# BNG Assessment & HMMP

Land at Campfields, Southwater

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| **Report** | Biodiversity Net Gain Assessment, Management and Monitoring Plan |
| **Site Name** | Land at Campfields, Southwater |
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| **Checked by** | Lyndsey Barratt BSc (Hons) PGCert MCIEEM |
| **Client** | Miller Homes |
| **Date of Issue** | April 2025 |
| **Status** | Final copy ready for submission |



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## 1.0 INTRODUCTION

### 1.1 Background

Ecosupport Ltd. were commissioned by Miller Homes to undertake a Biodiversity Net Gain Assessment at 'Land at Campfields, Southwater' and detail the results of this assessment.

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

This report will also address how habitats will be enhanced and created to achieve a net gain in biodiversity units and how these habitats will be managed and monitored for at least 30 years. The following points will be covered (DEFRA, 2023a):

- How off-site gains and / or significant on-site enhancements will be managed, taking into account any legal restrictions and requirements
- When and how habitats will be monitored
- When and how monitoring results will be reported
- When and how management proposals will be reviewed
- How habitats will be restored if the management plan is not working

***This report should be read in conjunction with the associated EcIA (Ecosupport, 2024).***

### 1.2 Site Location and Description

The site is comprises of an area of plantation woodland located to the south of Centenary Road, Southwater, Horsham, RH13 9FR (**Fig 1**) (central Grid Reference: TQ 16043 24858). The site is bound by a residential development to the north, the A34 to the east, an area of agricultural grassland to the south and an area of woodland to the west. The wider environ is largely rural situated on the outskirts of Southwater, a village to the south of Horsham.



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**Figure 1.** Site boundary (Google Satellite, 2025).


### 1.3 Development Proposals

The full scale of the proposals in not yet finalised however, it is understood the proposals entail the construction of up to 82 dwellings (number tbc) with associated access and landscaping works (**Fig 2**).

**Figure 2**. Illustrative Master plan (The Core 2025)




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## 2.0 METHODOLOGY

The methodology for the assessment follows the Natural England Statutory Biodiversity Metric habitat condition assessment protocols and uses the Statutory Biodiversity Metric calculation tool to calculate biodiversity losses and gains (DEFRA, 2023b).

### 2.1 Habitat Assessment

Habitats on site pre-development were identified in accordance with the categories specified for a UK Habitats survey using Habitat Definitions Version 2.0 (UKHab Ltd., 2023). This was chosen as an appropriate habitat categorisation system as it fits within the Statutory Biodiversity Metric calculation. The habitat definitions used were based on those identified during the walkover on the 28th March 2023. An updated walkover was carried out on the the 13th March 2024 by Lyndsey Barrat BSc (Hons) PGCert ACIEEM and Amy Johnston BSc (Hons). The EcIA should be referred to for information on UKHab habitat classifications on site and plant species recorded.

A condition assessment, in line with the Statutory Biodiversity Metric Technical Annex 1, was carried out on site by Lyndsey Barrat, Senior Ecologist with Ecosupport, and Amy Johnston BSc (Hons), Project Ecologist with Ecosupport, on the 18th March 2023 and updated on the 13th March 2024. Another visit of several areas of grassland offsite was undertaken by Amy Johnston BSc (Hons) on the 9th July 2024. The area of identified habitats is calculated in hectares (ha), ignoring linear features or ditches (the area is measured to the centre line of such features). The length of linear features is measured separately in kilometres (km). The dominant habitat type was selected, according to those defined by UKHab Ltd (2023). Where there was disparity between the UK classification for habitat type and those present within the Statutory Biodiversity Metric calculator tool, this was noted within the condition assessment tables.

### 2.2 Habitat Distinctiveness

Each habitat was assigned a score for distinctiveness, according to the Statutory Biodiversity Metric calculator tool (DEFRA, 2023b). This ranged from Poor - High for most habitats, or Not Applicable (e.g. Developed Land – Sealed Surface). Using the tool, habitats were assigned a score based on their distinctiveness.

### 2.3 Habitat Condition

The condition of each habitat was assessed following criteria set out in the Statutory Biodiversity Metric Technical Annex 1 (DEFRA, 2023b), which includes detailed assessment criteria for different habitats. Full results of the condition assessments can be found within **Section 3.0**. The condition of each habitat was assessed individually on site but, where the condition was found to be the same across several parcels, these were grouped together.

### 2.4 Strategic Significance

Each habitat was assigned a strategic significance in line with the Statutory Biodiversity Metric User Guide (DEFRA, 2023b).

### 2.5 Limitations

There were not considered to be any significant limitations on the results of the habitat survey with all areas of the site accessible. Despite the initial condition assessment being conducted outside of the optimal season for vascular flowering plants, given the nature of the habitat types present and the



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species recorded, this is not considered to have affected the accuracy of the site's valuation. As well as this, there has been a continuous presence on site between March and October 2023 so any changes to the habitat condition could be noted.



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## 3.0 EXISTING HABITATS AND DEVELOPMENT PROPOSALS

The habitats on site were categorised according to UK Hab Ltd. Habitat Definitions Version 2.0 (2023) as listed below (please refer to the **Baseline Habitats map appended** for information on the locations of these habitats on site):

- w1g – Other woodland; broadleaved with scattered scrub (10) and plantation (36) (**Fig 3**)
- g4 – Modified grassland (**Fig 4**)
- w1g6 – Line of trees (33) with scattered scrub (10) (**Fig 5**)
- r1 - Standing open water and canals with ponds (19) (**Fig 6**)

**Figure 3.** View of the woodland present on site (taken March 2023)



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**Figure 4.** View of the modified grassland on site (taken March 2023)

**Figure 5.** View of the line of trees present on the site (taken March 2023)



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**Figure 6a.** View of the pond 1 present (taken March 2023)

**Figure 6b.** View of pond 2 present on site (taken March 2023)

### 3.1 Baseline Condition Assessment

The following tables provide detail as to the condition assessments undertaken of the non-linear (**Table 1**) and linear (**Table 2**) habitats present on site with reference to the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b).



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**Table 1.** Existing non-linear habitats present on site including details as to their condition and the condition assessment criteria that have been met / failed as per the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b).

| Habitat Type | Area (ha) | Condition | Condition Assessment Notes | Strategic Significance |
|---|---|---|---|---|
| Other Woodland; broadleaved | 3.144 | Poor | The woodland on site largely comprised of plantation Downy Birch (*Betula pubescens*) with a bramble understory. There was no evidence of browsing damage or invasive species present. The trees are healthy but the woodland has a lack of structure, open space and dead wood.<br><br>Specifically, the woodland scored 22 out of the possible 39, with the following scores; A – 1, B – 3, C – 3, D – 1, E – 1, F – 1, G – 1, H – 3, I – 1, J – 2, K – 1, L – 2, M - 2 | Location ecological desirable but not in local strategy |
| Modified Grassland | 1.137 | Poor | Mown Modified Grassland with typical species present (e.g. Perennial Rye grass, Dandelion, Yarrow, Common Nettle, and Creeping Buttercup) and an absence of scrub, bracken or invasive non-native species. The ground had been damaged due to public access resulting in areas of bare ground.<br><br>Specifically, Criteria C, F and G were met. | Location ecological desirable but not in local strategy |
| Pond | 0.22 | Moderate | The two ponds located in the centre of the site were found to have a low water quality however there was an absence of algae, duckweed and other invasive species. The ponds are not artificially connected to other waterbodies and are allowed to fluctuate naturally throughout the year. The ponds have not been stocked with fish.<br><br>Specifically, Criteria B, C, D, E, F and G were met. | Location ecological desirable but not in local strategy |
| Developed Land; Sealed Surface | 0.591 | N/A | N/A - Other | Area not in local strategy. |



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**Table 2.** Existing linear habitats present on site including details as to their condition and the condition assessment criteria that have been met / failed as per the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b).

| Habitat Type | Length (km) | Condition | Condition Assessment Notes | Strategic Significance |
|---|---|---|---|---|
| Line of trees | 0.915 | Moderate | Line of native trees comprising of Oak, Ash and Downy birch with a complete canopy, presence of some deadwood and Ivy and no obvious signs of damage or disease.<br><br>Specifically, Criteria A, B and E were met. | Location ecological desirable but not in local strategy |



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## 4.0 PROPOSED CREATED HABITATS & NET GAIN ASSESSMENT

### 4.1 On-Site Proposals

Following consultation with Fabrik and Miller Homes, in order to minimise the loss of biodiversity on site, the following habitats are being retained, enhanced and created (please refer to the **Post-Development Layout appended** for information on the locations of these habitats). The full landscaping plans have yet to be finalised, and therefore, the BNG assessment is based on the plans currently available. Tables have been provided as appropriate to indicate the targeted condition for each of the habitat types and which criteria will need to be met in order to achieve the desired condition.

**Section 5.0** details the proposed planting and ongoing management required to ensure the stated condition criteria are met for each habitat type. A detailed landscape strategy (including planting and management specifications) has not been prepared at this stage however the recommendations within this report have been prepared in conjunction with Fabrik Landscape Architects.

***NB. Should planting and management prescriptions need altering slightly when drawing up the detailed landscape strategy, this will first be approved by an ecologist to ensure the recommendations are in line with the Biodiversity Net Gain Assessment.***

*4.1.1 Non-Linear Habitats*

**Table 3** indicates those habitats due to be retained, enhanced and created on site with details provided, where appropriate, as to how the necessary condition criteria will be met.



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**Table 3.** Non-linear habitats to be retained, enhanced and created on site including details as to the condition assessment criteria that must be met in order to achieve the targeted condition (the necessary planting and management required to achieve the stated condition criteria is detailed in **Section 5.0**).

| Habitat Type | Action | Area (ha) | Target Condition | Condition Assessment Notes | Strategic Significance |
|---|---|---|---|---|---|
| Developed Land; Sealed Surface | Retained | 0.591 | N/A | N/A - Other | Area not in local strategy. |
| Ponds | Retained | 0.22 | Moderate | The two ponds located within the centre of the site will be retained and managed so that their condition does not deteriorate. | Location ecological desirable but not in local strategy |
| Other Neutral Grassland | Created | 1.343 | Moderate | Other neutral grassland of Moderate condition will be created in line with the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). Specifically, criteria A, B, C, D and E will be targeted for achievement with sowing of an appropriate seed mix and appropriate management to minimise bare ground, scrub and bracken and maintain a varied sward height. | Location ecological desirable but not in local strategy |
| Modified Grassland | Created | 0.387 | Moderate | Modified grassland of Moderate condition will be created in line with the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). Specifically, criteria A, C, D, E, F and G will be targeted for achievement with sowing of an appropriate seed mix and appropriate management to minimise bare ground, scrub and bracken and maintain a varied sward height. | Location ecological desirable but not in local strategy |



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| | | | | | |
|---|---|---|---|---|---|
| Other woodland; broadleaved | Created | 0.514 | Moderate | Broadleaved woodland will be created around the boundaries and centre of the site through planting to widen the existing tree lines. Woodland of Moderate condition will be created in line with the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). Native tree species along with scrub understory planting, creation of deadwood and appropriate monitoring and management of the woodland parcels will be undertaken to achieve Moderate condition. | Location ecological desirable but not in local strategy |
| Mixed scrub | Created | 0.052 | Moderate | Small areas of native mixed scrub will be created as a buffer to the woodland on the western boundary. The habitat will be created in line with the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). Specifically criteria A, C and E will be targeted through planting of a variety of native species and management. | Location ecological desirable but not in local strategy |
| SUDS | Created | 0.04 | Good | A large attenuation basin of Good condition will be created on site in line with the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). Specifically, criteria A, B, C and E will be targeted for achievement through the use of an appropriate seed mix containing native species suited for wetland environment. Planting will contain species beneficial to wildlife with an absence of any invasive non-native species. | Location ecological desirable but not in local strategy |
| Vegetated Garden | Created | 0.541 | Condition Assessment N/A | No condition assessment required as per the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). | Location ecological desirable but not in local strategy |



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| | | | | | |
|---|---|---|---|---|---|
| Developed Land; Sealed Surface | Created | 0.952 | N/A – Other | No condition assessment required as per the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). | Area not in local strategy. |
| Developed Land; Sealed Surface | Created | 0.453 | N/A – Other | No condition assessment required as per the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). | Area not in local strategy. |
| Individual Urban trees | Created | 0.492 | Moderate | 121 Individual trees are proposed to be planted across the site. These will be created in line with the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). These will largely be non-native trees however a number of fruiting species will be used. Specifically criteria B, C and D will be targeted through appropriate management of the planted trees. | Location ecological desirable but not in local strategy |



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*4.1.2 Linear Habitats*

**Table 3** indicates those linear habitats due to be retained, enhanced and created on site with details provided, where appropriate, as to how the necessary condition criteria will be met.



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**Table 3.** Linear habitats to be retained, enhanced and created on site including details as to the condition assessment criteria that must be met in order to achieve the targeted condition (the necessary planting and management required to achieve the stated condition criteria is detailed in **Section 5.0**).

| Habitat Type | Action | Length (km) | Target Condition | Condition Assessment Notes | Strategic Significance |
|---|---|---|---|---|---|
| Line of Trees | Retained | 0.703 | Moderate | The lines of trees present around the boundaries of the site will be retained and appropriately managed to maintain their condition. | Location ecological desirable but not in local strategy |
| Species rich native hedgerow | Created | 0.146 | Good | A species rich native hedgerow will be created adjacent to the acoustic fence to be installed on the eastern boundary of the site. The hedgerow will be created of good condition, in line with the DEFRA technical supplement. Specifically. Criteria A1, B1, B2, C2, D1 and D2 will be targeted for achievement. | Location ecological desirable but not in local strategy |
| Ornamental hedgerow | Created | 0.127 | Poor | A number of non-native, ornamental hedgerows will be created on site. These automatically achieve the condition of poor. | Area not in local strategy. |



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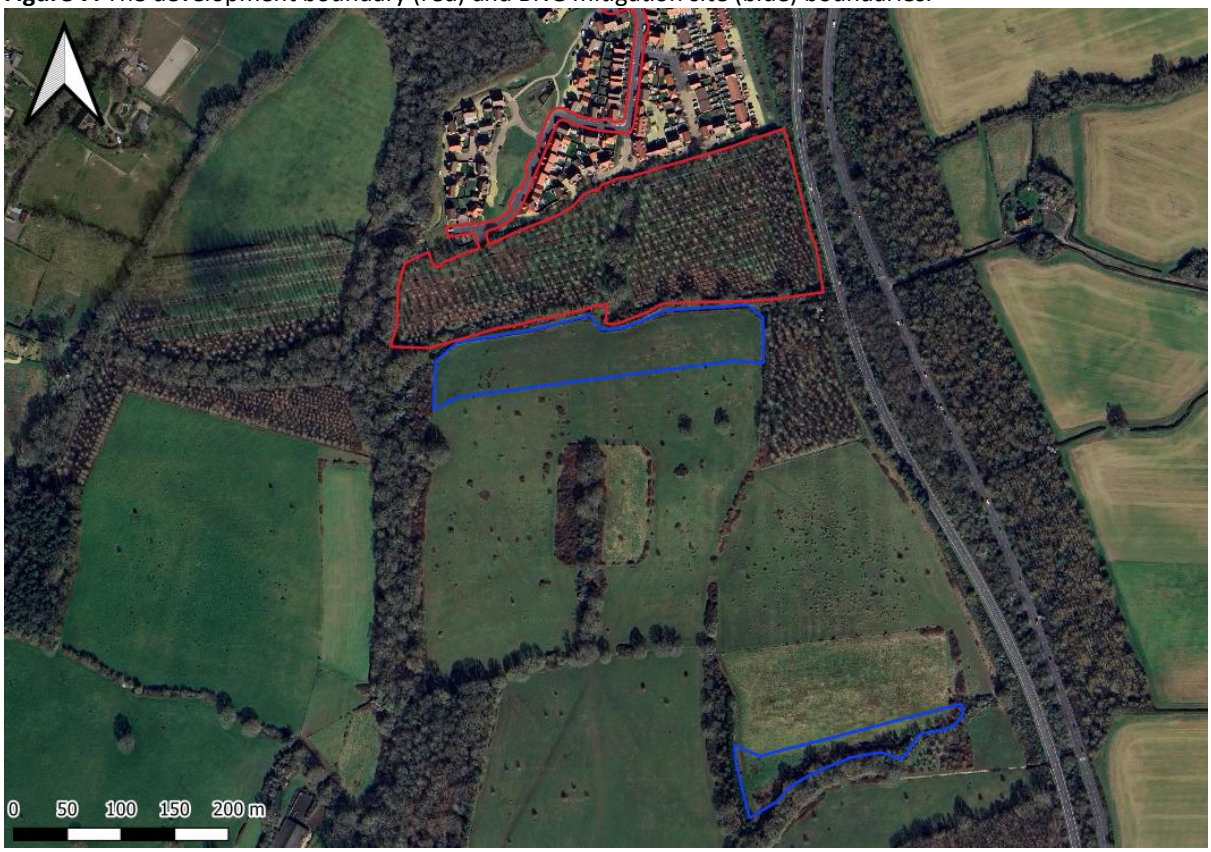
## 4.2 Offsite Proposals

### *4.2.1 Location*

2.217 ha of offsite compensation will be provided over two areas of land located directly to the south of the site. The plot is under the same ownership as the main development site.

**Figure 7.** The development boundary (red) and BNG mitigation site (blue) boundaries.




### *4.2.2 Description*

The vegetation survey was carried out by Amy Johnston BSc (Hons) in July 2024. This survey identified that both areas consisted of modified grassland (g4) of similar species composition. Species noted included: Perennial Rye grass *(Lolium perenne)*, Yorkshire Fog (*Holcus lanatus*), Meadow Foxtail *(Alopecurus pratensis)*, White Clover *(Trifolium repens)*, Broadleaved Dock *(Rumex obtusifolius)*, Creeping Buttercup *(Ranunculus repens)*, Creeping Thistle *(Cirsium arvense)*, Common Nettle *(Urtica dioica)*, Dandelion *(Taraxacum agg.)*, Meadow Bindweed (*Convolvulus arvensis*), Ragwort *(Senecio jacobaea)*, Common Vetch *(Vicia sativa)* and Bramble *(Rubus fruticosus)*.



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**Figure 8.** Modified grassland present in the northern BNG mitigation site (taken July 2024).

**Figure 9.** Modified grassland present in the southern BNG mitigation site (taken July 2024).

*4.2.3 Baseline Condition Assessment*

The following tables provide detail as to the condition assessments undertaken of the non-linear (**Table 4**) habitats present off site with reference to the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b).



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**Table 4.** Existing non-linear habitats present on site including details as to their condition and the condition assessment criteria that have been met / failed as per the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b).

| Habitat Type | Area (ha) | Condition | Condition Assessment Notes | Strategic Significance |
|---|---|---|---|---|
| Modified Grassland (northern parcel) | 1.58 | Poor | Managed Modified Grassland with typical species present (e.g. Perennial Rye grass, White clover, Creeping Buttercup and Creeping Thistle) and an absence of bracken or invasive non-native species. There was some bramble scrub present. And the sword height was largely unvaried across each grassland parcel.<br><br>Specifically, Criteria D, E, F and G were met. | Location ecologically desirable but not in local strategy |
| Modified Grassland (southern parcel) | 0.637 | Moderate | Managed Modified Grassland with typical species present (e.g. Perennial Rye grass, White clover, Creeping Buttercup and Creeping Thistle) but had more diversity then the northern section. and an absence of bracken or invasive non-native species. There was some bramble scrub present and the sword height was largely unvaried across each grassland parcel.<br><br>Specifically, Criteria A, D, E, F and G were met. | Location ecologically desirable but not in local strategy |
| Individual trees | 0.0122 | Moderate | Three small individual trees were present within the northern parcel. The trees were native, but were immature. There was no evidence of damage from human activities or browsing alongside no ecological niches. Specifically, criteria, A, B, D, and F were met. | Location ecologically desirable but not in local strategy |



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*4.2.4 Non-Linear Habitats*

**Table 5** indicates those habitats due to be retained, enhanced and created off site with details provided, where appropriate, as to how the necessary condition criteria will be met.



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**Table 5.** Non-linear habitats to be retained, enhanced and created off site including details as to the condition assessment criteria that must be met in order to achieve the targeted condition (the necessary planting and management required to achieve the stated condition criteria is detailed in **Section 5.0**).

| Habitat Type | Action | Area (ha) | Condition | Condition Assessment Notes | Strategic Significance |
|---|---|---|---|---|---|
| Other woodland; broadleaved | Created | 2.217 | Moderate | Broadleaved woodland will be created in the offsite area in line with the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). Native tree species along with scrub understory planting, creation of deadwood and appropriate monitoring and management of the woodland parcels will be undertaken to achieve moderate condition. | Location ecologically desirable but not in local strategy |



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### 4.3 Additionality

Where an area of site is being utilised for a different activity, such as Hazel Dormouse compensation or Ancient Woodland Buffer, these areas can only count 'in-part' towards the overall BNG result. This means that at least 10% of the units must come from measures which are not being used for any other purpose as per the guidance shown in **Figure 10** below.

**Figure 10**. Screenshot of the gov.uk guidance covering additionality.

## What you can count in full, in part or not at all

You cannot include some habitat schemes in BNG calculations at all. There are other schemes that you can include:

- in full - for enhancing actions, such as green infrastructure (a developer can satisfy all their BNG requirements through the works, receiving 110% of their biodiversity units through them)
- in part - for mitigation and compensation actions, such as nutrient mitigation (at least 10% of the developer's biodiversity units must come from additional activities other than mitigation and compensation)

Example: a developer already has to do nutrient mitigation to compensate for impacts on protected species. This counts in part towards BNG, so at least 10% of their total (110%) BNG should come from measures which are not nutrient mitigation. The development needs to achieve 11 biodiversity units, so nutrient mitigation can count for 10 of these units. At least 1 unit should come from other on-site or off-site gains or statutory biodiversity credits.

The same rules apply to what you can count whether on-site or off-site. For example, if something can only count in part when taking place off-site, it can also only count in part when on-site, and vice versa.

Therefore, in this case, the planting for dormouse compensation and for the ancient woodland buffer can only be counted 'in-part' towards the final BNG result and, therefore, 10% of the units required to meet the BNG requirement (110%) must come from enhancements made outside of these areas. To demonstrate this, two metrics have been produced. One for the site overall, and one with these areas excluded to demonstrate how many units are to be provided on site with these areas excluded.



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**Figure 11**. Area excluded as within the 15m buffer for the ancient woodland (red buffer).

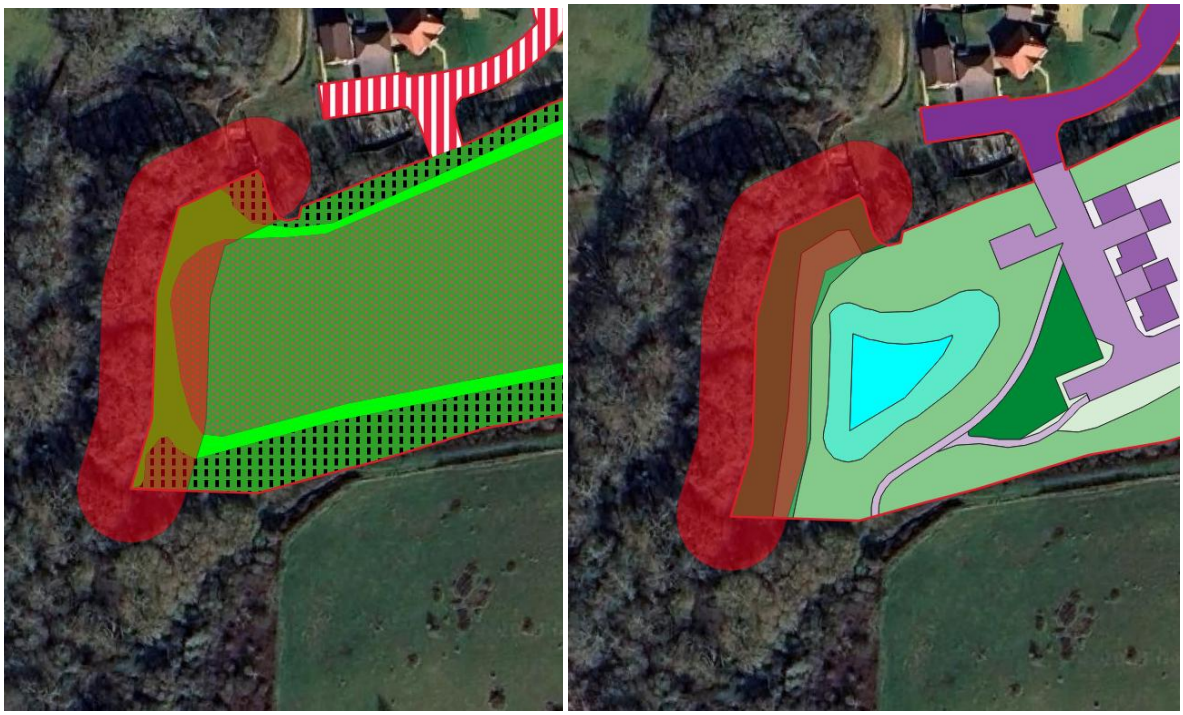

**Figure 12**. Area excluded as it is to be enhanced for Dormouse habitat (shown in red).



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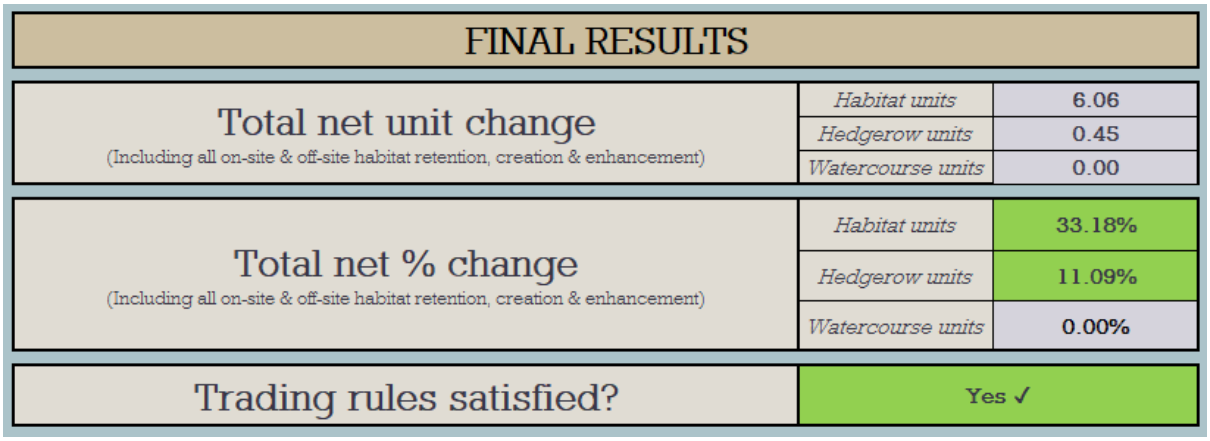
### 4.4 Metric Calculation

Following the incorporation of the above measures into the DEFRA Statutory Biodiversity Metric, ***there is a net gain of +33.18% in habitats (or +6.06 habitat units) and a net gain of +11.09% in hedgerows (or +0.45 hedgerow units) and the trading rules are satisfied*** (**Fig 13**). Therefore, a more than sufficient gain for biodiversity has been achieved and no further measures are required.

**Figure 13.** Screenshot of the 'headline results' output from the BNG assessment undertaken for the site using the DEFRA Statutory Biodiversity Metric.




**Tables 6 & 7** below outline the workings for additionality demonstrating that the units needed from outside of the dormouse and ancient woodland planting have been provided.

**Table 6**. Additionality requirement table for non-linear habitats.

| Non-linear habitats | Units |
|---|---|
| Baseline units (including offsite) | 24.66 |
| Units needed for 10% gain | 27.12 |
| Units needed outside of dormouse & ancient woodland | 2.71 |
| Units provided outside of dormouse & ancient woodland | 27.9 |
| Units provided included dormouse & ancient woodland | 30.72 |

**Table 7**. Additionality requirement table for linear habitats.

| Linear habitats | Units |
|---|---|
| Baseline units | 4.03 |
| Units needed for 10% gain | 4.43 |
| Units needed outside of dormouse & ancient woodland | 0.44 |
| Units provided outside of dormouse & ancient woodland | 2.4 |
| Units provided included dormouse & ancient woodland | 4.47 |



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## 5.0 HABITAT MANAGEMENT

At the current stage, a detailed landscape scheme is not yet available and, therefore, the below sections provide general recommendations with regard to the management of the habitats. Should the provision of a detailed landscape scheme be conditioned in the future, the information within the below sections will be used to inform the landscape strategy to ensure it remains consistent with the Biodiversity Net Gain assessment.

### 5.1 Protection of Retained Habitats

All of the habitats to be retained or enhanced will be protected from damage during the works. The ecological buffer zone along the northern boundary of the development area and the retained western scrub will be fenced using Heras fencing or similar to prevent access by machinery. Where large mature trees are present, they will be protected using standard arboricultural tree protection measures which include protection of the canopy and prevention of root compaction.

No vehicles will enter the protective ring fencing and no materials will be stored within their circumference. All protective fencing must be in place prior to any construction machinery arriving on site, before any works on site get underway, and will remain in place until all work is completed. This will minimise the level of disturbance within the ecological buffer zones during the works and ensure the habitats and any wildlife species that may be using them are protected.

### 5.2 Other Neutral Grassland

*5.2.1 Proposed Planting*

The areas of other neutral grassland to be created on site will be sowed with a wildflower mixture such as Emorsgate EM2 – Standard General Meadow Mixture which contains a mix of native grasses and wildflowers such as Yarrow (Achillea millefolium), Ribwort Plantain (*Plantago lanceolata*), Meadow Buttercup (*Ranunculus acris*), Common Knapweed (*Centaurea nigra*), Common Bent (*Agrostis capillaris*), Red Fescue (*Festuca rubra*), Smaller Cat's-tail (*Phleum bertolonii*) and Smooth-stalked Meadow-grass (*Poa pratensis*).

*4.2.2 Management*

Wildflower areas do not require any additional watering or fertilizer. Cutting a meadow and removing the clippings retains low nutrient levels in the soil and suppresses coarse grasses which would otherwise out-compete the wildflowers. It is recommended the wildflower grassland undergoes two annual cuts. The growth should be cut back to a height of 50-75mm. The cut grass should be dried on site. Cuttings should be left in situ for approximately one week. After this the arisings are to be removed from site.

**First year management:** Perennial species take at least a full year to establish. For newly sown areas the first summer will be dominated by annual weeds arising from the soil seed bank and by grass growth. This should be controlled by mowing throughout the first year to minimise competition and weed seed production.



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**Management Once Established:** During the second year the wildflower areas can undergo a spring cut in April to expedite nutrient depletion and promote wildflower development, however it is recommended that it is instead left to flower and will be cut in mid-summer. However, if a retained buffer area is established, this should not be cut in May or early June due to nesting birds. Mowing in mid-June brings a premature end to the flowers and can compromise nesting birds, which do not fledge until late July, insects and other wildlife. If some mowing has to take place at this time, sections should be cut at different dates to prolong the overall flowering season and give wildlife a chance to move. The second annual cut should be undertaken during late Autumn.

Grassland which is consistently cut late in the season, in August and September, year on year reduces species diversity as late cutting gives more time for coarse grasses and other dominant plants to grow unchecked. To maintain maximum diversity and flowering interest the buffer should be managed in sections at different times from late June to the end of August. Varying the mowing times from year to year is the best way to maintain a diverse balanced sward.

### 5.3 Modified Grassland

*5.3.1 Proposed Planting*

The areas of modified grassland located along the verge of the access road will be maintained as mown flowering lawns. This grassland will be created through seeding with a suitable seed mix such as the Emorsgate EL1 Flowering Lawn mixture which contains 20% wildflowers and 80% slow-growing grasses. This seed mixture includes but is not limited to Common Knapweed (*Centaurea nigra*), Birdsfoot Trefoil (*Lotus corniculatus*), Ribwort Plantain (*Plantago lanceolata*), Cowslip (*Primula veris*), Meadow Buttercup (*Ranunculus acris*), Tufted Vetch (*Vicia cracca*), Common Bent (*Agrostis capillaris*), Crested Dogstail (*Cynosurus cristatus*) and White Clover (*Trifolium repens*). Recommended species planting of grass species for this habitat may also include Rye grasses (*Lolium* spp.,), Timothy (*Phleum pratense*), Yorkshire-fog (*Holcus lanatus*), and Cock's-foot (*Dactylis glomerata*). Grass cover is usually over 75% for this habitat type. Broadleaved species may include Dandelion (*Taraxacum officinale*), Creeping Buttercup (*Ranunculus repens*) and Greater Plantain (*Plantago major*).

*5.3.2 Management*

The sowing of these seeds will be completed either during the Spring (March-May) or the late Summer (August-October) when the temperatures are warm, and the ground is dry. The seed must be surface sown at an even distribution throughout the entire landscaped area.

**First year management:** During the first year the grassland areas must be regularly maintained to a height of 40-60mm every 3-4 weeks (or more frequently as needed) during the growing season to prevent the establishment of weeds. All arisings must be taken from site to prevent the addition of too many nutrients into the soil.



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## 5.4 Mixed Scrub

*5.4.1 Mixed Scrub*

The areas of mixed scrub will be created through the planting of native species such as the following: Dogwood (*Cornus sanguinea*), Hazel (*Corylus avellana*), Spindle (*Euonymus europaeus*), Wild Privet (*Ligustrum vulgare*), Honeysuckle (*Lonicera periclymenum*), Elderflower (*Sambucus nigra*), and Guelder-rose (*Viburnum opulus*).

*5.4.2 Management Prescriptions*

Following establishment, scrub management will be undertaken annually (as needed) to maintain a suitable matrix between grassland and scrub. This can be achieved by manual cutting (with arisings removed), as well as mechanical clearance in winter months that can be carried out to ensure the area does not become overgrown. Any scrub removal must be undertaken under precautionary measures for Hazel Dormice and nesting birds.

## 5.5 Woodland Creation

Proposed Planting

It is recommended that the area of woodland planting should comprise of a mix of the following tree and shrub species: Alder (*Alnus glutinosa*), Beech (*Fagus sylvatica*), Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*), Hazel (*Corylus avellana*), Oak (*Quercus robur*), Wild Cherry (*Prunus avium*), Dog Rose (*Rosa canina*), Crab Apple (*Malus sylvestris*), Dog Wood (*Cornus sanguineaI),* Elder (*Sambucus nigra*), Field Maple (*Acer campestre*), Guelder Rose (*Viburnum opulus*) and Small-leaved Lime (*Tilia cordata)*.

These species should be planted randomly to avoid the appearance of a plantation linear woodland. A more semi-natural appearance can be achieved through randomisation locations for planting with long term benefits as a result of a varied structure and microclimates.

Initial Management

To ensure a successful establishment of the newly planted woodland, all trees must have a 1-metre exclusion zone whereby weeds are routinely removed for the first 2 – 3 years. Additionally, all trees must have tree guards installed to act as a form of protection from extreme weather or excessive foraging from wildlife. During weed removal, tree guards should also be routinely checked to ensure they are maintained in good condition and are firmly positioned within the soil. If the guards begin to split, they must be removed and disposed of responsibly.

The newly planted trees will be watered during extreme dry periods throughout **early – late summer**, particularly between years 1 – 2.

Coppicing

Any Hazel will be managed on a rotational coppicing scheme. This involves cutting young trees down to ground level to promote new growth and prevent over-shading. This will be rotationally implemented, with only a small portion approximately 30% of Hazel coppiced every 3 years. Works will take place outside of the core Hazel Dormice breeding periods (June - September inclusive) and avoid the hibernation period (late November – March) and as such, the most appropriate timings



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would be October – Early November as this will avoid the nesting bird season. Coppicing will only occur once the Hazel has grown to a size that will be beneficial and appropriate. Since this is within the nesting bird season, a nesting bird check must be carried out by a suitably qualifying ecologist.

Coppice management is best carried out on a rotation of approximately every 6-10 years for each tree, with timing staggered for plants to ensure there is continued connectivity at any given time.

Retain some of the dead wood. Include some larger horizontal trunks and limbs as well as log piles and discarded brash. Leave wood piles in shady areas.

Any invasives noted during coppicing must be marked for removal as per the invasives management section below.

Thinning

Woodland will be thinned (i.e. trees removed) to benefit retained trees and promote regeneration. The optimal canopy target is 75% cover, which allows greater development of the understory to create a more diverse woodland. Selective thinning will be carried out every five years to maintain a canopy target of 75% cover.

The target trees to be removed are those showing signs of disease or poor growth; The specific target trees and areas of woodland will be determined by the supervising ecologist or arborist. Please note, all mature trees will need to be surveyed for PRFs that may be suitable for roosting bats. If any trees have PRFs, it is recommended they are retained if possible and alternative trees are selected for thinning.

It is considered likely a botanical survey will identify areas of highest botanical value and this will influence the location of thinning. The recommended botanical survey should be undertaken during the optimum survey season during the first year of woodland management to identify areas of botanical interest. It is recommended this is repeated every five years.

Where practical to do so, as determined by the arborist, some potential selected trees may be cut at 3-5m height and the stumps will be left in situ to rot as habitat for saprophytic invertebrates.

Invasive Species Management

Any invasive species will be removed from the site, as these could have deleterious effects on native species. The removal of such species would open-up ground for restoration of semi-natural woodland. Invasive species will generally be removed by a combination of cutting back and removal of cut material from the site, followed by treatment of stumps, roots or regrowth using an approved systemic herbicide (such as glyphosate). This process may need to be repeated over the course of several years.

Contractors will need to be shown the locations of the species and mark these where needed to help avoid native species being removed accidentally. Areas of bare ground created by this work should be left for regeneration.

Natural Regeneration



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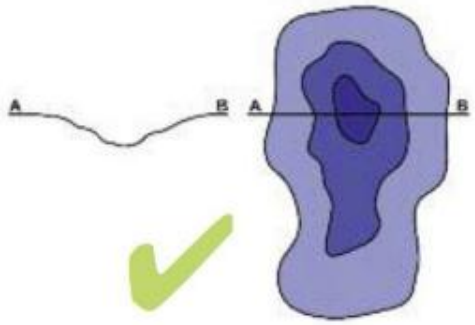
Tree and shrub species should be established by natural regeneration where possible e.g., by creating space for new regeneration around existing specimens of the desired trees and shrub species. Ash regeneration could be an important part of the mix, it should not be cut out or destroyed, and would benefit from being protected. Deer management is especially critical for the success of natural regeneration.

**5.6 SUDs**

*5.6.1 SUDs Creation*

Ideally the margins of the SUDs should be shallow. The best ecologically valuable ponds have 'gentle shelving edges. Therefore, whilst excavating the SUDs it will be ensured that the SUDs have sloping edges to ensure there is a shallow water environment at less than 1:5 (12°) and preferably less than 1:20 (3°) (Freshwater Habitats 2013) (**Fig 14**). The SUDs depth will vary across the SUDs. Creating shelves is one option for obtaining different depths.

**Figure 14.** Design of SUDs showing varying depths at a gently sloping level (Freshwater Habitats 2013)




*5.6.2 Proposed Planting*

The SUDS will be designed to hold some water all year round and planted with a variety of native species surrounding the pond through the sowing of a wildflower mixture such as Emorsgate EM8F – Wild Flowers for Wetlands (*or similar as approved by an ecologist*). Additionally, the edges of the pond are recommended to be sown with Emorsgate EP1 - Pond Edge Mixture (*or similar as approved by an ecologist*) on particular boundaries of the pond.

*5.6.3 Management*

In the early years, blanket weed could cover ponds. This should be pulled out carefully. Once the pond has settled blanket weed will usually be kept in check by pond animals. Any plant that starts to dominate should be thinned out. Only one third of a pond should be cleared per year.

Once cleared, plants or debris should be left along the edge for a few days to allow any trapped wildlife to return to the water.

Frog (*Rana temporaria*) spawning is usually the first to take place within freshwater habitats, starting as early as January. From February adult Newts emerge from hibernation and make their way to aquatic habitat where they then breed. Common Toads (*Bufo bufo*) also congregate in ponds in early



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spring, often shortly after Frogs. All three amphibians then lay eggs in early Spring. Common Toads then move away from ponds into terrestrial habitat. In summer metamorphosis takes place.
As a result, the best time for pond management is late October. Tadpoles would have left the pond and adult amphibians have not yet gone into hibernation at this time. Ponds should not be disturbed in mid-winter as this might expose hibernating amphibians to severe cold, for example Newts will be hibernating in damp areas nearby to the pond and Frogs are known to hibernate at the bottom of ponds (Freshwater Habitats Trust, 2015b).

Aquatic vegetation within the ponds will be managed every five years to maintain a ratio of approximately 50:50 plants to open water to provide opportunities for breeding amphibians. In addition, the ponds will be dredged every five years to remove decomposing organic matter and silt, which will help to maintain depth and water quality.

The tussocky grassland and wildflower areas surrounding the ponds will be cut once annually in September, once the wildflower species have set seed, and to a minimum sward height of 15cm (with arisings removed). Cutting within these habitats will be undertaken by hand-held strimmer to prevent unnecessary disturbance and harm to reptiles and amphibians. These areas will be cut in rotation to leave areas of longer grass. The best time of year to carry out management to minimise the impact on reptiles is from October – late February. This will involve reducing the grass level to no shorter than 15cm.

The boundaries of any swales and attenuation basins will best be managed as tussocky grassland.

**5.7 Individual (Urban) Trees**

*5.7.1 Proposed Planting*
A total of 105 No. trees will be planted across the site. These will largely be non-native species, but a number of fruiting species have been chosen. Trees to be planted includes; *Amelanchier × lamarckii, Pyrus calleryana 'Chanticleer'*, *Magnolia 'Elizabeth'*, *Tilia cordata 'Greenspire', Betula pendula*, *Prunus accolade, Pyrus communis*, *Malus dom. 'Crawley Beauty', Malus dom. 'Coronation', Medlar 'Nottingham'*.

Planting will be carried out in the first year. The best time to plant is late autumn and it is recommended to avoid freezing temperatures or heat. Rootgrow or Bonemeal will be applied to the new plants to encourage healthy root growth.

The newly planted trees will be watered regularly throughout **early – late summer**, particularly between years 1 – 2.


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*5.7.2 Management*

*5.7.2.1 Mycorrhizal Treatment*

To ensure a successful establishment of the newly planted trees, it is recommended that mycorrhizal treatment to the tree roots is conducted **during the planting**, this would reduce the risk of tree mortality and increase the long-term tolerance of these trees to periods of drought or adverse soil conditions thus ensuring a higher chance of successful long-term establishment.

*5.7.2.2 Weed Management*

All newly planted trees must have a 1-metre exclusion zone whereby weeds are routinely and pro-actively removed for the **first 2 – 3 years**. Bark mulch is recommended around each tree and will act as an effective management method to also supress weed colonisation.

*5.7.2.3 Pruning*

The trees will be subject to light pruning as required in October to ensure that they are developing healthy growth forms (but pruning will not be extensive enough to restrict expected canopy or height for their species).

*5.7.2.4 Monitoring and Replacement*

Trees will be inspected every 3 years by a suitably experienced arborist **during late winter – early spring of each year when required**. These monitoring visits will assess the general health of the trees and determine if any remedial action is required, including noting any presence of disease. As part of these monitoring visits, the arborist will produce a monitoring report which will be sent to the LPA outlining the results and appropriate recommendations (i.e. remedial works, removal /replacement). Any plants that are removed, die or become seriously damaged or defective shall be replaced like for like in the next planting season.

**5.8 Hedgerows**

*5.8.1 Proposed Planting*

A species rich native hedgerow is proposed adjacent to the acoustic fence on the eastern boundary of the site. The remaining proposed hedges will be non-native or ornamental hedges adjacent to the development areas. The native hedgerow will comprise of the following species; *Corylus avellana, Crataegus monogyna, Ilex aquifolium, Prunus spinosa,* and *Viburnum opulus.*

It is recommended that the ground is prepared by digging a strip approximately 60 – 90 cm in width. All weeds present in the soil are to be removed during soil preparation.

*5.8.2 Hedgerow Management*

The most favourable approach to managing hedgerows for the benefits of biodiversity is to encourage minimal interference and ensure when there is any cutting, it does so after autumn fruiting (so late winter is preferable). The key points of the management prescriptions will therefore be as follows (adopting recommendations as outlined within Bright and MacPherson 2002):



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- Cutting will be done on a 3-year cycle (part of the hedges on site cut during the first year, another part of the hedges cut during second year and no cutting during the third year), to provide sustained foraging opportunities across the site every active season. Hedgerows will be allowed to develop into a tall, dense, bushy structures and maintained at a height of 3 – (preferably 4) meters.
- A proportion of hedges (at least 30%) should be left to grow for at least 7 – 10 years.
- Not all hedgerows should be cut in any one year, so some heavy fruiting hedges are always present. Flails should not be used if possible meaning management works will likely involve cutting using hand tools
- Coppicing or laying should be used to manage any of the hedgerows on site which become gappy or sparse
- If the size of the hedgerow needs to be reduced, avoid cutting the top and cut one side.

In more formal locations, hedges may need to be maintained more regularly than is stated above and this is permitted provided that the criteria set out are achieved as described.

Targeted removal of invasive species will be carried out as necessary.

*5.8.3 Monitoring*

Annual monitoring will take place of the newly planted hedgerow for the first 3 years, with bi-annual monitoring between 4-10 years. This will be carried out by a suitably experienced ecologist during late winter – early spring of each year. These monitoring visits will assess the general health of the hedgerow and determine if any remedial action is required (some of which are outlined below such as replacement planting or altering the frequency of cuts).

*5.8.4 Replacement*

Any plants that are removed, die or become seriously damaged or defective during the 10- year monitoring period of planting shall be replaced like for like in the next planting season.

If hedgerows become very thin, coppicing of selected plants / laying of short lengths of hedgerow may be required and will be beneficial to promote vigorous, dense regrowth. Such works must be undertaken during the period October – February to avoid the breeding bird season.

**5.9 Compliance Check**

A compliance visit will be completed by a suitably qualified ecologist once the construction phase of the development has been completed. The check will be conducted annually for the first 5 years post-completion, and every 5-years thereafter until year 30. The compliance check will be carried out during a suitable time of year and in suitable weather conditions. The ecologist will check the condition of all of the habitats to assess if they have been achieved and make an assessment if any recommended changes are required to management.

On completion of the visit, a Biodiversity Net Gain (BNG) monitoring report will be compiled, including the following:

- Assessment of habitats against the objectives defined in this management plan



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- Any presence of target species noted during the compliance check
- Date stamped photographic evidence taken from fixed monitoring points, of which will be the central point of each land parcel per habitat type as listed in **Section 4.0,** during the first compliance check after the construction phase
- Detailed site notes including a condition assessment for each habitat type listed in **Section 4.0** (where appropriate) using the condition criteria within the Technical Annex 1 (DEFRA, 2023b).
- Detailed specific recommendations on management actions to promote growth and establishment of target species / habitats including timescales for undertaking actions (if required) and marked site plans to show the actions
- Management of the above recommended actions must be carried out in the next phase and report of any details
- Each BNG monitoring report will be written up in accordance with the BNG Habitat Monitoring Report template provided by Natural England (2023) and will be sent to the LPA.

**5.10 Safeguarding**

The developer and project manager will be responsible for briefing all site personnel of the ecological sensitivities of the site and implementing the habitat enhancement, creation and management measures outlined within **Sections 4.0 & 5.0**. If any protected species are encountered during the construction works, it will be the responsibility of the project manager to cease works and immediately contact an ecologist for advice.

**5.11 Post-Construction Habitat Creation**

**Table 7** below depicts the indicative timings associated with the habitat creation and enhancements to be undertaken after all construction works have been completed. This is considered to be year 1 of the management plan. For those activities that can be undertaken at any time of year, the earliest possible time is recommended.

**5.12 Management Responsibilities**

Miller Homes will assume responsibility for the management and maintenance of the newly created and enhanced habitats. When required, responsibility will include ensuring all management works are completed and qualified ecologists, arborists or landscape managers are contracted, etc. If the land is to be transferred, the new landlords shall bear responsibility for the management and maintenance of habitats within their curtilage. If not, the responsibility shall remain with Miller Homes. All management works as described above will need to be secured by a Section 106 agreement for the site that will legally oblige Miller Homes or other agreed party to carry out the works. An annual management timeline of all habitats has been provided in **Table 7 & 8** and management works should continue in perpetuity.

A formal review process will be implemented when objectives and management recommendations are not reached / roles and responsibilities are not fulfilled as agreed. The details of this formal review process are as below:

- A suitably qualified ecologist will visit the site to conduct the compliance check (detailed in **Section 5.9**).
- The compliance check will include the write up and submission of a BNG Habitat Monitoring



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report

- The ecologist will review the success for BNG that the previous recommendations or management actions have for the target species / habitats
- The project manager is contacted by the ecologist and is informed of the recommendations or management actions which have not been fulfilled to identify what or who is responsible
- The BNG Habitat Monitoring report will include a section addressing any raised issues identified during the compliance check
- The BNG Habitat Monitoring report is submitted to the LPA for review and comment



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**Table 7.** Schedule of habitat retention, enhancement and creation works to be carried out in first year (as per **Sections 4.0 and 5.0**).

| General Activity | Specific Activity | Dates / Timing | Description |
|---|---|---|---|
| **Habitat Retention** (**Section 5.1**) | Installation of Heras fencing for protection | Anytime | • Heras fencing to be erected along the boundaries of the site to prevent these areas from being damaged during works. |
| **Habitat Creation** Other Neutral Grassland (**Section 5.2**) | Creation of grassland | Ideally Autumn or Spring | • The areas of other neutral grassland will be sown with Emorsgate EM2 – Standard General Meadow Mixture. |
| | Year 1 Management | Routinely as required | • Control annual weed growth by mowing to 50-75mm throughout the first year to minimise competition and weed seed production. |
| **Habitat creation** Modified Grassland (**Sections 5.3**) | Planting | Ideally Autumn or Spring | • Establish the grassland through sowing of Emorsgate EL1 Flowering Lawn mixture |
| | Year 1 Management | Routinely as required | • Control annual weed growth by regular mowing throughout the first year to minimise competition and weed seed production.<br>• If necessary, glyphosate-based weed killer can be used to spot treat any areas with dense patches of Nettles or Bramble. |
| **Habitat Creation** Mixed Scrub (**Section 5.4**) | Plant native shrub species | Late Autumn | • Plant at least 3 different native shrub species.<br>• Plant in groups of 3-5 with large spacing. |
| | Removal of undesirable species | Anytime | • Any undesirable species present within will be removed and replaced with native species. |
| | Year 1 Management | Spring and Summer | • Weed around newly planted shrubs as necessary.<br>• Water every week throughout the first six months of establishment if soil is dry. |



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| | | | |
|---|---|---|---|
| | | | • Replace any dead shrubs like-for-like. |
| **Habitat creation**<br>Other Broadleaved Woodland<br>(**Sections 5.5**) | Planting | Autumn or Spring | • A variety of native woodland tree species will be planted. All plated trees will have tree guards. |
| | Removal of undesirable species | Anytime | • Any undesirable species present within will be removed and replaced with native species when needed. |
| **Habitat creation**<br>SUDs<br>(**Sections 5.6**) | Excavation of SUDs | Anytime | • The basin will have a varying depth across the SUDs. Creating shelves is one option of obtaining different depths. |
| | Creation of SUDs | Anytime | • Several SUDs features will be created across site |
| | Year 1 Management | Ideally Autumn or Spring | • The SUDs will be planted up with a suitable grassland seed mix and selective plug planting to encourage establishment of a wetland area |
| **Habitat creation**<br>Individual Trees<br>(**Sections 5.7**) | Planting | Late Autumn | • Planting of tree species.<br>• Apply Rootgrow or Bonemeal to encourage healthy root growth.<br>• Apply Mycorrhizal treatment to the tree roots. |
| | Year 1 Management | Routinely as required | • Remove weeds from a 1m exclusion zone around each newly planted tree.<br>• Apply mulch around the base of the tree as required. |
| **Habitat creation**<br>Hedgerows<br>(**Sections 5.8**) | Planting | Late Autumn | • Prepare ground by removing all weeds and digging a strip approx. 60-90cm wide.<br>• Plant with native shrub species. |
| | Year 1 Management | Winter i.e. October - February (outside of bird nesting season) | • Begin 3 year cutting cycle in which a portion of the hedges on site are cut in the first year, another portion in the second year and no cutting in the third year.<br>• Use hand tools and avoid the use of flails. |



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| | | | |
|---|---|---|---|
| | Year 1 Monitoring | Late Winter – Early Spring | • Hedgerows will be inspected by a suitably experienced ecologist to assess the general health of the hedgerow.<br>• Remedial action will be taken as necessary.<br>• Any plants that are removed, die or become seriously damaged will be replaced like-for-like in the next planting season. |



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**5.13 Years 2 – 30 Management / Monitoring Table**

Once the initial works covering the first year of management / monitoring have been completed as outlined in **Table 7**, the longer-term management objectives for the ecological features will need to be implemented (which have been outlined in detail in the above sections). **Table 8** below provides an overview of the actions required and the timings of when they should be complete (covering years 2– 30 post construction).

**Table 8.** Schedule of monitoring and management in Years 2 – 30 for all habitats (as per **Sections 4.0 and 5.0**).

| General Activity | Specific Activity | Dates / Timing | Description |
|---|---|---|---|
| Other Neutral Grassland (**Section 5.2**) | Years 2 – 30 Management | Spring and mid to late Summer | • Mow to 100mm in Spring.<br>• Leave to flower until late July / August.<br>• Conduct single hay cut after flowering with growth reduced to 50mm.<br>• Manage sections of each grassland parcel at different times from late June to the end of August. |
| | Removal of undesirable species | Winter i.e. October - February (outside of bird nesting season) | • Targeted scrub, bracken and invasive species removal will be carried out as necessary. |
| Modified Grassland (**Section 5.3**) | Years 2-30 Management | Year-round | • The grassland will be subject to regular mowing to a height of 30-50mm during April-August and 50-70mm for the remainder of the year. |
| | Removal of undesirable species | Winter i.e. October - February (outside of bird nesting season) | • Targeted scrub, bracken and invasive species removal will be carried out as necessary. |
| Mixed Scrub (**Section 5.4**) | Cutting back / thinning | Winter i.e. October - February (outside of bird nesting season) | • Scrub will be cut back annually as needed to ensure areas do not become overgrown.<br>• Thinning will take place routinely every 5 years.<br>• Different areas will be cut back / thinned on rotation to maintain a diverse age range.<br>• Any scrub encroaching into adjacent habitats will be cut back as needed. |
| | Bramble management | Winter i.e. October - February (outside of bird nesting season) | • Bramble will be cut back as necessary to maintain a density of no more than 15%. |

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| | Invasive species removal | Winter i.e. October - February (outside of bird nesting season) | • Removal of invasive species will be undertaken as necessary if they establish on site. |
| | Shrub replacement | Late Autumn | • Any dead shrubs or areas that become sparse will be planted with new native shrubs, replacing like-for-like. |
| Other Broadleaved Woodland (**Section 5.5**) | Selective thinning (Retained & newly planted trees, once established) | As required, during October - February | • Once the newly planted trees / shrubs are established, selective thinning of retained or established trees will be conducted to promote regeneration and a vigorous, dense regrowth<br>• Where practical to do so, as determined by the arborist, some potential selected trees may be cut at 3-5m height and the standing stumps will be left in situ to rot as habitat for saprophytic invertebrates and a resource for woodland birds such as Woodpeckers and Nuthatch. |
| | Coppicing | October – November, every 3 years but best carried out every 6-10 years on rotation | • Occasional rotational coppicing may be required of the newly planted or retained trees to prevent overcrowding and promote natural new growth. All Hazel present will be managed on a rotational coppicing scheme.<br>• This involves cutting young trees down to a low level to promote new growth and prevent over-shading.<br>• This will be rotationally implemented, with only a small portion approximately 30% of Hazel coppiced every 3 years during winter months (November to March), but only once the Hazel has grown to a size that will be beneficial and appropriate.<br>• Coppice management is best carried out on a rotation of approximately every 6-10 years for each tree, with |

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| | | | timing staggered for plants to ensure there is continued connectivity at any given time.<br>• Retain some of the dead wood. Include some larger horizontal trunks and limbs as well as log piles and discarded brash. Leave wood piles in shady areas. |
| | Invasive Species Removal / Management | As required | • Any invasive species, such as Japanese Knotweed (Fallopia japonica) Himalayan Balsam (Impatiens glandulifera), Rhododendron (Rhododendron ponticum), Giant Hogweed (Heracleum mantegazzianum), will be removed from the site, as these could have deleterious effects on native species.<br>• The removal of such species would open-up ground for restoration for natural re-generation.<br>• Invasive species will generally be removed by a combination of cutting back and removal of cut material from the site, followed by treatment of stumps, roots or regrowth using an approved systemic herbicide (such as glyphosate). This process may need to be repeated over the course of several years.<br>• Contractors will need to be shown the locations of the species and mark these where needed to help avoid native species being removed accidentally.<br>Areas of bare ground created by this work will be left for natural regeneration (described below). |
| | Plant removal / planting | Late Autumn ideally, in suitable weather | • Recommendations may also include that any plants (newly planted or retained) that are removed, die or become seriously damaged or defective during the 30-year monitoring period shall be replaced like for like in the next planting season.<br>• If any of the plants fail, they will be replaced like-for-like. |

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| | | | • Similarly, scope for tree and shrub species to establish by natural regeneration should be permitted where possible e.g. by creating space for new regeneration around existing specimens of the desired trees and shrub species. Ash regeneration could be an important part of the mix, it should not be cut out or destroyed unless suffering from Ash Dieback, and would benefit from being protected. |
| Individual Trees (**Section 5.7**) | Weed management | Routinely as required | • Remove weeds from a 1m area around the base of the trees for the first 2-3 years. |
| | Pruning | October | • The trees will be subject to light pruning as required in October to ensure that they are developing healthy growth forms |
| | Monitoring | Every 3 years, late Winter – early Spring | • Trees will be inspected by a suitably experienced arborist.<br>• General health will be assessed with remedial action recommended as necessary.<br>• Arborist will produce a monitoring report to be sent to the LPA.<br>• Any plants that are removed, die or become seriously damaged shall be replaced like-for-like in the next planting season. |
| Native Hedgerows (**Sections 5.8**) | Years 2-30 Management | Winter i.e. October - February (outside of bird nesting season) | • Continue the 3 year cutting cycle.<br>• A proportion of hedges (at least 30%) should wherever possible be left to grow for 7-10 years.<br>• Maintain a height of 3-4m wherever possible.<br>• Use hand tools and avoid the use of flails.<br>• Use coppicing or laying to fill gaps. |

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| | | | • If hedgerow size needs to be reduced (e.g. in more formal areas), avoid cutting the top and cut only one side. |
| | Monitoring | Late Winter – Early Spring<br><br>Annually in Years 1-3<br><br>Bi-annually in Years 4-10 | • Suitably qualified ecologist will assess the health of the hedgerow and recommend any necessary remedial action |
| | Replacement Planting | Late Autumn ideally, in suitable weather (for planting)<br><br>Winter i.e. October - February (outside of bird nesting season) (for coppicing / laying) | • Removed, dead or damaged specimens will be replaced like for like in the next planting season.<br>• Coppicing / laying will be used to gap up / thicken any thin hedgerows. |
| Compliance Check (**Section 5.9**) | Monitoring report | Annually for the first 5 years, then every 5 years until year 30<br><br>Must be conducted during a suitable time of year and weather conditions | • A report will be produced detailing assessment of habitats against criteria stipulated in Section 4.0 and any necessary remedial actions or adjustments to ongoing management.<br>• The report will be submitted to the LPA.<br>• Any necessary actions must then be completed prior to the next compliance check. |

## 6.0 REFERENCES

DEFRA (2023a) *Creating a habitat management and monitoring plan for biodiversity net gain.* Available at: https://www.gov.uk/guidance/creating-a-habitat-management-and-monitoring-plan-for-biodiversity-net-gain

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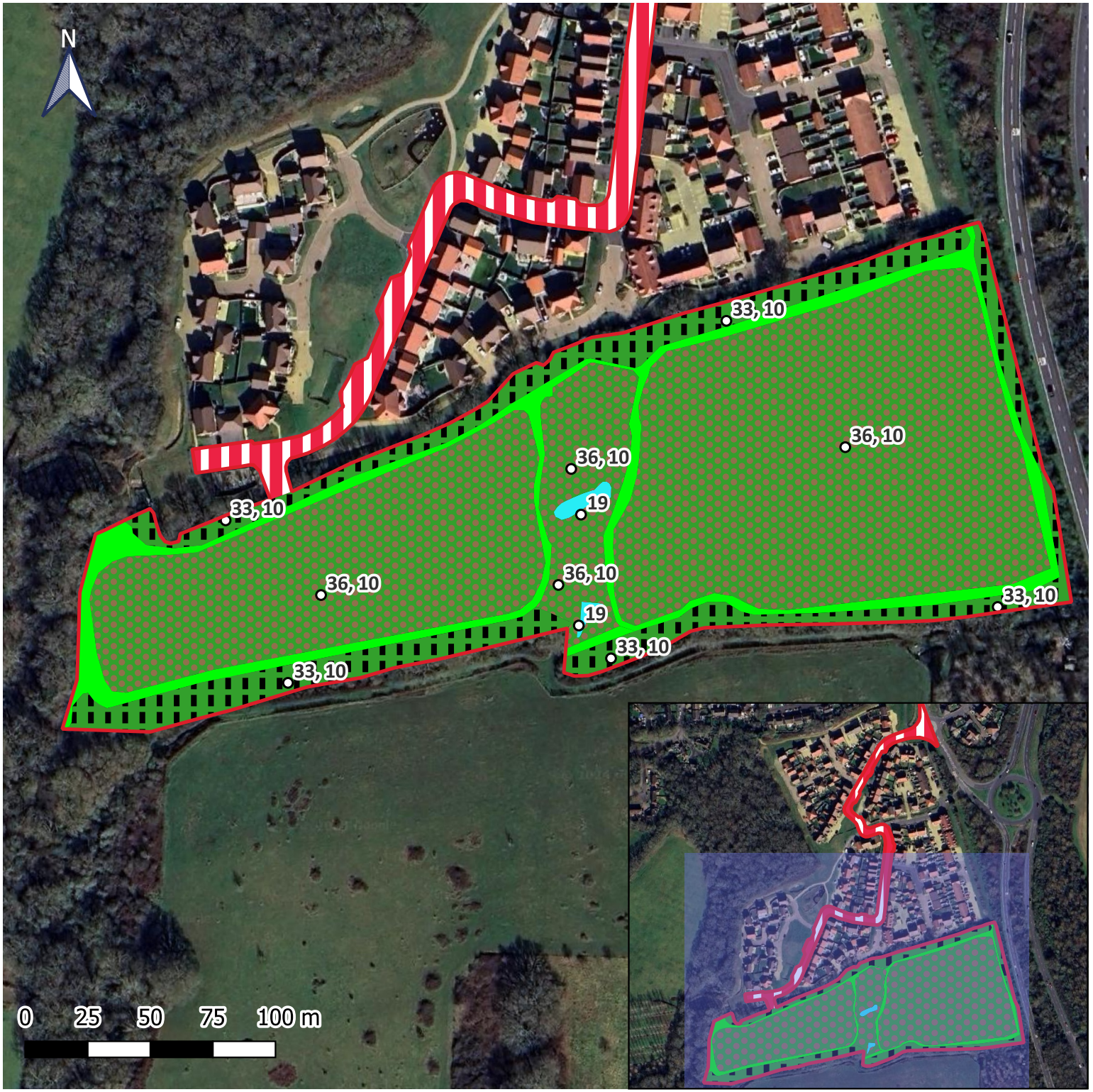
**APPENDIX 1 - MAPS**




Legend

- Site Boundary
- Modified grassland (g4)
- Other woodland-broadleaved (w1g)
  Secondary code(s):
  10 - Scattered scrub
  36 - Plantation
- Developed land. sealed surface (u1b)
- Standing open waters and canals (r1)
  Secondary code(s):
  19 - Pond
- Line of trees (33)
  Secondary code(s):
  10 - Scattered scrub

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| | |
|---|---|
| **Map** | UK Habs Map |
| **Site** | Campsfield, Southwater |
| **Client** | Miller Homes |
| **Date** | 01/04/2025 |


## Legend

- Site boundary
- Retained line of trees
- Proposed ornamental hedgerows
- Proposed species rich native hedgerow
- Proposed Individual Trees (121)
- Retained Road
- Buildings
- Roads
- Footpaths
- Private gardens
- Amenity grassland
- Wildflower grassland
- Woodland edge / Scrub planting
- Woodland
- Pond
- Gravel pond edge
- SUDs
- SUDs marginal grassland

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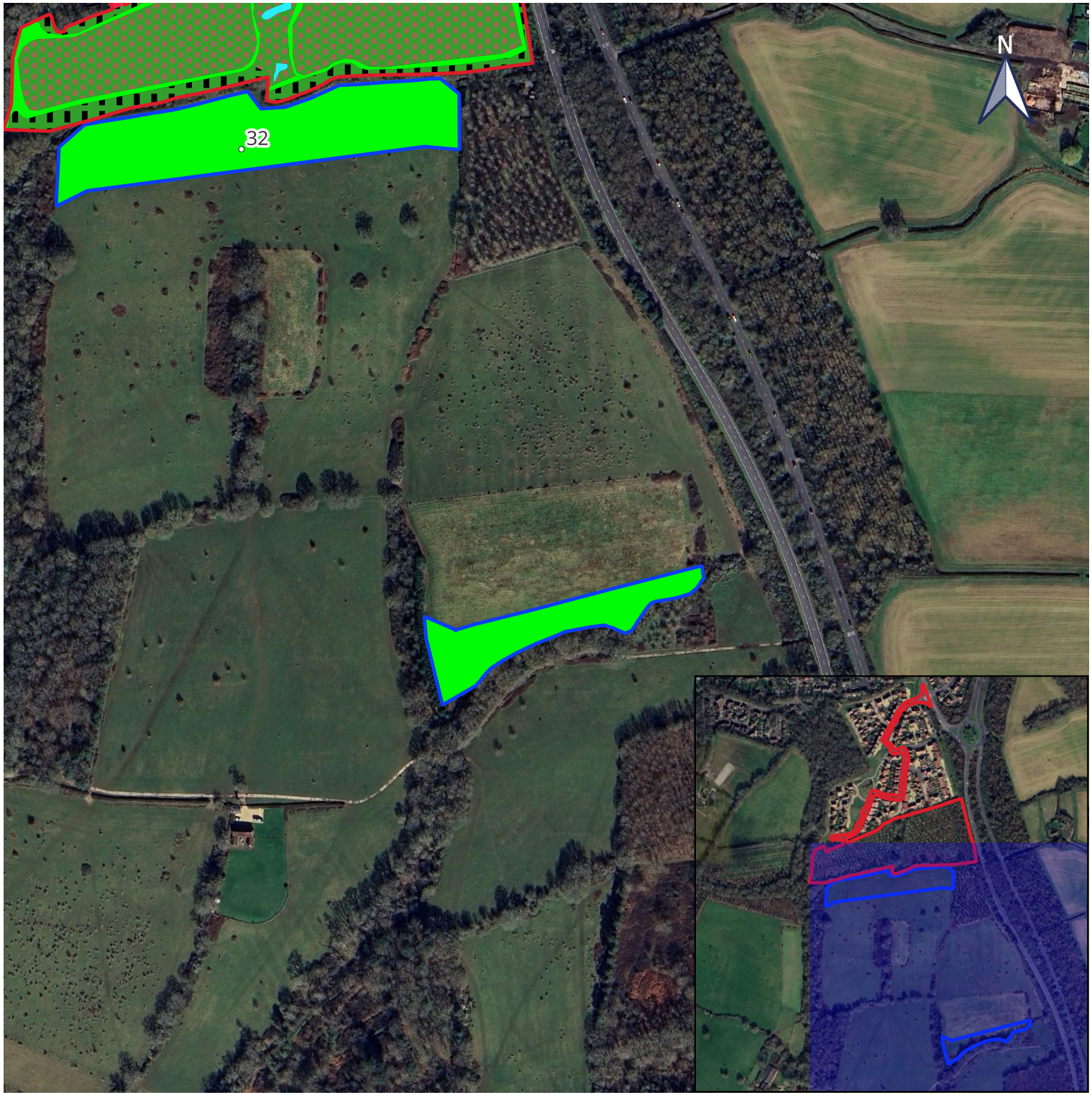
| | |
|---|---|
| **Map** | UK Habs Map - Post-development |
| **Site** | Southwater |
| **Client** | Miller Homes |
| **Date** | 01/04/2025 |




Legend

Site Boundary

Offsite Boundary

Modified grassland (g4)
Secondary code(s):
32 - Scattered trees

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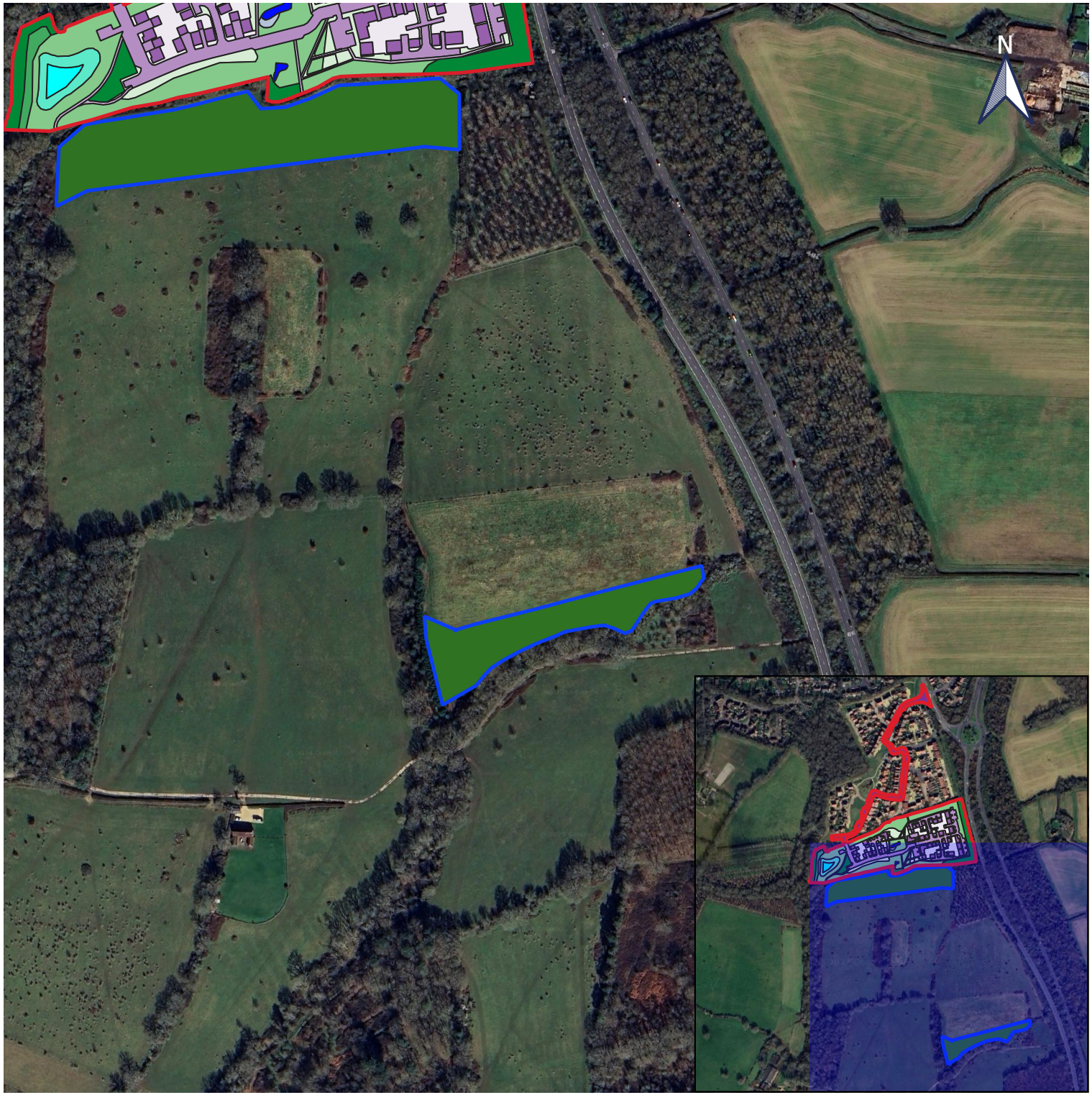
| | |
|---|---|
| **Map** | Pre-development Map - Offsite |
| **Site** | Southwater |
| **Client** | Miller Homes |
| **Date** | 01/04/2025 |




Legend

Site Boundary

Offsite Boundary

Woodland creation

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| | |
|---|---|
| **Map** | Post-development Map - Offsite |
| **Site** | Southwater |
| **Client** | Miller Homes |
| **Date** | 01/04/2025 |