

BEAM PARK STATION

BIODIVERSITY NET GAIN ASSESSMENT

October 2024



SUPPORTED BY

MAYOR OF LONDON

BEAM PARK: BIODIVERSITY NET GAIN ASSESSMENT

OXF9274-R-021d

Beam Park: BNG Assessment
D
23/10/2024

BEAM PARK: BNG ASSESSMENT

Quality Management					
Version	Status	Authored by	Reviewed by	Approved by	Review date
1	Internal and client review	Matt Fasham	Mike Barker	Mike Barker	
2	Final version	Matt Fasham	Mike Barker	Mike Barker	11/05/22
3	Final version amended to include changes in retained/removed habitats	Matt Fasham	Mike Barker	Mike Barker	04/11/22
4	Updated for planning	Matt Fasham / Hannah Knight	Mike Barker	Mike Barker	23/10/224

Approval for issue	
Mike Barker	23 October 2024

File Location	
Document location:	OXF9274-R-021c Beam Park Biodiversity Net Gain assessment

© Copyright RPS Group Plc. All rights reserved.

The report has been prepared for the exclusive use of our client and unless otherwise agreed in writing by RPS Group Plc, any of its subsidiaries, or a related entity (collectively 'RPS'), no other party may use, make use of, or rely on the contents of this report. The report has been compiled using the resources agreed with the client and in accordance with the scope of work agreed with the client. No liability is accepted by RPS for any use of this report, other than the purpose for which it was prepared. The report does not account for any changes relating to the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. RPS does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

RPS accepts no responsibility for any documents or information supplied to RPS by others and no legal liability arising from the use by others of opinions or data contained in this report. It is expressly stated that no independent verification of any documents or information supplied by others has been made. RPS has used reasonable skill, care and diligence in compiling this report and no warranty is provided as to the report's accuracy. No part of this report may be copied or reproduced, by any means, without the prior written consent of RPS.

Prepared by: RPS Matt Fasham Technical Director Willow Mere House, Compass Point Business Park St Ives, Cambridgeshire PE27 5JL T 01480 466 335 E matt.fasham@rpsgroup.com	Prepared for: Countryside Properties Ltd Countryside House, The Drive, Brentwood Essex, CM13 3AT
--	---

Contents

1 INTRODUCTION 1

 Purpose and scope of this report 1

 Biodiversity Net Gain definition and methods 1

 Methods and assumptions for assessment of BNG 2

2 BIODIVERSITY NET GAIN ASSESSMENT 4

 Habitats 4

3 HABITATS WITH BIODIVERSITY BENEFITS AND MANAGEMENT 8

4 SUMMARY 9

REFERENCES 10

Tables

Table 3.1: Baseline assessment of biodiversity value..... 5

Table 3.2: Assessment of biodiversity value of post-construction habitat creation 6

Table 3.3: Assessment of biodiversity value of post-construction habitat enhancement.....7

Figures

Figure 1. Phase 1 Survey Map 3

1 INTRODUCTION

Purpose and scope of this report

- 1.1 RPS was commissioned by Countryside Properties Limited to undertake a Biodiversity Net Gain (BNG) assessment of Beam Park, London Borough of Barking & Dagenham and London Borough of Havering).
- 1.2 This report has been submitted against the Station application specifically. The BNG requirements of the Station Site are dealt with within this overall masterplan for Beam Park and the net gain required is delivered in those proposals, as demonstrated within the following sections of this report.
- 1.3 **Notwithstanding the above, for the station site itself, it has been surcharged and so the deemed baseline for the Station is zero and therefore no separate BNG uplift would in any case be required.**
- 1.4 This report provides:
- Assessment of baseline ecological value and ecological value of the application site post-development; and
 - Results of the overall net gain assessment.

Biodiversity Net Gain definition and methods

- 1.5 Biodiversity Net Gain (BNG) is defined in Baker *et al* (2019)¹ as:
- "Development that leaves biodiversity in a better state than before"*
- 1.6 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."*
- 1.7 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.
- 1.8 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.
- 1.9 This assessment was undertaken using the Defra biodiversity metric version 3.0 which was made available in July 2021. The metric and associated documents were downloaded from <http://publications.naturalengland.org.uk/publication/6049804846366720>

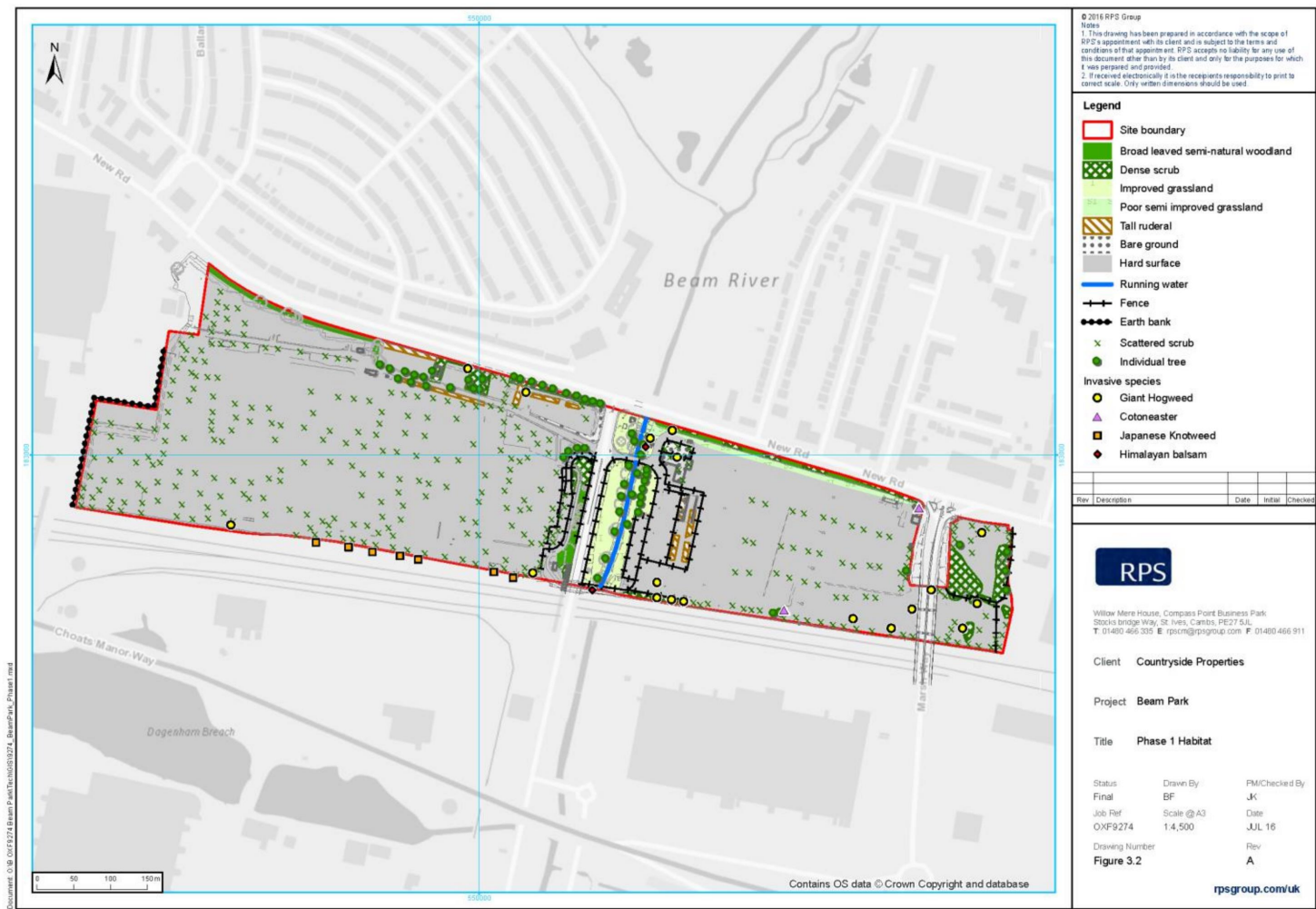
Baker, J., Hoskin, R. & Butterworth, T. (2019). *Biodiversity Net Gain – good practice principles for development*. Ciria, London.

Methods and assumptions for assessment of BNG

- 1.10 The assessment of BNG has been undertaken across the whole Beam Park development site with the exception of the two school sites (one of which is located in Phase 1, and the other in Phase A).
- 1.11 The baseline year for assessment of baseline ecological value was taken from Phase 1 habitat surveys undertaken in 2016 in support of the original 2017 hybrid planning application. The Phase 1 map from the 2016 baseline year is provided in Figure 1.
- 1.12 For the assessment of post-development habitat creation, areas of habitats have been taken from the following:
 - Phase 1: Detailed landscape designs, submitted and approved (drawings produced by Ireland Albrect in 2019; management plan detailed in RPS, 2020a);
 - Phase 2A/A: Detailed landscape designs, submitted and approved for Phase 2A/2B (drawings produced by Ireland Albrect in 2020, management plan detailed in RPS 2020b).
 - Phases B-G: Areas of proposed habitats have been taken from outline landscape and Urban Greening Factor drawings produced by Patel Taylor in 2022 (refer to Part 8 Page 134 of the Design & Access Statement).
 - **For the station site itself, it has been surcharged and so the deemed baseline for the Station is zero and therefore no separate BNG uplift would in any case be required.**
- 1.13 The drawings for Phases B-G include a proposed number of urban tree planting. As there are no detailed designs for these phases, the precise ratio of small/medium/large trees for the Urban Tree category assessment of value has been based on the ratio of these trees for Phase 1, where detailed designs are complete.
- 1.14 In terms of the proposed date of completion for assessment of post-construction habitats, the Beam Park development will be completed on a phased basis over several years; Phase 1 is now occupied, for example, and Phase 2A/A is under construction. The remaining phases will be completed between 2023 and 2032.
- 1.15 The assessment year for completion of the development is therefore taken as 2032. In reality some of the habitats associated with phases that complete before 2032 will be further towards achieving target condition due to the works taking place between 2023 and 2032. The assessment of post-construction value is therefore conservative and precautionary in that it assumes all habitat creation completed in 2032. As this makes no significant difference in terms of determining whether the development achieves 10% BNG, this is not considered to be an issue in terms of the assessment.
- 1.16 An assessment of hedgerows has not been undertaken. As there are no hedgerows currently on site, any provision of hedgerows results in a gain of 100% being returned by the Defra metric. It was not therefore considered necessary to include hedgerows in the BNG assessment.
- 1.17 No assessment of BNG for rivers has been undertaken. The River Beam flows through the site. Its current condition has been affected by previous channel straightening works. No significant additional encroachment of development on the river corridor occurs as a result of the development. Some relatively small-scale channel diversification works are proposed for the River, along with management of riparian habitat. It is therefore considered that the development will result in an improvement on the baseline condition of the river corridor, and that a detailed assessment was therefore unnecessary.

BEAM PARK: BNG ASSESSMENT

Figure 1. Phase 1 survey map (2016)



2 BIODIVERSITY NET GAIN ASSESSMENT

- 2.1 The baseline for assessment of BNG used the 2016 Phase 1 habitat map for the Site produced for the Ecological Appraisal (Figure 1 and RPS, 2016). Refer to this report for details of the baseline habitats present on site.
- 2.2 Habitats on the development site are taken from the sources summarised in Paragraph 1.10.
- 2.3 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 2 decimal places which occasionally generates apparent minor discrepancies due to rounding errors when numbers are placed into tables.

Habitats

- 2.4 The extent, distinctiveness and condition of the baseline habitats on site are summarised in Table 3.1.
- 2.5 Areas of new habitats proposed for the Site post-redevelopment and the biodiversity value as derived from the Defra calculation tool are provided in Table 3.2.

Table 3.1: Baseline assessment of biodiversity value

Phase	Habitat type	Area (ha)	Distinctiveness		Condition		Strategic significance		Value ^a (Habitat units)	Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area lost	Value of habitat lost
			Category	Score	Category	Score	Category	Score							
Phase 1	Other woodland; broadleaved	0.007	Medium	4	Moderate	2	Low	1	0.056	0	0	0	0	0.007	0.056
	Mixed scrub	0.101	Medium	4	Fairly Poor	1.5	Low	1	0.606	0	0	0	0	0.101	0.606
	Introduced shrub (buddleia)	0.203	Low	2	Poor	1	Low	1	0.406	0	0	0	0	0.203	0.406
	Bramble scrub	0.102	Medium	4	Poor	1	Low	1	0.408	0	0	0	0	0.102	0.408
	Modified grassland (poor semi-improved grassland)	0.159	Low	2	Moderate	2	Low	1	0.636	0	0	0	0	0.159	0.636
	Developed land; sealed surface	5.142	V.Low	0	N/A - Other	0	Low	1	0	0	0	0	0	5.142	0
Phase 2A/A	Other woodland; broadleaved	0.154	Medium	4	Moderate	2	Low	1	1.232	0	0	0	0	0.154	1.232
	Mixed scrub	0.166	Medium	4	Moderate	2	Low	1	1.328	0	0	0	0	0.166	1.328
	Modified grassland (Improved grassland)	1.076	Low	2	Fairly Poor	1.5	Low	1	3.228	0	0	0	0	1.076	3.228
	Modified grassland (poor semi-improved grassland)	0.119	Low	2	Moderate	2	Low	1	0.476	0	0	0	0	0.119	0.476
	Ruderal/Ephemeral (tall ruderal)	0.171	Low	2	Moderate	2	Low	1	0.684	0	0	0	0	0.171	0.684
	Developed land; sealed surface	7.887	V.Low	0	N/A - Other	0	Low	1	0	0	0	0	0	7.887	0
	Vacant/derelict land/ bareground	0.219	Low	2	Poor	1	Low	1	0.438	0	0	0	0	0.219	0.438
	Urban Tree	0.2216	Medium	4	Moderate	2	Low	1	1.7728	0.1696	0	1.3568	0	0.052	0.416
Phase B	Developed land; sealed surface	2.717	V.Low	0	N/A - Other	0	Low	1	0	0	0	0	0	2.821	0
Phase C	Developed land; sealed surface	2.134	V.Low	0	N/A - Other	0	Low	1	0	0	0	0	0	1.874	0
	Other neutral grassland	0.054	Medium	4	Moderate	2	Low	1	0.43	0	0	0	0	0.054	0.43
	Ruderal / ephemeral	0.077	Low	2	Moderate	2	Low	1	0.31	0	0	0	0	0.077	0.31
Phase D	Ponds (Non- Priority Habitat)	0.003	Medium	4	Poor	1	Low	1	0.012	0	0	0	0	0.003	0.012
	Developed land; sealed surface	1.242	V.Low	0	N/A - Other	0	Low	1	0	0	0	0	0	5.872	0
	Ruderal/Ephemeral	0.027	Low	2	Moderate	2	Low	1	0.11	0	0	0	0	0.027	0.011
Phase E	Other woodland, broadleaved	0.003	Medium	4	Moderate	2	Low	1	0.02	0	0	0	0	0.003	0.02
	Developed land; sealed surface	0.94	V.Low	0	N/A - Other	0	Low	1	0	0	0	0	0	0.94	0
	Vacant/derelict land/ bareground	0.002	V.Low	0	N/A - Other	0	Low	1	0	0	0	0	0	0.02	0
	Ruderal/Ephemeral	0.129	Low	2	Moderate	2	Low	1	0.52	0	0	0	0	0.129	0.52
Phase F	Developed land; sealed surface	4.112	V.Low	0	N/A - Other	0	Low	1	0	0	0	0	0	4.112	0
Phase G	Developed land; sealed surface	3.123	V.Low	0	N/A - Other	0	Low	1	0	0	0	0	0	3.123	0
	Other woodland; broadleaved	0.132	Medium	4	Moderate	2	Low	1	1.06	0	0	0	0	0.132	1.06
	Total	30.201 ^b							13.73	0.170	0	1.36	0	30.25	12.37

a: Calculated as: area x distinctiveness x condition x strategic significance

b: Excludes area for 'urban tree'

Table 3.2: Assessment of biodiversity value of post-construction habitat creation

Phase	Proposed habitat	Area	Distinctiveness		Target condition		Strategic significance		Time to target condition		Difficulty of habitat creation		Value ^a
			Category	Score	Category	Score	Category	Score	Years	Multiplier	Category	Score	
Phase 1	Developed land; sealed surface	2.84	V.Low	0	N/A - Other	0	Low	1	0	1.00	Medium	0.67	0.00
	Artificial unvegetated, unsealed surface (e.g. non-tarmac footpaths)	0.528	V.Low	0	N/A - Other	0	Low	1	0	1.00	Low	1	0.00
	Vegetated garden (private)	0.369	Low	2	Poor	1	Low	1	1	0.97	Low	1	0.71
	Modified grassland (amenity grass)	0.278	Low	2	Poor	1	Low	1	1	0.97	Low	1	0.54
	Other neutral grassland (wildflower meadow planting)	0.125	Medium	4	Moderate	2	Low	1	5	0.84	Low	1	0.84
	Reedbeds	0.035	High	6	Moderate	2	Low	1	7	0.78	Medium	0.67	0.22
	Sustainable urban drainage feature (swales / attenuation ponds)	0.334	Low	2	Moderate	2	Low	1	3	0.90	Medium	0.67	0.80
	Introduced shrub (will be approx 50/50 native / non-native.	0.2	Low	2	Poor	1	Low	1	1	0.97	Low	1	0.39
	Mixed scrub (native)	0.183	Medium	4	Moderate	2	Low	1	5	0.84	Low	1	1.23
	Intensive green roof (biodiverse roofs)	0.657	Medium	4	Moderate	2	Low	1	5	0.84	Medium	0.67	2.95
	Ground level planters (herbaceous / perennial ground cover planting)	0.165	Low	2	Poor	1	Low	1	1	0.97	Low	1	0.32
	Urban Tree	1.0368	Medium	4	Poor	1	Low	1	10	0.70	Low	1	2.90
Phase 2A/A	Developed land; sealed surface	5.283	V.Low	0	N/A - Other	0	Low	1	0	1.00	Medium	0.67	0.00
	Artificial unvegetated, unsealed surface (e.g. non-tarmac footpaths)	0.547	V.Low	0	N/A - Other	0	Low	1	0	1.00	Low	1	0.00
	Vegetated garden (private)	0.698	Low	2	Poor	1	Low	1	1	0.97	Low	1	1.35
	Modified grassland (amenity grass)	0.292	Low	2	Poor	1	Low	1	1	0.97	Low	1	0.56
	Other neutral grassland (species rich grassland in attenuation basins)	0.469	Medium	4	Moderate	2	Low	1	5	0.84	Low	1	3.14
	Other neutral grassland (wildflower meadow planting)	1.014	Medium	4	Moderate	2	Low	1	5	0.84	Low	1	6.79
	Other neutral grassland (in swales)	0.492	Medium	4	Moderate	2	Low	1	5	0.84	Low	1	3.29
	Reedbeds	0.15	High	6	Moderate	2	Low	1	7	0.78	Medium	0.67	0.94
	Introduced shrub (will be approx 50/50 native / non-native.	0.051	Low	2	Poor	1	Low	1	1	0.97	Low	1	0.10
	Mixed scrub (shrubs)	0.05	Medium	4	Moderate	2	Low	1	5	0.84	Low	1	0.33
	Mixed scrub (scrub)	0.131	Medium	4	Fairly Good	2.5	Low	1	7	0.78	Low	1	1.02
	Other woodland; broadleaved	0.13	Medium	4	Moderate	2	Low	1	15	0.59	Low	1	0.61
	Intensive green roof (biodiverse roofs)	0.436	Medium	4	Moderate	2	Low	1	5	0.84	Medium	0.67	1.96
	Ground level planters	0.049	Low	2	Poor	1	Low	1	1	0.97	Low	1	0.09
	Urban Tree	1.6861	Medium	4	Moderate	2	Low	1	27	0.38	Low	1	5.15
Phases B-G	Other neutral grassland (wildflower meadow planting)	0.389	Medium	4	Moderate	2	Low	1	5	0.84	Low	1	2.60
	Other woodland; broadleaved (replanted woodland strip on north edge of Phase G	0.135	Medium	4	Moderate	2	Low	1	15	0.59	Low	1	0.63
	Modified grassland (amenity grass)	1.752	Low	2	Poor	1	Low	1	1	0.965	Low	1	3.38
	Sustainable urban drainage feature (swales, reedbed, attenuation ponds)	1.272	Low	2	Moderate	2	Low	1	3	0.90	Medium	0.67	3.06
	Introduced shrub, hedging and other native/non-native planting	1.568	Low	2	Poor	1	Low	1	1	0.965	Low	1	3.03
	Intensive green roof (biodiverse roofs)	1.386	Medium	4	Moderate	2	Low	1	5	0.84	Medium	0.67	6.22
	Developed land; sealed surface	8.012	V.Low	0	N/A - Other	0	Low	1	0	1	Medium	0.67	0.00
	Urban Tree	5.129	Medium	4	Moderate	2	Low	1	27	0.38	Low	1	15.68
	Total	29.885^b											70.84

a: Calculated as: area x distinctiveness x condition x strategic significance x time multiplier x difficulty multiplier

b: Excludes area for 'urban tree'

BEAM PARK: BNG ASSESSMENT

- 2.6 The assessment assesses the baseline value of the site at **13.73** units, of which 1.36 are retained and 12.37 are lost.
- 2.7 Habitat creation proposed for the site provides **70.84** units.
- 2.8 Post-development units on site are therefore **$13.73 - 12.37 + 70.84 = 72.19$ units**.
- 2.9 This is a net change of **+58.46 habitat biodiversity units**, which is a gain of **425.77%**.

3 HABITATS WITH BIODIVERSITY BENEFITS AND MANAGEMENT

- 3.1 Outline habitat management principles are provided in the Outline Ecological Management Plan (RPS, 2020).
- 3.2 Detailed management plans have been produced and approved by the LPAs for Phases 1 and 2A/A (RPS, 2020a and 2020b).
- 3.3 Detailed LEMPs will be produced prior to occupation for Phases B-G and will be secured via planning conditions.

4 SUMMARY

- 4.1 The assessment above indicates that the development proposals provide a net gain of 425.77% for area-based habitats, which is significantly above the target of 10% net gain as set out in the Environment Act 2021.
- 4.2 A summary screenshot from the calculator tool is provided below.

Beam Park	Return to results menu	
Headline Results		
On-site baseline	Habitat units	13.73
	Hedgerow units	0.00
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	72.19
	Hedgerow units	0.00
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	Habitat units	425.77%
	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	58.46
	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	425.77%
	Hedgerow units	0.00%
	River units	0.00%
Trading rules Satisfied?	Yes	

REFERENCES

RPS (2017a). *Beam Park: Preliminary Ecological Appraisal*. Report (OXF9274-R-001h) to Countryside Properties. RPS, St Ives, Cambridgeshire.

RPS (2017b). *Beam Park: Outline Ecological Management Plan*. Report (OXF9274-R-004c) to Countryside Properties. RPS, St Ives, Cambridgeshire.

RPS (2020a). *Beam Park Phase 1: Ecological Management Plan*. Report (OXF9274-R-09e) to Countryside Properties. RPS, St Ives, Cambridgeshire.

RPS (2020a). *Beam Park Phase 2: Ecological Management Plan*. Report (OXF9274-R-010c) to Countryside Properties. RPS, St Ives, Cambridgeshire.