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LAND EAST OF STATION HILL, BOTLEY, CURBRIDGE, HAMPSHIRE

BIODIVERSITY NET GAIN FEASIBILITY REPORT

Draft Document

July 2024

Preliminary Ecological Appraisals • Protected Species Surveys and Licensing • NVC • EcIA • HRA • Management Plans
Habitats • Badger • Bats • Hazel Dormouse • Birds • Reptiles • Amphibians • Invertebrates • Riparian and Aquatic Species

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ECOSA Quality Assurance Record

This report has been produced in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Report Writing 2017 (CIEEM, 2017), the CIEEM Biodiversity Net Gain Good Practice Principles for Development (CIEEM, 2016) and the CIEEM Biodiversity Net Gain Report and Audit Templates (CIEEM, 2021). The survey work has been undertaken in line with references within CIEEM's Source of Survey Guidance (CIEEM, 2017).

Description:	Biodiversity Net Gain Feasibility Report
Produced For:	Foreman Homes Ltd
Issue:	Draft
Report Reference:	24.0095.0002.D0
Date of Issue:	29th July 2024
Date of Survey Works:	23rd May 2024
Metric Version and Date:	DEFRA Statutory Biodiversity Metric Calculation Tool – 12th July 2024
Author:	[redacted] [redacted] Ecologist
Checked by:	[redacted] [redacted] Principal Ecologist
Reviewed by:	[redacted] [redacted] Managing Principal Ecologist

LAND EAST OF STATION HILL, BOTLEY, CURBRIDGE, HAMPSHIRE

BIODIVERSITY NET GAIN FEASIBILITY REPORT

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EXECUTIVE SUMMARY

Ecological Survey and Assessment Ltd (ECOSA) have been appointed by Foreman Homes Ltd to undertake a Biodiversity Net Gain Feasibility assessment of Land East of Station Hill, Botley. The purpose of the assessment is to determine the site's baseline condition and identify the feasibility of delivering a net gain in biodiversity following development at the site. The site is located to the east of Botley village centre in Hampshire and comprises two grassland fields separated by a ditch. The proposals entail the development of the site for housing. This report presents the findings of the ecological survey work undertaken to date

The main findings of the Biodiversity Net Gain Feasibility assessment are:

- The site comprises modified grassland, willow scrub, developed land; sealed surface, hedgerows, hedgerows with trees and a river and stream. The pre-development on-site baseline units are 23.30 habitat units, 10.59 hedgerow units and 1.95 watercourse units.

- The assessment of the current master plan provides post-development units are 26.05 habitat units, 10.74 hedgerow units and 2.27 watercourse units, representing a 11.80% gain of habitat units, a 1.46% loss of hedgerow units and 16.80% gain of watercourse units. The trading rules for both habitats and hedgerows are not being satisfied currently.

- Due to the hedgerows units being below the 10% target and the trading rules not being satisfied for hedgerows and habitats, the proposal in their current form, cannot achieve a net gain in biodiversity on site.

- Recommendations have been made to change the design to improve the biodiversity net gain on site, including the planning of medium distinctiveness scrub habitat in moderate condition and planting of more medium distinctiveness hedgerows in moderate condition.

- Further recommendations will be given as the proposals develop. Once the proposals are finalised, the report will be updated to the Biodiversity Net Gain Design Stage for submission to support the planning application.

1.0 INTRODUCTION

1.1 Background

Ecological Survey & Assessment Limited (ECOSA) have been appointed by Foreman Homes Ltd. to prepare a Biodiversity Net Gain Feasibility Report to determine the net gain/loss of biodiversity as a result of the Land East of Station Hill, Botley, Curbridge Hampshire SO30 2HA (hereafter referred to as the site).

Lindsay Carrington Ecological Services Ltd were appointed to undertake a Preliminary Ecological Appraisal of the site in 2020 (Lindsay Carrington Ecological Services, 2020). The appraisal identified the need to carry out further survey work at the site and ECOSA were appointed to complete this work. Further surveys included bat activity surveys, otter and water vole survey, hazel dormouse survey, breeding bird surveys, reptile survey and great crested newt Habitat Suitability Index (HSI) and environmental DNA (eDNA) survey. These surveys were completed in 2023 and the details are written up in the Interim Ecological Assessment (ECOSA, 2023).

This report presents the findings of the Biodiversity Net Gain Feasibility Assessment, based on calculations using the DEFRA Statutory Biodiversity Metric Calculation Tool (DEFRA, 2024).

1.2 The Site

The site is located in the village of Botley, Hampshire, centred on National Grid Reference (NGR) SU 5231 1294 (**Map 1**).

The site comprises two grassland fields separated by a ditch and bounded by hedgerows, trees and fencing. The site area measures approximately 11.6 hectares. A railway line and residential development is present to the north, Outlands Lane to the east, the A3051 to the south and the A334 Station Hill to the west.

The wider landscape comprises the village of Botley to the west with an open agricultural landscape to the north, east and south with areas of residential housing and the River Hamble 450 metres west.

1.3 Aims and Scope of Report

The aim of this document is to establish the feasibility of delivering measurable net gain in biodiversity using the DEFRA Statutory Biodiversity Metric Calculation Tool (DEFRA, 2024) by calculating:

- The pre-development biodiversity units;
- The post-development biodiversity units; and

- Making recommendations for the retention, enhancement and creation of habitats to achieve a minimum of 10% net gain at the site post-development.

This document is a stand-alone assessment of the pre-development value of the site in terms of the biodiversity units and the feasibility of the proposals to deliver biodiversity net gain post-development. This does not supersede the Ecological Impact Assessment (ECOSA, 2022) and should be read in-conjunction with that document.

1.4 Site Proposals

The development will include the construction of a new housing site; new green corridor; formation of new means of access on Outlands Lane and Station Hill and associated highway works.

The assessment made reference to an initial proposals plan produced by HGP Architects, dated May 2024 (Drawing No. SK02) (**Appendix 1**).

2.0 PLANNING POLICY CONTEXT

2.1 Introduction

This section summarises the planning policy as relevant to Biodiversity Net Gain within the Winchester City Council administrative area. This information is then used to make necessary make recommendations for mitigation and enhancements in order to ensure any future planning application accords with relevant planning policy.

2.2 Legislation

2.2.1 Environment Act

The legislative driver for Biodiversity Net Gain comes through the Environment Act 2021 which was adopted in February 2024. The primary legislation is set out within Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021). Schedule 7A of the Act sets out the following:

- Sets a measurable Biodiversity Net Gain[1] objective of 10% for all development for which planning permission is granted;
- The statutory biodiversity metric to calculate the Biodiversity Value of the site is produced and published by the Secretary of State;
- The pre-development and post-development biodiversity value of the site should be calculated using the statutory metric and based on the pre-development biodiversity value on the date of planning application. However, this may be agreed as being an alternative date by the local planning authority;
- All planning permissions (with a few exceptions) granted in England will be subject to a general condition requiring that a Biodiversity Net Gain Plan is submitted for approval to the planning authority prior to commencement of the development; and
- The post-development value must be calculated based on the development at completion and the obligation for maintained the proposed Biodiversity Net Gain measures will be a minimum of 30 years. This will only apply when the person submitting the biodiversity gain plan for approval proposes to carry out works in the course of the development that increase the biodiversity value of the onsite habitat, and the planning authority considers that the increase is significant in relation to the pre-development biodiversity value.

[1] Biodiversity Net Gain is defined as "development that leaves biodiversity in a better state than before" (CIEEM, 2016).

The Act also states that where activities are undertaken on a given site on or after the 30th January 2020, which result in a lower biodiversity value than otherwise would have been achieved (e.g. site clearance), then the biodiversity value should be calculated based on the value of the site prior to the activity commencing. The only exception is where activities undertaken are in accordance with an otherwise consented[2] activity, In practice this puts an onus on the applicant and the ecologist who completed the assessment to assume a "worst case scenario" approach where habitat clearance has been undertaken at the time of the site survey.

Where 10% Biodiversity Net Gain cannot be demonstrated on site the Act makes provision for offsite offsetting either through the purchase of biodiversity units on registered offsetting land or alternatively through the Government's credit system.

The government guidance on biodiversity states that some schemes (such has habitat provided to mitigate or compensator for protected species, nutrient neutrality, and provision of suitable alternative natural greenspace) can only be included in part (Gov, 2024). This means that the habitats provided can contribute up to no net loss within a biodiversity net gain assessment but cannot count towards net gain. To achieve the required biodiversity unit uplift beyond no net loss, there must be habitat provision or enhancement beyond the minimum requirements of the protected species, nutrient neutrality, and provision of suitable alternative natural greenspace.

2.3 Planning Policy

2.3.1 National Policy

The National Planning Policy Framework (NPPF) sets out the government's requirements for the planning system in England. The original document was published in 2012 with the most recent revised NPPF published in December 2023. A number of sections of the NPPF are relevant when taking into account development proposals and the environment. As set out within Paragraph 11 of the NPPF "*Plans and decisions should apply a presumption in favour of sustainable development*". However, Paragraph 188 goes on to state that "*The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.*".

The NPPF sets out that development proposals should not only minimise the impacts on biodiversity but also to provide enhancement. Paragraph 180 states that the planning system should contribute to and enhance the natural environment by

[2] For example a previous planning permission.

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

A number of principles are set out in Paragraph 186, including that where harm cannot be adequately avoided then it should be mitigated for, or as a last resort, compensated for. Where impacts occur on nationally designated sites, the benefits must clearly outweigh any adverse impact and incorporating biodiversity in and around developments should be encouraged. Specific reference is also made to the protection of irreplaceable habitats[3], including ancient woodland[4]. Where loss to irreplaceable habitats occurs planning permission would normally be refused unless there are wholly exceptional reasons and an adequate compensation strategy is in place. Paragraph 186 also states "*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*.". Paragraph 187 also sets out that potential SPAs, SACs and listed or proposed Ramsar sites or sites acting as compensation for SPAs, SACs and Ramsar sites, should receive the same protection as habitat sites.

In addition to the NPPF, Circular 06/05 provides guidance on the application of the law relating to planning and nature conservation as it applies in England. Paragraph 98 states "*the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat*". Paragraph 99 states "*it is essential that the presence or otherwise of a protected species, and the extent that they may be affected by the Proposed Project Development, is established before planning permission is granted*"."

2.3.2 Local Policy

Local planning policy within Winchester City Council is provided by the Local Plan Part 1 Joint Core Strategy 2013 and the Local Plan Part 2 adopted in April 2017. One policy is of direct relevance to biodiversity. The specific policy is:

Policy CP16: Biodiversity

This policy refers to the protection and enhancement of biodiversity and the need for proposals to deliver net gain for biodiversity. The policy also refers to the protection of

[3] The NPPF defines irreplaceable habitats as "*Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. They include ancient woodland, ancient and veteran trees, blanket bog, limestone pavement, sand dunes, salt marsh and lowland fen."*

[4] Natural England defines ancient woodland as "An area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites (PAWS)."

designated sites, enhancement of Biodiversity Opportunity Areas, and preventing fragmentation of the biodiversity network.

3.0 METHODOLOGY

3.1 Introduction

This section provides the methodology followed as part of the Biodiversity Net Gain Feasibility Assessment.

3.2 Desk Study

3.2.1 Biological Records Centre

Hampshire Biodiversity Information Centre (HBIC) was consulted on 28th May 2024 for records of Habitats of Principal Importance for the Conservation of diversity in England notified under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and as listed in the England Biodiversity List. This information is required to inform the assessment of the strategic significance of habitat features on site.

3.2.2 Multi-Agency Geographic Information for the Countryside

The Multi-Agency Geographic Information for the Countryside (MAGIC) database (DEFRA, 2024) was reviewed on 15th July 2024 to establish the location of statutory designated sites located within the vicinity of the site. This included a search for all internationally and nationally designated sites such as Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Wetlands of International Importance (Ramsar sites), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs) within one kilometre of the site.

A search was also made for the presence of any Habitats of Principal Importance potentially identified either on or adjacent to the site and any other features of importance which may require consideration when assessing the strategic significance of habitat features on site (see Paragraph 3.4.4).

3.2.3 Other Sources of Information

Given the requirement of the Environment Act that where operations have taken place which would decrease the unit value of the site after 30th January 2020, which are not otherwise part of a lawful operation, a review of publicly available aerial photography was undertaken to ensure that site conditions appear similar to those before the 30th January 2020.

In addition, a review was also undertaken of aerial photography to identify any potential features which may require consideration when assessing the strategic significance of habitat features on site.

3.3 Field Survey

3.3.1 Habitat Classification and Condition Assessment

Areas of existing habitat that make up the on-site baseline and their current condition were identified during a field survey undertaken by ECOSA on 23rd May 2024.

The field survey followed UK Habitat Classification (UKHab) methodology (The UK Habitat Classification Working Group, 2018). UKHab is the classification system used (with some minor modifications) within DEFRA's Statutory Biodiversity Metric Calculation Tool.

The field survey covered all accessible areas of the site within the defined red line boundary.

The UKHab Survey Application, developed using the digital survey platform Coreo was used to map habitats in the field, collect the field survey data and photograph the site.

The condition assessment was based on the criteria within the Statutory Biodiversity Metric Condition Assessments (DEFRA, 2024b). Some habitat types (for example most agricultural habitats and hardstanding) are not subject to assessment and are assigned default scores by the calculation tool.

3.3.2 Field Survey Details

The field survey was carried out by Samantha Faggetter, Ecologist of ECOSA on 23rd May 2024. The weather conditions were cloudy with approximately 50-75% cloud cover, an ambient temperature of 14 °C and light wind.

During the survey, the surveyor was equipped with a ladder, 10x40 binoculars, a high powered torch and a digital camera.

3.4 Biodiversity Metric Assessment Methods

The Biodiversity Net Gain Assessment was undertaken using DEFRA's Statutory Biodiversity Metric Calculation Tool (DEFRA, 2024).

The calculator provides a score which represents the biodiversity value of each area of habitat by applying multipliers, which can have a positive or negative effect on the overall score, based on a number of components of biodiversity quality. These components are set out in the paragraphs below.

Once these calculations are completed a pre- and post- development biodiversity value of the site is provided, which allows an assessment to be made of the net biodiversity gains achievable at the site.

As standard, the pre-development situation is based on the current ecological baseline as recorded during the field survey. However, the pre-development situation may be based on a historic ecological baseline if a review of aerial imagery indicates that activities have been undertaken at the site on or after the 30th January 2020, which would have resulted in the site having a lower biodiversity value than otherwise would have been achieved (e.g. site clearance). In these instances, in accordance with the Environment Act (see Paragraph 2.2.1) the biodiversity value should be calculated based on the value of the site prior to the activity commencing.

3.4.1 Pre-Development Assessment

The site boundary on which this assessment was based was received by ECOSA on 12th June 2024 provided by Master Land and Planning on behalf of Foreman Homes Ltd. The red line boundary on which the assessment is based is shown in Appendix 1.

The pre-development biodiversity value of the site is based on the baseline recorded during the condition assessment undertaken on the 23rd May 2024 and a review of aerial imagery.

3.4.2 Post-Development Assessment

The post-development biodiversity value of the site is based on information provided by Master Land and Planning on behalf of Foreman Homes Ltd in the form of Illustrative Masterplan – Foreman Homes, May 2024 (Drawing No. SK02)

In order to assess post-development habitats the Illustrative Masterplan was categorised into likely UKHab classifications based on the best information available at the time of preparation of this report.

3.4.3 Components of Biodiversity Quality

Habitat Type

The field survey followed UK Habitat Classification (UKHab) methodology (The UK Habitat Classification Working Group, 2018), to classify all habitats on site into specific habitat types. The UKHab classification system is used (with some minor modifications) within DEFRA's Statutory Biodiversity Metric Condition Assessments.

Habitat Area

Areas of existing, retained and proposed habitats were mapped and measured by ECOSA using QGIS. The extents of existing habitats are based on information collected during the field survey and using aerial photography and Ordnance Survey (OS) mapping resources.

The extents for retained and proposed habitats were based on the Illustrative Masterplan produced by HGP Architects, dated May 2024 (Drawing No. SK02) (**Appendix 1**). This information was subsequently used to generate a Post-Development Habitat Map in QGIS (**Map 3**).

Non-linear habitats are measured in hectares while linear features are measured by length in kilometres. Therefore, for the purposes of the calculation they are addressed separately with separate biodiversity units calculated for linear and non-linear features.

In both the pre-development and post-development mapping a Minimum Mapping Unit (MMU) is applied. This means that where individual habitats are smaller than the MMU these are not accounted for in the metric. The MMU for the baseline was the small-scale UKHab unit of five metres by five metres. For the post-development measurements this was based on plans provided by the design team which allowed mapping resolution to be increased to match the resolution of the plans provided.

In order to ensure that habitats can be tracked from pre-development through to post-development each polygon created is based on the final post-development layout. For example, if an individual area of developed land; sealed surface is being created on a an area of modified grassland this polygon will be visible both before (as modified grassland) and after (as developed land; sealed surface). The measurements are all made in metres squared and rounded to the nearest whole number. These measurements are then converted to hectares using the GIS import tool.

When measuring habitat areas for the purposes of inputting into the metric these polygons are combined into a single measurement based on that habitats characteristics (i.e. habitat, condition and strategic significance). The polygon numbers which are associated with each metric entry are then referenced in the GIS reference number section of the metric to allow cross referencing back to the pre and post-development habitat maps.

Habitat Distinctiveness

The distinctiveness of a habitat represents its relative quality and importance compared to other habitat types, based on an assessment of the distinguishing features of a habitat, including consideration of species richness, rarity and the degree to which a habitat supports species rarely found in other habitats. The Habitat Distinctiveness scores are automatically assigned by the calculator in accordance with the assessment methodology detailed in the Statutory Biodiversity Metric Draft User Guide (DEFRA, 2024a).

Habitat Condition

The condition of a habitat represents its relative quality judged against the perceived ecological optimum state for that particular habitat type. Therefore, habitat condition is specific to the habitat type and not comparable between habitat types (unlike Habitat Distinctiveness).

The condition assessment was based on the criteria within the Statutory Biodiversity Metric Condition Assessments (DEFRA, 2024b). Some habitat types (for example most agricultural habitats and hardstanding) are not subject to assessment and are assigned default scores by the calculation tool.

For proposed habitat creation, retention and enhancement a 'Target Condition' is assigned, this is the condition that it is proposed the habitat will achieve post-development and is based on the same criteria as the condition assessment.

Strategic Significance

The Strategic Significance multiplier gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives. Strategic significance is the local significance of the habitat based on its location and habitat type. The strategic significance of an area may change between pre- and post-development scenarios, where the strategic value of the habitat features has changed post-development. For example, newly developed residential units may no longer be strategically significant compared to the pre-development situation, whereas a newly created ecological corridor or buffer may be deemed as more strategically significant if created post-development.

Where a Local Nature Recovery Strategy (LNRS) has been published, this will set out the descriptions to allow strategic significance to be assigned. Where no LNRS has yet been published, a relevant planning authority should specify alternative documents for assigning the strategic significance. Examples include, but not limited to, Local Plans, Tree Strategies, Biodiversity Action Plans, and Green Infrastructure Strategies (DEFRA, 2024a). Where a LNRS has not yet been published, nor documents from the Local Planning Authority (LPA) issued, further information from within the DEFRA User Guide (DEFRA, 2024a) must be followed.

There are three categories of strategic significance.

High (Formally Identified In Local Strategy)

Where an LNRS has been published, this category can be applied where the habitat in question falls within the parameters of the Local Habitat Map as an area with potential

to deliver the priorities of the LNRS. If this is true, then strategic significance is recorded as 'Low' in the baseline, and 'High' in the post-intervention.

Where an LNRS has not been published, to allow high strategic significance to be assigned, the habitat is mapped and described as locally ecologically important within a specific location in the documents supplied by the LPA. If the project delivers the actions set out within the document, it can be recorded as 'High' in the post-intervention scenario. If the LPA document identified existing habitat as locally important, then strategic significance can be assigned as 'High' in the baseline.

Medium (Location ecologically desirable but not in local strategy)

This category cannot be applied where an LNRS has been published. Where the LPA have not identified a suitable alternative document, 'Medium' significance can only be assigned where it can be explained how the habitat type is ecologically important, demonstrated that the habitat is important in providing ecological linkage to other strategically significant locations, or by using professional judgement.

Low (Area/compensation not in local strategy/no local strategy)

Low significance is assigned where the definition for High (in LNRS) or for High or Medium (without LNRS) are not met. Within a scheme where there is an LNRS available, if the project is a potential area, if it does not deliver the specific actions outlined in the LNRS then it must be recorded as 'Low'.

Strategic Significance Context

At the time of submission of the planning application no Local Nature Recovery Strategy was in place which covered Winchester City Council district. It is understood that a Local Nature Recovery Strategy will be brought forward in due course.

Winchester City Council were contacted in order to determine whether there were "specified documents" which were to be used in the absence of the Local Nature Recovery Strategy. Winchester City Council responded via email stating they are following the guidance from the South Downs National Park Authority (SDNPA) regarding high strategic significance (South Downs National Park , 2024) and are classing any habitats located within the HBIC Ecological Network, as identified on their maps, as having medium strategic significance. The SDNPA guidance states that any areas falling within a statutory or non-statutory designated site or are classified as ancient woodland should be assessed as having high strategic significance. Any habitats falling outside of these definitions are to be classified as low strategic significance.

3.4.4 Additional Factors for Habitat Creation and Enhancement

In addition to the above components, several additional multipliers are assigned to habitats which are proposed to be created or enhanced post-development. These factors take into account the risks associated with attempting to establish new habitats and are detailed below.

Difficulty Risk

This is the risk associated with the delivery of biodiversity creation or enhancement due to uncertainty in the effectiveness of techniques to create or restore a particular habitat type. For some habitat types it is much more difficult to replicate habitat losses because of the unique physical and ecological features of the habitat.

Temporal Risk

For some habitat types, it can take a long time to achieve the Target Condition (see Habitat Condition paragraph above). If there is a significant time lag between initial habitat loss and establishing new habitats of adequate condition to compensate for this loss, there will be lower levels of biodiversity for this period of time. The temporal risk multiplier reflects this temporary reduction in quality.

In addition, where habitat creation is delayed from the initial impact (for example if a landscaping scheme is delivered in the latter stages of a construction program) an additional temporal risk is applied to represent the time delay from the loss of biodiversity though to creation/enhancement of new habitats.

Spatial Risk

Where habitat creation is being undertaken to offset habitat loss as a result of the proposals, it is beneficial for such offsetting to be delivered in proximity to the original loss, ideally within the site itself, so that the ecosystem services provided by such habitat will benefit receptors that are affected by the proposals. Where this is not possible, it is considered that locating off-site compensation within the local planning authority area or the same National Character Area represents a minimal risk. For offsetting delivered further afield a negative multiplier is applied.

Trading Rules

When undertaking habitat creation it is also necessary to take into account trading rules. This means that “trading down” must be avoided. Habitat losses need to be compensated for on a “like for like” or “like for better” basis. This means that newly created habitats should be similar (for example grassland type habitats being replaced by grassland type habitats) and new habitat should aim to achieve either a higher distinctiveness and/or better condition that those which are lost. The only exception applies where low distinctiveness habitats are lost these can be offset with different but higher distinctiveness habitats. Losses of irreplaceable or very high distinctiveness

habitat cannot be adequately accounted for through the metric. This should be avoided or a bespoke compensation scheme would need to be devised and agreed with the relevant authority.

3.5 Assumptions and Limitations

Whilst a best assessment is made of the post-development habitat types these do not always directly correlate into UKHab Classifications. Therefore, the creation of the habitats proposed are also subject to any future management and monitoring regime to ensure that the post-development creation and target condition is achieved.

The amount of developed land sealed surface has been assumed at this point based on the masterplan which is illustrative at this point and will be subject to change once the locations for gardens and houses are decided on.

4.0 BASELINE CONDITIONS

4.1 Introduction

This section sets out a summary of the baseline ecological conditions at the site, supported by a pre-development habitat map (**Map 2**) with the full baseline assessment and evaluation provided within the accompanying interim ecological appraisal (ECOSA, 2023). This section then establishes the baseline biodiversity units for the site.

4.2 Important Ecological Features

Following the completion of the Ecological Assessment the following Important Ecological Features were identified:

- Foraging and commuting bats;
- Otter;
- Hazel dormouse;
- Breeding birds; and
- Slow worm.

These features have been used to help design the Biodiversity Net Gain solution on site and also to assess additionality. For full understanding of the Important Ecological Features identified within the scheme please refer back to the Interim Ecological Assessment (ECOSA, 2023).

4.3 Baseline Habitats

4.3.1 Baseline Date

A review of historic aerial imagery as part of the desk study indicates that the land has been managed in its current use (agricultural) since before January 30th 2020, and there is no evidence of activities that would result in a lower biodiversity value at the site since this date, therefore the pre-development scenario has been based on the most recent field survey.

4.3.2 Habitat Type and Distinctiveness

The baseline habitats within the development red-line boundary are detailed within **Table 1**, **Table 2** and **Table 3** and are shown **Map 2**.

Table 1: Baseline Habitat Units

Habitat Ref.	Habitat Type	Habitat Distinctiveness	Habitat Area (Hectares)
1	Modified grassland	Low	11.6157
2	Willow scrub	Medium	0.0170
3	Developed land; sealed surface	Very Low	0.1151

Table 2: Baseline Linear Hedgerow Units

Hedgerow Number	Hedgerow Type	Hedgerow Distinctiveness	Hedgerow Length (Kilometres)
H1	Native hedgerow with trees	Medium	0.244
H5	Native hedgerow	Low	0.286
H4	Non-native and ornamental hedgerow	Very Low	0.072
H2, H3	Species-rich native hedgerow with trees	High	0.537

Table 3: Baseline Watercourse Habitat Units

Watercourse Ref.	Watercourse Type	Watercourse Distinctiveness	Watercourse Length (Kilometres)
1	Other rivers and streams	High	0.014
2	Culvert	Low	0.008
3	Other rivers and streams	High	0.016
4	Other rivers and streams	High	0.01
5	Other rivers and streams	High	0.153
6	Other rivers and streams	High	0.045

4.3.3 Condition Assessment

Details of the condition criteria met by each habitat are provided in **Appendix 3, Appendix 4** and **Appendix 5** with the results summarised **Table 4**, **Table 5** and **Table 6** below.

Table 4: Baseline Habitat Condition

Habitat Ref.	Condition Assessment Sheet	Habitat Condition
1	Modified grassland	Poor
2	Willow scrub	Poor
3	Developed land; sealed surface	N/A - Other

Table 5: Baseline Hedgerow Condition

Hedgerow Ref.	Condition Assessment Sheet	Hedgerow Condition
H1	Native hedgerow with trees	Good
H5	Native hedgerow	Moderate
H4	Non-native and ornamental hedgerow	Poor
H2, H3	Species-rich native hedgerow with trees	Moderate

Table 6: Baseline Watercourse Condition

Watercourse Ref.	Condition Assessment Sheet	Watercourse Condition
1	Other rivers and streams	Fairly Poor
2	Culvert	Poor
3	Other rivers and streams	Fairly Poor
4	Other rivers and streams	Fairly Poor
5	Other rivers and streams	Fairly Poor
6	Other rivers and streams	Fairly Poor

4.4 Strategic Significance

The Strategic Significance multiplier gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives. Strategic significance designations are based on the criteria set out in Paragraph 3.4.3.

4.4.1 Assigned Significance

All habitats pre and post development are assessed as being "Area/compensation not in local strategy/ no local strategy". This is due to none of the habitats being located within a statutory or non-statutory designated sites and not located within the Ecological Network map produced by HBIC.

4.5 Baseline Biodiversity Units

The pre-development habitat units for the site have been assessed as being 23.30, the hedgerow units as 10.59 and the watercourse units as 20.70. The summary of the baseline unit calculations are provided in **Table 8**, **Table 9** and **Table 10** with the full metric calculation provided in **Appendix 6**.

Table 8: Baseline Habitat Units

Habitat Ref.	Habitat Type	Biodiversity Units
1	Modified grassland	23.23
2	Willow scrub	0.07
3	Developed land; sealed surface	0.00
Total Units		**23.30**[5]

[5] When rounded up to two decimal places.

Table 9: Baseline Hedgerow Units

Hedgerow Ref.	Hedgerow Type	Biodiversity Units
H1	Native hedgerow with trees	2.93
H5	Native hedgerow	1.14
H4	Non-native and ornamental hedgerow	0.07
H2, H3	Species-rich native hedgerow with trees	6.44
Total Units		**10.59**[5]

Table 10: Baseline Watercourse Units

Watercourse Ref.	Watercourse Type	Biodiversity Units
1	Other rivers and streams	0.11
2	Culvert	0.01
3	Other rivers and streams	0.14
4	Other rivers and streams	0.08
5	Other rivers and streams	1.20
6	Other rivers and streams	0.41
Total Units		**1.95**[5]

5.0 PROPOSED DESIGN PROPOSALS

5.1 Introduction

This section set outs the proposed design and how it has been informed by Biodiversity Net Gain Design. The associated Post-Development Habitat Plan is provided in Map 3. Details of target conditions of the habitats to be created are provided in **Appendix 7, Appendix 8** and **Appendix 9**.

5.2 Key Habitats and Ecological Features

Consultation with the BRC and the MAGIC database produced no records of key habitats or other ecological features on or adjacent to the site, therefore there will be no impacts to these features as a result of the proposals.

5.3 Habitat Retention

Where possible the boundary hedgerows are being retained however some loss will take place to facilitate access. The habitats to be retained are set out in **Table 9**.

Table 7: Retained Hedgerows

Hedgerow Number	Hedgerow Type.	Hedgerow Length (Kilometres)	Retained Condition	Units
H1	Native hedgerow with trees	0.244	Good	2.93
H5	Native hedgerow	0.26	Moderate	1.04
H4	Non-native and ornamental hedgerow	0.072	Poor	0.07
H2, H3	Species-rich native hedgerow with trees	0.515	Moderate	6.18
Total Units				**10.22**

5.4 Habitat Enhancement

The water course sections that are not to be culverted will be enhanced through the removal of the schedule 9 species Himalayan balsam *Impatiens glandulifera*. Enhanced habitats are set out in **Table 18**. Details of target conditions of the habitats to be enhanced are provided in **Appendix 9**.

Table 8: Enhanced Watercourses

Watercourse Reference	Watercourse Type.	Watercourse Length (Kilometres)	Pre-Development Condition	Target Condition	Watercourse Units
1	Other rivers and streams	0.014	Fairly Poor	Moderate	0.11
2	Culvert	0.008	Poor	Other rivers and streams - Moderate	0.05
5	Other rivers and streams	0.153	Fairly Poor	Moderate	1.66
6	Other rivers and streams	0.045	Fairly Poor	Moderate	0.43
Total Units					**2.25**

5.5 Habitat Creation

The anticipated habitats, biodiversity units and target conditions to be created within the development red-line boundary are detailed below.

5.5.1 Habitat Type and Distinctiveness

The anticipated post-development habitats, distinctiveness and area within the development red-line boundary are detailed within **Table 11**, **Table 12** and **Table 13** and are shown on **Map 3.**

Table 9: Anticipated Post-Development Habitat Type, Distinctiveness and Area

Habitat Ref.	Habitat Type	Habitat Distinctiveness	Habitat Area (Hectares)
1	Modified grassland	Low	0.7707
2	Other neutral grassland	Medium	3.3415
3	Developed land; sealed surface	Very Low	7.4124
4	Sustainable drainage system	Low	0.2232
5	Urban tree	Medium	0.1669

Table 10: Anticipated Post-development Hedgerow Type, Distinctiveness and Area

Hedgerow Number	Hedgerow Type	Hedgerow Distinctiveness	Hedgerow Length (Kilometres)
H1	Native hedgerow	Low	0.156

Table 11: Anticipated Post-development Watercourse Type, Distinctiveness and Area

Watercourse Ref.	Watercourse Type	Watercourse Distinctiveness	Current Biodiversity Units
1	Culvert	Low	0.016
2	Culvert	Low	0.01

5.5.2 Condition Assessment

Details of the condition criteria met by each anticipated post-development habitat are provided in **Appendix 7, Appendix 8** and **Appendix 9** with the results summarised in **Table 14**, **Table 15** and **Table 16** below.

Table 12: Anticipated Post-development Habitat Condition

Habitat Ref.	Condition Assessment Sheet	Habitat Condition
1	Modified grassland	Moderate
2	Other neutral grassland	Moderate
3	Developed land; sealed surface	N/A – Other
4	Sustainable drainage system	Moderate
5	Urban tree	Poor

Table 13: Anticipated Post-development Hedgerow Condition

Hedgerow Ref.	Condition Assessment Sheet	Hedgerow Condition
H1	Native hedgerow	Moderate

Table 14: Anticipated Post-development Watercourse Condition

Watercourse Ref.	Condition Assessment Sheet	Watercourse Condition
1	Culvert	Poor
2	Culvert	Poor

5.5.3 Assigned Significance

All habitats pre and post development are assessed as being "Area/compensation not in local strategy/ no local strategy". This is due to none of the habitats being located within a statutory or non-statutory designated sites and not located within the Ecological Network map produced by HBIC.

5.6 Feasibility of Design

Post-development habitats are shown on Map 3. The anticipated post-development biodiversity units are 26.05 habitat units, 10.75 hedgerow units and 2.75 watercourse units.

The anticipated post-development habitats within the development red-line boundary are modified grassland, other neutral grassland, developed land; sealed surface, sustainable drainage system, urban tree, native hedgerow, other rivers and streams and culvert.

5.7 Stakeholder Engagement

Stakeholder Engagement will be undertaken as part of the planning process.

5.8 Risks

It is possible that some of the area currently categorised as other neutral grassland post-development may need to be categorised under a lower distinctiveness habitat type (such as modified grassland), or a lower habitat condition, if it requires significant management in order to serve its function as a public space

The assessment has predicted that 'moderate' condition can be achieved for the sustainable drainage system, this requires the design of the drainage system to meet the condition criteria. It is recommended that these criteria are discussed with a drainage specialist in order to ensure that they do not conflict with the requirements of the drainage feature to serve its primary function.

This assessment is currently assuming that all habitat creation would take place within 12 months of the baseline habitats being removed. If this is not the case then a time delay would need to be applied to the habitats which is likely to cause a decrease in

units provided by each habitat type and therefore more land for habitats may be required.

It will be necessary to ensure newly created habitats are appropriately managed in order to ensure they continue to meet the targeted condition criteria as set out in **Appendix 7**. It is recommended that an ecological management plan is developed to support any future planning application, so that it can be demonstrated to the local authority how these target conditions will be achieved/maintained and who will be responsible for ensuring these measures are implemented. This is compliant with Principle 8 of the Biodiversity Net Gain Good Practice Principles for Development (**Appendix 10**).

6.0 RESULTS AND CONCLUSIONS

6.1 Introduction

This section sets out the results of the Biodiversity Net Gain assessment. The full metric assessment is provided in **Appendix 5** with the Baseline Habitats and Post-Development Habitats shown on **Appendix 6, Appendix 7 and Appendix 8** respectively.

6.2 Results

The baseline biodiversity units are 23.30 habitat units[5], 10.59 hedgerow units[5] and 1.95 watercourse units[5]. The anticipated post-development biodiversity units are 26.05 habitat units[5], 10.75 hedgerow units[5] and 2.27 watercourse units[5].

This represents a net gain of 2.75 habitat units, a net gain of 0.15 hedgerow units and a net gain of 0.33 watercourse units which is a gain of **11.80% habitat units, a net loss of 1.46% hedgerow units and a net gain of 16.80% watercourse units**.

The trading rules have not been achieved in relation to habitat and hedgerow units but have been achieved in relation to watercourse units.

6.3 Further Actions

Creation of additional natural habitats within the developable area, such as vegetated gardens, would increase habitat unit value, this should be considered as the detailed design of the developable area is brought forward. If the current illustrated proposals plan was to be implements the following measures would be requites to ensure the site is able to achieve net gain on-site.

- To satisfy the trading rules for habitats planting of a medium distinctiveness scrub habitat such as mixed scrub, willow scrub or hazel scrub would be required. A total of 0.13 habitat units are required which equated to approximately the planting of 0.02 hectares.

- To satisfy the trading rules for linear habitats an additional 0.29 units need to come from a high distinctiveness linear habitat such as Species-rich native hedgerow with trees, Species-rich native hedgerow - associated with bank or ditch or Native hedgerow with trees - associated with bank or ditch in moderate condition. This equates to 0.035 kilometres of linear habitat.

- To achieve a 10% net gain and satisfy the trading rules for linear habitats a minimum of 0.29 units need to come from a high distinctiveness linear habitat and 0.67 units need to come from at least medium distinctiveness linear habitats. Medium distinctiveness linear habitats include Species-rich native

hedgerow, Native hedgerow with trees and ecologically valuable line of trees. This equates to 0.035 kilometres of high distinctiveness and 0.190 kilometres of medium distinctiveness linear habitats.

6.4 Conclusion

Given the findings of this reports it is not possible for this scheme to achieve the targeted Biodiversity Net Gain in its current design. Further actions will need to be taken for the scheme deliver Biodiversity Net Gain in accordance with the Environment Act and local planning policy

7.0 REFERENCES

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Map 1 Site Location Plan

STATION HILL (LAND AT), BOTLEY, CURBRIDGE, HAMPSHIRE

BIODIVERSITY NET GAIN ASSESSMENT

Map 1 - Site Location Plan

Client:	Master Land & Planning
Date:	June 2024
Status:	Draft

KEY

Site Boundary

1:10,000

0 100 200 300 400 m

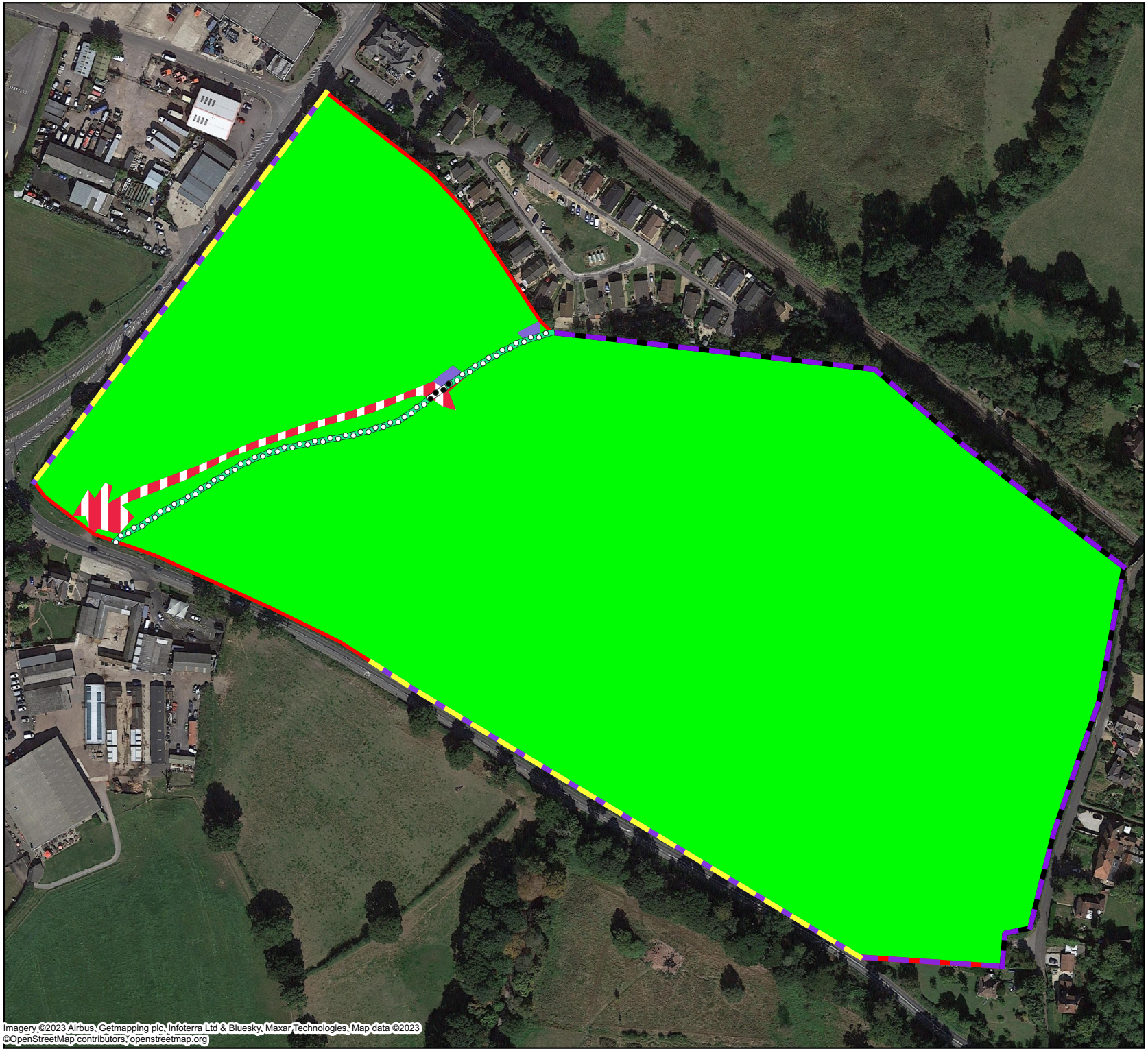
N

Prepared by: KM	Date: 050624
Last amended by: N/A	Date: N/A

ECOSA
Ecological Survey & Assessment
A Trinity Consultants Company

ECOSA Ltd., Ten Hogs House, Manor Farm Offices,
Flexford Road, North Baddesley, Hampshire SO52 9DF
Telephone: 02380 261065 Email: info@ecosa.co.uk
Web: www.ecosa.co.uk

Map 2 Baseline Habitats



STATION HILL (LAND AT), BOTLEY, CURBRIDGE, HAMPSHIRE

BIODIVERSITY NET GAIN ASSESSMENT

Map 2 - Baseline Habitats

Client:	Master Land & Planning
Date:	July 2024
Status:	Draft

KEY

- Site Boundary
- Developed land; sealed surface
- Modified grassland
- Willow scrub
- Non-native and ornamental hedgerow
- Native hedgerow
- Native hedgerow with trees
- Species-rich native hedgerow with trees
- Culvert
- Other rivers and streams

1:2,600

0 25 50 75 100 m

N

Prepared by: KM	Date: 050624
Last amended by: KM	Date: 230724

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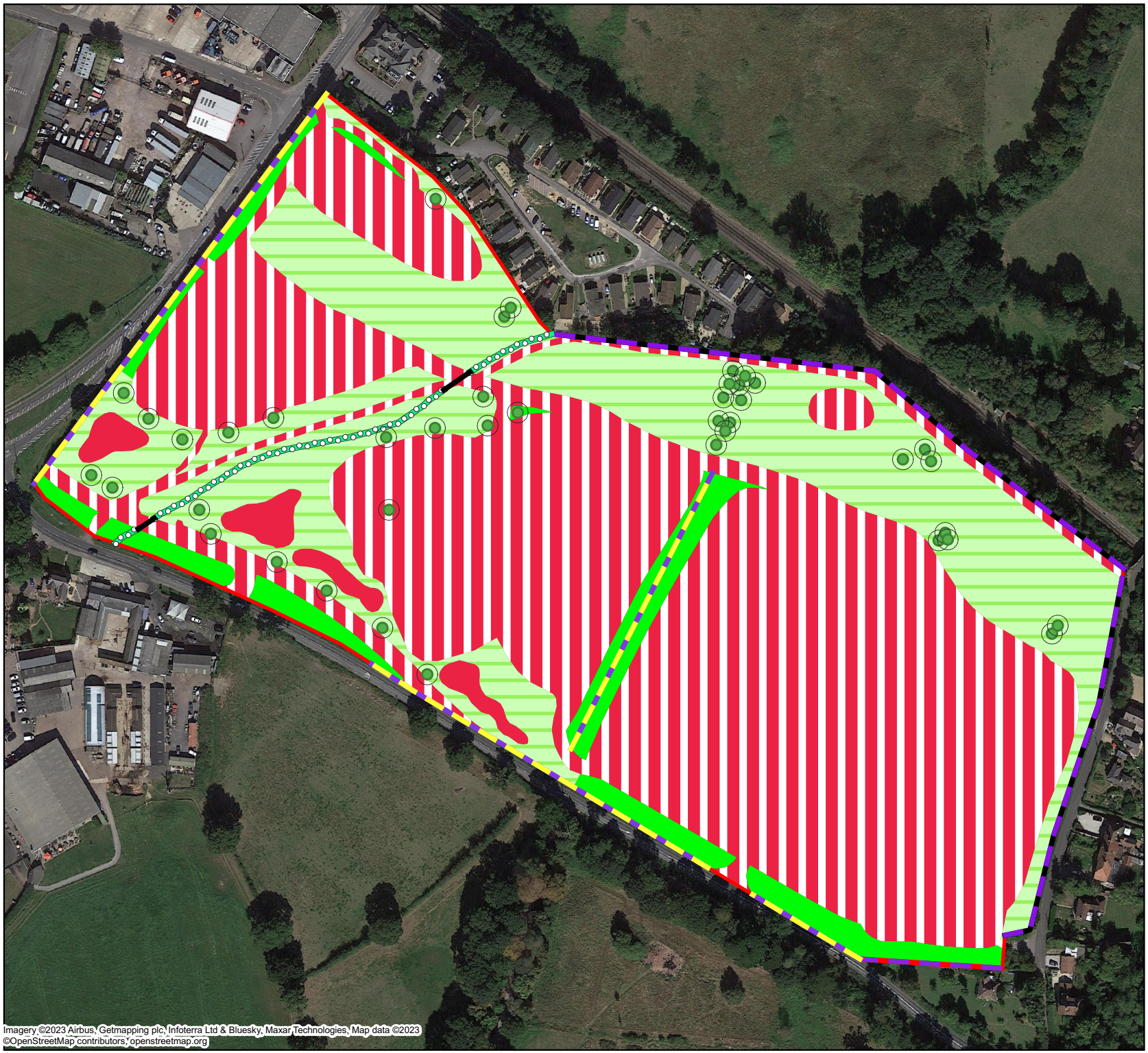
Map 3 Post-Development Habitats



STATION HILL (LAND AT), BOTLEY, CURBRIDGE, HAMPSHIRE

BIODIVERSITY NET GAIN ASSESSMENT

Map 3 - Post Development Habitats

Client:	Master Land & Planning
Date:	July 2024
Status:	Draft

KEY

- Site Boundary
- Developed land; sealed surface
- Modified grassland
- Other neutral grassland
- Sustainable drainage system
- Non-native and ornamental hedgerow
- Native hedgerow
- Native hedgerow with trees
- Species-rich native hedgerow with trees
- Other rivers and streams
- Lost
- Proposed Small Rural Tree

1:2,600

0 25 50 75 100 m

N

Prepared by: KM	Date: 050624
Last amended by: KM	Date: 230724

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Appendix 1 Site Proposals Plan

Please Note:

This drawing can only be scaled for planning purposes. Dimensions to be checked on site and any discrepancies are to be highlighted to the Architect prior to construction.

Topographical / Ordnance Survey information shown has been prepared by a third party, HGP accept no responsibility for accuracy or completeness of the survey.

This drawing is to be read in conjunction with all other project drawings, construction notes and / or project specifications including those by other project consultants and specialists. All discrepancies should be reported immediately.

Design subject to detail development / approval. Measurements and accommodation schedules subject to amendments following coordinated input by others. Costings cannot be finalised until approval /confirmation by relevant authorities and Client.

Key:

- Existing Public Right of Way
- Existing Cycle Route
- Proposed Vehicular Access
- Proposed Pedestrian/Cyclist Access

FOREMAN HOMES

Rev.	Description	DATE	DB	CB
A	Main Access Relocated to Match Highways' Design	12.06.24	VP	DY

Illustrative Masterplan

PROJECT	**JOB NO.**
Station Hill, Botley	22.137
SCALE @A1	**DATE**
1:1250	May '24
DRAWN BY/CHECKED BY	**REVISION**
VP /HJE	A
DWG#	**STATUS**
SK02	Preliminary

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Appendix 2 Baseline Habitat Condition Assessment

Habitat Ref.	1
Broad Habitat	Grassland
Habitat Type	Modified grassland

	Indicator	Condition
A	There are 6-8 vascular plant species per m2 present, including at least 2 forbs (these may include those listed in Footnote 1). **Note - this criterion is essential for achieving Moderate or Good condition**	FALSE
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	FALSE
C	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	TRUE
D	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	TRUE
E	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	TRUE
F	Cover of bracken less than 20%.	TRUE
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species[1] make up less than 5% of ground cover.	TRUE
	Total Score	**1**
	All Essential Criteria Met?	**No**
	Condition	**Poor**

Habitat Ref.	2
Broad Habitat	Heathland and shrub
Habitat Type	Willow scrub

	Indicator	Condition
A	"The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). - At least 80% of scrub is native, - There are at least three native woody species, - No single species comprises more than 75% of the cover (except hazel Corylus avellana, common juniper Juniperus communis, sea buckthorn Hippophae rhamnoides (only in its restricted native range), or box Buxus sempervirens, which can be up to 100% cover)."	FALSE
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran shrubs are all present.	FALSE
C	There is an absence of invasive non-native plant species4 (as listed on Schedule 9 of WCA5) and species indicative of suboptimal condition6 make up less than 5% of ground cover.	TRUE
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	TRUE
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	FALSE
	Total Score	**1**
	Condition	**Poor**

Habitat Ref.	3
Broad Habitat	Urban
Habitat Type	Developed land; sealed surface
N/A - Other	

Appendix 3 Baseline Hedgerow Condition Assessment

Habitat Ref.	H1
Broad Habitat	Hedgerow and lines of trees
Habitat Type	Native hedgerow with trees

	Indicator	Condition
A1	**Height** >1.5m average along length	TRUE
A2	**Width** >1.5m average along length	TRUE
B1	**Gap - Hedge Base** Gap between ground and base of canopy <0.5m for 90% of length (unless line of trees)	TRUE
B2	**Gap - Hedge Canopy Continuity** Gaps make up <10% of total length, and no canopy gaps >5m.	TRUE
C1	**Undisturbed Ground and Perennial Vegetation** >1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: Measured from outer edge of hedgerow; and Is present on at least one side of the hedge	TRUE
C2	**Undesirable Perennial vegetation** Plant species indicative of nutrient enrichment of soils dominate	TRUE
D1	**Invasive and neophyte species** >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	TRUE
D2	**Current damage** >90% of the hedgerow or undisturbed ground is free of damage caused by human activities	TRUE
Applicable to Hedgerows with Trees only		
E1	**Tree Age** At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	FALSE
E2	**Tree Health** At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	TRUE
	Group A Score:	**2**
	Group B Score:	**2**
	Group C Score:	**2**
	Group D Score:	**2**
	Group E Score:	**1**

No. of failures:	**1**
Number of functional groups where both attributes failed:	**0**
Condition	**Good**

Habitat Ref.	H5
Broad Habitat	Hedgerow and lines of trees
Habitat Type	Native hedgerow

	Indicator	Condition
A1	**Height** >1.5m average along length	FALSE
A2	**Width** >1.5m average along length	FALSE
B1	**Gap - Hedge Base** Gap between ground and base of canopy <0.5m for 90% of length (unless line of trees)	TRUE
B2	**Gap - Hedge Canopy Continuity** Gaps make up <10% of total length, and no canopy gaps >5m.	TRUE
C1	**Undisturbed Ground and Perennial Vegetation** >1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: Measured from outer edge of hedgerow; and Is present on at least one side of the hedge	TRUE
C2	**Undesirable Perennial vegetation** Plant species indicative of nutrient enrichment of soils dominate	TRUE
D1	**Invasive and neophyte species** >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	TRUE
D2	**Current damage** >90% of the hedgerow or undisturbed ground is free of damage caused by human activities	TRUE
Applicable to Hedgerows with Trees only		
E1	**Tree Age** At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	N/A
E2	**Tree Health** At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	N/A
	Group A Score:	**0**
	Group B Score:	**2**
	Group C Score:	**2**
	Group D Score:	**2**

Group E Score:	**N/A**
No. of failures:	**2**
Number of functional groups where both attributes failed:	**1**
Condition	**Moderate**

Habitat Ref.	H4
Broad Habitat	Hedgerow and lines of trees
Habitat Type	Non-native and ornamental hedgerow
No assessment required – condition fixed at poor	

Habitat Ref.	H2, H3
Broad Habitat	Hedgerow and lines of trees
Habitat Type	Species-rich native hedgerow with trees

	Indicator	Condition
A1	**Height** >1.5m average along length	TRUE
A2	**Width** >1.5m average along length	TRUE
B1	**Gap - Hedge Base** Gap between ground and base of canopy <0.5m for 90% of length (unless line of trees)	TRUE
B2	**Gap - Hedge Canopy Continuity** Gaps make up <10% of total length, and no canopy gaps >5m.	FALSE
C1	**Undisturbed Ground and Perennial Vegetation** >1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: Measured from outer edge of hedgerow; and Is present on at least one side of the hedge	FALSE
C2	**Undesirable Perennial vegetation** Plant species indicative of nutrient enrichment of soils dominate	TRUE
D1	**Invasive and neophyte species** >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	TRUE
D2	**Current damage** >90% of the hedgerow or undisturbed ground is free of damage caused by human activities	TRUE
Applicable to Hedgerows with Trees only		
E1	**Tree Age** At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	FALSE

E2	**Tree Health** At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	TRUE
	Group A Score:	**2**
	Group B Score:	**1**
	Group C Score:	**1**
	Group D Score:	**2**
	Group E Score:	**1**
	No. of failures:	**3**
	Number of functional groups where both attributes failed:	**0**
	Condition	**Moderate**

Appendix 4 Baseline Watercourse Condition Assessment

Watercourse Ref.	W1
Broad Habitat	Rivers and lakes
Habitat Type	Other river and streams

River Type Indicators		***Positive Condition Indicators***			***Negative Condition Indicators***	
Indicator	**Current Score**		**Indicator**	**Current Score**	**Indicator**	**Current Score**
A1 - Braiding Index	1	Bank Top	B1 Bank top vegetation structure	2	B4 Bank top NNIPS cover	-2
A2 - Sinuosity Index	1.024		B2 Bank top tree feature richness	0	B5 Bank top managed ground cover	-1
A3 - Anabranching Index	1		B3 Bank top water-related features	0		
A4 - Level of Confinement	Unconfined	Bank Face	C1 Bank face riparian vegetation structure	2	C7 Bank face artificial bank profile extent	0
A5 - Reach Valley Gradient	0.01320		C2 Bank face tree feature richness	1	C8 Bank face reinforcement extent	-1
A6 - Bedrock Reach?	No		C3 Bank face natural bank profile extent	3	C9 Bank face reinforcement material severity	-2
A7 - Coarsest Bed Material	Gravel-Pebble		C4 Bank face natural bank profile richness	4	C10 Bank face NNIPS cover	-3
A8 - Average Bed Material	Sand		C5 Bank face natural bank material richness	2		
River Type	H		C6 Bank face bare sediment extent	1		
Planform: Straight/Sinuous Bed Material: Sand (or gravel/cobble) Level of Confinement: Unconfined or partly confined (sometimes confined)		Channel Margin	D1 Channel margin aquatic vegetation extent	2	D5 Channel margin artificial features	-1
			D2 Channel margin aquatic morphotype richness	1		
			D3 Channel margin physical feature extent	1		
			D4 Channel margin physical feature richness	1		

	Channel Bed	E1 Channel aquatic morphotype richness	2	E7 Channel bed siltation	0
		E2 Channel bed tree features richness	2	E8 Channel bed reinforcement extent	0
		E3 Channel bed hydraulic features richness	2	E9 Channel bed reinforcement severity	0
		E4 Channel bed natural features extent	0	E10 Channel bed artificial features severity	-4
		E5 Channel bed natural features richness	0	E11 Channel bed NNIPS extent	0
		E6 Channel bed material richness	3	E12 Channel bed filamentous algae extent	0
		Preliminary Condition Score	0.4493927	**Final Condition**	Fairly Poor

Appendix 5 Detailed Metric Calculation

Appendix 6 Post-Development Target Created Habitat Condition

Broad Habitat	Grassland	
Habitat Type	Modified grassland	
Treatment	Created	
Description		
	Indicator	**Condition**
A	There are 6-8 vascular plant species per m2 present, including at least 2 forbs (these may include those listed in Footnote 1). **Note - this criterion is essential for achieving Moderate or Good condition**	TRUE
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	FALSE
C	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	TRUE
D	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	FALSE
E	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	TRUE
F	Cover of bracken less than 20%.	TRUE
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species[1] make up less than 5% of ground cover.	TRUE
	Total Score	**5**
	All Essential Criteria Met?	**Yes**
	Condition	**Moderate**

Broad Habitat.	Grassland	
Habitat Type	Other neutral grassland	
Treatment	Created	
Description		
	Indicator	**Condition**
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description). **Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**	TRUE

B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	FALSE
C	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	TRUE
D	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	TRUE
E	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of undesirable species and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.	TRUE
	Total Score	**4**
	Condition	**Moderate**

Broad Habitat	Urban
Habitat Type	Developed land; sealed surface
Treatment	Created
Description	
N/A - Other	

Broad Habitat.	Urban	
Habitat Type	Sustainable drainage system	
Treatment	Created	
Description		
	Indicator	**Condition**
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	TRUE
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	TRUE
C	Invasive non-native plant species (listed on Schedule 9 of WCA1) and others which are to the detriment of native wildlife (using professional judgement) cover less than 5% of the total vegetated area. **Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).**	TRUE
Additional Criteria - must be assessed for **Bioswale and SuDS** habitat types only:		

E1	Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife.	TRUE
E2	The vegetation is comprised of plant species suited to wetland or riparian situations.	FALSE
	Total Score	**4**
	All core criteria met?	**Yes**
	Condition	**Moderate**

Appendix 7 Post-Development Target Created Hedgerow Condition

Broad Habitat	Hedgerow and lines of trees	
Habitat Type	Native hedgerow	
Treatment	Created	
	Indicator	**Condition**
A1	**Height** >1.5m average along length	TRUE
A2	**Width** >1.5m average along length	FALSE
B1	**Gap - Hedge Base** Gap between ground and base of canopy <0.5m for 90% of length (unless line of trees)	TRUE
B2	**Gap - Hedge Canopy Continuity** Gaps make up <10% of total length, and no canopy gaps >5m.	TRUE
C1	**Undisturbed Ground and Perennial Vegetation** >1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: Measured from outer edge of hedgerow; and Is present on at least one side of the hedge	FALSE
C2	**Undesirable Perennial vegetation** Plant species indicative of nutrient enrichment of soils dominate	TRUE
D1	**Invasive and neophyte species** >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	TRUE
D2	**Current damage** >90% of the hedgerow or undisturbed ground is free of damage caused by human activities	FALSE
Applicable to Hedgerows with Trees only		
E1	**Tree Age** At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	N/A
E2	**Tree Health** At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	N/A
	Group A Score:	**1**
	Group B Score:	**2**
	Group C Score:	**1**
	Group D Score:	**1**
	Group E Score:	**N/A**
	No. of failures:	**3**
	Number of functional groups where both attributes failed:	**0**
	Condition	**Moderate**

Appendix 8 Post-Development Target Created Watercourse Condition

Project Number			2			
Project Name			Station Hill, Botley			
Reach Name						
River Type Indicators		***Positive Condition Indicators***			***Negative Condition Indicators***	
Indicator	**Current Score**		**Indicator**	**Current Score**	**Indicator**	**Current Score**
A1 - Braiding Index	1	Bank Top	B1 Bank top vegetation structure	2	B4 Bank top NNIPS cover	0
A2 - Sinuosity Index	1.024		B2 Bank top tree feature richness	0	B5 Bank top managed ground cover	-1
A3 - Anabranching Index	1		B3 Bank top water-related features	0		
A4 - Level of Confinement	Unconfined	Bank Face	C1 Bank face riparian vegetation structure	2	C7 Bank face artificial bank profile extent	0
A5 - Reach Valley Gradient	0.0132		C2 Bank face tree feature richness	1	C8 Bank face reinforcement extent	-1
A6 - Bedrock Reach?	No		C3 Bank face natural bank profile extent	3	C9 Bank face reinforcement material severity	-2
A7 - Coarsest Bed Material	Gravel-Pebble		C4 Bank face natural bank profile richness	4	C10 Bank face NNIPS cover	0
A8 - Average Bed Material	Sand		C5 Bank face natural bank material richness	2		

River Type	H		C6 Bank face bare sediment extent	1		
Planform: Straight/Sinuous Bed Material: Sand (or gravel/cobble) Level of Confinement: Unconfined or partly confined (sometimes confined)		Channel Margin	D1 Channel margin aquatic vegetation extent	2	D5 Channel margin artificial features	-1
			D2 Channel margin aquatic morphotype richness	1		
			D3 Channel margin physical feature extent	1		
			D4 Channel margin physical feature richness	1		
		Channel Bed	E1 Channel aquatic morphotype richness	2	E7 Channel bed siltation	0
			E2 Channel bed tree features richness	2	E8 Channel bed reinforcement extent	0
			E3 Channel bed hydraulic features richness	2	E9 Channel bed reinforcement severity	0
			E4 Channel bed natural features extent	0	E10 Channel bed artificial features severity	-4
			E5 Channel bed natural features richness	0	E11 Channel bed NNIPS extent	0
			E6 Channel bed material richness	3	E12 Channel bed filamentous algae extent	0
			Preliminary Condition Score	0.8340081	**Final Condition**	Moderate

Appendix 9 Biodiversity Net Gain Good Practice Principles for Development

Table 15: Biodiversity Net Gain Good Practice Principles for Development

Principle	Descriptor	Proposal Design
Principle 1. Apply the Mitigation Hierarchy	Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.	It has been necessary for the baseline habitats (which are largely of low distinctiveness) to be cleared to facilitate the development. Where possible the majority of these habitats will be replaced with habitats of higher distinctiveness/better condition once the development has been completed.
Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere	Avoid impacts on irreplaceable biodiversity - these impacts cannot be offset to achieve No Net Loss or Net Gain.	The scheme currently does not avoid impacts but ways to mitigate and enhance the site have been shown. With some changes to the proposals biodiversity net gain should be possible within the site boundary.
Principle 3. Be inclusive and equitable	Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to Net Gain. Achieve Net Gain in partnership with stakeholders where possible and share the benefits fairly among stakeholders.	Stakeholder engagement will take place as part of the planning process
Principle 4. Address risks	Mitigate difficulty, uncertainty and other risks to achieving Net Gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.	We have targeted habitats which are realistic and achievable based on the proposed long-term management of the site.
Principle 5. Make a measurable Net Gain contribution	Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.	A measurable net gain has been not established through this document however measure required to achieve a measurable net gain have been identified.

Principle	Descriptor	Proposal Design
Principle 6. Achieve the best outcomes for biodiversity	Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly-justified choices when: ▪ Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses ▪ Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation ▪ Achieving Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels ▪ Enhancing existing or creating new habitat ▪ Enhancing ecological connectivity by creating more bigger, better and joined areas for biodiversity	The changes to the proposals required to achieve a scheme design that can deliver a 10% net gain and satisfy the trading rules for habitats and hedgerows on site have been identified. The proposals for the watercourse will result in a 10% and satisfy the trading rules so no additional measures are required for this element of the biodiversity net gain assessment.
Principle 7. Be additional	Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e., do not deliver something that would occur anyway).	The scheme will be designed to deliver a range of habitats including open space which will be managed for wildlife.
Principle 8. Create a Net Gain legacy	Ensure Net Gain generates long-term benefits by: ▪ Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity ▪ Planning for adaptive management and securing dedicated funding for long-term management ▪ Designing Net Gain for biodiversity to be resilient to external factors, especially climate change ▪ Mitigating risks from other land uses ▪ Avoiding displacing harmful activities from one location to another ▪ Supporting local-level management of Net Gain activities	The delivery of an appropriate long-term management plan will secure the Habitat Mitigation and Management Plan.

Principle	Descriptor	Proposal Design
Principle 9. Optimise sustainability	Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.	The habitat creation measures proposed have been located to provide a positive enhancement to both the sites landscape and biodiversity.
Principle 10. Be transparent	Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.	The preparation of this report sets out transparently how biodiversity net gain could be designed and achieved at the site.