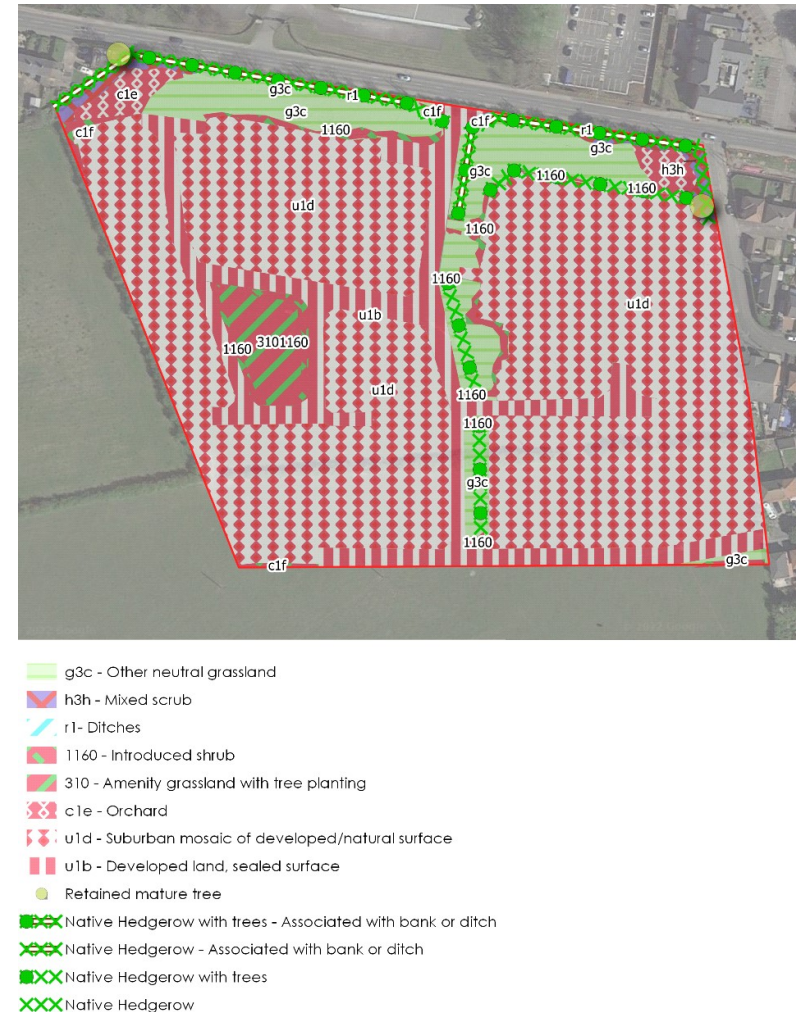


Table 7.1 Habitat Creation Summary extracted from Biodiversity Metric 2.0 Calculator tool

Land off Barugh Green, Barnsley

A-2 Site Habitat Creation

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

Post development/ post intervention habitats										
Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological	Strategic significance	Temporal	Difficulty	Habitat units delivered	Comments	
				Ecological connectivity	Strategic significance	Time to target condition/years	of creation category		Assessor comments	Reviewer comments
Urban - Developed land; sealed surface	0.66	V.Low	N/A - Other	Low	Area/compensation not in local strategy/ no local strategy	0	Low	0.00	Main access roads. Taken from TPM Landscape- Landscape Masterplan 3612-101-C.	
Urban - Developed land; sealed surface	2.23	V.Low	N/A - Other	Low	Area/compensation not in local strategy/ no local strategy	0	Low	0.00	70% of housing / gardens. Includes large number of trees. Taken from TPM Landscape- Landscape Masterplan 3612-101-C.	
Urban - Vegetated garden	0.96	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	1	Low	1.85	30% of housing and gardens. Taken from TPM Landscape- Landscape Masterplan 3612-101-C.	
Urban - Amenity grassland	0.15	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	1	Low	0.29	Amenity grassland in POS. Taken from TPM Landscape- Landscape Masterplan 3612-101-C.	
Urban - Introduced shrub	0.09	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	1	Low	0.17	Non-native landscape planting. Taken from TPM Landscape- Landscape Masterplan 3612-101-C.	
Grassland - Other neutral grassland	0.49	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	10	Low	2.75	Wildflower grassland (EM2). Taken from TPM Landscape- Landscape Masterplan 3612-101-C.	
Heathland and shrub - Mixed scrub	0.06	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	3	Low	0.43	Native shrub planting. Taken from TPM Landscape- Landscape Masterplan 3612-101-C.	
Urban - Street Tree	0.2	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	27	Low	0.31	Tree planting in POS and outside of hedgrows. Taken from TPM Landscape- Landscape Masterplan 3612-101-C.	
Urban - Orchard	0.11	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	15	Low	0.52	Taken from TPM Landscape- Landscape Masterplan 3612-101-C.	
Totals	4.75							6.31		

Table 7.2 Hedgerow Creation Summary extracted from Biodiversity Metric 2.0 Calculator tool

Land off Barugh Green, Barnsley										
B-2 Site Hedge Creation										
Condense / Show Columns				Condense / Show Rows						
Main Menu				Instructions						
Proposed habitats						Multipliers			Hedge units delivered	Comments
						Spatial quality		Temporal multiplier		
Baseline ref	New hedge number	Habitat type	Length km	Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance	Time to target condition/years		
1		Native Hedgerow with trees	0.27	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	10	0.76	New native hedgerow with trees. Taken from TPM Landscape- Landscape Masterplan 3612-101-B.
2										
3										
4										
5										
Creation Length/KM			0.27						0.76	

Table 7.3 Headline Summary extracted from Biodiversity Metric 2.0 Calculator tool

On-site baseline	Habitat units	10.98
	Hedgerow units	4.48
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	7.71
	Hedgerow units	2.60
	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	-3.27
	Hedgerow units	-1.88
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	Habitat units	-29.75%
	Hedgerow units	-42.05%
	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. A planning application has been submitted in August 2021 for a residential development of 1,760 dwellings to the west and south of the Site boundary, the outcome of which has not been decided as of yet. There might be a minor cumulative impact arising from the two developments due to their shared habitat types, with there being potential impacts on the local urban & farmland bird and bat populations.

10. Offsite Measures or Compensation

- 10.1.1. The scheme is expected to result in a net loss for biodiversity, despite on-site measures being proposed within the Landscape masterplan and BMP.
- 10.1.2. Some form of offsetting is likely to be required by the LPA to ensure the proposals deliver a net gain for biodiversity overall. This could be secured through the use of blue line land (if available to the client) or through a commuted sum, either to the council, or a third party broker.

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 and will be detailed in the BMP and Landscaping Plan documents to be produced as a standard condition of planning.

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, submitted as part of the planning application, will be able to address all significant effects resulting from the development.
- 14.1.2. Biodiversity offsetting will need to be agreed with the LPA, to ensure the Site delivers a net neutral or net gain for biodiversity.

References

- Andrews H. L. (2011) *A habitat key for the assessment of potential bat roost features in trees*.
- Bat Conservation Trust (2016) *Bat Surveys for Professional Ecologists – Good Practice Guidelines*
- BSI (2013) British Standards Institute *BS 42020:2013 Biodiversity — Code of Practice for Planning and Development*.
- CIEEM (2017) *Guidelines for Ecological Report Writing* 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal*, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal*, 3rd edition. Chartered Institute of Ecology and Environmental Management, Winchester
- DEFRA (2021) Biodiversity Metric 3.0 Auditing and accounting for biodiversity Calculation tool macro free
- DEFRA (2021) Biodiversity Metric 3.0 Technical Supplement (1)
- DEFRA (2021) Biodiversity Metric 3.0 User Guide
- English Nature (2004) *Bat Mitigation Guidelines*. English Nature, Peterborough.
- Harris S, Jefferies D, Cheeseman C and Booty C (1994). *Problems with Badgers*, revised 3rd Edition. RSPCA, ISBN 0-901098-04-3
- Gent T and Gibson S, 2003, *Herpetofauna Workers' Manual*, JNCC
- IEA. (1995). *Guidelines for Baseline Ecological Assessment*. Chapman and Hall
- Hill et al. 2005, *Handbook of Biodiversity Methods*. Cambridge
- JNCC (2004) *The Bat Workers Manual*. 3rd Edition.
- JNCC (2010). *Handbook for Phase 1 Habitat Survey: A technique for environmental audit*.
- Ratcliffe, D.A. (1977) *A Nature Conservation Review*, Cambridge University Press