

Ecological Impact Assessment North Bierley, Phase 2

Keyland

Report Reference: ER-5528-06-C

01/11/2021

Report Title:	Ecological Impact Assessment North Bierley, Phase 2
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Summary

The proposals have avoided 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 a Biodiversity Management Plan (BMP).

As the current application is for outline planning permission, detailed proposals have not been made available. However, based on the proposed layout, there is ample opportunity for habitat retention, enhancement and creation and an overall net gain in Habitat Units seems feasible.

1. Introduction

1.1.1. Brooks Ecological Ltd was commissioned by Keyland to carry out an Ecological Impact Assessment (EcIA) for a Site referred to as *Land at North Bierley, Phase 2*, (grid reference SE181271).

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 ^{1, 12 and 13}		
Surveys, Sites, Species and Habitats	3. Adequate ¹⁴ and up-to-date ¹⁵ : a. Desk study has been undertaken ¹⁶ b. Phase 1 habitat survey (or equivalent) has been undertaken ¹⁷ c. Phase 2 ecology surveys have been undertaken (where necessary) ¹⁸		
	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 ¹⁹ 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 ⁴		
	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 ²⁰ 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 ²¹		
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 ²² based on sound professional judgement ²³ 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

2.1. Scope of Assessment

- 2.1.1. The application site 'the Site' comprises part of a water treatment works and a series of grazed fields alongside a small section of Hunsworth Beck which passes through the eastern extent. 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 May 2021. ER-5528-01. June 2021.
 - Riparian Mammal carried out by Brooks Ecological in June 2021. ER-5528-02. July 2021.
 - Bat Activity carried out by Brooks Ecological in August / October 2021. ER-5528-03. October 2021.
 -
 - White-clawed Crayfish carried out by Brooks Ecological in July 2021. ER-5528-05. July 2021.

2.2. Desk Study

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

2.3. Field Survey

- 2.3.1. The following dedicated field survey 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
- Riparian Mammal
- Bat Activity Surveys – Transect and Remote Monitoring
-
- White-clawed Crayfish Survey

Figure 2.1 Site area under assessment (red line)

2.4. Assessment Method

2.4.1. 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

2.4.2. 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.

2.4.3. 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

2.4.4. 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:

3.2. Designated Sites and Conservation Areas

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

3.2.2. One non-statutory designation is of potential relevance to the development, with a very small part located adjacent to the Site. This being Hanging Wood Local Wildlife Site, designated for its Wd1- ancient and semi-natural woodland. The majority of Hanging Wood which borders the Site does not meet the criteria for Wd1 and is not designated.

3.2.3. Part of the southern grassland within the Site, Hunsworth Beck and all of Hanging Wood is designated under Kirklees Wildlife Habitat Network.

3.3. Habitats

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

3.4. Potential future changes to the baseline

3.4.1. The Site's use and ecological baseline will likely be unchanged until the time of the proposed development. If left unmanaged/un-grazed, habitats g3c, 351 and u1c would likely succeed to taller ruderal vegetation and native scrub over time.

Figure 3.1 The Site's habitats



3.4.2. 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
351 & u1c	Habitats of Low or Very Low Distinctiveness.	Water treatment tank and very recently cleared ground part of the water treatment remedial works. Both devoid of any significant vegetation. 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 process.	Negligible
g3c	Other Neutral Grassland	Two distinct areas- the first is the largest section which covers the west and south of the Site and comprises former grazed pasture, with remnant field boundaries (drystone wall and fencing) bisecting the grassland. The sward varies throughout, likely due to variable soil conditions but, across all, the diversity is low and comprises a range of common grasses and forbs; some localised areas of scattered tall ruderal and scrub. The second area whilst keyed out as other neutral grassland is more appropriately recognised as being a tall ruderal herb community, formerly being a sludge bed. For the most part, this comprises nettle and Himalayan balsam, alongside a range of coarse grass species. This is a common habitat type locally and it does not support rare or otherwise notable species here. Part of the southern grassland is mapped as Kirklees Wildlife Habitat Network (KWHN). Loss will be mitigated / compensated through the Biodiversity Net Gain process - which will need to target grassland habitat on/off site.	Local Level (due to mapping as KWHN)
h3h	Mixed Scrub	Along the banks of Hunsworth Beck, dense scrub has developed which includes invasive weeds. Scrub also encircles the area of grassland between Hunsworth Beck and Hanging wood. This is a common habitat type locally and it does not support rare or otherwise notable species here. Mapped as KWHN. Loss will be mitigated / compensated through the Biodiversity Net Gain process - which will need to target scrub habitat on/off site.	Local Level (due to mapping as KWHN)
r9	Rivers and Streams	Two stretches of watercourse- the first is a small watercourse found to the north-west apparently issuing close to the M606, which is then culverted c.20m into the Site. Where it passes through the Site it has been damaged by grazing and more recently by ongoing groundworks to the north of the Site. The second section of watercourse is Hunsworth Beck which passes along the Site's eastern boundary, before it enters for c.210m and then is culverted under the M62. The watercourse is known to have suffered from large pollution events in recent years. The banks are occupied by the aforementioned mixed scrub habitat. Hunsworth Beck is mapped as KWHN. Impacts upon both watercourses should be avoided.	Local Level

3.4.3. 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 3.0 Spreadsheet Calculator.

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

North Bierley, Phase 2

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 Total habitat units
Ref	Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance		
1	Urban	Urban - Vacant/derelict land/ bareground	0.91	Low	Poor	Low	Location ecologically desirable but not in local strategy	Same distinctiveness or better habitat required	2.00
2	Urban	Urban - Artificial unvegetated, unsealed surface	1.3	V.Low	N/A - Other	Low	Area/compensation not in local strategy/ no local strategy	Compensation Not Required	0.00
3	Grassland	Grassland - Other neutral grassland	0.39	Medium	Poor	Low	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required	1.72
4	Grassland	Grassland - Other neutral grassland	1.13	Medium	Poor	Low	Within area formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	5.20
5	Grassland	Grassland - Other neutral grassland	2.85	Medium	Poor	Low	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required	12.54
6	Heathland and shrub	Heathland and shrub - Mixed scrub	0.37	Medium	Poor	Low	Within area formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	1.70
7	Urban	Urban - Street Tree	0.01	Low	Moderate	Low	Within area formally identified in local strategy	Same distinctiveness or better habitat required	0.05
8									
9									
10									
11									
Total site area ha			6.95					Total Site baseline	23.20

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 DEFRA's 2.0 Biodiversity Metric Tool based on guidance (DEFRA 2021) to continue its use from the Preliminary Ecological Appraisal. 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.

North Bierley, Phase 2								
C-1 Site River Baseline								
Condense / Show Columns			Condense / Show Rows					
Main Menu			Instructions					
Existing river type			Habitat distinctiveness	Habitat condition	Strategic significance		Suggested action	Ecological baseline
Baseline ref	River type	length KM	Distinctiveness	Condition	Strategic significance	Strategic significance		Total river units
1	Rivers & Streams (Other)	0.18	Medium	Moderate	Within Local Plans	High strategic significance	Avoid	2.484
2	Rivers & Streams (Other)	0.02	Medium	Poor	Low potential/ action not identified in any plan.	Low Strategic Significance	Avoid	0.08
3								
4								
5								
Total site length KM		0.20					Total Site	2.56

3.5. Species and Species Groups

3.5.1. 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.

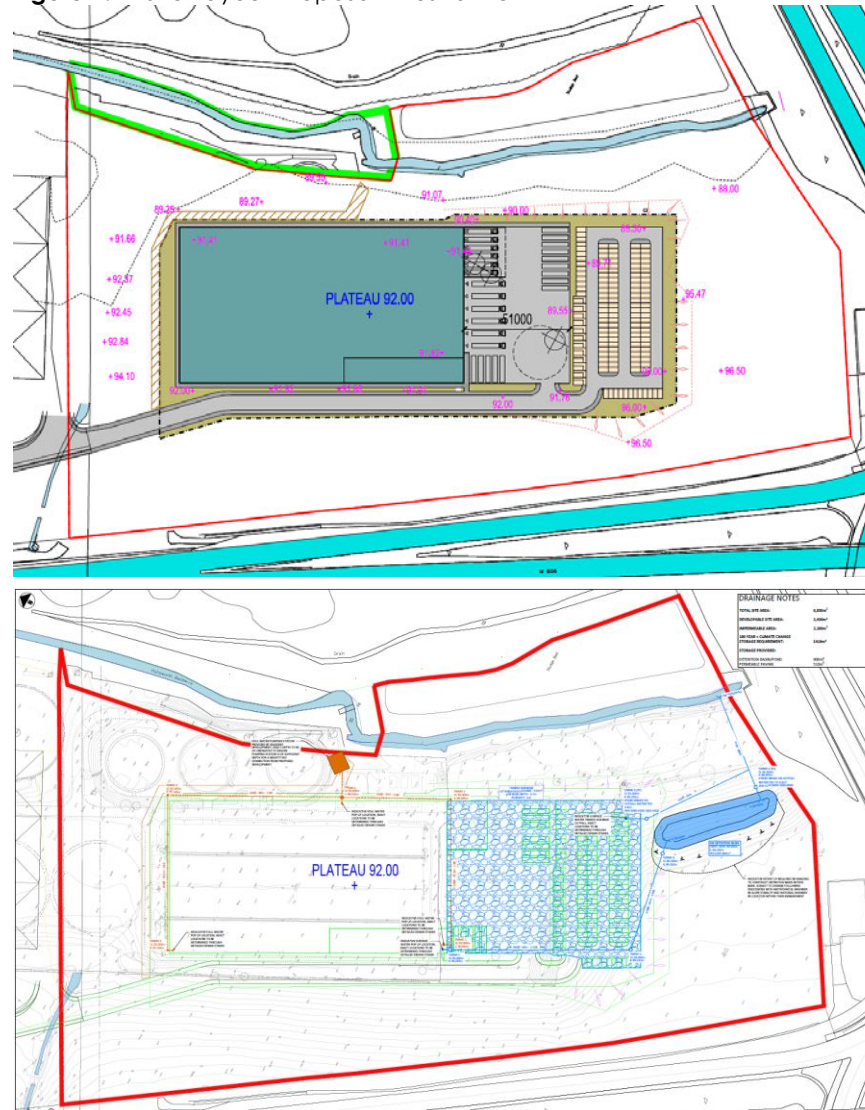
Table 3.2 Summary of relevant faunal issues

Species/ Group (Feature)	Notes	Valued at what scale
Riparian Mammals	Surveys have confirmed likely absence of protected species	N/A
Bats	Surveys have found the Site to attract low-level, irregular foraging by a limited range of common bat species.	Site Level
White-clawed crayfish	Surveys have confirmed likely absence.	N/A
Birds	The Site will support a typical range of nesting birds and provide opportunities for foraging. Standard precautions apply regarding clearance of vegetation.	Site Level
Invasive non-native plant species	Himalayan balsam is present along Hunsworth Beck and to the east of the Site whilst Japanese knotweed is present along Hunsworth Beck.	Site level

4. Description of the Proposed Development

- 4.1.1. Outline planning application for a single unit with an associated access road.
- 4.1.2. With it being outline planning permission, a high level layout proposal is all that is currently available. However, land to the north of Hunsworth Beck will be unimpacted, as will Hunsworth Beck itself.
- 4.1.3. Impacts are assessed on the basis of the effects which result on the valued habitats, species or Site's which have been identified above.

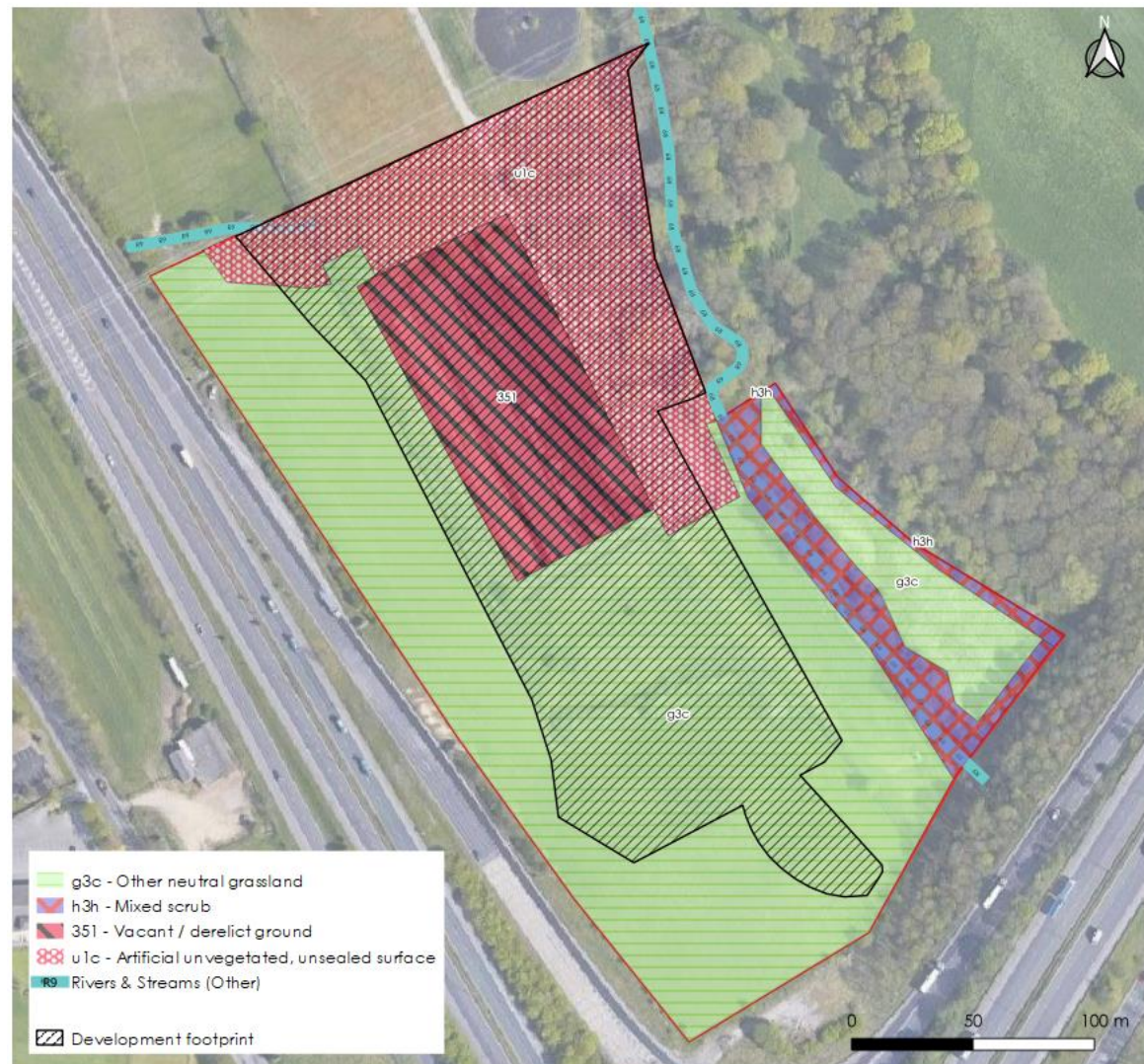
Figure 4.1 Site Layout Proposal - Illustrative



4.2. Impacts and Effects of Development

- 4.2.1. Figure 4.2 shows the development footprint (black hatch) in relation to the mapped habitats.
- 4.2.2. The development footprint comprises the new Unit, access road, a buffer area surrounding it and a SUDS to the north and south of the Unit.
- 4.2.3. Half of the development footprint comprises habitats of very low / low distinctiveness with the other half part of the other neutral grassland.

Figure 4.2 Development footprint in relation to existing on-Site habitats



4.2.4. Table 4.1 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 affect connectivity through and around the Site. Habitat loss will be likely to effect identified features of the Site.	Vacant / derelict ground Artificial unvegetated, unsealed surface Other neutral grassland Birds Bats KWHN	Local
1b	Damage to retained habitat such as by storage of clearance machinery or materials in these areas.	Other neutral grassland Mixed Scrub Rivers & Streams KWHN	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 Riparian fauna Off-Site- Hanging Wood LWS KWHN	Local
1d	Pollution. There is the potential for sediment or chemicals to be released from the Site, or into retained habitat during this stage.	Off-Site- Hanging Wood LWS KWHN Other Neutral Grassland Mixed Scrub Rivers & Streams	Local

1e	Potential effects on Protected Species . Precautions will be required to ensure that impacts on nesting birds, and the spread of Invasive Non-Native Species (INNS) can be avoided.	Protected Species Invasive Non-Native Species	Criminal Offence
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	Impact	Stage
2	Construction activities will take place over a c.1-2 year period. Construction of roads and sewers will be followed by footings and then above ground construction of the Unit.	<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 neutral grassland Mixed Scrub Rivers & Streams KWHN	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 Riparian fauna Off-Site- Hanging Wood LWS KWHN	Local
2c	Pollution . There is the potential for sediment or chemicals to be released from the Site during this stage.	Off-Site- Hanging Wood LWS KWHN Other Neutral Grassland Mixed Scrub Rivers & Streams	Local

	Impact	Stage
3	Landscaping activities will take place period during the construction period and will, be phased around completion of roads and the Unit.	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.	Other neutral grassland Mixed Scrub Rivers & Streams KWHN	Local
3b	Pollution. There is the potential for sediment or chemicals to be released from the Site during this stage.	Off-Site- Hanging Wood LWS KWHN Other Neutral Grassland Mixed Scrub Rivers & Streams	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. The Unit will be occupied, and traffic and services will access the Site regularly. Pedestrian access across the Site will increase. Retained and created habitat will be managed by the Site Management Company.	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 neutral grassland Mixed Scrub Rivers & Streams KWHN	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.	Birds Bats Riparian fauna Off-Site- Hanging Wood LWS KWHN	Local
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

5. Mitigation & Residual Effects

- 5.1.1. Where feasible, the avoidance of unnecessary impacts has been considered at the design stage and worked into the Site Layout plan. 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.
- 5.1.2. Habitat creation and management will need to be applied to the proposals to achieve the calculated BNG position. 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.
- 5.1.3. 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.
- 5.1.4. 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)
 - An Invasive Weeds Management Plan
 - Detailed Landscaping Plans
 - A Lighting Plan

5.1.5. 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.	<i>Clearance</i>

	Significant Effects - in the absence of mitigation	Mitigation / Compensation	Residual Magnitude
1a	Direct habitat loss.	Complies with current Biodiversity Net Gain policy. The CEMP will detail the protection of retained habitats. The BMP will detail the enhancement of retained habitat and the creation of new.	Neutral / Minor Positive
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, Hunsworth Beck, KWHN and Hanging Wood LWS.	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, watercourses and off-Site Habitat (including Hanging Wood LWS) 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 on nesting birds, and the spread of Invasive Non-Native Species (INNS) can be avoided.	The CEMP will detail necessary pre-works checks for nesting birds and INNS.	Avoided entirely.

	Impact	Stage
2	Construction activities will take place over a c.1-2 year 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	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 and off-site 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, off-Site habitats 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.	<i>Construction</i>

	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

	Significant Effects - in the absence of mitigation	Mitigation / Compensation	Residual Magnitude
3b	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 Hunsworth Beck and the location of bunded compounds for storage of machinery and materials.	Neutral
3c	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.	

	Impact	Stage
4	The Site will be populated. The unit will be occupied, and traffic and services will access the Site regularly. Pedestrian access across the Site 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 will need to be designed to accommodate buffering of sensitive habitats.	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.	Landscaping will need to be designed to maximise the amount of habitat which groups such as birds can use for cover, and to provide habitat connectivity.	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

6. Biodiversity Net Gain

- 6.1.1. 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).
- 6.1.2. 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.
- 6.1.3. Calculations setting out the position of the proposals in relation to BNG are set out overleaf. These are based on the Proposed Layout and an indicative retention, enhancement and creation habitat strategy. 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 (Fig 7.1 below). These would be covered by a standard Landscape Masterplan.
- 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 historically have been scoped out of Impact Assessments.

6.2. Net Gain Calculations

- 6.2.1. Whilst the calculations are based on an indicative ecological strategy only (figure 7.1), given the good opportunities for habitat retention, enhancement and creation, it seems likely that the resulting post development score is feasible.
- 6.2.2. Based on figure 7.1, a net gain in habitat units is achieved, with a post development score of 23.56 Habitat Units (10.17%) predicted.
- 6.2.3. This is based on large areas of the 'poor' other neutral grassland retained and enhanced to moderate condition and through new native tree planting. A circa 10m buffer is also created along Hunsworth Beck and the

M62 embankment boundary to ensure the watercourse and off-site LWS are protected and to contribute to the KKWN. A large SuDS is also created to the north-east of the Site- there is opportunity here for this to be ecologically designed and which would increase the metric score.

- 6.2.4. Hunsworth Beck and land to the east will be unimpacted by the proposals and, at this stage, opportunities for enhancement have not been built into the metric calculator. However, this area (mixed scrub and other neutral grassland) could be the location of ecological enhancement should the development footprint be amended.
- 6.2.5. Once comprehensive plans have been provided, the metric calculations will be updated and a BEMP / CEMP produced to detail the retention, enhancement and creation of this habitats.
- 6.2.6. The client has been provided with a full copy of the Biodiversity Metric 3.0 Calculation Tool.

Figure 6.1 Post development habitat types *Indicative only

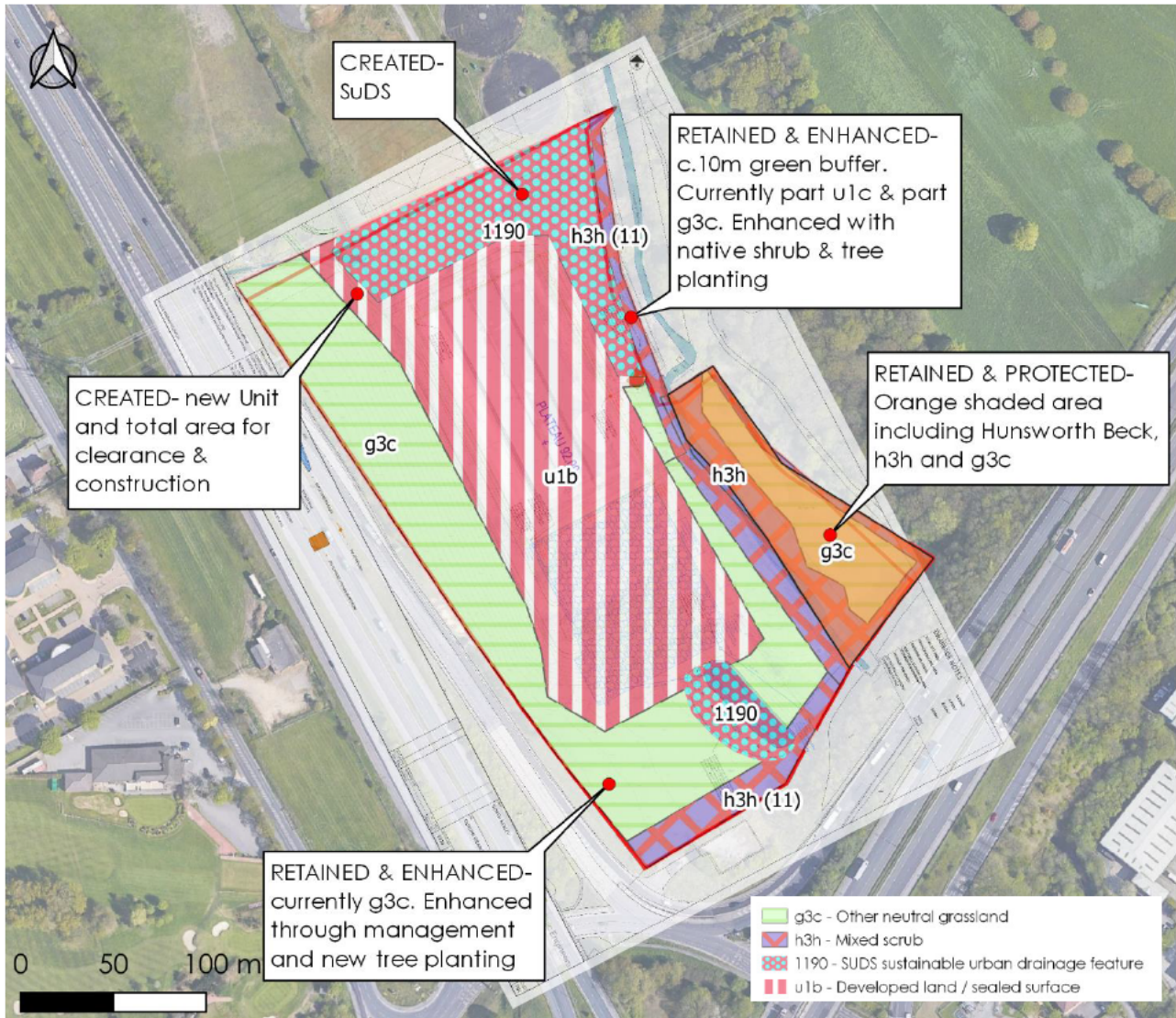


Table 7.2 Habitat Enhancement Summary extracted from Biodiversity Metric 2.0 Calculator tool *based on Figure 7.1

North Bierley, Phase 2													
A-3 Site Habitat Enhancement													
Condense / Show Columns		Condense / Show Rows											
Main Menu		Instructions											
Post development/ post intervention habitats													
Baseline habitats		Change in distinctiveness and condition			Area (hectar es)	Distinctiv ess	Condition	Ecological connectivit y score	Strategic significance	Temporal multiplier	Difficulty of enhancem ent	Habitat units delivered	Assessor comments
Baseli ne ref	Baseline habitat	Proposed habitat (Pre-populated but can be overridden)	Distinctiveness change	Condition change									
1	Urban - Vacant/delinquency land/ bareground	Heathland and shrub - Mixed scrub	Low - Medium	Lower Distinctiveness Habitat - Moderate	0.12	Medium	Moderate	Low	Location ecologically desirable but not in local strategy	3	Low	0.98	Within 10m buffer of Hunsworth Beck, u/o enhanced through new native scrub & tree planting. See figure 7.1 of EoIA. g3c enhanced through new native scrub & tree planting. See figure 7.1 of EoIA. Within KWHN
5	Grassland - Other neutral grassland	Grassland - Other neutral grassland	Medium - Medium	Poor - Moderate	2.45	Medium	Moderate	Low	Within area formally identified in local strategy	10	Low	13.16	
					Total site area	2.57						Enhancement total	20.14

Table 7.3 Headline Summary extracted from Biodiversity Metric 3.0 Calculator tool *based on figure 1

North Bierley, Phase 2

Headline Results

Return to results menu

On-site baseline	Habitat units	23.20
	Hedgerow units	0.00
	River units	2.56
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	25.56
	Hedgerow units	0.00
	River units	2.56
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	2.36
	Hedgerow units	0.00
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	Habitat units	10.17%
	Hedgerow units	0.00%
	River units	0.00%

7. Timing Issues

- 7.1.1. An updating INNS weed survey should be carried out pre-commencement.

8. Cumulative Effects

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

9. Offsite Measures or Compensation

- 9.1.1. Based on the Layout Proposal and indicative ecological strategy, the scheme is expected to result in a net gain for biodiversity on-site. The calculations will be updated when a detailed Layout and landscaping become available.
- 9.1.2. Should the application result in a net loss, 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 third-party broker.

10. Enhancement

- 10.1.1. Opportunities to provide enhancement, and how to secure this, have been identified in the PEA and will be detailed in the BMP and Landscaping Plan documents to be produced as a standard condition of planning.

11. Monitoring

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

12. Policy and Legislation

- 12.1.1. 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.

13. Conclusion

- 13.1.1. Mitigation to be agreed by standard conditions of planning will be able to address all significant effects resulting from the development.
- 13.1.2. Based on the indicative ecological strategy, the scheme is able to deliver a net gain in Habitat Units on site.

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