

BIODIVERSITY NET GAIN DESIGN STAGE ASSESSMENT

December 2023

Mercury 62,
Cronton Road,
Prescot,
Merseyside

**U R B A N
G R E E N**



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NON-TECHNICAL EXECUTIVE SUMMARY

This Biodiversity Net Gain Assessment has been prepared by Urban Green on behalf of Maro Developments Ltd to support an application for the proposed erection of a single warehouse unit (Use Class B8) with ancillary office space, associated parking, access, landscaping, and other works.

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 4.0 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					On-site post development	Net change in Biodiversity	
	On-site baseline	Retained	Lost	Enhanced	Created		Habitat units	%
Area Habitat Units	63.68	24.63	38.19	0.86	39.56	65.34	+1.66	+2.61
Linear Hedgerow Units	-	-	-	-	7.14	7.14	+7.14	N/A
Watercourse Units	2.51	1.85	0.00	0.66	-	2.89	+0.38	+15.18

The proposals deliver a net gain of 1.66 area habitat units (2.61%), a net gain of 7.14 hedgerow units (percentage not applicable as baseline is zero) and a net gain of 0.38 watercourse units (15.18%). However, the newly created habitats fail to satisfy the trading rules laid out in the metric due to insufficient compensation for broadleaved woodland and other neutral grassland.

Extensive native and evergreen hedgerow is to be provided across the site, and whilst there is no existing hedgerow on site to allow a percentage gain in the metric, the positive benefits of hedgerow provision as a habitat should not be overlooked.

To ensure that habitats are maintained at the expected condition, a 30 year-management plan should be implemented post-development (Urban Green, 2023a).

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1 Introduction

1.1 Background to the Scheme

Maro Developments Ltd is proposing to develop land off Cronton Road in Prescot, Merseyside (hereafter referred to as 'the Site'). The applicant is seeking approval for the erection of a single warehouse (Use Class B8) with ancillary office space, associated parking, access, landscaping, and other works.

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 Net Gain Consultant, Shannon Brady. Shannon has experience providing consulting services for a range of development schemes across the UK, including residential, commercial, and infrastructure schemes.

1.2 Site Context

The site is located at National Grid Reference SJ 46758 89304 and comprises a total area of approximately 10.2ha (see Figure 1).

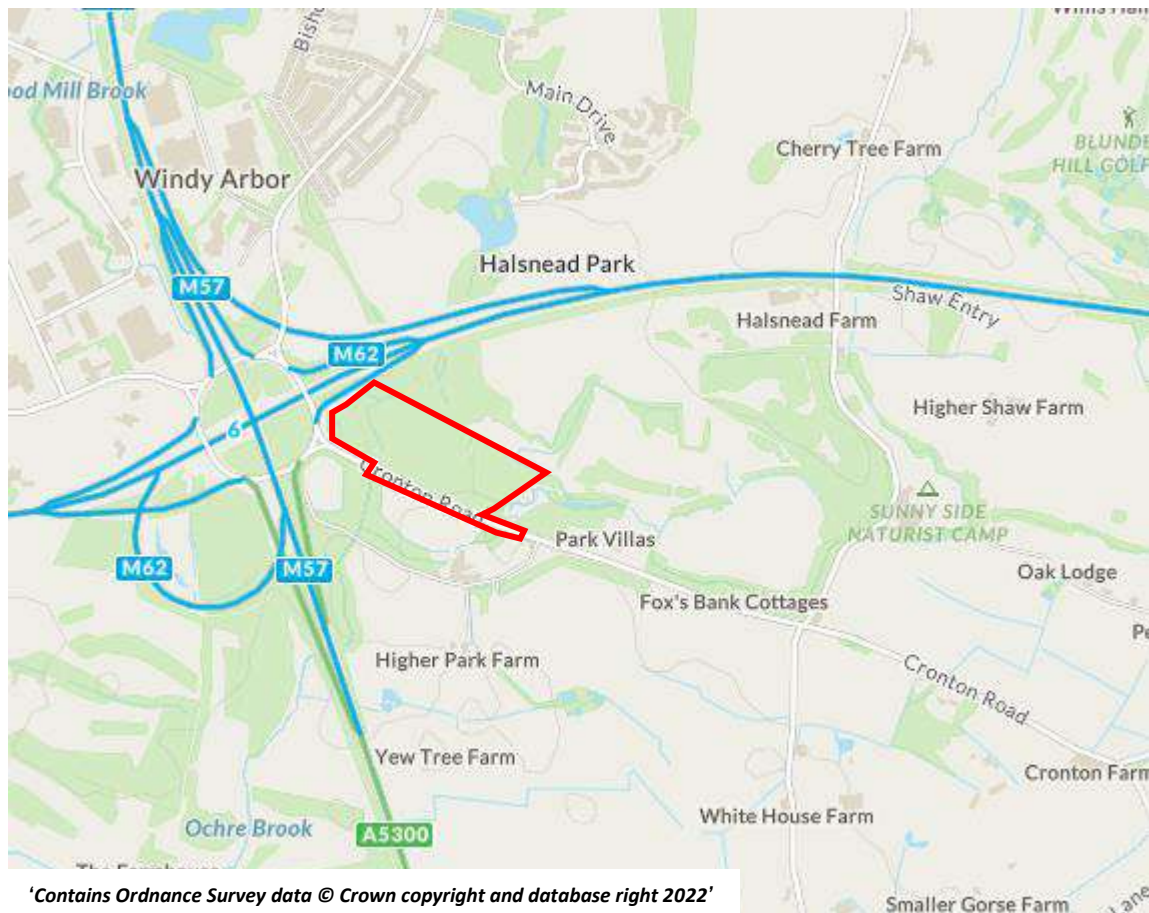


Figure 1 – Site Extent

The Site is located to the east of Junction 6 of the M62, bound by Tarbock roundabout to the west, M62 to the north, Cronton Road to the south and undeveloped land to the east.

Whilst the surrounding area is undeveloped, land adjacent to the east of the Site is subject to two large development proposals: construction of a new country park, which awaits determination (ref:

20/00578/FUL); and a hybrid application which secured full consent for the development of 15,273sqm of storage and distribution floorspace (B8) and outline consent for a further 77,629sqm of storage and distribution floorspace (B8) (ref: 20/00494/HYB). These developments, once brought forward in accordance with the adopted Halsnead Garden Village Masterplan SPD, will inevitably change the character, land use, and appearance of the area.

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;

Knowsley Council Local Plan Policy SD1 (Sustainable Development) states:

1) When considering development proposals, a positive approach will be taken, which reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. Work will be undertaken proactively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.

2) Planning applications that accord with the policies in this Local Plan (and any relevant policies in Neighbourhood Plans) will be approved without delay, unless material considerations indicate otherwise.

3) Where there are no policies relevant to the application or relevant policies are out of date at the time of making the decision then permission will be granted unless material considerations indicate otherwise – taking into account whether:

- Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework taken as a whole; or
- Specific policies in that Framework indicate that development should be restricted.

Knowsley Council Local Plan Policy CS8 (Green Infrastructure) states:

1) Knowsley's existing Green Infrastructure and its beneficial functions will be protected, managed and/or enhanced, primarily to:

- Ensure more attractive and cleaner residential neighbourhoods;
- Sustain and promote biodiversity (including designated sites, priority habitats and protected and endangered species) in accordance with importance and contribution to ecological networks;
- Preserve the character and function of historic environments and valued landscapes;
- Mitigate the effects of climate change and flood risk;
- Mitigate air, water and noise pollution;
- Provide local opportunities for sport, recreation and allotments; and
- Provide sustainable transport linkages between residential neighbourhoods and easy access to employment and services.

2) To achieve the above, planning powers and other interventions will be used to:

- Protect and enhance strategically important areas of greenspace;
- Ensure an appropriate quantity and improved quality of locally important open spaces, including outdoor sports provision (and ancillary facilities of appropriate scale);
- Promote effective movement of wildlife through a network of strategic green links, by protecting, maintaining and improving existing and new open spaces, water courses (including water quality) and biodiversity assets;
- Protect, enhance and/or introduce biodiversity into existing areas of Green Infrastructure, through integration into the design of new development and public realm projects;
- Improve accessibility for communities to greenspace offering leisure and recreation opportunities;
- Protect and where possible improve green paths and cycleways linking residential areas, existing strategic areas of greenspace, employment locations, local community services and leisure facilities;
- Work in partnership with other districts and relevant bodies at a landscape scale to minimise the impact of development upon Knowsley's existing biodiversity and geological assets, and sustain the protection afforded to internationally important sites, including supporting habitat, for biodiversity outside of the borough; and

- Deliver new integrated and functional Green Infrastructure that helps to mitigate and adapt to climate change, such as sustainable drainage systems, carbon capture and storage, soft landscaping and green roofs.

Merseyside Environmental Advisory Service (MEAS) provide advice relating to environmental matters for the councils which comprise the Liverpool City Region (LCR). In 2022, MEAS issued an information note on Biodiversity Net Gain within the LCR which states:

During the Environment Act transition period, there is no mandatory requirement for developers / applicants to provide a completed Biodiversity Metric and 10% BNG. However, the provision of BNG is being strongly encouraged within the LCR in line with the above legislation, policy and guidance and especially the NPPF.

1.5 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) must be followed. 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.

1.6 Liverpool City Region Ecological Network

The Liverpool City Region Ecological Network forms a data set which highlights priority habitats and ecological networks across the region. Figure 2 demonstrates the habitats and designations on site and within the broader landscape.

Areas of priority grassland, woodland and wetland are present on site, as well as a priority linear feature relating to Ochre Brook. The on-site woodland to the north-west and the woodland which infringes on the south-eastern boundary are designated as Local Wildlife Sites (LWS) and a nature improvement area is approximately 250m south-west of the site.



Figure 2 – LCR Ecological Network map



1.7 Irreplaceable Habitat

Irreplaceable habitat is defined in the NPPF as ‘habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity’ (Department for Levelling Up, Housing and Communities, 2023).

An off-site parcel of woodland to the north of the site boundary (referred to as Old Wood South) is identified as ancient woodland on both the ancient woodland inventory and MAGIC. None of the on-site woodland is currently identified as ancient woodland, however, most ancient woodlands below 2-hectares in size were omitted from the original ancient woodland inventory but ‘improved mapping technology and evidence availability mean that there is now the capacity to rectify this’ (Natural England, 2018).

Development Management Advice, submitted by Merseyside Environmental Advisory Service (MEAS) in April 2023 in reference to the application (Ref: 22/00587/FUL), highlighted the potential for the woodland to the north-west of the site (referred to as Strettles Bog) to be ancient woodland.

In 2023, Tyler Grange was instructed to produce an arboricultural note addressing the likelihood of the woodland being ancient (Tyler Grange, 2023) which determined that there is insufficient evidence for the woodland to be classified as such.

As a precautionary measure, the Strettles Bog woodland has been identified in the metric as ancient woodland and the irreplaceable habitats tab has been populated.

2 Methods

2.1 Sources of Information

Table 1 details the range of sources used to inform this assessment. Knowsley Local Plan Policies Map was unavailable at the time of assessment.

Table 1 – Desk Study Sources of Information

Source	Date Consulted	Information Sought
DEFRA Magic Map Application	09/10/2023	Locations of statutory designated Sites within 1km of the Site boundary. Locations of Natura 2000 Sites (Ramsar, Special Area of Conservation (SAC) and Special Protection Area (SPA)) within 5km of the Site boundary. Locations of priority habitats within 1km of the site boundary.
Liverpool City Region (LCR) Ecological Network	09/10/2023	Evidence base containing information relating to ecology and biodiversity within the Liverpool City Region
North Merseyside Biodiversity Action Plan	09/10/2023	Species and habitats which are given special conservation status at the local level.
Preliminary Ecological Appraisal (PEA) (Urban Green, 2023b)	10/10/2023	Notable species, habitats and designations identified on site and within a 2km radius
Arboricultural Impact Assessment (AIA) (Urban Green, 2023c)	04/12/2023	Tree related data, including constraints, root protection areas (RPA), tree removal and recommendations for development
The Biodiversity Metric 4.0	20/12/2023	The Biodiversity Metric 4.0, including the tool itself, user guides and reference documentation associated with the tool.

2.2 Site Mapping

2.2.1 Existing Habitat (Pre-Development)

The site was subject to a field survey by Urban Green on the 6th June 2022, by Senior Ecologist Mark Blacker. The weather conditions were 15°C, overcast (7/8 oktas), with a wind speed of 1 on the Beaufort scale. A further site walkover was undertaken on 16th August 2023 by Assistant Ecologist, Barnaby Gardner.

Surveys were based on the standard methodology as detailed by The UK Habitat Classification User Manual (Butcher et al. 2020) and Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017). The mapping techniques are based on The UK Habitat Classification User Manual guidance. The method records the habitat types present, within and immediately surrounding the site, habitat extent and quality. These habitats were subsequently mapped using ESRI ArcGIS Pro software, and habitat areas and lengths were calculated to demonstrate habitats within the proposed development and the surrounding area (Appendix 1).

Plant species were also identified and recorded. Flora species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and species which are indicators of important and/or uncommon habitats, were searched for during the survey. Any invasive species, including those listed on the revised (April 2010) Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) were noted during the field survey when sighted.

2.2.2 Planning Layout (Post-Development)

The proposed landscape plan, as provided by the Annabelle Langhorn Landscape Planning Ltd (2023) (Appendix 2), was provided in DWG. format and an additional PDF document was provided detailing planting mixes and areas of different proposed habitats. These resources were used to inform the assessment.

2.3 The Biodiversity Metric 4.0

The calculation was undertaken utilising The Biodiversity Metric 4.0 from Natural England. The Biodiversity Metric 4.0 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.

The calculation was performed by a technically competent person as detailed in British Standard BS8683 - Suitably qualified person –definition in BS8683:2020.

2.4 Habitat Scoring

The Biodiversity Metric 4.0 supplies reference documents and user guides to accurately evaluate and assess the different habitats on site. The methodology for the baseline and post development calculations are demonstrated in the following sections.

2.4.1 Minimum Mapping Units (MMU)

The UKHab classification system can be applied at various levels – fine scale, suitable for smaller sites, and large scale, used for broader landscapes. The fine scale level, which acknowledges areas of minimum 25m² and lengths of 5m, is considered appropriate for this site.

2.4.2 Baseline Units

To assess the quality of a habitat, and therefore calculate the units scored, the Biodiversity Metric 4.0 utilises three scoring factors detailed as follows:

Condition

The condition of a habitat is assessed utilising the Condition Sheets provided for each 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 Biodiversity Metric 4.0 Technical Annex 1 (Natural England, 2023a).

Table 2 identifies the habitat condition sheets used to assess both pre- and post-development habitats. Ochre Brook, which is categorised as ‘other rivers and streams’, was assessed using the MoRPH River Survey method.

Table 2 – Conditions Sheets for Habitat Assessment

Condition Sheet	Habitats Assessed
Area Habitats	
Grassland (Low)	Modified Grassland
Grassland (Medium, High and Very High)	Other Neutral Grassland
Heathland and Shrub	Mixed Scrub
Individual Trees	Urban Trees
Pond	Pond (Non-Priority Habitat)
Urban	Ruderal/Ephemeral
Woodland	Other Woodland, Broadleaved
Linear Hedgerow Habitats	
Hedgerow	Native Hedgerow Species Rich Native Hedgerow Species Rich Native Hedgerow with Trees
Watercourse Habitats	
Ditch	Ditch
Other Rivers and Streams	MoRPh5 River Survey

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 3 provides the basis of the distinctiveness assessment.

Table 3 – Distinctiveness Assessment for Habitats

Distinctiveness Categories		
Category	Scores	Description
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 (hedgerows)	1	Lowest biodiversity value possible e.g. non-native and ornamental hedgerow
Very Low (area and watercourse)	0	Little or no biodiversity value e.g. hard standing or sealed surface.

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. 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 (see Table 4).

The site contains areas of priority habitat which are identified within the Liverpool City Region Ecological Network (Section 1.6) and Strettle Bog, Tarbock Local Wildlife Site (LWS) is present within the site. Lowland mixed broad-leaf woodland is identified as priority habitat within the North Merseyside Biodiversity Action Plan and two Tree Preservation Orders (TPO) are present on site, covering the Strettle Bog woodland (TPO No. 1-1964) and a portion of the woodland along the south-eastern boundary (TPO No. 2-1986).

For the above reasons, all pre- and post-development habitats on site have been allocated high strategic significance.

Table 4 – Strategic Significance Assessment

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

2.4.3 Post-Development

Post-development habitats are subject to the same condition assessments as baseline habitats, based on information provided by the proposed landscape layout (Appendix 2). Two additional factors are considered within post-development landscapes which are detailed below.

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.

Difficulty Multipliers

For post development habitat creation or enhancement, a risk multiplier will be automatically applied by the tool to account 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.

2.5 MoRPH River Survey

Condition of the watercourse habitat present on site was assessed by a Modular River Physical Survey (MoRPh Survey) undertaken by a certified ecologist. Assessment of watercourse 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 affected 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 (10m). These five contiguous modules covered a sub reach of the river 50m in length. Due to the small length of the river present within the redline boundary and the small overall length of the river, it was not necessary to survey more than one subreach to assess the condition of the river.

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 10m from the bank tops).

2.6 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.

ESRI ArcGIS Pro software was utilised to produce the pre-development habitat map, with the best possible effort 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 2.4. 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 illustrates the numerical data (Urban Green, 2023d). Full habitat descriptions can be found in the Preliminary Ecological Appraisal (PEA).

3.1 Area Habitats

3.1.1 1) Grassland – Other Neutral Grassland

The largest habitat area on-site was other neutral grassland, which showed evidence of heavy machinery using the site, with deep wheel ruts evident. At the time of survey this habitat was damp, although no evidence of standing water was observed within the site. This habitat was observed to be more species rich than agricultural land, although none of the species present were notable and are likely to be common within the surrounding area.

Yorkshire fog (*Holcus lanatus*) was present abundantly within this habitat. Species present frequently within this habitat comprised cock's foot (*Dactylis glomerata*), common sorrel (*Rumex acetosa*), creeping cinquefoil (*Potentilla reptans*), creeping thistle (*Cirsium arvense*), and marsh thistle (*Cirsium palustre*). Species present occasionally within this habitat included field horsetail (*Equisetum arvense*), creeping bent (*Agrostis stolonifera*), hard rush (*Juncus inflexus*), wild angelica (*Angelica sylvestris*), hogweed (*Heracleum sphondylium*), common vetch (*Vicia sativa*), northern marsh orchid (*Dactylorhiza purpurella*), glaucous sedge (*Carex flacca*), field forget-me-not (*Myosotis arvense*). Square-stalked StJohn's-wort (*Hypericum tetrapterum*) was present rarely.

Two areas of marshy grassland were present within the broader grassland habitat. This habitat was mostly dominated by soft rush (*Juncus effusus*) and reed canary-grass (*Phalaris arundinacea*), with occasional hairy willowherb (*Epilobium hirsutum*) and rare wild angelica present.

Table 5 – Condition Assessment for Other Neutral Grassland

UK Hab Classification	Other Neutral Grassland				
Condition Sheet	Grassland medium, high & very high				
Condition Criteria 1.	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present.	Fail	Condition Criteria 4.	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%	Pass
Condition Criteria 2.	Sward height is varied (at least 20% of the	Pass	Condition criteria 5.	Combined cover of species indicative of sub-optimal	Fail

	sward is less than 7cm and at least 20% is more than 7%) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.			condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.	
Condition Criteria 3.	Cover of bare ground between 1% and 5% including localised areas, for example, rabbit warrens	Pass	Condition Criteria 6 (non-acid types only).	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type	Fail
Condition	Poor	Passes 3 of 6 criteria but fails essential criteria 1			
Distinctiveness	Medium				



Photo 1 – Neutral grassland present within the majority of the site



Photo 2 - Neutral grassland present within the majority of the site



Photo 3 – Marshy Grassland present within the eastern section of the site



Photo 4 – Marshy Grassland present within the western section of the site

3.1.2 2) Woodland and Forest - Other Woodland, Broadleaved

Broadleaved woodland was present towards the western section of the site which forms the area designated as Strettles Bog, Tarbock LWS. The body of the woodland is covered by a TPO (TPO No. 1-1964) and the woodland has been identified within the irreplaceable habitats tab of the metric as a precautionary measure (Section 1.7).

The species present in the canopy comprised sycamore (*Acer pseudoplatanus*), pedunculate oak (*Quercus robur*), ash (*Fraxinus excelsior*), silver birch (*Betula pendula*) and hawthorn (*Crataegus monogyna*). Fallen deadwood was present within this woodland, with the ground covered in a dense layer of leaf litter throughout. Evidence of woodland regeneration was present with some sycamore and oak saplings present within the ground layer. No evidence of management practices was observed within the woodland. Further information can be found in the Arboricultural Impact Assessment (AIA).

Table 6 – Condition Assessment for Other Woodland; Broadleaved

UK Hab Classification	Other woodland; Broadleaved		
Condition Sheet	Woodland		
Indicator 1. Age distribution of trees	Two age classes present (Moderate – 2 Points)	Indicator 8. Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback (Good – 3 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	Recognisable NVC plant community at ground layer present, strongly characterised by ancient woodland flora specialists (Good – 3 Points)
Indicator 3. Invasive plant species	Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species	Indicator 10. Woodland vertical structure	Two storeys across all survey plots (Moderate – 2 Points)

	<10% cover (Moderate – 2 Points)		
Indicator 4. Number of native tree species	Five or more native tree or shrub species across woodland parcel (Good – 3 Points)	Indicator 11. Veteran trees	One veteran tree per hectare (Moderate – 2 Points)
Indicator 5. Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native (Good – 3 Points)	Indicator 12. Amount of deadwood	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps (Good – 3 Points)
Indicator 6. Open space within woodland	10 - 20% of woodland has areas of temporary open space (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	All three classes present in woodland; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth (Good – 3 Points)		
Condition	Good	Scores 33 (>32 = Good)	
Distinctiveness		Medium	



Photo 5 – Broadleaved semi-natural woodland with bramble ground layer present within the western section of the site



Photo 6 – Broadleaved semi-natural woodland present within the western section of the site.

3.1.3 3) Woodland and Forest - Other Woodland, Broadleaved

Additional parcels of woodland were present to the north of the site, adjacent to the woodland described in Section 3.1.2, along the south-western boundary with Cronton Road and along the south-eastern boundary.

The canopy consisted of sycamore, beech (*Fagus sylvatica*), goat willow (*Salix caprea*), birch (*Betula* spp.), hawthorn, ash, holly (*Ilex aquifolium*), hazel (*Corylus avellana*) and pedunculate oak. The woodland along Cronton Road was growing on a slope and there was evidence of historic coppicing in some areas, with deadwood present throughout. A small proportion of the woodland along the south-eastern boundary is covered by a TPO (TPO No. 2-1986).

Table 7 – Condition Assessment for Other Woodland; Broadleaved

UK Hab Classification		Other woodland; Broadleaved	
Condition Sheet		Woodland	
Indicator 1. Age distribution of trees	Two age classes present (Moderate – 2 Points)	Indicator 8. Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback (Good – 3 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	Recognisable woodland NVC plant community at ground layer present (Moderate – 2 Points)
Indicator 3. Invasive plant species	Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species <10% cover (Moderate – 2 Points)	Indicator 10. Woodland vertical structure	Two storeys across all survey plots (Moderate – 2 Points)
Indicator 4. Number of native tree species	Five or more native tree or shrub species across woodland parcel (Good – 3 Points)	Indicator 11. Veteran trees	No veteran trees present in woodland (Poor – 1 Point)
Indicator 5. Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native (Good – 3 Points)	Indicator 12. Amount of deadwood	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps (Good – 3 Points)
Indicator 6. Open space within woodland	10 - 20% of woodland has areas of temporary open space (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	All three classes present in woodland; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth (Good – 3 Points)		
Condition	Moderate	Scores 31 (26 - 32 = Moderate)	
Distinctiveness	Medium		

3.1.4 4) Heathland and Shrub – Mixed Scrub

Dense scrub was present as a well-established edge layer around the broadleaved semi-natural woodland and as distinct parcels within the grassland. Species present within this scrub comprised frequent hawthorn, goat willow, and blackthorn (*Prunus spinosa*), with common gorse (*Ulex europaeus*) present rarely on the soil mounds present within the site.

Table 8 – Condition Assessment for Mixed Shrub

UK Hab Classification		Heathland and Shrub				
Condition Sheet		Scrub				
Condition Criteria 1.		The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range)	Pass	Condition Criteria 4.	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).	Pass
Condition Criteria 2.		Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	Pass	Condition criteria 5.	There are clearings, glades or rides present within the scrub, providing sheltered edges.	Pass
Condition Criteria 3.		There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition make up less than 5% of ground cover.	Fail			
Condition	Moderate	Passes 4 of 5 criteria				
Distinctiveness		Medium				

3.1.5 5) Grassland – Modified Grassland

A small area of tall ruderal vegetation had developed around a mound that had been created within the centre of the site, possibly from where excavated material had been deposited. Plant species present within this habitat included occasional hairy willowherb, common nettle (*Urtica dioica*), hogweed, bramble (*Rubus fruticosus* agg.), with field woundwort (*Stachys sylvatica*) present rarely.

Table 9 – Condition Assessment for Modified Grassland

UK Hab Classification		Grassland			
Condition Sheet		Grassland (Low)			
Condition Criteria 1.	There are 6-8 vascular plant species per m ² present, including at least 2 forbs	Fail	Condition criteria 5.	Cover of bare ground between 1% and 5% including localised areas, for example, a concentration of rabbit warrens	Pass
Condition Criteria 2.	Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7%) creating microclimates which	Fail	Condition Criteria 6.	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%	Pass

		provide opportunities for insects, birds and small mammals to live and breed.				
Condition Criteria 3.		Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area.	Pass	Condition Criteria 7.	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Pass
Condition Criteria 4.		Physical damage is evident in less than 5% of total grassland area.	Fail			
Condition	Poor	Passes 3 of 7 criteria but fails essential criteria 1.				
Distinctiveness		Low				

3.1.6 6) Sparsely Vegetated Land – Ruderal/Ephemeral

An area of sparsely vegetated land was present on two spoil heaps that had been leftover from the emergency flood works conducted on the ditch. These consisted of compacted soil with large chunks of concrete and other miscellaneous rubble also present. This habitat had become partially colonised with vegetation such as cock's foot, dandelion (*Taraxum officinale*), teasel (*Dipsacus fullonum*), Yorkshire fog, and bird's-foot trefoil (*Lotus corniculatus*).

Table 10 – Condition Assessment for Ruderal/Ephemeral

UK Hab Classification		Sparsely Vegetated Land				
Condition Sheet		Urban				
Condition Criteria 1.		Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area.	Fail	Condition criteria 3.	Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area.	Pass
Condition Criteria 2.		The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	Fail			
Condition	Poor	Passes 1 of 3 condition criteria				
Distinctiveness		Low				

3.1.7 7) Urban - Developed Land, Sealed Surface

This habitat comprised Cronton Road and the pedestrian footpath present immediately adjacent to the site. Developed land is automatically allocated a condition score of **N/A** in the metric.

3.2 Watercourse Habitats

3.2.1 1) Ditch

Two sections of ditch were present within the site. One ditch flowed from a culvert adjacent to the northern boundary into Ochre Brook. This flowed through a deep cutting in the northern section of the site which had been subject to extensive earthworks and therefore had minimal vegetation established on the banks. Towards the western end of the first ditch, there is a tributary from which the second section of ditch flows. This flows towards the A5080 at the south of the site. The ditches are within the woodland to the west of the site which forms Strettlles Bog, Tarbock Local Wildlife Site (LWS), therefore the ditches have been allocated high strategic significance.

Table 11 – Condition Assessment for 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.	Pass	Condition Criteria 5.	Physical damage is evident along less than 5% of the ditch	Pass
Condition Criteria 2.	A range of emergent, submerged and floating leaved plants are present. As a guide >10 species of plants 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	Fail
Condition Criteria 4.	A fringe of marginal vegetation is present along more than 75% of the ditch	Fail	Condition Criteria 8	There is an absence of non-native plant and animal species	Fail
Condition	Poor	Passes 4 of 8 attributes			
Distinctiveness		Medium			



Photograph 7– Drainage ditch that flows into Ochre Brook within the deep cutting.

3.2.1 2) Other Rivers and Streams (Ochre Brook)

Ochre Brook was present within the area of other broadleaved woodland present in the western section of the site. This watercourse enters from a culvert beneath the M62 and exits through another culvert beneath A5080 south of the site. The watercourse had a high level of flow and showed evidence of pollution, likely due to surface water run-off from the motorway.

The brook is identified as a priority linear habitat within the Liverpool City Region Ecological Network and runs through Strettles Bog, Tarbock LWS, therefore the stream has been allocated high strategic significance.

Table 12 – Condition Assessment for Other Rivers and Streams

Name		Ochre Brook	
UK Hab Classification		Other Rivers and Streams	
Condition Assessment		River MoRPH Survey	
River Category	Other	Reach Valley Gradient	0.01
Braiding Index	1	Bedrock Reach	No
Sinuosity Index	1.23	Coarsest Bed Material	Cobble
Anabranching Index	1	Average Bed Material	Gravel-Pebble
Level of Confinement	Unconfined	Condition Score	Fairly Poor
Condition Score		Fairly Poor	
Distinctiveness		Medium	
Extent of watercourse encroachment		No encroachment	
Extent of riparian encroachment		No encroachment	

4 Retained Habitats

4.1 Area habitats

74% of the total area of woodland on site will be retained post-development and a proportion of this will be enhanced (Section 7.1). The developed land of Cronton Road will be retained fully. The areas and associated units to be retained are detailed in Table 13.

Table 13 – Retained Area Habitats

Habitat Parcel Reference	Total Area (ha)	Total Units	Area Retained (ha)	Units Retained
2) Other Woodland; Broadleaved	1.914	26.41	1.785	24.63
7) Developed Land; Sealed Surface	0.852	0.00	0.852	0.00
Total	2.766	26.41	2.637	24.63

4.2 Watercourse habitats

Ochre Brook will be retained in its entirety and there will be no active management of the brook. Approximately half of the ditch will be retained, with the other half enhanced (Section 7.2). The lengths and associated units to be retained are detailed in Table 14.

Table 14 – Retained Watercourse Habitats

Habitat Parcel Reference	Total Length (km)	Total Units	Length Retained (km)	Units Retained
1) Ditch	0.29	1.27	0.14	0.61
2) Other Rivers and Streams	0.12	1.24	0.12	1.24
Total	0.41	2.51	0.26	1.85

5 Lost Habitats

5.1 Area Habitats

The full extent of the grassland, scrub and ruderal habitats will be lost to development, as well as a proportion of the woodland. The areas and associated units to be lost are detailed in Table 15.

Table 15 – Lost Area habitats

Habitat Parcel Reference	Total Area (ha)	Total Units	Area lost (ha)	Units lost	Planned Mitigation
1) Other Neutral Grassland	6.404	29.46	6.404	29.46	Three different types of wildflower meadow are proposed across the site, however, this habitat will not be sufficiently compensated for
2) Other Woodland; Broadleaved	1.914	26.41	0.13	1.78	The existing woodland will be extended, and a new strip of woodland created along Cronton Road. However, this habitat will not be sufficiently compensated for
3) Other Woodland; Broadleaved	0.616	5.67	0.52	4.81	
4) Mixed Scrub	0.158	1.45	0.158	1.45	Large areas of mixed scrub will be created around the periphery of the site, containing a range of native species
5) Modified Grassland	0.042	0.10	0.042	0.10	This habitat will not be sufficiently compensated for
6) Ruderal/Ephemeral	0.257	0.59	0.257	0.59	This habitat will not be sufficiently compensated for
Total	9.391	63.68	7.51	38.19	

6 Pre-Development Unit Summary

Using the Biodiversity Metric 4.0, the habitat units of the existing site habitats, the units to be retained and the units that are anticipated to be lost in site development were calculated.

The results of these calculations are presented in Table 16.

Table 16: Pre-Development Unit Summary

	On-site baseline	Retained	Lost	Enhanced
Area Habitats	63.68	24.63	38.19	0.86
Watercourse Habitats	2.51	1.85	0.00	0.66

7 Enhanced Habitats

Post-development habitats as detailed within the Proposed Landscape Plan (Annabelle Langhorn Landscape Planning Ltd, 2023) were assessed to establish their condition following the methodology outlined in Section 2.4. The habitats have been given reference numbers of the pre-development habitat to be enhanced for clarity regarding in-text.

7.1 Area Habitats

7.1.1 3) Other Broadleaved Woodland (Moderate) - Other Broadleaved Woodland (Good)

The woodland to the north-west of the site has already achieved good condition, therefore the condition of the woodland cannot be further improved.

Two points are required to enhance the woodland along the south-eastern boundary from moderate to good condition. The invasive non-native species within the retained parcel of woodland will be removed fully and a shade tolerant wildflower mix (EH1 hedgerow mixture or equivalent) will be used to supplement the existing ground flora. A grassland buffer will be created between the woodland and adjacent development and the woodland is expected to receive limited disturbance. It is therefore anticipated that the woodland will not receive any nutrient enrichment and natural regeneration will improve evidence of existing damage.

Table 17 – Condition Assessment for Enhanced Other Woodland; Broadleaved

UK Hab Classification	Other woodland; Broadleaved		
Condition Sheet	Woodland		
Indicator 1. Age distribution of trees	Two age classes present (Moderate – 2 Points)	Indicator 8. Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback (Good – 3 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	Recognisable woodland NVC plant community at ground layer present (Moderate – 2 Points)
Indicator 3. Invasive plant species	No invasive species present in 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	Five or more native tree or shrub species across woodland parcel (Good – 3 Points)	Indicator 11. Veteran trees	No veteran trees present in woodland (Poor – 1 Point)
Indicator 5. Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native (Good – 3 Points)	Indicator 12. Amount of deadwood	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps (Good – 3 Points)
Indicator 6. Open space within woodland	10 - 20% of woodland has areas of temporary open space (Good – 3 Points)	Indicator 13. Woodland disturbance	No nutrient enrichment or damaged ground evident (Good – 3 Points)
Indicator 7. Woodland regeneration	All three classes present in woodland; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth (Good – 3 Points)		

Condition	Good	Scores 34 (>32 = Good)
Distinctiveness		Medium
Units Delivered via Enhancement		0.3

7.2 Watercourse Habitats

7.2.1 Ditch

The section of the ditch which emerges from the culvert and flows into Ochre Brook is to be enhanced by establishing new vegetation on the banks of the ditch which are currently heavily damaged and contain low cover of ruderal vegetation. The banks will be seeded with a wetland meadow mix, EM8 specification, which contains a mix of 80% grasses and 20% wildflowers. Species within this mix are suited to seasonally wet soils and include species such as: betony (*Betonica officinalis*), common knapweed (*Centaurea nigra*), meadowsweet (*Filipendula ularia*), common bent (*Agrostis capillaris*), sweet vernal grass (*Anthoxanthum odoratum*) and red fescue (*Festuca rubra*). The condition score of the ditch is expected to be elevated from **poor** to **moderate**.

Table 17 – Condition Assessment for 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.	Pass	Condition Criteria 5.	Physical damage not present	Pass
Condition Criteria 2.	A range of emergent, submerged and floating leaved plants are present. As a guide >10 species of plants 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	Non-native plants are absent	Pass
Condition	Moderate	Passes 7 of 8 attributes			
Distinctiveness		Medium			
Units Delivered via Enhancement		0.38			

7 Created Habitats on Site

7.1 Area Habitats

7.1.1 C1) Individual Trees - Urban Trees

A total of 424 urban trees are due to be planted, primarily to the north of the site. Some trees form part of the broader proposed woodland habitat or form hedgerows with trees and have therefore been excluded from the calculation. Proposed species include common alder (*Alnus glutinosa*), silver birch (*Betula pendula*), hornbeam (*Carpinus betulus*), bird cherry (*Prunus padus*) and common oak (*Quercus robur*). Trees have been classified as small sized in accordance with the Biodiversity Metric 4.0 User Guide (Natural England, 2023b), except for proposed wild cherry (*Prunus avium*), silver birch, downy birch (*Betula pubescens*), and beech trees which will be planted as extra heavy standards (14-16cm), and common oak which will be planted as extra heavy standards (16-18cm) and are expected to reach medium size class (>30cm DBH) after 30 years due to their growth rates and overall size.

Table 18 - Condition Assessment for Urban Tree

Classification within Landscape Designs		Scattered Native Trees			
UK Hab Classification		Urban tree			
Condition Sheet		Individual tree			
Condition Criteria 1.	The tree is a native species (or more than 70% within the block are native species).	Pass	Condition Criteria 4.	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height.	Pass
Condition Criteria 2.	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Pass	Condition Criteria 5.	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Pass
Condition Criteria 3.	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	Fail	Condition Criteria 6.	More than 20% of the tree canopy area is oversailing vegetation beneath.	Pass
Condition	Good	Passes 5 of 6 criteria			
Distinctiveness		Medium			
Time to Target Condition		30+ years			
Difficulty of Creation		Low			

7.1.2 C2) Woodland and Forest – Other Woodland, Broadleaved

The existing woodland is to be extended by planting the area at the northern tip of the site and a new woodland buffer will also be planted along Cronton Road. The proposed woodland mix contains a range of tree and shrub species which are entirely native and, once mature, the balance of trees and shrubs will create a diverse vertical structure within the woodland, with varied foraging, nesting and commuting opportunities. Tree species include silver birch, hornbeam, wild cherry, and common oak. Shrub species include holly (*Ilex aquifolium*), crab apple (*Malus sylvestris*) and dog rose (*Rosa canina*). Standard trees will be planted within the new woodland which will diversify the age and vertical structure. A native groundcover layer will also be created by introducing woodland plants, including selfheal (*Prunella vulgaris*), red campion (*Silene dioica*) and bush vetch (*Vicia sepium*).

Table 19 - Condition Assessment for Other Woodland; Broadleaved

Classification within Landscape Designs		Native Woodland Mix / Scattered Native Trees	
UK Hab Classification		Other woodland; Broadleaved	
Condition Sheet		Woodland	
Indicator 1. Age distribution of trees	Two age classes present (Moderate – 2 Points)	Indicator 8. Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback (Good – 3 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	Recognisable woodland NVC plant community at ground layer present (Moderate – 2 Points)
Indicator 3. Invasive plant species	No invasive species present in 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	Five or more native tree or shrub species across woodland parcel (Good – 3 Points)	Indicator 11. Veteran trees	No veteran trees present in woodland (Poor – 1 Point)
Indicator 5. Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native (Good – 3 Points)	Indicator 12. Amount of deadwood	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities (Poor – 1 Point)
Indicator 6. Open space within woodland	10 - 20% of woodland has areas of temporary open space (Good – 3 Points)	Indicator 13. Woodland disturbance	No nutrient enrichment or damaged ground evident (Good – 3 Points)
Indicator 7. Woodland regeneration	One or two classes only present in woodland (Moderate – 2 Points)		
Condition	Moderate	Scores 31 (26 – 32 = Moderate)	
Distinctiveness	Medium		
Time to Target Condition	15 years		
Difficulty of Creation	Low		

7.1.3 C3) Heathland and Shrub – Mixed Scrub

A native shrub mix will be planted in the car parking area of the site. Some of the scrub will form linear features which have therefore been classified as hedgerow habitats (Section 7.2.2). The scrub which

forms blocks has been assessed as an area habitat. The planting mix will contain all native species, including elder (*Sambucus nigra*) and European gorse (*Ulex europaeus*).

Table 20 – Condition Assessment for Mixed Scrub

Classification within Landscape Designs		Native Shrub Mix				
UK Hab Classification		Mixed Scrub				
Condition Sheet		Scrub				
Condition Criteria 1.		The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species, with no single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i>, common juniper <i>Juniperus communis</i>, sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i>, which can be up to 100% cover).	Pass	Condition Criteria 4.	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).	Fail
Condition Criteria 2.		Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	Fail	Condition Criteria 5.	There are clearings, glades or rides present within the scrub, providing sheltered edges.	Fail
Condition Criteria 3.		There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition make up less than 5% of ground cover.	Pass			
Condition	Poor	Passes 2 of 5 criteria				
Distinctiveness		Medium				
Time to Target Condition		1 year				
Difficulty of Creation		Low				

7.1.4 C4) Heathland and Shrub – Mixed Scrub

Larger areas of scrub habitat will be planted around the periphery of the site and adjacent to an access road. The scrub will contain at least four native shrub species, including hazel and hawthorn, and

ground flora species, such as knapweed (*Centaurea nigra*) and bird's-foot trefoil (*Lotus corniculatus*) will also be introduced.

Table 21 - Condition Assessment for Mixed Scrub

Classification within Landscape Designs		Mixed Scrub Margin Mix				
UK Hab Classification		Mixed Scrub				
Condition Sheet		Scrub				
Condition Criteria 1.		The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species, with no single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i>, common juniper <i>Juniperus communis</i>, sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i>, which can be up to 100% cover).	Pass	Condition Criteria 4.	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).	Pass
Condition Criteria 2.		Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	Fail	Condition Criteria 5.	There are clearings, glades or rides present within the scrub, providing sheltered edges.	Fail
Condition Criteria 3.		There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition make up less than 5% of ground cover.	Pass			
Condition	Moderate	Passes 3 of 5 criteria				
Distinctiveness		Medium				
Time to Target Condition		5 years				
Difficulty of Creation		Low				

7.1.5 C5) Grassland – Other Neutral Grassland

New wildflower meadow is to be created to the north of the site, adjacent to the woodland, scrub and ditch habitats, and as a linear strip along the boundary with Cronton Road. The earth will be seeded with an EM1 basic general purpose meadow mixture which contains a 90% mix of slow growing grasses and

10% native wildflowers. Grass species include common bent, crested dogtail (*Cynosurus cristatus*), red fescue and smooth-stalked meadow grass (*Poa pratensis*). Seven wildflower species are incorporated in the mix, including oxeye daisy (*Leucanthemum vulgare*), ribwort plantain (*Plantago lanceolata*) and selfheal (*Prunella vulgaris*).

Table 22 - Condition Assessment for Other Neutral Grassland

Classification within Landscape Designs		General Purpose Wildflower Mix			
UK Hab Classification		Other neutral grassland			
Condition Sheet		Grassland (medium, high & very high)			
Condition Criteria 1.	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present.	Pass	Condition Criteria 4.	Cover of bracken <i>Pteridium aquilinum</i> less than 20% and cover of scrub (including bramble) less than 5%	Pass
Condition Criteria 2.	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Pass	Condition Criteria 5.	Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area	Pass
Condition Criteria 3.	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Pass	Condition Criteria 6.	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type	Pass
Condition	Good	Passes 6 of 6 criteria, including both essential criteria.			
Distinctiveness		Medium			
Time to Target Condition		10 years			
Difficulty of Creation		Low			

7.1.6 C6) Grassland – Other Neutral Grassland

Further wildflower areas will be created in compartments adjacent to the car park and along an access road. These meadow areas will be seeded with an EL1 flowering lawn mixture which contains a mix of 80% grasses and 20% wildflowers. Species within these areas include glaucous sedge (*Carex flacca*), smaller cat's-tail (*Phleum bertolonii*), meadow buttercup (*Ranunculus acris*) and cowslip (*Primula veris*).

Table 23 - Condition Assessment for Other Neutral Grassland

Classification within Landscape Designs		Flowering Lawn Mix			
UK Hab Classification		Other neutral grassland			
Condition Sheet		Grassland (medium, high & very high)			
Condition Criteria 1.	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present.	Pass	Condition Criteria 4.	Cover of bracken <i>Pteridium aquilinum</i> less than 20% and cover of scrub (including bramble) less than 5%	Pass
Condition Criteria 2.	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Pass	Condition Criteria 5.	Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area	Pass
Condition Criteria 3.	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Pass	Condition Criteria 6.	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type	Pass
Condition	Good	Passes 6 of 6 criteria, including both essential criteria.			
Distinctiveness		Medium			
Time to Target Condition		10 years			
Difficulty of Creation		Low			

7.1.7 C7) Grassland – Other Neutral Grassland

Marginal vegetation will be established around the existing ditch and proposed pond, by seeding with EM8 seed mixture containing 80% grasses and 20% wildflowers. Species within this mix are suited to seasonally wet soils and are typical of floodplain habitats. Species include sweet vernal-grass (*Anthoxanthum odoratum*), tufted hair-grass (*Deschampsia cespitosa*), Devil's-bit scabious (*Succisa pratensis*) and rough hawkbit (*Leontodon hispidus*).

Table 24 - Condition Assessment for Other Neutral Grassland

Classification within Landscape Designs		Wetland Meadow Mix			
UK Hab Classification		Other neutral grassland			
Condition Sheet		Grassland (medium, high & very high)			
Condition Criteria 1.	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present.	Pass	Condition Criteria 4.	Cover of bracken <i>Pteridium aquilinum</i> less than 20% and cover of scrub (including bramble) less than 5%	Pass
Condition Criteria 2.	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Pass	Condition Criteria 5.	Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area	Pass
Condition Criteria 3.	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Pass	Condition Criteria 6.	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type	Pass
Condition	Good	Passes 6 of 6 criteria, including both essential criteria.			
Distinctiveness		Medium			
Time to Target Condition		10 years			
Difficulty of Creation		Low			

7.1.8 C8) Lakes – Pond (Non-Priority)

A large pond will be created to the north-west of the site. The banks of the pond will be sown with wetland wildflower seed, aquatic plants will be introduced and the water levels in the pond will be allowed to

fluctuate naturally. The pond will provide a valuable habitat for aquatic and amphibious species, as well as being an interesting visual feature.

Table 25 - Condition Assessment for Pond (Non-Priority Habitat)

Classification within Landscape Designs		Pond			
UK Hab Classification		Pond (non-priority habitat)			
Condition Sheet		Pond			
Condition Criteria 1.	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	Pass	Condition Criteria 6.	There is an absence of non-native plant and animal species.	Pass
Condition Criteria 2.	There is semi-natural habitat (i.e. moderate distinctiveness or above) for at least 10 m from the pond edge.	Pass	Condition Criteria 7.	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Pass
Condition Criteria 3.	Less than 10% of the pond is covered with duckweed or filamentous algae.	Pass	Condition Criteria 8.	In non-woodland ponds, plants, be they emergent, submerged or floating (excluding duckweeds) ³ , should cover at least 50% of the pond area that is less than 3 m deep.	Pass
Condition Criteria 4.	The pond is not artificially connected to other waterbodies, either via streams, ditches or artificial pipework.	Pass	Condition Criteria 9.	The surface of non-woodland ponds is no more than 50% shaded by woody bankside species.	Pass
Condition Criteria 5.	Pond water levels should be able to fluctuate naturally throughout the year. No obvious dams, pumps or pipework.	Pass			
Condition	Good	Passes 9 of 9 criteria.			
Distinctiveness		Medium			
Time to Target Condition		5 years			
Difficulty of Creation		Low			

7.1.9 C9) Urban - Developed Land; Sealed Surface

Areas formed of hardstanding, such as access roads and car parks, and buildings are classified as 'developed land; sealed surface' which is automatically allocated a predetermined condition of **N/A** within the metric.

7.2 Linear Habitats

7.2.1 1) Hedgerow – Species Rich Native Hedgerow with Trees

The hedgerow bordering the western boundary of the car park and several of the hedgerows within the car park will be planted with standard trees, thereby forming hedgerows with trees. These hedgerows will contain at least 5 native shrub species, such as field maple (*Acer campestre*), European spindle (*Euonymus europaeus*), and guelder-rose (*Viburnum opulus*).

Table 26 - Condition Assessment for Native Species Rich Hedgerow with Trees

Classification within Landscape Designs		Native Hedgerow				
UK Hab Classification		Species Rich Native Hedgerow with Trees				
Condition Sheet		Hedgerow				
A1. Height		>1.5 m average along length	Pass	C2. Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	Pass
A2. Width		>1.5 m average along length	Pass	D1. Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Pass
B1. Gap – hedge base		Gap between ground and base of canopy <0.5 m for >90% of length (unless ‘line of trees’)	Pass	D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	Pass
B2. Gap – hedge canopy continuity		Gaps make up <10% of total length and No canopy gaps >5 m.	Pass	E1. Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient ⁸), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow	Fail
C1. Undisturbed ground and perennial vegetation		>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: - measured from outer edge of hedgerow, and - is present on one side of the hedge (at least)	Pass	E2. Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity	Pass
Condition	Good	Passes 9 of 10 criteria and fails no more than 1 fail in each functional group				
Distinctiveness		High				
Time to Target Condition		20 years				
Difficulty of Creation		Low				

7.2.2 2) Hedgerow – Species Rich Native hedgerow

The hedgerow bounding an access road and running parallel to Cronton Road, as well as some of the native shrub hedgerows in the car park, contain at least 5 native species and have therefore been classified as species rich native hedgerows. Species within the hedgerows include holly and hazel.

Table 27 - Condition Assessment for Species Rich Native Hedgerow

Classification within Landscape Designs		Native Hedgerow				
UK Hab Classification		Species Rich Native 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: - measured from outer edge of hedgerow, and - is present on one side of the hedge (at least)	Pass
A2. Width		>1.5 m average along length	Pass	C2. Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <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 (unless ‘line of trees’)	Pass	D1. Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Pass
B2. Gap – hedge canopy continuity		Gaps make up <10% of total length and No canopy gaps >5 m.	Pass	D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	Pass
Condition	Good	Passes 8 of 8 criteria				
Distinctiveness		Medium				
Time to Target Condition		12 years				
Difficulty of Creation		Low				

7.2.3 3) Hedgerow - Native hedgerow

A total of 20m of native hedgerow will be created as two small lengths of hedgerow bordering a stretch of parking bays. The only species within this hedge is hornbeam.

Table 28 - Condition Assessment for Native Hedgerow

Classification within Landscape Designs	Evergreen Hedgerow				
UK Hab Classification	Native 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: - measured from outer edge of hedgerow, and	Fail

				- is present on one side of the hedge (at least)	
A2. Width	>1.5 m average along length	Fail	C2. Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <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 (unless ‘line of trees’)	Pass	D1. Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Pass
B2. Gap – hedge canopy continuity	Gaps make up <10% of total length and No canopy gaps >5 m.	Pass	D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	Fail
Condition	Moderate	Passes 5 of 8 criteria and fails no more than 1 fail in each functional group			
Distinctiveness	Low				
Time to Target Condition	5 years				
Difficulty of Creation	Low				

8 Post-Development Summary and Conclusion

Using the Biodiversity Metric 4.0, the habitat units of the planned 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 Table 29.

Table 29: Post Development Biodiversity Net Gain Calculation

	Habitat Unit Change					On-site post development	Net change in Biodiversity	
	On-site baseline	Retained	Lost	Enhanced	Created		Habitat units	%
Area Habitat Units	63.68	24.63	38.19	0.86	39.56	65.34	+1.66	+2.61
Linear Hedgerow Units	-	-	-	-	7.14	7.14	+7.14	N/A
Watercourse Units	2.51	1.85	0.00	0.66	-	2.89	+0.38	+15.18

As illustrated in Table 29, based on current design, the proposals deliver a net gain of 1.66 area habitat units (2.61%), a net gain of 7.14 hedgerow units (percentage not applicable as baseline is zero) and a net gain of 0.38 watercourse units (15.18%). However, the newly created habitats fail to satisfy the trading rules laid out in the metric due to insufficient compensation for broadleaved woodland and other neutral grassland.

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 (usually 30 years) is required (Urban Green, 2023a). 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

- Annabelle Langhorn Landscape Planning (2023). Proposed Landscape Plan. Ref: CLPD 075 Po1d Detailed Planting Plan 20122023.
- CIEEM (2017). Guidelines for Preliminary Ecological Appraisal.
- eCountability Ltd. (2018). UK Habitat Classification (Professional Edition).
- Gurnell *et al.* (2019) The MoRPH Survey: Technical Reference Manual.
- JNCC (2010). Handbook for Phase One Habitat Survey – 2010 Edition. England Field Unit, Nature Conservancy Council. Reprinted JNCC.
- Knowsley Council (2013) Knowsley Local Plan: Core Strategy.
- Department for Levelling Up, Housing & Communities (2023). National Planning Policy Framework.
- Lcreconet.uk. (2023). Interactive Map – Liverpool City Region Ecological Network. Available at: <http://lcreconet.uk/map/>.
- Merseyside Biodiversity Group (2008). North Merseyside Biodiversity Action Plan.
- Merseyside Environmental Advisory Service (2015). Liverpool City Region Ecological Network Final Report.
- Merseyside Environmental Advisory Service (2022). Information Note on Biodiversity Net Gain and its implementation in the Liverpool City Region.
- Natural England (2023a). The Biodiversity Metric 4.0 – Technical Annex 1 – Condition Assessment Sheets.
- Natural England (2023b). The Biodiversity Metric 4.0 - User Guide.
- Tyler Grange (2023). Arboricultural Note. Ref: Mercury 62, Knowsley Ro1a_Arboricultural Note.
- Urban Green (2023a). Biodiversity Enhancement Management Plan. Ref: UG_1602_ECO_BEMP_02.
- Urban Green (2023b). Preliminary Ecological Appraisal (PEA). Ref: UG_1602_ECO_PEA_03.
- Urban Green (2023c). Arboricultural Impact Assessment (AIA). Ref: UG_1459_ARB_AIA_01_REV_05_FINAL.
- Urban Green (2023d). Biodiversity Metric 4.0. Ref: UG_1602_BNG_CALC_02.

APPENDIX 1 - PRE- DEVELOPMENT HABITAT MAP

U R B A N
G R E E N

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- Red Line Boundary
- Other Rivers and Streams
- Sparsely Vegetated
- Mixed scrub
- Modified Grassland
- Other neutral grassland
- Developed Land Sealed Surface
- Target Note
- TN1 - Himalayan balsam
- TN2 - Himalayan balsam
- TN3 - Marshy grassland
- TN4 - Marshy grassland



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Title: **Habitat Map**

Issue: **02**

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Project: UG1602	Scale @ A3: 1:1850	Date: 09/10/2023
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Dwg No: UG_1602_ECO_HM_02	Revision: 01
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APPENDIX 2 – PROPOSED LANDSCAPE PLAN

U R B A N
G R E E N

