

HANGER 4, MANCHESTER AIRPORT

Biodiversity Net Gain Assessment

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BNG Assessment
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1 INTRODUCTION

1.1 Purpose and Scope of this Report

- 1.1.1 RPS was commissioned by Columbia Threadneedle Investments to produce a Biodiversity Net Gain (BNG) Assessment on an area of land at Manchester Airport north of Wilmslow Old Road, Ringway, Manchester, M90 5YP which currently comprises a large hangar building with associated ancillary buildings. The current structures are due to be demolished and a new hangar built for the airport.
- 1.1.2 An Ecological Assessment (EA) was undertaken by Tetra Tech on the 17th January 2023 (Tetra Tech, 2023). This identified the need to undertake a BNG Assessment of the site, to support the planning application. The EA also made recommendations for biodiversity enhancements.
- 1.1.3 This BNG assessment report aims to:
- Calculate and assess the baseline ecological status and condition of current habitats identified on site;
 - Calculate the biodiversity value of the site post-development; and
 - Provide a summary of the habitat enhancements and creation proposals designed to ensure net gain is achieved.
- 1.1.4 The recommendations included within this report are the professional opinion of an experienced ecologist and therefore the view of RPS.

1.2 Biodiversity Net Gain Definition and Methods

- 1.2.1 Biodiversity Net Gain is defined in Baker *et al* (2019) as:
- "Development that leaves biodiversity in a better state than before"*
- 1.2.2 The requirement for developments to seek to achieve BNG arises from the National Planning Policy Framework (NPPF, 2021), which states in Para. 174 that:
- "Planning policies and decisions should contribute to and enhance the natural and local environment by ... minimising impacts on and providing net gains for biodiversity."*
- 1.2.3 An accepted method of assessing BNG is through the use of biodiversity calculators to assess the biodiversity value of habitats pre- and post-development based on habitat type, distinctiveness and condition.
- 1.2.4 A biodiversity index is derived for the baseline and for the proposed development, and BNG is considered to be achieved where an increase in value is delivered (on or offsite), and where habitats of a higher value are not replaced exclusively with habitats of a lower value.
- 1.2.5 The methods of calculating BNG for this project followed the guidance produced by Natural England's Biodiversity Metric 4.0 (JP039) (Pank *et al.*, 2023). Defra made available its beta test BNG assessment tool in July 2019, which was subsequently updated in July 2021, April 2022 and April 2023. This tool has been used for the assessment in this report. The tool and associated documents were downloaded from:

<http://publications.naturalengland.org.uk/publication/6049804846366720>

Condition Assessment

- 1.2.6 Using the data collected from the Phase 1 Habitat Survey, a habitat condition assessment was undertaken for the habitats present within the project boundary. The appropriate 'condition sheet' was first selected via the Table TS1-1a in the technical supplement provided by Pank *et al.* (2023).

- 1.2.7 The condition sheet was then used to assess the individual habitats by comparing how they scored against pre-set condition assessment criteria. The criteria describe what components are needed for the habitat to be of good, moderate or poor value.
- 1.2.8 Each habitat was scored the following:
- 1 – Poor;
 - 2 – Moderate; and
 - 3 – Good.
- 1.2.9 The calculator allows these to be further divided and provides categories for fairly good and fairly poor. The ecologist undertaking the assessment used their professional judgement, considering the habitat condition assessment criteria, to decide when it was suitable to use these categories.
- 1.2.10 It should be noted that some habitats are given a fixed score and do not need assessing.

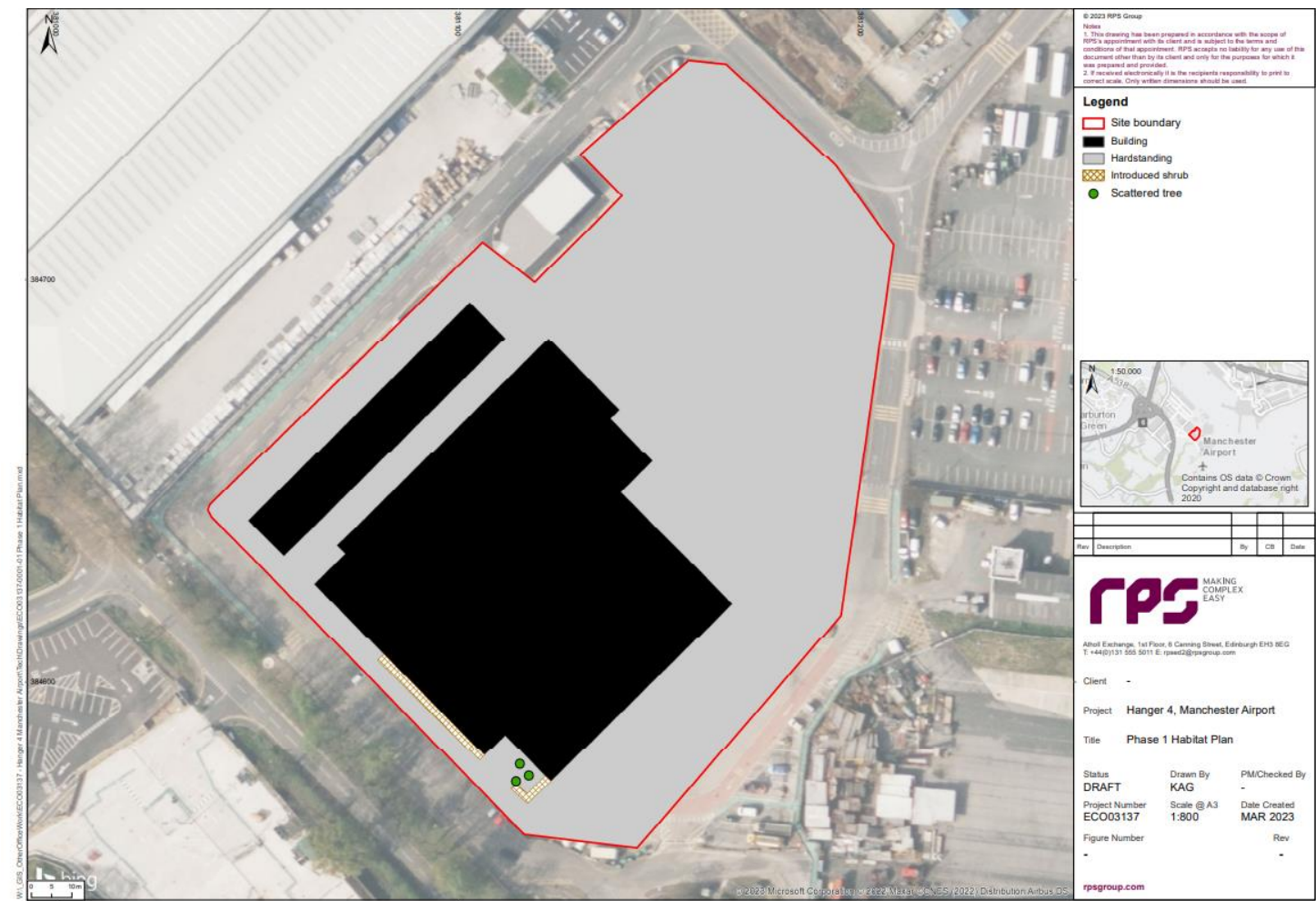
2 BASELINE DESCRIPTION

- 2.1.1 The baseline description is taken from the Ecological Assessment (Tetra Tech, 2023) where the full Phase 1 Habitat Survey descriptions can be found. Only habitats that were deemed to have an ecological value are discussed further.

2.2 Phase 1 Habitat Survey – Overview

- 2.2.1 A full list of the habitats identified on the site is provided below:
- A3.1 Scattered broadleaved trees;
 - *J3.6 Building*
 - *J4 Hardstanding*
 - *J4 Introduced scrub*
- 2.2.2 The habitats in italics were considered to be of no ecological value or were not going to be impacted by the development and therefore are not considered further in terms of the BNG assessment.
- Scattered Broadleaved trees**
- 2.2.3 Small scrubby self set trees were recorded next to the main hanger on the south corner. Species included ash *Fraxinus excelsior* and elder *Sambucus nigra*. The trees has negligible ecological value.
- 2.2.4 The Phase 1 Habitat Plan is shown on Figure 2.1.

Figure 2.1: Phase 1 Habitat Plan (pre-development habitat)



2.3 Habitat Condition Assessment

- 2.3.1 A condition assessment was not required for the habitats present on site (as shown on Figure 2.1). The extent, distinctiveness and condition of the baseline habitats on site are fixed for the habitats present and summarised in Table 2.1 overleaf.
- 2.3.1 Numbers in the tables in this section are copied from those generated by the Defra metric. Note that the spreadsheet rounds figures of credits to two decimal places which occasionally generates apparent minor discrepancies due to rounding errors when numbers are placed into tables.

Table 2.1: Baseline assessment of biodiversity value

Habitat type	Area (ha)	Distinctiveness score	Condition score	Strategic significance score	Value (biodiversity units) ^a	Area of habitat retained	Area of habitat enhanced	Baseline value of retained habitats	Baseline value of enhanced habitats	Area of habitat lost (ha)	Value of habitats lost
Developed land;sealed surface	1.9125	V.Low	0	N/A - Other	0	0	0	0	0	1.91	0
Introduced shrub	0.009	Low	2	Poor	0.018	0	0	0	0	0.01	0.02
Urban tree	0.0122	Medium	4	Poor	0.05	0	0	0	0	0.01	0.05
Total	1.92 (excluding urban trees)				0.07	0	0	0	0	1.93	0.07

a: Calculated as: area x distinctiveness x condition

b: Areas for urban street trees are calculated using the 'urban tree helper' tool provided with the Defra metric. This provides an 'area equivalent' to enable the value of street trees to be included in the total site value calculation, but as this is not a direct measurement of actual habitat area, it does not get included in the total site area. The urban tree score for the site post-development is based on estimates from landscape design drawings. As a precautionary basis, the target condition for the urban trees has been set as 'poor'. It may be possible to review this target condition upwards when final planting schedules are produced.

Urban tree helper						
Tree size	Number of trees and area (ha) for each condition state					
	Poor	Area	Moderate	Area	Good	Area
Small	3	0.0122		0.0000		0.0000
Medium		0.0000		0.0000		0.0000
Large		0.0000		0.0000		0.0000
Total		0.0122		0.0000		0.0000

3 BIODIVERSITY ENHANCEMENT STRATEGY

3.1 Habitats

- 3.1.1 Habitats on the proposed development site are taken from the Landscaping Proposals plan (drawing reference:JSL4762) (RPS, 2023).
- 3.1.2 Taking into account the proposed use of the site, the post development planting will include a more diverse range of habitats than those that are present pre-development, including a more species-rich assemblage of introduced shrub, a Herbaceous perennial *Stipa tenuissima* alongside a grassland seed mix appropriate for an airport.

Non-native Scrub Planting

- 3.1.3 A shrub mix of six non-native species will be present to the north-west to the north-east of the site. Consisting of species such as *Cornus sanguinea* 'Mid-Winter Fire' and *Pittosporum tenuifolium* 'Arundel Green'.
- 3.1.4 These areas are recorded as 'Introduced-Shrub'. This would deliver **0.08 habitat units**.

Non-native Herbaceous Planting

- 3.1.5 A herbaceous community with a mix of two species is present to the north of the site.
- 3.1.6 These areas are recorded as 'Introduced-Shrub'. This would deliver **0.02 habitat units**.

Modified grassland

- 3.1.7 Hurrells Specialist Seeds HL.6 Birdstrike Airport Grass Seed Mix or equal will be sown around the majority of the site as this is typical and most appropriate for an airport.
- 3.1.8 These areas are recorded as 'Introduced-Shrub'. This would deliver **0.06 habitat units**.

Non-native Groundcover Planting

- 3.1.9 Proposed ground cover planting is present to the north of the site, with a non-native planting schedule which consists of different species depending on the light levels within the area. Such species include *Juniperus squamata* 'Blue Carpet' (full sun), *Geranium macrorrhizum* 'Album' (part shade) and *Geranium macrorrhizum* 'Album' (shade).
- 3.1.10 These areas are recorded as 'Introduced-Shrub'. This would deliver **0.01 habitat units**.

Table 3.1: Assessment of biodiversity value of post-construction habitat creation

Proposed habitat	Area (ha)	Distinctiveness score		Condition score		Time to target condition (years)	Temporal multiplier	Difficulty of creation / enhancement	Difficulty multiplier	Habitat units delivered ^a
Introduced shrub	0.0411	Low	1	Condition Assessment N/A	1	1	1.000	Low	1.000	0.08
Introduced shrub	0.0056	Low	1	Condition Assessment N/A	1	1	1.000	Low	1.000	0.01
Introduced shrub	0.0085	Low	1	Condition Assessment N/A	1	1	1.000	Low	1.000	0.02
Modified Grassland	0.0322	Low	1	Poor	1	1	1.000	Low	1.000	0.06
Developed land;sealed surface	1.83	V.low	0	N/A - Other	0	0	1.000	Low	0.67	0
Total habitat creation	1.92									0.17

a: Calculated as: area x distinctiveness x condition x time x difficulty

4 SUMMARY

- 4.1.1 The assessment above indicates that the development proposals for Hanger 4, Manchester Airport site will deliver a net gain of **152.52%** for habitats.
- 4.1.2 The total units delivered by the proposals is **0.17** units.
- 4.1.3 The Trading Rules below have not been satisfied due to the removal of the three poor 'urban trees'. These trees were old and scrubby and had no ecological value. As the development is within an airport, new tree planting is not permissible.
- 4.1.4 Within the landscaping proposals a large amount of shrub planting and groundcover planting is being undertaken across the site which is considered to offset the loss of the poor condition small trees currently present on site.
- 4.1.5 A summary screenshot from the calculator tool is provided in Figure 4.1 below.

Figure 4.1: Biodiversity Metric 4.0 Calculation Tool Beta Test Headline Results

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.10
	Hedgerow units	0.00
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	152.52%
	Hedgerow units	0.00%
	Watercourse units	0.00%
Trading rules satisfied?	No - Check Trading Summaries ▲	

Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	0.07	0.07	0.00	Unit requirement met or surpassed ✓
Hedgerow units	10.00%	0.00	0.00	0.00	Unit requirement met or surpassed ✓
Watercourse units	10.00%	0.00	0.00	0.00	Unit requirement met or surpassed ✓

5 REFERENCES

- Baker, J., Hoskins, R. & Butterworth, T. (2019). Biodiversity Net Gain – good practice principles for development. Ciria, London.
- JNCC (2010). Handbook for Phase 1 Habitat survey: a technique for environmental audit (revised reprint). Joint Nature Conservation Committee, Peterborough.
- Panks, S., White, N., Newsome, A., Nash, M., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Cashon, C., Goddard, E., Scott, S.J., Heaven, M., Scott, S.H., Treweek, J., Butcher, B. and Stone, D. 2023. Biodiversity metric 4.0: Auditing and accounting for biodiversity – User Guide. Natural England.
- Tetra Tech (2023). Hangar 4, Manchester Airport 784-B041631 Preliminary Ecological Appraisal