



BNG Habitat Management & Monitoring Plan

Land North of Colwell Farm,
Haywards Heath

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Report	Biodiversity Net Gain (BNG) Assessment & Habitats Management and Monitoring Plan (HMMP)
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Client	Miller Homes
Date of Issue	17 th December 2024
Revision(s)	8 th January 2025
Status	Final 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 of the development proposed at 'Land North of Colwell Farm' in Haywards Heath and detail the results within a Habitat Management and Monitoring Plan.

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 because 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, updated 2024):

- How off-site gains and / or significant on-site enhancements will be managed, considering 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 EclA (Ecosupport Ltd., 2024).

1.2 Site Location and Description

The site comprises of three fields located at North Colwell Farm, Lewes Road, Haywards Heath, RH17 7SX (centred on OS grid reference TQ 35293 23299) (**Fig 1**). The site is bound by residential dwellings and Lewes Road to the north, ancient woodland to the east and south and an access track and patches of woodland to the west. The immediate wider environ is predominantly semi-rural located on the southern outskirts of the town of Haywards Heath.

Figure 1. Redline boundary of the site (Google Satellite 2024)



1.3 Development Proposals

Proposals involve the construction of up to 80 dwellings with associated landscaping, open space, infrastructure and access.

Figure 2. Illustrative masterplan for the site (Richards Urban Design., 2024)

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, updated 2024).

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 a walkover carried out by Lewis Lakudzala BSc (Hons), MRes, ACIEEM and Amy Johnston BSc (Hons) on the 6th December 2023. A second walkover was completed in June 2024 by Lewis Lakudzala BSc (Hons), MRes, ACIEEM and Shannon Dagnell MSc as this was within the season for flowering vascular plants.

A condition assessment, in line with the Statutory Biodiversity Metric Technical Annex 1, was carried out on site during the second walkover in June 2024 by Lewis Lakudzala Project Ecologist with Ecosupport. 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, updated 2024). 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, updated 2024), 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, updated 2024).

2.4.1 Ecologically Desirable Areas

Where ecologically valuable baseline and post-development habitats were located adjacent to or with connectivity to the ecological network these were listed as 'Location ecologically desirable but not in local strategy'.

2.5 Limitations

There were not considered to be any limitations on the results of the habitat assessment as it was undertaken during good weather conditions and during the optimal time of the year (with regards to the presence of flowering plants). As such, it was considered an accurate assessment of the habitats could be made along with the conditions of the habitats (for factoring into the BNG calculations).

3.0 EXISTING HABITATS AND DEVELOPMENT PROPOSALS

The habitats on site were categorised according to UK Hab Ltd. Full descriptions of the habitats can be found in the EclA (Ecosupport, 2024). 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):

- *Other Neutral Grassland (g3c) with grazed (10) and scattered rushes (14) (Fig 2)*
- *Lowland Mixed deciduous woodland (w1f) – with line of trees (33) and ditch (50) (Figs 3 & 4)*
- *Built up areas and gardens (u1) – with vegetated garden (828)*

Figure 2. Grazed other neutral grassland present with scattered bracken and scrub (June 2024).



Figure 3. Line of trees present on site (June 2024).



Figure 4. View of one of the ditches present on site (taken June 2024).



Table 1. Existing 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, updated 2024).

Habitat Type	Area (ha)	Condition	Condition Assessment Notes	Strategic Significance
Other neutral grassland	4.655	Poor	The other neutral grassland present on site is regularly grazed by deer and has typical species present (Cock's Foot, Yorkshire Fog, Annual Meadow Grass, Meadow Buttercup, Bird's-foot Trefoil, Cinquefoil Germander Speedwell). There is also scattered bramble scrub and bracken present. The ground has been damaged by access in some areas leading to bare ground being present. Specifically criteria A was met.	Location ecologically desirable but not identified in local strategy.
Lowland Mixed deciduous woodland	1.438	Good	The Lowland Mixed Deciduous Woodland present around the boundaries of the site comprised of a number of mature tree species (Oak, Sycamore, Ash, Silver Birch and Willow). A number of the trees have browsing damage caused by deer. The woodland also has open space, deadwood and a variety of tree ages classes present. Specifically the woodland scored 26 out of the possible 39.	Location ecologically desirable but not identified in local strategy.
Vegetated Garden	0.069	Condition Assessment N/A	Condition Assessment N/A	Area not in local strategy.

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	0.076	Poor	Line of native trees comprising of Oak, Sycamore, Ash, Silver Birch and Willow with a complete canopy, but presence of browsing damage caused by deer. Specifically, Criteria A, B and E were met.	Area not in local strategy.

4.0 PROPOSED CREATED HABITATS & NET GAIN ASSESSMENT

4.1 On-Site Proposals

Following consultation with Miller Homes, to minimise the loss of biodiversity on site the following habitats are being *retained, enhanced and/or created* (please refer to the **Post-Development Layout appended** for information on the locations of these habitats). 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 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.***

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 Habitats

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

Table 4 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.

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.

Habitat Type	Action	Area (ha)	Target Condition	Condition Assessment Notes	Strategic Significance
Lowland Mixed deciduous woodland	Retained	1.405	Good	The woodland present on site will be retained with ongoing management to ensure its condition remains as 'Good'.	Location ecologically desirable but not identified in local strategy.
Other Neutral Grassland	Created	1.629	Good	Other neutral grassland of Good condition will be created in line with the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). Specifically, criteria A, B, C, D, E and F 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 ecologically desirable but not identified in local strategy.
Other Neutral Grassland	Created	0.28	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 ecologically desirable but not identified in local strategy.
Modified Grassland	Created	0.256	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, E, F and G will be targeted for achievement with sowing of an appropriate seed mix and appropriate management to minimise scrub and bracken and removal of any invasive species.	Area not in local strategy.

Sustainable Drainage System (SUDs)	Created	0.191	Good	A SUDs will be created to Good condition created in line with the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b). Specifically, criteria A, B, C, D, E1 and E2 will be targeted for achievement through appropriate management to ensure varied structure and lack of duckweed, algae or invasive species. The SUDs has been positioned adjacent to medium distinctiveness habitats, with limited shading from adjacent trees or shrubs.	Location ecologically desirable but not identified in local strategy.
Individual Urban trees	Created	0.5130	Poor	126 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 be native trees. Specifically criteria B and F will be targeted.	Area not in local strategy.
Vegetated Garden	Created	0.793	Condition Assessment N/A	No condition assessment required as per the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b).	Area not in local strategy.
Artificial unvegetated, unsealed surface	Created	0.019	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	0.478	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	1.112	N/A – Other	No condition assessment required as per the Statutory Biodiversity Metric Technical Annex 1 (Defra, 2023b).	Area not in local strategy.

4.1.2 Linear Habitats

Table 4 indicates those linear habitats due to be *retained, enhanced and/or created* on site with details provided, where appropriate, as to how the necessary condition criteria will be met.

Table 4. 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.

Habitat Type	Action	Length (km)	Target Condition	Condition Assessment Notes	Strategic Significance
Native Hedgerow	Created	0.853	Poor	A number of native hedgerows are proposed to be planted across the site. These are expected to be single species native hedgerows. The hedgerows will be regularly managed especially where adjacent to access road to ensure visibility and therefore are expected to be less than 1.5m wide and tall. Specifically, B1, B2, C2, D1 and D2 will be targeted.	Area not in local strategy.

4.2 Metric Calculation

Following the incorporation of the above measures into the DEFRA Statutory Biodiversity Metric, on site there is a net gain of 0.72% in habitats (or +0.35 habitat units) and a net gain of +441.54% in hedgerows (or +1.34 hedgerow units), however the trading rules have not been satisfied due to the loss of Lowland Mixed Deciduous Woodland (w1f) and Other Neutral Grassland (g3c) (Fig 5). Therefore, further compensation will be required in order to meet the required 10% gain for habitat units and satisfaction of the trading summary.

Figure 5. Screenshot of the 'headline results' output from the BNG assessment undertaken for the site using the DEFRA Statutory Biodiversity Metric.

On-site baseline	Habitat units	49.09		
	Hedgerow units	0.30		
	Watercourse units	0.00		
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	49.45		
	Hedgerow units	1.65		
	Watercourse units	0.00		
On-site net change (units & percentage)	Habitat units	0.35	0.72%	
	Hedgerow units	1.34	441.54%	
	Watercourse units	0.00	0.00%	
Off-site baseline	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site net change (units & percentage)	Habitat units	0.00	0.00%	
	Hedgerow units	0.00	0.00%	
	Watercourse units	0.00	0.00%	
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.35		
	Hedgerow units	1.34		
	Watercourse units	0.00		
Spatial risk multiplier (SRM) deductions	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
FINAL RESULTS				
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.35		
	Hedgerow units	1.34		
	Watercourse units	0.00		
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.72%		
	Hedgerow units	441.54%		
	Watercourse units	0.00%		
Trading rules satisfied?	No - Check Trading Summaries ▲			
Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	49.09	54.00	4.56
Hedgerow units	10.00%	0.30	0.33	0.00
Watercourse units	10.00%	0.00	0.00	0.00

4.2.1 Compensation

To provide compensation for the loss of habitats on site, BNG credits will be purchased from an external provider. Currently the site is at a deficit of 4.56 habitat units due to the loss of Other Neutral Grassland (g3c) and Lowland Mixed Deciduous Woodland (w1f). A credit provider has not been decided as the application is at outline stage, however a provider will be decided at a later stage.

5.0 HABITAT MANAGEMENT

Due to this being an outline application, a detailed landscape scheme is not yet available and, therefore, the below sections provide general recommendations about the management of the habitats on site. The information within the below sections will be used to inform the landscape strategy at the detailed stage 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 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 Modified Grassland

5.2.1 Proposed Planting

Areas of modified grassland in the form of grass verges are proposed to be created around the residential areas on site. This grassland is set to be reinforced and will be seeded with Emorsgate EG22 – Strong Lawn Grass Mixture or similar (approved by an ecologist).

5.2.2 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. Given the location of the grass verges it is expected to be regularly maintained at a short sward of less than 7cm.

First year management: During the first year the grassland areas must be regularly maintained to the above noted heights every 3-4 weeks (or more frequently as needed) to prevent the establishment of weeds. All arisings must be taken from site to prevent the addition of too many nutrients into the soil. If necessary, glyphosate-based weed killer can be used to spot treat any areas with dense patches of Nettles or Bramble.

Management Once Established: Once the seed is established after the first year, regular mowing is still expected, which will result in a shorter sward height. However, grass should not be cut lower than 30mm.

Targeted scrub, bracken and invasive plant removal should also be carried out, as needed, to prevent encroachment into the grassland.

5.3 Other Neutral Grassland

5.3.1 Proposed Planning

1.629ha of species rich grassland is to be created around defined areas around the boundaries of the site, in particular on the northeast and around the SUDs. This will be achieved through sowing a wildflower mixture (e.g. Emorsgate EM4 – Meadow Mixture for Clay Soils) or sourcing a local grassland donor from a nearby site.

Recommended grass species for this habitat type may include Perennial Rye-grass (*Lolium perenne*), Common Bent (*Agrostis capillaris*), False Oat-grass (*Arrhenatherum elatius*), Yorkshire-fog (*Holcus lanatus*), Rough Meadow-grass (*Poa trivialis*) and Cock's-foot (*Dactylis glomerata*). Herb planting may include Yarrow (*Achillea millefolium*), Ribwort Plantain (*Plantago lanceolata*), Red Clover (*Trifolium pratense*), Common Knapweed (*Centaurea nigra*), Bird's-foot Trefoil (*Lotus corniculatus*), Common Mouse-ear (*Cerastium fontanum*), Meadow Buttercup (*Ranunculus acris*), Self-heal (*Prunella vulgaris*).

Wildflower areas do not require additional watering or fertilizer. Cutting a meadow and removing the clippings retains low nutrient levels in the soil and suppresses out-competing coarse grasses. It is recommended the wildflower grassland undergoes two annual cuts. The growth should be cut back to a height no lower than 15cm, and this cut grass should be dried on site. Cuttings should be left in situ for approximately one week, after this the arisings must be removed from the site.

Due to the presence of reptiles on site, any cutting must be completed in a two-stage directional trim. This two-stage process requires the grassland to be cut primarily to 300mm and then to ground level following checks that no reptiles are present, and it is confirmed no reptiles are at risk of injury or death.

First year management: Perennial species take at least a full year to establish. For newly sown areas, weeds will dominate during the first summer, arising from the soil seed bank and by grass growth. Mowing should therefore be undertaken during the first year to control this, thereby minimising competition and weed seed production.

Management Once Established: The wildflower areas can undergo a spring cut in April of the second year to enhance wildflower growth. However, leaving it to flower and instead cutting it mid-summer is recommended, except if a retained buffer area is established. This buffer 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 the nesting birds that do not fledge until late July, as well as insects and other wildlife. If mowing is required, 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.

To ensure maximum flowering and wildlife diversity, the buffer must be managed in sections at varying times between late June and the end of August as this will allow a diverse, balanced sward to be achieved. Consistently cutting late (August and September) allows coarse grasses and other dominant species to grow unchecked and is therefore not recommended.

5.4 Individual Trees

5.4.1 Proposed Planning

A total of 126 individual trees will be planted on site. It is recommended that the following trees are planted as individual trees: Field Maple (*Acer campestre*), European Hornbeam (*Carpinus betulus*), Hawthorn (*Crataegus monogyna*), Small-Leaved Lime (*Tilia cordata*) and Wild Cherry (*Prunus avium*). Weeding must be done at the base of each tree in all years and the trees must be managed to ensure they remain in good condition. Weed growth can be suppressed with wood chips or raked hay if placed at the base of the trees. Fruiting trees must not be cut to allow the fruiting bodies to develop.

Tree planting: Planting will be carried out in the late autumn of the first year, to reduce the effects of freezing and unusually high temperatures. Rootgrow or Bonemeal will be applied to the new plants to encourage healthy root growth.

Years 1-2: Annual inspections of all newly planted trees should be carried out to assess their condition, looking at their general health and understanding whether remedial action may be required. Trees that become damaged or that die must be replaced with the same tree in the next planting season.

Years 3-5: If required, the trees should be pruned in October to promote growth. Any dead or damaged trees must be replaced as stated in Years 1 and 2.

5.5 Native Hedgerows

5.5.1 Proposed Planting

Several single-species native hedgerows will be planted around the residential areas on the site. Recommended species to be planted include Hawthorn (*Crataegus monogyna*), Alder Buckthorn (*Frangula alnus*), Hazel (*Corylus avellana*), Field Maple (*Acer campestre*), Dog Rose (*Rosa canina*), Holly (*Ilex aquifolium*), Butcher's-broom (*Ruscus aculeatus*). These are recommended to be interwoven with climbers, such as Traveller's-joy (*Clematis vitalba*) and Honeysuckle (*Lonicera periclymenum*).

5.5.2 Management

There are three important factors to consider when managing hedgerows in terms of the impact on resident mammal populations and are the basis of management recommendations. These are outlined by The *Hedgerow Management and Wildlife* (Barr et al., undated) and are as follows:

1. The type and amount of food available within the hedgerow. Favourable conditions being a large invertebrate population or prolific annual seed and berry crop.
2. The vegetation structure and composition of the hedgerow. Several species favour a dense, herb- rich basal layer or a continuous line of hedgerow trees.
3. The continuity and connectivity of the hedge within the landscape. A hedgerow connecting patches of small farm woodlands will have greater value as a corridor for mammal dispersal.

5.5.3 Monitoring

Annual monitoring of the newly planted trees / hedge areas will be undertaken for the first 3 years and bi-annual monitoring between 4-10 years. The existing hedgerows / tree lines will be monitored during the first, third and fifth year, by a suitably experienced ecologist during late winter – early

spring of each year. These monitoring visits will assess the general health of the hedgerows and determine if any remedial action is required.

5.5.4 Replacement

Any plants that are removed, die or become seriously damaged during the 10-year monitoring period of planting shall be replaced with the same tree species 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 promote vigorous, dense regrowth. This must be done between October and February, outside of the breeding bird season.

5.5.5 Hedge Trimming Regime

To benefit small mammals, minimal interference is recommended and cutting should be done after autumn fruiting (e.g. in late winter). The key points of the management prescriptions will therefore be as follows (adopting recommendations as outlined within Bright and MacPherson 2002):

- 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 structure and maintained at a height of 3 – (preferably 4) meters.
- At least 30% of the hedge 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. Therefore, management will require hand tools.
- Coppicing or laying should be used to manage any of the hedgerows on site which become gappy or spars
- If the size of the hedgerow needs to be reduced, avoid cutting the top and cut one side.

5.6 SUDs

5.6.1 SUDs Creation

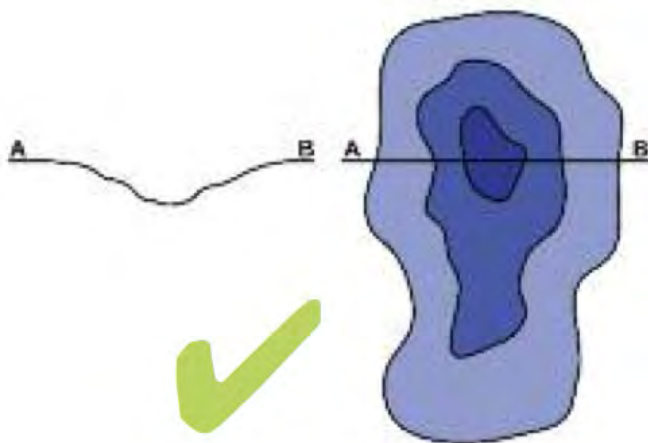
The basin and margins will be seeded with an appropriate wetland seed mix to support variations in water levels.

Within the open space on the south of the field furthest to the east, one SUDs basin is proposed totalling an area of 0.0.191ha. It is recommended it is seeded with a wetland species mix into/surrounding the SUDs basin and selective plug planting to encourage establishment of a wetland area. This habitat has been listed as sustainable urban drainage feature of ‘moderate’ target condition, within the accompanying metric.

This habitat will also provide a range of plant species which will encourage invertebrate diversity and enhance foraging and sheltering opportunities for amphibians on site. A maintenance regime will be undertaken to establish a varied structure in vegetation and discourage invasive non-native species cover.

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 has 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 6**). It is recommended the SUDs are an approximate maximum depth of 0.9m, but the depth should vary across the SUDs. Creating shelves is one option of obtaining different depths.

Figure 6. Design of SUDs showing varying depths at a gently sloping level (Freshwater Habitats 2013)



5.6.2 Management

The pond and SUDs will be planted up with a suitable grassland seed mix and selective plug planting to encourage establishment of a wetland areas. Planting beyond this is not recommended as per Freshwater Habitats (2013), as the new-pond stage within a pond/SUDs is relatively short, and they will colonise naturally. Further, the new-pond stage can be important for some species such as certain species of dragonflies. Therefore, no planting will occur, but management will be required within 2-5 years after establishment.

In the early years, blanket weed can cover waterbodies which includes ponds/SUDs. This will be controlled if necessary and be pulled out carefully. Once the waterbody has settled blanket weed will usually be kept in check by animals. Any plant that starts to dominate will be thinned out. Only one third of a waterbody should be cleared per year.

Once cleared, plants or debris will 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 waterbodies in early spring, often shortly after Frogs. All three amphibians then lay eggs in early Spring. Common Toads then move away from waterbodies into terrestrial habitat. In summer metamorphosis takes place.

As a result, the best time for waterbody management is late September and October. Tadpoles would have left the pond/SUDs 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 waterbodies.

Whilst a varied vegetation structure is recommended, to prevent overgrowth of possible establishment from scrub around the edges of the SUDs, further management will also be required. It is recommended this is achieved by manual cutting to keep scrub from overgrowing.

5.7 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 on site 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
- 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, updated 2024).
- 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.

5.8 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.

5.9 Post-Construction Habitat Creation

Table 5 below depicts the indicative timings associated with the habitat creation and enhancements to be undertaken after all construction works on site 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.

5.10 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 5** 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 5.8**).
- The compliance check will include the write up and submission of a BNG Habitat Monitoring 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

Table 5. Schedule of habitat *retention, enhancement and/or 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 around all habitats to be retained / enhanced to prevent these areas from being damaged during works.
Habitat Creation Modified Grassland (Sections 5.2)	Planting	Ideally Autumn or Spring	Establish the grassland through sowing of Emorsgate EG22 – Strong Lawn Grass 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. - If necessary, glyphosate-based weed killer can be used to spot treat any areas with dense patches of Nettles or Bramble.
	Weeding	Annually, outside of February to August.	- Cut the scrub back to prevent it becoming overgrown. Keep the bramble at a density of 15%. - Weeding should occur following the first planting. - Water when required.
Habitat Enhancement Other Neutral Grassland (Section 5.3)	Planting	Late Autumn or Spring	Establish grassland by planting Emorsgate EM4 – Meadow Mixture for Clay Soils or sourcing a local grassland donor from a nearby site.
Woodland (Section 5.4)	Planting	Late Autumn	Rootgrow or Bonemeal should be applied upon planting to promote root growth.
	Year 1 Management	Routinely as required	- Two annual cuts should be undertaken, cutting it to 50-75mm and drying the cuttings on site. Any arisings from the cuttings are to be removed following 1 week. - Mowing to prevent weed domination.
	Botanical Survey	Optimal Survey Season	Identify areas of high botanical value, in order to advise thinning locations accurately.

Habitat Creation Individual Trees (Section 5.5)	Planting	Late Autumn	• Rootgrow or Bonemeal should be applied upon planting to promote root growth.
	Year 1 Management	Routinely as required	• Health inspections of each tree. • Replacement of dead or damaged trees. • Weeding at the tree base and input of wood chips or raked hay if suppression is required.
Habitat Creation Native Hedgerow (Section 5.6)	Monitoring	Late Winter – Early Spring	• Monitoring should be undertaken by an experienced ecologist to assess hedgerow health. • Replacement should occur where necessary.
	Cutting	Between October and February	• Cutting is carried out on a 3-year cycle to sustain foraging opportunities for the local wildlife.
Habitat Creation SUDs (Sections 5.7)	Planting	Ideally Autumn or Spring	• Attenuation basins will be established through seeding of Emorsgate EM8 – Meadow Mixture for Wetlands.
	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.

5.11 Years 2 – 30 Management / Monitoring Table

Once the initial works covering the first year of management / monitoring have been completed as outlined in **Table 5**, the longer-term management objectives for the ecological features on site will need to be implemented (which have been outlined in detail in the above sections). **Table 6** below provides an overview of the actions required and the timings of when they should be complete (covering years 2– 30 post construction)

Table 6. 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
Modified Grassland (Section 5.2)	Years 2-30 Management	Year-round	The grassland will be subject to regular strimming (not mowing due to reptile presence) 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.
Other Neutral Grassland (Section 5.3)	Annual cutting	First Cut: Mid-summer of Year 2 Second Cut: Late Autumn	- Spring cut of the wildflower areas. - Sections should be mowed on different dates. - Buffer areas must be managed at different times between late June and the end of August.
Woodland (Section 5.4)	Weed Removal	First 2-3 years	Weeds should be cut back as necessary to prevent domination.
	Hazel Coppice Rotation	Every 6-10 years, November-March	- Hazel should be cut to ground level. 30% will be cut every 3 years within the specified months. - Coppice management occurs within the timeframe shown. Ensure this is staggered.
	Selective Thinning	Every 5 years	- An ecologist or arborist will declare the target trees to be removed to maintain a canopy cover of 75%. - Trees with PRFs should be retained - Some trees are to be cut at a height of 3-5m and the stumps should be left.
	Botanical Surveys	Every 5 years	Carried out by an ecologist or arborist to identify areas of botanical value.
	Removal of invasive species	Winter e.g. October-February (outside of nesting bird season)	Stumps, roots and regrowth can be treated with glyphosate where other treatments are not successful.

			Consult specialists if Japanese Knotweed, Giant Hogweed, <i>Rhododendron ponticum</i> or New Zealand Pygmyweed are found.
Individual Trees (Section 5.5)	3-5 Year Management	October	Pruning and replacement if required.
Native Hedgerow (Section 5.6)	Annual Management	Between October and February	- Coppicing if thinning occurs. - Any cutting must occur after the autumn fruiting occurs. - The hedgerow will be maintained at a height of 3-4 metres.
SUDs (Section 5.7)	Years 2 – 30 Management	Mid to late Summer and Autumn	- The grassland will be left to flower until late July / August. - Conduct single hay cut after flowering with growth reduced to 50mm. - Manage sections of each grassland parcel at different times from late June to the end of August. - Conduct a second cut in Autumn with growth reduced to 50mm. - A further Spring cut can be undertaken if needed.
Compliance Check (Section 5.8)	Monitoring report	Annually for the first 5 years, then every 5 years until year 30 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. - The report will be submitted to the LPA. - Any necessary actions must then be completed prior to the next compliance check.

6.0 CONCLUSION

A Biodiversity Net Gain Assessment was undertaken for 'Land at North Colwell Farm'. At this stage the assessment identified that based on plans currently available, the proposals will result in a net loss of -12.07% in habitats (or -5.92 habitat units) and a net gain of +441.54% in hedgerows (or +1.34 hedgerow units) and the trading rules are not satisfied. Habitat creation on site includes woodland, species-rich grassland and individual trees in addition to a number of native hedgerows around the site. As the 10% requirement for habitat units and trading summary has not been met on site, compensation will be provided through the purchase of BNG units from a credit provider. The manner in which the habitats should be managed is also detailed within this report, this including how frequently and at what time of year this should be carried out.

7.0 REFERENCES

DEFRA (2023a, updated 2024) *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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UKHab Ltd. (2023). *The UK Habitat Classification – Version 2.0*.

APPENDIX 1- Baseline Habitats Map

APPENDIX 2- Post-development Habitats Map



Legend

-  Redline boundary
-  4x tree with bat roost potential (PRF-I)
-  Line of trees (w1f)
-  Ditch
-  Bracken (g1c)
-  Other neutral grassland (g3c)
Secondary code(s):
(10) Grazed
(14) Scattered rushes
-  Lowland mixed deciduous woodland (w1f)
Secondary code(s):
(33) Line of trees
(50) Ditch
-  Dense scrub (h3)
-  Built-up areas and gardens (u1)
Secondary code(s):
(828) Vegetated garden



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Map	UK Habs Map
Site	Land North of Colwell Farm
Client	Miller Homes
Date	13/12/2024

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Legend

-  Redline boundary
-  Tree planting (126) (Indicative locations)
-  Modified grassland
-  Species rich grassland / wildflower planting
-  Woodland
-  SUDs
-  Residential gardens
-  Unvegetated paths
-  Hard standing
-  Buildings



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Map	Post development habitat plan
Site	Land North of Colwell Farm
Client	Miller Homes
Date	08/01/2025

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