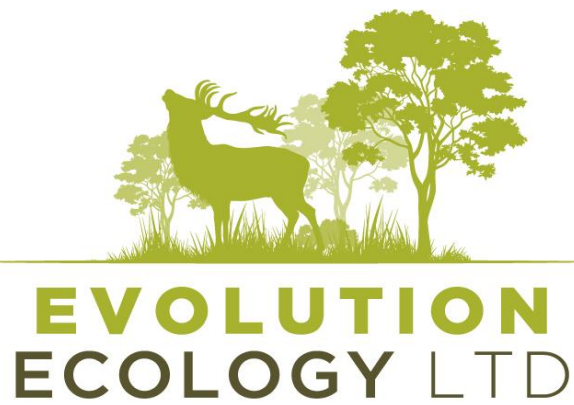




"Providing Common Sense Solutions for Sustainable Development"

Paul Keeling, Lulworth House, 51 High Street, Cheadle Staffordshire Moorlands, ST10 1AR,
M:07838 377 612 (direct line), E: paul@evolutionecology.co.uk, W: www.evolutionecology.co.uk

Pear Tree Farm

Biodiversity Net Gain Assessment (BNG) – August 2024



Evolution Ecology Ltd

Paul Keeling (Director/Ecologist)

Lulworth House, 51 High Street,

Cheadle, Staffordshire, ST10 1AR,

M: 07838 377 612 (direct line),

E: paul@evolutionecology.co.uk, W: www.evolutionecology.co.uk

Contents

<u>1. INTRODUCTION</u>	<u>Page 4</u>
• Background • Proposed application	
<u>2. METHODOLOGY</u>	<u>Page 7</u>
• Desk study • Biodiversity net gain & impact assessment • Biodiversity impact calculator • Baseline biodiversity unit calculation	
<u>3. RESULTS</u>	<u>Page 9</u>
• Designated sites • Habitat criteria assessment	
<u>4. IMPACT ASSESSMENT</u>	<u>Page 12</u>
• Impacts & mitigation • Biodiversity impact assessment • Overview of proposed 'off-setting' site • Preliminary creation & enhancement recommendations	
<u>5. REFERENCES</u>	<u>Page 18</u>
<u>6. APPENDIX</u>	<u>Page 19</u>

1. INTRODUCTION

1. Further to the request of the Staffordshire Moorlands District Council, Evolution Ecology Ltd was commissioned to undertake a Biodiversity Impact Assessment (BIA) in relation to the Biodiversity Net Gain (BNG) assessment for the proposed redevelopment of the site for the proposed construction of dwellings (Planning Reference: 24/00403/OUT).
 2. Using the 'Small Sites Metric Calculation Tool' (the total site area is 1442.17m²), this BNG report aims to ascertain if a net loss to biodiversity is incurred as a result of the proposed redevelopment and outline the need for any additional enhancement and management of habitat through on-site or off-site habitat creation.
 3. Assessment and impact calculations have been made using ecological baseline information from the initial Phase 1 Preliminary Ecological Appraisal (Evolution Ecology Ltd, August 2024) in conjunction with Ordnance Survey maps and technical CAD drawings (pre- and post-development drawings, supplied by the client/Architect).
- **Proposed redevelopment.**
4. The proposed redevelopment of the site is to create a plant centre with a coffee shop and gardens consisting of a white garden, a large Japanese garden, a large rock garden, a secret garden surrounded by hedges, and various woodland gardens inspired by Dorothy Clive gardens.

Figure 1. An aerial map showing the location of the site (red outline) and surrounding area.



Figure 2. An ordnance survey map showing the site's location (red outline) and some of the local landscape.



2. METHODOLOGY

5. To assess the overall net impact on biodiversity through the redevelopment, a site survey was carried out on the 19th of August 2024, undertaken by Paul Keeling BSc (Hons), MCIEEM.
6. In England, BNG is mandatory (12th February 2024 for large sites and 2nd April 2024 for small sites) and expects that all development delivers a net gain of 10% in biodiversity proportionate to the size and scale of the re/development. In circumstances where adverse impacts are demonstrated to be unavoidable, developers must ensure that impacts are appropriately mitigated, with suitable compensation measures towards loss of habitat used only as a last resort where there is no alternative'.
7. Should a BNG determine a residual net loss to biodiversity after the 'mitigation hierarchy' has been followed, and if the development is in accordance with all other local and national planning policies and wildlife laws, a biodiversity off-setting scheme may be necessary, and to be managed in the long term.
8. Biodiversity Impact Assessment used the 'Statutory Biodiversity Metric Calculation Tool' to measure and quantify the site's biodiversity units before and after any proposed re/development. This reveals if the re/development is likely to cause no net loss, net loss or net gain to biodiversity using the following criteria:

○ Obtain adequate pre-development baseline data of the types and conditions of habitats present;
○ Map the habitat type(s), and assess the baseline value of the site in terms of biodiversity units;
○ Assess the need for the creation or restoration of habitat(s) to deliver units of biodiversity on-site and, if necessary, off-setting off-site (where applicable);
○ Assess timescales required to achieve biodiversity net gain through habitat creation/ restoration and management techniques, including avoiding and minimising ecological harm and creating a landscape rich in biodiversity and green infrastructure.
○ Develop an outline masterplan, and test design by calculating preliminary post-development biodiversity units. Where necessary, revise masterplan in response to the initial calculation and test subsequent iterations of the masterplan;
○ Subject to the approval of BIA/BNG, prepare an Ecology Construction and Enhancement Plan or similar to address requirements to achieve projected BNG for ongoing management
○ Carry out compliance checks during and on completion of construction;
○ Ensure clear handover of responsibility for maintenance from developer to management company;
○ Implement and monitor habitat management;
○ Revise the management plan, if necessary, to ensure BNG is sustained.

- **Baseline biodiversity unit calculation**

9. Baseline data was used to calculate the habitat units, measuring the biodiversity within the re/development footprint. The distinctiveness of the habitat and condition are given numerical "scores", which are multiplied alongside the area (ha) or length (km) to provide the number of baseline habitat and hedgerow units.
 - o The biodiversity metric calculator can be accessed at the following link:
[Small Sites Metric Statutory Biodiversity Metric Calculation Tool 02.24.xlsm \(live.com\)](#)
10. Calculations have been determined as precisely as possible from architectural drawing scale bars and dividing the areas into regular shapes – subsequently, calculations are +/- m² within tolerance.

3. RESULTS

- **Designated sites**

Statutory Sites - The information received from the local records office confirmed that there is one **statutory site** (e.g., SSSI, SPA, SAC, LNR, or Ramsar) present approximately 1.5km north of the site (Cecilly Brook Local Nature Reserve). With no sites being located within the site's boundary.

Non-Statutory Sites - The desktop study has revealed three **non-statutory sites** located within a 2km radius of the site. These are in the form of biodiversity alert sites and local wildlife sites. However, none of these sites lies within the red line boundary of the site.

Ancient, Ancient Semi-natural and Ancient Replanted Woodland –
According to the information obtained from the local records office, four Ancient & Semi-natural Woodland sites are located to the northeast and northwest of the site. However, none of these sites lies within the red line boundary of the site.

Please see Figures 3 and 4 below for the locations of the statutory and non-statutory sites.

Figure 3. Designated conservation sites within a 2km radius of the proposed application area (black cross).

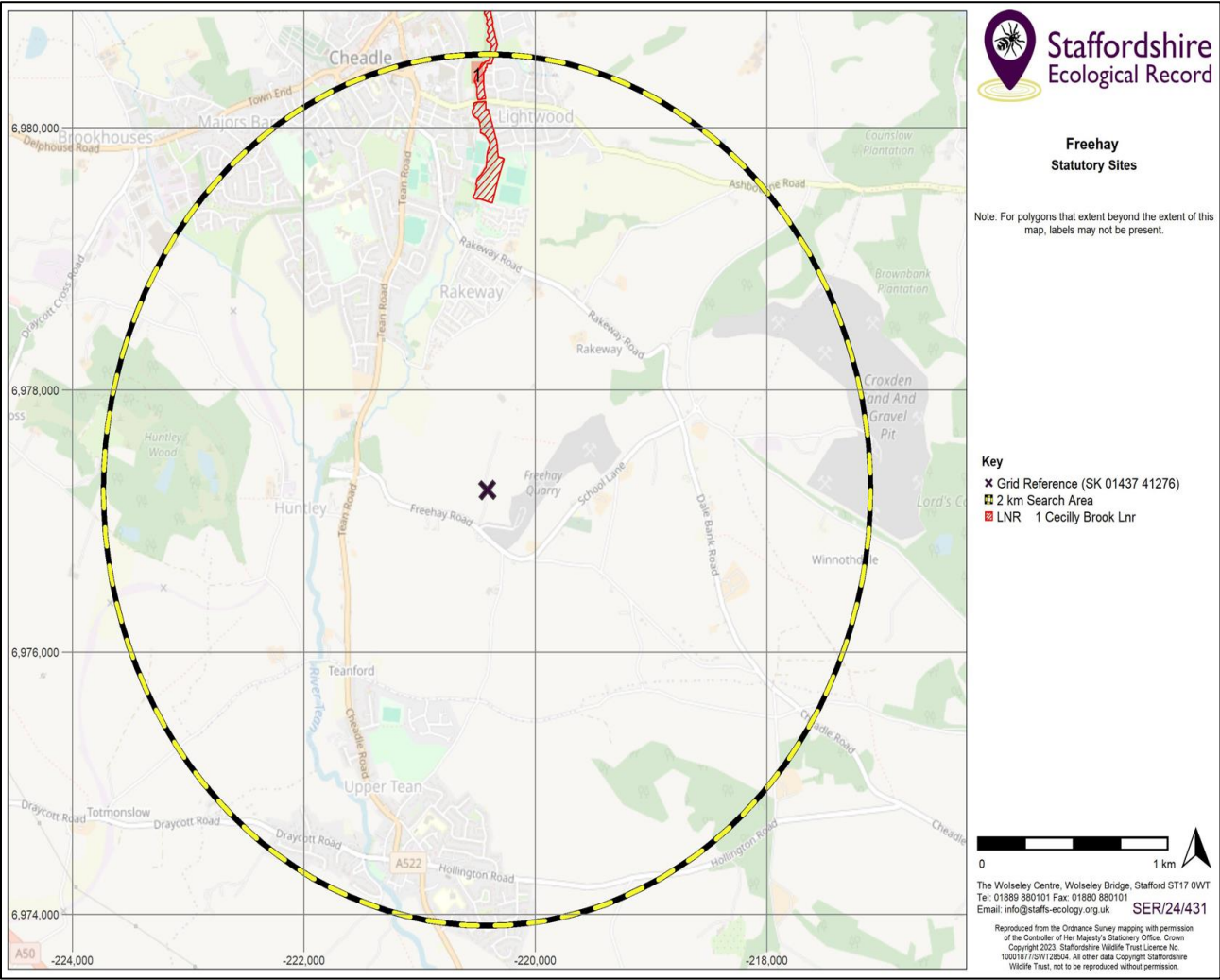
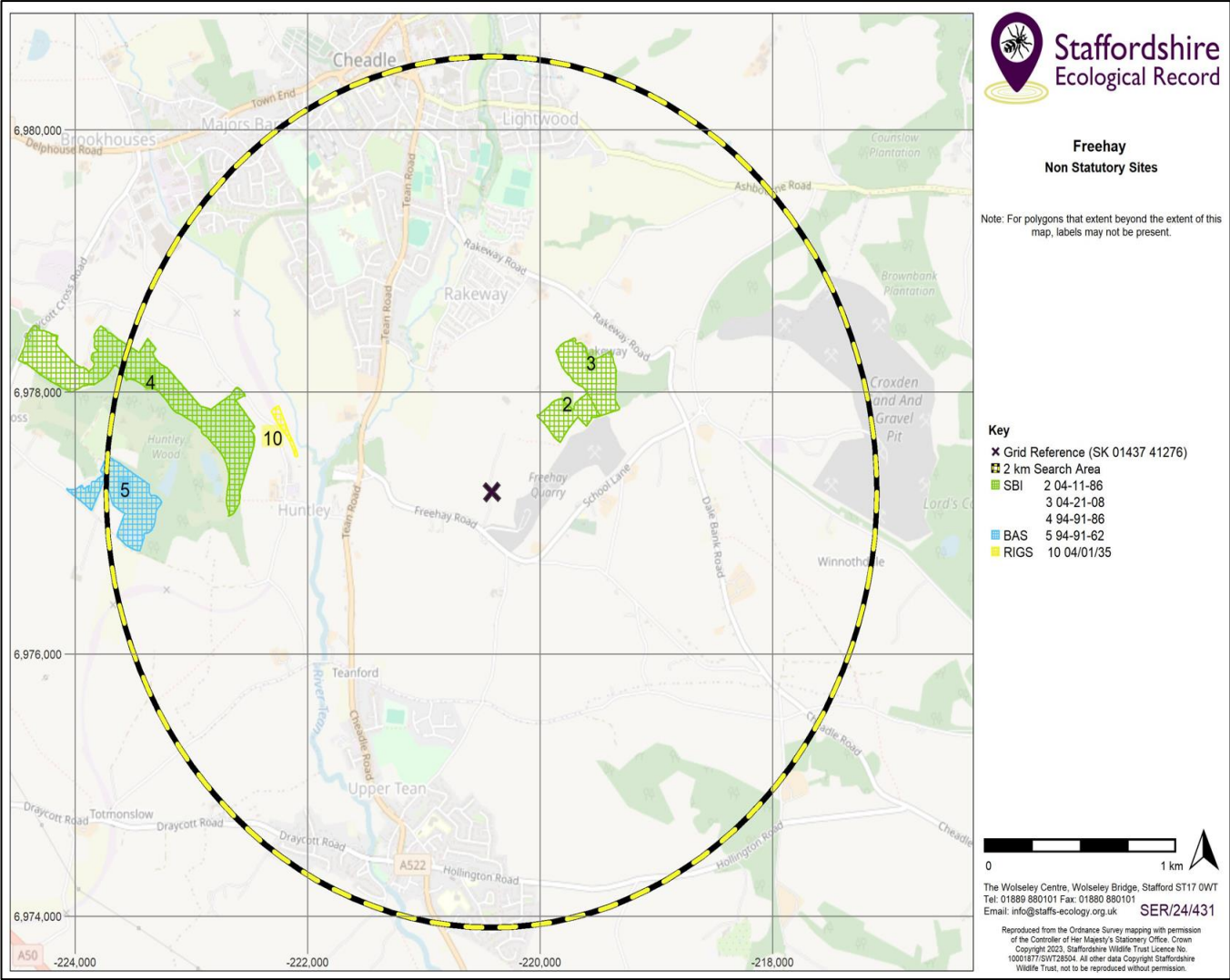


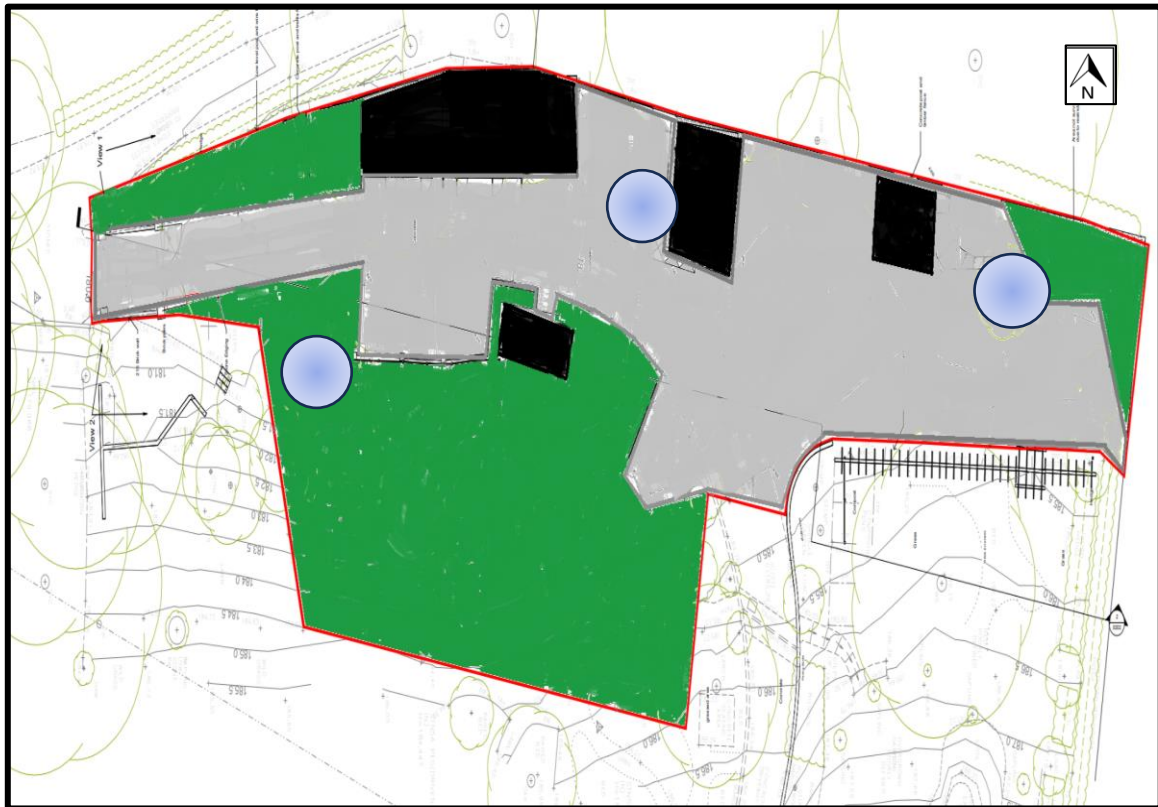
Figure 4. Non designated conservation sites within a 2km radius of the proposed application area (black cross).



4. IMPACT ASSESSMENT

Existing Habitats at the Site

Figure 5: Baseline Map Pre-development



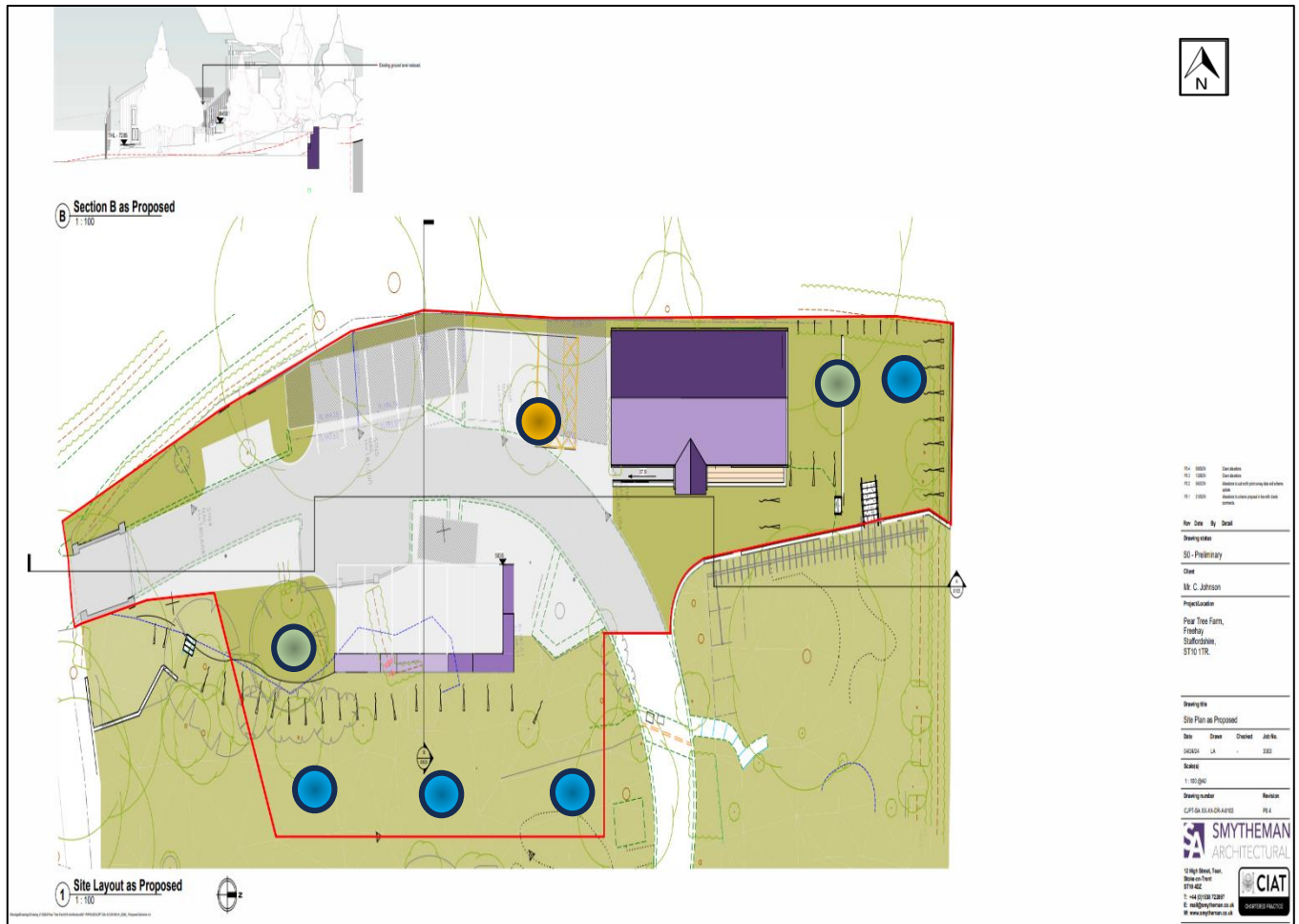
Habitat Key	
	Red line boundary
	Vegetated garden/grassland
	Hard standing ground
	Buildings
	Trees

ON-SITE BASELINE habitats in isolation				Ecological Importance of					
Habitat	Total (1442.17m2)	Units	Distinctiveness	I	N	R	D	L	S
Urban – Vegetated Garden	350.70	0.07	Low						X
Urban (developed land/sealed surface)	740.77	0.0	Very low						X
Grassland (modified grassland)	350.70	0.14	Low						X
Trees (3 trees)	N/A	0.1123	Medium						X
Total		0.3227							
I=International, N=National, R=Regional, D=District, L=Local, S=Site									

11. The proposed redevelopment site comprises areas of amenity grassland, shrubs, hard-standing ground (drive), trees, and buildings (photographs of the site are presented in the Appendix) to be replaced with various themed gardens, hard-standing ground (drive and car park), trees, and buildings.

Proposed Habitats at the Site

Figure 6: Post-development Map. Please contact jonathan@smytheman.co.uk for a clearer image.



Landscape Key

	1442.04m ² - Site Boundary.
	101.12m ² - Building/walls.
	616.53m ² - Drive/car park.
	724.50m ² - Gardens (shrubs and amenity grassland).
	2 Existing Trees to be Retained.
	1 Existing Tree to be Removed.
	4 new trees to be planted.

- ON-SITE POST-INTERVENTION

- Site habitat creation**

12. The proposed redevelopment of the site is to create a plant centre with a coffee shop and gardens consisting of a white garden, a large Japanese garden, a large rock garden, a secret garden surrounded by hedges, and various woodland gardens inspired by Dorothy Clive gardens.
13. The 'On-site habitat creation' table, detailed below, lists the habitats that will be created at the site.

ON-SITE HABITAT CREATION			
Habitat	Total M2	Units delivered	Estimated time to target improved condition
Urban – Vegetated Garden	362.25	0.0699	1 year
Grassland – Modified Grassland	362.25	0.1694	1 year
Urban (developed land: sealed surface)	1000	0	0
Trees (4 trees)	N/A	0.0498	27 years
Total		0.2891	

- Trees to be planted – Cheal's weeping cherry blossom trees (prunus 'kiku Shidare Zakura' (www.rootsplants.co.uk)).

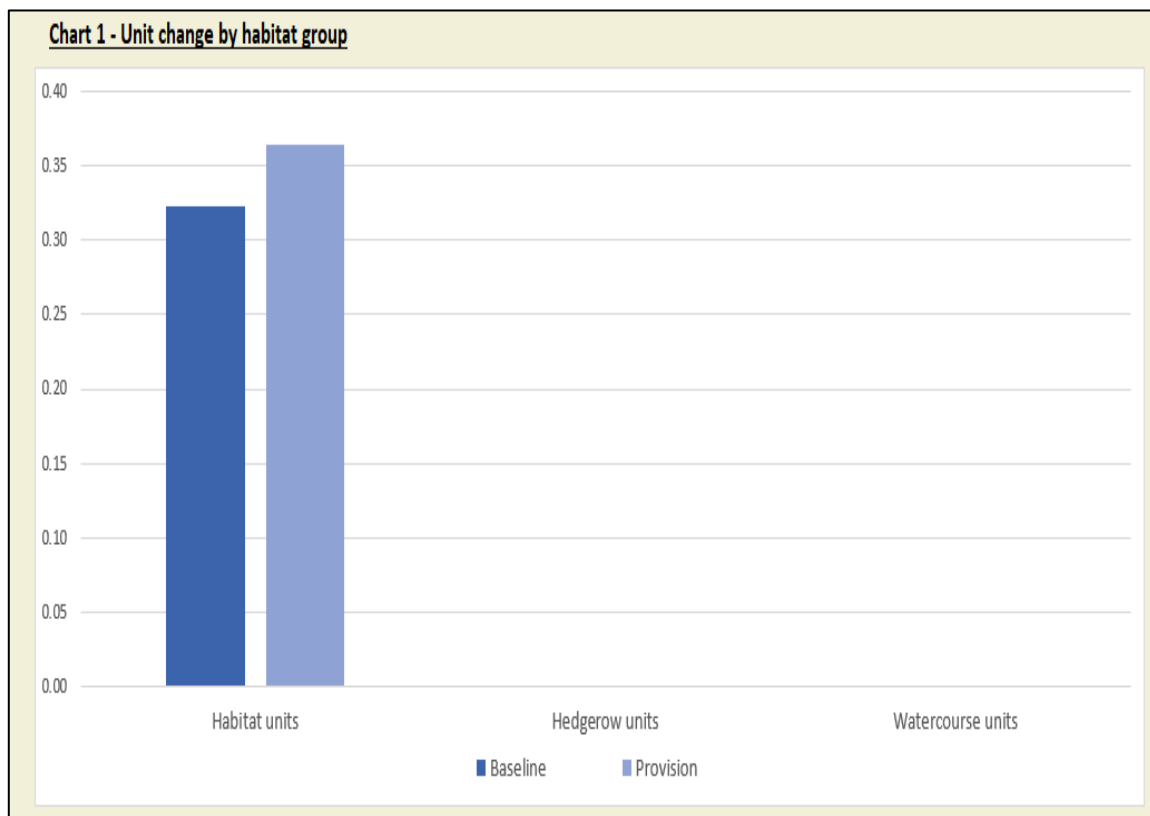
Summary of On-site Post-Intervention

14. The site's redevelopment will result in the required total net change of +12.77 % habitat units at the site.

Figure 7: Headline Results.

Site Name		Pear Tree Farm, Freehay, Staffordshire	
Sheet Name		Headline Results	
Headline Results			
Headline		BNG Targets Met ✓	
Trading Rules		Trading Rules Satisfied ✓	
Next steps		Check for input errors/rule breaks present in the metric ⚠	
Baseline Units	Habitat units	0.3227	
	Hedgerow units	Zero Units Baseline	
	Watercourse units	Zero Units Baseline	
Post-development Units	Habitat units	0.3639	
	Hedgerow units	0.0000	
	Watercourse units	0.0000	
Total net unit change	Habitat units	0.0412 ✓	
	Hedgerow units	0.0000	
	Watercourse units	0.0000	
Total net % change	Habitat units	12.77% ✓	
	Hedgerow units	% target not appropriate	
	Watercourse units	% target not appropriate	

Figure 7: Unit Change by Habitat Group Results.



5. REFERENCES

Biodiversity Impact Assessment / Metric links

- <http://publications.naturalengland.org.uk/publication/5850908674228224>
- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/839610/net-gain-ia.pdf
- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819823/net-gain-consult-sum-resp.pdf

References

- CIEEM (2021). Biodiversity Net Gain Report and Audit Templates Chartered Institute of Ecology and Environmental Management, Winchester, UK.
- Brigg (ed. Maddock, A.), (2008) JNCC - UK Biodiversity Action Plan; Priority Habitat Descriptions. Source: <http://jncc.defra.gov.uk/page-5706>
- CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
- JNCC (2010) Handbook for Phase 1 Habitat survey – A technique for environmental audit. ISBN 0 86139 636 7.
- Institute of Ecology and Environmental Management (2007). Guidelines for Ecological Impact Assessment in the United Kingdom. [Online]. Available at: <http://www.ieem.net/ecia/>
- Multi-Agency Geographical Information for the Countryside (2010). MAGIC. [Online].
- Natural England (2010). List of habitats and species of principal importance in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. <http://webarchive.nationalarchives.gov.uk/20140711133551/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx>.
- Office of the Deputy Prime Minister. (2005) Planning Policy Statement 9: Biodiversity and Geological Conservation. The Stationery Office, Norwich.
- The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007, SI 2007/1843, London: HMSO.
- The Conservation of Habitats and Species Regulations 2010, SI 2010/490.
- Ward, L. K., (1990): Management of grassland and scrub mosaics, pp134-139. In: Hillier, S.H., Walton.
- UK BAP (2008) Priority Habitat Descriptions [Online]. Available at: <http://www.ukbap.org.uk/library/UKBAPPriorityHabitatDescriptionsfinalAllhabitats20081022.pdf>
- Webb, J., Lawley, S., Cadman, D., Slawson, C., Smith, J. and Weightman, J. (2017). Guidelines for the selection of sites of County Biological Importance in Staffordshire. Staffordshire Wildlife Trust (version 6).

6. APPENDIX

Site Photographs

Plate 1: A photograph of the vegetated garden/amenity grassland at the site.



Plate 2: A photograph of the site's hard-standing area (the tree to be removed is highlighted by the blue circle).



Plate 3: A photograph of one of the two trees at the site, which will be retained (highlighted by the green circle), and the tree to be removed (orange circle).



Plate 4: A photograph of the other tree at the site to be retained (highlighted by the green circle)



Plate 5: A photograph of the existing building at the site.



Plate 6: A photograph of a section of the 'vegetated garden' at the site existing building at the site.



LIMITING CONDITIONS/DISCLAIMERS (Unless stated otherwise)

The Service

1.1 Evolution Ecology Ltd agrees to supply Ecological consulting services of a preliminary nature or a more thorough service as advised or as commissioned.

2. Fees

2.1 The client(s) will settle the agreed fee in full, within 30 days of receiving the invoice. Reports will remain the property of Evolution Ecology Ltd until full payment has been received. No liability is accepted for the contents of a report that is not paid in full. Any queries should be notified to Evolution Ecology Ltd within 7 days of the invoice date.

2.2 If the client(s) fails to pay within the time specified in 2.1 then Evolution Ecology Ltd shall charge the client(s) interest on the outstanding fee, both before and after any judgment, at the rate of 4% per annum above the HSBC Bank base rate, until payment is made in full (A part of a month being treated as a full month for the purposes of calculating interest).

2.3 In the event that it is necessary to recover any outstanding fees from the client(s), the client(s) will fully reimburse any costs and expenses incurred during the recovery period, including court costs. Evolution Ecology Ltd reserves the right to make a charge for every letter sent and telephone/fax call made, in connection with the recovery.

3. The Report

3.1 If any part of the report is lost or altered without the written consent of Evolution Ecology Ltd, then the entire report becomes invalid.

3.2 The general format of reports is a certified product and cannot be shown, copied or distributed to third parties without the permission of Evolution Ecology Ltd. No liability is accepted for the contents of the report, other than to that of the client(s).

3.3 The report will purport not to express any opinion or comment as to the condition or structural integrity of any building and no reliance should be made on any such comments.

4. Insurance Cover

4.1 All work carried out by Evolution Ecology Ltd is covered by a £1,000,000 professional indemnity insurance.

5. Quality of Craftsmanship

5.1 When appointing an Ecologist, please use only suitably qualified and experienced companies (The Local Authority and the Institute of Ecology and Environmental Management may be able to provide a select list of such companies).

5.2 Evolution Ecology Ltd will not accept liability for any works undertaken by any other companies, or contractors.