Framework Biodiversity Net Gain Plan

Hither Green Golf Course, Redditch

A Report To: Barratts/David Wilson Homes
Report Number: RT-MME-159232-Rev A
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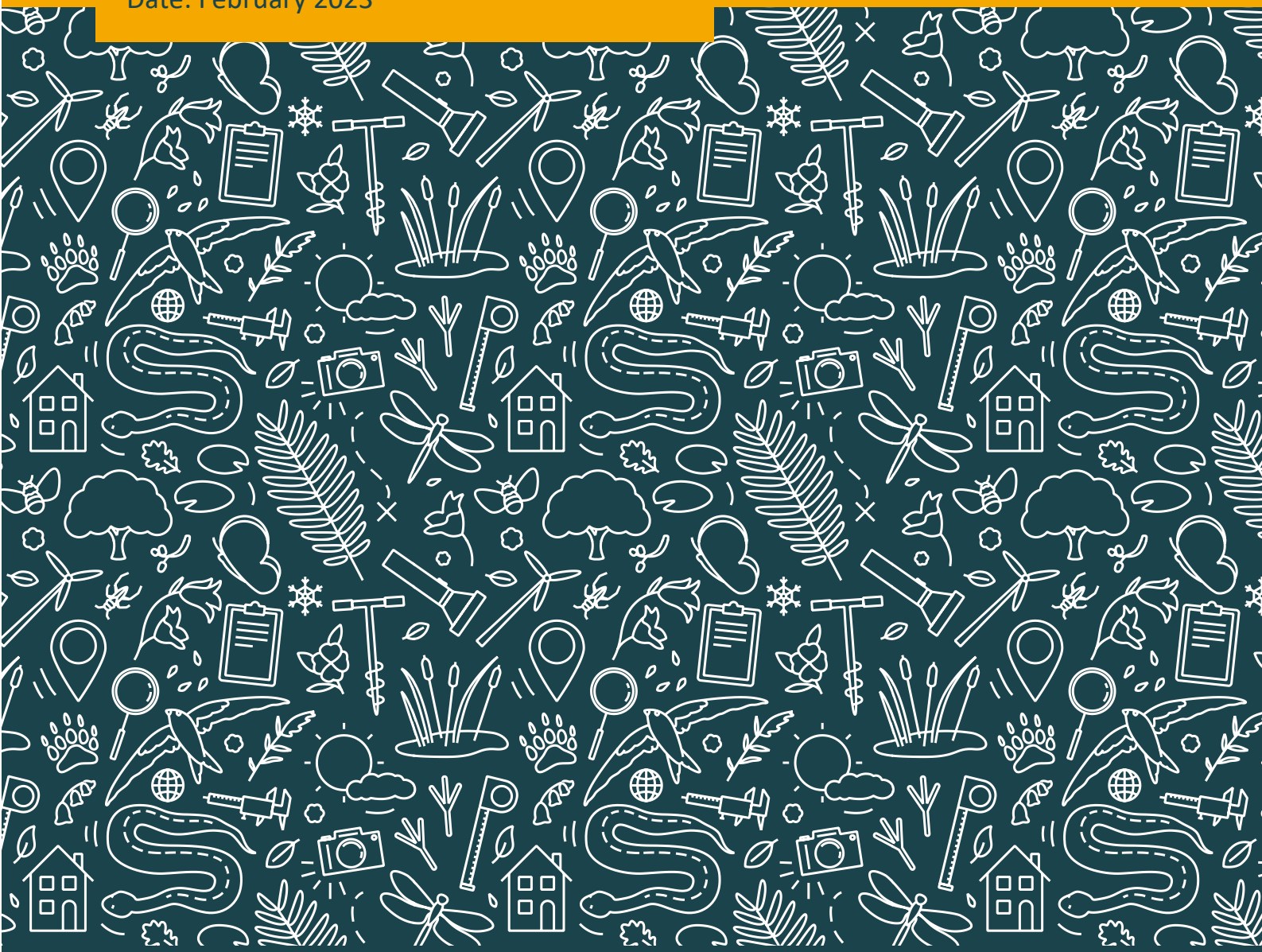

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Declaration of Compliance

This study has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of Practice for Planning and Development". The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

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The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

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1. Introduction

1.1 Project Background

In October 2022, Barratts/David Wilson Homes commissioned Middlemarch to prepare a Framework Biodiversity Net Gain Plan (FrBNG) for a proposed development at Hither Green Golf Course. The FrBNG forms part of a series of ecological reports that have been prepared by Middlemarch to inform a planning application for the proposed development. These include:

- Preliminary Ecological Appraisal (Report RT-MME-152753-03-Rev B),
- Preliminary Bat Roost Assessment (Report RT-MME-153160-01),
- Badger Survey (Report RT-MME-153160-02),
- Great Crested Newt eDNA Survey (Report RT-MME-153160-03),
- Breeding Bird Survey (Report RT-MME-153160-04),
- Reptile Survey (Report RT-MME-153160-05),
- Wintering Bird Survey (Report RT-MME-153160-07),
- Construction Ecological Management Plan (Report RT-MME-153160-06-Rev A); and,
- Biodiversity Net Gain Concept Plan at Abbey Park Hotel Golf Course (Report RT-MME-157753).

The reports comprise the baseline conditions which have informed the avoidance, mitigation and compensation proposals detailed in this plan.

1.2 Scope of the Plan

The FrBNG set outs approach of the proposed development to secure an overall net gain for biodiversity. The plan considers Biodiversity Net Gain: Best Practice Principles[1] to ensure that any net gain delivered is measurable, equitable across all habitats and species and complies with the mitigation hierarchy of the National Planning Policy Framework (NPPF)[2]. The Plan is underpinned by a biodiversity metric assessment (Appendix A), which provides a measure of progress towards biodiversity net gain objectives based on habitat values, however qualitative net gains for species are also considered in unison to ensure a net gain for biodiversity overall.

1.3 Site Information

Table 1.1 provides a summary of the site and its surroundings.

Attribute	Description
Location	Hither Green Golf Course, Redditch
National Grid Reference	SP043693

Table 1.1: Summary of Site and Surroundings (Continues)

[1] CIRIA, CIEEM, IEMA (2016) *Biodiversity Net Gain: Good Practice Principles for Development* [Available https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf]

[2] Ministry of Housing, Communities and Local Government (2021) National Planning Policy Framework. Available https://www.gov.uk/government/publications/national-planning-policy-framework--2

Attribute	Description
Site Area (ha)	9.84 ha
Topography	The site is situated on a gentle southerly slope ranging from 101 m above ordnance datum (AOD) to 92 m AOD.
Land Cover (on site)	The site comprises a former golf course comprising areas of modified and semi-natural grassland, ponds and pockets of woodland enclosed by boundary hedgerows.
Land Cover (site surrounds)	Principal landcover within 1 km of the site includes improved grassland, arable and horticulture and pockets of broad-leaved woodland with extensive areas of suburban and urban development to the south.

Table 1.1: Summary of Site and Surroundings (Continued)

1.4 Documentation Provided

The impacts and mitigation/compensation proposals detailed in this plan are based on the documentation provided by the client in Table 1.2.

Document / Drawing Number	Author
Hither Green - Proposed Site Layout (Drawing ME-24-21Y	Urban Design
Hither Green - Landscape Masterplan (Drawing HG-19-Rev 3)	SLR
Hither Green - Preliminary Drainage Strategy and Finished Floor Levels (Drawings 21169 1-3F)	Travis Baker
Hither Green Arboricultural Impact Assessment Report RT-MME-153943-02	Middlemarch

Table 1.2: Documentation Provided by Client

2. Baseline and Impacts

2.1 Baseline Summary

Table 2.1 below provides a summary of the baseline conditions at the site with reference to the data source for each ecological receptor.

Feature	Data Source	Summary Description
Designated Sites		
Dagnell End Meadow Site of Special Scientific Interest	Preliminary Ecological Appraisal (*Report RT-MME-152753-03-Rev B*)	Located 450 m east of the site, the SSSI comprises one of the last surviving ancient pastures in the valley of the River Arrow,
River Arrow Local Wildlife Site	Preliminary Ecological Appraisal (*Report RT-MME-152753-03-Rev B*)	The River Arrow Local Wildlife Site runs along the southern boundary of the site. The River is notified for being an important wildlife corridor with a range of natural riparian features, semi-natural bankside habitats and associated aquatic fauna including otters and kingfisher.
Habitats		
All Habitats	Preliminary Ecological Appraisal (*Report RT-MME-152753-03-Rev B*)	The site supports a range of semi-natural habitats including broad-leaved semi-natural and woodland, scrub, ponds, hedgerows as well as artificial habitat created for the amenity use of the site as a golf course. The latter includes amenity grassland, broad-leaved plantation woodland, buildings, and hardstanding.
Species		
Amphibians	Great Crested Newt eDNA Survey (*Report RT-MME-153160-03*)	No great crested newts were recorded in any of the ponds on site or within 250 m of the site boundary. Common toad was recorded on site during the reptile survey and there is anecdotal evidence of large populations of common frog and small populations of common toad, palmate and smooth newts[3]
Bats	Preliminary Roost Assessment (*Report RT-MME-153160-01*)	The site was found to support a building and ten trees with high potential. Of these, the building and two of the ten trees were situated within the development footprint.
	Dusk Emergence and Dawn Re-entry Bat Survey (*Report RT-MME-155922*)	Dusk/dawn surveys were completed for two of the ten trees and the building with high roost potential. A total of seven bat species were recorded during the survey, however no roosts were found in the trees or buildings assessment.

Table 2.1: Summary of Baseline Ecological Conditions (Continues)

[3] Steve Bloomfield (Worcestershire Wildlife Trust) (2022) *Pers.comm.*

Feature	Data Source	Summary Description
Designated Sites		
Birds	Breeding Bird Survey (*Report RT-MME-153160-04*)	The site was found to support a assemblage of 21 confirmed/probable breeding bird comprising common generalist species with a selection of woodland and scrub specialists. No significant concentrations of breeding species in either a local or national context were recorded.
	Wintering Bird Survey (*Report RT-MME-153160-07*)	A total of 36 wintering bird species were recorded on site, the majority of which were widespread and generalist species. Overall, the site is of low value to overwintering species.
Terrestrial mammals	Preliminary Ecological Appraisal (*Report RT-MME-152753-03-Rev B*)	The site supports suitable habitat opportunities for hedgehog and it is considered that the species is likely to be at least intermittently present within the site.
	Badger Survey (*Report RT-MME-153160-02*)	The site was found to support suitable badger foraging and sett building habitat, but no evidence of badger was recorded within the site. It is considered likely that badgers will use the site intermittently.
Reptiles	Reptile Survey (*Report RT-MME-153160-05*)	A low population of grass snake (maximum count of 3 adults) was recorded around the pond in the north of the site and along the northern and eastern boundaries of the site.

Table 2.1: Summary of Baseline Ecological Conditions (Continued)

2.2 Description of Development

The proposed development comprises a new residential development scheme with a vehicular access point onto Hither Green Lane, play areas, public open space including footways and cycleways, sustainable urban drainage systems and all other ancillary and enabling infrastructure. The development is detailed in the Hither Green Proposed Site Layout (Drawing ME-24-21Y) by Urban Design.

The following activities are likely to be associated with the construction and operational phase of the proposed development:

Construction Phase

- Site clearance and ground preparation,
- Use and movement of heavy goods vehicles and machinery,
- Storage of plant, materials, and waste; and,
- Presence of and movement of site personnel.

Operational Phase

- Permanent siting of buildings, structures, and roads,
- Frequent movement of heavy goods vehicle, cars, and other forms of transportation,
- Use of lighting associated with roads and buildings,
- Presence of and movement of site personnel; and,
- Maintenance of landscaping.

2.3 Summary of Effects

Table 2.2 summarises the potential impacts of the proposed development on biodiversity, prior to avoidance/mitigation, and the corresponding section of the FrBNG which details how these impacts will be address as part of the development proposal.

Receptor	Summary of Impact	Framework BNG Plan Section
Designated Sites		
Dagnell End Meadow SSSI	Potential for indirect impacts of run-off and pollution during construction and operational phases.	Section 4
River Arrow LWS	Potential for indirect impacts of run-off and pollution during construction and operational phases.	Section 4
Habitats		
Priority Habitats	Habitat loss or fragmentation of priority habitats including woodland, hedgerows, and ponds.	Section 3, 5 and 6
All Habitats	Overall loss of habitat value for biodiversity. Disturbance of retained habitats.	Section 3, 5 and 6 Section 4
Species		
Amphibians	Aquatic and terrestrial habitat loss for common amphibians. Habitat fragmentation as a result of operational use of the site. Killing or injury of common amphibians during construction.	Section 3 Section 3 Section 4
Bats	Loss of roosting and foraging habitat Fragmentation of habitats due to lighting	Section 3 Section 4
Birds	Loss of habitat Potential for killing/injuring during construction phases and management during operation	Section 3 Section 4 and 5
Terrestrial mammals	Loss/fragmentation of habitat Potential injury during construction phases	Section 3 Section 4
Reptiles	Loss and fragmentation of habitat construction/operation Killing and injury of grass snake during construction	Section 3 Section 4

Table 2.2: Summary of Existing Habitats and Linear Features

3. Scheme Design

3.1 Avoidance/Minimisation

The design of the proposed development has taken account of the principal features of biodiversity interest on site and has sought to retain or minimise impacts or losses of these features. This includes the following design measures:

Non-statutory Wildlife Sites

River Arrow – The proposed development retains a development stand-off from the River Arrow Local Wildlife Site and associated riparian habitats. This ensures there is no net loss of riparian habitat along the River Arrow corridor whilst providing opportunities for complementary habitat creation which can be designed to support the continued function of the river as an important wildlife corridor.

The proposed site drainage system (see Preliminary Drainage Strategy and Finished Floor Levels Drawings 21169 1-3F by Travis Baker) has been designed with swales, settlement ponds, permeable paving, and a balancing basin with new reedbed planting and a sediment forebay to minimise the risk of runoff and contaminants reaching the River Arrow during the operational phase of the proposed development. The drainage strategy, together with its long-term maintenance to ensure continued mitigation for the River Arrow, can be secured via a planning condition. Mitigation for construction phase hydrology effects is detailed in Section 4.

Habitats

Woodland – The proposed development has retained 85% of the existing semi-natural or plantation woodlands on site. Most of these woodlands are situated on the eastern boundary of the site, thereby retaining a key north-south dispersal corridor for woodland species within the site.

Trees – The proposed development has been designed to retain the majority of the mature specimen trees on site (See the Arboricultural Impact Assessment Report RT-MME-152753-02-Rev A by Middlemarch). These trees are incorporated into the open spaces throughout, ensuring some continued wooded permeability and canopy cover throughout the main developed areas.

Hedgerows – The proposed development has retained 68% of the existing hedgerow network, principally around the site boundaries, ensuring continued north-south and east-west dispersal opportunities around the site.

Ponds – The pond to the north of the site (Ponds P1) has been retained and is incorporated into the landscaping proposals. This comprises 52% of the existing open water habitats.

Section 5 includes provisions for long-term maintenance of all retained habitat within the site.

Species

Amphibians – The pond in the north of the site will be retained, which provides continued aquatic breeding habitat for common amphibian species such as common frog, smooth and palmate newt. Retained areas of woodland and boundary hedgerows will also maintain suitable terrestrial habitat principally along the northern, eastern, and western boundaries of the site, ensuring continued dispersal opportunities along ‘primary dispersal corridors’ (see Middlemarch Drawing C159232-02-Rev A in Section 7) and to alternative habitats in the surrounding landscape. Section 5 includes provisions for long-term maintenance of these retained features for amphibians.

It is considered likely that the proposed road network and areas of built development will restrict dispersal opportunities for common amphibians throughout the main development area. As such, it is proposed that measures to maintain/restore permeability for amphibians will be incorporated into the final designs. This will include the provision of dropped kerbs and gully pots at strategic locations along the route of the 'secondary dispersal corridors' (see Middlemarch Drawing C159232-02-Rev A in Section 7) to link up networks of private gardens, road verges and sustainable urban drainage features across the site. The design and location of these features will be set out at the detailed design phase and incorporated into the Landscape and Ecology Management Plan (LEMP) (see Section 5).

Bats – The proposed development will retain eight of the ten trees with high bat roost potential, ensuring that the site continues to provide tree roosting opportunities for the seven species of bat recorded. The retention of the boundary hedgerows and woodland cluster on the eastern boundary of the site will ensure that bat foraging/commuting opportunities are maintained along the 'primary dispersal corridors' (see Drawing C159232-02-Rev A). Section 4 details the proposed mitigation for light disturbance along the bat dispersal corridors.

Nesting Birds – The retained woodland, trees and hedgerows provide continued nesting and limited winterfeeding opportunities for the assemblages of breeding and overwintering birds recorded. These features will be subject to long-term maintenance as part of the LEMP (see Section 5)

Terrestrial Mammals – The retained hedgerows and woodland will ensure the maintenance of suitable foraging and dispersal habitat for terrestrial mammals such as hedgehog and badger. The road network, areas of built development and boundary fences between gardens, however, may restrict permeability of much of the remaining site area for hedgehog. To ensure the maintenance of connectivity for hedgehog, it is proposed the final scheme design will include the provision of hedgehog passes in boundary fences to link garden spaces along the route of the secondary dispersal corridors (see Drawing C159232-02-Rev A). The number and location of these features will be set out at the detailed design phase and incorporated into the LEMP (see Section 5).

Reptiles – The proposed development includes the retention of several important features for grass snake, including the pond to the north of the site, the boundary hedgerows, and a connective north-south link along the primary dispersal corridor to the east of the site. Maintenance of the development stand-off along the River Arrow will also ensure continue access to, and function of, the riparian corridor which may provide further dispersal opportunities to alternative habitats in the surrounding landscape. Long-term maintenance of these habitats and dispersal routes during the operational life of the scheme will be underpinned by a LEMP (see Section 5)

3.2 Habitat Creation/Enhancement

Tables 3.1 highlights the proposed habitat creation and enhancement measures that have been incorporated into scheme design. The measures are based on the Landscape Drawing HG-19-Rev 3 plan by SLR. An adapted version of this plan showing the full extent of each habitat type is detailed in Drawing C159232-01-Rev A in Section 7.

Feature	Area (ha) / Length (km)	Summary Description
Habitats		
Woodland enhancement (Plantation woodland)	1.23 ha	**Target: Broad-leaved plantation woodland in 'fairly good' condition** The enhancements will be achieved by selective thinning of non-native canopy and shrub species and native species underplanting to improve the extent and diversity of the shrub layer. Long term management (Section 5),comprising periodical thinning/coppicing, will be undertaken increase woodland structure and regeneration potential, with subsequent enhanced nesting opportunities for woodland birds. Deadwood from woodland management activities will be used to increase deadwood across the woodland parcels.
Woodland enhancement (Semi-natural woodland)	0.26 ha	**Target: Broad-leaved semi-natural woodland in 'moderate' condition** Enhancement of the semi-natural woodland adjacent to the River Arrow will include proposed by native shrub and tree planting to close canopy gaps and increase shrub layer, regeneration potential and woodland structure. Whilst some long-term control of Himalayan balsam will be carried out as part of a LEMP (See Section 5), it is considered that, outside of a catchment led management approach, the species will not be eradicated completely and therefore a 'Moderate' target condition is given.
Woodland enhancement (Semi-natural)	0.10 ha	**Target: Broad-leaved semi-natural woodland in 'moderate' condition** Enhancement of the small woodland in the centre of the site will be achieved through selective canopy thinning and underplanting to create shrub layer improve regeneration potential, structure, and enhanced nesting opportunities for woodland/woodland edge birds.
Enhanced wetland features	0.11 ha	**Target: Eutrophic standing water (non-priority pond) in 'moderate' condition** Enhancement of Pond P1 will be achieved by some minor regrading works to accommodate the access road to the north along with new wetland planting (see reedbeds and bankside wet grassland creation below). Long-term management will be included in the LEMP (see Section 5), which will include control of the invasive New Zealand pigmyweed. Whilst the target will be to eradicate the species from the pond, it is possible that long-term control will be needed therefore a 'Moderate' target condition is given to reflect the likely persistence of this species.
Proposed amenity grassland	0.63 ha	**Target: Amenity grassland in 'moderate' condition** Comprises formal areas of open space and road verges. The grassland will be maintained principally for amenity purposes but will be sown with a flowering lawn mixture (e.g., Emorsgate EL1 Flowering Lawn Mixture) to improve the botanical composition so that a 'Moderate' condition can be achieved.

Table 3.1: Summary of Habitats to be Created/Enhanced (Continues)

Feature	Area (ha) / Length (km)	Summary Description
Habitats		
Proposed damp grassland	0.32 ha	**Target: Neutral grassland in 'moderate' condition** Comprises the seeding of the seasonally wet banks and margins of the retained and created pond and SUDS features. The seeding will comprise tussocky sward type with species tolerant of seasonal inundation or gleying (e.g., Emorsgate EM8 Meadow Mixture for Wetlands. The grassland will be managed to promote good sward structure to benefit common amphibians and reptiles in replacement for losses of grassland habitat elsewhere on site.
Proposed Species-rich grassland	0.34 ha	**Target: Neutral grassland in 'moderate' condition** Comprises new areas of neutral grassland within the informal open spaces on the peripheries of the proposed development. The grassland will be sown onto a low nutrient sub-soil base using an appropriate neutral grassland mix (e.g., Emorsgate EM5 Meadow Mixture for Loamy Soils). The grassland will be maintained as part of a LEMP (Section) which will focus on a hay meadow regime of spring and summer cut and collect. The grassland will provide some replacement habitat for amphibians, terrestrial mammals, and grass snake and whilst retaining some connectivity for these species along the primary and secondary dispersal routes.
Proposed scrub/grassland mosaic	0.66 ha	**Target: Mixed scrub in 'good' condition** Comprises informal areas of open space along the River Arrow corridor and the primary dispersal corridor in the east of the site. The habitat will be created by the planting of mixed dense thickets and scattered native shrubs forming a variable mosaic with areas of grassland and tall herb. The good condition will be achieved by long-term management proposed in the LEMP (See Section 5) which will include incremental coppicing of shrubs to improve age structure and height as well as ensuring open area of rough grassland is maintained throughout. Provisional ratios of scrub to open habitats will be 60:40 shrubs to grassland. The mosaic has been proposed to create good habitat opportunities for the population of grass snake whilst also providing benefits to terrestrial mammals and amphibians, whilst the complex scrub structure will support nesting opportunities for woodland edge bird species.
Proposed Reed-bed	0.08 ha	**Target: Swamp (reedbed) in 'moderate' condition** Comprises new areas of reed planting around the margins of the northern pond and as part of the SUDS basin in the south of the site. The reeds will be established from rhizomes and designed in the SUDS basin to maximise filtration capacity. Management of the reedbed will be included in the LEMP (see Section 5) but will be largely low intervention other than to remove encroaching scrub or invasive plant species therefore a 'moderate' condition is proposed.

Table 3.1: Summary of Habitats to be Created/Enhanced (Continued)

Feature	Area (ha) / Length (km)	Summary Description
Habitats		
Proposed community orchard	0.08 ha	**Target: Amenity grassland in 'moderate' condition** Comprises the proposed community orchard which will principally be maintained as an amenity space with low intensity mown scattered fruit trees. Local cultivar fruit trees should be considered to improve the biodiversity value of this feature and a flowering lawn mixture can be used to increase botanical composition in the field layer below. Whilst the principal use of the orchard will be for public use, it will nevertheless provide a replacement foraging resource for nesting birds and terrestrial mammals.
Natural play area	0.02 ha	**Target: Amenity grassland in 'moderate' condition** Comprises a natural play area within the informal open space areas. The detailed designs of the play area are to be determined but it proposed that the area is overseeded with a neutral grassland seed mixture to create a 'natural' feel to the area and maximise its value to biodiversity. However, due to the likely usage of the feature, the target habitat has been classified as amenity grassland.
Proposed SUDS	0.09 ha	**Target: Eutrophic standing water (non-priority pond) in 'moderate' condition** A new permanent body of standing water forming part of the SUDS feature in the south of the site. The basin is terraced in design to create a varied water depth creating opportunities for the establishment of aquatic macrophytes, and will be complemented by new reed planting damp grassland creation on the drier margins. The SUDS feature will be managed by low intervention, in accordance with a LEMP (see Section 5), to maintain good water quality and remove invasive non-native species.
Proposed residential gardens	1.44 ha	**Target: Amenity grassland (vegetated garden) in 'poor' condition** Comprises the network of informal garden spaces which could provide some open habitat for nesting birds, amphibians and terrestrial mammals and will support potential secondary dispersal routes through site. As the management of the gardens cannot be assured a 'Poor' target condition is given but some garden spaces may provide additional shrubs, trees and flower beds that will contribute additional biodiversity value.
Hedgerows		
Enhanced native hedgerow	0.277 km	**Target: Native hedgerow in 'good' condition** Enhancement of hedgerow H2 will comprise replanting and gapping up to the hedgerow along the western boundary. Gapping up will be undertaken using native shrub and trees species. Thereafter the hedgerow will be managed, in accordance with a LEMP (Section 5) on low rotation to improve structure and bolster the primary dispersal route along this boundary.

Table 3.1: Summary of Habitats to be Created/Enhanced (Continued)

Feature	Area (ha) / Length (km)	Summary Description
Hedgerows		
Proposed species-rich hedgerows	0.232 km	**Target: Native species-rich hedgerow in 'good' condition** Comprises new areas of hedgerow planting around the site entrance to the northeast and as a site boundary in the southeast. The hedgerows will be planted with a species-rich mix of native shrub species and managed in accordance with a LEMP (Section 5) to establish an intact hedgerow with a minimum height of 2 m and minimum width of 1.5 m.
Proposed species-rich hedgerow and ditch	0.043 km	**Target: Native species-rich hedgerow in 'good' condition** As above but the new hedgerow lines the existing ditch on the eastern boundary.

Table 3.1: Summary of Habitats to be created/enhanced (Continued)

Table 3.2 details the habitat features that will be installed throughout the site as part of the proposed development. Indicative locations for some of these features are shown on Middlemarch Drawing C159232-02-Rev A in Section 7.

Feature	Number	Summary Description
Species Features		
Bird boxes	2 no. Schwegler No.5 Owl Boxes or similar 5 no. Schwegler 3S Starling Boxes or similar 5 no. Woodstone Swift Nest box or similar 5 no. Schwegler 1SP Sparrow Terraces or similar 5 no. House Martin Nest Bowls 5 no, Schwegler 1B Nest Boxes with 32 mm Entrance Hole or similar 5 no. Schwegler 2HW Nest Boxes or similar	To be installed on suitable retained trees and on new dwellings adjacent to areas of scrub, hedgerows, or woodland. The exact locations of the bird boxes will be provided in a LEMP (Section 5).
Bat boxes	10 no. bat boxes to be installed onto retained trees (2F Schwegler bat box or similar). 15 no. bat boxes to be integrated into the elevation walls of the new dwellings at the eaves (Habibat bat box or similar)	To be installed on retained trees and new dwellings adjacent to areas of scrub, hedgerows, or woodland. The exact locations of the bat boxes will be provided in a LEMP (Section 5) .
Amphibian hibernacula and log piles	4 no.	To be created in areas of open space / within retained woodlands and in proximity to the retained pond. To be created from the cut logs from the removed trees.
Compost heap (Grass snake)	1 no.	To be created in a sunny location in proximity to habitats likely to be used by grass snake such as on the edge of the open space in the south of the site.

Table 3.2: Summary of Habitat Features to be Installed

3.3 Biodiversity Change

A Biodiversity Metric Assessment has been carried out concurrently with this report to determine the change in biodiversity value that will occur as a result of the proposed development. The metric calculation accounts for all retained, lost, and created habitats, hedgerows and watercourse features at the site using habitat attributes to determine biodiversity change in biodiversity units (BU). The methods and assumptions associated with the biodiversity metric assessment, together with a completed Biodiversity Metric 3.1 calculator tool, are detailed in Appendix A.

Table 3.3 details the result of the Biodiversity Metric Assessment based on the avoidance, retention and enhancement measures detailed in Section 3.1 and 3.2 above.

	Habitat Units (BU)	Hedgerow Units (BU)	River and Stream Units (BU)
On-site baseline	35.26	9.12	1.56
On-site post-intervention	31.24	7.60	1.56
Total net unit change	-4.02	-1.52	0.00
Total net % change	-11.40%	-16.61%	-

Table 3.3: Biodiversity Metric Assessment – Headline Results

The Biodiversity Metric Assessment figures above assume the full preparation and implementation of a LEMP as detailed in Section 5.

4. Mitigation Measures

4.1 Lighting Plan

A lighting plan will be produced for the site, with ecological input to ensure that the plan minimise potential adverse effects on light-sensitive ecological receptors. The lighting plan will take account of best practice guidance for lighting and biodiversity (Miles *et al*., 2018[4]; Gunnell *et al.,* 2012[5]). Examples of good practice to be considered include :

- Avoiding the installation of new lighting in proximity to key ecological features (See Table 4.1).
- Using modern LED fittings rather than metal halide or sodium fittings, as modern LEDs emit negligible UV radiation.
- The use of directional lighting to reduce light spill, e.g., by installing bespoke fittings or using hoods or shields. For example, downlighting can be used to illuminate features such as footpaths whilst reducing the horizontal and vertical spill of light.
- Where the use of bollard lighting is proposed, columns should be designed to reduce horizontal light spill. Implementing controls to ensure lighting is only active when needed, e.g., the use of timers or motion sensors.
- Use of floor surface materials with low reflective quality. This will ensure that bats using the site and surrounding area are not affected by reflected illumination.
- For internal lights, recessed light fittings cause significantly less glare than pendant type fittings. The use of low-glare glass may also be appropriate where internal lighting has the potential to influence sensitive ecological receptors.

Table 4.1 outlines the light sensitive ecological receptors at the site and the broad approach to lighting mitigation, using a combination of the options detailed above to mitigate adverse effects. The principal locations for each of the receptors are shown on Drawing C159232-02-Rev A in Section 7.

Receptors	Location	Target Mitigation
River Arrow Local Wildlife Site/Wildlife corridor, roosting and foraging bats, nesting birds, amphibians, reptiles, and terrestrial mammals.	Primary dispersal corridors	Avoidance of all sources of lighting and avoidance of light spill
Roosting/foraging bats, nesting birds, terrestrial mammals	Secondary dispersal corridors	Minimisation of lighting and avoidance/minimisation of light spill.
Nesting birds, terrestrial mammals.	Other features	Measures to reduce light spill

Table 4.1: Target Locations for Lighting Mitigation

[4] Miles, J., Ferguson, J., Smith, N. and Fox, H. (2018) *Bats and Artificial Lighting in the UK*. Guidance Note 08/18. Institute of Lighting Professionals

[5] Gunnell, K., Grant, G. and Williams, C. (2012*) Landscape and urban design for bats and biodiversity*. Bat Conservation Trust

4.2 Construction Ecological Management Plan

In November 2021, Middlemarch prepared a Construction Ecological Management Plan (CEcMP) for the proposed development (see Middlemarch Report RT-MME-153160-06-Rev A). The overall aim of the CEcMP is to minimise the potential impact of the construction phase of the development on the existing ecology of the site, and ensure works proceed in accordance with current wildlife legislation. Practical measures to avoid / reduce construction impacts to the key ecological features, as included in the CEcMP, are summarised in Table 4.2 below.

Key Ecological Receptor	Measures to be Implemented to Avoid / Reduce Construction Impacts
Nature Conservation Sites	
River Arrow Local Wildlife Site	Includes mitigation measures to manage impacts on the adjacent River Arrow (LWS), including adherence to standard noise, pollution, and lighting standards.
Habitats	
Ditches	Retained ditches will be protected during construction by the installation of protective fencing. Mitigation measures relating to pollution will be adhered to.
Retained trees, hedgerows, woodlands, and	Retained trees, woodland and hedgerows will be protected during construction by the installation of protective fencing.
Standing Water	Retained ponds will be protected during construction by the installation of protective fencing. Mitigation measures relating to pollution will be adhered to.(See also invasive plants).
Species Features	
Bats	Habitats on site are suitable for use by roosting, foraging and commuting bats and so the following measures will be implemented: - Updated bat surveys to determine if the status of roosting bats has changed prior to works commencing. - Soft felling of trees with bat rooting potential where roosts are not present . - Careful design of lighting strategy .
Birds	Where possible, works should be timed to avoid the nesting bird season, including building demolition and vegetation removal.
Herpetofauna	To minimise impacts on grass snake and common amphibians: - Updated surveys will be undertaken, if required. - Site clearance and construction works will be undertaken in accordance with the prepared Reasonable Avoidance Method Statement. - Adhere to precautionary measures during the draining and removal of the ponds.
Semi-aquatic Mammals (otter)	No works will be undertaken within 30 m of the River Arrow. Best practice measures to be adhered to during construction in relation to open excavations and open pipework.
Terrestrial mammals (including badger and hedgehog)	To avoid terrestrial impacts on terrestrial mammals: - Complete an updated badger survey prior to commencement. - Best practice measures to be adhered to during construction in relation to open excavations and open pipework. - Vigilance to be maintained during works for any potential badger setts.

	- Sensitive clearance of rabbit burrows.

Table 4.2: Summary of Construction Safeguards in the CEcMP (Continues)

Key Ecological Receptor	Measures to be Implemented to Avoid / Reduce Construction Impacts
Invasive Plants	Works which may impact New Zealand pigmyweed to be completed in accordance with a Method Statement.

Table 4.2: Summary of Construction Safeguards in the CEcMP (Continued)

It is anticipated that the CEcMP will be secured via a planning condition.

5. Management and Monitoring

5.1 Landscape and Ecology Management Plan

A Landscape and Ecology Management Plan (LEMP) will be produced setting out the detailed landscaping designs and management prescriptions that will be implemented to create, establish, and maintain the target habitat types detailed in Section 3 of this report. The LEMP will comprise the information detailed in Table 5.1.

Chapter	Description
Management Context	A summary of the LEMP setting out the planning context and duration of the LEMP.
Site Information and Baseline Data	Includes site details and persons responsible for implementing the management plan. The baseline conditions will describe the types and conditions of all retained/enhanced habitats to provide a context for monitoring future biodiversity change.
Habitat Creation Proposals	Details the proposed habitat creation proposals to achieve the target habitats including designs, planting specifications (or link to a detailed Landscaping Plan), ground preparation and timings for habitat creation.
Management Objectives	Objectives linked to a proposed habitat map and setting out the target habitat types, habitat areas and habitat conditions. This will provide a target baseline to monitor progress and inform future management plan changes or contingency.
Management Prescriptions	A summary of short-term establishment and long-term maintenance measures to ensure the habitats achieve their target type and condition. Management timings and constraints will be implicit in the prescriptions to ensure that sensitive periods and working practices for protected species are factored into the management approach.
Monitoring and Review	A detailed approach for long-term surveillance of the target habitats, monitoring against the management objectives and review to ensure that the management plan remains fit for achieving its intended aims. The monitoring strategy will include scope for local authority oversight and contingency.

Table 5.1: Summary Content of the LEMP

In accordance with Biodiversity Net Gain: Best Practice Principles for Development[6], the LEMP will be designed to cover a period of 30 years with regular review and updates linked to monitoring outcomes.

It is anticipated that the LEMP will be secured by way of planning condition and submitted to, and agreed by, the local planning authority prior to scheme commencement.

[6] CIRIA, CIEEM, IEMA (2016) *Biodiversity Net Gain: Good Practice Principles for Development* [Available https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf]

6. Residual Effects/ Compensation

6.1 Residual Effects

Section 3.3 shows that subject to the avoidance and habitat creation/enhancement measures proposed, there will be a residual loss of habitat and hedgerow value equivalent to 4.02 BU and 1.52 BU respectively.

The mitigation hierarchy of the National Planning Policy Framework[7] states that where adverse biodiversity impacts cannot be avoided or mitigated, compensation will be required to ensure that development proposals achieve net gains in biodiversity. In this instance, opportunities to provide further habitat creation/enhancement within the site to address residual losses and secure a net gain have been explored but it was deemed that, due to the type, layout, and end use of the development scheme, achieving a net gain was not feasible on site. An offsite compensation solution will be required to ensure that the development can achieve an overall net gain for biodiversity and ensure compliance with planning policy.

6.2 Off-site Compensation

To address the residual loss of biodiversity onsite, Barratt/David Wilson Homes has provisionally agreed with the adjacent Abbey Park Hotel and Golf Course to provide additional biodiversity enhancements on offsite land immediately to the east of the proposed development. Middlemarch carried an ecological walkover of the site in May 2022 and produced a Biodiversity Net Gain Plan (Middlemarch Report RT-MME-157753) detailing a series of biodiversity enhancement works that could be delivered to meet the residual biodiversity needs of the proposed development. The Biodiversity Net Gain Plan proposals are summarised as follows:

Offsite Location

Abbey Park Hotel and Golf Course is situated immediately to the east of the proposed development. The area of focus comprises a stretch of land to the south of the golf course, along the River Arrow (see Drawing C157753-02 in Section 7).

Off-site Proposals

Table 6.1 below details the proposed habitat creation/enhancement proposals at Abbey Hotel Golf Course detailed in the Biodiversity Net Gain Concept Plan report by Middlemarch.

[7] Ministry of Housing, Communities and Local Government (2021) National Planning Policy Framework. Available https://www.gov.uk/government/publications/national-planning-policy-framework--2

Feature	Area (ha) / Length (km)	Summary Description
Habitats		
Grassland enhancement (Area A)	0.73 ha	**Target: Neutral grassland in 'fairly poor' condition** The project includes the enhancement of existing grassland along the River Arrow corridor. Works will include overseeding the existing sward to increase botanical diversity as well as managing the scattered presence of the invasive non-native Himalayan balsam. Suggested long term management will include cutting 50% on rotation to manage scrub and nutrient effects whilst maintaining a good habitat structure. The focus on the area was to increase semi-natural habitats along the River Arrow Local Wildlife Site and increase connectivity from the proposed development for grass snake.
Grassland enhancement (Area B)	0.53 ha	**Target: Neutral grassland in 'moderate' condition** Comprises the enhancement of grassland to the east of the golf course that has succumb to scrub encroachment. Some scattered and bramble scrub will be removed to restore the grassland sward although, after consultation with Worcestershire Wildlife Trust at least 50% of the bramble coverage will be retained as resource for nesting birds. Weed management will carried to reduce the presence of extensive areas of taller herbs to promote a greater sward diversity. Suggested long-term management will include an annual cut and collect to maintain sward composition. The area was suggested to provide connective grassland habitats to the adjacent Dagnell End Meadows SSSI and to replace some loss of grassland habitat value from the proposed development.
Woodland enhancement (Area C)	0.98 ha	**Target: Broad-leaved plantation woodland in 'moderate' condition** Comprises the enhancement of the existing plantation woodland adjacent to Dagnell End Meadow SSSI. Enhancements include selective thinning to reduce non-native species and create conditions for semi-natural woodland regeneration. Cuttings will be retained as dead wood to improve woodland processes in the woodland. Underplanting of the canopy with native shrubs will be carried out to improve the woodland vertical structure and improve nesting opportunities for breeding birds. Suggested long-term management thereafter will principally be low intervention with regular checks to monitor or remediate tree health.

Table 6.1: Summary of Habitat Creation/Enhancement Proposals at Abbey Park Hotel and Golf Course (Continues)

Feature	Area (ha) / Length (km)	Summary Description
Habitats		
Pond Creation (Area D)	0.27 ha	**Target: Eutrophic standing water in 'moderate' condition** A new pond will be excavated in an area of poor semi-improved grassland. The pond will be designed for biodiversity with different depths to encourage a diverse aquatic fauna and flora. Spoil from the pond will be used to bank the pond and spread on adjacent poor grassland with the subsoil used to facilitate a damp neutral grassland seed mixture around the pond. Suggested management is low intervention with regular checks and remedial actions to remove any invasive non-native plant species.
Hedgerow Planting (Area E)	0.250 km	**Target: Species-rich hedgerow in 'good' condition** Comprises the creation of a new species-rich hedgerow on the northern boundary of the course and surrounding the above pond feature. The hedgerow will comprise a mix of native shrubs which will be managed to establish a species-rich canopy of a minimum 2 m high and 1.5 m wide.

Table 6.1: Summary of Habitat Creation/Enhancement Proposals at Abbey Park Hotel and Golf Course (Continued)

Management and Monitoring

The habitat creation and enhancement measures detailed in Table 6.1 above will be subject to detailed designs and long-term management and monitoring to ensure that they achieve their intended values. It is therefore proposed that a Habitat Enhancement and Management Plan (HEMP) will be produced to detail the final designs and required management prescriptions as per the structure of the LEMP detailed in Section 5. In accordance with Biodiversity Net Gain: Best Practice Principles, the HEMP should cover a minimum period of 30 years.

Delivery

It is anticipated that the principle of the offsite compensation scheme will be secured by way of a planning condition or obligation (Section 106 agreement) with all final scheme details included in the HEMP, to be submitted to and agreed with the Local Planning Authority prior to commencement.

To ensure the continued delivery of the offsite scheme over the required 30-year scheme duration, it is anticipated that the delivery of the HEMP will be subject to a legal agreement between Barratts/David Wilson Homes and the Abbey Hotel and Golf Course. Middlemarch understands that a provisional agreement in principle will be submitted prior to determination to provide confidence of delivery, with a final legal agreement submitted with the HEMP to discharge any associated planning conditions or obligations.

6.3 Residual Biodiversity Change

Table 6.2 details the result of the biodiversity metric assessment taking account of the proposed off-site compensation measures detailed in Section 6.2 above.

	Habitat Units (BU)	Hedgerow Units (BU)	River and Stream Units (BU)
On-site baseline	35.26	9.12	1.56
On-site post-intervention	31.24	7.60	1.56
Off-site baseline	12.48	0.00	0.00
Off-site post-intervention	17.42	1.96	0.00
Total net unit change	+0.92	+0.44	0.00
Total net % change	+2.62%	+4.85%	-

Table 6.2: Residual Biodiversity Metric Assessment – Headline Results

The biodiversity metric assessment figures above assume the full preparation and implementation of a both a LEMP (on-site) and a HEMP (off-site) for the period of 30 years from scheme commencement.

Table 6.2 demonstrates that upon delivery of both the on and offsite provisions of the FrBNG, a net gain of habitats and hedgerows equivalent to 0.87 BU and 1.96 BU will be achieved respectively.

Habitat Trading

The Biodiversity Metric indicates that the trading rules for the biodiversity metric have not been met as part of the biodiversity due to the provision of one habitat type of the expense of another. Table 6.3 details where the trading rules are not compliant.

	Broad Habitat type	Net Value change	Trading assumptions met?
High distinctiveness Habitats	Reedbeds	+0.5 BU	Yes
	Woodland	+0.28 BU	Yes
Medium distinctiveness habitats	Other neutral grassland	-6.95 BU	No
	Scrub (Mixed and bramble)	+2.11 BU	Yes
	Ponds (Non-priority)	+0.65 BU	Yes
	Other broad-leaved woodland	+5.33 BU	Yes
Low distinctiveness habitats	Modified grassland	-3.65 BU	No
	Vegetated garden	+2.80 BU	Yes

Table 6.3: Habitat Trading Summary for the Proposed Development

Table 6.3 indicates that whilst the scheme will secure an overall net gain for biodiversity, the scheme will result in the loss of grassland value. This loss is replaced by equivalent and greater values of scrub and woodland and therefore there is no 'downtrading', i.e., a habitat of higher value being replaced by a habitat of lower value, but rather cross trading. The application of the trading rules therefore highlights a matter of whether it is acceptable, in principle, for grassland to be replaced by other semi-natural habitats of equivalent value.

In this instance, it is considered that the loss of grassland is justified by the increase in woodland and scrub values for the following reasons:

1. The grassland lost comprises species poor semi-improved grassland. This is neither a priority habitat nor local biodiversity action plan priority. By contrast, broad-leaved woodland is a Worcestershire biodiversity action priority and the added value arising from the improvement of woodland structure is complementary to the aims of the action plan for this habitat; and,
2. The grassland supports habitat for a low population of grassland, common amphibians, and terrestrial mammals. The design of the proposed development has sought to retain and recreate alternative habitats for these species and maintain connectivity throughout the site. The areas of scrub/grassland mosaic, wetland habitat around the SUDS pond, and grassland enhancement along the River Arrow could therefore, in principle, lead to a betterment of habitat opportunities for these species.

7. Drawings

Drawing C159232-01-Rev A – Hither Green Framework Biodiversity Net Gain Plan - Habitats

Drawing C159232-02-Rev A – Hither Green Framework Biodiversity Net Gain Plan - Features

Drawing C157753 – Abbey Park Hotel and Golf Course - Biodiversity Net Gain Concept Plan

404200 404300 404400 404500 404600 404700

269600 269500 269400 269300 269200 269100

0 50 100 m

Legend

- Application boundary
- Existing dry ditch removed
- Existing hedgerow removed
- Existing hedgerow retained
- Proposed hedgerow
- Amenity grassland
- Community orchard
- Damp grassland
- Existing woodland managed
- Other gardens
- Proposed LAP
- Proposed native hedgerow
- Proposed natural play
- Proposed water
- Reed bed
- Scrub grassland mosaic
- Species-rich grassland
- Developed land
- Suburban
- 221008.403.04993.00075_HG-20_MASTERPLAN_EW_HABITAT PLAN-Modified.dwg Polyline

N

Project
Hither Green Golf Course

Drawing
Proposed Landscape Layout - Habitats

Client
Barratt/David Wilson Homes

Drawing Number	Revision
C159232-01-RevA	Rev A
Scale @ A3	Date
1:2,000	February 2023
Approved By	Drawn By
RW	GT

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C159232-01-RevA

404200 404300 404400 404500 404600 404700

269600 269500 269400 269300 269200 269100

0 50 100 m

Legend

- Application boundary
- Compost heap
- Hibernacula/log pile
- Primary Disperal Corridor
- Secondary Dispersal Corridor
- Existing dry ditch removed
- Existing hedgerow removed
- Existing hedgerow retained
- Proposed hedgerow
- Amenity grassland
- Community orchard
- Damp grassland
- Existing woodland managed
- Other gardens
- Proposed LAP
- Proposed native hedgerow
- Proposed natural play
- Proposed water
- Reed bed
- Scrub grassland mosaic
- Species-rich grassland
- Developed land
- Suburban

N

Project: Hither Green Golf Course

Drawing: Proposed Landscape Layout - Features

Client: Barratt/David Wilson Homes

Drawing Number	Revision
C159232-02-RevA	Rev A
Scale @ A3	Date
1:2,000	February 2023
Approved By	Drawn By
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C159232-02-RevA

C157753-01-02

Legend

- Indicative ownership boundary
- Survey extent
- Area A - Grassland Enhancement
- Area B - Grasland Enhancement
- Area C - Woodland Enhancement
- Area D - Pond Creation
- Area D - Grassland Restoration
- Area E - Species-rich hedgerow creation

PH1 Features

- Scattered tree
- Dry ditch
- Species-poor intact hedgerow
- Hardstanding
- A — Amenity grassland
- SI — Poor semi-improved grassland
- SI — Neutral semi-improved grassland
- Semi-natural broad-leaved woodland
- Tall ruderal
- Dense scrub
- Broad-leaved plantation woodland
- Scattered broad-leaved trees
- Standing water
- Dagnell End Meadow SSSI

N

Project	Hither Green Golf Course
Drawing	Biodiversity Net Gain Concept Plan
Client	Barratt David Wilson Homes Mercia
Drawing Number: C157753-01-02	Revision: 00
Scale @ A3: 1:1,500	Date: May 2022
Approved By: CF	Drawn By: JR

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405200 405300 405400 405500 405600

268900 268800 268700 268600

0 50 100 m

C157753-01-02

Legend

- Indicative ownership boundary
- Survey extent
- Area A - Grassland Enhancement
- Area B - Grasland Enhancement
- Area C - Woodland Enhancement
- Area D - Pond Creation
- Area D - Grassland Restoration
- Area E - Species-rich hedgerow creation

PH1 Features

- Scattered tree
- Dry ditch
- Species-poor intact hedgerow
- Hardstanding
- Amenity grassland
- Poor semi-improved grassland
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- Semi-natural broad-leaved woodland
- Tall ruderal
- Dense scrub
- Broad-leaved plantation woodland
- Scattered broad-leaved trees
- Standing water
- Dagnell End Meadow SSSI

0 100 200 m

Page 2 of 2

N

Project	Hither Green Golf Course
Drawing	Biodiversity Net Gain Concept Plan
Client	Barratt David Wilson Homes Mercia
Drawing Number: C157753-01-02	Revision: 00
Scale @ A3: 1:3,000	Date: May 2022
Approved By: CF	Drawn By: JR

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Appendix A

Biodiversity Metric Assessment (Methods and Assumptions)

This section provides a quantitative valuation of the site for biodiversity based on the on- and off-site proposals detailed in the Framework Biodiversity Net Gain Plan. The valuation utilises a biodiversity metric to provide a proxy measure of biodiversity based on habitat attributes to provide a value figure for all habitats, hedgerows and river and stream features. The purpose of the valuation is to determine the relative change in biodiversity value resulting from any development or land use change proposed.

It should be noted that the metric is only a proxy for biodiversity using habitat values and that any proposed enhancements should be designed using appropriate ecological expertise. Existing levels of protection afforded to protected species and to habitats are not changed by use of the metric and statutory obligations will still need to be satisfied. In addition, the metric cannot account for impacts on, or enhancements to, irreplaceable habitats or protected sites, which will need to be assessed separately.

Biodiversity Metric Tool

The biodiversity calculations used within this assessment were undertaken by Richard Wheat (Principal Consultant) using 'The Biodiversity Metric 3.0' and associated User Guide[8] and Technical Supplement[9].

Baseline Data

The on- and off-site baseline habitat data and condition assessment is taken from the Hither Green Preliminary Ecological Appraisal Report RT-MME-152753-3) and the Abbey Park Hotel and Golf Club Biodiversity Net Gain Concept Plan (Report RT-MME-157753). Each existing habitat or linear feature recorded within each site area is assigned a score for 'Distinctiveness', 'Condition' and 'Strategic Significance'. Table A1 below describes how each habitat attribute has been determined for the existing baseline habitats in the metric assessment.

Attribute	Description
Distinctiveness	An automated score based on the habitat present and its value to wildlife. Highly diverse habitats such as those listed as Habitats of Principal Importance under the NERC Act (2006) or Annex 1 habitats in the Habitats Directive (1992) score highly whilst highly modified habitats such as arable crops will have low distinctiveness scores.
Condition	A score based on the quality of the habitat parcel against published condition criteria.

Table A1: Habitat Attributes for Existing On and Off-site Baseline Habitats (Continues)

[8] Panks, S., White, N., Newsome, A., Potter, J., Heyton, M., Mayhew, E., Alvarez, M., Russell, T., Scott, S.J., Heaver, M., Scott, S.H., Treweek, J., Butcher, B. and Stone, D. (2021) T*he Biodiversity Metric 3.0 – Auditing and accounting for biodiversity: User Guide*. Natural England.

[9] Panks, S., White, N., Newsome, A., Potter, J., Heyton, M., Mayhew, E., Alvarez, M., Russell, T., Scott, S.J., Heaver, M., Scott, S.H., Treweek, J., Butcher, B. and Stone, D. (2021) T*he Biodiversity Metric 3.0 – Auditing and accounting for biodiversity: Technical Supplement*. Natural England.

Attribute	Description
Strategic significance	A score based on information set out in local plans or policies. In this instance, neither site was located within a strategic biodiversity area and so strategic significance was determined by a features proximity to a statutory or non-statutory wildlife site (e.g. River Arrow Local Wildlife Site or Dagnell End Meadow Site of Special Scientific Interest).

Table A1: Habitat Attributes for Existing On- and Off-site Baseline Habitats (Continued)

Future Baseline Data

The future baseline conditions of the site are based on the Landscape Concept Drawing HG-19-Rev 2 by SLR (on-site proposals) and the Biodiversity Net Gain Concept Plan Proposal (off-site proposals) by Middlemarch (Report RT-MME-157753), details of which are provided in Sections 3 and 6 of the FrBNG respectively. Table A2 below describes how each habitat attribute has been determined for the future baseline habitats in the metric assessment.

Attribute	Description
Distinctiveness	An automated score based on the type of habitat present and its value to wildlife. Highly diverse habitats such as those listed as Habitats of Principal Importance under the NERC Act (2006) or Annex 1 habitats in the Habitats Directive (1992) score highly in this category whilst highly modified and low diversity habitats such as arable crops will have low distinctiveness scores.
Condition	A score based on the quality of the habitat parcel against published condition criteria.
Strategic significance	A score based on information set out in local plans or policies. In this instance, neither site was located within a strategic biodiversity area and so strategic significance was determined by a features proximity to a statutory or non-statutory wildlife site (e.g., River Arrow Local Wildlife Site or Dagnell End Meadow Site of Special Scientific Interest).
Time to Target Condition	Time to target condition is automatically assigned in accordance with the Biodiversity Metric Tool 3.0. In the case of the woodland edge, an additional 10 years was added to account for establishment through natural regeneration.
Difficulty of Recreation	An automated value based on the difficulty of creating the target habitat. This value is unchanged from the values generated in Metric 3.0.
Spatial risk	Applies to offsite habitat creation proposals only. Factors in the proximity of the offsite habitat creation proposals to the site. Locality is judged by local authority area and/or Natural Character Area. In this assessment, the site is adjacent to the offsite creation and so all offsite habitat creation is deemed to be local.

Table A2: Habitat Attributes for Future On- and Off-site Baseline Habitats (Continued)

Metric Assumptions

The following assumptions were applied as part of the metric assessment:

- For the purposes of the assessment, the term ‘Habitat Loss’ is applied to proposals that result in a change of habitat type or habitat ‘distinctiveness’. This is defined in the Biodiversity Metric even where the new habitat type is created without any physical loss

of the previous habitat type (e.g., creation of scrub over grassland). 'Habitat Enhancement' is applied where the habitat type and 'distinctiveness' remains the same, but the 'condition' of the habitat is improved.

- The BNG Assessment necessitates an estimation of future baseline values, based on professional opinion, to determine the change in biodiversity value that could occur as a result of the proposals at the site. The assumptions about target habitat types or condition in this report is based on professional opinion about the likely achievable outcomes at the site based on the proposed planting plans and presumed management resources. All target habitats presume the implementation of a long-term Management Plan to achieve these ends as is recommended in Section 5 of the FrBNG.
- The Biodiversity Metric Calculations are based on the Middlemarch's current understanding of the proposed development. If these proposals change, or if updated proposals are produced, an updated Biodiversity Metric Assessment should be carried out to determine if there are any changes to the habitat values provided.

Biodiversity Metric Tool

(*Attached separately*)