

NOMA Angel Square – Public Realm M60 0AG

ASSESSMENT OF BIODIVERSITY NET GAIN

September 2022

[ERAP (Consultant Ecologists) Ltd ref: 2022-285]

ERAP (Consultant Ecologists) Ltd
Building N2
Chorley Business and Technology Centre
East Terrace
Euxton Lane
Euxton
Chorley
PR7 6TE

Tel: 01772 750502

mail@erap.co.uk
www.erap.co.uk



CONTENTS

1.0	Introduction	3
2.0	Methods and Approach	4
2.1	Vegetation and Habitats	4
2.2	Evaluation Methods, Parameters and Rules Applied	4
3.0	Baseline Conditions	4
3.1	Ecological Baseline and Assessment of Habitat Types, Areas and Condition Assessments	4
4.0	Post-Development Habitats	6
5.0	References	7
6.0	Appendix: Condition Assessments and Figures	8
6.1	Condition Assessments	8
6.2	Figures	9

List of Tables

Table 3.1: Summary of Area-based Habitats within Site	5
Table 4.1: Summary of Area-based Habitats Retained and Created at Site	6
Table 4.2: Results of Biodiversity Metric 3.1 Calculation (from Headline Results Tab of BNG Worksheet)	6
Table 6.1: Condition Assessments for Modified Grassland	8
Table 6.2: Condition Assessments for Urban Trees	8

List of Figures

Figure 1: Aerial Image of the Site	9
Figure 2: UKHab Map Showing Baseline Habitats Within the Site	10
Figure 3: UKHab Map Showing Proposed Habitats Within the Site	11

Document Control

Survey Type:	Surveyor	Survey Date
Habitat survey and Condition Assessment	Brian Robinson B.Sc. (Hons) MCIEEM Senior Ecologist	30 th August 2022
Reporting	Personnel	Date
Author	Brian Robinson B.Sc. (Hons) MCIEEM Senior Ecologist	31 st August 2022
Signature(s)		
Checked	Catie Haworth B.Sc. (Hons) M.Sc. Ecologist	1 st September 2022
Revised and Issued	Brian Robinson	20 th September 2022
Report issued to	Gardiner & Theobald LLP	
Version Number	1	

1.0 INTRODUCTION

- 1.1 ERAP (Consultant Ecologists) Ltd was commissioned by Gardiner & Theobald LLP to carry out works to complete a Biodiversity Net Gain (BNG) assessment of the public realm area at NOMA, Angel Square, (hereafter referred to as the 'site'). The assessment was requested to inform proposals to enhance and improve the areas of public realm within NOMA Angel Square.
- 1.2 The Ordnance Survey (OS) grid reference at the centre of the 0.49 hectares¹ site is SJ 84297 99013. An aerial image of the site and its surrounding habitats is appended at **Figure 1** (source image: ESRI World Imagery).
- 1.3 In accordance with Chapter 15, paragraph 180(d) of the *National Planning Policy Framework* (NPPF) (Ministry of Housing, Communities and Local Government, 2021):

'opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate'.
- 1.4 This report has been prepared to accompany a completed assessment of BNG using *The Biodiversity Metric 3.1: Auditing and accounting for biodiversity Calculation Tool* (Natural England, 2022); the key findings of the excel worksheet, which is provided as a separate document (*ERAP Ltd 2022-285 Biodiversity Metric 3.1 Calculation Tool 200922*, hereafter the 'BNG Worksheet'), are presented within this report.

¹ The total site area has been calculated by ERAP (Consultant Ecologists) Ltd and confirmed by the client.

2.0 METHODS AND APPROACH

2.1 Vegetation and Habitats

- 2.1.1 2022-285 NOMA Angel Square – Public Realm M60 OAG: Ecological Survey and Assessment (ERAP (Consultant Ecologists) Ltd, 2022), hereafter the ‘ecology report’, has been used to inform the ecological baseline in terms of the habitats present within the site.
- 2.1.2 The survey of the site was completed by Brian Robinson B.Sc. (Hons) MCIEEM on 30th August 2022. The weather was dry and sunny with a light air (Beaufort scale 1) and an air temperature of 18°C.
- 2.1.3 The survey included the completion of Condition Assessments at each habitat within the site, and an assessment of each habitat in accordance with the UK Habitats Classification / UKHab, in order that appropriate BNG habitat types could be assigned for the metric.
- 2.1.4 Habitats within the site were assessed in accordance with the UK Habitats Classification / UKHab (Butcher, et al., 2020). The UKHab has been designed to function at two scales: fine scale (25m² or 5 metres length) and large scale (400m² or 20 metres length). It has been considered for the purposes of this survey that the fine scale of 25m² or 5 metres length is appropriate.
- 2.1.5 Condition Assessments of each habitat in accordance with those presented in *The Biodiversity Metric 3.1: habitat condition assessment sheets with instructions* (Natural England, 2022) have been completed.

2.2 Evaluation Methods, Parameters and Rules Applied

Habitats and Assessment

- 2.2.1 Habitats have been assessed to determine whether they meet those described in *UK Biodiversity Action Plan: Priority Habitat Descriptions* (Maddock, A (ed), 2008); these lists are used to help draw up the statutory lists of Priority Habitats, as required under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006*. Where suitable, the ecological value of the habitats present have been assessed using the terms outlined in *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).
- 2.2.2 The BNG Assessment tool used is *The Biodiversity Metric 3.1 (JP039)* (Natural England, 2022). Condition Assessments for each of the habitats present within the site have been taken from *The Biodiversity Metric 3.1: habitat condition assessment sheets with instructions* (Natural England, 2022).
- 2.2.3 On site habitat mapping was assisted via use of GPS technology and QField on-site mapping software, using *MAS_AHR-00-XX-DR-A-00-001.dxf* (a digital map of the site) and *ESRI World Imagery* as base plans.
- 2.2.4 *Angel Square, Manchester: Landscape Masterplan Drg. No. 2962-PLA-XX-XX-DR-L-0002 Revision P03* (Planit I.E. Limited, 2022), hereafter the ‘site layout’, was provided to ERAP (Consultant Ecologists) Ltd and has been used to calculate the proposed habitats at the site. The provided .dwg file was inputted into QGIS and an affine transformation was completed to ensure the proposals were correctly spatially referenced.

3.0 BASELINE CONDITIONS

3.1 Ecological Baseline and Assessment of Habitat Types, Areas and Condition Assessments

- 3.1.1 **Tables 3.1 and 3.2** below provide a summary of the habitats present, their condition assessment result and their area / length within the site. Full Condition Assessments for each habitat are appended at **Section 6.1**, and photographs of each habitat are appended at Section 8.2 of the ecology report.

- 3.1.2 Figures are appended at **Section 6.2**; an aerial image of the site is presented at **Figure 1**, and plan showing the baseline habitats using UKHab symbology is appended at **Figure 2**. A plan showing the final site layout is presented at **Figure 3**.
- 3.1.3 Please note that a direct translation between habitat types presented in Phase 1 Habitat surveys, UKHab habitat types and the habitats presented in the BNG metric is not always possible. Where applicable, the most appropriate corresponding habitat types with the current BNG metric to reflect the habitats at the site has been included with justification as appropriate.

Table 3.1: Summary of Area-based Habitats within Site

Habitat and Photo References	UK Habitat Classification Type	BNG Habitat Equivalent	Phase 1 Habitat Equivalent	Condition Assessment	Area (ha)
Habitat 1 Landscape Planting (Photos 1 and 2 of the ecology report)	h3h mixed scrub with the following secondary codes: 11 scattered trees and 48 non-native	Urban – introduced shrub	J1.4 introduced shrub	N/A	0.21
Habitat 2 Amenity grassland (Photo 3 of the ecology report)	g4 modified grassland with the following secondary codes: 11 scattered trees, 75 active management and 66 frequently mown	Grassland – modified grassland	J1.2 amenity grassland	Poor	0.02
Habitat 3: Hard standing and buildings (Photos 4 and 5 of the ecology report)	u1b6 other developed land and u1b5 buildings	Urban – developed land; sealed surface	J4 – bare ground and J3.6 buildings	N/A	0.26
Habitat 4: Urban trees (9, small)	Secondary code 154 within h3h mixed scrub presented above (Habitat 1)	Urban – Urban trees	J5 – other habitat	Poor	0.04 ²
Total Area (not including urban trees)					0.49

- 3.1.4 No linear habitats are present at the site.

² Note that due to the way urban trees are calculated within the BNG metric their area does not contribute to the total site area calculation.

4.0 POST-DEVELOPMENT HABITATS

- 4.1 In accordance with the planning layout the following habitats, summarised at **Table 4.1** below, will be retained, enhanced or created. The planning layout is presented using UKHab symbology at **Figure 3**.
- 4.2 As shown on **Figure 3** the landscape masterplan indicates that 37 urban trees (assumed to be of 'small' size and managed to a 'moderate' condition) are proposed at the site. Note that small trees are measured to have a diameter at breast height of up to 30cm, and a metric root protection area radius of 3.6m, after 30 years from the year of establishment.
- 4.3 Losses and gains of habitats have been quantified using the BNG Metric, and the results are presented below. The measurement of the proposed habitats (including gardens) has been completed by ERAP (Consultant Ecologists) Ltd using the site layout.

Table 4.1: Summary of Area-based Habitats Retained and Created at Site

Habitat	Notes on Retained and Created Habitats	BNG Equivalent Habitat	Target Condition Assessment	Area (ha)
Habitat 3 Retained buildings	Unaffected by the proposals	Urban – developed land; sealed surface	N/A	0.01
New Habitat A Proposed landscape planting	No condition assessment is required for the proposed introduced shrubs	Urban – introduced shrub	N/A	0.16
New Habitat B Proposed hard standing	No condition assessment is required for the proposed hard standing	Urban – developed land; sealed surface	N/A	0.32
Habitat 4 Retained trees (3)	3 trees retained	Urban – urban tree	Poor	0.01 ³
New Habitat C Urban trees	Small size urban trees x 36	Urban – urban tree	Moderate	0.15 ³
Total area (not including retained and proposed urban trees)				0.49ha

- 4.4 A Target Condition Assessment for the proposed new habitat (Urban trees) is appended at **Section 6.1**. The headline results of the BNG Metric are presented below at **Table 4.2**.

Table 4.2: Results of Biodiversity Metric 3.1 Calculation (from Headline Results Tab of BNG Worksheet)

On-site Baseline	Habitat units	0.62
	Hedgerow units	0.00
	River units	0.00
On-site Post Intervention	Habitat units	0.81
	Hedgerow units	0.00
	River units	0.00
Total Net Unit Change	Habitat units	0.19
	Hedgerow units	0.00
	River units	0.00
Total Net % Change	Habitat units	30.22%
	Hedgerow units	0.00%
	River units	0.00%

³ Note that due to the way urban trees are calculated within the BNG metric their area does not contribute to the total site area calculation.

- 4.5 As demonstrated at **Table 4.3**, the Biodiversity Metric 3.1 Calculation Tool confirms that a net gain in habitat area-based units will occur as a consequence of the proposals.
- 4.6 A long term habitat management plan will be required for the proposed habitats to ensure that the calculation remains an accurate assessment of the change in habitat units at the site as a consequence of the proposed development.

5.0 REFERENCES

- Butcher, B. et al., 2020. *UK Habitats Classification User Manual Version 1.1*, Stockport: UKHab Ltd.
- CIEEM, 2018. *Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*, Winchester: Chartered Institute of Ecology and Environmental Management.
- ERAP (Consultant Ecologists) Ltd, 2022. *2022-285 NOMA Angel Square – Public Realm M60 OAG Ecological Survey and Assessment*, Chorley: ERAP (Consultant Ecologists) Ltd.
- Maddock, A (ed), 2008. *UK Biodiversity Action Plan: Priority Habitat Descriptions*. [Online]
Available at: <http://jncc.defra.gov.uk/page-5718>
- Ministry of Housing, Communities and Local Government, 2021. *National Planning Policy Framework*. London: H.M.S.O.
- Natural England, 2022. *The Biodiversity Metric 3.1 (JP039)*. [Online]
Available at: <http://publications.naturalengland.org.uk/publication/6049804846366720>
[Accessed 27 June 2022].
- Natural England, 2022. *The Biodiversity Metric 3.1: habitat condition assessment sheets with instructions*. [Online]
Available at: <http://publications.naturalengland.org.uk/publication/6049804846366720>
[Accessed 10 June 2022].
- Planit I.E. Limited, 2022. *2.2.4 Angel Square, Manchester: Landscape Masterplan Drg. No. 2962-PLA-XX-XX-DR-L-0002 Revision P03*, Manchester: Planit I.E. Limited.
- Stace, C. A., 2010. *New Flora of the British Isles 3rd Edition*. Cambridge: Cambridge University Press.
- UK Habitats Classification Working Group, 2018. *UK Habitats Classification Working Manual*. [Online]
Available at: <http://ecountability.co.uk/ukhabworkinggroup-ukhab>
[Accessed 22 July 2022].

6.0 APPENDIX: CONDITION ASSESSMENTS AND FIGURES

6.1 Condition Assessments

Table 6.1: Condition Assessments for Modified Grassland

Condition Assessment Criteria	Habitat 2: Modified Grassland
1. There must be 6-8 species per m2. Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving good condition.	No
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	No
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.	Yes
4. Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	No
5. Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	No
6. Cover of bracken less than 20%.	Yes
7. There is an absence of invasive non-native species listed on Schedule 9 of <i>Wildlife and Countryside Act 1981</i> (as amended).	Yes
Good: Passes 6 or 7 of 7 including essential criterion 1	No
Moderate: Passes 4 or 5 of 7 criteria; OR passes 4 of 5 criteria including essential criteria 1	No
Poor: Passes 0, 1, 2 or 3 of 7 criteria OR passes 4, 5 or 6 but failing criterion 1	Yes

Table 6.2: Condition Assessments for Urban Trees

Condition Assessment Criteria	Habitat 4: Urban Trees	New Habitat C: Proposed Urban Trees
1. The tree is a native species (or more than 70% within the block are native species)	No	Yes
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.	Yes	Yes
3. More than 50% of trees are mature ² or veteran ³ .	No	No
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.	No	No
5. Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, Ivy or loose bark	No	No
6. More than 20% of the tree canopy area is oversailing vegetation beneath.	Yes	Yes
Good: Passes 5 or 6 of 6 criteria	No	No
Moderate: Passes 3 or 4 of 6 criteria	No	Yes
Poor: Passes 0, 1 or 2 of 6 criteria	Yes	No

6.2 Figures

Figure 1: Aerial Image of the Site

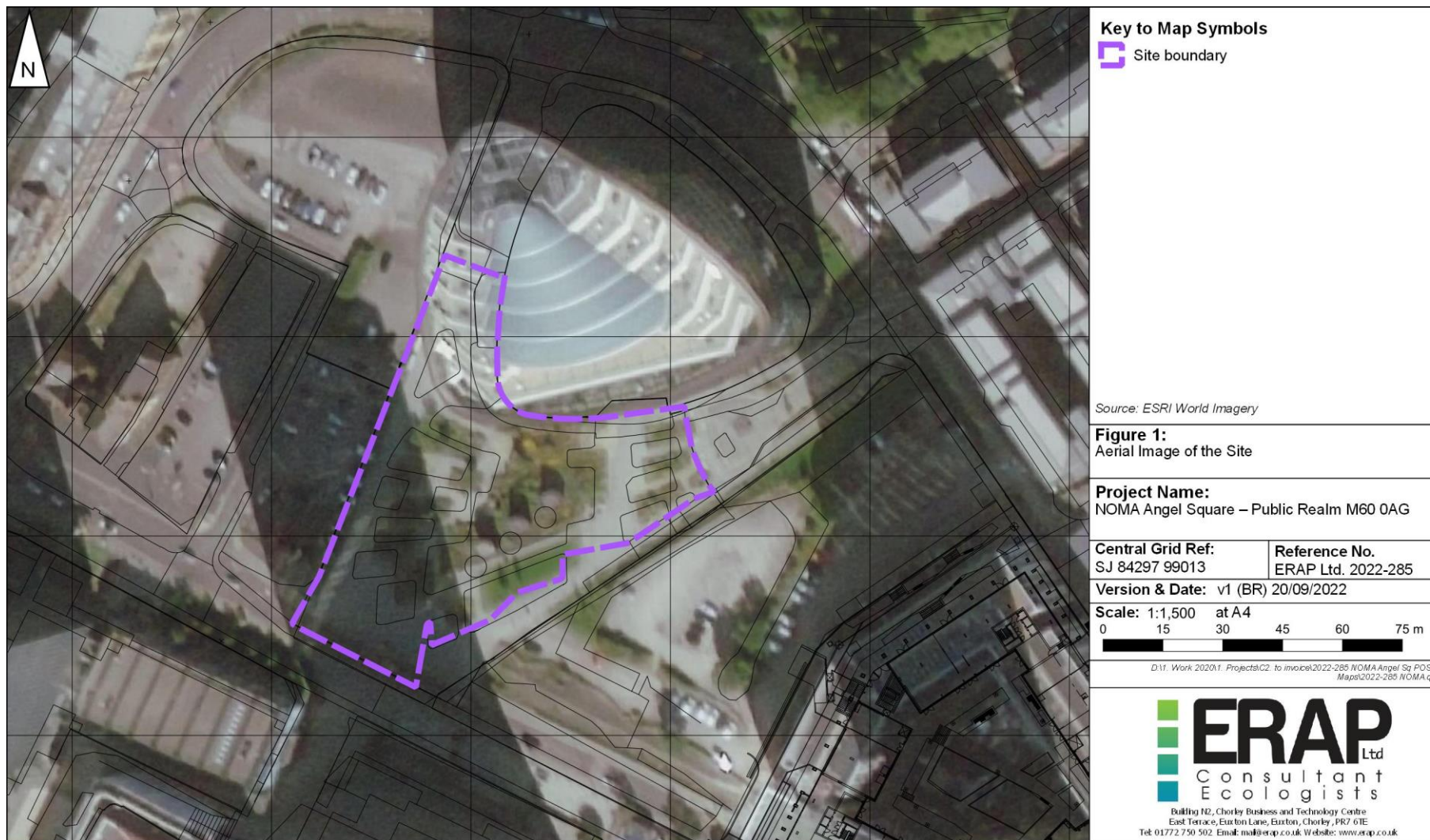


Figure 2: UKHab Map Showing Baseline Habitats Within the Site

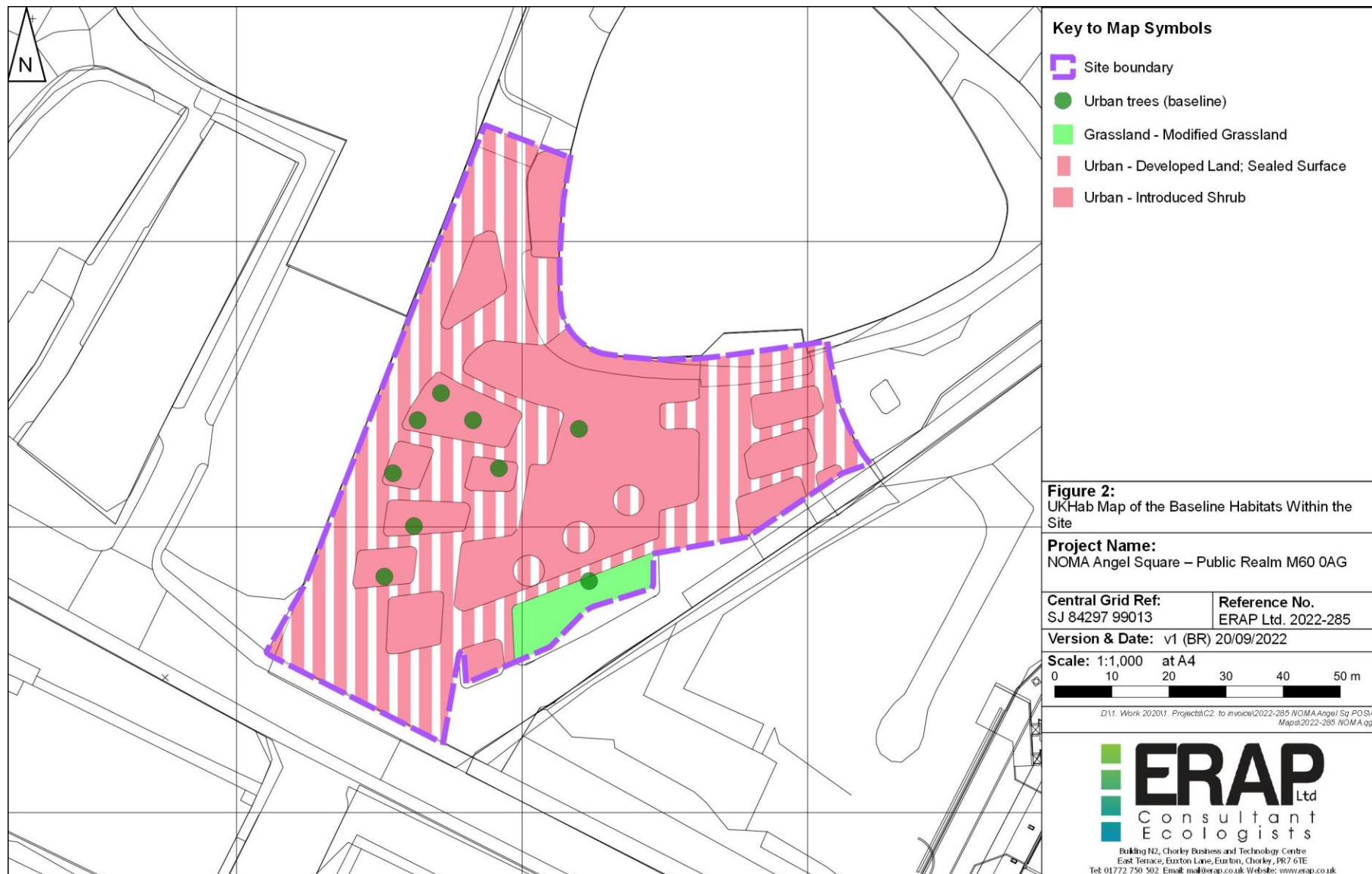


Figure 3: UKHab Map Showing Proposed Habitats Within the Site

