

Assessment of Biodiversity

Version 2
05.04.2023

Prepared for: Quartz

Site: Argosy Way, CTI land.

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1. Introduction

1.1 Background to the project

Amenity Tree was commissioned by Quartz to undertake a Biodiversity Assessment for land at Argosy Way, Manchester known as CTI land.

1.2 Site location and context

The site is located within Manchester Airport in an urban environment. The habitat on site comprises of urban sealed surfacing, scattered trees and amenity grassland. The total area of the site is approximately 2.95 acre / 1.19 hectare.

1.3 Report purpose and scope

1.3.1 This assessment was requested by the client for the purposes of supporting a planning application for the site's development.

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 Calculator.

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 3.1: Auditing and accounting for biodiversity value: technical supplement (Crosher, et al., Beta version, July 2019).
- An assessment of BNG using The Biodiversity Metric 3.1 Calculation Tool Beta Test Final (Natural England, 2020).

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 modified grassland and scattered trees.

2.1.2 The UKHAB scheme has been designed to function at two scales: fine and large scaling. It has been considered for the purposes of this survey that the finer scale is appropriate for the classification of habitats using the measurement of 25m square.

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 outside the optimal survey period for vascular plants as determined by JNCC, 2010 (August 2021), however broad species and habitats are 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 software has been used to measure habitat size and all habitats are calculated as areas.

2.3.3 The BNG Assessment tool “The Biodiversity Metric 3.1 – Natural England 2020) is used for the evaluation and condition assessment is made using the technical support provided by Natural England.

2.3.4 There are no high or very high value distinctiveness habitats and as such habitat connectivity is not calculated.

2.3.5 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. From 2000 to 2022 the site has been the same and no change has occurred.

3.1.2 An examination of <https://magic.defra.gov.uk/MagicMap.aspx> indicates no priority habitat is located on the site.

3.2. Site description and assessment of habitats

3.2.1 The site is best described as a managed car park with building to include peripheral managed amenity grassland site with scattered trees.

3.2.2 A condition assessment for the amenity grassland / modified grassland is provided below and in appendix 5. The condition habitat assessment scored 1 essential criterion and 2 criteria passed making it a poor condition.

1	There must be 6-8 species per m2. If a grassland has 9 or more species per m2 it should be classified as a medium distinctiveness grassland habitat type. NB - this criterion is essential for achieving moderate condition.	y
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 insects, birds and small mammals to live and breed.	n
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	n
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.	n
5	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).	y
6	Cover of bracken less than 20%.	y
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	y
Essential criterion 1 achieved (Y/N)		
Number of criteria passed		
Condition Assessment Result	Condition Assessment Score	Score Achieved x/✓
Passes 6 or 7 of 7 criteria including passing essential criterion 1	Good (3)	
Passes 4 or 5 of 7 criteria; OR Passes 4 or 5 of 7 criteria including passing essential criterion 1	Moderate (2)	
Passes 0, 1, 2 or 3 of 7 criteria; OR 4, 5 or 6 of criteria but failing criterion 1	Poor (1)	Poor

A condition assessment for the urban trees is provided below and in appendix 5. The condition habitat assessment scored 1 criteria passed making it a poor condition.

Condition Assessment Criteria		Condition Achieved (Y/N)
1	More than 70% of trees are native species.	N
2	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	Y
3	Includes one or more mature ¹ or veteran ² tree.	N
4	There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other anthropogenic operations.	N
5	At least 95% of the 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.	N
Number of criteria passed		
Condition Assessment Result	Condition Assessment Score	Score Achieved x/✓
Passes 5 of 5 criteria	Good (3)	
Passes 3 or 4 of 5 criteria	Moderate (2)	
Passes 0, 1 or 2 of 5 criteria	Poor (1)	Poor

3.2.4 Summary of area based habitat. The total area of the site is approximately 2.95 acre / 1.19 hectare.

Habitat ref	UK Habitat Classification Type	Phase 1 Habitat Equivalent	Condition Assessment Result	Acre
Habitat 1	G4 modified grassland	J1.2 Amenity grassland	Poor	0.5
Habitat 2	Urban trees	Scattered trees	Poor	0.3
Habitat 3	Urban introduced shrub	Introduced shrub	n/a	0.1
Habitat 4	Uib(5) urban buildings and hard standing	Hardstanding and building	n/a	2.05

4. Evaluation and Assessment

4.1 Proposed habitat creation and enhancement

The site shall be developed as proposed in appendix 4 which shall consist of urban sealed surface (building), neutral grassland, and urban trees (existing and proposed). A summary of the habitats created by the proposal is provided below.

Habitat Type	Acre / Hectare
Urban trees (proposed) 32 (4 large 28 medium) moderate condition	UTC 1.33Ha
Urban developed land (created)	2.35 / 0.95

4.2 Habitat enhancement methods – Neutral wildflower grassland

Other neutral grassland contains perennial ryegrass *Lolium perenne* cover at less than 30% with 9-15 species per meter square present. Grassland will be created throughout the site in 'good' condition to an area of 0.093ha.

Recommended Seed Mixes:

- Emorsgate Seeds EW1 Mixture.

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 enhancement 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 . Species within allotment should include fruit-bearing species associated with a traditional orchard.

Considerations:

- Trees will adapt to natural conditions. Additional watering will only be required during a particularly long dry spell or if trees are planted out with of 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.

It is the responsibility of the applicant to implement habitat creation, management and monitoring of the site for a 30 year period as per best practice guidelines or their accredited agents.

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.

Wildflower Grassland

The created and retained other neutral grassland areas within the site will require regular monitoring and annual maintenance to achieve 'good' 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 considered to be 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.

4.4 The results of the BNG calculation are indicated below:

Argosy Way CTI land

Headline Results

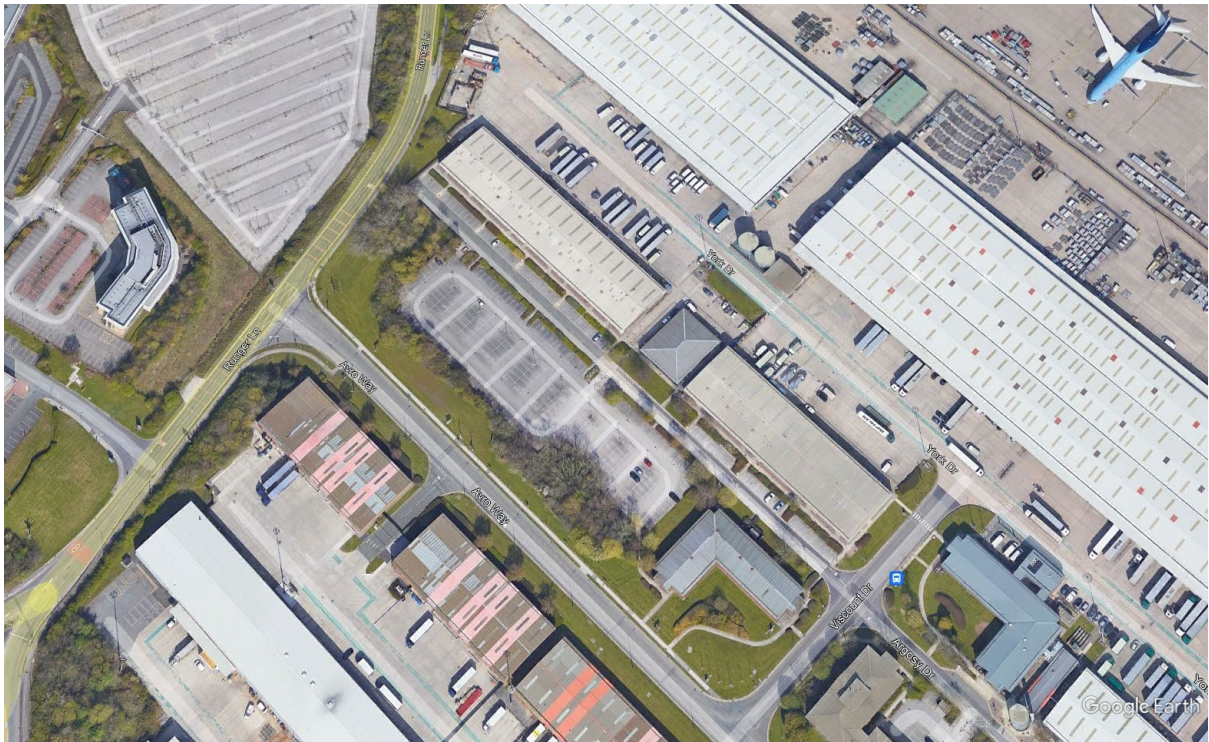
Return to results menu

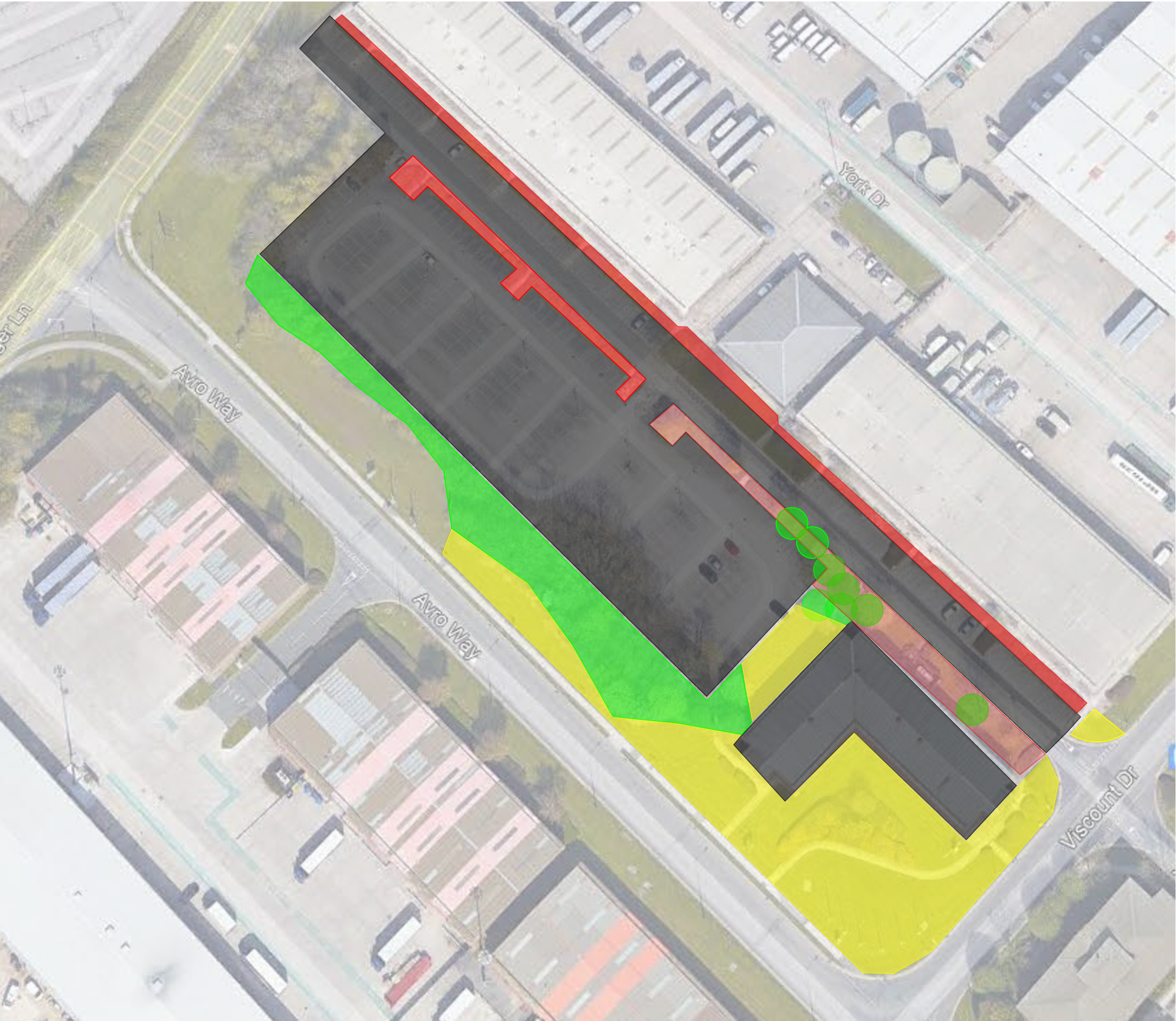
On-site baseline	Habitat units	2.40
	Hedgerow units	0.00
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	4.07
	Hedgerow units	0.00
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	Habitat units	69.42%
	Hedgerow units	0.00%
	River units	0.00%
Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	1.67
	Hedgerow units	0.00
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	69.42%
	Hedgerow units	0.00%
	River units	0.00%
Trading rules Satisfied?		Yes ✓

5. Conclusions

- 5.1 In accordance with the habitats present within the site and the proposals for the site's redevelopment the BNG Assessment predicts a change of +69.42% and in 1.67 habitat units.

Appendix 1 site image





PHASE ONE HABITAT MAP

KEY

- A.3.1 Broadleaf scattered trees
- J2 Amenity grassland
- J3 Introduced shrub
- J4 Buildings and hard standing

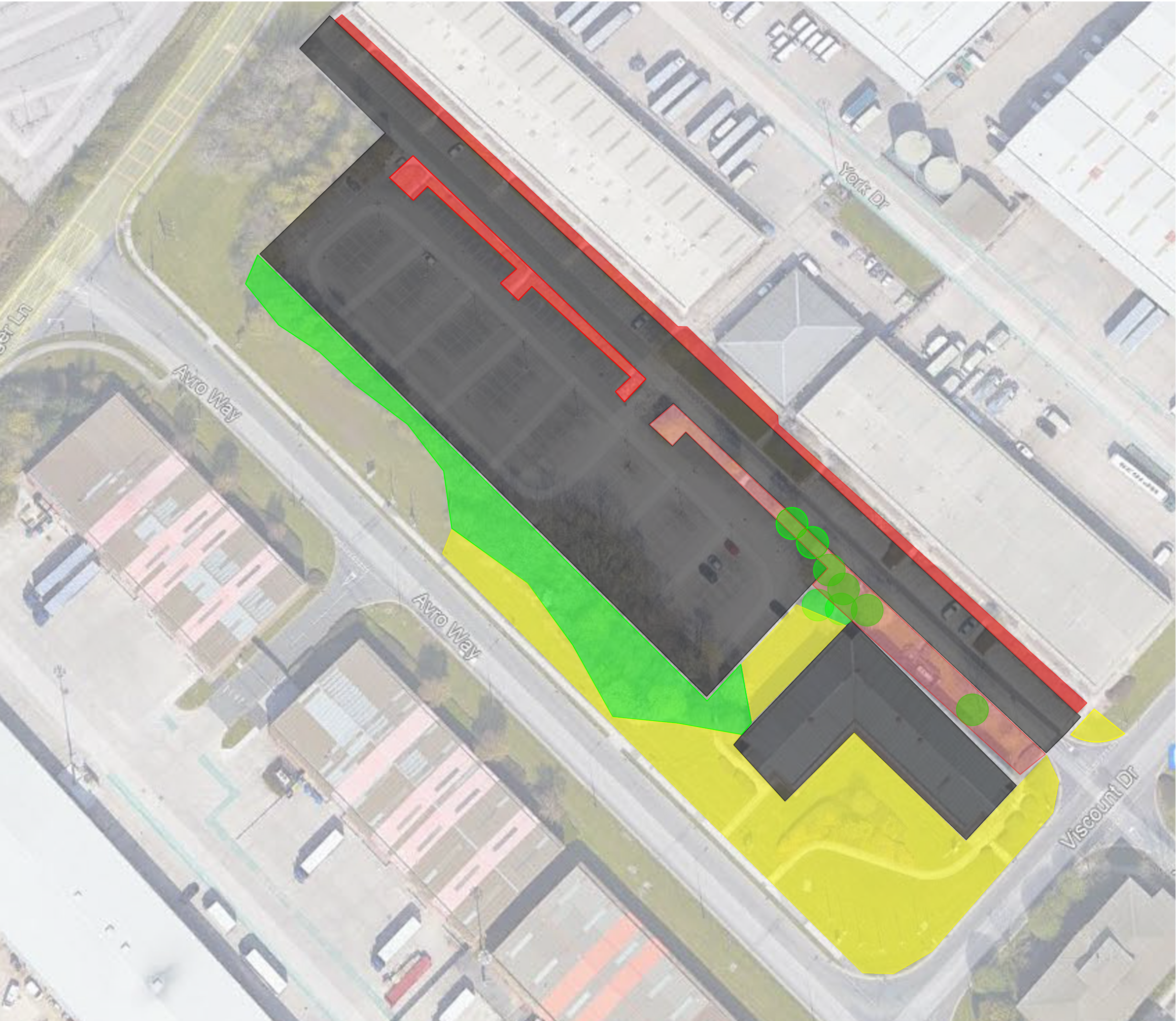
Client:
Quartz

Project:
Argosy Way CTI land

Detail:
Phase One Habitat Map

Drawn By: SB Date: 08.12.2022 Scale: NTS

Drg No: TR-01 Revision: V1



UK HABITAT MAP

KEY

u Urban trees

g4 modified grassland

u Urban Introduced shrub

u1b(5) Buildings and hard standing

Client:		
Quartz		
Project:		
Argosy Way CTI land		
Detail:		
UK Habitat Map		
Drawn By:	Date:	Scale:
SB	08.12.2022	NTS
Drg No:	Revision:	
TR-01	V1	

NOTES

- All to architect's and engineer's details.
- All works to be DDA compliant.
- Tree replacement numbers based upon AECOM AIA report March 2022.

LOCATION PLAN N.T.S.

REFER TO DRAWING AT.22.1242.100 FOR SUBSTATION PLANTING

2 No. Pinus sylvestris

1 No. Betula sylvestris

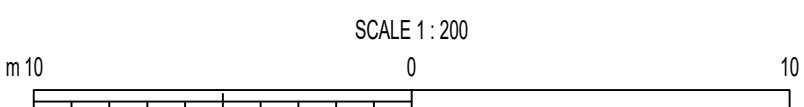
3 No. Acer Campestre

3 No. Crataegus Monogyna

3 No. Corylus Coluna

3 No. Populus tremula

1 No. Betula pubescens



PLANTING SPECIFICATION

GROUND PREPARATION - GENERAL

Preparing for topsoiling

Contractor shall be in accordance with BS 4303:1988 section 4. Subsoil that is to receive topsoil shall, whether previously over compacted or not, be thoroughly broken up by hand, by heavy vibrator, or by subsoiler or other equipment with adequate passes made to thoroughly break up the surface to a depth of 150mm, cleared of all large stones, bricks, pavement waste, tree roots (excluding living tree roots), coarse vegetation and other extraneous matter.

Subsoiling grading

Subsoil shall only be graded after loosening as above and this shall be undertaken by the use of a tractor and blade grade on large areas and by hand on small areas. The ground shall at no time be traversed by heavy machinery, for grading or any other purpose after subsoiling and if or topsoiling has been placed.

Making up levels

When it is anticipated in low lying areas to raise formation levels, this shall be lightly consolidated and be broken up to receive topsoil. Imported BS material shall be natural subsoil free from metal, concrete or organic material with any one dimension greater than 25mm. All imported fill material shall be approved by the Landscape Architect prior to spreading on site.

Supply of topsoil

Topsoil shall be approved by the Landscape Architect and details of the source of supply shall be provided in order that inspection may be made before delivery commences. Topsoil shall conform to BS 3482:2015, Recommendations and Classification for Topsoil, clause 4.1a. The topsoil shall be free of weed, root or perennial weeds, pests, diseases, debris, tree roots, sticks, subsoil and foreign matter and shall be capable of being broken down at a 100.

Temporary topsoil heaps

The disposal of temporary heaps of topsoil shall be so arranged that possible damage to existing plants, plants, trees, shrubs and other vegetation is avoided. Unless otherwise agreed by the Landscape Architect, temporary spoil heaps shall be on unworked ground. Such protection shall take the form of wire mesh, concrete, or similar. Stacks or similar, if damaged once used, it shall be made good at the contractors own expense. Areas excavated to receive topsoil but have not had the base loosened shall not be used as temporary off loading areas. If the bottom of the excavation has been loosened off, loading on these areas is permitted.

Spreading topsoil

Prior to topsoil replacement the formation level shall be cleared of all stones, rubbish, debris with any one dimension greater than 50mm. Areas to be seeded or sowed shall be covered to topsoil 100mm thick and areas to be planted 400mm thick. Topsoil shall be spread in an evenly consolidated layer and shall be left cleared of all roots, stones and debris with any one dimension greater than 50mm throughout its depth. Unless otherwise stated the finished level shall be 25mm above adjacent test areas. No topsoil shall be spread until the subsoil grade has been inspected by a Landscape architect.

Planting

Planting areas shall be retailed to a depth of 225mm in the original ground, or where the ground is compacted, ripped and retailed. Pick off stones, bricks, litter and all other debris among which there are any dimensions greater than 50mm and remove off site to tip. Do not cultivate across any drain where the stone is flush with the ground surface.

Soil improvers

Where directed composts, fertilisers or other additives shall be incorporated into the soil. Spent mushroom compost or similar shall be spread to the specified thickness and incorporated by turning into the top 150mm. Fertilisers, organic or inorganic shall be added to the top 25mm.

Rejection of plants

All incoming material shall comply with the minimum requirements of BS 3095:1988 Specification for trees and shrubs and BS 3095:2007 Specification for trees and shrubs. Any plant material which is the species of the Landscape Architect, does not meet the requirements of the Specification, is unsuitable, or defective in any other way, or is rejected. The minimum size of the plant material shall be strictly enforced. The contractor shall be responsible for all costs related to the rejection.

Planting

All plant material shall be generally be planted between November and March in open cool weather. Planting shall not take place in frosty, snowy or waterlogged conditions. Where approved, pot or container grown plants may be planted outside the specified season, but adequate watering shall be supplied. Torn or damaged roots and branches shall be clearly pruned prior to planting.

Planting of whips, transplants and shrubs.

The nature of the material to be planted shall be variable and the contractor shall allow for planting to be properly carried out in all cases as described in BS 4428:1988 section 7. All plants shall be planted at same depth or very slightly deeper, than as they were grown. Roots shall not be bent, broken or forced to reconstruct pits or notches. Plants shall be upright, firm and not overtopped, with no air pockets around the roots. All pits and notches shall be carefully removed prior to planting. All pit and notches along side shall be removed and the pits and notches shall be picked up and stored ready for removal to tip. Plants shall be planted at the specified centres. On sloping sites this shall be in the horizontal measure.

Tree planting with soft landscape areas.

Trees shall conform to BS 5836:1995, and shall be planted in tree pits of the following sizes unless otherwise directed:
Furnished trees - 300mm/200mm
Selected standards - 100mm/100mm
Heavy standards - Extra heavy standards - 120mm/120mm
Estimated subsoil or stone shall be carried off site to tip. The top 300mm of pit shall be backfilled with imported topsoil as specified unless directed otherwise.

Compost for planting pits

Compost shall be a proprietary product, bark based incorporating fertilisers and improving additives. The type of compost shall be approved before its delivery to site and the details of the product shall be supplied. Compost planting compost is approved. Where directed compost shall be added to and mixed with topsoil backfill at the following rates:
Furnished trees - 40 litres
Selected standards - 60 litres
Heavy standards - Extra heavy standards - 80 litres.

Stakes for trees

Stakes shall be pointed round hardwood, pointed, minimum diameter 75mm. The stakes shall be driven into the base of the tree pit prior to placing the tree and building. Stakes shall in general have a clear height above the finished ground level as follows unless directed otherwise:
Furnished trees - 750mm (1 stake / 1 tree)
Selected standards - 500mm (2 stakes / 1 tree each)
Heavy standards - Extra heavy standards - 1200mm (2 stakes / 1 tree each or underground guyed as specified).
The stakes shall be long enough to drive until they hold the tree firmly without rocking.

Tree ties

Ties for bare root trees, shall be approved rubber natural type with cushioned spacer such as Torns or other equally approved. Nails shall be flat headed galvanised and shall hold the ties securely into the stake. Ties shall not be over tight on the tree stems. Ties available from J Toms Ltd, Wheeler Street, Huddersfield, West Yorkshire, HD7 8BN.
Furnished - Type 04 (1 tie)
Selected standards - Type 1.1 (1 tie per stake)
Heavy standards - Extra heavy standards - Type 1.3 (1 tie per stake).

Ties for rooted and container grown trees

Ties for rooted and container grown trees shall be 50mm rubber tree ties in a figure of eight around the tree. Fixed to the stakes with flat head galvanised nails.
Furnished - 1 tie
Selected standards - 2 ties
Heavy standards - Extra heavy standards - 2 ties.

Planting of trees

The tree shall be set upright and at the same depth as grown in the nursery, the roots shall be spread out (bareroot) and the soil followed by compact topsoil medium, backfilled, grading, should be done to ensure close contact between roots and topsoil by firming in layers. The soil shall be at level and tidy, any exposed clods, bricks or stones over 50mm arising, collected and carried off site.

Mulching

A 75mm compacted layer of medium grade pulverised bark, with size of not more than 100mm and containing no more than 10% fines, shall be spread to form a continuous layer covering the whole of the bed or in the case of standard trees within grass shall be in the form of a circle 600mm diameter around the base of the tree. Whips and transplants shall be mulched in the form of a 500mm diameter circle around the base of the tree. Where trees are planted within grass a circular tree head mat is required beneath the base of each of the diameters stated above, secured with living plants. The tree pit surface shall be as top as possible.

TURNING

Soil preparation and cultivation
All areas to be laid shall be cultivated to a depth of at least 100mm, at weeds, stones and refuse larger than 50mm shall be removed to Contractors tip and shall be brought to a fine 88h. Allow for hand cultivation where reactive work is not possible.

Turf

Turf shall be extra quality meadow turf and shall comply to BS 3969:1998+A1:2013 and shall be laid in accordance with BS 4428:1998, section 6. Turf. The contractor shall supply a sample of the turf proposed for use for the approval of the Landscape Architect and shall ensure that all that supplied hereon are similar to the approved sample. The contractor shall inform the Landscape Architect of the location of the supply, so that the turf can be inspected prior to laying.

Seeds

Seeds shall be laid when weather and soil conditions are suitable and where possible, preference should be given to autumn and early winter sowings. Turf shall be laid in exceptionally dry or frosty weather or in other unsuitable weather conditions.

Delivery and stacking

For bare root trees, turf shall be delivered at the appropriate intervals throughout the work so as to avoid stacking for long periods.

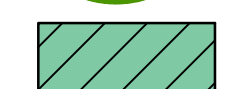
CTI SITE - PLANT SCHEDULE.

1.0	TREES					
REF.	SPECIES.	NUMBER	GIRTH cm	SIZE cm	TYPE	NOTE
1.1	Acer campestre.	18	14-16	NA	RB	Underground guyed.
1.2	Alnus glutinosa.	4	14-16	NA	RB	Underground guyed.
1.3	Betula pendula.	7	14-16	NA	RB	Underground guyed.
1.4	Betula pubescens.	6	14-16	NA	RB	Underground guyed.
1.5	Crataegus monogyna.	10	14-16	NA	RB	Underground guyed.
1.6	Corylus colurna.	6	14-16	NA	RB	Underground guyed.
1.7	Pinus sylvestris.	16	250-275	NA	RB	Underground guyed / Feathered.
1.8	Populus tremula.	7	14-16	NA	RB	Underground guyed.
2.0	NATIVE HEDGE PLANTING					
	Acer campestre.	130	10	75		Planted in 100cm biodegradable grow tube / stake.
	Alnus glutinosa.	65	5	75		Planted in 100cm biodegradable grow tube / stake.
	Betula pubescens.	185	15	75		Planted in 100cm biodegradable grow tube / stake.
	Cornus betulus.	185	15	75		Planted in 100cm biodegradable grow tube / stake.
	Crataegus monogyna.	260	20	75		Planted in 100cm biodegradable grow tube / stake.
	Corylus colurna.	65	5	75		Planted in 100cm biodegradable grow tube / stake.
	Populus tremula.	120	10	75		Planted in 100cm biodegradable grow tube / stake.
	Quercus robur.	185	15	75		Planted in 100cm biodegradable grow tube / stake.
	Taxus baccata.	65	5	50		
The above to be planted at 2 plants per m2.						

KEY



NATIVE TREE PLANTING



NATIVE HEDGE MIX 1.5m WIDE MIN.



AMENITY TURF 2m WIDE



EMORSGATE EM 4 WILDFLOWER SEED MIX

NOTE:

- Do not scale from this drawing.
- All setting out, levels and dimensions to be agreed on site.
- The dimensions of all materials must be checked on site before being laid out.

Project:

MAG Argosy Drive Development
Manchester Airport

Title:

Ecological Enhancements &
Planting Plan Part 1

ENVIRONMENTAL PLANNING CONSULTANTS
Willow Cottage, School Lane, Bardsley, CH3 9NX, 01629 770 075

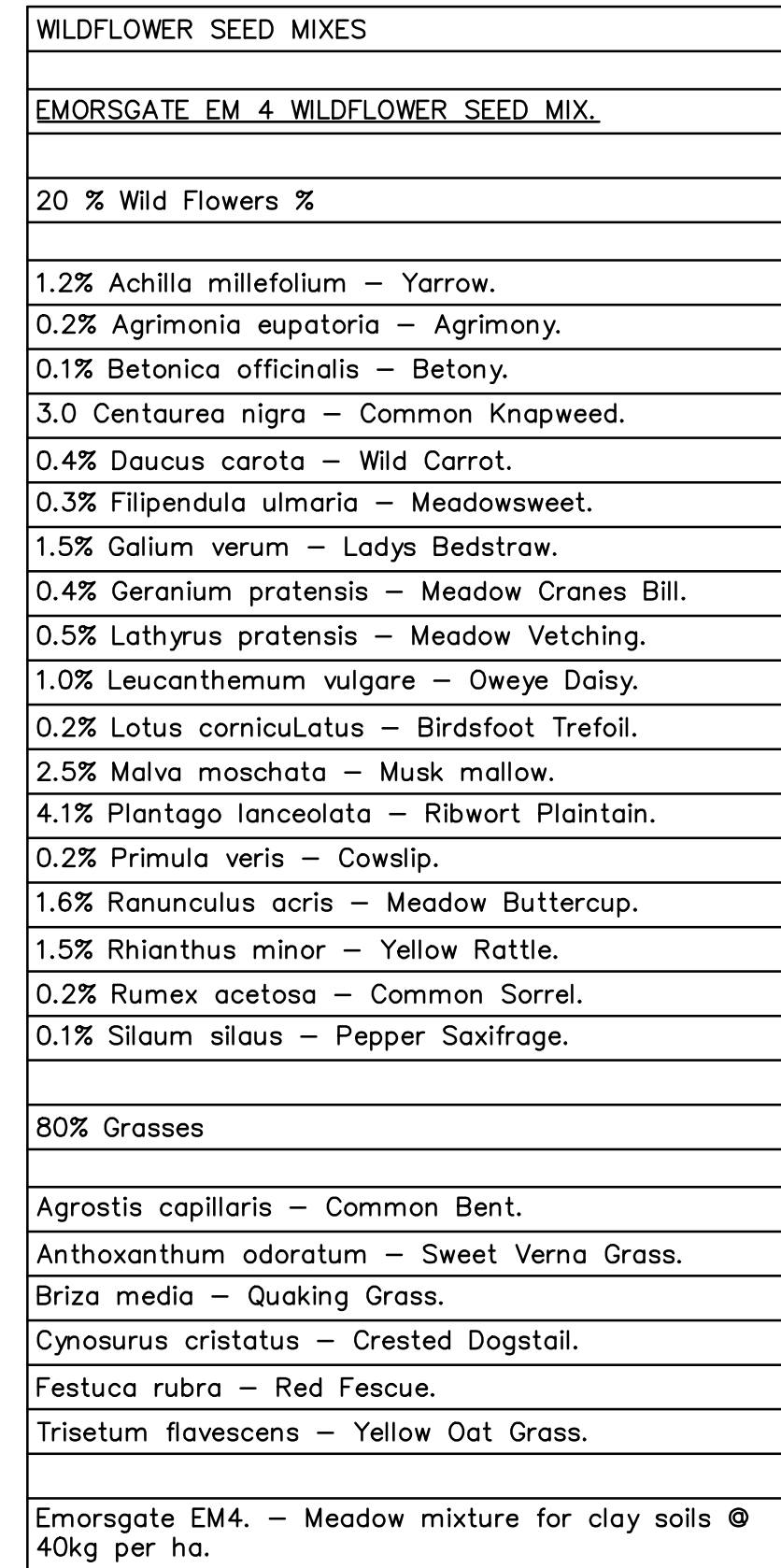
Status:

Planning
First issued DEC 2022 Drawn: AP
Scale: 1:200 Size: A0

Drawing No:

AT.22.1242.200r1

1. All to architect's and engineer's details.
2. All works to be DDA compliant.
3. Tree replacement numbers based upon AECOM AIA report March 2022.

[illegible][illegible][illegible]

Topsoil Topsoil medium, backfilled. Backfilling should be done to ensure close contact between roots and topsoil by firming in layers. The soil shall be level and tidy, any subsoil clods, bricks or stones over 50mm arising, collected and carted off site.

Mulching
A 75mm compacted layer of medium grade pulverised bark, with size of not more than 100mm and containing no more than 10% fines, shall be spread to form a continuous layer covering the whole of the bed or in the case of standard trees within grasses shall be in the form of a circle 600mm diameter around the base of the tree. Whips and transplants shall be mulched in the form of a 300mm diameter circle around the base of the tree. Where trees are planted within grass a circular heavy mulch mat is required beneath the layer of mulch at the diameters stated above, secured with fixing pegs. The tree pit surface shall be as big as possible.

Soil preparation and cultivation
All weeds to be turfed shall be cultivated to a depth of at least 100mm, all weeds, stolones and refuse larger than 50mm shall be removed to Contractors tip and shall be brought to a fine tilth. Allow for hand cultivation where machine work is not possible.

Turf
Turf shall be extra quality meadow turf and shall comply to BS 3609:1998 +A1:2013 and shall be laid in accordance with BS 4428: 1996, section 6
Turfing. The contractor shall supply a sample of the turf proposed for use for the approval of the Landscape Architect and shall ensure that all supplied turves are similar to the approved sample. The contractor shall inform the Landscape Architect of the location of the supply, so that the turf can be inspected prior to lifting.

Delivery and stacking
For large areas, turf shall be delivered at the appropriate intervals throughout the work so as to avoid stacking for long periods.

[illegible]

Watering
The contractor shall ensure that sufficient water is applied to maintain healthy growth.

Litter
The waste to be kept free of litter.

Grass cutting
The refuse cut shall be carried away when the first growth is apparent. Blades are 30mm above ground level. The contractor shall continue cutting until the grass is 100mm high. The contractor shall ensure that grass is cut evenly and that grass areas are handled once. Following the second cutting, repair of all erosion and settlement and re-seeding is necessary to establish a uniform and healthy stand of grass that continues until harvest.

WULFORD SEEDING AND MAINTENANCE

Soil preparation and cutting
The contractor shall be required to agree by the landowner at least one day before cutting and seeding. All areas to be seeded shall be cultivated to 150mm depth and all weeds, stones and refuse above soil shall be removed to be. Cultivated soil shall be rolled and refilled to produce a 180-20mm surface. The contractor shall be required to seed the area with Wulford seed immediately following the preparation of the seed bed.

Seeding
The contractor shall be required to cut during each season. All sowing is at the contractors own risk and any areas where germination fails shall be reseeded at the contractors expense.

[illegible]

Wildflower seed mix
Sow the wildflower seed specified as specified. Certificates of purchase shall be provided for all deliveries prior to the sowing of the wildflower seed mix, stating source, mixture, purity and germination percentage. Sources must be of indigenous source.

First cut of wildflower meadow
 Areas seeded August to September shall be lightly cut in the following spring using a flail mower or strimmer, when the meadow reaches a height of 100mm. Areas seeded during April to May shall be cut in October when flowering is over. In both cases all cuttings shall be raked up and removed from site.

Subsequent cuts
 Hereafter cutting shall be undertaken with a flail mower or strimmer when flowering is over, annually during September to October. All cuttings shall be raked up and removed from site.

C1 SITE – PLANT SCHEDULE.						
REF.	SPECIES.	NUMBER	GIRTH cm	SIZE cm	TYPE	NOTE
1.0	TREES					
1.1	Acer campestre.	18	14–16	NA	RB	Underground guyed.
1.2	Alnus glutinosa.	4	14–16	NA	RB	Underground guyed.
1.3	Betula pendula.	7	14–16	NA	RB	Underground guyed.
1.4	Betula pubescens.	6	14–16	NA	RB	Underground guyed.
1.5	Crataegus monogyna.	10	14–16	NA	RB	Underground guyed.
1.6	Corlyus colurna.	6	14–16	NA	RB	Underground guyed.
1.7	Pinus sylvestris.	16	250–275	NA	RB	Underground guyed / Feathered.
1.8	Populus tremula.	7	14–16	NA	RB	Underground guyed.
2.0	NATIVE HEDGE PLANTING					
			%			
	Acer campestre.	130	10	75		Planted in 100cm biodegradable grow tube / stake.
	Alnus glutinosa.	65	5	75		Planted in 100cm biodegradable grow tube / stake.
	Betula pubescens.	185	15	75		Planted in 100cm biodegradable grow tube / stake.
	Carpinus betulus.	185	15	75		Planted in 100cm biodegradable grow tube / stake.
	Crataegus monogyna.	260	20	75		Planted in 100cm biodegradable grow tube / stake.
	Corlyus colurna.	65	5	75		Planted in 100cm biodegradable grow tube / stake.
	Populus tremula.	120	10	75		Planted in 100cm biodegradable grow tube / stake.
	Quercus robur.	185	15	75		Planted in 100cm biodegradable grow tube / stake.
	Taxus baccata.	65	5	50		

The above to be planted at 2 plants per m2.



 NATIVE TREE PLANTING
 NATIVE HEDGE MIX 1.5m WIDE MIN.
 AMENITY TURF 2m WIDE
 EMORSGATE EM 4 WILDFLOWER SEED MIX

NOTE:	1. Do not scale from this drawing	
2.	All setting out, levels and dimensions to be agreed on site.	
3.	The dimensions of all materials must be checked on site before being laid out.	
Project:	MAG Argosy Drive Development Manchester Airport	
Title:	Ecological Enhancements & Planting Plan Part 2	
 ENVIRONMENTAL PLANNING CONSULTANTS - Willow Cottage, School Lane, Burslem, CHS, NKS: 01629 770 075		
Station:	Planting	
First issued:	DEC 2022	Drawn: AP
Scale:	1:200	Size: A0
Drawing No:	AT 20 1242 201r1	

Appendix 5 BNG Metric