

Castle Walk Bridgnorth Slope Stabilisation Project

Biodiversity Net Gain Assessment Report

BRIDGNORTH TOWN COUNCIL

Final

VERSION 2

25 January 2025

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Document History and Status

| Revision | Date Issued | Reviewed By | Approved By | Date Approved | Revision Type |
|----------|-------------|-------------|-------------|---------------|----------------------------|
| 1 | 24/01/2025 | RM | | | Draft for technical review |
| 2 | 25/01/2025 | RM | RM | 25/01/2025 | Final |

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|-------------------------|--|
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| Client | Bridgnorth Town Council |
| Name of Project | Castle Walk, Bridgnorth; Slope Stabilisation Project |
| Name of Document | Biodiversity Net Gain Assessment |
| Document Version | 2 |
| Document Status | Final |

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1. Introduction

1.1. Background

BiOME Consulting Ltd was commissioned by Bridgnorth Town Council to undertake a Biodiversity Net Gain (BNG) assessment in relation to a site where slope stabilisation works are required. The 'site' (**Figure 1**), located adjacent to the Castle Walk in the centre of Bridgnorth, Shropshire, comprised a steep scrub-clad embankment.

A standalone Preliminary Ecology Appraisal¹ (PEA) has been completed.

1.2. Proposed Project

Due to subsidence issues, slope stabilisation works within the site are required. The full scope of works had not been confirmed at the time of writing, although it is understood will likely include the stabilisation of an existing retaining wall and the installation of soil-nails and plates along with erosion control matting and structural mesh.

1.3. Current Site Description

The site comprised dense bramble *Rubus fruticosus* agg. scrub and sapling trees (predominantly Sycamore *Platanus occidentalis*) (**Photograph 1**).

The site had been historically terraced with various walls present along with a single cave within the sandstone cliff face also present. Much Ivy *Hedera helix* growth was evident.

¹ BiOME Consulting (2025). Castle Walk, Bridgnorth, Slope Stabilisation Project. Preliminary Ecological Appraisal

Photograph 1. Typical area of vegetation within the site



2. Methods

2.1. Suitably Qualified Ecologists

The site survey was conducted and report authored by Martyn Owen MCIEEM. Martyn is a highly skilled and experienced ecologist having worked as a consultant ecologist for 20 years. He has completed many similar surveys previously.

The deliverable was reviewed by Richard Moores MCIEEM. Richard has worked as an ecological consultant for over 20 years.

GIS analyses was completed by Jonathan Gatward, a GIS specialist who has worked as a consultant for over 25 years.

2.2. Site Survey & Habitat Mapping

The purpose of this BNG assessment was to quantify the ecological value of the site prior to development, and the predicted ecological value post-development. This is measured in biodiversity units calculated according to the habitats present based on their size, distinctiveness and condition. This enables the quantitative calculation of the predicted change in biodiversity value as a result of the proposed development, with the objective of achieving a net gain in biodiversity.

A survey was conducted in good weather conditions on 8 January 2025 by BiOME to define the baseline habitats within the survey area and their condition. The survey was completed using the UK Habitat Classification (UKHab) system², and condition assessment was undertaken for each habitat parcel following Defra Statutory Biodiversity Metric guidance³.

For the purposes of BNG assessment all areas within the proposed development boundary (**Figure 1**) were considered to be 'on-site'. No off-site areas were included in this assessment.

When digitising habitats, due to the steeply sloping nature of the site, the normal 'planimetric' (map view) calculation of site and habitat areas would give erroneous results when compared to calculating the true 'surface' area. By

2 UKHab Ltd (2023). *UK Habitat Classification Version 2.0* (at: <http://www.ukhab.org/>)

3 Department for Environment, Food and Rural Affairs (Defra) (2024) *The Statutory Biodiversity Metric – User Guide*. DEFRA

incorporating a Digital Terrain Model (DTM) into the area calculations, the true area of the slope can be calculated. In this instance, a DTM from the Environment Agency's LiDAR survey was used, giving heights over the entire site at 1m resolution. Using Geospatial tools, the area of polygons (site boundary and habitat parcels) 'draped' over the 3-dimensional surface of the DTM was then calculated.

2.3. Limitations

The UKHab site survey was completed outside the optimal time, and it is highly likely that some species present would not have been evident during the survey. This limitation has been factored into the habitat and condition assessments detailed within this report. The site survey was completed by a surveyor local to the site and highly familiar with it, having visited during all seasons over many years which largely mitigated this limitation.

3. Baseline Habitats

Table 1 details the baseline area habitats present within the site with UKHab classifications and Defra Metric habitat definitions included.

Baseline area habitats on-site are shown on **Figure 2**.

No watercourse or linear modules were present.

Table 1. Baseline area habitats

| Habitat | Area (Ha) | Notes |
|---|-----------|--|
| UKHab: h3d – Bramble Scrub Defra Metric Definition: Heathland and scrub – Bramble Scrub Parcel/s & Condition: N/A | 1.072 | Dense bramble and sapling trees (<i>Sycamore Platanus occidentalis</i>). Prolonged maintenance has limited succession and species diversity. Infrequent <i>Buddleia Buddleja davidii</i> . |

4. Post-construction Habitats

This section details the proposed habitats to be created and management measures (if applicable) to achieve the proposed condition. All planting will use solely native species. Habitat creation and subsequent management will be overseen by the site owner.

Post-construction habitats are shown on **Figure 3** and detailed within **Tables 2**. Any minor discrepancies in values calculated are due to rounding, since the Metric values are calculated from the raw data.

Table 2. Area habitats post development

| Area Habitat (metric definition) | Baseline Area (ha) | Retained (ha) | Enhanced (ha) | Created (ha) |
|-------------------------------------|--------------------|---------------|----------------------|-----------------------|
| Heathland and Scrub – Bramble scrub | 1.072 | - | 0.561 ⁽ⁱ⁾ | 0.511 ⁽ⁱⁱ⁾ |

Table Notes

- (i) To Mixed Scrub of moderate condition.
- (ii) It is assumed that the netted area will revegetate with scrub.

4.1. Habitat Creation

4.1.1. Heathland and Scrub - Mixed Scrub

The area within the site, outside the netted area, will be managed to generate a mixed scrub. This will be achieved through the planting of occasional Hawthorn *Crataegus monogyna*, Blackthorn *Prunus spinosa*, Hazel *Corylus avellana* and Rowan *Sorbus aucuparia* along with the management of bramble to prevent dominance (<75% of the area will be this species). Buddleia will be removed.

It is envisaged that this area will achieve moderate condition.

4.1.2. Heathland and Scrub – Bramble Scrub

It is assumed that the netted area will revegetate with Bramble scrub.

5. Monitoring

Monitoring of establishment will be complete three years following construction to ensure the envisaged condition (moderate) has been achieved. Any plants that failed to establish will be replaced.

6. Summary

This BNG assessment indicates that greater than 10% net gain achievable on-site for all relevant habitats (**Table 5**).

Table 5. BNG Summary⁴

| | | Baseline | Post Development | % change (Net Gain) | Unit Increase |
|---------|--------------------|----------|------------------|---------------------|---------------|
| On-site | Area Habitat units | 4.29 | 6.09 | +42.12 | 1.81 |
| | Hedgerow units | 0.00 | 0.00 | N/A | N/A |
| | Watercourse units | 0.00 | 0.00 | N/A | N/A |

⁴ These data have been taken from the Metric spreadsheet. Apparent minor discrepancies in values calculated are due to rounding, since the Metric values are calculated from the raw data.

Figures

- Figure 1** **Site Location**
- Figure 2** **Baseline Habitats**
- Figure 3** **Proposed Habitats**



Bridgnorth Retaining Wall Castle Terrace Bridgnorth

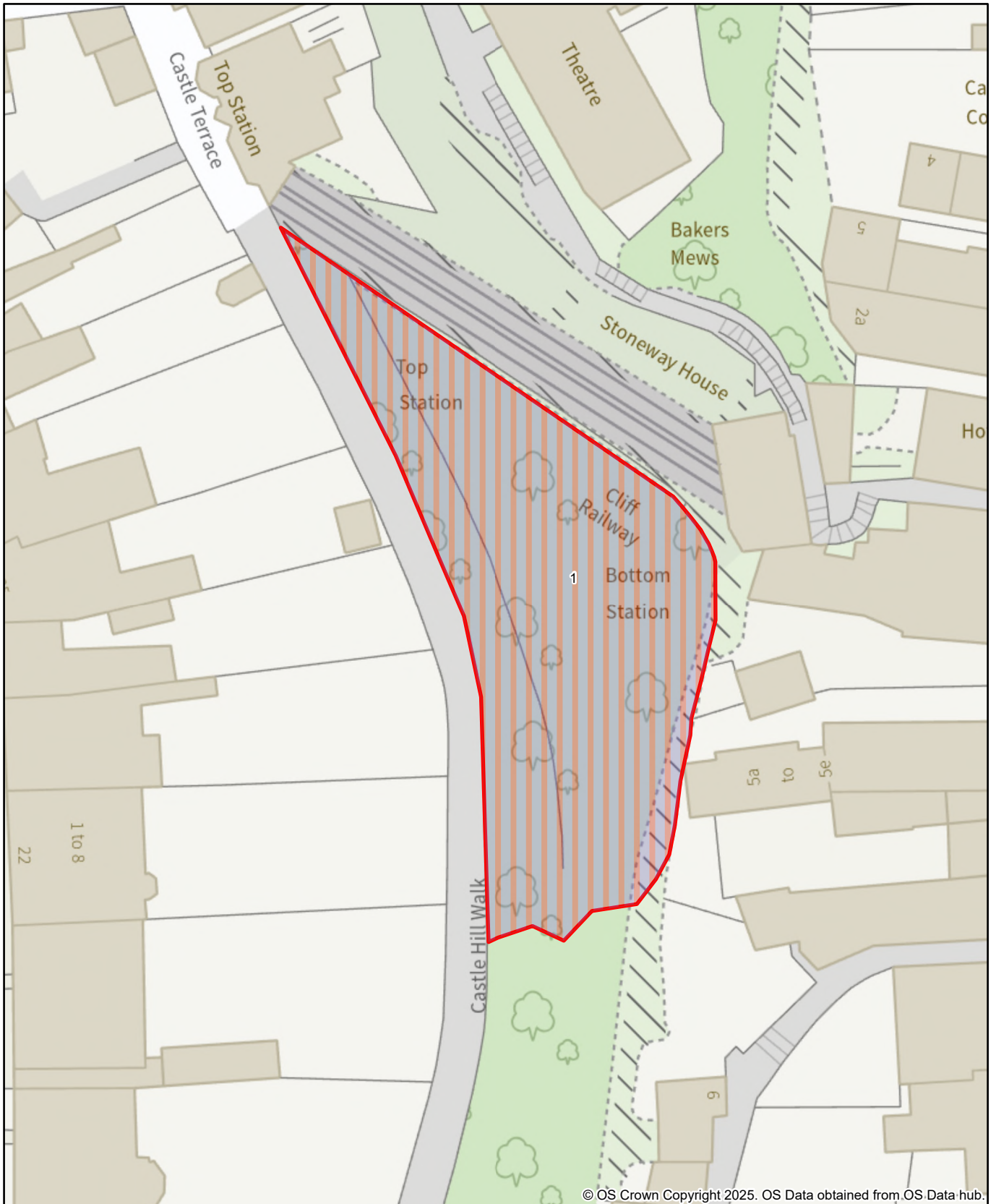
Figure 1
Site Location

Planning Application Boundary

N
Meters
0 5 10 15 20
Scale: 1:1,000 @A4

Content: MO
Checked: MO
Drawn: JG
Ver: 1.0
Date: 09/01/2025





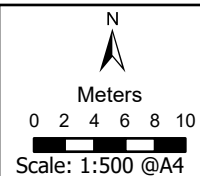


Bridgnorth Retaining Wall Castle Terrace Bridgnorth

Figure 2
Baseline Habitats

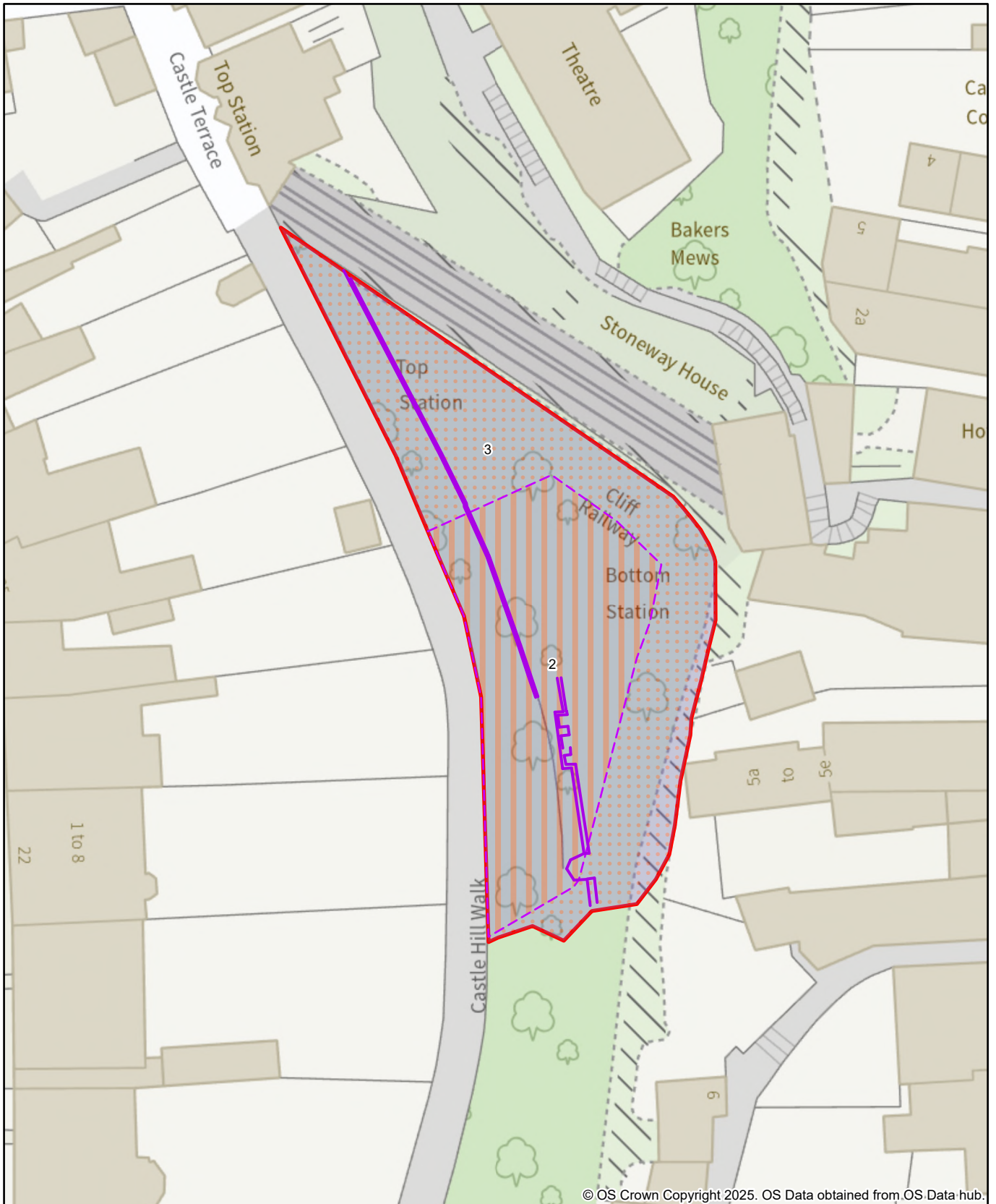
UK Habitat Classification

-  h3d - bramble scrub
-  Planning Application Boundary



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Drawn: JG
Ver: 1.0
Date: 27/01/2025







Bridgnorth Retaining Wall Castle Terrace Bridgnorth

Figure 3
Proposed Developments

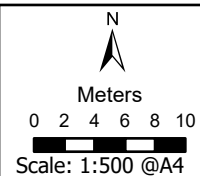
UK Habitat Classification

-  h3d - bramble scrub
-  h3h - mixed scrub

 Proposed Retaining Wall

 Works Area

 Planning Application Boundary



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Date: 27/01/2025

