BIODIVERSITY NET GAIN DESIGN STAGE ASSESSMENT

September 2023

Land off Oldham Road
Newton Heath
Manchester
M40 2JB

URBAN GREEN

QUALITY MANAGEMENT

Project No.:	UG2045				
Project:	Land off Oldham Road, Newton Heath				
Location:	Oldham Road, Newton Heath, Manchester, M40 2JB				
Title:	Biodiversity Net Gain Design Stage Assessment				
Document Type:	BNG	**Issue No.:**	01		
Date:	07.08.2023				
Prepared By:	Shannon Brady	**Signature:**		**Qualifications:**	Senior Biodiversity Net Gain Consultant, MSc, QCIEEM
Checked By:	Sarah Child	**Signature:**		**Qualifications:**	Biodiversity Net Gain Consultant, MSc
Checked By:	Barnaby Indio Gardner	**Signature:**		**Qualifications:**	Assistant Ecologist, MEnv, BSc, QCIEEM

Revision Status:

Rev:	Date:	Issue/Purpose/ Comment:	Prepared:	Checked:
02	22/09/2023	To reflect changes to landscape	SB	SC

NON-TECHNICAL EXECUTIVE SUMMARY

One Manchester are proposing to develop land off Oldham Road, Newton Heath (hereafter referred to as 'the site'). The proposals include the construction of residential units with associated hard and soft landscaping.

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					Net change in Biodiversity	
	On-site baseline	Retained	Lost	Enhanced	Created	On-site post development	Habitat units	%
Area Habitat Units	1.50	0.00	1.50	0.00	1.50	1.50	<0.01	**-0.18**
Linear Hedgerow Units	0.00	-	-	-	0.15	0.15	+0.15	**N/A**

Overall, this assessment produces a net loss of <0.01 area habitat units (-0.18%) and a net gain of 0.15 linear hedgerow units (percentage not applicable as the baseline is zero). The trading rules have not been satisfied for the existing modified grassland and vacant/derelict land habitats. On-site mitigation opportunities have been maximised.

CONTENTS

1 Introduction 1

1.1 Background to the Scheme 1

1.2 Site Context 1

1.3 Purpose of this Report 2

1.4 Planning Context 2

1.5 Good Practice Principles 3

2 Methods 4

2.1 Sources of Information 4

2.2 Site Mapping 4

2.3 The Biodiversity Metric 4.0 5

2.4 Habitat Scoring 5

2.5 Constraints to the Survey 7

3 Pre-Development Habitat Assessment 9

3.1 Area Habitats 9

4 Lost Habitats 16

4.1 Area Habitats 16

5 Pre-Development Unit Summary 17

6 Created Habitats on Site 18

6.1 Area Habitats 18

6.2 Linear Hedgerow Habitats 21

7 Post-Development Summary and Conclusion 23

8 References 24

APPENDIX 1 - Pre-Development Habitat Map

APPENDIX 2 - Primary and Secondary Codes

APPENDIX 3 - Proposed Landscape Plan

1 Introduction

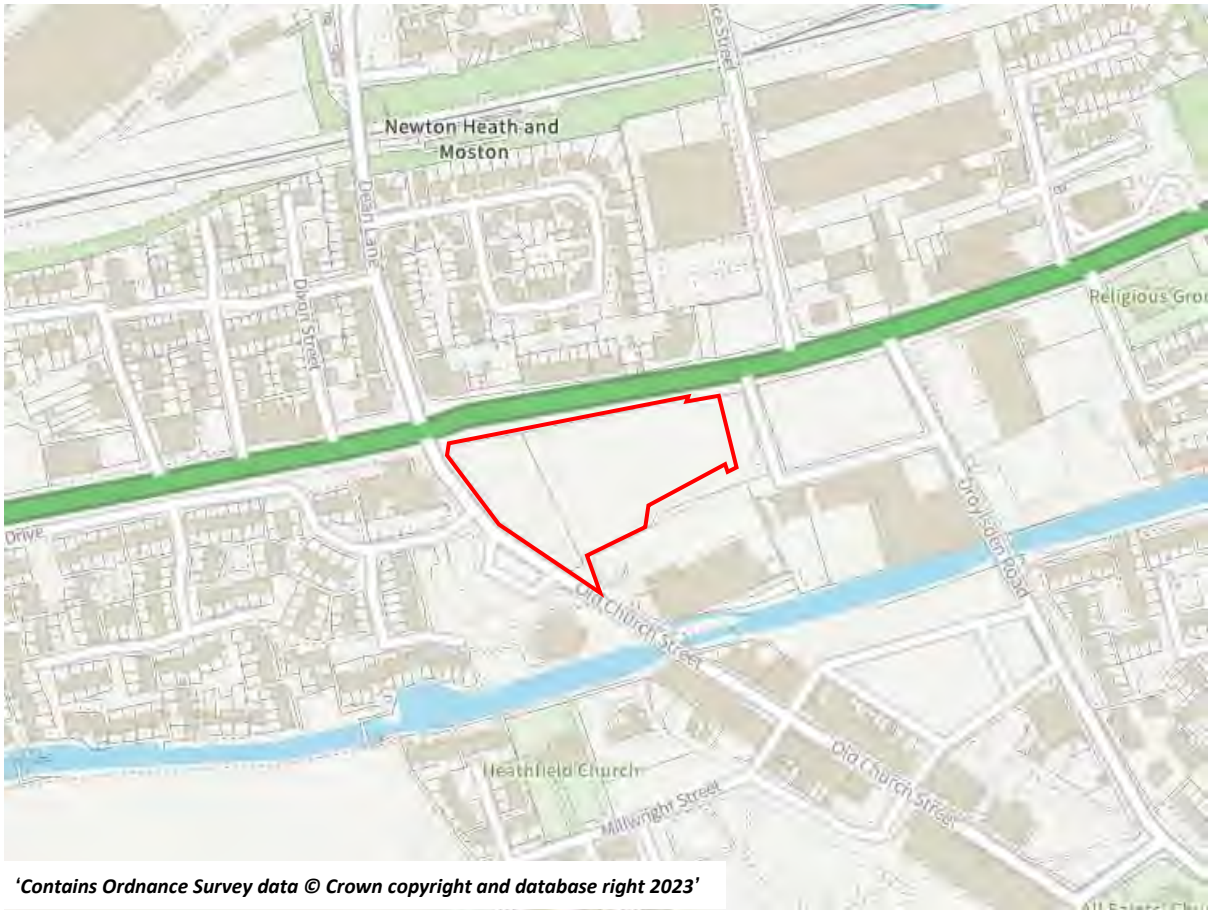
1.1 Background to the Scheme

This Biodiversity Net Gain Assessment has been prepared by Urban Green on behalf of One Manchester to assess the change in value to biodiversity as a result of the proposed development on land off Oldham Road, Newton Heath. The proposals include the construction of residential units with associated hard and soft landscaping.

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 and commercial schemes.

1.2 Site Context

The site is located at National Grid Reference SD 87972 00644 and comprises a total area of approximately 0.9ha (see Figure 1).



'Contains Ordnance Survey data © Crown copyright and database right 2023'

Figure 1 – Site Extent

The site is located within the densely urban area of Newton Heath, 4.5km from Manchester city centre. The northern border is bound by the busy A62 road, which spans an extensive east-west distance beyond site – a major dispersal barrier. To the south of site, the Rochdale Canal spans a similar distance parallel to the A62. Extensive urban residential, commercial, and industrial districts are found in all directions of the site's wider area. Sparse areas of urban green space are interspersed between, notably Moston Vale

northwest, Broadhurst park northeast, Brookdale Park southeast, and the woodland off Briscoe Lane Academy close southwest.

1.3 Purpose of this Report

This report has been produced to document the methods, results and conclusions of a Biodiversity Net Gain (BNG) Design Stage 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 from November 2023. 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.

Manchester City Council adopted a local plan in 2012, which will remain in place until 2027. While this document does not directly reference Biodiversity Net Gain, Policy EN 15 (Biodiversity and Geological Conservation) states:

Developers will be expected to identify and implement reasonable opportunities to enhance, restore or create new biodiversity, either on-site or adjacent to the site, contributing to linkages between valuable or potentially valuable habitat areas where appropriate.

Policy JP-G 9 of the Greater Manchester Places for Everyone plan, relating to biodiversity and geodiversity, states:

Development will be expected to:

a. Follow the mitigation hierarchy of:

i. Avoiding harm to biodiversity, particularly where it is irreplaceable, and including consideration of alternative sites where appropriate, then

ii. Mitigating (within the local area) any harm to biodiversity, then

iii. Compensating (within the local area) for any remaining harm to biodiversity

b. Avoid fragmenting or severing connectivity between habitats;

c. Achieve a net gain in biodiversity

d. Make appropriate provision for long-term management of habitats and geological features connected to the development; and

e. Provide robust evidence in accordance with relevant government and other guidance, including field surveys wherever development of 'best and most versatile' agricultural land is proposed or to establish the status of the land within the Agricultural Land Classification system.

Whilst off-site habitat enhancement and creation required as part of the mitigation hierarchy (or to achieve a measurable net gain in biodiversity of no less than 10%) should be local to the site regard should be had to supporting strategic biodiversity priorities and initiatives.

Greater Manchester Combined Authority (GMCA) have also produced guidance relating to Biodiversity Net Gain within the 10 GM boroughs and set out a 10% target (GMCA, 2021):

The minimum level of Biodiversity Net Gain is considered to be achieved when the biodiversity units for the habitats (for example, area based habitats, rivers and/or hedges) impacted by the development is increased by 10% or more after the development. If the calculations indicate that a net gain will not be delivered at this stage, either the design should be updated or additional areas for habitat compensation identified (either onsite or outside the development boundary).

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.

2 Methods

2.1 Sources of Information

Table 1 – Desk Study Sources of Information

Source	Date Consulted	Information Sought
MAGIC website (www.magic.gov.uk)	31/07/2023	Locations of statutory designated sites within 2km of the site boundary. Locations of National Site Network sites (Ramsar, Special Area of Conservation (SAC) and Special Protection Area (SPA)) within 5km of the site boundary.
Greater Manchester Biodiversity Action Plan	31/07/2023	Species and habitats which are given special conservation status at the local level.
Preliminary Ecological Appraisal (PEA) Urban Green (2023b)	03/08/2023	Notable species, habitats and designations identified on site and within a 2km radius
The Biodiversity Metric 4.0 *Natural England Publications (http://publications.naturalengland.org.uk/publication/6049804846366720?cache=1679663880.16)*	21/09/2023	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 (Baseline)

The site was subject to a field survey on the 27th April by Barnaby Gardner, Assistant Ecologist. The weather conditions were 11°c, scattered clouds (4/8 oktas), wind speed 2 Beaufort scale.

Plant species were identified and recorded and species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and those 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* were also searched for during the field survey.

Habitat types were identified and recorded using the Coreo habitat mapping application (version V1.1) which utilises UKHab V1.1 classifications (Butcher *et al.* 2020). Habitat types were based on the UKHab guidance provided and the assessor's best judgment while using these guidelines. 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. The baseline habitat map is displayed in Appendix 1. Secondary codes were also allocated to provide further information about

the habitat which is not provided by primary codes. Definitions for primary and secondary codes can be found in Appendix 2.

At the time of site visit, the eastern extent of the site was being used by construction traffic and for storage for the adjacent Phase 1 development. As current activities have directly impacted the biodiversity value of the on-site habitats, in accordance with Paragraph 6 (Part 1, Section 14) of the Environment Act, 2021, the baseline value of the site prior to disturbance will be used. This has been gathered from aerial imagery and assumptions have been made based on the condition of the surrounding grassland.

2.2.2 Post-Development Habitats

The planning layout, as provided by TPM Landscape (2023a) (Appendix 3), was provided in DWG and PDF format and used to categorise the proposed habitats. A planting plan was also provided (TPM Landscape, 2023b).

2.3 The Biodiversity Metric 4.0

The BNG calculation was undertaken utilising The Biodiversity Metric 4.0 from Natural England using data obtained from the field surveys.

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

The Biodiversity Metric 4.0 uses habitat features as a proxy measure for capturing the value and importance of nature. The metric considers the size, ecological condition, location and proximity to nearby 'connecting' features. The metric enables assessments to be made of the present and forecast future biodiversity value of a site.

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 25m^2 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:

<u>Condition</u>

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). Condition sheets used within this assessment for pre- and post-development habitats are grassland (low), individual trees, scrub urban and hedgerow.

Table 2 – Conditions Sheets for Habitat Assessment

Condition Sheet	Habitats Assessed
Area Habitats	
Grassland (Low)	Modified Grassland
Individual Trees	Urban Trees
Scrub	Mixed Scrub
Urban	Vacant/Derelict Land
Linear Hedgerow Habitats	
Hedgerow	Native Hedgerow

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 for area habitats.

Table 3 – Distinctiveness Assessment

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 Nature Recovery Areas, local biodiversity plans, National Character Area 14 objectives and green infrastructure strategies (see Table 4).

None of the pre- or post-development habitats are identified within the Greater Manchester Biodiversity Action Plan or other local documentation and therefore all habitats have been allocated low 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 3). 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

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 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.

Some of the habitats recorded within the baseline of the site have been identified retrospectively as recent disturbance by construction traffic has changed the context of the land (see Section 2.2.1). The classifications and condition scores have been allocated based on aerial imagery and the classification/condition of similar adjacent habitats. However, without recent survey data, comprehensive species lists and thorough condition assessments, there is a possibility of baseline data being unreliable and habitats being undervalued.

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. Full habitat descriptions can be found in the PEA (Urban Green, 2023b).

3.1 Area Habitats

3.1.1 1) Urban – Vacant/Derelict (u 10 17 189)

The north-west corner of the site was comprised of vacant/derelict land which was defined by unmanaged demolition debris. The ground was predominantly bare, with areas of hardstanding, and buddleja (*Buddleja davidii*) dominated the vegetation layer. Dandelion (*Taraxum officinale*), yarrow (*Achillea millefolium*), ragwort (*Jacobaea vulgaris*), white clover (*Trifolium repens*), willowherb (*Onagraceae* spp.), dock (*Rumex* spp.) and sweet vernal grass (*Anthoxanthum odoratum*) were also identified during the field visit.

Table 5 – Condition Assessment for Vacant/Derelict Land

UK Hab Classification	Vacant/derelict land				
Condition Sheet	Urban				
Condition Criteria 1.	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	Fail	Condition Criteria 3.	Invasive non-native plant species (listed on Schedule 9 of WCA[1]) and others which are to the detriment of native wildlife (using professional judgement)[2] cover less than 5% of the total vegetated area[3]. **Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).**	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 criteria				
Distinctiveness	Low				

Photo 1 – Vacant/derelict land

3.1.2 2) Urban – Other Developed Land (u1b6 10 111 189)

A disused tarmac road runs north to south. The road was extensively littered and had been colonised by ruderal species, including dandelion, nettle (*Urtica dioica*), buddleja and ragwort. The road has been input into the metric as 'developed land; sealed surface' which is automatically allocated a condition score of N/A in the metric.

3.1.3 3) Urban – Developed Land; Sealed Surface (u1b)

Prior to the disturbance as a result of construction activity, a proportion of the site was occupied by a building, associated car park and other areas of hardstanding. These features are classified as developed land; sealed surface which is automatically allocated a condition score of N/A in the metric.

3.1.4 4) Grassland – Modified Grassland (g4 10 17 77 78 80)

The primary habitat on site was modified grassland which comprises much of the land to the west of the disused road. The land was previously occupied by buildings but, since demolition, vegetation has colonised. Sweet vernal grass (*Anthoxanthum odoratum*) and perennial ryegrass (*Lolium perenne*) were dominant, and white clover, dandelion and buddleja were abundant. Frequently recorded species were creeping thistle (*Cirsium arvense*), ragwort, broadleaved dock (*Rumex obtusifolius*), dove's foot crane's-bill (*Geranium mole*), yarrow, and speedwell (*Veronic* spp.).

Table 6 – Condition Assessment for Modified Grassland

UK Hab Classification	Modified grassland				
Condition Sheet	Grassland (low)				
Condition Criteria 1.	There are 6-8 species per m², including at least 2 forbs. **Note - this criterion is essential for achieving Moderate or Good condition.**	Fail	Condition Criteria 5.	Cover of bare ground is between 1% and 10%, 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 7 cm and at	Fail	Condition Criteria 6.	Cover of Bracken *Pteridium aquilinum* <20% of ground cover	Pass

	least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.				
Condition Criteria 3.	Some scattered scrub (including bramble Rubus fruticosus agg.) 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. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Fail			
Condition Poor	Passes 4 of 7 criteria but fails essential criterion 1				
Distinctiveness	Low				

Photo 2 – Modified grassland

3.1.5 5) Grassland – Modified Grassland (g4 10 17 73 77 80)

A parcel of grassland to the west of the site contained high cover of bare ground and levels of industrial waste, such as concrete and bricks. The species composition was similar to that described in Section 3.1.4, though contained higher cover of buddleja and bramble (*Rubus fruticosus* agg.).

Table 7 – Condition Assessment for Modified Grassland

UK Hab Classification	Modified grassland				
Condition Sheet	Grassland (low)				
Condition Criteria 1.	There are 6-8 species per m^2, including at least 2 forbs. **Note - this criterion is essential for achieving Moderate or Good condition.**	Fail	Condition Criteria 5.	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).	Fail
Condition Criteria 2.	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	Fail	Condition Criteria 6.	Cover of Bracken *Pteridium aquilinum* <20% of ground cover	Pass
Condition Criteria 3.	Some scattered scrub (including bramble Rubus fruticosus agg.) may be present, but scrub accounts for less than 20% of total grassland area.	Fail	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. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high	Fail			

		levels of access, or any other damaging management activities.				
Condition	Poor	Passes 2 of 7 criteria but fails essential criterion 1				
Distinctiveness		Low				

Photo 3 – Western grassland

3.1.6 6) Grassland – Modified Grassland (g4 80 / g4 10 11 17 80)

Two distinct parcels of grassland sit to the east of the road and at the north of the site. The larger of the two parcels had a sward of varied height which contained sweet vernal grass, crested dog's tail (*Cynosurus cristatus*), cock's foot (*Dactylis glomerata*), ribwort plantain (*Plantago lanceolata*), dandelion, ragwort, and willowherb. The smaller parcel contains a similar grassland composition but also contains regeneration of tree and shrub saplings, including goat willow (*Salix caprea*) and ash (*Fraxinus excelsior*). The grasslands have been assessed together due to the low species richness.

Table 8 – Condition Assessment for Modified Grassland

UK Hab Classification	Modified grassland				
Condition Sheet	Grassland (low)				
Condition Criteria 1.	There are 6-8 species per m², including at least 2 forbs. **Note - this criterion is essential for achieving Moderate or Good condition.**	Fail	Condition Criteria 5.	Cover of bare ground is between 1% and 10%, 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 7 cm and at least 20% is more than 7 cm) creating microclimates	Pass	Condition Criteria 6.	Cover of Bracken *Pteridium aquilinum* <20% of ground cover	Pass

	which provide opportunities for vertebrates and invertebrates to live and breed.				
Condition Criteria 3.	Some scattered scrub (including bramble Rubus fruticosus agg.) may be present, but scrub accounts for less than 20% of total grassland area.	Fail	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. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Fail			
Condition Poor	Passes 4 of 7 criteria but fails essential criterion 1				
Distinctiveness	Low				

Photo 4 – Larger grassland parcel

Photo 5 – Scrub within grassland

3.1.7 7) Grassland – Modified Grassland (g4)

The final parcel of grassland has been mapped based on historic aerial imagery and classifications of surrounding habitats for the reasons described in Section 2.2.1. It has been assumed that the grassland contained a similar species composition to that described in Section 3.1.6 and the resulting condition would therefore be **poor**.

4 Lost Habitats

4.1 Area Habitats

All of the existing on-site habitats will be lost to facilitate development. The habitats, associated areas and units to be lost are detailed in Table 9.

Table 9 – Lost Area Habitats

Habitat Parcel Reference	Total Area (ha)	Total Units	Area lost (ha)	Units lost	Planned Mitigation
1) Vacant/derelict land	0.133	0.27	0.133	0.27	This habitat will be compensated for by the creation of other low distinctiveness habitats and medium distinctiveness habitats
2) Developed land; sealed surface	0.019	0.00	0.019	0.00	Developed land offers negligible ecological value and therefore does not require compensation
3) Developed land; sealed surface	0.129	0.00	0.129	0.00	
4) Modified grassland	0.099	0.20	0.099	0.20	New areas of modified grassland will be created across the site, however, this will not compensate fully for the loss of the existing grassland
5) Modified grassland	0.024	0.05	0.024	0.05	
6) Modified grassland	0.121	0.24	0.121	0.24	
7) Modified grassland	0.374	0.75	0.374	0.75	
Total	**0.899**	**1.50**	**0.899**	**1.50**	

5 Pre-Development Unit Summary

Using the Biodiversity Metric 4.0, 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 10.

Table 10 - Pre-Development Unit Summary

	On-site baseline	Retained	Lost
Area Habitat Units	1.50	0.00	1.50

6 Created Habitats on Site

6.1 Area Habitats

6.1.1 C1) Individual Trees – Urban Trees

A total of 32 urban trees will be planted across the site, however, 9 of these trees will be under the management of homeowners. These trees have therefore been excluded from the calculation. Proposed trees are a mix of native and ornamental species, such as, Himalayan birch (*Betula utilis jacquemontii*) and wild cherry (*Prunus avium*), and 12 of the trees have been classified as small size and 11 classified as medium sized. The trees classified as medium sized are silver birch (*Betula pendula*), hornbeam (*Carpinus betulus*) and wild cherry which will be planted as semi-mature standards.

Table 11 – Condition Assessment for Individual Trees

Classification Within Landscape Proposals	Proposed Urban Trees / Proposed Tree to Public Spaces in Hard Landscape / Proposed Tree to Public Spaces in Soft Landscape / Proposed Fruit Tree				
UK Hab Classification	Urban Trees				
Condition Sheet	Individual Trees				
Condition Criteria 1.	The tree is a native species (or at least 70% within the block are native species).	Fail	Condition Criteria 4.	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And 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	Pass	Condition Criteria 5.	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark	Fail
Condition Criteria 3.	The tree is mature (or more than 50% within the block are mature)	Fail	Condition Criteria 6.	More than 20% of the tree canopy area is oversailing vegetation beneath	Fail
Condition Moderate	Passes 3 of 6 criteria				
Distinctiveness	Medium				
Time to Target Condition	27 years				
Difficulty of Creation	Low				

6.1.2 C2) Urban – Introduced Shrub

Blocks of shrub and herbaceous planting will be created across the site, bordering communal spaces and car parks. The planting mixes are comprised primarily of non-native, ornamental species such as Mexican orange blossom (*Chosiya ternate*) and garden lady's-mantle (*Alchemilla mollis*) and will provide primarily aesthetic value to the development. Introduced shrub is automatically allocated a condition score of N/A in the metric.

6.1.3 C3) Heathland and Shrub – Mixed Scrub

A block of mixed scrub will be planted to the north of the site, adjacent to the car park. The species mix is entirely native and includes hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*), blackthorn (*Prunus spinosa*), elder (*Sambucus nigra*) and guelder-rose (*Viburnum opulus*).

Table 12 – Condition Assessment for Mixed Scrub

Classification within Landscape Designs	Proposed 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 *Corylus avellana*, common juniper *Juniperus communis*, sea buckthorn *Hippophae rhamnoides* or box *Buxus sempervirens*, 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				

6.1.4 C4) Grassland – Modified Grassland

Quality fine turf will be laid within the public open space. The turf will contain a low species richness of exclusively grass species.

Table 13 – Condition Assessment for Modified Grassland

Classification Within Landscape Proposals	Proposed Grass				
UK Hab Classification	Modified Grassland				
Condition Sheet	Grassland (Low)				
Condition Criteria 1.	There are 6-8 vascular plant species per m2 present, including at least 2 forbs. **Note - this criterion is essential for achieving Moderate or Good condition.**	Fail	Condition Criteria 5.	Cover of bare ground is between 1% and 10%, 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 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	Fail	Condition Criteria 6.	Cover of Bracken *Pteridium aquilinum* <20% of ground cover	Pass
Condition Criteria 3.	Some scattered scrub (including bramble Rubus fruticosus agg.) 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. Examples of physical damage include excessive poaching, damage from machinery use or	Pass			

		storage, erosion caused by high levels of access, or any other damaging management activities.				
Condition	Poor	Passes 5 of 7 criteria but fails essential criterion 1				
Distinctiveness		Low				
Time to Target Condition		1 year				
Difficulty of Creation		Low				

6.1.5 C5) Urban – Vegetated Gardens

All vegetation within domestic curtilage, including any ornamental planting, hedgerows and trees, has been classified as 'vegetated gardens' which is automatically allocated a condition score of **N/A** in the metric.

6.1.6 C6) Urban – Developed Land; Sealed Surface

Buildings, with their associated hardstanding, and roads are classified as developed land; sealed surface which is allocated a condition score of **N/A** in the metric.

6.2 Linear Hedgerow Habitats

Hedgerows associated with residential units and under the management of homeowners have been excluded from the calculation.

6.2.1 C1) Native Hedgerow

A total of 41m of native hedgerow, comprised exclusively of wild privet (*Ligustrum vulgare*), will be planted to the north-west and north-east of the site.

Table 14 – Condition Assessment for Native 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	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	Pass
Condition	Moderate	Passes 5 of 8 criteria			

Distinctiveness	Low
Time to Target Condition	5 years
Difficulty of Creation	Low

6.2.2 C2) Non-Native and Ornamental Hedgerow

A total of 10m of hedgerow containing Portuguese laurel (*Prunus lusitanica*) will be planted adjacent to car parking bays to the east of the site. Ornamental hedgerows are automatically allocated a condition score of **poor** in the metric.

7 Post-Development Summary and Conclusion

Using the Biodiversity Metric 4.0, 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 and the habitat units of the planned created habitats were calculated.

The results of these calculations are presented in Table 15.

Table 15 - 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 Habitat Units	1.50	0.00	1.50	0.00	1.50	1.50	<0.01	**-0.18**
Linear Hedgerow Units	0.00	-	-	-	0.15	0.15	+0.15	**N/A**

Overall, this assessment produces a net loss of <0.01 area habitat units (-0.18%) and a net gain of 0.15 linear hedgerow units (percentage not applicable as the baseline is zero). The trading rules have not been satisfied for the existing modified grassland and vacant/derelict land habitats. On-site mitigation opportunities have been maximised.

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. 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. This management plan is provided by Urban Green (2023a) as a separate document and covers the recommended management practices for the proposed habitats discussed in this report.

8 References

Baker, J., Hoskin, R. and Butterworth, T. (2019). Biodiversity net gain. Good practice principles for development: A practical guide.

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). *UK Habitat Classification – Habitat Definitions V1.1*

CIEEM (2017). Guidelines for Preliminary Ecological Appraisal.

eCountability Ltd. (2018). UK Habitat Classification (Professional Edition).

Greater Manchester Biodiversity Project (2009). Greater Manchester Biodiversity Action Plan (BAP).

Greater Manchester Combined Authority (2021). GMCA Biodiversity Net Gain: Guidance for Greater Manchester.

JNCC (2010). Handbook for Phase One Habitat Survey – 2010 Edition. England Field Unit, Nature Conservancy Council. Reprinted JNCC.

Manchester City Council (2012). Core Strategy Development Plan Document.

Natural England (2023a). The Biodiversity Metric 4.0 - Technical Annex 1.

Natural England (2023b). The Biodiversity Metric 4.0 - User Guide.

TPM Landscape (2023a). Landscape Layout. Ref: 3538 102E Landscape Layout.

TPM Landscape (2023b). Planting Plan. Ref: 3538 201B Planting Plan.

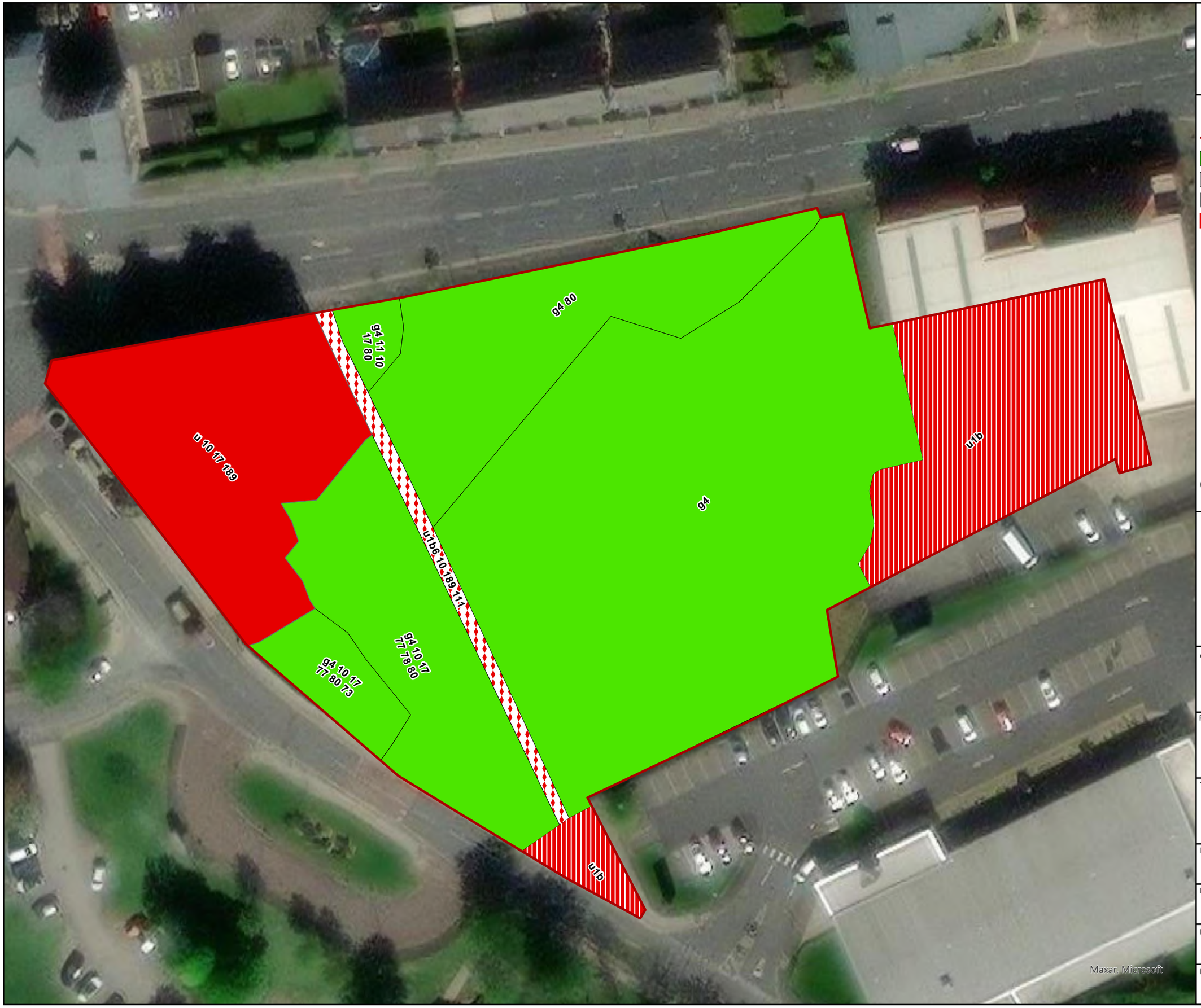
Urban Green (2023a). Biodiversity Enhancements Management Plan (BEMP). Ref: UG_2045_BNG_BEMP_02.

Urban Green (2023b). Preliminary Ecological Appraisal (PEA). Ref: UG_2045_ECO_03.

Urban Green (2023c). Biodiversity Metric 4.0. Ref: UG_2045_BNG_CALC_02.

APPENDIX 1 - PRE-DEVELOPMENT HABITAT MAP

URBAN GREEN



Do not scale this drawing (printed or electronic version).
This drawing is copyright and is for use on this site only. This drawing should be read in conjunction with all relevant consultants drawings and specialist subcontractors / supply chain drawings and specifications.
Responsibility for the reproduction of this drawing in paper form, or issued in electronic format, lies with the recipient to check that all information has been replicated in full and is correct when compared to the original paper or electronic image.

Legend

- Red Line Boundary
- Modified grassland
- Other developed land
- Urban
- Developed land; Sealed surface

N

0 0.01 0.01 0.03 Kilometers

URBAN GREEN

A: Ground Floor, The Tower, Deva City Office Park, Trinity Way, Manchester M3 7BF

T: +44 (0) 161 312 3131

weareurbangreen.co.uk

Client: **Barratt Homes**

Project: **Land of Oldham Street, Newton Heath**

Title: **UKHAB Habitat Map**

Issue: **04**

Drawn:	Checked:	Approved:
CL	BG	JH

Project:	Scale @ A3:	Date:
UG2045	1:875	20/07/2023

Dwg No:	Revision:
UG_2045_ECO_HM_04	01

APPENDIX 2 – PRIMARY AND SECONDARY CODES

URBAN GREEN

Primary Code	Definition
g4	Modified grassland
u	Urban
u1b	Developed land; sealed surface
u1b6	Other developed land
Secondary code	**Definition**
10	Scattered scrub
11	Scattered trees
17	Ruderal/ephemeral
73	Bare ground
77	Neglected
78	Abandoned
80	Unmanaged
111	Road
189	Scattered grass

APPENDIX 3 – PROPOSED LANDSCAPE PLAN

URBAN GREEN

Example of low concrete steps to provide raised seating area

LEGEND

SOFT LANDSCAPE

Existing Trees to be Retained

Existing Trees Showing Poor Health
Replacement of trees to be discussed with local authority.

Proposed Urban Trees
Trees to be planted as 20-25cm, Extra Heavy Standard, 4.5-5.5m high with 2m clear stem. Trees to be secured with underground guying system.

Proposed Tree to Public Spaces in hard landscape, with underground soil support system and tree grill
Size: 4.5-5.5m
Girth: 20-25cm
Fixing: Underground rootball anchor system

Proposed Tree to Public Spaces in soft landscape
Size: 4.5-5.5m
Girth: 14-16cm
Fixing: Double-staked, rubber ties

Proposed Fruit Tree to Community Orchard
Size: 3.5-4.5m
Girth: 12-14cm
Fixing: Double-staked, rubber ties

Proposed Ornamental Planting
Shrubs and herbaceousplanting in 3ltr pots with specimens.Planting beds to receive 75mm depth ornamental bark mulch.

Proposed Native Shrub Mix
To be planted as bare root stock, 60-80cm, at 2 p/m2, and protected with spiral guards. To be planted in groups of 3-5 plants.

Proposed 1m Hedge Planting
Planted at 1m height, in 10L container stock at 4 per lin.m, double staggered

Proposed 0.45m Hedge Planting
Planted at 0.45m height, in 10L container stock at 4 per lin.m, double staggered

Proposed Grass
Quality fine turf to POS areas

HARD LANDSCAPE AND FEATURES

Flag Paving to Communal Areas
Typical treatment - Concrete Flag paving
Eg Marshalls Perfecta Natural 600x600 flags

Block Paving to Communal Areas
Typical treatment - Concrete Block paving: Eg Silver Grey Fusion by Tobermore

Block Paving to Private Driveways
Typical treatment - Concrete Block Paving; as specified by architects

Block Paving to delineate bin store area
Typical treatment - Concrete Block paving: Eg Pennant Grey Tegula by Marshalls

Concrete steps
400 width x 100mm high lower step; 100mm width upper step to grass terrace

Proposed Gravel

Proposed Timber Bench
Eg, Woodscape Type 2-2000 curved bench with backrest

Levels

Existing Levels as indicated on topographical survey

Proposed levels as indicated on architect drawings

Proposed strategic external levels

GENERAL NOTES

1. This drawing is the copyright of tpm landscape Ltd and cannot be reproduced in any form without the consent of the company.
2. This drawing is to be read in conjunction with detail landscape drawings, details and specification.
3. This drawing is to be read in conjunction with all relevant Architects', Engineer's, Specialists, Bills of Quantities and Specifications.
4. The insertion of any firm or proprietary brand on this drawing is an indication of the class or quality required and does not exclude the use of alternative materials that are equal in performance, quality and appearance, provided that they have been approved in writing by the Landscape Architect.
5. The Contractor is responsible for accurately ascertaining the position of underground services and responding to all relevant service easement requirements.
6. All dimensions are in millimetres unless stated otherwise, for the purposes of construction this drawing must not be scaled and only written dimensions used. Written and scaled dimensions to be checked on site, any discrepancies reported prior to work commencing. IF IN DOUBT PLEASE ASK.
7. All work and materials are to be in accordance with the relevant British Standards and Code of Practice.
8. All Proprietary products are to be used strictly in accordance with the manufacturer's instructions and details.

REVISION NOTES

Rev	By	Description	Date
E	TS	Tweaked 3nr Native-trees in line with the comments	21 Sep '23
D	TS	Updated in line with the ecologist's comments -planting update for BNG calculation	25 Aug '23
C	KP	Hedges added between rear parking bays	19 June '23
B	KP	Minor layout changes - bin store amended	14 June '23
A	KP	Additional strategic levels	23 May '23

FOR ALL BOUNDARY TREATMENTS PLEASE LOOK TO ARCHITECTS DRAWING

Client
One Manchester

Project
Oldham Road, Newton Heath

Description
Landscape Layout

Status
For Approval

Scale @ A2	Drawn	Checked	Date
1:500	TS	KP	15.05.23
Job number	**Drawing number**		**Revision**
3538	102		E

tpm landscape
chartered landscape architects
address: 4th Floor Studio 10 Little Lever St Manchester M1 1HR
tel: 0161 235 0600 fax 0601 email info@tpmlandscape.co.uk