

Assessment of Biodiversity

Version 2 updated
08.09.2023

Prepared for: Morgan Sindall

Site: Star Radcliffe

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1. Introduction

1.1 Background to the project

Amenity Tree was commissioned by Morgan Sindall to undertake a Biodiversity Assessment at Star Academy, Radcliffe.

1.2 Site location and context

The site is located within the Radcliffe area of Bury in a semi urban environment and enclosed by existing residential and commercial land uses. The habitat on site comprises of scattered trees, amenity grassland, scrub and building habitat including areas of hard standing.

The total area of the site is approximately 4.88 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 specifically in reference to comments made at pre application stage in relation to demonstrating biodiversity net gains in accordance with National Planning Policy Framework.

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 the UK Habitat Classification system (UK Habitats Classification Working Group, 2018) which details modified grassland, scattered trees and bramble scrub.

2.1.2 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 inside the optimal survey period for vascular plants (2nd August 2023) as determined by JNCC, 2010 (August 2021), and 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 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 2023 the site has exhibited the same land use.

3.1.2 An examination of <https://magic.defra.gov.uk/MagicMap.aspx> indicates there are no section 41 habitats listed on the inventory on the site or adjacent to the site boundaries. Priority woodland is located on the site boundary to the north outside the scrub denoted on the habitat plan. There are numerous areas of listed woodland within the 1km. The site is within the National Habitat Network All Habitats Combined (England) Network Enhancement Zone 2

3.2. Site description and assessment of habitats

3.2.1 The site is best described as an amenity grassland site with urban sealed surfacing and woodland periphery.

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 3 criteria passed making it a moderate condition.

Condition Assessment Criteria		Condition Achieved (Y/N)	Notes/Justification
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.	Y	
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.	Y	
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).	N	
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).	N	
		Essential criterion 1 achieved (Y/N)	Y
		Number of criteria passed	3
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 3 criteria passed making it a moderate condition.

Condition Assessment Criteria		Condition Achieved (Y/N)	Notes/Justification
1	The tree is a native species (or more than 70% within the block are native species).	Y	
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	N	
3	The tree is mature ² or veteran ³ (or more than 50% within the block are mature ² or veteran ³).	N	
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height.	Y	
5	Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark	Y	
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	N	
		Number of criteria passed	3
Condition Assessment Result	Condition Assessment Score	Score Achieved x/□	
Passes 5 or 6 of 6 criteria	Good (3)		
Passes 3 or 4 of 6 criteria	Moderate (2)	Moderate	
Passes 0, 1 or 2 of 6 criteria	Poor (1)		

3.2.4 Summary of area based habitat. The total area of the site is approximately 4.88 hectare.

Habitat ref	UK Habitat Classification Type	Phase 1 Habitat Equivalent	Condition Assessment Result	Ha
Habitat 1	G4 modified grassland	J1.2 Amenity grassland	Moderate	2.25
Habitat 2	U Artificial sealed surface	Hard standing	N/A	2.28
Habitat 3	Urban trees (38 medium, moderate)	Scattered trees	Moderate	1.39

4. Evaluation and Assessment

4.1 Proposed habitat creation and enhancement

The site shall be developed as proposed in appendix 4. A summary of the habitats created and retained by the proposal is provided below.

Habitat Type	Hectare
Native woodland	0.37
Neutral grassland	1.33
SUDS	0.09
Amenity grassland	0.47
Introduced shrub	0.12
Urban trees	2.3
Retained urban trees (21 medium, moderate condition)	0.76
Urban sealed surfacing	1.5
Urban artificial unvegetated, unsealed surface	1.0

NOTE: Total site coverage of 4.88Ha has increased due to the use and inclusion of retained and proposed urban trees

4.2 Habitat creation methods – Neutral grassland and SUDS seeding

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 'moderate' condition to an area of 0.47ha.

Recommended Seed Mixes:

- Emorsgate Seeds EM3 Special General Purpose Meadow Mixture.
- Emorsgate Seeds EM8F Meadow Mixture for Wetlands– for wetter areas.

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 – Modified grassland

Modified grassland vegetation is dominated by few fast-growing grasses on fertile neutral soils. Grassland will be created throughout the site in 'good' condition to an area of 0.44ha.

Recommended Seed Mixes:

- General amenity grass from a local supplier.

Creation Methodology:

- Follow instructions from turf supplier for specific turf type.

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 . 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 Exemplar 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.
- 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 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.

Modified grassland

Modified grassland amenity areas will be created throughout the site which will require annual management to achieve 'good' condition. The following sets out the UKHAB criteria as to what is considered to be a good condition modified grassland.

Aim:

- There must be between 6-8 species per meter square.
- Scrub accounts for less than 20% of habitat area.

- Physical damage (such as excessive poaching, damage from machinery use or storage) is evident in less than 5% of total grassland area.
- Cover of bare ground is between 1 and 10%.
- Cover of bracken is less than 20%.
- There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).

Management:

- Manage turf using supplier's instructions for first year of growth.
- Regularly cut grassland to required length for its amenity usage.
- 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.

5. Conclusions

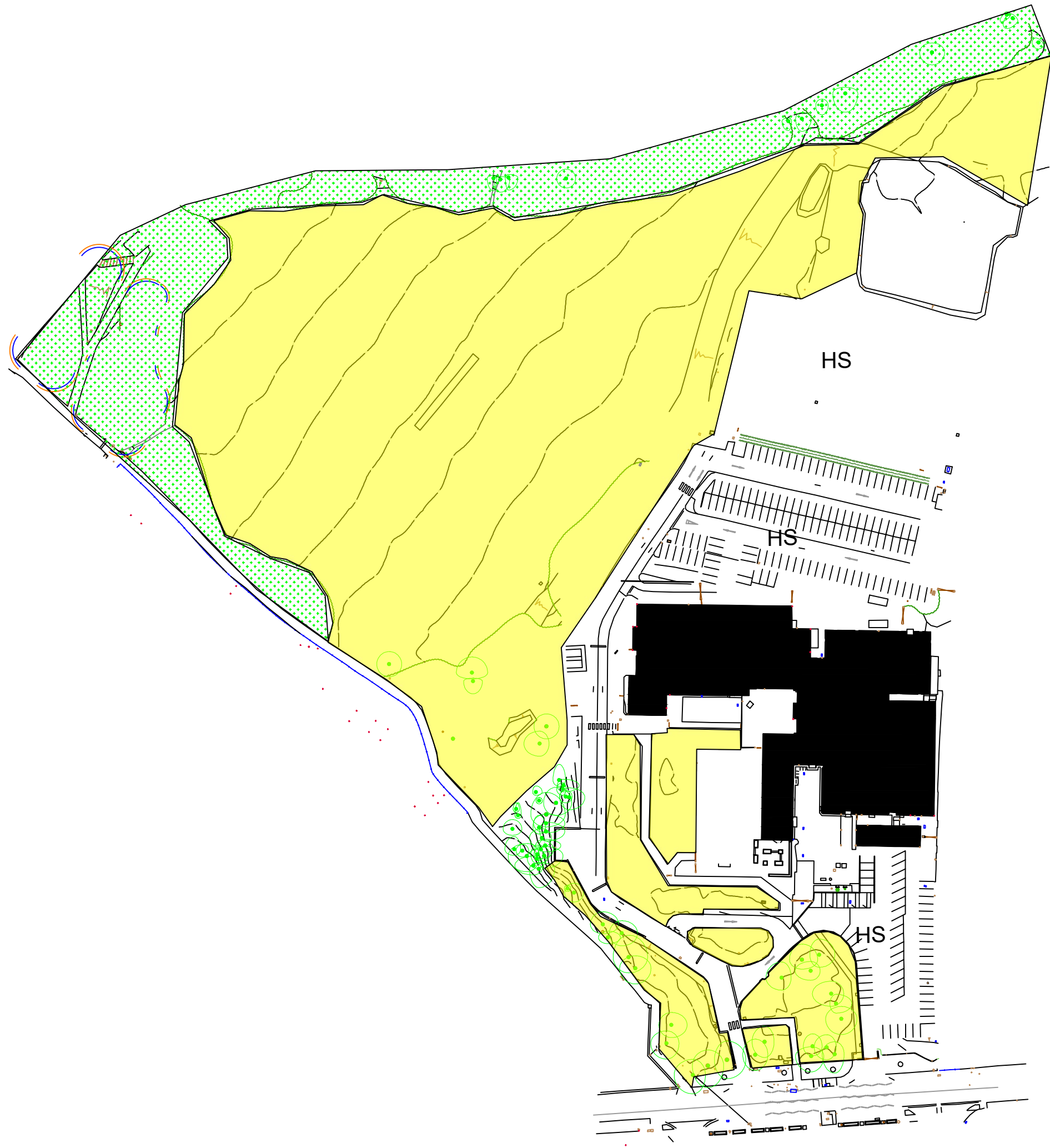
5.1 The results of the BNG calculation are indicated below and in accordance with the habitats present within the site and the proposals for the site's redevelopment the BNG Assessment predicts a change of +33.23% and increase in 6.39 habitat units.

On-site baseline	Habitat units	20.12
	Hedgerow units	0.00
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	26.81
	Hedgerow units	0.00
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	Habitat units	33.23%
	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	6.69
	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	33.23%
	Hedgerow units	0.00%
	River units	0.00%
Trading rules Satisfied?	Yes ✓	

NOTE baseline cross check failed because of increase in site size due to urban tree retention and creation

Appendix 1 Aerial mapping of site and adjacent habitats





PHASE ONE HABITAT MAP KEY

-  A.2. Scrub
-  A.3.1 Broadleaf scattered trees
-  J.2 Amenity grassland
-  J.4 Building

① Target Notes. Refer to Preliminary Ecological Appraisal

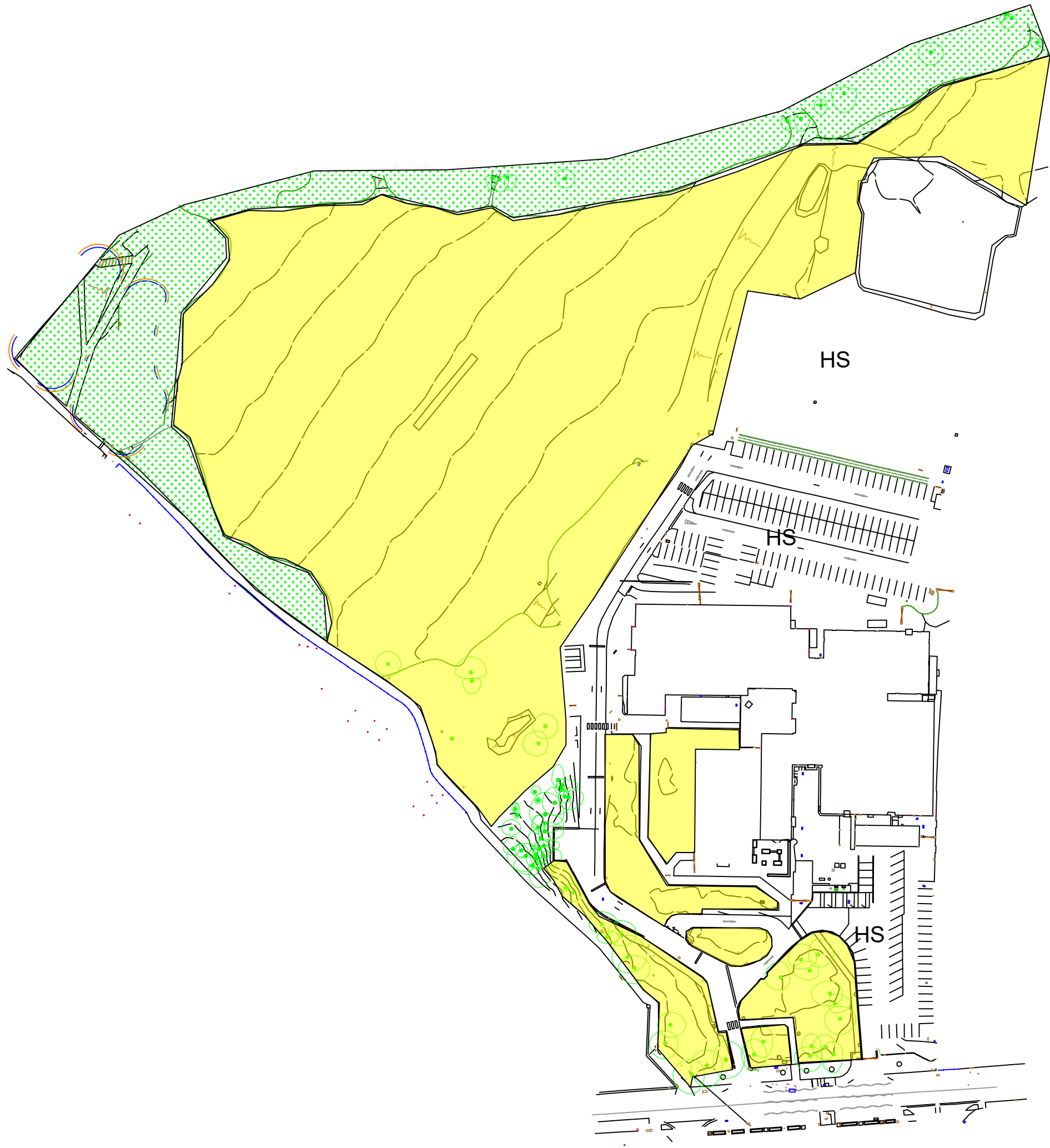
Client:
Mott McDonald

Project:
STAR Radcliffe

Detail:
Phase One Habitat Map

Drawn By:	Date:	Scale:
SB	03.03.21	NTS

Drg No:	Revision:
TR-01	V1

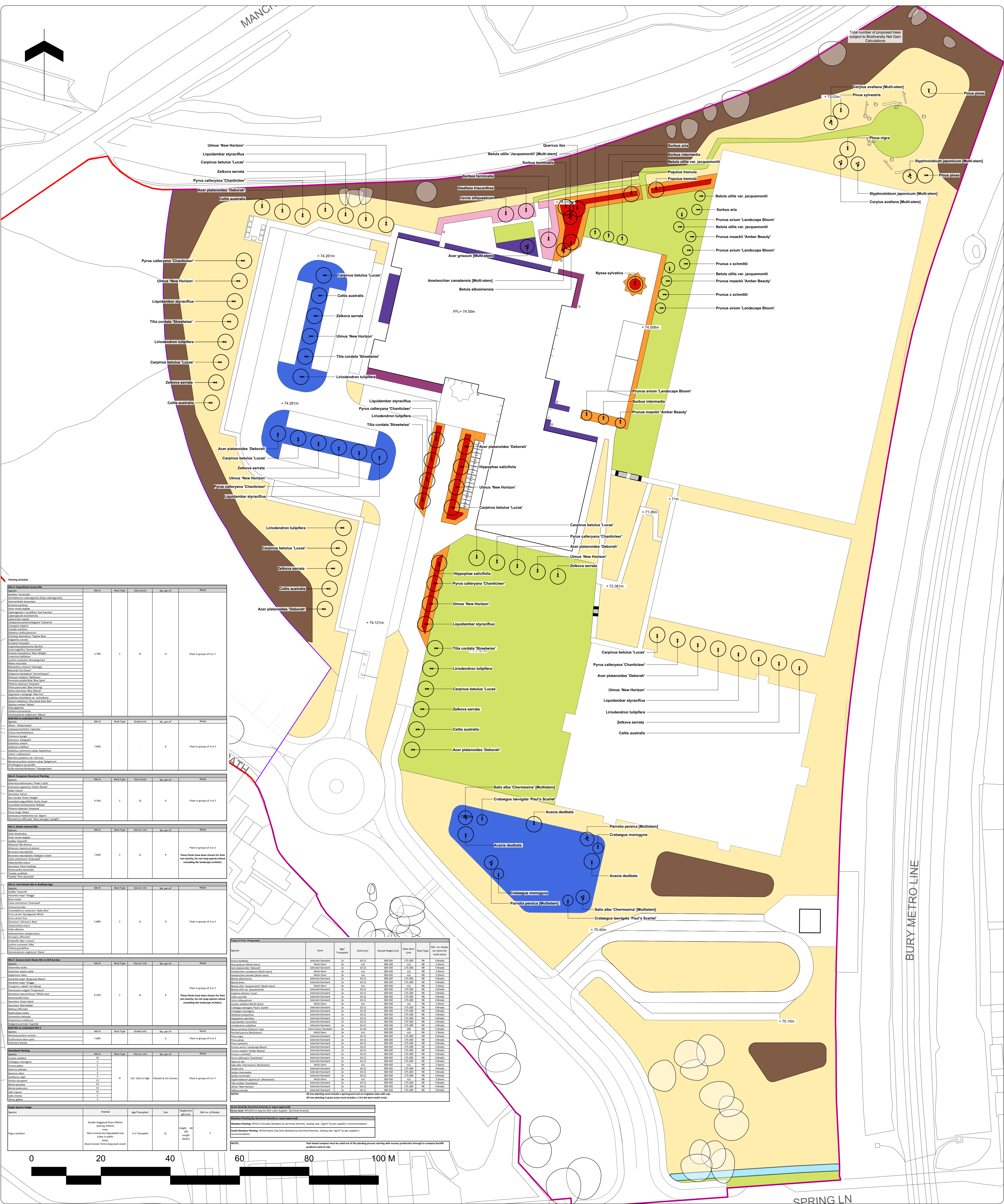


UK HABITAT CLASSIFICATION MAP
KEY

-  Woodland
-  Urban trees
-  Modified grassland
-  Urban sealed surfacing

1

Client:		
Morgan Sindall		
Project:		
STAR Radcliffe		
Detail:		
Phase One Habitat Map		
Drawn By:	Date:	Scale:
SB	05.08.2023	NTS
Drg No:		Revision:
TR-01		V1



Note

- Do not scale from this drawing
- To be read in conjunction with Project Risk Register REF: FS1013-ALA-EX-XX-RR-L-00001
- To be read in conjunction with all other Landscape Architect's drawings
- To be read in conjunction with Outline Landscape Specification REF: FS1013-ALA-EX-XX-SPL-0001

ID	RISK	MITIGATION	DATE MITIGATED
1	Obstruction to sky reflection beam	2.4m fencing. End user access restricted. Beam to be 600mm deep. Beam to dry in ground during a maintenance event. Warning sign.	31.07.23
2	Falling on cars while accessing sport pitches	Barriers in 2m wide 'road' area provided at all times.	31.07.23
3	Collision between pedestrians and vehicles accessing amenity parking area	Barriers to manage vehicle speed. Barriers added to trees.	31.07.23
4	Collision between pedestrians and vehicles in car park	Landscape features to stop vehicles from leaving car park and parking area. Road markings to clearly define parking.	31.07.23
5	Collision between pedestrians and cyclists accessing amenity facilities	As wide as possible / cycle approach. Shared to manage speed on site. Clear signage.	31.07.23
6	Close proximity contact with underground utilities and services	Two jobs to be located in close proximity to existing services. Working to be done in a gradient of 1:1. 1.1m gap and 0.1m from existing services.	31.07.23
7	Falling from height - 1.5 grassed bank to east of sports hall	Grassed bank designed to be in a gradient of 1:1. 1.1m gap and 0.1m from existing services.	31.07.23
8	Collision between pedestrians and open windows	Clear barriers to window openings.	31.07.23

RESIDUAL PROJECT RISKS

KEY

Site

- Planning Application Boundary
- Extent of Works
- Proposed Building
- Existing Tree Retained

Planting

Details refer to Planting Plan

Proposed Tree
Refer to Schedule

Proposed Multi-stem Tree
Refer to Schedule

Grass Seed
Refer to Schedule

Meadow Planting
Refer to Schedule

Swale Meadow Planting
Refer to Schedule

Woodland Planting
Refer to Schedule

Amenity Planting **MIX A**
Refer to Schedule

Amenity Planting **MIX B**
Refer to Schedule

Amenity Planting **MIX C**
Refer to Schedule

Amenity Planting **MIX D**
Refer to Schedule

Amenity Planting **MIX E**
Refer to Schedule

Hedge Planting
Refer to Schedule

DIE DESIGN DELIVERABLE REF:

150

DATE	REV	DESCRIPTION OF REVISION	DRAWN BY	APPROVED BY
07/09/2023	P02	Issued for Planning	PH	BS
11/09/2023	P01	Issued for ITT	PH	BS

REVISIONS

STATUS:

S2 - For Planning

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CLIENT:

Morgan Sindall

PROJECT TITLE:

Star Radcliffe Academy, Bury

DRAWING TITLE:

Planting Plan

DRAWING SCALE:	DRAWN BY:	DRAWN DATE:
1:500	PH	06/07/2023
PAPER SIZE:	APPROVED BY:	ALA PROJECT CODE:
A1	BS	ALA805

DRAWING NUMBER:	STATUS:	REVISION:
FS1013-ALA-EX-ZZ-D-L-0010	S2	P02