BIODIVERSITY NET GAIN DESIGN STAGE ASSESSMENT

May 2022

Farington Cricket Ground,
Woodcock Estate,
Farington

URBAN GREEN

QUALITY MANAGEMENT

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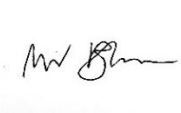
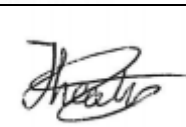
Checked By:	Mark Blacker	**Signature:**		**Qualifications:**	Senior Ecologist, MSc, ACIEEM
Checked By:	Jake Healy	**Signature:**		**Qualifications:**	Assistant Ecologist, MSc, Qualifying CIEEM

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Rev:	**Date:**	**Issue/Purpose/ Comment:**	**Prepared:**	**Checked:**
02	09/02/2022	Updated Landscape Designs	MM	MB
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06	19/07/2022	Updated Landscape Designs	SB	-

NON-TECHNICAL EXECUTIVE SUMMARY

This Biodiversity Net Gain Assessment has been prepared by Urban Green on behalf of Lancashire County Council (LCC) to support a planning application for a proposed Cricket Facility comprising 2No. cricket ovals and associated pavilion building and spectator seating, covered cricket nets, access, parking, landscaping and associated works (including temporary event overlay facilities on ticketed match days), realignment of Public Right of Way Ref 9-12-FP 1, 7-4 -FP 6 and Public Right of Way Ref 9-12-FP 2, 7-4 -FP 5, at land at Woodcock Estate, Farington.

Urban Green have been appointed to complete a Biodiversity Net Gain Design Stage Assessment in order to assess the change in value to the environment provided by the proposed development.

The Assessment was conducted using the Biodiversity Metric 3.0 to calculate the pre-and post-development biodiversity habitat units of the site for the proposed development. The results of this calculation are summarised in the following table:

		Habitat Unit Change					Net change in Biodiversity	
	On-site baseline	Retained	Lost	Enhanced	Created	On-site post development	Habitat units	%
Area Units	28.5	0.4	28.1	-	47.29	47.69	19.19	**67.33**
Linear Units	6.38	3.66	2.72	-	3.28	6.94	0.56	**8.78**
River Units	1.82	0.65	1.17	-	1.47	2.11	0.3	**16.33**

Overall, this assessment does reach a net gain in biodiversity and meets local and national planning requirements and all trading rules have been satisfied.

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1 Introduction

1.1 Background to the Scheme

This Biodiversity Net Gain Assessment has been prepared by Urban Green on behalf of Lancashire County Council to support a planning application for the proposed Cricket Facility comprising 2No. cricket ovals and associated pavilion building and spectator seating, covered cricket nets, access, parking, landscaping and associated works (including temporary event overlay facilities on ticketed match days), realignment of Public Right of Way Ref 9-12-FP 1, 7-4-FP 6 and Public Right of Way Ref 9-12-FP 2, 7-4-FP 5.

Urban Green have been appointed to complete a Biodiversity Net Gain Design Stage Assessment in order to assess the change in value to the environment provided by the proposed development.

The author of the report is Senior Biodiversity Consultant Maisie McKenzie, ACIEEM, MSc. Maisie has experience providing ecological consulting services including Biodiversity Net Gain assessments for a range of development schemes across the UK, including residential and commercial schemes. Maisie is a Suitable Qualified Ecologist to conduct Biodiversity Net Gain as defined within British Standard: BS 8683:2021

1.2 Site Context

The site is located at National Grid Reference SD 54783 24726 and comprises a total area of approximately 13.7ha (see Figure 1).

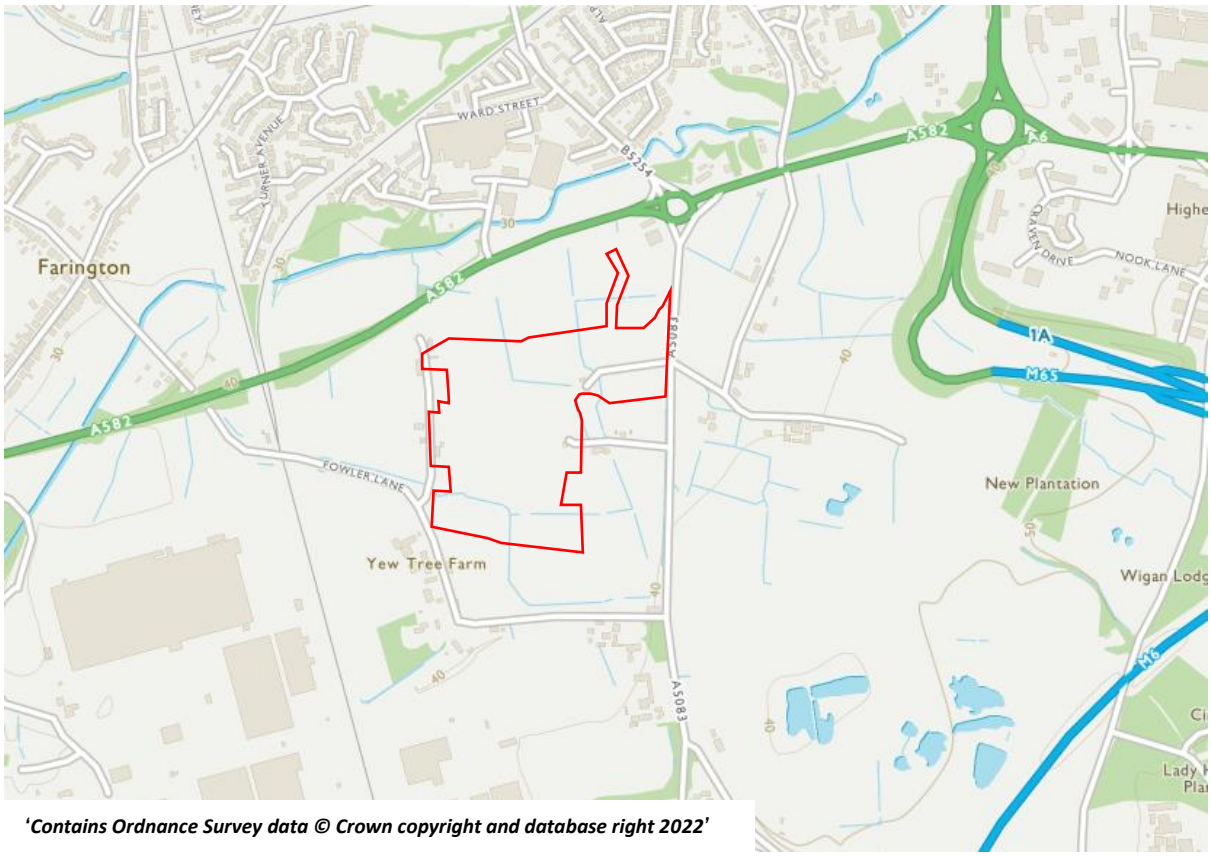

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Figure 1 – Site Extent

The site is located in suburban area of Farington, approximately 2.5km southwest of Wigan town centre. Residential estates are located to the south and west with commercial buildings to the east. A series of broadleaved woodland areas are located to the south and east connecting the wider agricultural landscape to the southeast.

The site consists of seven arable fields bounded by native hedgerows with mature trees. An area of plantation woodland is present to the south of the site and a stream runs adjacent to the southern boundary within the site.

1.3 Purpose of this Report

This report has been produced to document the methods, results and conclusions of a BNG Assessment that was undertaken on site. The advice herein is based on both desk and field-based studies and intends to fulfil the following purposes:

- Ensure the core principles of Biodiversity Net Gain including the mitigation hierarchy are applied;
- Identify the baseline habitats present on site (pre-development), assess the condition and provide an indication of the ecological value of those habitats;
- Identify the post development habitats present on site, assess the possible target condition and provide an indication of the likely importance of those habitats;
- Calculate the overall change in biodiversity score from pre- to post-development habitats (measured as habitat units);

1.4 Planning Context

BNG means leaving biodiversity in a better state than it was before. As part of the Government's 25 Year Environment Plan, this requirement is being introduced and mandated for all developments. National planning policy and several Local Plans already require developments to deliver BNG.

Currently the National Planning Policy Framework (NPPF, 2021) details:

Paragraph 174 of the NPPF states:

Planning policies and decisions should contribute to and enhance the natural and local environment by:

> d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

Currently the Central Lancashire Local Plan Policy details:

Policy 22 Biodiversity and Geodiversity States:

Conserve, protect and seek opportunities to enhance and manage the biological and geological assets of the area, through the following measures:

> (a) Promoting the conservation and enhancement of biological diversity, having particular regard to the favourable condition, restoration and re-establishment of priority habitats and species populations;
>
> (b) Seeking opportunities to conserve, enhance and expand ecological networks;

(c) Safeguarding geological assets that are of strategic and local importance.

2 Methods

2.1 Biodiversity Net Gain

Biodiversity Net Gain is defined as "development that leaves biodiversity in a better state than before". This assessment was conducted using the Biodiversity Metric 3.0 from Natural England.

The Biodiversity Metric 3.0 uses habitat features as a proxy measure for capturing the value and importance of nature. The metric considers the size, ecological condition, distinctiveness, and location of habitats assessing 'Area', 'Hedgerow' and 'River' habitat units independently. The metric enables assessments to be made of the baseline and targeted post development biodiversity value of a site.

2.2 Good Practice Principles

To ensure holistic development that makes a lasting positive change to the site's biodiversity the Good Practice Principles as detailed in Biodiversity Net Gain: Good Practice Principles for Development (Baker, et al., 2019). Key principles include:

- Following the 'Mitigation Hierarchy':
    - Avoid impacts on biodiversity
    - Minimise impacts on biodiversity
    - Compensate for biodiversity losses on site
    - Compensate for biodiversity loss off site
- Avoid irreplaceable habitats and losing biodiversity that cannot be offset elsewhere;
- Address risks including difficulty and time of habitat creation and enhancement;
- Make a measurable net gain contribution calculated with a suitable metric with limitation and assumptions clearly identified;
- Achieve the best outcome for biodiversity creating lasting long-term benefits that exceed current expectations;

2.3 Desk Study

A desk study was undertaken to provide information of habitat types, condition, and strategic significance both on site and within the wider area. Due to the size of the site and being located within the rural-urban fringe of Leyland a 1km radius was deemed an appropriate distance for the Zone of Influence. Sources of information for the desk study are displayed in Table 1.

Source	Date Consulted	Information Sought
Multi-Agency Geographic Information for the Countryside (MAGIC) online database	11/01/2022	Identify statutory nature conservation designation.

Source	Date Consulted	Information Sought
Lancashire Ecological Record Centre (LERN)	11/01/2022	Locally designated wildlife sites within 1km of site boundary.
Environment Agency Main River Map	11/01/2022	Location and information regarding adjacent river habitats.
Natural England Priority Habitat Inventory (England)	11/01/2022	Information regarding priority habitats within the zone of influence

2.4 Site Mapping

2.4.1 Sources of Information

Table 2 – Site Mapping Sources of Information

Source	Date Consulted	Information Sought
Ecological Assessment BDP 2020	20/12/2021	Phase 1 Habitat Survey map and description of existing habitat condition.
Ecological Walkover Urban Green 2022	20/12/2021	
Arboricultural Impact Assessment (AIA), Urban Green 2022	05/01/2022	Tree Root Protection Areas (RPA) for existing trees on site and details of trees scheduled for removal/retention as part of the development on site.
Soft Landscape plan (UG_1053_LAN_GA_DRW_01)	27/10/2020	Habitat areas and conditions as to be included within the planning layout (post-development) for site.
The Biodiversity Metric 3.0 (JP029) *Natural England Publications (hyperlink)*	01/12/2021	The Biodiversity Metric 3.0, including the tool itself, user guides and reference documentation associated with the tool.

2.4.2 Existing Habitat (Pre-Development)

The site was subject to a field survey as detailed within the Ecological Assessment (BDP, 2020). The site was subject to a further field survey on the 14th of December 2021, by Senior Biodiversity Consultant Maisie McKenzie. The weather conditions were 6°c, clear (2/8 oktas), wind speed 3 Beaufort scale.

The methods were based on the standard 'Phase 1' habitat survey technique (JNCC, 2010) which was extended to include any relevant information on evidence or suitability for use by protected or notable species. Site habitats, extent, quality and botanical species abundance was recorded for all habitats present on site. Additionally, a tree survey was conducted on site by Urban Green in September 2021, which obtained information on site trees including root protection areas (RPAs).

These habitats were subsequently mapped using ESRI ArcGIS Pro software, and habitat areas and lengths were calculated (Appendix 1).

Habitat types were converted to UKHab classifications (The UK Habitat Classification Working Group, May 2018) using the UK Habitat Classification V1 guidance tool based on the assessor's judgment of how JNCC habitat descriptions best meet the criteria of the UKHab classification.

2.4.3 Planning Layout (Post-Development)

The planning layout as provided by Urban Green (UG_1016_LAN_GA_DRW) (see Appendix 2) was transferred from DWG. format into ESRI ArcGIS Pro software, and habitat areas and lengths calculated.

2.5 The Biodiversity Metric 3.0

The BNG calculation was undertaken utilising The Biodiversity Metric 3.0 from Natural England. The Biodiversity Metric 3.0 uses habitat features as a proxy measure for capturing the value and importance of nature. The metric takes into account the type, size, ecological condition and location of habitats. The metric enables assessments to be made of the present and forecast future biodiversity value of a site.

2.6 Habitat Scoring

The Biodiversity Metric 3.0 supplies reference documents and user guides in which to accurately evaluate and assess the different habitats on site as to their condition, distinctiveness and strategic significance. A summary of the methodology for each assessment undertaken is demonstrated in the following sections.

2.6.1 Condition

The Biodiversity Metric 3.0 uses the term habitat 'condition' as one of its measures of the quality of a habitat.

'Condition Sheets' are provided for each area habitat type. These list positive indicators for each habitat and indicate how many of these indicators need to be present to meet certain thresholds of condition. These condition sheets can be found in "The biodiversity metric 3.0: habitat condition assessment sheets". Completed condition sheets for this assessment can be found in section 3.

Table 3 details the condition sheets used within this assessment.

Table 3 – Conditions sheets used for habitat assessment

Condition Sheet	Habitats Assessed
Area Habitats	
Grassland (low)	Modified grassland
Grassland (medium, high & very high)	Grassland - Other neutral grassland
Scrub	Heathland and shrub - Mixed scrub
Urban – Non-Priority Habitat	Urban - Sustainable urban drainage feature Urban - Vacant / derelict land / bare ground Urban – Developed land; sealed surface
Urban Trees	Urban – Urban Tree
Woodland and forest	Woodland and forest - Other woodland; broadleaved
Hedgerow Habitats	
Hedgerows	Native hedgerow Native hedgerow - associated with bank or ditch Native hedgerow with trees Native hedgerow with trees - associated with bank or ditch
River Habitats	
Ditch	Rivers and streams – Ditches

2.6.2 Distinctiveness

The distinctiveness of each habitat is automatically assigned by the tool, based upon national records of the occurrence and rarity of each habitat. Table 4 provides the basis of the distinctiveness assessment.

Table 4 – Distinctiveness Assessment for Habitats

Distinctiveness Categories		
Category	**Scores**	**Multiplier**
Very High	8	Priority habitats as defined in Section 41 of the Natural Environment and Rural Communities (NERC) Act that are highly threatened, internationally scarce and require conservation action e.g. blanket bog.
High	6	Priority habitats as defined in Section 41 of the NERC Act requiring conservation action e.g. lowland fens.
Medium	4	Semi-natural habitats not classed as a Priority Habitat.
Low	2	Habitat of low biodiversity value. Temporary grass and clover ley; intensive orchard; rhododendron scrub.
Very Low	0	Little or no biodiversity value e.g. hard standing or sealed surface.

2.4.4 Strategic Significance

The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are in preferred locations for biodiversity and other environmental objectives. Ideally these

aspirations will have been summarised in a local strategic planning document which articulates where biodiversity is of high priority and the places where it is less so. Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement, such as Nature Recovery Areas, local biodiversity plans, National Character Area 14 objectives and green infrastructure strategies.

Table 5 – Strategic Significance Assessment for Habitats

Strategic Significance Categories	
Category	**Score**
High strategic significance High potential & within area formally identified in local policy	1.15
Medium strategic significance Good potential but not in area defined in local policy	1.1
Low Strategic Significance Low potential and not in area defined in local policy	1

2.6.3 Temporal Multiplier

For post development habitat creation or enhancement, a risk multiplier will be automatically applied by the tool to account for the period of diminished ecological value while the habitat reaches the targeted post development condition. This time and therefore risk multiplier differs between habitat types, if the habitat is being created or enhanced and how the habitat is to be managed. The predetermined multiplier is based on the average time to meet targeted condition assuming good practice principles and appropriate management strategies are applied.

2.6.4 Difficulty Multipliers

For post development habitat creation or enhancement, a risk multiplier will be automatically applied by the tool to account for the 'difficulty' of habitat-specific enhancement or creation. There are two separate difficulty multipliers assigned to each habitat, one for creation and one for enhancement/restoration, recognising that the technical challenges will not necessarily be the same for both.

2.7 MoRPH River Survey

Condition of the linear river habitat present on site was assessed by a Modular River Physical Survey (MoRPh Survey) undertaken by a certified ecologist. Assessment of linear river habitats condition is based on the extent and diversity of a number of physical features within in both the river channel and riparian as well as the extent and type of any human modifications. This assessment is implemented in two parts:

A desk-based reach-scale assessment to define river type of the homogenous reach of the river to be effected by development.

A field based sub-reach scale assessment that captures channel dimensions, physical features / habitats, vegetation structural features, and human interventions to assess the condition of the river at the development site, taking into account the type of river.

The field element of the assessment included, five MoRPh field surveys conducted on contiguous lengths (modules) of river. Each MoRPh module covers a river length that is approximately twice the

river width (1.5m). These five contiguous modules covered a sub reach of the river 15m in length. This was repeated three times to a total of three sub reaches which covers >20% of the total river length and also ensures characterization of any notable variation in river character.

The River Condition Assessment captures information on sediments, vegetation, morphological and water-related features; and the extent and severity of physical modification within the channel, channel margins, banks and riparian zone (to 10 m from the bank tops).

2.8 Constraints to the Survey

Whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.

The conclusions and recommendations detailed in this report are based upon the site redline boundary and the development proposals as outlined by the client at the time of writing. Should there be any changes to the site redline boundary or development proposals at a later stage, this assessment should be reviewed to determine whether any amendments or additional survey work is required.

Best possible effort was made during the mapping process to ensure that the habitat map accurately represents the area of habitats present on site. Some margin of error is possible due to the continuous and difficult to define nature of habitat boundaries, however this margin of error has been minimised using professional opinion of two experienced ecologists and up to date aerial imagery. As such this is not expected to be a significant constraint and affect the overall Biodiversity Net Gain Calculation provided within this report.

3 Pre-Development Habitat Assessment

Pre development baseline habitat condition was assessed following the methodology outlined in Section 2.6 and 2.7. Habitat descriptions and the results of this assessment are provided below. The habitats have been given reference numbers for clarity regarding in-text and the metric calculation (UG_1053_ECO_BNGCALC_02) which illustrates the numerical data. Full habitat descriptions can be found in the EA (BDP, 2020).

3.1 Area Habitats

3.1.1 1) Improved - Modified Grassland

Areas of improved grassland were present across the site. These areas are heavily managed to a short sward with areas of damage from machinery and livestock present.

Table 6 – Condition Assessment for Modified Grassland

Phase 1 Habitat Classification	Improved Grassland				
UK Hab Classification	Modified Grassland				
Condition Sheet	Grassland (Low)				
Condition Criteria 1.	6-8 species per m^2	Fail	Condition Criteria 5.	Cover of bare ground between 1 – 5%	Fail
Condition Criteria 2.	Sward height is varied	Fail	Condition Criteria 6.	Cover of Bracken <5% of ground cover	Pass
Condition Criteria 3.	Cover of scrub less than 20%	Pass	Condition Criteria 7.	Absence of invasive non-native species. Combined cover of damage and undesirable species less than 5% of total area.	Pass
Condition Criteria 4.	Physical damage evident in less than 5% of total grassland area	Fail			
Condition Poor	Passes 3 of 7 criteria				
Distinctiveness	Low				

3.1.2 2) Broadleaved Woodland - Other woodland; broadleaved

An area of plantation broadleaved woodland is present on the northern and southern periphery of the site.

Table 7 – Condition Assessment for Broadleaved Plantation Woodland

Phase 1 Habitat Classification	Broadleaved woodland		
UK Hab Classification	Other woodland; Broadleaved		
Condition Sheet	Woodland		
Indicator 1. Age distribution of trees	One age class present (Poor – 1 Point)	Indicator 8. Tree health	11-25% mortality and/or crown dieback or low risk pest or disease present (Moderate – 2 Points)

Indicator 2. Wild, domestic, and feral herbivore damage	Evidence of significant browsing pressure is present in 40% or less of whole woodland (Moderate – 2 Points)	Indicator 9. Vegetation and ground flora	No recognisable NVC community (Poor – 1 Point)
Indicator 3. Invasive plant species	No invasive species present in the woodland (Good – 3 Points)	Indicator 10. Woodland vertical structure	One or less storey across all survey plots (Poor – 1 Point)
Indicator 4. Number of native tree species	None to two native tree or shrub species across woodland parcel (Poor – 1 Point)	Indicator 11. Veteran trees	No veteran trees present in the woodland (Poor – 1 Point)
Indicator 5. Cover of native tree and shrub species	50 - 80% of canopy trees and 50 -80% of understory shrubs are native (Moderate – 2 Points)	Indicator 12. Amount of deadwood	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps (Poor – 1 Point)
Indicator 6. Open space within woodland	10-20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply (Good – 3 Points)	Indicator 13. Woodland disturbance	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground (Poor- 1 Point)
Indicator 7. Woodland regeneration	No class or coppice regrowth present in woodland (Poor – 1 Point)		
Condition Poor	Scores 20 (>26 – Poor)		
Distinctiveness	Medium		

3.1.3 3) Marshy Grassland- Other Neutral Grassland

An area of other neutral grassland was present on site. This area was unmanaged with a sward height of approximately 0.5m.

Table 8 – Condition Assessment for Other Neutral Grassland

Phase 1 Habitat Classification	Marshy Grassland				
UK Hab Classification	Other Neutral Grassland				
Condition Sheet	Grassland (Med-High)				
Condition Criteria 1.	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type	Fail	Condition Criteria 4.	Cover of bracken less than 20% and cover of scrub less than 5%	Pass
Condition Criteria 2.	Sward height is varied	Pass	Condition Criteria 5.	Absence of invasive non-native species. Combined cover of damage and	Fail

				undesirable species less than 5% of total area.	
Condition Criteria 3.	Cover of bare ground between 1% and 5%	Fail			

Condition Poor	Passes 2 of 5 criteria
Distinctiveness	Medium

3.2 Linear Hedgerow Habitats

3.2.1 1, 3, 9) Species Poor Hedgerow – Native Hedgerow with trees

Three native hedgerows with trees were present on site. These were dominated by hawthorn and heavily flailed to a height and width of 1m.

Table 9 – Condition Assessment for Native Hedgerow with trees

Phase 1 Habitat Classification	**Species poor hedgerow**				
UK Hab Classification	**Native Hedgerow with trees**				
Condition Sheet	**Hedgerow**				
A1. Height	>1.5 m average along length	Fail	C2. Undesirable perennial vegetation	Undesirable species <20% cover of the area of undisturbed ground	Fail
A2. Width	>1.5 m average along length	Fail	D1. Invasive Non-native species	>90% of the hedgerow and undisturbed ground is free of invasive non-native species	Pass
B1. Gap – Hedge Base	Gap between ground and base of canopy <0.5 m for >90% of length	Fail	D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Fail
B2. Gap – hedge canopy continuity	Gaps make up <10% of total length. No canopy gaps >5m	Pass	E1. Tree age	A least one mature tree per 30m stretch of hedgerow.	Pass
C1. Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length	Fail	E2. Tree health	At least 95% of hedgerow trees are in a healthy condition. There is little or no evidence of an adverse impact on tree health by damage	Pass

Condition Poor	Fails 6 attributes and both in functional group A
Distinctiveness	Medium

3.2.2 2, 5, 6, 7, 10, 11, 13, 14, 15, 16) Species Poor Hedgerow – Native Hedgerow

Ten native hedgerows with trees were present on site. These were dominated by hawthorn and heavily flailed to a height and width of 1m. All across the site were subject to the same management practices and had similar species composition.

Table 10 – Condition Assessment for Native Hedgerow

Phase 1 Habitat Classification	**Species poor hedgerow**
UK Hab Classification	**Native Hedgerow**

Condition Sheet	Hedgerow				
A1. Height	>1.5 m average along length	Fail	C1. Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length	Fail
A2. Width	>1.5 m average along length	Fail	C2. Undesirable perennial vegetation	Undesirable species <20% cover of the area of undisturbed ground	Fail
B1. Gap – Hedge Base	Gap between ground and base of canopy <0.5 m for >90% of length	Fail	D1. Invasive Non-native species	>90% of the hedgerow and undisturbed ground is free of invasive non-native species	Pass
B2. Gap – hedge canopy continuity	Gaps make up <10% of total length. No canopy gaps >5m	Pass	D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Fail
Condition	**Poor**	Fails 6 attributes and both in functional group A			
Distinctiveness		Medium			

3.2.3 4, 8) Species Poor Hedgerow – Native Hedgerow – Associated with bank or ditch

Two native hedgerows on site were associated with a ditch. These were dominated by hawthorn and heavily flailed to a height and width of 1m.

Table 11 – Condition Assessment for Native Hedgerow – associated with bank or ditch

Phase 1 Habitat Classification	Species poor hedgerow				
UK Hab Classification	Native Hedgerow – Associated with bank or ditch				
Condition Sheet	Hedgerow				
A1. Height	>1.5 m average along length	Fail	C1. Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length	Fail
A2. Width	>1.5 m average along length	Fail	C2. Undesirable perennial vegetation	Undesirable species <20% cover of the area of undisturbed ground	Fail
B1. Gap – Hedge Base	Gap between ground and base of canopy <0.5 m for >90% of length	Fail	D1. Invasive Non-native species	>90% of the hedgerow and undisturbed ground is free of invasive non-native species	Pass
B2. Gap – hedge canopy continuity	Gaps make up <10% of total length. No canopy gaps >5m	Pass	D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Fail
Condition	**Poor**	Passes 2 attributes, fails both in functional group A and C			
Distinctiveness		Medium			

3.3 Linear River Habitats

3.3.1 1,2, 3, 4) Ditch – Ditch

Four drainage ditches were present on site. These were found to be dry during the 2020 surveys however were holding water during the 2021 survey. Bankside and ground vegetation was minimal and no vegetation was present within the ditches.

Table 12 – Condition Assessment for Ditch

Phase 1 Habitat Classification	**Ditch**				
UK Hab Classification	**Ditch**				
Condition Sheet	**Ditch**				
Condition Criteria 1.	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Fail	Condition Criteria 5.	Physical damage evident along less than 5% of the ditch	Fail
Condition Criteria 2.	A range of emergent, submerged and floating leaved plants are present. As a guide >10 species of plans in a 20m ditch length.	Fail	Condition Criteria 6.	Sufficient water levels are maintain	Fail
Condition Criteria 3.	There is less than 10% cover of filamentous algae and/or duckweed	Pass	Condition Criteria 7.	Less than 10% of the ditch is heavily shaded	Pass
Condition Criteria 4.	A fringe of marginal vegetation is present along more than 75% of the ditch	Fail	Condition Criteria 8.	Absence of non-native plant and animal species	Pass
Condition	Poor	Passes 3 of 8 attributes			
Distinctiveness	Medium				

3.3.2 5) Stream – Other Rivers and Streams

A stream was present on the southern periphery of the site. This was identified as an unnamed tributary of the River Lostock present approximately 400m to the west of the site. Four outflows and a bridge were present along the stream which became culverted at the western end.

Table 13 – Condition Assessment for Other Rivers and Streams

Phase 1 Habitat Classification	**Stream**		
UK Hab Classification	**Other Rivers and Streams Type**		
Condition Assessment	**River MoRPH Survey**		
River Category	Other	Reach Valley Gradient	0.02
Braiding Index	1	Bedrock Reach	No
Sinuosity Index	1	Coarse Bed Material	Gravel-Pebble
Anabranching Index	1	Average Bed Material	Sand
Level of Confinement	Unconfined	Condition Score	Moderate
Condition Score	Poor		
Distinctiveness	High		

Extent of watercourse encroachment	Minor
Extent of riparian encroachment	Major

4 Retained Habitats

Using the Biodiversity Metric 3.0, the habitat units of the predevelopment habitats to be retained were calculated.

4.1 Area Habitats

Table 14 shows a summary of the area habitats and their corresponding area (ha) and unit score to be retained on site.

Table 14– Area habitats to be retained on site

Habitat Parcel Reference	Total Area (ha)	Total Units	Area Retained (ha)	Units Retained
Other woodland; broadleaved	0.52	2.08	0.1	0.4

4.2 Linear Hedgerow Habitats

Table 15– Linear hedgerow habitats to be retained on site

Habitat Parcel Reference	Total Length (km)	Total Units	Length Retained (km)	Units Retained
Native Hedgerow with Trees	0.51	2.2	0.51	2.2
Native Hedgerow	0.73	1.46	0.73	1.46

4.3 Linear River Habitats

Table 16– Linear river habitats to be retained on site

Habitat Parcel Reference	Total Length (km)	Total Units	Length Retained (km)	Units Retained
Other rivers and streams	0.18	0.65	0.18	0.65

5 Lost Habitats

Using the Biodiversity Metric 3.0, the habitat units of the pre-development habitats to be lost were calculated.

5.1 Area Habitats

Table 16 shows a summary of the area habitats and their corresponding area (ha) and unit score to be lost on site along with planned mitigation.

Table 17 – Area habitats to be lost on site

Habitat Parcel Reference	Total Area (ha)	Total Units	Area lost (ha)	Units lost	Planned Mitigation
Modified grassland	17.05	34.1	17.05	34.1	These areas are currently in poor condition with little species and height variation. The loss of this habitat is to be compensated for by the creation of higher quality grassland habitats on site.
Other woodland; broadleaved	0.52	2.08	0.42	1.68	These areas are currently in poor condition with little species and age variation. The loss of this habitat is to be compensated for partially by the planting of native trees across the site.
Other neutral grassland	0.03	0.12	0.03	0.12	The loss of this habitat is to be compensated for by the creation of higher quality grassland habitats on site.
Total	17.6	36.3	17.53	35.9	

5.2 Linear Hedgerow Habitats

Table 17 shows the linear hedgerow habitats and their corresponding length (km) and units to be lost on site along with planned mitigation.

Table 18 – Linear hedgerow habitats to be lost on site

Habitat Parcel Reference	Total Length (km)	Total Units	Length lost (km)	Units lost	Planned Mitigation
Native hedgerow with Trees - Associated with bank or ditch	0.16	0.96	0.16	0.96	The loss of these habitats are to be compensated for by the inclusion of species rich native hedgerow within the landscape designs.
Native hedgerow - Associated with bank or ditch	0.13	0.52	0.13	0.52	
Native hedgerow	0.13	0.26	0.13	0.26	
Native hedgerow	0.1	0.2	0.1	0.2	

Native hedgerow - Associated with bank or ditch	0.09	0.54	0.09	0.54	
Native hedgerow	0.03	0.06	0.03	0.06	
Native hedgerow	0.09	0.18	0.09	0.18	
Total	**0.73**	**2.72**	**0.73**	**5.96**	

5.3 Linear River Habitats

Table 18 shows the linear river habitats and their corresponding length (km) and units to be lost on site along with planned mitigation.

Table 19 – Linear habitats to be lost on site

Habitat Parcel Reference	Total Length (km)	Total Units	Length lost (km)	Units lost	Planned Mitigation
1) Ditch	0.04	0.12	0.04	0.12	The loss of this habitat is to be compensated for through the enhancement and creation of other linear features on site.
2) Ditch	0.15	0.45	0.15	0.45	
3) Ditch	0.1	0.3	0.1	0.3	
4) Ditch	0.1	0.3	0.1	0.3	
Total	0.57	1.82	0.39	1.17	

6 Pre-Development Unit Summary

Using the Biodiversity Metric 3.0, the habitat units of the existing site habitats were calculated; the habitat units to be retained within site development were calculated; and, the habitat units that are anticipated to be lost in site development were calculated.

The results of these calculations are presented in Table 19.

Table 20: Pre-Development Unit Summary

	On-site baseline	Retained	Enhanced	Lost
Area Units	28.5	0.4	-	28.10
Linear Hedgerow Units	6.38	3.66	-	2.72
Linear River Habitats	1.82	0.65	-	1.17

7 Created Habitats on Site

Post development habitats as detailed within the General Arrangement plan (UG_1053_GA_DRW_01 P06) were assessed to establish their condition following the methodology outlined in Section 2.6 and 2.7. The habitats have been given reference numbers of the pre development habitat to be enhanced for clarity regarding in-text and the metric calculation (UG_1053_ECO_BNGCALC_02) which illustrates the numerical data.

7.1 Area Habitats

7.1.1 C1) Developed land; sealed surface

Areas of hardstanding including carparks and paths are to be created across the site. There will also be one building present on site. Developed land; sealed surface has a predetermined score of **"NA"** within the metric.

7.1.2 C2) Other neutral grassland

Areas of other neutral grassland are to be created across the site. These will be seeded with native wildflower species and managed utilising ecologically sensitive methods including reduced mowing to allow plants to naturally set seed.

Table 21 – Condition Assessment for Other Neutral Grassland

Classifications within landscape designs	Proposed species rich grassland / Proposed pollen and nectar wildflower mix				
UK Hab Classification	Other Neutral Grassland				
Condition Sheet	Grassland (Med-High)				
Condition Criteria 1.	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type	Fail	Condition Criteria 4.	Cover of bracken less than 20% and cover of scrub less than 5%	Pass
Condition Criteria 2.	Sward height is varied	Pass	Condition Criteria 5.	Absence of invasive non-native species. Combined cover of damage and undesirable species less than 5% of total area.	Pass
Condition Criteria 3.	Cover of bare ground between 1% and 5%	Pass			
Condition Moderate	Passes 4 of 5 criteria				
Distinctiveness	Medium				
Time to Target Condition	5				
Difficulty of Creation	Low				

7.1.3 C3) Modified Grassland

The proposed creation of the cricket greens will cover the majority of the site. Although these areas will be seeded with a native grass mix, they will be heavily managed.

Table 22 – Condition Assessment for Modified Grassland

Classification within Landscape Designs	Proposed pitch surfacing				
UK Hab Classification	Modified Grassland				
Condition Sheet	Grassland (Low)				
Condition Criteria 1.	6-8 species per m^2	Fail	Condition Criteria 5.	Cover of bare ground between 1 – 5%	Fail
Condition Criteria 2.	Sward height is varied	Fail	Condition Criteria 6.	Cover of Bracken <5% of ground cover	Pass
Condition Criteria 3.	Cover of scrub less than 20%	Pass	Condition Criteria 7.	Absence of invasive non-native species. Combined cover of damage and undesirable species less than 5% of total area.	Pass
Condition Criteria 4.	Physical damage evident in less than 5% of total grassland area	Pass			
Condition Poor	Passes 4 of 7 criteria				
Distinctiveness	Low				
Time to Target Condition	1				
Difficulty of Creation	Low				

7.1.4 C4) Modified Grassland

Areas of amenity grass are to be created across the site. Although these areas will be seeded with a native grass mix, they will be heavily managed.

Table 23 – Condition Assessment for Modified Grassland

Classification within Landscape Designs	Amenity grass				
UK Hab Classification	Modified Grassland				
Condition Sheet	Grassland (Low)				
Condition Criteria 1.	6-8 species per m^2	Fail	Condition Criteria 5.	Cover of bare ground between 1 – 5%	Fail
Condition Criteria 2.	Sward height is varied	Fail	Condition Criteria 6.	Cover of Bracken <5% of ground cover	Pass
Condition Criteria 3.	Cover of scrub less than 20%	Pass	Condition Criteria 7.	Absence of invasive non-native species. Combined cover of damage and undesirable species less than 5% of total area.	Pass
Condition Criteria 4.	Physical damage evident in less than 5% of total grassland area	Pass			

Condition Poor	Passes 4 of 7 criteria
Distinctiveness	Low
Time to Target Condition	1
Difficulty of Creation	Low

7.1.5 C5) Other woodland; broadleaved

Areas of woodland including native shrub and groundcover will be created on the southeast periphery of the site.

Table 24 – Condition Assessment for Broadleaved Plantation Woodland

Classification within landscape designs	Proposed Native Woodland planting		
UK Hab Classification	Other woodland; Broadleaved		
Condition Sheet	Woodland		
Indicator 1. Age distribution of trees	Two age class present (Moderate – 2 Points)	Indicator 8. Tree health	11-25% mortality and/or crown dieback or low risk pest or disease present (Moderate – 2 Points)
Indicator 2. Wild, domestic, and feral herbivore damage	No significant browsing damage evident in woodland (Good – 3 Points)	Indicator 9. Vegetation and ground flora	No recognisable NVC community (Poor – 1 Point)
Indicator 3. Invasive plant species	No invasive species present in the woodland (Good – 3 Points)	Indicator 10. Woodland vertical structure	Two storeys across all survey plots (Moderate – 2 Points)
Indicator 4. Number of native tree species	Three to four native tree or shrub species found across woodland parcel (Moderate - 2 Points)	Indicator 11. Veteran trees	No veteran trees present in the woodland (Poor – 1 Point)
Indicator 5. Cover of native tree and shrub species	50 - 80% of canopy trees and 50 -80% of understory shrubs are native (Moderate – 2 Points)	Indicator 12. Amount of deadwood	Between 25-50% of all survey plots within the woodland and parcel have standing deadwood, large dead branches / stems and stumps (Moderate – 2 Points)
Indicator 6. Open space within woodland	10-20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply (Good – 3 Points)	Indicator 13. Woodland disturbance	Less than 1 hectare in total of nutrient enrichment across woodland areas and/or less than 20% of woodland has damaged ground (Moderate – 2 Points)
Indicator 7. Woodland regeneration	One to two classes only present in woodland (Moderate – 2 Points)		
Condition Poor	Scores 27 (26-32 –Moderate)		
Distinctiveness	Medium		
Time to Target Condition	15		
Difficulty of Creation	Low		

7.1.6 C6) Introduced Shrub

Areas of introduced shrub are to be created across the site, containing ornamental shrub and flowering herbaceous plants. Introduced shrub has a pre-determined score of **"poor"** within the metric.

7.1.7 C7) Mixed Scrub

Areas of mixed scrub are to be created across the periphery of the site. These will contain native species and will be managed using ecologically sensitive methods such as rotational pruning.

Table 25 – Condition Assessment for Mixed Scrub

Classification within Landscape Designs	Proposed Native shrub				
UK Hab Classification	Mixed Scrub				
Condition Sheet	Scrub				
Condition Criteria 1.	Habitat is representative of UKHab description. There are at least three woody species, with no one species comprising more than 75% of the cover.	Pass	Condition Criteria 4.	Well-developed edge with tall grassland/herbs present between scrub and adjacent habitats	Pass
Condition Criteria 2.	Diverse age range with seedlings, young shrubs, and mature shrubs.	Pass	Condition Criteria 5.	Clearings, glades and rides present within the scrub, providing sheltered edges.	Fail
Condition Criteria 3.	Absence of invasive non-native species and undesirable species make up 5% of ground cover	Pass			
Condition **Moderate**	Passes 4 of 5 criteria				
Distinctiveness	**Medium**				
Time to Target Condition	5				
Difficulty of Creation	**Low**				

7.1.8 C8) Urban Tree

Native and horticultural varieties of trees are to be planted throughout the amenity grassland and developed areas of the site.

Table 26 – Condition Assessment for Urban Tree

Classification within Landscape Designs	Street Tree planting
UK Hab Classification	Urban Tree
Condition Sheet	Urban Tree

Condition Criteria 1.	More than 70% of the trees are native species	Fail	Condition Criteria 4.	Little to no evidence of an adverse impact on tree health by anthropogenic activities.	Pass
Condition Criteria 2.	Tree canopy is predominantly continuous	Fail	Condition Criteria 5.	Management regime has encouraged micro habitat sites	Fail
Condition Criteria 3.	More than 50% of the trees are mature or veteran	Pass	Condition Criteria 6.	Trees are immediately adjacent to other vegetation	Fail

Condition Poor	Passes 2 of 6 criteria
Distinctiveness	Medium
Time to Target Condition	10
Difficulty of Creation	Low

7.1.9 C9) Urban Tree

Native trees will be planted in groups throughout the POS on site.

Table 27 – Condition Assessment for Urban Tree

Classification within Landscape Designs	Informal Native Tree Planting
UK Hab Classification	Urban Tree
Condition Sheet	Urban Tree

Condition Criteria 1.	More than 70% of the trees are native species	Pass	Condition Criteria 4.	Little to no evidence of an adverse impact on tree health by anthropogenic activities.	Pass
Condition Criteria 2.	Tree canopy is predominantly continuous	Pass	Condition Criteria 5.	Management regime has encouraged micro habitat sites	Fail
Condition Criteria 3.	More than 50% of the trees are mature or veteran	Pass	Condition Criteria 6.	Trees are immediately adjacent to other vegetation	Pass

Condition Moderate	Passes 5 of 6 criteria
Distinctiveness	Medium
Time to Target Condition	27
Difficulty of Creation	Low

7.1.10 C10) Sustainable urban drainage feature

A Suds is to be created in the northwest aspect of the site. This will be planted with native aquatic and marginal species and partially hold water year-round.

Table 28 – Condition Assessment for SUDs

Classification within Landscpae design	SUDs / Marginal planting
UK Hab Classification	SUDs
Condition Sheet	Urban

Condition Criteria 1.	Vegetation structure is varied, providing opportunities for wildlife. A single ecotone should not account for more than 80% of the total habitat area	Fail	Condition Criteria 3.	Schedule nine non native invasive species cover less than 5% of vegetated area	Pass
Condition Criteria 2.	There is a diverse range of flowering plants and pollen sources including non-native species beneficial to wildlife	Pass	Condition Criteria 4b. (Only applicable to Bioswale and SUDs habitat types)	The water table is at or near the surface throughout the year.	Pass
Condition Criteria 3.	Schedule nine non native invasive species cover less than 5% of vegetated area	Pass			

Condition Moderate	Passes 4 of 5 criteria
Distinctiveness	Low
Time to Target Condition	3
Difficulty of Creation	Medium

7.2 Linear Hedgerow Habitats

7.2.1 C1) Native Species Rich Hedgerow

Lengths of native hedgerow are to be planted on the periphery of the site.

Table 29 – Condition Assessment for Native Hedgerow

Classification within Landscape Designs	**Native Species Rich Hedgerow**
UK Hab Classification	**Native Species Rich Hedgerow**
Condition Sheet	**Hedgerow**

A1. Height	>1.5 m average along length	Pass	C1. Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length	Pass
A2. Width	>1.5 m average along length	Fail	C2. Undesirable perennial vegetation	Undesirable species <20% cover of the area of undisturbed ground	Pass
B1. Gap – Hedge Base	Gap between ground and base of canopy <0.5 m for >90% of length	Pass	D1. Invasive Non-native species	>90% of the hedgerow and undisturbed ground is free of invasive non-native species	Pass
B2. Gap – hedge canopy continuity	Gaps make up <10% of total length. No canopy gaps >5m	Pass	D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Fail

Condition	Moderate	Fails 2 attributes

Distinctiveness	Medium
Time to Target Condition	5
Difficulty of Creation	Low

7.2.2 C1) Native Hedgerow – Associated with bank or ditch

One length of native hedgerow will run adjacent to a created drainage ditch.

Table 30 – Condition Assessment for Native Hedgerow - Associated with bank or ditch

Classification within Landscape Designs	**Native Hedgerow - Associated with bank or ditch**				
UK Hab Classification	**Native Hedgerow - Associated with bank or ditch**				
Condition Sheet	**Hedgerow**				
A1. Height	>1.5 m average along length	Pass	C1. Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length	Pass
A2. Width	>1.5 m average along length	Fail	C2. Undesirable perennial vegetation	Undesirable species <20% cover of the area of undisturbed ground	Pass
B1. Gap – Hedge Base	Gap between ground and base of canopy <0.5 m for >90% of length	Pass	D1. Invasive Non-native species	>90% of the hedgerow and undisturbed ground is free of invasive non-native species	Pass
B2. Gap – hedge canopy continuity	Gaps make up <10% of total length. No canopy gaps >5m	Pass	D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Fail
Condition	**Moderate**	Fails 2 attributes			
Distinctiveness		Medium			
Time to Target Condition		5			
Difficulty of Creation		Low			

7.3 Linear River Habitats

7.3.1 C1, 2 & 3) Ditch

A series of ditches will be created across the periphery of the site to deal with drainage. These will partially hold water year-round and will be seeded with a mixture of native grass and semi aquatic species.

Table 32 – Condition Assessment for Ditch

Phase 1 Habitat Classification	**Ditch**				
UK Hab Classification	**Ditch**				
Condition Sheet	**Ditch**				
Condition Criteria 1.	The ditch is of good water quality, with clear water (low turbidity)	Pass	Condition Criteria 5.	Physical damage evident along less than 5% of the ditch	Pass

	indicating no obvious signs of pollution.				
Condition Criteria 2.	A range of emergent, submerged and floating leaved plants are present. As a guide >10 species of plans in a 20m ditch length.	Fail	Condition Criteria 6.	Sufficient water levels are maintained	Pass
Condition Criteria 3.	There is less than 10% cover of filamentous algae and/or duckweed	Pass	Condition Criteria 7.	Less than 10% of the ditch is heavily shaded	Pass
Condition Criteria 4.	A fringe of marginal vegetation is present along more than 75% of the ditch	Pass	Condition Criteria 8.	Absence of non-native plant and animal species	Pass

Condition	Moderate	Passes 7 of 8 attributes
Distinctiveness		Medium

8 Post Development Unit Summary and Conclusion

Using the Biodiversity Metric 3.0, the habitat units of the planned enhanced and created habitats were calculated; the habitat units to be retained within site development were calculated; and the habitat units that are anticipated to be lost in site development were calculated.

The results of these calculations are presented in the Table 32.

Table 33: Post Development Biodiversity Net Gain Calculation

		Habitat Unit Change					Net change in Biodiversity	
	On-site baseline	Retained	Lost	Enhanced	Created	On-site post development	Habitat units	%
Area Units	28.5	0.4	28.1	-	47.29	47.69	19.19	**67.33**
Linear Units	6.38	3.66	2.72	-	3.28	6.94	0.56	**8.78**
River Units	1.82	0.65	1.17	-	1.47	2.11	0.3	**16.33**

As illustrated in Table 32, based on the current landscape design the site currently results in a gain of 67.33% area units 8.78% hedgerow units and 16.33% river units. This illustrates the development is currently in line with the relevant National Planning Policy Framework and Local Planning Policies.

To ensure that the habitats proposed as part of the post development design of this site reach the condition detailed within this report and the full gain in value to the environment is achieved by this site, a long-term management plan (30 years) is required. This length of management plan is required due to the complex nature of the habitats to be enhanced/created on site and the high value they will provide to the environment.

9 References

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