Brooks Ecological
Grounded advice

Ecological Impact Assessment

Lady Anne Road, Soothill

D. Noble Ltd.

Report Reference: ER-3787-01-F

09/11/2023

Report Title:	Ecological Impact Assessment Lady Anne Road, Soothill
Report Reference:	ER-3787-01-F
Written by:	Christopher Shaw BSc (Hons) MCIEEM Principal Ecologist
Technical Review:	Rob Weston BSc MSc MCIEEM Technical Director
QA:	Peter Brooks BSc (Hons), MA, MCIEEM, CEnv Managing Director
Approved for Issue:	Rob Weston BSc MSc MCIEEM Technical Director
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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

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Summary

The proposals have engaged with the NPPF Mitigation Hierarchy and 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 BS42020.

An overall net loss in Habitat Units is predicted based on the plans provided, whilst a net gain in Hedgerow and River Units is achievable if the mitigation/ compensation proposed within this report is properly implemented.

1. Introduction

1.1. Brooks Ecological Ltd was commissioned by D. Noble Ltd. to carry out an Ecological Impact Assessment (EcIA) for a Site referred to as Lady Anne Road, Soothill.

1.2. It is proposed to re-develop the Site to remove the old factory and office buildings to make way for a garden centre occupying the same footprint.

1.3. The British Standard BS42020 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.

1.4. 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.

1.5. This report adapts the format set out in the Chartered Institute for Ecology and Environmental Management (CIEEM) guidelines for Ecological Report Writing (December 2017).

CIEEM

Ecological Impact Assessment (EcIA) Checklist

ASSOCIATION OF Local Government Ecologists

	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)[i], 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[ii, iii and iv]		
Surveys, Sites, Species and Habitats	3. Adequate[v] and up-to-date[vi]: a. Desk study has been undertaken[vii] b. Phase 1 habitat survey (or equivalent) has been undertaken[viii] c. Phase 2 ecology surveys have been undertaken (where necessary)[viii]		
	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[ix] 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[x]		
	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[xi] 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[xii]		
	19. All ecologists and surveyors hold appropriate species licences (where relevant) and/or have all necessary competencies to carry out the work undertaken		
Conclusions	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[xiii] based on sound professional judgement[xiv] 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. An Extended Phase 1 Habitat Survey of the Site was carried out in April 2016 by Witcher Wildlife Ltd. (Report Ref. 160518). This report recommended further survey for bats and water vole, the latter of which has been undertaken by Brooks Ecological.

2.2. Given the amount of time that has elapsed since the initial assessment was carried out, an updating walkover survey has been undertaken in January 2020 by Brooks Ecological; so as to confirm the Site's baseline.

2.3. The extent of the survey area is the land within the red line boundary defined in Figure 2.1. Where possible or relevant, this was extended into adjacent habitat to provide context to the site. The Survey Site included gaining access down to the riparian habitats adjacent to the Site wherever this was possible.

2.4. 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.

2.5. The application site 'the Site' comprises a former allotment, which has been left vacant and allowed to succeed to a mosaic of rough grassland, tall ruderal and scrub habitat, with a beck and wetland habitat along the eastern boundary.

2.6. To provide information on the Site's ecological value, the following studies have been carried out; with the relevant reports produced being:

- Extended Phase 1 Habitat Survey (Ref. 160518). Witcher Wildlife Ltd. May 2016.
- Water Vole Assessment & Mitigation Plan (R-3009-01.1). Brooks Ecological. September 2017.
- Water Vole Survey. (R-3787-01). Brooks Ecological. June 2019.
- Water Vole Survey (ER-3787-03-A). Brooks Ecological. September 2023.
- Bat Activity Survey (ER-3787-04-A). Brooks Ecological. September 2023.

Desk Study

2.7. 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

2.8. The initial walkover survey was carried out during April 2016 and followed Phase 1 Habitat Survey Methodology (JNCC, 2010).

Water vole survey

2.9. Survey followed the methodology for field survey outlined in Dean and Strachan (2016).

Figure 2.1 The Survey Site

Assessment Method

2.10. 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

2.11. 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.

2.12. 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

2.13. 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. A *summary* of the points salient to this assessment are set out below:

Designated Sites and Conservation Areas

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

Kirklees Wildlife Habitat Network

3.3. The entire Site lies within the Kirklees Wildlife Habitat Network.

Habitats

3.4. The Site comprises of the following habitat types, all of which have been described and mapped below.

Potential future changes to the baseline

3.5. The Site's use and ecological baseline will likely be unchanged until the time of the proposed development.

3.6. In the absence of re-development, succession would likely result in the further expansion of scrub into areas of grassland, with scrub continuing towards woodland. Some areas of grassland would remain due to rabbit and informal horse grassing.

Figure 3.1 The Site's habitats

Code	Habitat Feature	Extent	Notes
g3c	Other neutral grassland	1.80 ha	Species-poor rough neutral grassland, growing over an east facing slope. The Site is subject to no formal management resulting in succession to scrub, tall ruderal and bracken along the margins. Unauthorised grazing from tethered horses maintains grassland within the centre. Habitat of moderate distinctiveness in poor condition. Valued at Site Level.
h3d	Bramble scrub	1.04 ha	Dense impenetrable scrub which has arisen naturally due to an absence of management. Comprises largely of bramble, with small amounts of elder, hawthorn and other native woody species and competitive herbs. Habitat of moderate distinctiveness in poor condition. Valued at Site Level.
f2	Tall herb communities	0.29 ha	Area of marshy grassland characteristic of S28 NVC community *Phalarus arundinacea* tall herb fen. Habitat of high ecological value. Valued at Local Level.
17	Ruderal / ephemeral	0.18 ha	Typical assemblage of tall ruderal herbs, which have established within area of rough grassland. Common habitat of low distinctiveness in poor condition. Valued at Site Level.
g1c	Bracken	0.06 ha	Habitat of limited ecological value. Low distinctiveness, poor condition. Valued at Site Level.
c1f	Introduced shrub	0.03 ha	Small isolated stands of Spirea – most likely garden escapes. Habitat of negligible ecological value. Valued at Site Level.
1170	Trees	0.2 ha	Scattered broadleaf trees, mostly goat willow and sycamore. Of young to semi-mature stature. Habitat of moderate distinctiveness in poor condition. Valued at Site Level.
LT4	Line of Trees	0.12 km	Line of mature sycamore trees through the centre (west-east) and semi-early mature alder, willow and birch along the southern end of the eastern boundary. Habitat of low distinctiveness in good condition. Valued at Site Level.
R4	Headwater stream	0.04 km	Small intermittent stream arising from a natural spring within the centre of the Site, flowing east into the fen habitat. Habitat of moderate ecological value. Valued at Site Level.
R9	Rivers & Streams (Other)	0.52 km	Howley Beck. Permanently flowing water feature, running north-south along the eastern boundary. Flanked by a mix of scrub and tall ruderal vegetation. Evidence of pollution. Habitat of high ecological value. Valued at District Level.

DEFRA Metric (Baseline)1

3.7. This metric sets out the baseline for the Site - proposals should seek to achieve at least a 'no net loss' situation through **Avoiding** areas of higher value, **Mitigating** any loss on-Site through retention and enhancement, or habitat creation. The Local Planning Authority *may* require you to **Compensate** any residual loss elsewhere - either through direct works or an off-setting contribution.

3.8. Our condition assessment for each habitat described references where available the criteria set out in The Biodiversity Metric 2.0 Auditing And Accounting For Biodiversity Technical Supplement Beta Edition.

Lady Anne Road, Soothill
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 - Other neutral grassland	1.81	Medium	Poor	Low	Within area formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	8.33
2	Heathland and shrub	Heathland and shrub - Bramble scrub	1.13	Medium	Poor	Low	Within area formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	5.20
3	Grassland	Grassland - Tall herb communities	0.29	High	Poor	Medium	Within area formally identified in local strategy	Same habitat required	2.20
4	Sparsely vegetated land	Sparsely vegetated land - Ruderal/Ephemeral	0.18	Low	Poor	Low	Within area formally identified in local strategy	Same distinctiveness or better habitat required	0.41
5	Grassland	Grassland - Bracken	0.07	Medium	Poor	Low	Within area formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	0.32
6	Urban	Urban - Introduced shrub	0.03	Low	Poor	Low	Within area formally identified in local strategy	Same distinctiveness or better habitat required	0.07
7	Urban	Urban - Street Tree	0.2	Low	Moderate	Low	Within area formally identified in local strategy	Same distinctiveness or better habitat required	0.92
8									
9									
10									
11									
12									
		Total site area ha	3.51					Total Site baseline	17.45

[1] Our report provides an estimate of the sites 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.

	UK Habitats - existing habitats			Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance		Ecological baseline
Baseline ref	Hedge number	Hedgerow type	length KM	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Total hedgerow units
1		Line of Trees	0.12	Low	Good	Low	Within area formally identified in local strategy	Same distinctiveness band or better	0.828
2									
3									
4									
5									
6									
		Total Site length/KM	0.12					Total Site baseline	0.83

Existing river type			Habitat distinctiveness	Habitat condition	Strategic significance		Sugested action	Ecological baseline
Baseline ref	River type	length KM	Distinctiveness	Condition	Strategic significance	Strategic significance		Total river units
1	Headwater Streams	0.04	High	Poor	Low potential/ action not identified in any plan.	Low Strategic Significance	Avoid	0.24
2	Rivers & Streams (Other)	0.52	Medium	Poor	Low potential/ action not identified in any plan.	Low Strategic Significance	Avoid	2.08
3								
4								
5								
	Total site length KM	0.56					Total Site	2.32

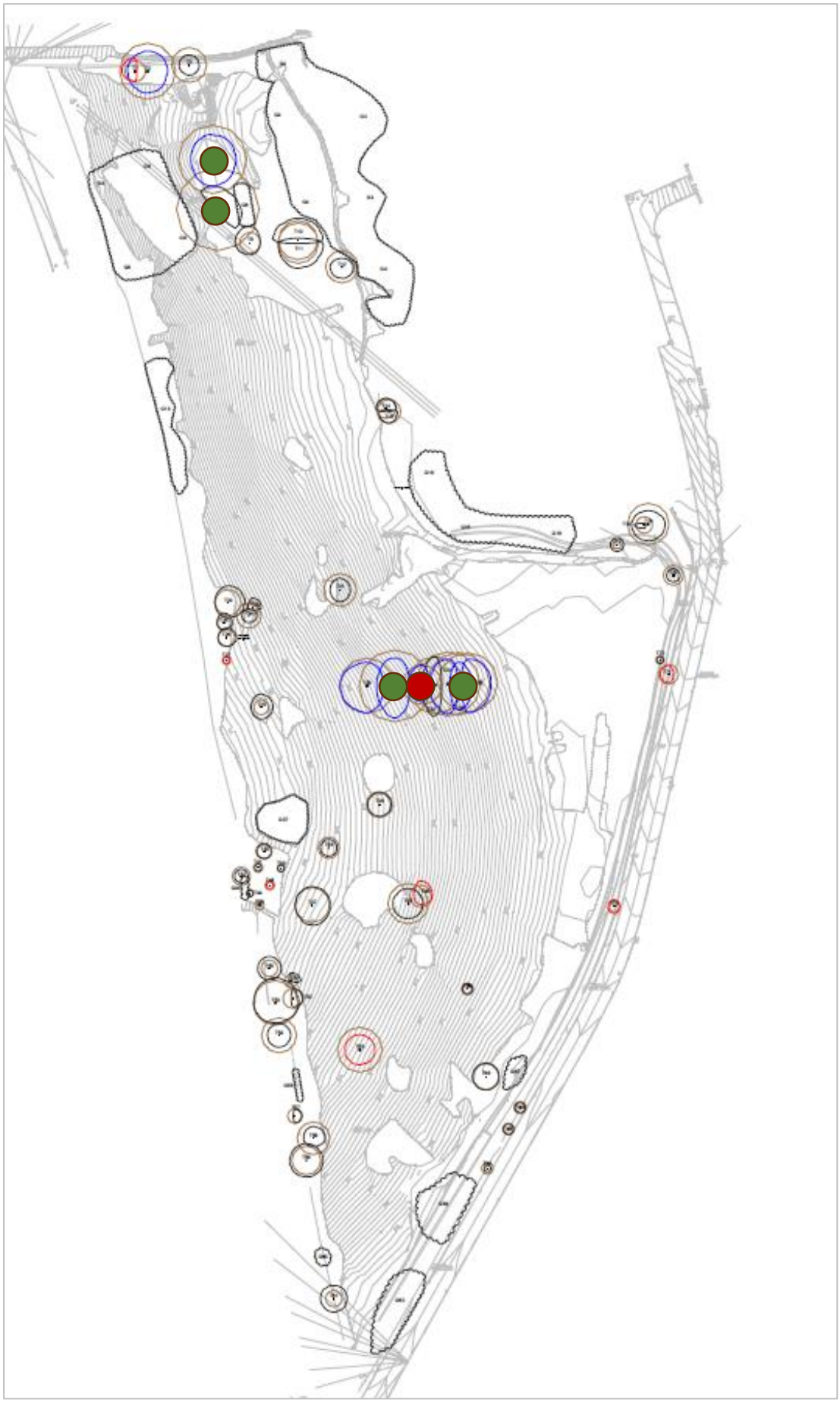
Species and Species Groups

3.9. Potential constraints relating to relevant groups were investigated through the surveys carried out.

Table 3.2 Summary of relevant faunal issues

Species/ Group	Presence	Notes
Water vole	Likely absence confirmed through dedicated survey by Brooks Ecological in 2017, 2019 and 2023 Species is potentially present upstream of the Site, but outside of the developments sphere of influence.	No direct or indirect impacts expected.
Bats	Five trees were identified as having bat roost suitability. These are shown on Figure 3.2 overleaf. A single tree has been assessed as having moderate roost suitability, due to the presence of a large trunk cavity, whilst the other four have been assessed as having low roost suitability, due to the presence of shallow or superficial features such as knot holes, peeling bark or ivy growth. Presence / absence survey is recommended on the tree with moderate bat roost suitability, should this require removal. Trees with low bat roost suitability should be soft felled under the supervision of a suitably qualified Ecologist. The Site has been found to attract only low levels of bat activity, with no obvious patterns in foraging or commuting activity. Despite this, Howley Beck should still be considered an important feature for bats and other local wildlife, and such be protected from development.	Possible direct impacts on trees scheduled for removal. Beck likely to be of importance to local bat population.
Other fauna	The Sites potential to support other protected or notable fauna was scoped out at the PEA stage.	No direct or indirect impacts expected.
Invertebrates	The potential for the Site to support rare or protected invertebrates was scoped out at the PEA stage by Whitcher Wildlife Ltd. The feature of greatest potential interest for this group is the tall herb / fen habitat – which will be largely retained and protected, and with it, any invertebrate interest it supports.	Impacts on this groups not likely to be significant.
Invasive non-native species	Himalayan balsam is present within the tall herb community and along the course of Howley Beck.	

Figure 3.2 Trees with BRS. Moderate suitability = red circle. Low = green circle.



4. Description of the Proposed Development

4.1. Revised proposals are for the construction of 65 new residential units, with associated infrastructure and Public Open Space.

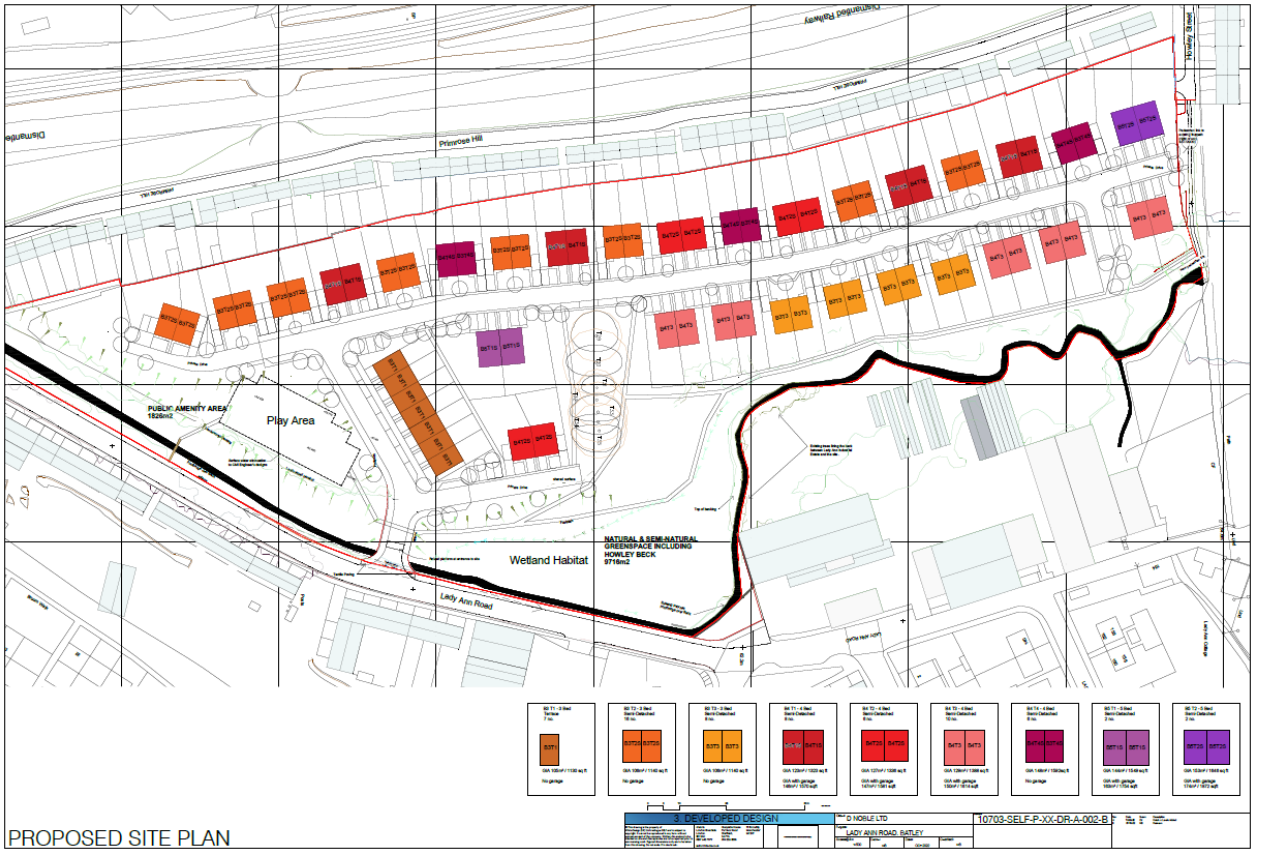
4.2. The following plans have been provided by the client and form the basis of this assessment:

- Proposed Site Plan. SELF Architects drwg 10703-SELF-P-XX-DR-A-002 Rev. B (07/10/2022).
- Landscape Proposals. Topia Landscape Architects drwg 0138-GA-001 to 003. Rev. PL02(24.11.22).

4.3. Given the Site's topography, large-scape earthworks will be required to create the necessary development platforms, with bankings created between the development and retained habitats.

4.4. Habitats of greatest ecological value, namely Howley Beck and the Tall Herb Fen will be largely retained and made available for ecological enhancement.

Figure 4.1 Proposed Site Plan



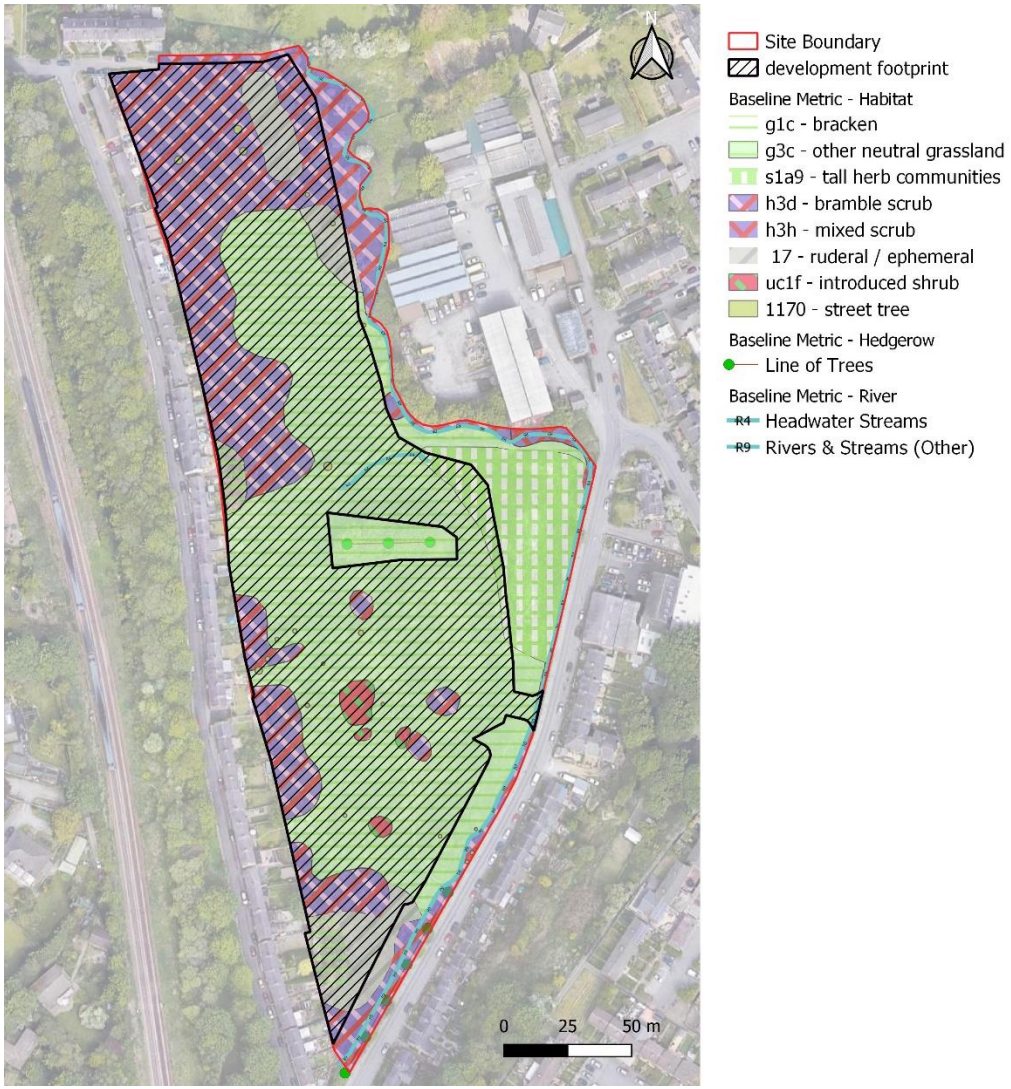
5. Impacts & Effects on the Proposed Development

5.1. Figure 5.1 shows the development footprint in relation to the mapped habitats.

5.2. The development footprint mapped in black shows the sum extent of proposed built development, as well as re-profiling works required to create the development platforms.

5.3. Given the Site's topography, banking will need to be created along the eastern boundary. This will represent short-term habitat loss, with existing vegetation removed during the initial Site preparation stage but recreated during construction.

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



5.4. Figure 5.2 summaries the impact of development on existing vegetation, with habitat permanently lost to residential development shown in Red, whilst vegetation temporarily lost during the initial reprofiling operation shown in Orange.

5.5. Habitat retained and protected is shown in Green.

5.6. Areas marked green and orange will be made available for ecological enhancement – details of which would be outlined in the Site's Biodiversity Management Plan (BMP).

Figure 5.2 Summary of impacts on existing habitats (lost and retained)

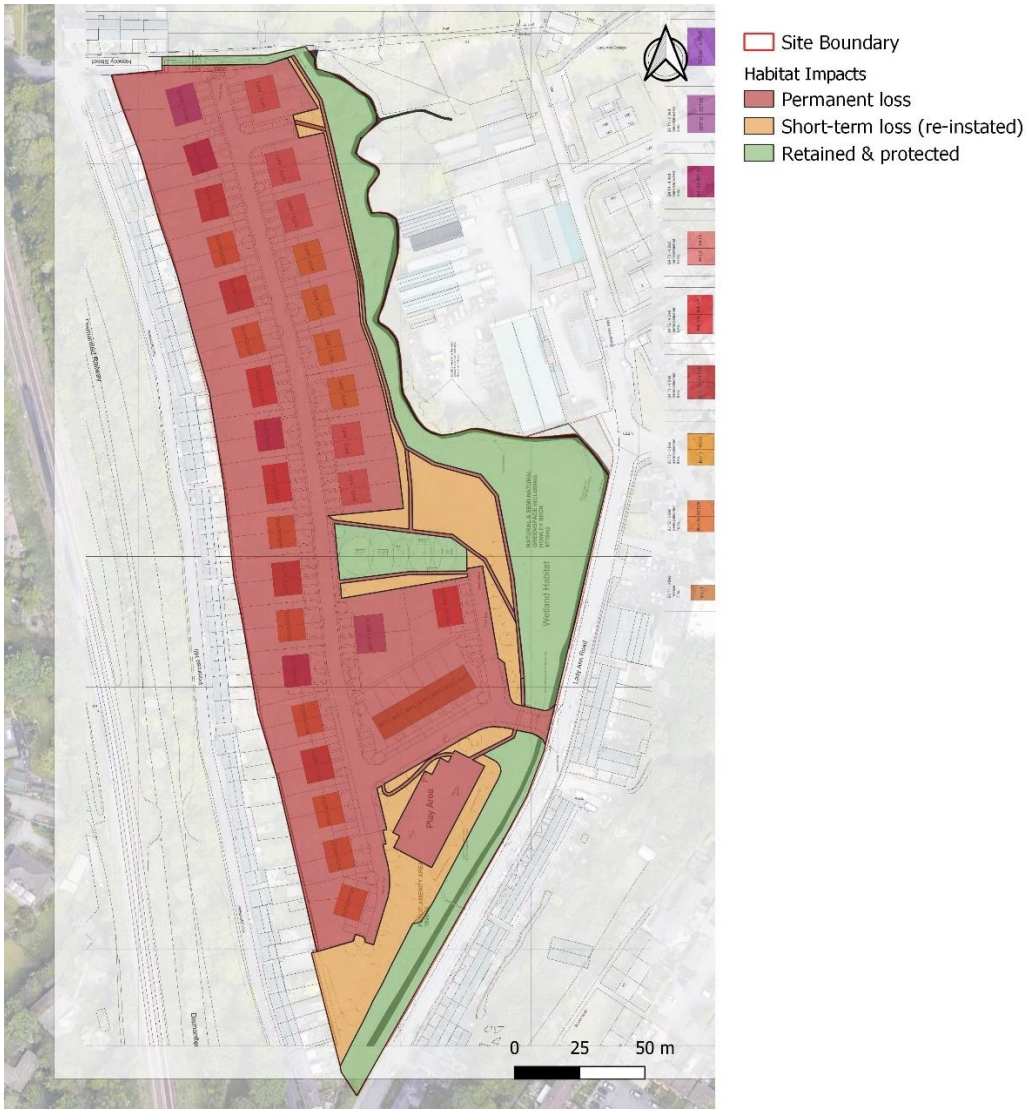


Table 5.1 Summary of impacts and effects

Feature	Impact	Stage	Significant Effects
Tall herb communities	Loss of 0.02ha (7%) of this habitat.	*Clearance*	Small loss of high value habitat. Significant at Site level only. Mitigation and compensation required.
Rivers & Streams	Loss of spring and associated headwater stream. Loss of c.20m of Howley Beck to facilitate new bridge point for access road. Pollution/ damage of watercourse and downstream habitats.	*Construction*	Significant at district level. Small loss of high value habitat during construction, plus the potential to damage retained section of stream and pollute downstream habitats. Mitigation and compensation required.
Low value habitat	Permanent loss of 1.59 ha of rough neutral grassland, 0.83ha of scrub, 0.15ha of tall ruderal vegetation and all areas of bracken and introduced shrubs.	*Clearance*	Largescale loss of low value habitat. Significant at Site level. Mitigation / Compensation will be required to ensure a no-net loss in biodiversity.
Water vole	Currently (likely) absent – no impact during construction. Habitat could be degraded during operation, stopping any future colonisation.	*Operation*	No significant impacts.
Bats	Potential loss of roosting opportunities (trees). Loss of foraging habitat. Degradation of retained habitat (artificial lighting) – interrupting commuting routes / displacing foraging bats.	*Clearance* *Construction* *Operation*	Significant at a local level. Should tree roosts be present, there is the potential for clearance to result in the damage or destruction of bat roosts. This would most likely impact small summer day roosts or low conservation significance. Construction would result in the permanent loss of foraging habitat, leading to the displacement of local bats into the wider landscape. Addition lighting and the new bridge point could also sever the Howley Beck corridor – resulting in fragmentation.
Invasive Species	Potential to spread Himalayan balsam further throughout the Site and off-site.	*Clearance* *Construction*	Significant at a local level. Potential to spread Himalayan balsam through the local area.

Feature	Impact	Stage	Significant Effects
Kirklees Wildlife Habitat Network	Potential to disrupt the continuity of the KWHN.	*Construction* *Operation*	Significant at a local level. Potential for development to impede the movement of wildlife though the local landscape, along the Howley Beck corridor. This could result in the fragmentation of local populations. Mitigation and compensation required.

6. Mitigation & Residual Effects

6.1. Any possible **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.

- A BS:42020 Biodiversity Management Plan (BMP); see ER-3787-02
- A BS:42020 Construction Environmental Management Plan (CEMP: Biodiversity) will be produced this can be secured by use of a standard condition and will set out measures detailed below;
- An Invasive Weed Management Plan (IWMP) will be produced, to set out the control of Himalayan balsam. This can be secured by use of a standard condition.

Table 6.1 Summary of Mitigation and Residual Effects

Effect	Features	NPPF Hierarchy	Residual Effect
Habitat loss	The BMP and landscaping plans will show: • The enhancement of retained habitat through better management and planting/ sowing - to increase floral diversity and condition assessment. • Measures to improve Howley Beck for water vole • Removal of litter and other contaminants. • The creation of new habitats within areas impacted by earthworks. • Installation of faunal boxes for birds, bats and invertebrates, as well as creating connectivity for hedgehogs.	**Compensation** *and* **Enhancement**	**Minor Negative** Residual net loss in Habitat Units
Damage / pollution of retained habitat and Howley Beck	The CEMP will detail the protection of retained habitats (namely the tall herb community and Howley Beck) during construction.	**Mitigation**	**Neutral** Retained habitat protected.
Degrading connectivity along Howley Beck corridor and the KWHN	The CEMP will detail the protection of the Howley Beck corridor, specifically the use of artificial lighting and maintaining a darkened corridor. The BMP and landscaping plans will work in combination to improve the quality of riparian habitat alongside the beck and strengthen its connectivity for groups such as bats.	**Mitigation** *and* **Enhancement**	**Neutral** Connectivity maintained through the Site along Howley Beck
Spread of INNS	The IWMP will outline how Himalayan balsam can be brought under control, so as to prevent its spread during site clearance / construction. Long term management will be required to keep the infestation in check, however permanent eradication is unlikely due to upstream material.	**Mitigation**	**Minor Positive** Control of INNS

7. Biodiversity Net Gain

7.1. The predicted change in Biodiversity score has been calculated using the Natural England Biodiversity Metric 2.0 Calculation Tool - Beta Test December 2019 Update. Areas for built development have been estimated using plans provided by the client.

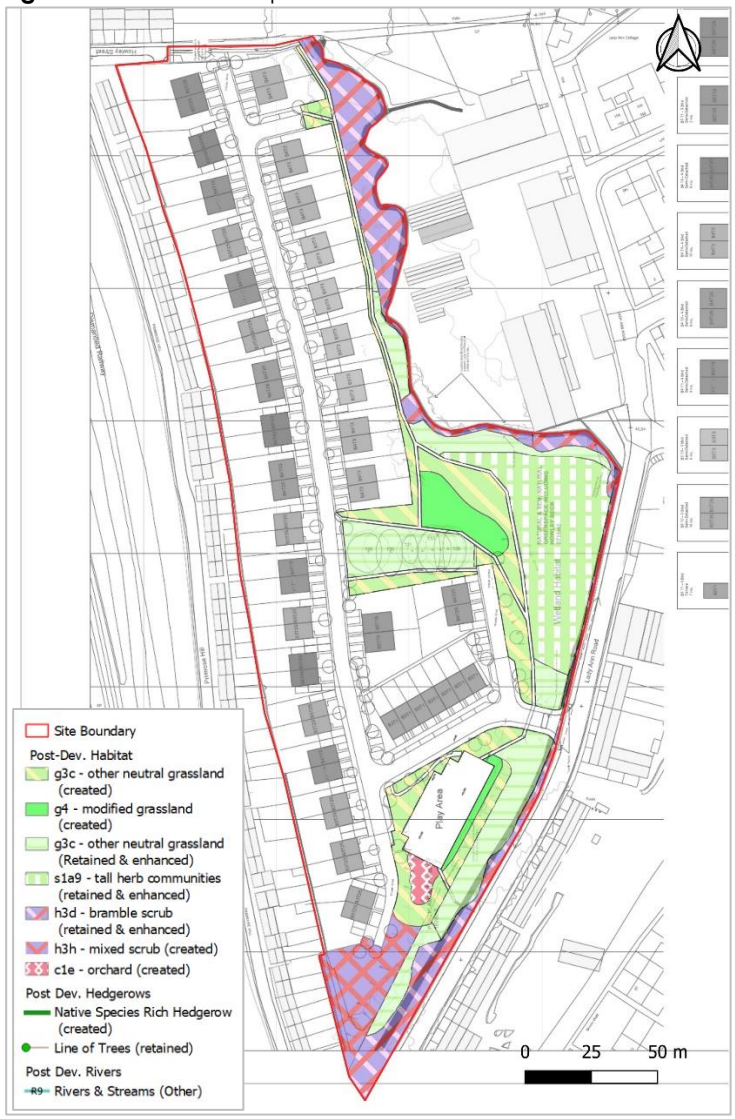
7.2. The figures generated are based on the habitats that could be created under a Biodiversity Management Plan. If a BMP is not produced or properly implemented, the predicted change in Biodiversity score shown in the Headline Results Table (right) can not be relied upon, and an overall Net loss is likely to be incurred.

7.3. This exercise identifies an overall Net Loss of -6.11 Habitat Units (-35.04%), and a Net Gain of +1.77 Hedgerow Units (+214.30%) and +0.64 River Units (+24.41%).

7.4. The client has been provided with a copy of the Biodiversity Metric 2.0 Calculation Tool excel spreadsheet. This will be made available for review if required.

On-site baseline	*Habitat units*	17.45
	Hedgerow units	0.83
	River units	2.63
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	*Habitat units*	11.34
	Hedgerow units	2.60
	River units	3.27
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement &	*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*	-6.11
	Hedgerow units	1.77
	River units	0.64
Total net % change (including all on-site & off-site habitat creation + retained habitats)	*Habitat units*	-35.04%
	Hedgerow units	214.30%
	River units	24.41%

Figure 7.1 Post development Habitats



8. Timing Issues

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

9. Cumulative Effects

9.1. No in-combination effects have been identified.

10. Offsite Measures or Compensation

10.1. Despite on-site mitigation and compensation, an overall net loss of -6.11 Habitat Units is predicted for the proposed development. Should the LPA require a 'no net loss' in biodiversity to be achieved here, offsetting will be required. The details of delivering a net neutral or net gain status through offsetting would need to be agreed with the LPA.

10.2. An overall net gain is achievable for River and Hedgerow Units through on-site mitigation/ compensation – assuming the Biodiversity Management Plan (see Brooks Report ER-3787-01-B) is implemented. Offsetting for these two receptors is therefore not required.

11. Enhancement

11.1. 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 document to be produced as a standard condition of planning.

12. Monitoring

12.1. The CEMP document will detail the role of and Ecological Clerk of Works (ECoW) in overseeing protection measures.

12.2. 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. 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.

13.2. Detailed bat survey will be required on any tree scheduled for removal, prior to any works commencing. Should roosting be confirmed, a European Protected Species Mitigation Licence will need to be secured prior to works commencing.

14. Conclusion

14.1. Mitigation to be agreed by standard conditions of planning will be able to address all significant effects resulting from the development.

14.2. An overall net loss in Habitat Units is predicted and offsetting will be required to achieve a net neutral or net gain for biodiversity. Nets gains are achievable for Hedgerow and River Units if the mitigation proposed is undertaken.

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

Chanin, P. (2003) *Ecology of the European Otter*. Conserving Natura 2000 Rivers Ecology Series No. 10, English Nature.

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

English Nature (2004) Bat Mitigation Guidelines. English Nature, Peterborough.

English Nature (2001) Great Crested Newt Mitigation Guidelines. http://www.naturalengland.org.uk/Images/GreatCrestedNewts_tcm6-21705.pdf

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

Strachan and Moorhouse (2006), Watervole Mitigation Handbook, University of Oxford

Appendix 1 – Photographs (15.01.2020)

Tall herb fen habitat	Howley Beck	Rough neutral grassland
		
Bracken	**Dense Bramble scrub**	**Stands of Introduced shrubs**
		

Line of trees	Spring and stream	Scattered trees