AMENITYTREE

ENVIRONMENTAL PLANNING CONSULTANTS

Assessment of Biodiversity Biodiversity Net Gain (BNG)

Version 1
29.04.2024

Prepared for: Network Space

Site: Welcomb St Openshawe

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1. Introduction

1.1 Background to the project

Amenity Tree was commissioned by Network Space to undertake a Biodiversity Assessment for the proposed development of at Welcomb St, Openshaw.

1.2 Site location and context

The Preliminary Ecological Appraisal stated:

> 'The habitat on and adjacent to site comprises of scattered trees, scrub, amenity grassland, introduced shrub and building including areas of hard standing access".

The total area of the site is approximately 1.75 hectare.

1.3 Report purpose and legislative background

1.3.1 This assessment was requested by the client for the purposes of supporting a planning application for the site's development in line with The Environment Act 2021, including Part 6 of the Environment Act 2021 'nature and biodiversity', which allows for biodiversity gain in the planning system. Schedule 14 of the Environment Act 2021 has been brought into force and there are current regulations legally mandating BNG. Some Local Planning Authorities have already adopted, in their local plans, a 10% biodiversity gain to be a condition of planning permission.

The British Standard BS 8683:20211 defines BNG as "*a specific, quantifiable outcome from project activities that deliver demonstrable benefits for biodiversity compared to the baseline situation*."

The National Planning Policy Framework 2021 (NPPF) emphasises the importance of protecting and enhancing the natural environment. The NPPF approach to BNG is set out in Paragraph 179b, which is to "p*romote the conservation, restoration and enhancement of priority habitats, ecological*

networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity".

1.3.2 A Preliminary Ecological Appraisal confirmed habitats present. Therefore, the habitats present are confirmed and using the UK Habitats Classification System (UKHAB) it is possible that the appropriate habitat classification is used in the BNG metric.

1.3.3 The scope of the Assessment is therefore:

- Assessment of the habitats within the site in accordance with the UK Habitats Classification (UK Habitats Classification Working Group, 2018).
- Completion of Condition Assessments of each habitat in accordance with those presented in The Biodiversity Metric 4.0: Auditing and accounting for biodiversity value: technical supplement (Crosher, et al., Beta version, July 2019).

2. Survey Methods

2.1 Vegetation and Habitats

2.1.1 An extended phase one habitat survey plan (in accordance with JNCC, 2010) is provided in appendix 2 which confirmed the habitats present. Appendix 3 is the habitat mapping based on is based on the UK Habitat Classification system (UK Habitats Classification Working Group, 2018) which details urban trees, scrub, introduced shrub, modified grassland, and urban sealed surfacing/building.

2.1.2 Table 1 details the conversion used from JNCC habitats to UK Habitat classifications / BNG metric habitat descriptors.

JNCC Habitat type	UK Habs/ BNG metric descriptors.
Scattered trees	Individual urban trees
Amenity grassland	Modified grassland
Scrub	Scrub

Hard standing and building	Urban sealed surface

2.1.3 Whilst on the site the habitat survey searched for all plants including those that are considered rare, uncommon or are statutorily protected such as those listed in schedule 9 of the *Wildlife and Countryside Act 1981* (as amended).

2.2 Limitations

2.2.1 The survey was conducted in the optimal survey period for vascular plants as determined by JNCC, 2010 (August 2021), and broad species and habitats were identifiable.

2.3 Evaluation

2.3.1 Habitats have been assessed to determine whether they meet those described in the UK Biodiversity Action Plan – Priority Habitat descriptions which are used to form Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

2.3.2 https://www.daftlogic.com/projects-google-maps-area-calculator-tool.htm and AutoCad has been used to measure habitat size and all habitats are calculated as areas.

2.3.3 The BNG Assessment tool "The Statutory Biodiversity Metric 02.24 is used for the evaluation using the technical support provided by Natural England.

2.3.4 Other government advice on wildlife such as the National Planning Policy Framework (NPPF) or the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017, is referenced where applicable and any impacts on protected species are evaluated in accordance with current guidance.

3. Survey results

3.1 History of site

3.1.1 The recent history of the site can be examined using historic aerial imagery which details no recent site changes.

3.2. Site description and condition assessment of habitats

3.2.1 The site is best described as hard standing, building and modified grassland site with scattered rural trees and introduced shrub.

3.2.2 A condition assessment for the modified grassland is provided in appendix 5. The condition habitat assessment scored 0 essential criterion and 3 criteria passed making it a poor condition.

	Condition Assessment Criteria	Criterion passed (Yes or No)	Notes (such as justification)
A	There are 6-8 vascular plant species per m^2 present, including at least 2 forbs (these may include those listed in Footnote 1). **Note - this criterion is essential for achieving Moderate or Good condition.** Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m^2 (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.	No	sward is limited
B	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.	No	Sward is managed regularly
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus* agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Yes	
D	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.	No	
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)[2].	No	Bare earth cover >10%
F	Cover of bracken *Pteridium aquilinum* is less than 20%.	Yes	
G	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4]).	Yes	
	Essential criterion achieved (Yes or No)		no
	Number of criteria passed		3

3.2.3 A condition assessment for the urban trees is provied below giving the urban trees a moderate condition score. There are 17 trees on the site all of which are small size as the stem diameters are under 300dbh. The total coverage of 17 small trees in moderate conditon is 0.0692Ha.

Tree size	Number of trees and area (ha) for each condition state					
	Poor	Area	Moderate	Area	Good	Area
Small		0.0000	17	0.0692		0.0000
Medium		0.0000		0.0000		0.0000
Large		0.0000		0.0000		0.0000
Very large		0.0000		0.0000		0.0000
Total	**0**	**0.0000**	**17**	**0.0692**	**0**	**0.0000**

	Condition Assessment Criteria	Criterion passed (Yes or No)
A	The tree is a native species (or at least 70% within the block are native species).	Yes
B	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).	Yes
C	The tree is mature (or more than 50% within the block are mature)[1].	No
D	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.	Yes
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Yes
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Yes
	Number of criteria passed	4

A condition assessment for the bramble scrub and introduced shrub and urban sealed surfacing is not required.

3.2.4 Summary of the area based habitat (Site size 1.75Ha)

Habitat ref	UK Habitat Classification Type	Condition Assessment Result	Ha / Linear M
Habitat 1	Modified grassland	Poor	0.07+0.06+0.01 0.14
Habitat 2	Urban sealed	NA	1.57
Habitat 3	Scrub	NA	0.03
Habitat 4	Introduced shrub	NA	0.01
Habitat 5	Urban trees	Moderate	0.0692Ha

4. Evaluation and Assessment

4.1 Proposed habitat creation and enhancement

The site shall be developed as proposed in appendix 4. The total area of the site is approximately 1.75 hectare.

Landscape proposal	BNG descriptor	Hectare coverage / linear M / tree numbers
Existing trees retained	Retained urban trees	0.0204
Proposed tree planting	Proposed urban trees	24no. (0.0977)
Buildings and hard standing	Urban sealed surfacing	1.58
Proposed native shrub planting / ground cover	Introduced shrub	0.07
Proposed native wildflower grassland	Neutral grassland	0.1
Native hedge	Native hedge	55m

4.2 Habitat creation methods – Neutral grassland

Other neutral grassland contains Biodiverse lawn EL1 (unmown and mown) and flowering meadow EM4.

Recommended Seed Mixes:

- Emorsgate Seeds EM4
- Emorsgate Seeds EL1

Considerations:

- If soil is being imported into the site, then nutrient poor soil should be used to create wildflower areas in order to support the establishment of the meadow.
- Don't add fertiliser as this will increase fertility of the soil and negatively impact the wildflower meadow.
- Reducing soil fertility: Due to the baseline conditions of the site intensive nutrient stripping techniques are not considered necessary and therefore nutrients should be removed from the grassland through silage cuts

Creation Methodology:

- Create a fine tilth for a seedbed by digging or rotovating the soil then firming and raking.
- Sow seed mixture evenly by hand at 5g per square meter during, late summer/early autumn.

Additional Methodology:

- Designate some areas of grassland for creation of a calcareous species sward with thin poor soils and good drainage. These areas should be managed in line with 'other neutral grassland' once established.
- Remove topsoil and spread limestone chippings.
- Translocation of soils from habitats within the site to be removed by development should be carried out by an experienced contractor

alongside Suitably Qualified Ecologist (SQE) who can identify appropriate soils.

Habitat creation methods – Urban trees

Recommended Species: At least 70% of trees should be native species found in the local area, taking into account the requirement to plant trees that will be appropriate for anticipated changes in climate.

Considerations:

- Trees will adapt to natural conditions. Additional watering will only be required during a particularly long dry spell
  Trees are to be planted within the tree planting season (October to March inclusive).
- Up to 30% of street trees will not establish and therefore supplementary planting over the following three years will be required to achieve prescribed numbers over the longer term.

Creation Methodology:

- Advanced nursery stock trees or larger will be planted within optimal tree planting season (October to March inclusive).
- Suitable wooden stakes will be used to support the trees.
- Weeds will be controlled around the base of the trees by applying organic mulch (10cm depth in a 50cm buffer around trees), this will also assist with water retention. This will be applied in early summer until trees are successfully established (minimum 3 years).

4.3 Management and monitoring

The following section details management and monitoring methodologies for the habitats proposed to be created and retained on site

The site should be subject to a UKHAB classification survey alongside a condition assessment of the created and enhanced habitats. This survey should be carried out by a suitably qualified ecologist, starting 1 year after the project is completed, with follow up visits within year 2, 5, 10, 20, until the final visit on year 30. A report provided by an independent assessor shall be submitted to the LPA, when habitats as listed in the Biodiversity Metric are judged to have reached target condition.
A review of management of all habitats should be undertaken at years 10 and 20 with the management programme will be updated/adjusted accordingly.

General Management

The following management practices are recommended throughout the site in order to protect created habitats from harmful management practices.

- Weed control will be undertaken using non-chemical interventions wherever possible including mulching and hand pulling. Where deemed necessary, the spot application of eco-friendly herbicides may be used, avoiding areas containing waterbodies such as ponds and rivers.
- The application of fertilisers will be avoided as excessive nutrient loading will negatively alter the species composition of the habitats.
- Care should always be taken when maintaining habitats to avoid damage or disturbance to protected species such as breeding birds and water vole.
- Any arisings and/or cuttings created by maintenance will need to be removed and disposed of off-site or in a suitable location such as a designated compost heap or alternatively composted within the allotments on site.

- During site clearance and management, wood (including dead wood) should be used to create refugia in a suitable location (within native scrub, woodland, or pond edges) wherever possible.
- All areas are to be monitored for controlled and/or invasive species and appropriate action taken to remove if found.
- All areas to be monitored for fly-tipping, rubbish and litter annually (both construction and post-construction phases) with appropriate action taken to remove if found.

Neutral Grassland

The created neutral grassland areas within the site will require regular monitoring and annual maintenance to achieve 'moderate' condition, allowing the more desirable species to flourish and to reduce the presence of unwanted species that will attempt to colonise the area. The following sets out the UKHAB criteria as to what is a good condition other neutral grassland.

Aim:

- The appearance and composition of the vegetation closely matches characteristics of UKHAB type definition. Indicator species are easily and clearly visible throughout the sward.
- 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 insects, birds, and small mammals to live and breed.
- Cover of bare ground between 1% and 5% of total habitat area to provide an important resource to insects.
- There is greater than 9 species per meter squared.

Management:

- For the first year of growth, cut to 5cm in May, then cut every 2 months or when sward reaches approximately 15cm. Stop cutting by August to allow wildflowers to seed. Final cut to 5cm will be in October.
- From the second year onwards, cut to 5cm in March or April, then make a second cut to 5cm in October.

- From the second year onwards, designate some areas to receive a cut to 5cm during August in order to produce a more varied habitat that will encourage different species of wildflower.
- Remove all arisings from the area, dispose of in designated areas such as a compost heap.
- Remove encroaching scrub and bracken manually using hand tools.
- Annually create areas of bare ground or ‘scrapes’ covering 1% to 5% of total habitat area by manually scraping away vegetation with hand tools. These scrapes should be located in sunny areas such as south facing embankments, if possible.

Monitoring:

- Habitat will be monitored for controlled and/or invasive species annually and appropriate action taken to remove if found.
- Monitor for damage, cover of bracken and scrub.
- Monitor bare ground cover.
- Check sward height throughout the first year and cut when it reaches 15cm.

5. Conclusions

5.1 The results of the BNG calculation are indicated below.

On-site baseline	*Habitat units*	0.97
	Hedgerow units	0.00
	Watercourse units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	1.11
	Hedgerow units	0.18
	Watercourse units	0.00
On-site net change (units & percentage)	*Habitat units*	0.14
	Hedgerow units	0.18
	Watercourse units	0.00
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	Watercourse units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00
	Hedgerow units	0.00
	Watercourse units	0.00
Off-site net change (units & percentage)	*Habitat units*	0.00
	Hedgerow units	0.00
	Watercourse units	0.00
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	0.14
	Hedgerow units	0.18
	Watercourse units	0.00
Spatial risk multiplier (SRM) deductions	*Habitat units*	0.00
	Hedgerow units	0.00
	Watercourse units	0.00
FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	0.14
	Hedgerow units	0.18
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	14.13%
	Hedgerow units	N/A
	Watercourse units	0.00%

Summary conclusion

The site has a unit baseline score of 0.97 and an onsite post intervention unit score of 1.11 meaning a 0.14 unit increase or a 14.13% increase in biodiversity as demonstrated by the metric.

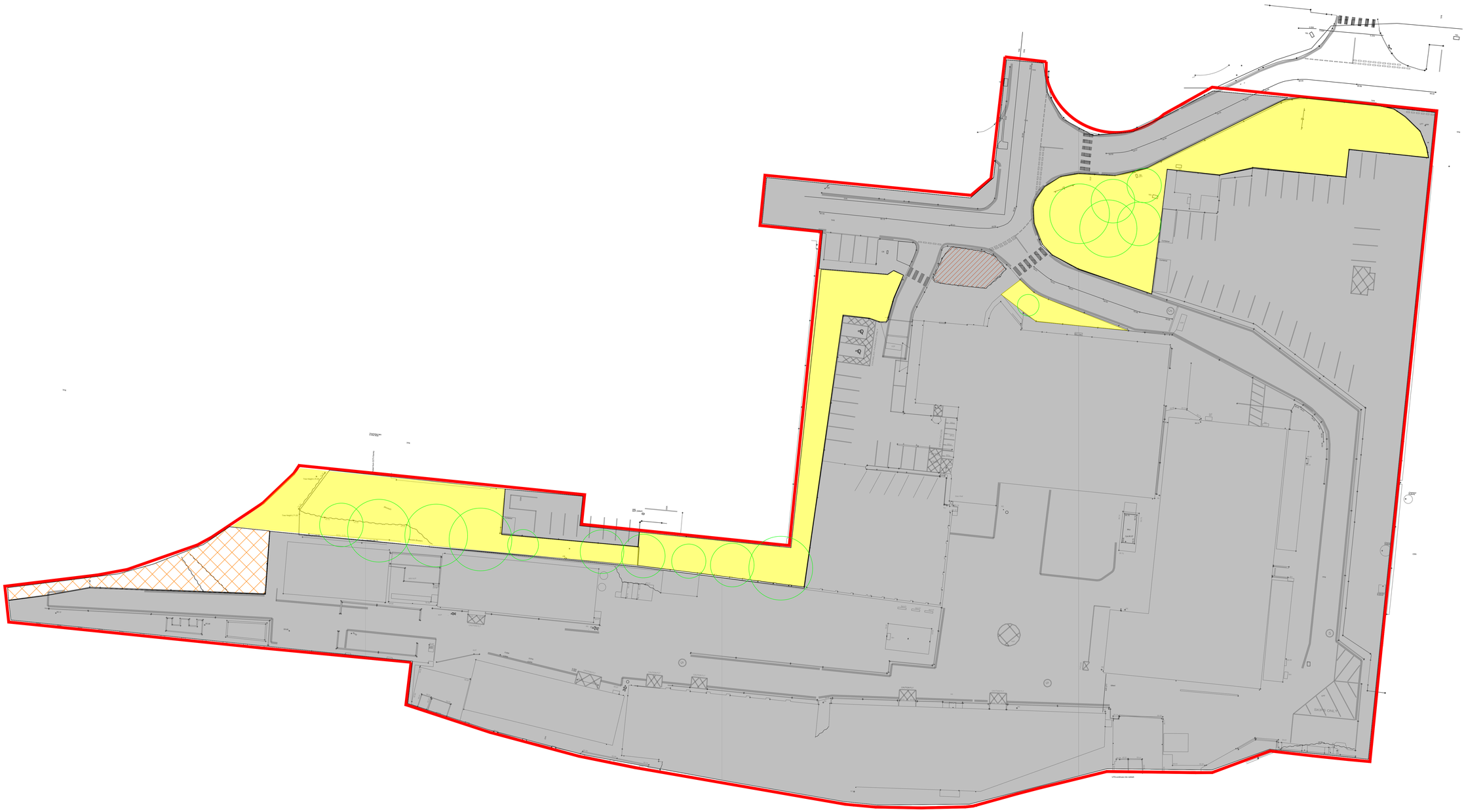
The proposal contains the introduction of hedgerow, urban trees, areas of introduced shrub and larger areas of neutral grassland all of which increase the proposed in comparison to the existing baseline.

Trading rules are not satisfied because there is a decrease in urban trees (0.12units) and bramble scrub (0.12units) on the site which cannot be replaced. However, the proposal contains 0.54 units of other neutral grassland hence overall there is a increase in medium distinctiveness habitats on the site and a surplus of medium units of 0.30.

Appendix 1 Extended phase one habitat plan

OS GRID

N



PHASE ONE HABITAT MAP

KEY

- A.3.1 Broadleaf scattered trees
- A2 Scrub
- Introduced shrub
- J2 Amenity grassland
- Buildings and hard standings

① Target Notes. Refer to Preliminary Ecological Appraisal

AMENITYTREE
ARBORICULTURAL & WOODLAND CONSULTANTS


Client:
Network Space

Project:
Openshaw

Detail:
Phase One Habitat Map

Drawn By:	Date:	Scale:
SB	26.04.2024	NTS

Drg No:	Revision:
TPI-01	V1



AMENITYTREE
ENVIRONMENTAL PLANNING CONSULTANTS

Client:
Network Space

Project:
Openshaw

Detail:
UK Habitat Map

Drawn By:	Date:	Scale:
SB	26.04.2024	NTS

Drg No:	Revision:
TR-01	V1

Appendix 2 Proposed development and ecological/landscape enhancements



KEY

- SITE BOUNDARY
- EXISTING TREES TO BE RETAINED
- PROPOSED TREE PLANTING
- PROPOSED NATIVE SHRUB PLANTING
- PROPOSED NATIVE HEDGEROW PLANTING
- PROPOSED GROUNDCOVER PLANTING
- PROPOSED WILDFLOWER GRASSLAND WITH 1m WIDE CLOSE MOWN VERGE TO HARD SURFACES
- PROPOSED BARK MULCH

NOTE:
FOR DETAILS OF BOUNDARY TREATMENTS AND HARD SURFACE FINISHES REFER TO AEW ARCHITECTS DRAWINGS.

SOFT LANDSCAPE SPECIFICATION

Materials and workmanship shall generally be in accordance with the following documents- BS 3936 Nursery Stock and BS 4428 Code of Practice for General Landscape Operations (excluding hard surfaces). All imported topsoil should be certified to BS 3882:2015 multi purpose topsoil.

Areas for tree planting shall wherever possible have clearance of unsuitable material to a depth of 900mm below ground level within a 2m radius of each tree with a minimum of 600mm topsoil.
Areas for native shrub, native hedgerow and groundcover planting shall have clearance of unsuitable material to a depth of 600mm with a minimum of 400mm topsoil, the bottom layer being made up of approved subsoil and the formation broken up if necessary to ensure drainage.

Areas for wildflower grass seeding shall have clearance of unsuitable material to a depth of 450mm below ground level with a minimum of 100mm low nutrient subsoil which is to be brought to even grades and a fine tilth prior to seeding. Finished grass levels are to be 20mm above hard surfaces.
Seed mix to be Germinal Amenity RE1 Traditional Hay Meadow (MG5 Grassland) mix sown at the rate of 5g/m² or similar approved. Sowing times and management shall follow the suppliers guidelines.

Plant material to be the sizes and dimensions as stated in the schedule and shall be healthy with good fibrous root systems. Trees and shrubs to conform to BS 3936 and the HTA's National Plant Specification. Supply, delivery and storage of plants shall comply to the Plant Handling Code published by CPSE.
Extra heavy and heavy standard trees are to be planted in pits 600mm deep and 1m diameter, single staked and secured with approved tree ties fixed 25mm from the top of the stake.
All stakes shall be 75mm diameter round section, straight with bark removed.
All shrub and hedge plants are to be planted in pits large enough to easily accommodate the roots.
All plants are to be firmed in at time of planting.
On completion of planting and when the soil is moist apply amenity grade bark mulch to all planted areas and 1m diameter circles around trees in grass areas to a settled depth of 50mm.

Maintenance and Defects Liability

Maintenance shall include regular watering, weeding, pruning, hedge trimming, adjustment and repair of tree stakes and ties and other horticultural operations necessary for the proper growth of the plants to keep areas neat in appearance, including removal of litter.

The defects liability period shall be 10 years following practical completion. During this period any trees, shrubs or other plants that are removed, damaged, die, fail to show leaf or are below specification shall be replaced as soon as is reasonably practical unless the Local Planning Authority gives its written consent to any variation. All replacement stock shall comply with the original specification and be obtained from a reputable supplier.

PLANT SCHEDULE

No.	Key	Name	Size	Centres
Tree Planting				
9no.	T1	Malus sylvestris	12-14cm girth HS B.	As shown
14no.	T2	Sorbus aucuparia	16-18cm girth EHS B.	As shown
1no.	T3	Tilia cordata	16-18cm girth EHS B.	As shown

Native Shrub Planting
Planted in groups of 3-7no plants of the same species together at 1.0m x 1.0m spacing.
Source: Local provenance

64no.	10%	Cornus sanguinea	60-90cm B1+1	1.0m
64no.	10%	Corylus avellana	60-90cm B1+1	1.0m
96no.	15%	Crataegus monogyna	60-90cm B1+1	1.0m
192no.	30%	Rosa pimpinellifolia *	40-60cm 2L	1.0m
96no.	15%	Ilex aquifolium	60-80cm 3L	1.0m
64no.	10%	Sambucus nigra	60-90cm B0+1	1.0m
64no.	10%	Viburnum opulus	60-90cm B1+1	1.0m

* Species to be planted on edge adjacent to hard surfaces.

Native Hedgerow Planting
Planted in double staggered rows 30cm apart. Plants in each row to be 45cm apart giving 5no plants per linear metre.
Source: Local provenance

60no.	15%	Carpinus betulus	60-90cm B1+1
40no.	10%	Cornus sanguinea	60-90cm B1+1
40no.	10%	Corylus avellana	60-90cm B1+1
100no.	25%	Crataegus monogyna	60-90cm B1+1
60no.	15%	Ligustrum vulgare	60-90cm B0+2
60no.	15%	Prunus spinosa	60-90cm B1+1
40no.	10%	Viburnum opulus	60-90cm B1+1

Groundcover Planting

352no.	S1	Cotoneaster Coral Beauty	30-40cm 2L	60cm

N

0 5 10 15 20 25 50m
1:500 @ A1

Rev. F. 25-04-24. Landscape updated to accord with current proposed site layout.
Rev. E. 13-09-23. Landscape updated to accord with current proposed site layout.
Rev. D. 14-06-23. Updated to include additional tree planting and wildflower grassland area.
Rev. C. 31-05-23. Landscape updated to accord with current proposed site layout.
Rev. B. 14-11-22. New tree species (Tilia cordata) included as requested by ecologist.
Rev. A. 11-11-22. Soft landscape amended to further enhance biodiversity & accord with current site layout.

Project/Client
WELCOMB STREET, OPENSHAW.
NETWORK SPACE.

Drawing
LANDSCAPE PROPOSALS

Scale	Drawn	Date
1:500 @ A1	JC Checked RE	SEPTEMBER 2022

Drawing No.	Revision
4198-01	F

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Appendix 3 Habitat Condition Assessments and BNG Metric