



WOODSTOCK

HOMES

LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN

Land off Dial Lane, Downend

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1.0 – INTRODUCTION

The development consists of 9 dwellings and associated infrastructure to include site estate roads, services and drainage.

In addition to the construction of the dwellings, demolition will be required to the existing buildings formally known as No. 2 and 4 Dial Lane (No. 2 being a residential bungalow and No. 4 being a warehouse associated to Woottons Removal and Storage).

The site is a rectangular shaped brownfield site, located off Dial Lane, Downend, Bristol. To the northern boundary are the Dial Lane Allotments. Dial Lane itself is to the southern boundary and to the eastern and western boundaries are residential properties/ retirement housing.

The site is accessed direct from Dial Lane.

Landscaping proposals will be as shown on 'Soft Landscape Proposals drawing 1564-01 Rev A' (Appendix 1).

Landscaping Maintenance will be as per the 'Landscape Maintenance and Management Plan' (Appendix 2).

Ecological mitigation measures will be as advised within the 'Ecological Impact Assessment – ETH23-184' (Appendix 3).

BNG requirements will be as advised within the 'Biodiversity Net Gain Assessment – ETH23-184' (Appendix 4).

2.0 – IMPLEMENTATION AND PROGRAM

2.1 – Hedgehogs

2.1.1 – Construction Impacts

The site has the potential to support hedgehog and in the absence of mitigation, impacts on hedgehog could occur during the construction phase, comprising injury or mortality of hedgehogs foraging or commuting over the site.

Good practice measures should be employed during construction to avoid impacts on hedgehogs. This should include appropriate storage of material (i.e. not in piles on the floor) to avoid creating refugia for hedgehog and ensuring any trenches or excavations have escape ramps to allow hedgehogs to escape in case any fall in.

2.1.2 – Operational Impacts

The proposed development will result in the temporary loss of foraging habitat for hedgehog, namely the vegetated garden and bramble scrub. However, the proposals include the creation of nine new residential gardens, which are considered to provide suitable new foraging opportunities for hedgehog. The site will need to remain permeable to hedgehogs post-development and therefore, any close-board fencing will require small holes (13cm x 13cm) at the base to ensure hedgehogs will still be able to move around the site.

With the implementation of the recommended mitigation measures during construction and operation, no significant effects are predicted on hedgehog.

2.2 – Badgers

Measures to ensure the protection of badger during the construction period will include the installation of escape ramps in exposed trenches to ensure badgers do not get trapped overnight and limiting the period of construction lighting to minimise impacts on foraging/commuting badger.

2.3 – Bats

To ensure impacts on any bats utilising the site for foraging or commuting purposes are avoided, sensitive lighting should be employed, both during construction and post development.

This should include turning off all construction lighting overnight and ensuring that any safety lighting on the new dwellings is down-facing and of a low level. No lighting should be focused on the adjacent allotment, which provides suitable foraging and commuting habitat for bats.

2.4 – Breeding Birds

Nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), so it will be necessary to avoid damage to or destruction of nests, or disturbance of nesting birds, during the construction phase. In order to mitigate impacts to breeding birds, removal of the bramble scrub and vegetated garden should be undertaken outside of the nesting season (March-August, inclusive) or be subject to a pre-works check for nesting birds by a suitably qualified ecologist. The ecologist will identify the presence of any active nests and set up exclusion zones around the nests. No works should be undertaken within the exclusion zone until the chicks have fledged.

2.5 – Reptiles

Precautionary mitigation for reptiles during construction should involve a two-stage cut of any dense vegetation on site, namely the bramble scrub. This should be undertaken during the active reptile season (March-October, inclusive) and vegetation should be cut from south to north to allow any reptiles present to disperse into the habitats to the north of the site.

3.0 – ECOLOGICAL ENHANCEMENTS

Two integrated bat boxes suitable for a range of common and widespread species of bat, such as a Vivara Pro Build-in WoodStone Bat Box, will be installed on the northern elevations of Plots 8 and 9 so they are in close proximity to the more valuable bat habitat to the north. The boxes will be positioned at a height of at least 2m, away from artificial light sources. These will be inserted into each dwelling as each plot is constructed.

An integrated bird brick, such as a CJ Wildlife Woodstone integrated bird brick, will be installed within the new dwelling on Plot 4. This will provide new nesting opportunities for species such as house sparrow which are included on the RSPB's Birds of Conservation Concern Red List. The brick will be positioned at a height of between 1.5m and 3m on the southern elevation. These will be inserted into each dwelling as each plot is constructed.

A nest box suitable for starling, such as a Vivara Pro Starling nest box, will be installed on one of the trees in the northern corner of the site. It will be fixed at a height of 1.5m and positioned close to other vegetation if possible. This will be incorporated when the recommended tree is established.

New native tree planting within the residential gardens and along the site boundaries will provide suitable foraging habitat for birds and invertebrates.

Hedgehog holes will be installed to close boarded fencing between gardens and to perimeter edges.

4.0 – MANAGEMENT AND MAINTENANCE

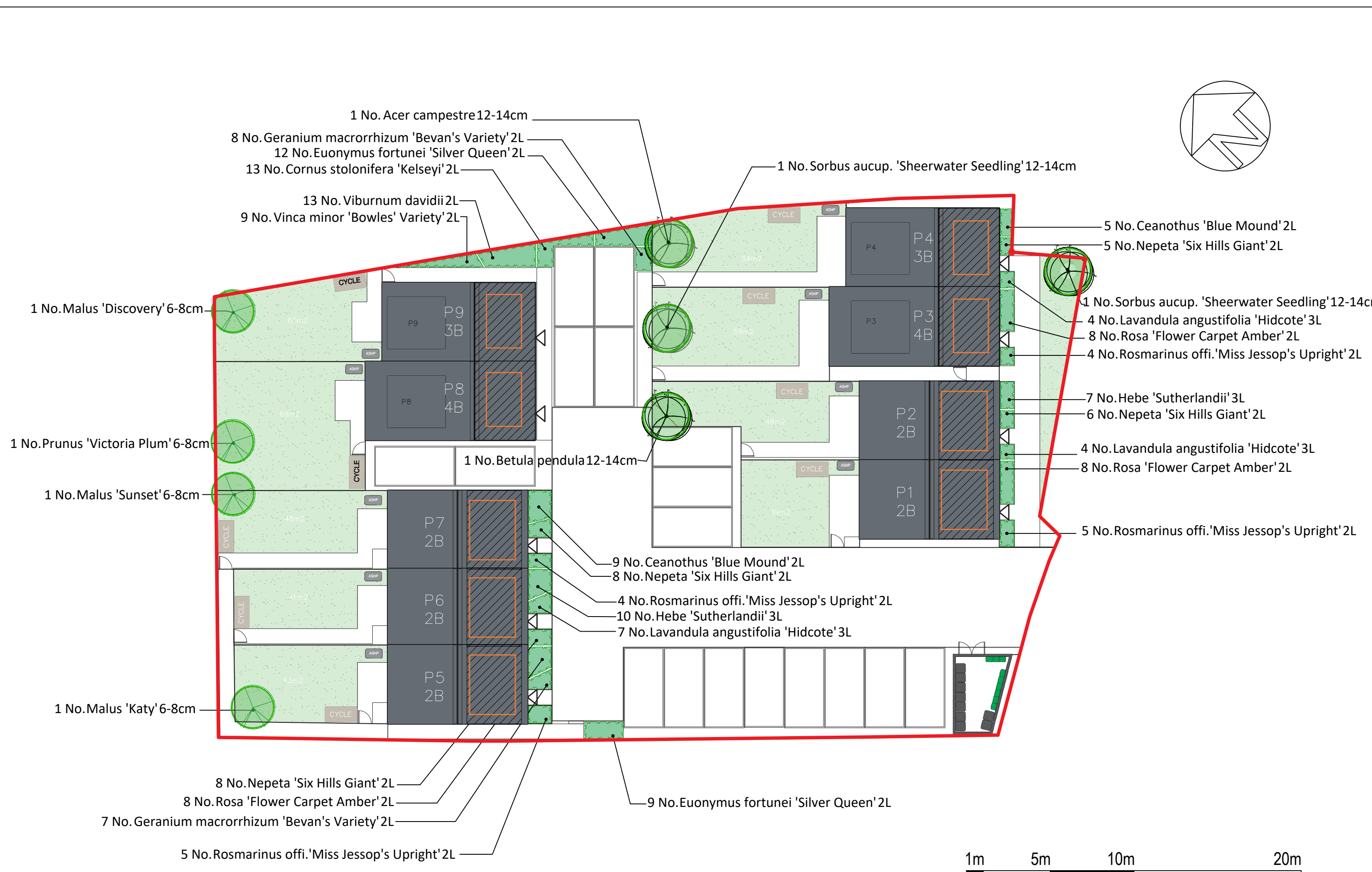
A Management Company will be set up to manage all the common areas of the development and that includes the estate road and all grass, planting, hedging and tree outside of private curtilage.

All residents on the site will be members of the Management Company and contribute to the annual costs incurred.

The Management Company will take over the site from the developer when the last dwelling is completed.

The Landscape Maintenance and Management Plan (Appendix 2) will be given to the Management Company. This document sets out both the management operations and program to maintain the landscaping. In tabular form the document sets out month by month what maintenance is required in the first then subsequent years for all the elements of landscaping that need to be managed.

APPENDIX 1 (PROPOSED LANDSCAPING LAYOUT)



PLANT SCHEDULE

Trees	Species	Girth	Height	Number
	Acer campestre	12-14cm	3.0-3.5m Heavy Standard :RB :Clear Stem min. 200	1
	Betula pendula	12-14cm	3.0-3.5m Heavy Standard :RB :Clear Stem min. 200	1
	Malus 'Discovery'	6-8cm	2.0-2.5m MM106 Rootstock	1
	Malus 'Katy'	6-8cm	2.0-2.5m MM106 Rootstock	1
	Malus 'Sunset'	6-8cm	2.0-2.5m MM106 Rootstock	1
	Prunus 'Victoria Plum'	6-8cm	2.0-2.5m St Julien 'A' Rootstock	1
	Sorbus aucup. 'Sheerwater Seedling'	12-14cm	3.0-3.5m Heavy Standard :RB :Clear Stem min. 200	2

Shrubs and Hedging	Species	Pot Size	Height	Density	Number
	Ceanothus 'Blue Mound'	2L	30-40cm	3/m ²	14
	Cornus stolonifera 'Kelsey'	2L	20-30cm	4/m ²	13
	Euonymus fortunei 'Silver Queen'	2L	20-30cm	3/m ²	21
	Hebe 'Sutherlandii'	3L	20-30cm	4/m ²	17
	Lavandula angustifolia 'Hidcote'	3L	20-30cm	4/m ²	15
	Rosa 'Flower Carpet Amber'	2L	20-30cm	3/m ²	24
	Rosmarinus offi. 'Miss Jessop's Upright'	2L	30-40cm	3/m ²	18
	Viburnum davidii	2L	20-30cm	3/m ²	13
	Vinca minor 'Bowles' Variety'	2L	15-20cm	3/m ²	9

Herbaceous	Species	Pot Size	Density	Number
	Geranium macrorrhizum 'Bevan's Variety'	2L	5/m ²	15
	Nepeta 'Six Hills Giant'	2L	5/m ²	27

Garden Lawns
 Germinal WFG20 Eco Species Rich Lawn (or equivalent turf)
 Sowing rates, establishment and ongoing maintenance to Germinal's recommendations.

PLANTING NOTES
 All plant material is to conform to BS3936 and the HTA 'National Plant Specification'. All native plants are to be of local provenance. Delivery and handling of all plant material to be in accordance with CPSE 'Handling and establishment of Landscape Plants 1996'. Planting seeding and turfing operations are to be carried out to the appropriate clauses of BS4428. All plants shall be watered in to field capacity immediately after planting.

WEED CLEARANCE
 Areas to be planted shall be cleared of any grass and weed growth physically and/or chemically with a translocated herbicide prior to cultivation operations. More than one application may be necessary to ensure eradication. Extreme care is to be taken whilst spraying herbicide near to existing trees and hedges. All roots of perennial weeds shall be removed.

TOPSOIL
 Imported topsoil to be in accordance with BS3882:2015 - General Purpose Grade.
 Imported topsoil & site won topsoil to be tested in accordance with BS3882 for contamination. Submit test result to the Project Manager & Landscape Architect & obtain approval prior to the delivery of any imported topsoil.
 Should site won topsoil not be in accordance with BS3882:2015 'General Purpose' but is free from contamination and phytotoxic elements seek instruction for the amelioration and enrichment with approved organic matter.

Planting areas - Generally 350mm depth clean non-contaminated topsoil, incorporating 100mm depth of BSI PAS 100 compost during final cultivation along with slow release general fertilizer applied at manufacturers recommended rates, over 300mm clean non-contaminated subsoil. Slow release granular fertilizer (eg N-Mag Lite or similar approved) to be incorporated at manufacturer's recommended rates.

Lawn areas- 150mm screened & ameliorated topsoil over a minimum of 200mm subsoil over ripped subgrade

Tree pits 1m x 1m x 0.9 consisting of 400mm depth of multipurpose topsoil to meet BS3882:2015 over 500mm depth of clean non-contaminated subsoil. For tree pits within all hard surfacing areas and within soft areas where subsoil is poorly drained or poorly aerated - existing subsoil is to be excavated and replaced with 600mm depth of imported multipurpose subsoil to meet BS8601:2013.

MULCH
 On completion of planting all trees and groundcover are to have a 50mm depth application of 15-65mm grade composted shredded bark mulch. All trees to have a clear 1 metre diameter mulch bed.

TREES
 Trees to be sourced from local nursery (eg 'Chew Valley Trees'). To be double short staked with untreated softwood and secured using bio-degradable ties (eg hessian 'Naturetie').
 Trees adjacent to hard surfaces and service runs to be planted with root deflectors or root barriers (eg ReRoot 600)

WATERING & MAINTENANCE
 All planting and grassing is to be watered and maintained up to Practical Completion and for a period of 12 months from that date by the landscape contractor. Any plant or area of grass which dies, or is not thriving during a five year period from completion is to be replaced.

KEY

- Proposed Native Trees
- Proposed Fruit Trees
- Proposed Groundcover Planting
- Proposed Lawn Grass
- Proposed Climbers

CAMBIUM : Landscape architecture | Arboricultural consultancy

Project **Dial Lane, Downend, Bristol**

Title **Soft Landscape Proposals**

Client **Woodstock Homes**

Date	January 2024	Drawn	LR	Checked	MW
Scale	1:200@A2	Status	Planning		
Dwg No.	DR-L-1564-01	Revision	A		

Cambium, 4 Clyde terrace, Bedminster Bristol BS3 3BL

APPENDIX 2 (LANDSCAPE MAINTENANCE & MANAGEMENT PLAN)

Dail Lane, Downend

LANDSCAPE MAINTENANCE & MANAGEMENT PLAN

CAMBIUM

Chartered Landscape Architects
4 Clyde Terrace,
Bristol BS3 3BL

Tel: 0117 373 8422

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- Trees
- Ornamental Shrubs, Groundcover and Low Hedges
- Lawns – Flowering

Refer to detail planting layout plans: 1564-01 Soft Landscape Proposals

1. Introduction

This landscape management and maintenance plan should be read alongside drawings 1564-01 Soft Landscape Proposals

After the one-year establishment period the management and maintenance of private areas will become the responsibility of the homeowners / occupiers. Landscape in open space areas will become the responsibility of the Management Company to be set up by Woodstock Homes.

1.1 Format of the Management and Maintenance Plan

This plan sets out general principles and quality standards required for the maintenance of softworks and for the long-term landscape management.

It can be used by the maintenance team to produce a detailed priced programme of work.

It can form the basis for periodic (annual) reviews and evaluation of actual maintenance works.

1.2. Aims of the Management and Maintenance Plan

This plan aims to ensure that the vision for the landscape at the Dail Lane site can be achieved through a long term, co-ordinated and informed approach to landscape management.

2. Landscape Management Objectives

2.1. The Establishment Period

Any landscape implementation contract should include a one-year aftercare maintenance period to cover intensive post-installation maintenance requirements for the whole of the landscape works. During this period the implementation contractor would be responsible for all horticultural maintenance operations, including planting which has failed to flourish. At the end of the initial one-year aftercare period any defects in soft landscape materials due to materials or workmanship should be rectified by the implementation contractor before responsibility is handed over to the homeowners and management company.

2.2. Access

The landscape maintenance contractor shall liaise with homeowners and the appointed management company directly regarding site access, working hours and permissions for parking. Maintenance work associated with pruning of trees and shrubs to be actioned outside of the bird breeding season: March to September.

2.3. Facilities

The landscape maintenance team shall liaise with site management and the Principal Contractor directly regarding working hours, permissions for parking, storage, use of water and any other resources.

2.4. Maintenance Objectives for Soft Landscape - Generally

- apply good horticultural and ecological practice to all operations.
- promote healthy growth and establishment of all plants, trees, grass, wildflower areas.
- ensure consistent control of invasive weeds.
- promote optimum display and flowering periods and stem colour.
- ensure development of optimum plant form, shape, and planting density.
- provide protection against pests and diseases.
- promote wildlife value and species diversity where appropriate.
- ensure long term commitment to replacement of defective plant material.

- review opportunities for introduction of new species or replacement of exhausted species where appropriate, in line with original design intentions.

2.5. Landscape components with specific management objectives

2.5.1 Trees

- ensure that good horticultural practice is employed to encourage long term health and vitality of all trees
- ensure well-balanced crowns and natural shape

2.5.2 Understorey and shrub mixes

- ensure that good horticultural practice is employed to encourage long term health and vitality of all trees, shrubs, hedges and whip planted areas
- planting to be thinned / re-spaced in order that they have sufficient room to develop
- review opportunities for introducing native shrubs and those with particular wildlife value into planted areas
- maintain a clean and safe environment
- ensure cultural techniques are employed which use a variety of mulches and organic fertilisers and which minimise the use of chemicals and peat wherever possible.

2.5.3 Open Space areas

- ensure the open space area is safe for amenity use; regular inspections required to ensure health & safety is maintained.
- ensure that good horticultural practice is employed to encourage long term health and vitality of all trees, shrubs, hedges and whip planted areas.
- ensure cultural techniques are employed which use a variety of mulches and organic fertilisers and which minimise the use of chemicals and avoid the use of peat.

3. Programming of Maintenance and Management Operations

3.1. Monitoring

To protect the investment in the quality of soft landscape works, the long-term maintenance team must provide a high standard of maintenance; the long-term success of the scheme is dependent on its maintenance regime.

The management plan and maintenance operations included herewith will be reviewed following the end of the initial implementation works defects period and from then on, on a regular basis.

This management plan is intended to provide a basic performance specification to enable the maintenance team to agree a detailed three-year programme of work which shall include scheduled dates for planting refurbishment and review.

The following is an indicative annual schedule of maintenance visits applicable for the first five years of establishment. This provides a reasonable frequency of the more common operations, and a good indication of the required level of intensity of management required but is not intended to be fully comprehensive or restrictive.

The landscape maintenance team can construct a schedule specifying operations and frequency using his own experience and horticultural knowledge.

The ongoing programme of maintenance work will also include proposed frequency of visits and operations detailed in the schedules. It shall also include dates for:

- infrequent operations such as re-spacing of plants, pruning, topping up of mulch, replacement of plants / restocking of beds etc.
- planting review and refurbishment.

- monitoring and review; the effectiveness of the management operations is to be closely and continually monitored and reviewed annually against this Landscape Maintenance Plan, with any resulting changes incorporated into the subsequent years' programme.

3.2. Soft Landscape Maintenance Schedules

Trees

Maintenance Operation	FREQUENCY												Subsequent Years	Special Comments	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Check for Stability / Damage / Disease and check stakes and loosen ties			1						1					Continue	Stakes to be attached to trees no higher than 1/3 of the clear height of stem. Plants loosened by the effects of wind, frost heave, etc shall be set upright and re-firmed.
Prune damaged, diseased or dead wood			1						1					Continue	Remove clippings etc. from site
Maintain 1m diameter circle around each tree weed-free			1			1				1				Continue	Care must be taken to avoid damage to the new planting, to avoid mixing mulching material with topsoil, and to avoid disturbing root system.
Top up mulch to specified 75mm depth – continue annually until establishment			1											Continue	Use originally specified mulch material.
Apply liquid manure / fertiliser lightly worked into surface of mulch			1											Continue	Approved alternative slow release fertiliser at manufacturer's recommended rates
Watering – Years 1 & 2				2	2	2	2	2	2	2					Watering – 25 litres per standard. Watering to be undertaken weekly during drought conditions during the early morning or early evening.
Watering Years 3 to 5				As required (see comments)											Drought conditions exist when there are 14 consecutive days or more without rain. In times of water restrictions 2 nd class water may be used
Existing Trees		1											1		All existing trees on site to be reviewed bi-annually for health and to establish any necessary tree works. Undergrowth to be cut back tidy and to prevent encroachment and to prevent dominance of undesirable single species eg bramble, holly, sycamore

General notes:

Where any new plantings fail to establish, measures will be taken to resolve any underlying problems. Any plant material which dies, or is not in a thriving condition, whether due to the effects of weather, lack of water, poor pruning technique, lack of maintenance, herbicide damage, or any other cause shall be replaced.

A programme of leaf clearance will be required near the buildings and in the car park areas.

Ornamental Shrubs, Groundcover & Low Hedges

Maintenance Operation	FREQUENCY												Subsequent Years	Special comments
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Remove weeds and fork over bare soil – maintain weed free for 5 years or until established. Avoid using chemicals			1	1	1	1	1	1	1				Discontinue once full cover has been achieved	Do not disturb root system
Top up to 75mm depth of mulch			1										Discontinue once full cover has been achieved	Shredded bark suitable for mulch
Prune shrubs to desired shape and remove deadwood at appropriate timing for species					1							1	Continue	Remove clippings to agreed composting area
Check for pest and disease and replant as necessary												1	Continue	
Apply liquid feed / slow-release fertiliser				1									Continue	Approved alternative slow-release fertiliser at manufacturer's recommended rates
Prune back any trailing or protruding vegetation from kerb lines and footpaths			1	1	1	1	1	1	1					
Watering Years 1 & 2				2	2	2	2	2	2					Watering to be undertaken weekly during drought conditions. Watering should be carried out during the early morning or early evening – 5 litres per linear metre of hedging
Watering Years 3 to 5				As required (see comments)									Drought conditions exist when there are 14 consecutive days or more without rain. In times of water restrictions 2 nd class water may be used	

General notes:

Where any new plantings fail to establish, measures will be taken to resolve any underlying problems. Any plant material which dies, or is not in a thriving condition, whether due to the effects of weather, lack of water, poor pruning technique, lack of maintenance, herbicide damage, or any other cause shall be replaced.

Species Rich Flowering Lawn – Emorsgate EL1 seed mix

Maintenance Operation	FREQUENCY												Subsequent Years	Special comments	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Year 1: Cut height to 4-6cm				2	3	4	3	3	2	1					Mow newly sown flowering lawns regularly (every 7 -10 days during growing season) throughout the first year of establishment. Cut to a height of 40-60mm, removing cuttings if dense. This will gradually develop a good sward structure, help maintain balance between faster growing grasses and slower developing wild flowers, and control annual weeds. Dig out any residual perennial weeds such as docks.
Year 2-5: Cut height to 3-5cm				2	3	3		2	2	2				Continue	Mow regularly as a lawn but not too short (3-5cm). To permit flowering, mowing can be relaxed from late June. Cut again when the sward gets untidy (after 4-8 weeks). Mowing may be suspended earlier in the year to allow cowslips to flower. Heavy quantities of cuttings should be collected and removed from site.
'Lawn' areas associated with buildings and closely mown margins around car park edges, - circa 2m wide			1	2	3	4	3	3	2	1					Mowing margin between kerb and conservation sward / hedge to be maintained as amenity grass

APPENDIX 3 (ECOLOGICAL IMPACT ASSESSMENT)

Ecological Impact Assessment

Dial Lane, Downend

August 2023

Ecology | Green Space | Community | GIS

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Report Produced for Acorn Property Group

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Issue: V2

Date: August 2023

Project: ETH23-184



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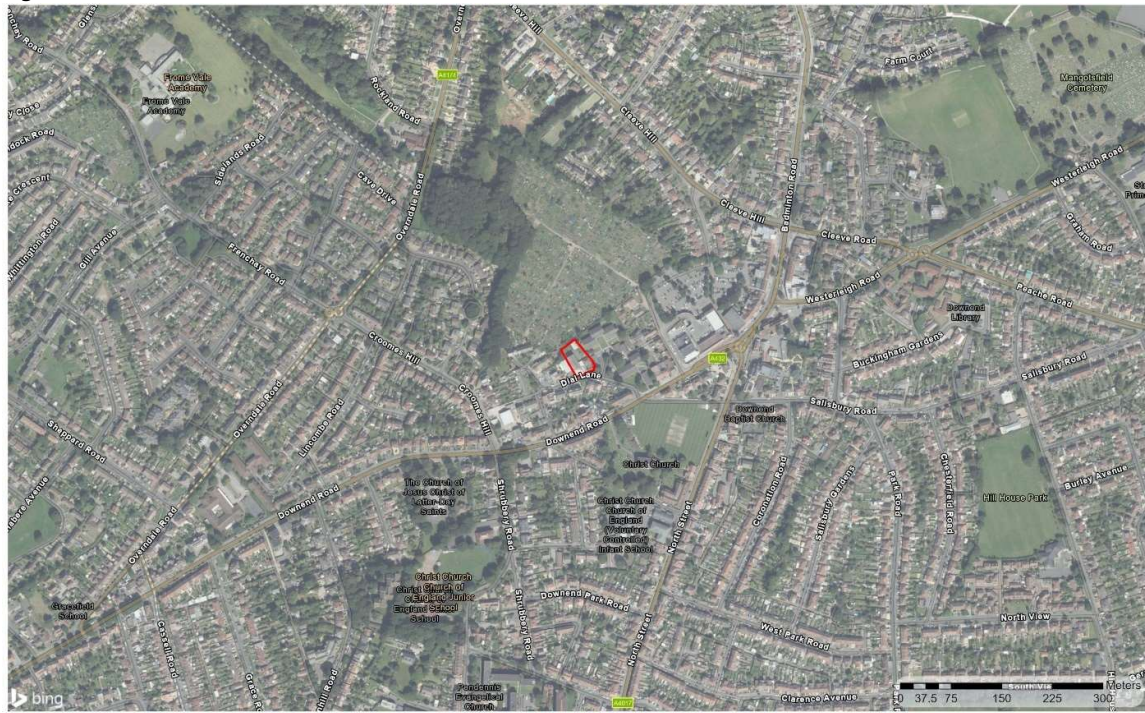
SUMMARY

Purpose of the report	This report has been produced by Ethos Environmental Planning on behalf of Acorn Property Group. It provides an assessment of the likely ecological effects associated with the proposed residential development of the property at Dial Lane, Downend, Bristol.
Description of the scheme	The development proposals for the site include the destruction of the existing structures on the site and the subsequent creation of nine residential dwellings with associated access and vegetated gardens.
Methodology	A desk study and UK Habitat Classification survey were undertaken for the site in June 2023. Detailed surveys for bats were undertaken in 2023.
Baseline ecological conditions	<ul style="list-style-type: none"> • The site comprises an area of developed land; sealed surface, vegetated garden and bramble scrub. • The bat emergence survey did not identify bats roosting on site. • Two species of bats were observed foraging/commuting on or around the site, namely common pipistrelle and noctule. Low bat activity was recorded. • The site has the potential to support foraging/ commuting hedgehog and badger. • The bramble scrub and vegetated garden are assessed as suitable habitat for nesting birds. • The site is adjacent to potentially suitable reptile habitat.
Key impacts and mitigation	<p>The proposed works will not result in any significant adverse impacts on protected or notable species.</p> <p>Mitigation measures are described to ensure compliance with protected species legislation for hedgehog, bats, birds, badgers and reptiles.</p>
Recommendations	<p>Assuming the implementation of effective mitigation measures, as set out in this report, no significant adverse ecological effects are predicted.</p> <p>Enhancements have been recommended to benefit bats and birds and to increase the biodiversity value of the site.</p> <p>The proposed development is therefore in accordance with relevant national and local planning policies in relation to nature conservation and relevant wildlife legislation.</p>

1 INTRODUCTION

- 1.1 This Ecological Impact Assessment (EclA) report has been prepared by Ethos Environmental Planning (Ethos) on behalf of Acorn Property Group. The EclA was written by Katie Munday MSc BSc (Hons), Assistant Ecologist, and reviewed by Stephanie Green, Principal Ecologist. The details and experience of the authors and field survey team are provided in Section 3.7.
- 1.2 The report provides the results of an EclA in relation to the proposed development of Land at Dial Lane, Downend (Central Grid Reference ST 64861 76651), hereafter referred to as the 'site' and shown in Figure 1. The site is located in an urban area and is bordered by residential development and an allotment.
- 1.3 The site comprises 0.15 hectares and includes developed land; sealed surface, vegetated garden and bramble scrub.

Figure 1 Site location



Legend
□ Site Boundary

Scale: 1:4,067
Date: 04/06/2023

- 1.4 The proposals for the site consist of the demolition of the existing structures and the construction of nine new dwellings with associated access and greenspace.
- 1.5 This assessment is based on surveys undertaken by Ethos in 2023 comprising a UK Habitat Classification (UKHab) survey, a desk study and targeted surveys for bats.

1.6 The aims of this EclA report are to:

- provide an assessment of the likely effects of the proposed redevelopment on ecological features on site;
- identify the measures required to mitigate impacts on site biodiversity;
- identify the need for European Protected Species (EPS) licensing;
- identify opportunities to deliver ecological enhancements and measurable gains for biodiversity as part of the proposals; and
- to enable the Local Planning Authority to assess whether the proposals comply with relevant planning policy or legislation.

1.7 This report has been produced following the approach set out in 'Guidelines for Ecological Report Writing' (CIEEM, 2017).

2 POLICY AND LEGISLATION

2.1 National Policy

2.1.1 The National Planning Policy Framework (NPPF) sets out national planning policy, including policies of relevance to conserving and enhancing the natural environment. Policies of relevance to the proposed development (parts of paragraphs 174, 180 and 185) have been summarised below:

Para 174: Planning policies and decisions should contribute to and enhance the natural and local environment by:

(a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan).

(d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Para 180: When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while 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.

Para 185: c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

2.2 Local Policy

2.2.1 South Gloucestershire's Local Plan comprises the Joint Waste Core Strategy (adopted 2011), the Core Strategy (adopted 2013) and the Policies, Sites and Places Plan (PSP Plan). The following policies from the Core Strategy and the PSP Plan relate to biodiversity.

Policy CS2 Green Infrastructure

2.2.2 The Council and its partners will ensure that existing and new Green Infrastructure (GI) is planned, delivered and managed as an integral part of creating sustainable communities and enhancing quality of life, considering the following GI objectives:

- Protecting and enhancing species and habitats, and creating new habitats and wildlife linkages between them.

Policy CS9 Managing the Environment and Heritage

2.2.3 The natural and historic environment is a finite and irreplaceable resource. In order to protect and manage South Gloucestershire's environment and its resources in a sustainable way, new development will be expected to:

- Conserve and enhance the natural environment, avoiding or minimising impacts on biodiversity and geodiversity.

Policy PSP3 Trees and Woodland

2.2.4 Development proposals should, where appropriate, include:

- additional tree planting, in accordance with Core Strategy Policy CS1 and the Landscape Character Assessment SPD's, including, but not limited to, planting along arterial roads, in car parks and in the public realm; and
- new planting schemes that retain and integrate healthy, mature trees and hedgerows, and include native species.

Policy PSP19 Wider Biodiversity

2.2.5 Development Proposals resulting in the loss or deterioration of irreplaceable habitats, including unimproved grassland (lowland hay meadows), ancient woodland, and ancient trees will be refused unless the need for, and benefits of, the development in that location clearly outweigh the loss.

2.2.6 Where appropriate, biodiversity gain will be sought from development proposals. The gain will be proportionate to the size of the scheme and be secured through an appropriate planning condition or legal undertaking. This will include sites of low nature conservation interest (for example, intensive agricultural land) where new semi-natural habitat (green infrastructure) would provide opportunities and gains for local wildlife.

2.2.7 Development proposals, where they would result in significant harm to sites of value for local biodiversity, which cannot be avoided by locating it on an alternative site with less harmful impacts, adequately mitigated or, as a last resort, compensated for, will be refused. Sites of value for local biodiversity include (but are not limited to):

- local sites (Sites of Nature Conservation Interest or Regionally Important Geological Sites);
- sites supporting species of fauna or flora protected under the Wildlife and Countryside Act 1981 (as amended), Countryside and Rights of Way Act 2000 or Habitat Regulations 2010;
- sites supporting species and habitats listed by the Government as being of Principle Importance for Biological Diversity in Britain under Section 41 of the Natural Environment and Rural Communities Act 2006 (Priority Species and Habitats);
- sites supporting birds listed on the Red, Amber or Green Lists of Species of Conservation Concern;
- wildlife corridors or new green infrastructure, which enable the dispersal and favourable status of flora and fauna species; and
- brownfield sites supporting notable assemblages of invertebrates.

2.3 Relevant Legislation

2.3.1 The following pieces of legislation have been considered within this assessment with an explanation of their relevance provided in Table 1.

Table 1 Relevant legislation

Legislation	Relevance
The Habitats Directive (together with the Birds Directive) forms the cornerstone of Europe's nature conservation policy. It is built around two pillars: the Natura 2000 network of protected sites and the strict system of species protection. All in all, the Directive protects over 1,000 animals and plant species and over 200 "habitat types" (e.g. special types of forests, meadows, wetlands, etc.), which are of European importance. The Habitats Directive and parts of the Birds Directive are transposed into legislation by The Conservation of Species and Habitat Regulations 2017 (as amended) .	Presence of foraging and commuting bats over the site and in the vegetated garden and bramble scrub. Presence of building with low potential to support roosting bats.
Wildlife and Countryside Act 1981 (as amended, including by the Countryside and Rights of Way Act 2000), which provides legislative protection for certain species. The Act also prohibits the spread of invasive plant species, as well as providing the mechanism for the designation and protection of Sites of Special Scientific Interest;	Potential for nesting birds in the bramble scrub and vegetated garden.
Badgers and their setts are protected under the Protection of Badgers Act 1992 as amended by the Hunting Act 2004.	Potential presence of commuting badger.
The Natural Environment and Rural Communities Act 2006 (the NERC act) places a duty on all public authorities, including local planning authorities, to consider biodiversity in their work. Local planning authorities are to ensure that there is no net loss of biodiversity on a site, no net loss in habitat connectivity and aims to enhance biodiversity.	Potential presence of commuting/foraging hedgehog. Enhancements for biodiversity.

3 METHODOLOGY

3.1 Scope of Assessment

3.1.1 This assessment has been undertaken following the approach set out in the 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2018). The assessment has considered 'Important Ecological Features' that are present within the 'Zone of Influence' of the project. Important Ecological Features for this project comprise:

- Habitats and Species of Principal Importance for the Conservation of Biodiversity in England;
- Legally protected species; and
- Red Listed or rare species (based on Red Data Book lists, Birds of Conservation Concern and species considered to be nationally rare/scare).

3.1.2 The Zone of Influence (Zoi) is the area over which the project could have an influence on ecological features. The Zoi is likely to vary for different features. However, in general terms the Zoi for this proposal is considered to comprise the habitats within the red line boundary and the habitats directly adjacent.

3.1.3 The scope of the assessment was informed by a UK Habitat Classification survey undertaken in June 2023, which was extended to include an assessment for protected species. The purpose of this was to identify the habitats on site, their potential for protected species and to establish the scope of surveys that would be required to inform a future planning application at the site.

3.1.4 The overall assessment has been informed by guidelines provided in 'Guidelines for Ecological Report Writing' (CIEEM, 2017).

3.2 Desktop Study

3.2.1 A search for statutory designated sites and granted European Protected Species (EPS) licences within 0.5km of the site boundary was undertaken using publicly available information (DEFRA Magic map).

3.3 UK Habitat Classification Survey

3.3.1 A UKHab survey was undertaken on 1st June 2023. The survey incorporated detailed assessment of the land within the development boundary, including a description and mapping of all key features and habitat types. The survey was carried out to identify the range of habitats within the site and the predominant and notable species of flora. This survey was informed by the UKHab classification User's Manual (Butcher *et al.*, 2020).

3.4 Protected Species Surveys

NERC S. 41 mammals

- 3.4.1 The survey included an assessment of the habitats on site for their potential to support NERC Section 41 species such as hedgehog (*Erinaceus europaeus*), polecat (*Mustela putorius*), harvest mouse (*Micromys minutus*) and brown hare (*Lepus europaeus*).

Badger

- 3.4.2 The survey for badger (*Meles meles*) included a search of the development site for any evidence of badgers, including setts, foraging signs (snuffle holes), runs and latrines.

Hazel dormouse

- 3.4.3 The survey included an assessment of the potential of the site for hazel dormouse (*Muscardinus avellanarius*), focusing on the connectivity and suitability of the habitat on site.

Riparian mammals

- 3.4.4 The survey included an assessment of the potential of the site to support riparian mammals such as otter (*Lutra lutra*) and water vole (*Arvicola amphibius*). This included an assessment of any riparian habitats within the wider environment to support these species.

Bats

- 3.4.5 The methodology for the bat surveys has been informed by the Bat Conservation Trust's 'Bat Surveys Good Practice Guidelines' (Collins, 2016).
- 3.4.6 The habitats on site were assessed for their suitability to support foraging and commuting bats. This assessment was also contextualized through examination of suitable habitat and features in the wider landscape and possible flight-lines across the proposed site following natural linear features such as hedgerows.

Preliminary Roost Inspection

- 3.4.7 A preliminary roost inspection of the structures on site was undertaken on 1st June 2023. The survey involved a physical internal and external search for live animals and a search for other signs that give an indication of past or present occupancy as outlined below. In the case of bats, typical indicators include droppings (which are characteristic and can often be speciated or at least be indicative of species type), signs of staining, urine splashing, characteristic odours, and accumulations of discarded prey remains.

3.4.8 Detailed descriptions of the structures on site can be found in Section 4.7, along with the results of the preliminary roost inspection.

Emergence survey

3.4.9 The emergence survey was informed by the results of the preliminary roost inspection. In line with the guidance in Table 7.3 of 'Bat Surveys Good Practice Guidelines' (Collins, 2016), building B1 was assessed as having 'low' roost suitability and was therefore subject to one emergence survey which was undertaken on 24th July 2023. Buildings B2-4 were assessed as having 'negligible' roost suitability and therefore did not require further surveys.

3.4.10 The survey commenced 15 minutes before sunset and finished approximately an hour and a half after sunset. Surveyors were positioned to view the northern and southern aspects of B1, as shown in Figure 2.

3.4.11 Echo Meter Touch (EMT) bat detectors were used for the survey. All calls recorded were analysed using the Echo Meter Touch app software. All calls recorded were cross referenced to a call reference collection library of known bat species to confirm species presence.

3.4.12 Thermal imaging cameras were used as a survey aid. The cameras were located at P1 and P2 on Figure 2, as shown in Photos 1 and 2. Jim Philips, Managing Director at Ethos, trained the surveyors in using thermal imaging cameras as a survey aid. Jim is a licensed bat surveyor who has attended two training courses on the use of thermal imaging cameras for bat surveys (Wildlifetek, 2020, 2022) and considered to be 'suitably qualified' in the use of the cameras as both a survey aid and method. For these surveys, thermal imaging was used as a 'survey aid' in accordance with the Thermal Imaging Bat Survey Guidelines (Fawcett Williams, 2021).

3.4.13 The thermal imaging survey used Flir E54 thermal imaging cameras. Videos were recorded as non-radiometric files. This camera has a thermal resolution of 320 x 240 with a 24° lens. The video files were transferred into standard video analysis software for later analysis.



Figure 2 Structures and surveyor positions

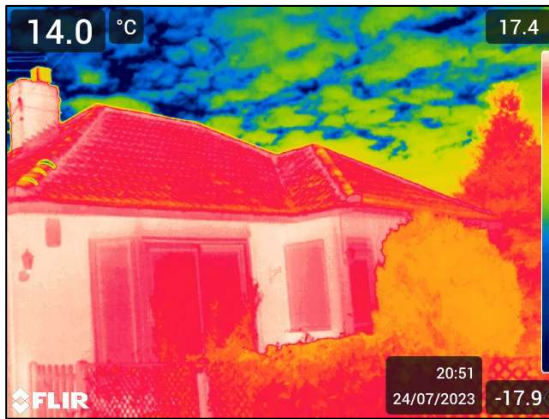


Photo 1 View from Position 1



Photo 2 View from Position 2

Birds

3.4.14 The bird survey included an assessment of the habitats on site for their potential to support protected and notable species of bird as well as their potential to support breeding birds.

Reptiles

3.4.15 The potential presence of reptiles on site was assessed considering the habitats present (availability of refugia and basking areas) and suitability of surrounding environment.

Amphibians

3.4.16 The site was examined for suitable waterbodies and for breeding terrestrial habitat. Terrestrial habitats providing sufficiently structured vegetation in which amphibians may forage or hibernate over winter were also surveyed for.

3.4.17 In addition to the on-site assessment, 'Great Crested Newt Mitigation Guidelines' (English Nature, 2001) recommend that a desktop analysis of ponds within 500m of the site be undertaken, to identify any potential breeding ponds which may require further survey. Ponds within 500m of the site were mapped on GIS with an OS OpenData base map at 1:10,000 resolution.

Invertebrates

3.4.18 Due to the many invertebrate taxonomic groups that exist, the often-large differences in invertebrate diversity between habitats and the many survey techniques available, invertebrate surveys are highly specific to individual sites. Therefore, an assessment of the potential site for invertebrates was undertaken, including the need for targeted surveys.

3.5 Limitations

3.5.1 A background data search was not requested from local records centre, however this was not considered a significant limitation to the assessment given the size and location of the site. It has been determined that a suitable assessment of the site was undertaken using the site visit, follow-up surveys, and the open access local records and background information.

3.5.2 All of the structures on site were fully accessible and the UKHab survey was undertaken at the optimum time of year for identifying botanical species. Therefore, it has been determined that there were no significant limitations to this assessment.

3.6 Evaluation of Ecological Features

3.6.1 In line with CIEEM's guidelines on EclA, this assessment has focused on relevant Important Ecological Features. The scale of importance of these features has been determined based on available contextual information. For this project, the maximum scale of importance is considered to be 'Local' - of importance to the local area (Downend), but not sufficiently important to warrant County scale of importance.

3.6.2 Potential impacts on Important Ecological Features are identified and assessed; likely significant effects are those likely to result in a change to the conservation status of a habitat or species population or undermine/support nature conservation policy. Mitigation measures have been devised following the mitigation hierarchy; appropriate mechanisms for securing mitigation measures have been identified.

3.7 Personnel

The surveyors on site are included within Table 2. The survey team have worked together on numerous similar projects and have a complimentary range of skills and experience which are considered to have provided a robust ecological appraisal of the site.

Table 2 Surveyors and report authors

Ecologist	Position	Qualifications/ Licences	Experience	Role in Assessment
Steph Green	Principal Ecologist	MSc BSc (Hons), MCIEEM Class 1 GCN Licence Class 1 Hazel Dormouse Licence	Steph has over ten years' experience in ecological field survey and consultancy. Steph is responsible for leading and undertaking comprehensive habitat assessments, protected species surveys and is a licenced GCN and dormouse worker, as well as a Full Member of CIEEM.	Emergence surveyor Report reviewer
Katie Munday	Assistant Ecologist	MSc, BSc (Hons)	Katie has experience with a variety of ecological field surveys, including protected species surveys and habitat assessments. She assists with bat call data analysis and report-writing.	Site assessor, emergence surveyor and report author
Shannon Bowle	Seasonal Ecologist	MSc, BSc (Hons)	Shannon is assisting with a variety of ecological field surveys, including protected species surveys and habitat assessments.	Site assessor

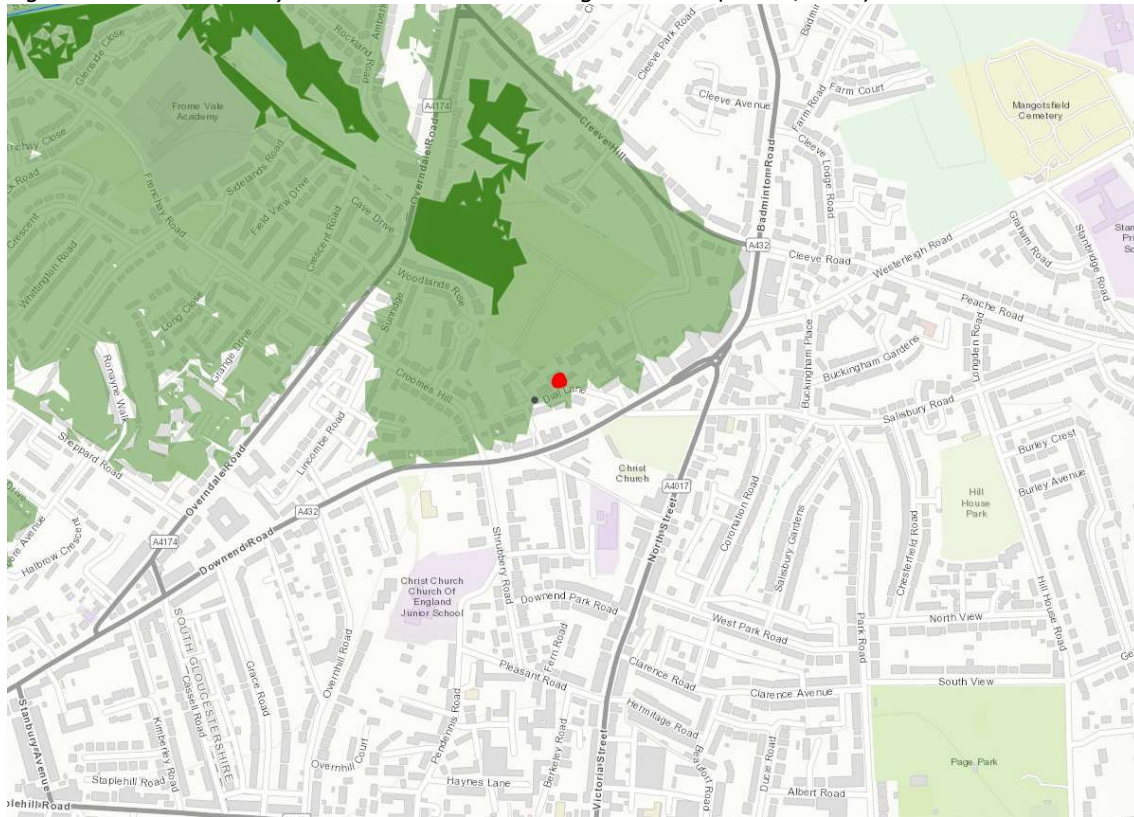
4 BASELINE ECOLOGICAL CONDITIONS

4.1 Designated Sites

4.1.1 There are no statutory designated sites within 0.5km of the site.

4.1.2 The site is located within the woodland network model for the West of England Nature Partnership Nature Recovery Network, as shown in Figure 3. The darker green areas denote existing woodland. The Nature Recovery Network is not assigned a level of importance for nature conservation and is not discussed further within this EclA.

Figure 3 Nature Recovery Network woodland strategic network (WENP, 2023)



4.2 Habitats

4.2.1 The site comprises hardstanding and a series of structures with vegetated garden and bramble scrub. The site is bordered by residential development to the east, west and south, with an allotment site to the north of the site.

4.2.2 Figure 4 displays the key habitats using the UK Habitat classifications. Descriptions of the habitats are provided in the following section.



Figure 4 UK Habitat survey

Developed land; sealed surface

4.2.3 A large section of the site comprises developed land sealed surface, shown in Photos 3 and 4. These areas include the concrete driveway from the site entrance to the structures on site. The structures are described in Section 4.7 in relation to their suitability for roosting bats. This habitat is considered to have negligible biodiversity value and is not considered further in this assessment.



Photo 3 Developed land; sealed surface



Photo 4 Developed land; sealed surface

Vegetated garden

4.2.4 A small portion of the site consists of vegetated garden (Photos 5 and 6), which is surrounded by developed land; sealed surface and structures. The vegetated garden

contains ornamental and native shrub species, including box (*Buxus sempervirens*), gorse (*Ulex europaeus*), *Leylandii* spp., elder (*Sambucus nigra*), *Prunus* spp., ash (*Fraxinus excelsior*), honeysuckle (*Lonicera* spp), bindweed (*Convolvulus arvensis*) and bramble (*Rubus fruticosus*). The vegetated garden is not considered to be valuable for nature conservation importance and is therefore not considered further in this assessment.



Photo 5 Vegetated garden (east)



Photo 6 Vegetated garden (south)

Bramble scrub

4.2.5 Several stands of bramble scrub were present on site and had small volumes of ash and sycamore (*Acer pseudoplatanus*) saplings present within them. The bramble scrub, shown in Photos 7 and 8, is assessed to have low ecological value, is not important for nature conservation and is only considered further in this assessment in relation to its potential to support protected species.



Photo 7 Bramble scrub



Photo 8 Bramble scrub

4.3 NERC S. 41 Mammals

4.3.1 The site mainly comprises large areas of developed land; sealed surface, which contain limited suitability to support hedgehog due to a lack of suitable cover opportunities. The vegetated garden and areas of scrub provide suitable nesting and foraging habitat for

hedgehog. Due to the proximity of the site to residential gardens to the east, west and south, and the allotment to the north, it is considered likely that hedgehog are present on the site and utilising the scrub and areas of vegetated garden for commuting and foraging.

4.3.2 Hedgehog are listed as a Species of Principal Importance for the conservation of biodiversity in England. Any animals using the site are likely to form part of a wider population within the local area, which would be of **Local importance** for nature conservation.

4.3.3 The site was considered unsuitable for harvest mouse, brown hare and polecat due to a lack of suitable habitat. The species are therefore considered likely absent from the site and are not considered further in this assessment.

4.4 Badger

4.4.1 The majority of the site comprises developed land; sealed surface which does not provide suitable habitat for badger. The bramble scrub and vegetated garden are suitable for foraging and commuting badger, with suitable habitat adjacent to the north of the site within the allotments. No badger setts were identified on or adjacent to the development site.

4.4.2 Whilst the site itself is not considered to be of significant value for badger, the surrounding area supports suitable habitat and it is therefore considered that badger may occasionally commute across the site.

4.4.3 Badgers are not a Species of Principal Importance and are only considered further in this assessment on a precautionary basis within the construction footprint, as they are a legally protected species under the Protection of Badgers Act 1992.

4.5 Hazel Dormouse

4.5.1 Suitable habitat for dormouse on site is limited to the sections of bramble scrub which have poor connectivity with the wider area. The vegetation on site is species-poor and therefore does not support a variety of food sources for dormice. There are no significant areas of woodland or hedgerows within proximity to the site which may support dormouse.

4.5.2 Given the urbanised context of the site and lack of suitable habitat for dormouse on and adjacent to the site, it is assessed that dormouse are likely absent from the site and are not considered further in this assessment.

4.6 Riparian Mammals

- 4.6.1 No evidence of otter or water vole was identified during the survey and there are no suitable riparian habitats on or adjacent to the site, therefore no suitable habitat for these species.
- 4.6.2 The site is located within 600m of the Rive Frome tributaries, which are located north of the site. There is no suitable habitat connecting the Frome to the site as there is the A4174 road and significant residential housing between the suitable watercourses and the site. Overall, given the lack of suitable habitat on or near to the site, otter and water vole are considered likely absent from the site and will not be considered further in this assessment.

4.7 Bats

- 4.7.1 One granted EPS licence relating to bats was identified during the desktop study. This licence (EPSM2010-2372) was approved in 2010 for a brown long-eared bat and was located 650m south-west of the site.

Habitats

- 4.7.2 The habitats on site are dominated by developed land; sealed surface, which provides negligible value for foraging or commuting bats. The bramble scrub and vegetated garden are assessed to contain some suitability for commuting and foraging bats, with links to the allotments and woodland to the north of the site. These offsite habitats may provide higher value for commuting and foraging bats. No trees with features potentially suitable for roosting bats were identified during the habitat survey.
- 4.7.3 Overall, it was considered that the site contains some suitable habitat for bats due to connectivity to the wider area via the northern boundary of the site. All other boundaries were connected to further residential and commercial development, which are poor suitability habitats for bats.

Preliminary roost inspection

- 4.7.4 There are three buildings and one shed located on site, as shown in Figure 5. Descriptions of the structures are provided in Table 3 below, along with their potential for roosting bats.
- 4.7.5 Overall, a single very old bat dropping was identified in one building (B1). Considering the context of the site, potential roost features identified, and evidence of bats found, B1 was subsequently assessed to have **low suitability for roosting bats**. The remaining structures were assessed to have **negligible potential for roosting bats**.



Figure 5 Structures and surveyor positions

Table 3 Structures assessment

Structure	Description	Evidence	Potential for bats
B1	Derelict residential bungalow with a hip roof structure. Roof is tiled and in good condition. A couple of lifted tiles present. One broken tile on the northern elevation. Gaps present under chimney flashing on the western elevation. Walls are brick and render in good condition with no cracks or crevices. Interior loft void has wooden rafters A-frame with plastic sarking. Insulation present on the floor of the loft. Light ingress is present at the northern corner of the loft, with the rest of loft being dark with no access points identified.	Single old bat dropping near loft hatch	Low
B2	Derelict warehouse with gable roof structure. Roof is tiled with lead flashing partially fixed to the walls. The walls are brick and render mostly in good condition, with some small cavities in the corner. Several superficial render cracks are present in the walls. A small cavity was located at the top of the structure which was not accessible to the surveyors via a ladder. It was determined that this cavity is minor and superficial given the composition of the exterior and interior of the structure, therefore not suitable for bats. There is no internal loft void. The interior comprises a vaulted timber and metal framed ceiling structure with some hanging felt from the roof. The interior is bright.	None	Negligible

Structure	Description	Evidence	Potential for bats
B3	Derelict pool building with corrugated metal roof in good condition. Unknown wall structure with render in good condition. No internal loft void, vaulted ceiling. Timber frame with tightly fitted MDF wood boards.	None	Negligible
B4	Shed felted roof with wood panelled walls and no internal loft void. All in good condition with no access points noted for bats.	None	Negligible



Photo 9 B1 (southern elevation)



Photo 10 B1 (loft void)



Photo 11 B2 (southern elevation)



Photo 12 B2 (roof interior)



Photo 13 B3 (southern elevation)



Photo 14 B3 (roof interior)



Photo 13 B4 (southern elevation)

Emergence surveys

4.7.6 An emergence survey was carried out on building B1 in line with guidance provided in 'Bat Surveys Good Practice Guidelines' (Collins, 2016). The observations made during the emergence survey were supported by the thermal imagery to increase confidence. The detailed results of the emergence survey are provided in Appendix 1 and a summary is provided below:

- No bats emerged from building B1 during the emergence survey.
- Two species of bat were recorded in the adjacent habitats, namely common pipistrelle (*Pipistrellus pipistrellus*) and noctule (*Nyctalus noctula*).
- The majority of the activity recorded was common pipistrelle bats commuting over the garage of building B1.
- An individual common pipistrelle bat was recorded foraging in the vegetated garden near surveyor position P1 and over the bramble scrub near surveyor position P2.

Summary

4.7.7 The results of the emergence survey confirm that building B1 does not support a bat roost. The proposed works can therefore proceed legally without the need for further survey or an EPS licence from Natural England.

4.7.8 The habitats on site are of 'low' suitability for bats and the survey demonstrates that the site supports an assemblage of common and widespread species. Given the urban setting of the site and the habitats present, it is assessed that the site is not of significant nature conservation importance for bats. They are only considered further in relation to the precautionary measures required to avoid impacts on the low numbers of bats utilising the site for commuting and foraging purposes.

4.8 Birds

4.8.1 The habitats on site are dominated by developed land; sealed surface which provides limited opportunities for nesting birds. The bramble scrub and vegetated garden could

provide potential breeding habitats for common and widespread species of garden and urban birds. No evidence of breeding birds was recorded on site however an old, weathered bird box is present on building B2.

4.8.2 Overall, it is considered that the site is not of particular conservation importance for birds and the assemblage utilising the site is likely to consist of common and widespread species. Breeding birds are only considered further on a precautionary basis during construction.

4.9 Reptiles

4.9.1 The site is dominated by developed land; sealed surface which is assessed to be of negligible suitability for reptiles due to a lack of refugia and foraging opportunities. The bramble scrub and vegetated garden provide some low potential reptile habitat, although it was noted that the bramble scrub was growing over concrete and therefore, less suitable for species such as slow worm who favour softer substrates and generally burrow under refugia. The areas of vegetated garden are located along the eastern boundary and are fragmented from the allotments to the north, reducing the suitability for reptiles. The allotments adjacent to the north of the site are assessed to contain potential habitat to support reptiles.

4.9.2 Due to the presence of some small areas of suitable habitat for reptiles on site and more valuable reptile habitats adjacent to the site, there is low potential for reptiles to be present. Therefore, reptiles are considered further on a precautionary basis in relation to the protection of these species during construction.

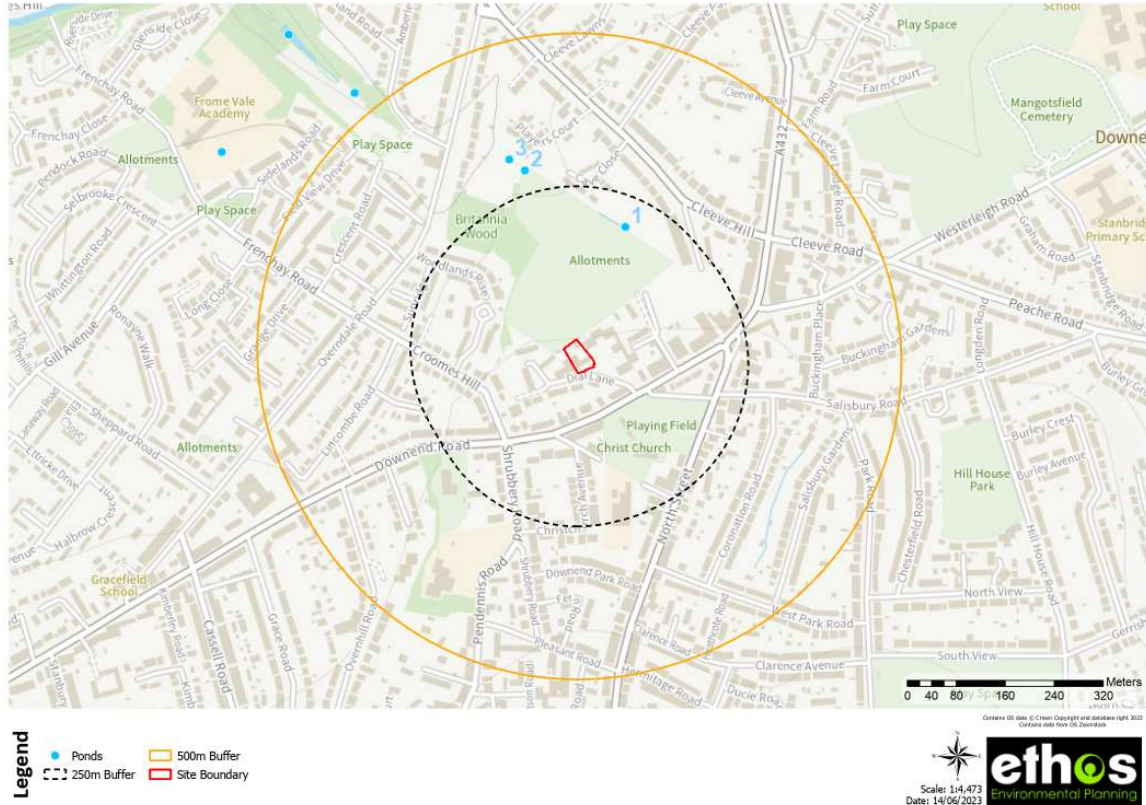
4.10 Amphibians

4.10.1 There are no waterbodies present on site and therefore no breeding habitat for great crested newt (GCN) and other amphibians. Suitable terrestrial habitat on site is limited to the areas of scrub and vegetated garden, with the majority of the site containing developed land; sealed surface which is of negligible value to amphibians. The scrub may provide potential habitat to support amphibians dispersing through the wider landscape and the allotments to the north may contain suitable terrestrial habitat for amphibians. The areas of vegetated garden are located along the eastern boundary and are fragmented from the allotments to the north, reducing the suitability for amphibians.

4.10.2 A search for ponds within 500m identified three ponds on the northern edge of the adjacent allotments, as shown in Figure 6. The ponds are located 200m and 300m north of the site. In 2016, Ethos undertook a range of ecological surveys for the land in which P3 is located. The eDNA survey of P3 was negative for GCN. The habitats near the ponds, comprising a mosaic of trees, scrub and grassland within residential gardens and the allotments, are assessed to be more valuable to amphibians than the habitats on site.

4.10.3 Given the distance between the ponds and the site, the suitability of the habitat on site and adjacent to the ponds, and the previous survey information, GCN have been assessed as likely absent from the site and are not considered further in this appraisal.

Figure 6 Ponds within 500m of the site



4.11 Invertebrates

4.11.1 The site contains common and widespread habitats including developed land; sealed surface, vegetated garden and bramble scrub. The scrub and vegetated garden are considered to hold low value for invertebrates and are assessed as unlikely to support rare or notable invertebrate species.

4.11.2 The site’s assemblage of invertebrates is not considered likely to be of particular nature conservation importance and therefore will not be considered further in this appraisal.

4.12 Summary

Table 4 Summary of important ecological features

Important Ecological Features	Scale of Importance
Hedgehog	Local
Badger	N/A – legal protection only
Bats	N/A – precautionary mitigation
Birds	N/A – legal protection only
Reptiles	N/A – precautionary mitigation

5 DEVELOPMENT PROPOSALS

5.1 The development proposals comprise the destruction of the existing structures on site and the subsequent construction of nine residential dwellings with associated access, car parking and green space, as shown in Figure 7.



Figure 7 Proposed site layout (Drawing number 5090_P.SL, Rev B)

6 ASSESSMENT OF IMPACTS AND MITIGATION MEASURES

6.1 Hedgehog

Construction impacts

- 6.1.1 The site has the potential to support hedgehog and in the absence of mitigation, impacts on hedgehog could occur during the construction phase, comprising injury or mortality of hedgehogs foraging or commuting over the site.
- 6.1.2 Good practice measures should be employed during construction to avoid impacts on hedgehogs. This should include appropriate storage of material (i.e. not in piles on the floor) to avoid creating refugia for hedgehog and ensuring any trenches or excavations have escape ramps to allow hedgehogs to escape in case any fall in.

Operational impacts

- 6.1.3 The proposed development will result in the temporary loss of foraging habitat for hedgehog, namely the vegetated garden and bramble scrub. However, the proposals include the creation of nine new residential gardens, which are considered to provide suitable new foraging opportunities for hedgehog. The site will need to remain permeable to hedgehogs post-development and therefore, any close-board fencing will require small holes (13cm x 13cm) at the base to ensure hedgehogs will still be able to move around the site.
- 6.1.4 With the implementation of the recommended mitigation measures during construction and operation, **no significant effects** are predicted on hedgehog.

6.2 Badger

- 6.2.1 Measures to ensure the protection of badger during the construction period will include the installation of escape ramps in exposed trenches to ensure badgers do not get trapped overnight and limiting the period of construction lighting to minimise impacts on foraging/commuting badger.

6.3 Bats

- 6.3.1 To ensure impacts on any bats utilising the site for foraging or commuting purposes are avoided, sensitive lighting should be employed, both during construction and post-development. This should include turning off all construction lighting overnight and ensuring that any safety lighting on the new dwellings is down-facing and of a low level. No lighting should be focused on the adjacent allotment, which provides suitable foraging and commuting habitat for bats.

6.4 Breeding birds

6.4.1 Nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), so it will be necessary to avoid damage to or destruction of nests, or disturbance of nesting birds, during the construction phase. In order to mitigate impacts to breeding birds, removal of the bramble scrub and vegetated garden should be undertaken outside of the nesting season (March-August, inclusive) or be subject to a pre-works check for nesting birds by a suitably qualified ecologist. The ecologist will identify the presence of any active nests and set up exclusion zones around the nests. No works should be undertaken within the exclusion zone until the chicks have fledged.

6.5 Reptiles

6.5.1 Precautionary mitigation for reptiles during construction should involve a two-stage cut of any dense vegetation on site, namely the bramble scrub. This should be undertaken during the active reptile season (March-October, inclusive) and vegetation should be cut from south to north to allow any reptiles present to disperse into the habitats to the north of the site.

6.6 Summary

6.6.1 A summary of the predicted significance of any effects, as well as the proposed mitigation measures and how these may be secured are outlined in Table 5.

Table 5 Summary of significance of effects and mitigation/compensation

Ecological feature	Mitigation	Mechanism for securing delivery	Residual effects
Hedgehog	Precautionary construction and operation measures – avoid creation of refugia via appropriate storage of materials and add escape ramp to any trenches. Site to be made permeable for hedgehog post-development through the installation of suitable gaps in non-permeable fencing.	Contractors to follow precautionary measures outlined in EclA.	No significant effect
Badger	Precautionary construction measures – lighting to be switched off overnight and escape ramps added to trenches.	Contractors to follow precautionary measures outlined in EclA.	N/A
Bats	Sensitive lighting – construction lighting to be switched off overnight. Post-development lighting to be down-facing and low level. No lighting to be focused on the adjacent allotment.	Contractors to follow lighting recommendations outlined in EclA. Layout to incorporate sensitive post-development lighting.	N/A
Breeding birds	Precautionary construction measures – removal of bramble scrub and vegetated garden outside nesting season (March-	Contractors to follow precautionary measures outlined in EclA.	N/A

Ecological feature	Mitigation	Mechanism for securing delivery	Residual effects
	August, inclusive) or pre-works check by a suitably qualified ecologist.		
Reptiles	Precautionary construction measures – two-stage cut of dense vegetation from south to north carried out during active reptile season (March-October, inclusive).	Contractors to follow precautionary measures outlined in EclA.	N/A

7 ENHANCEMENTS

- 7.1 Two integrated bat boxes suitable for a range of common and widespread species of bat, such as a Vivara Pro Build-in WoodStone Bat Box, should be installed on the northern elevations of Plots 8 and 9 (Figure 7) so they are in close proximity to the more valuable bat habitat to the north. The boxes should be positioned at a height of at least 2m, away from artificial light sources.
- 7.2 An integrated bird brick, such as a CJ Wildlife Woodstone integrated bird brick, should be installed within the new dwelling on Plot 4. This will provide new nesting opportunities for species such as house sparrow which are included on the RSPB's Birds of Conservation Concern Red List. The brick should be positioned at a height of between 1.5m and 3m on the southern elevation.
- 7.3 A nest box suitable for starling, such as a Vivara Pro Starling nest box, should be installed on one of the trees in the northern corner of the site. It should be fixed at a height of 1.5m and positioned close to other vegetation if possible.
- 7.4 New native tree planting within the residential gardens and along the site boundaries would provide suitable foraging habitat for birds and invertebrates.

8 CONCLUSIONS

- 8.1 The site comprises 0.15 hectares and includes developed land; sealed surface with areas of bramble scrub and vegetated garden. There are three buildings on site and a shed. The key ecological features were identified as the bramble scrub and the vegetated garden.
- 8.2 The development proposals are for the destruction of the existing structures on the site and the construction of nine new residential dwellings with associated access and vegetated gardens. Mitigation measures have been provided for protected species, as appropriate.
- 8.3 Mitigation measures for protected species including hedgehog, bats, birds, badger and reptiles have been provided, focusing on avoiding impacts during the construction phase.
- 8.4 The results of the targeted surveys for bats demonstrate that building B1 does not support a bat roost and the proposed works can therefore proceed legally without the need for further surveys or an EPS licence from Natural England.
- 8.5 Enhancements for bats and birds have been made which will result in benefits to the biodiversity of the site.

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APPENDIX 1 BAT SURVEY DATA

The following section details the results of the bat emergence survey at the site. Codes used in the description of bat species are as follows:

CP Common pipistrelle (*Pipistrellus pipitrellus*)
NOC Noctule bat (*Nyctalus noctula*)

Results of the emergence survey are included below and the environmental variables recorded during the survey are shown in Table 6.

Table 6 Environmental variables

Date	24/07/2023	
Sunset	21:06	
Start / end time	20:51	22:36
Temperature (°C)	18.9	14.9
Humidity (%)	64.2	75.5
Cloud cover (oktas)	7	7
Avg. wind speed (m/s)	0.1	0
Rain	Earlier today	

Emergence survey results

- 21:34 – CP foraging under tree near P1.
- 21:36 – CP faint brief call, heard but not seen near P2.
- 21:37 – CP commuting from north of P2 to south over garage past P1.
- 21:45 – CP faint brief call, heard but not seen near P1.
- 21:45 – CP foraging around bramble scrub near P2 for several minutes.
- 21:48 – CP briefly foraging in garden near P1 then commuting north over garage.
- 21:48 – NOC faint call, heard but not seen near P1, likely commuting high above.
- 21:51 – CP commuting north to south over garage.
- 21:52 – CP commuting north to south over garage.
- 22:00 – CP commuting north to south over garage.
- 22:03 – CP commuting south to north over garage.
- 22:08 – CP commuting south to north over garage.

No emergence recorded at P1 or P2. Two species were recorded during the survey, namely NOC and CP. Majority of activity was CP commuting over the garage of building B1. Some CP foraging was recorded in the vegetated garden near P1 and over the bramble scrub near P2.

APPENDIX 4 (BIODIVERSITY NET GAIN ASSESSMENT)

Biodiversity Net Gain Assessment

Dial Lane, Downend

August 2023

Ecology | Green Space | Community | GIS

Unit 1, Brassmill Lane Enterprise Centre | Bath | BA1 3JN

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Report Produced for Acorn Property Group

Written by: Stephanie Green, Principal Ecologist

Issue: V1

Date: August 2023

Project: ETH23-184



EXECUTIVE SUMMARY

This report provides an assessment of the biodiversity change at Dial Lane, Downend (Central Grid Reference ST 64861 76651). The baseline habitats include developed land; sealed surface, vegetated garden and bramble scrub. There are no linear biodiversity features or river habitats on site. The baseline habitats provide 0.1448 Habitat Units.

Development proposals comprise the demolition of the existing structures and the construction of nine new dwellings with associated access and greenspace. The post-intervention habitats include developed land; sealed surface with areas of modified grassland, vegetated garden, mixed scrub and urban street tree planting.

Based on the DEFRA Small Sites Metric, the habitats will generate a gain of 135.73% for Habitat Units. Due to the amount of bramble scrub present on the site, as well as the small size of the site, the site does not meet the trading standards for the broad habitat type; scrub. However, the site does significantly exceed the >10% minimum for net gain and also meets the trading summary in terms of the distinctiveness band. Therefore, the proposed habitats are considered suitable to achieve biodiversity net gain on site.

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1 INTRODUCTION

- 1.1 This report provides an assessment of the biodiversity change following the proposals for the site at Dial Lane, Downend (Central Grid Reference ST 64861 76651), referred to as the 'site' and shown in Figure 1.
- 1.2 The report sets out the policy background for biodiversity net gain, the baseline conditions of the site, the proposed site layout, the results of the BNG Small Sites Calculations, and the overall change in terms of biodiversity.
- 1.3 This assessment is informed by the Proposed Site Plan (Drawing Number 5090_P.SL).
- 1.4 This report is submitted alongside the BNG Small Sites Calculator.
- 1.5 A Habitat Management and Monitoring Plan (HMMP) will be secured through a planning condition. This will provide detailed habitat implementation, ongoing management, and specific monitoring which will inform remedial action to obtain the target conditions set out within this assessment.
- 1.6 Relevant legislation and local policy is provided within Appendix 1 of this assessment.

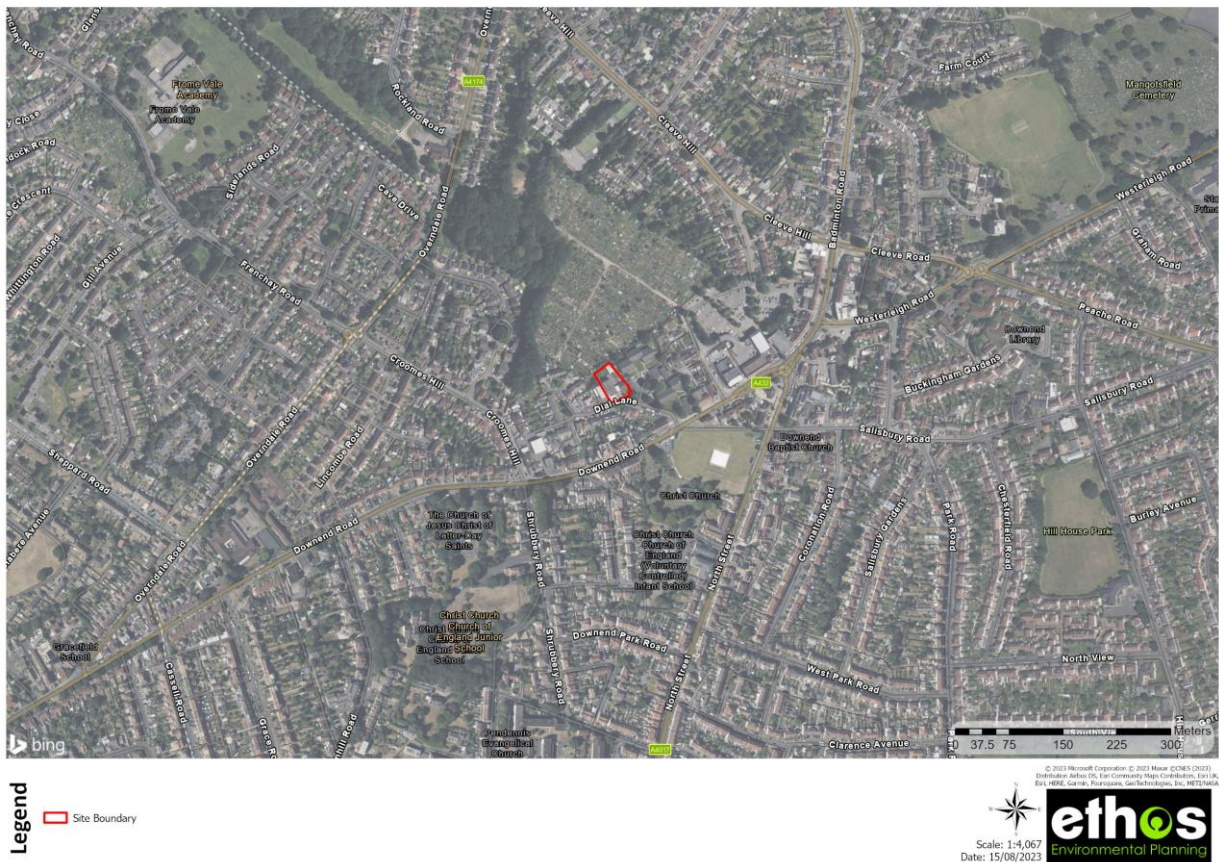


Figure 1 Site location

2 METHODOLOGY

2.1 Biodiversity Net Gain (BNG) Assessment

2.1.1 This BNG assessment uses the following industry recognised best practice methods:

- CIEEM, IEMA & CIRIA (2016). Biodiversity Net Gain: Good Practice Principles for Development
- CIEEM (2021). Biodiversity net gain report and audit templates
- Natural England Joint Publication (2023) Small Sites Metric (Biodiversity Metric 4). Calculation Tool: User Guide.

2.1.2 Applying these standardised methods results in the calculation of a baseline biodiversity value, a post-development biodiversity value and a net change in biodiversity value associated with the proposed development.

2.1.3 The quantitative outcomes of the calculations are one component of the BNG assessment and associated good practice principles. A BNG assessment also requires the collation of qualitative evidence on the application of the mitigation hierarchy, stakeholder engagement and post-development habitat management. Collectively, these quantitative outcomes and qualitative evidence are used to inform the outcomes of the project wide BNG assessment.

2.2 UK Habitat Classification Survey

2.2.1 The habitat survey was carried out on 1st June 2023 according to the UKHab Classification system. The survey included a detailed assessment of the land within the development boundary, including a description and mapping of all key features and habitat types. The survey was carried out to identify the range of habitats within the site and the predominant and notable species of flora.

2.2.2 Full results of the UKHab including species lists are provided within the corresponding EclA (Ethos, 2023).

2.3 Condition Assessments

2.3.1 Condition assessments are not required under the Small Sites Metric and the baseline habitats present do not require an assessment of condition (bramble scrub, sealed surface and vegetated garden).

2.4 Strategic significance

2.4.1 Strategic significance relates to the spatial location of a habitat parcel at a landscape scale. It is based on the habitat type and its location, depending on their status in a local plan, strategy, or policy. The user guide that accompanies the DEFRA Metric 3.1 provides guidance on how to assign strategic significance.

2.4.2 The following published strategies were identified for the site's location:

- The West of England Nature Recovery Network.

2.5 Limitations and Assumptions

2.5.1 The biodiversity net gain calculations based on field survey of habitats and mapping of habitat parcels in GIS. Habitat areas have been calculated in GIS and rounded to two decimal places.

2.5.2 Habitat surveys were carried out at a suitable time of year, but surveys were not exhaustive and may not have recorded all species present on site.

2.5.3 There are considered to be no significant limitations to the assessment.

3 BASELINE HABITATS

3.1.1 The site encompasses 1521m². The baseline map displays the existing habitats on site (Figure 2) and the habitats are listed below.

- Urban – Developed land; sealed surface (A1).
- Urban – Vegetated garden (A2).
- Heathland and scrub – Bramble scrub (A3).



Figure 2 Baseline Habitats

3.2 Habitat Units

Developed land; sealed surface (A1)

3.2.1 The site contains 1046m² of developed land; sealed surface. These areas include the concrete driveway from the site entrance (Photo 1) and the structures on site (Photo 2). The habitat is a very low distinctiveness habitat with negligible value for biodiversity.



Photo 1 Hardstanding driveway



Photo 2 Building on site

Urban – Vegetated garden (A2)

- 3.2.2 A portion of the site (226m²) consists of vegetated garden (Photos 3 and 4), which is surrounded by developed land; sealed surface and structures. The vegetated garden contains ornamental and native shrub species, including box (*Buxus sempervirens*), gorse (*Ulex europaeus*), *Leylandii* spp., elder (*Sambucus nigra*), *Prunus* spp., ash (*Fraxinus excelsior*), honeysuckle (*Lonicera* spp), bindweed (*Convolvulus arvensis*) and bramble (*Rubus fruticosus*). The habitat is a low distinctiveness habitat.



Photo 3 Vegetated garden



Photo 4 Vegetated garden

Heathland and scrub – Bramble scrub (A3)

- 3.2.3 Several stands of bramble scrub (Photos 5 and 6) were present on site comprising 249m², which has small amounts of ash and sycamore (*Acer pseudoplatanus*) saplings present within them. The bramble scrub is a medium distinctiveness habitat.



Photo 5 Bramble scrub



Photo 6 Bramble scrub

3.3 Strategic Significance of Baseline Habitats

3.3.1 The site is located within the Woodland network model for the West of England Nature Partnership Nature Recovery Network, as shown in Figure 3. The darker green areas denote existing woodland.

3.3.2 The baseline habitats are not classified within the broad habitat type 'woodland' and therefore, are not considered to be of strategic significance.

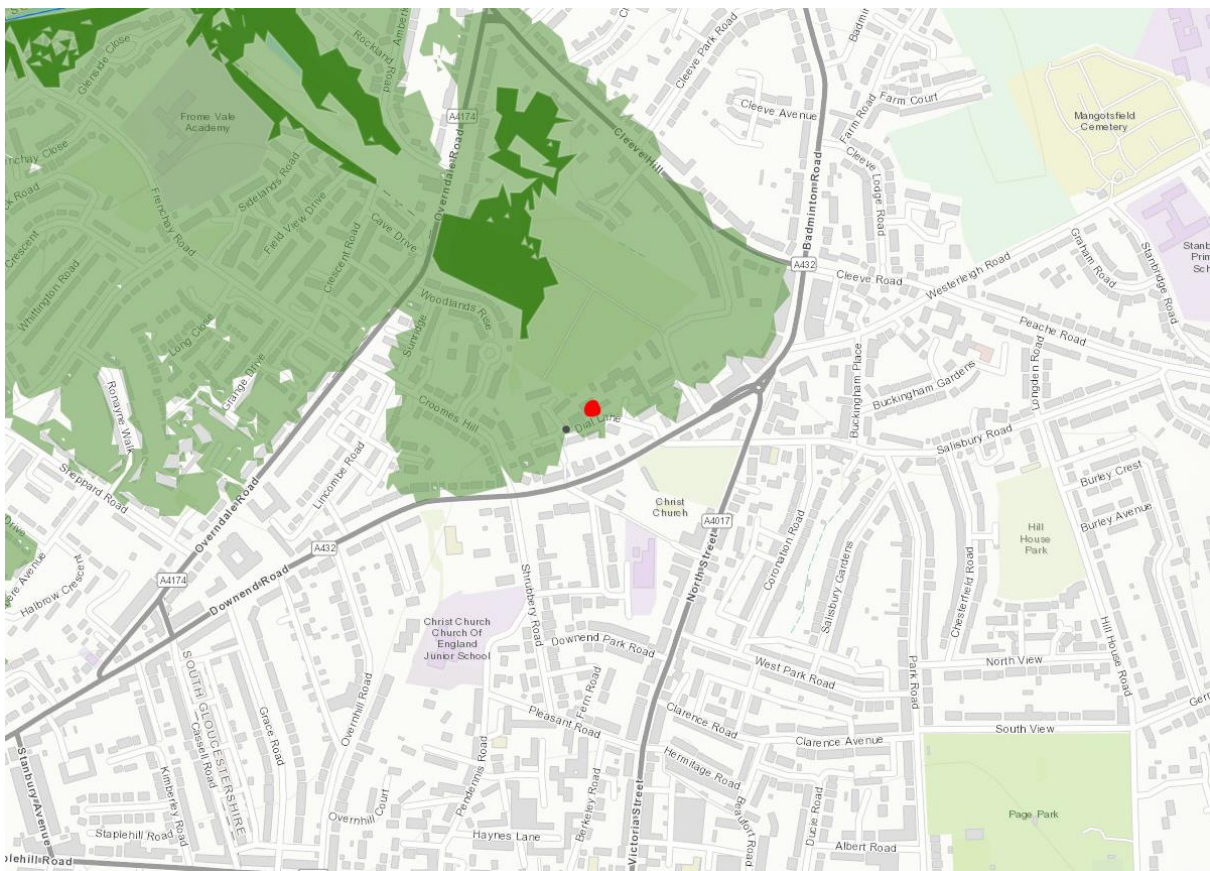


Figure 3 Nature Recovery Network woodland strategic network (WENP, 2023)

4 DEVELOPMENT PROPOSALS

- 4.1 The development proposals comprise the demolition of the existing structures on site and the subsequent construction of nine residential dwellings with associated access, car parking and green space, as shown in Figure 4. All habitats will be lost to the development, with areas of vegetated garden, modified grassland, mixed scrub and urban street trees planted as part of the landscaping works.



Figure 4 Proposed site layout (Drawing number 5090_P.SL, Rev B)

5 POST-INTERVENTION HABITATS

5.1 Condition assessment sheets which for created habitats are provided within Appendix 2 of this report. The proposed condition assessments include justification for how the habitats will meet their target conditions.



Figure 5 Proposed Habitats

5.2 Created Habitat Units

5.2.1 Created Habitat Units include:

- Urban – Developed land; sealed surface (A4).
- Grassland – Modified grassland (A5).
- Heathland and scrub – Mixed scrub (A6).
- Urban – Vegetated garden (A7).

Developed land; sealed surface (A4)

5.2.2 The development will include developed land; sealed surface in the form of residential housing, driveways and the access road. This habitat is a very low distinctiveness habitat, is not assigned a condition assessment and does not result in the creation of habitat units.

Grassland – Modified grassland (A5)

- 5.2.3 Areas of modified grassland will be created within the street scene, around the frontage of new residential housing. Modified grassland is a low distinctiveness habitat and is not of strategic significance. The grassland will be sown with a suitable species mix and managed to achieve moderate condition, as set out in Appendix 2.

Heathland and scrub – Mixed scrub (A6)

- 5.2.4 An area of mixed scrub will be created along the frontage of the site. Mixed scrub is a medium distinctiveness habitat and is not of strategic significance. The mixed scrub will be created by planting a suitable mix of native shrub species and will be managed to achieve moderate condition, as set out in Appendix 2.

Urban – Vegetated garden (A7)

- 5.2.5 Areas of vegetated garden will be created to the rear of the new residential dwellings. The vegetated garden is not assigned a condition assessment and is not of strategic significance. The vegetated garden will be subsequently managed by the residents.

6 SUMMARY OF BIODIVERSITY CHANGE ON SITE

6.1 Based on the DEFRA Small Sites Metric, the habitats will generate a gain of 135.73% for Habitat Units. Due to the amount of bramble scrub present on the site, as well as the small size of the site, the site does not meet the trading standards for the broad habitat type; scrub. However, the site does significantly exceed the >10% minimum for net gain and also meets the trading summary in terms of the distinctiveness band. The headline results are shown in Figure 6.

Site Name		Dial Lane Downend	
Sheet Name		Headline Results	
Headline Results			
Headline		BNG Targets Met ✓	
Trading Rules		Trading Rules Not Satisfied ▲	
Next steps		Scheme alterations or offsite units required	
If BNG targets cannot be reached on-site, the main Biodiversity Metric 4.0 should be used.			
Baseline Units	Habitat units	0.1448	
	Hedgerow units	Zero Units Baseline	
	River units	Zero Units Baseline	
Post-development Units	Habitat units	0.3413	
	Hedgerow units	0.0000	
	River units	0.0000	
Total net unit change	Habitat units	0.1965	☒
	Hedgerow units	0.0000	☒
	River units	0.0000	☒
Total net % change	Habitat units	135.73%	☒
	Hedgerow units	% target not appropriate	
	River units	% target not appropriate	

Figure 6 BNG headline results (Small Sites Metric)

7 BIODIVERSITY NET GAIN PRINCIPLES

7.1 This section sets out the BNG principals and the ways they have been considered throughout the stages of the project.

Table 1 BNG Principals

PRINCIPLE	APPLICATION TO PROJECT
Principle 1: Apply the mitigation hierarchy	There are no Habitats of Principal Importance on site, with no habitats being removed requiring compensation. Impacts on biodiversity (protected species) will be mitigated for during site clearance, as set out within the EclA (Ethos, 2023).
Principle 2: Avoid losing biodiversity that cannot be offset by gains elsewhere	There are no irreplaceable habitats on site.
Principle 3: Be inclusive and equitable	Stakeholders were engaged through the production of a Preliminary Ecological Appraisal, which set out potential impacts of the development and requirements for further surveys.
Principle 4: Address risk	Habitats to be created on site are considered low risk and the habitat creation, management and remedial measures will be set out within the HMMP. This will address the potential risk of created habitats failing to meet their target conditions.
Principle 5: Make a measurable net gain contribution	The development achieves a measurable gain of 135%.
Principle 6: Achieve the best outcomes for biodiversity.	Habitats proposed are considered ecologically equivalent in terms of distinctiveness and condition, with the development resulting in a significant increase above the minimum 10% BNG. Due to the amount of bramble scrub present on the existing site, the development is unable to meet the trading standards for the broad habitat type 'scrub'. An area of mixed scrub is proposed on site, however the area is not large enough to meet the trading standards due to the small size of the site. Bramble scrub is not a Habitat of Principal Importance, was not assessed as an ecologically important habitat within the EclA (Ethos, 2023) and it is assessed that it is not practical or proportionate to recommend the creation of bramble scrub on the post-development site. Therefore, the habitats proposed are assessed to be suitable to

PRINCIPLE	APPLICATION TO PROJECT
	achieve the best outcome for biodiversity on the site. The creation of urban street trees and mixed scrub will create new habitat for a variety of protected and notable species such as birds and bats.
Principle 7: Be additional	The development results in a 135% increase in Habitat Units on the site, which is considered additional to the minimum 10% requirement by legislation and policy.
Principle 8: Create a net gain legacy	<p>The habitats located within the public realm will be managed by a designated management company for at least 30 years in line with BNG targets. This will maintain the habitats and therefore, create a net gain legacy.</p> <p>The habitats proposed are assessed to be low risk and resilient to external factors such as climate change.</p>
Principle 9: Optimise sustainability	The created habitats will be managed as set out within the HMMP, which will also include remedial measures, should the ecological monitoring identify that the habitats be assessed as not meeting their proposed condition. Therefore, they are considered sustainable.
Principle 10: Be transparent	The BNG calculations and report will be provided to the Client, LPA and will be publicly accessible on the planning portal.

8 CONCLUSIONS

- 8.1 The site is located at Dial Lane, Downend and the development proposals include the demolition of existing buildings on site and construction of nine residential dwellings with associated access and greenspace.
- 8.2 The baseline habitats include an area of developed land; sealed surface, with vegetated garden and bramble scrub. All Habitat Units are gained from the creation of new habitats, namely mixed scrub, modified grassland, vegetated garden and urban street trees.
- 8.3 Based on the DEFRA Small Sites Metric, the habitats will generate a gain of 135.73% for Habitat Units. Due to the amount of bramble scrub present on the site, as well as the small size of the site, the site does not meet the trading standards for the broad habitat type; scrub. However, the site does significantly exceed the >10% minimum for net gain and also meets the trading summary in terms of the distinctiveness band ('medium'). Within the EclA, the bramble scrub was not assessed to contain value to nature conservation (Ethos, 2023). It is therefore not considered necessary or proportionate to recommend retaining the bramble scrub or compensating for its loss through the creation of bramble scrub. An area of mixed scrub planting is proposed along the site entrance.
- 8.4 This project aligns with the BNG principles, and is in accordance with local and national policy, and emerging national legislation.
- 8.5 The habitats within this assessment will need to be managed for at least 30 years. It is recommended to provide a Habitat Management and Monitoring Plan (HMMP) to ensure that the habitats are implemented and managed successfully in the long term.

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APPENDIX 1 POLICY AND LEGISLATION

8.2 National Planning Policy Framework

- 8.2.1 The National Planning Policy Framework (NPPF) sets out planning policy for England. Paragraph 174 of the NPPF states:

“Planning policies and decisions should contribute to and enhance the natural and local environment by:...

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;...”

Paragraph 179 states

“To protect and enhance biodiversity and geodiversity, plans should:...

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”

Paragraph 180 states

“d) development whose primary objective is to conserve or enhance biodiversity should be supported; while 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.”

8.3 Environment Act 2021

- 8.3.1 The Environment Act 2021 includes provision for biodiversity net gain to be applied to every planning permission.

Schedule 14 of the draft Environment Bill sets out amendments to the Town and Country Planning Act 1990 for the inclusion of biodiversity net gain as follows:

“Biodiversity gain objective

(1) The biodiversity gain objective is met in relation to development for which planning permission is granted if the biodiversity value attributable to the development exceeds the pre-development biodiversity value of the onsite habitat by at least the relevant percentage.

(2) The biodiversity value attributable to the development is the total of—

(a) the post-development biodiversity value of the onsite habitat,

b) the biodiversity value, in relation to the development, of any registered offsite biodiversity gain allocated to the development, and

(c) the biodiversity value of any biodiversity credits purchased for the development.

(3) The relevant percentage is 10%.”

8.3.2 The Environment Act received Royal Assent in November 2021, meaning that by November 2023 the expectation for all planning permissions to include a biodiversity net gain of at least 10% will become a legal requirement.

8.4 Local Policy

South Gloucestershire Council (2022) Biodiversity and Planning: Guidance for New Developments. Supplementary Planning Document

8.4.1 All new developments (unless exempt), whether outline or a full planning application, will be encouraged to submit a Biodiversity Net Gain Plan. The following core biodiversity gain information that will need to be submitted with an application prior to determination is (this will become a requirement once BNG becomes mandatory):

- The pre-development biodiversity value;
- Steps taken to minimise adverse biodiversity impacts;
- The proposed approach to enhancing biodiversity on-site;
- Any proposed off-site biodiversity enhancements (including the use of credits) that have been planned or arranged for the development (see Biodiversity Offsetting (offsite compensation)).

BNG and Scheme Design

8.4.2 Any compensatory habitat and the BNG requirements should be designed into schemes as part of mitigation hierarchy process with early consultation with the council, whether this consists of existing on-site habitat, any new areas of semi-natural habitat or, as a last resort off-set site habitat compensation. Again, this is best achieved through the council's pre-application consultation service for BNG and specific ecological issues within a development.

8.4.3 It is crucial that the design of a scheme is developed in conjunction with all other aspects of a site, including arboriculture, landscape, heritage, archaeology, drainage, and public open space provision.

8.4.4 In addition, should the design change during development of a scheme in such a way that alters its impact on biodiversity, the BNG assessment will need to be reviewed and revised, if necessary, in consultation with the council ecologist(s). For sites with moderate and high target distinctiveness habitats, the design will also need to be reconsidered along with long-term management requirements.

BNG Monitoring, management and enforcement

- 8.4.5 The management of all semi-natural habitat, including BNG, as well as its monitoring, will also form part of a Landscape and Environmental Management Plan (LEMP) and/or Habitat Management and Monitoring Plan (HMMP) for the scheme and will similarly form part of a planning condition (secured through a section 106 Agreement or other appropriate agreement). This is normally drawn up prior to commencement of development. Again, if the post-construction habitats differ from the original BNG calculation and agreement, then a revised LEMP and/or HMMP will need to be submitted.
- 8.4.6 It will be the landowner or developer's responsibility to ensure monitoring and reporting obligations are fulfilled, or adequately delegated to another body (with necessary funding), to the specifications set out in the Biodiversity Gain Plan. The number of monitoring assessments will depend on the habitat type and extent, but a typical schedule for a medium sized habitat creation project might result in reports for years 2, 5, 10, 20 and 30.
- 8.4.7 Failure to deliver, or attempt to deliver, biodiversity net gain outcomes which are secured through conditions or other limitations (subject to which planning permission is granted) can result in enforcement action. Revisions may be required to the original management plan accompanying the planning application in this instance and this should be accompanied by adequate evidence and justification for the proposed changes.

APPENDIX 2 PROPOSED HABITATS CONDITION JUSTIFICATION

This section sets out how the proposed habitats will be managed to achieve their condition in line with the BNG requirements.

Table 2 Modified grassland

Condition Assessment Criteria	Evidence	Pass/Fail
<p>"There are 6-8 vascular plant species per m2 present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition.</p> <p>Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m2 (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet. "</p>	<p>The grassland will be sown with a suitable species-rich mix such as Emorsgate Seeds EM1 Basic General Purpose Meadow Mixture, which contains a variety of grassland and flowering species.</p>	<p>Pass</p>
<p>Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.</p>	<p>The grassland will be managed to a short sward and will therefore not be varied.</p>	<p>Fail</p>
<p>Some scattered scrub (including bramble <i>Rubus fruticosus</i> agg.) may be present, but scrub accounts for less than 20% of total grassland area.</p> <p>Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.</p>	<p>No scrub will be planted within the grassland areas and any encroaching scrub will be removed during management activities.</p>	<p>Pass</p>
<p>Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.</p>	<p>Damage from residential activities may occur due to the proximity of the grassland to driveways and the pavement.</p>	<p>Fail</p>
<p>Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)².</p>	<p>It is anticipated that there will not be any bare ground within the sward due to the fact that it will be managed for amenity purposes, therefore areas of bare ground beneath longer grassland will not be able to develop.</p>	<p>Fail</p>

Condition Assessment Criteria	Evidence	Pass/Fail
Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Any bracken will be removed through management activities.	Pass
There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Any non-native invasive species will be removed through management activities.	Pass
Condition: Moderate		

Table 3 Mixed scrub

Condition Assessment Criteria	Evidence	Pass/Fail
<p>The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type.</p> <p>At least 80% of scrub is native, and there are at least three native woody species¹, with no single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i>, common juniper <i>Juniperus communis</i>, sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i>, which can be up to 100% cover).</p>	At least three species of native shrub will be planted, with no single species comprising more than 75%, therefore passing this criteria.	Pass
Seedlings, saplings, young shrubs and mature (or ancient or veteran ²) shrubs are all present.	The scrub will be managed to ensure young seedlings, saplings and mature stands are present.	Pass
There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) and species indicative of sub-optimal condition ⁵ make up less than 5% of ground cover.	Any invasive non-native species identified during management activities will be removed.	Pass
The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	The scrub will be located adjacent to sealed surface and therefore, unable to have a well-developed edge.	Fail
There are clearings, glades or rides present within the scrub, providing sheltered edges.	Due to the small area of proposed scrub, clearings and rides will not be achievable.	Fail
Condition: Moderate		

Table 13 Individual Street Trees

Condition Assessment Criteria	Evidence	Pass/Fail
<i>The tree is a native species (or at least 70% within the block are native species).</i>	The majority of urban street trees will be native species.	Pass
<i>The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).</i>	The trees will be spaced throughout the street scene and therefore will not form a continuous canopy.	Fail

Condition Assessment Criteria	Evidence	Pass/Fail
<i>The tree is mature (or more than 50% within the block are mature).</i>	Trees will not reach maturity within 30 years and therefore, this criteria cannot be met.	Fail
<i>There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.</i>	Trees will be managed to ensure tree health is maintained. Any damaged/deteriorating trees will be monitored and replaced as appropriate.	Pass
<i>Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.</i>	As the trees will be planted and therefore won't be able to reach maturity, it is unlikely that natural cavities and deadwood will develop within the 30 years.	Fail
More than 20% of the tree canopy area is oversailing vegetation beneath.	Trees will be planted over modified grassland and vegetated garden, therefore ensuring they oversail the grassland below.	Pass
Condition: Moderate		