



Appendix 13.8

Biodiversity Net Gain (BNG) Assessment Report

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Appendix 13.8 – Biodiversity Net Gain Report

Client

Bloor Homes & Pigeon

Project

**North Hemel Hempstead,
Hertfordshire**

Date

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1.0 NON-TECHNICAL SUMMARY

Report Scope
FPCR were commissioned by Bloor Homes and Pigeon to undertake a Biodiversity Net Gain (BNG) assessment at Land north of Hemel Hempstead to provide a baseline biodiversity score for the Site and to compare it with proposals. The Site forms part of the proposed allocated Hemel Garden Communities, a development scheme that will create sustainable new neighbourhoods and communities to the north and east of Hemel Hempstead.
Baseline
The Site is primarily composed of cropland but also features a patch of grassland in the corner of the southern extent. A strip of woodland is located along the western boundary, as well as a single compartment located in the middle of a large crop field to the south. Other habitats include individual trees, isolated patches of mixed scrub and a pond. Hedgerows mark most of the field boundaries, composed largely of native hedgerows, with five species-rich hedgerows recorded.
Proposals
The proposals for the Site include up to 1,500 dwellings, associated access and infrastructure, facilities including a primary school and sports area, and green infrastructure, including a Community Park that will function as a Suitable Alternative Natural Greenspace (SANG). The proposed green infrastructure will include creating a mosaic of mixed scrub patches, species-rich grassland, and SuDs seeded with wildflowers. Other habitats feature formal and informal amenity grasslands, a community orchard and allotments, along with new tree planting, including street trees throughout the site. The existing woodland and pond will be retained as part of the SANG proposal. The proposals will result in the partial loss of sections of six hedgerows to facilitate site access and create footpaths across the SANG. To compensate for this loss, approximately 1.87 km of new species-rich native hedgerow will be planted.
Conclusion
BNG scores were calculated for a Basic SANG (standard greenspace provision) and an Enhanced SANG (with habitat improvements) to demonstrate additionality. The proposals with the Basic SANG will result in a loss of -2.26% habitat units and a 16.51% gain in hedgerow units. However, BNG requirements will be delivered on-site, along with proposals for an enhanced SANG, resulting in a +15.68% gain in habitat units and a 16.51% gain in hedgerow units. This assessment demonstrates that the proposals can deliver an on-site gain that is compliant with national and local policy requirements. The report also demonstrates that the development with the enhanced SANG will yield an additional gain of over 10% compared to the proposals with the basic SANG, ensuring additionality.

2.0 INTRODUCTION

- 2.1 The following Biodiversity Net Gain (BNG) Report has been prepared by FPCR Environment and Design Ltd on behalf of Bloor Homes and Pigeon, for the Site at North Hemel Hempstead (Central OS Grid Ref: TL 08444 11097) herein referred to as 'the Site'.
- 2.2 This report accompanies the Biodiversity Chapter of an Environmental Statement (ES) for the Site, which has been undertaken to inform the development proposals and to provide recommendations for mitigation and enhancement. This report should therefore be read in conjunction with this accompanying Biodiversity Chapter (Chapter 13) (FPCR, 2025) and Outline SANG Mitigation and Management Plan (OSMMP) (FPCR, 2025).

Site Location & Context

- 2.3 The Site is located to the north and east of Hemel Hempstead. It comprises a series of agricultural field compartments that are generally large and open. Field boundaries are bounded by native hedgerows or rows of mature trees. Other habitats on site include grasslands, scrub patches, and a pond.
- 2.4 The surrounding landscape to the north, east and west is comprised mainly of agricultural land with small pockets of woodland interspersed throughout. The M1 motorway lies approximately 0.5km east of the Site, with the village of Redbourn beyond. To the south and west of the Site, the landscape comprises the urban environs of Woodhall farm in the north-east of Hemel Hempstead.

Report Scope and Objectives

- 2.5 This Biodiversity Net Gain Report is based on the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance. The scope and objectives of this report are to:
- Summarise the results of the baseline UKHab Survey undertaken on the Site and to present the results of habitat condition assessment surveys following the Defra Statutory Biodiversity Metric Technical Guidance.
 - Provide an overview of the proposed habitats following completion of the scheme.
 - Present the results of the Statutory Biodiversity Metric assessment completed for the proposals.
 - Demonstrate the capacity for the proposals to demonstrate a net gain in biodiversity through the Statutory biodiversity Metric.
 - Provide recommendations for the proposals to maximise their biodiversity potential.

3.0 LEGISLATION AND POLICY

The Environment Act 2021

- 3.1 In England, biodiversity net gain is required under statutory frameworks introduced by Schedule 7A of the Town and Country Planning Act 1990 (inserted by the Environment Act 2021). Under this framework, the majority of planning permission grants will be deemed to have been granted subject to a general biodiversity gain condition. This will require an objective for developments to deliver at least a 10% increase in biodiversity value relative to the pre-development biodiversity value of all on-site habitats.
- 3.2 This is a pre-commencement condition requiring the provision of a Biodiversity Gain Plan to be submitted and approved before works can be commenced, but after planning permission has been granted.
- 3.3 In principle, the grant of planning permission is not within the scope of BNG; however, it is important to consider as part of the consenting body's decision-making process how a scheme will be able to demonstrate BNG after permission is granted. Therefore, this biodiversity net gain report presents the results of a Biodiversity Net Gain assessment completed to demonstrate how the proposals comply with the requirements of the Environment Act.

Biodiversity Net Gain Hierarchy

- 3.4 The statutory framework allows for the 10% biodiversity gain to be delivered through on-site biodiversity gains, registered off-site biodiversity gains or statutory biodiversity credits. However, as set out in Articles 37A and 37D of the Town and Country Planning (Development Management Procedure) (England) Order 2015, development must consider the biodiversity net gain hierarchy when designing scheme proposals. This sets out the hierarchy of actions as follows:
- a) First, for all medium, high and very high distinctiveness habitats, the avoidance of any adverse effects.
 - b) Where these can't be avoided, mitigating any adverse effects on medium, high and very high distinctiveness habitats.
 - c) Then, for all on-site habitats (including low distinctiveness), adverse effects should be compensated by in accordance with the following hierarchy:
 - Prioritising the enhancement of existing habitats; then
 - Creation of on-site habitats;
 - Allocation of registered off-site unit gains; then
 - Purchase of biodiversity credits
- 3.5 Proposals must demonstrate how the biodiversity hierarchy has been applied to or provide the reasons for any deviation. This biodiversity net gain hierarchy is distinct from the mitigation hierarchy set out by CIEEM, which is addressed in the accompanying Biodiversity Chapter (FPCR, 2025) where relevant.

National Planning Policy Framework

- 3.6 The National Planning Policy Framework (NPPF) 2024 seeks to ensure that the planning system contributes to and enhances the natural and local environment, protect and enhance biodiversity and geodiversity by:

“187. d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures and incorporating features which support priority or threatened species such as swifts, bats and hedgehogs;

193. when determining planning applications, local planning authorities should apply the following principles: ...

193. d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.”

Mandatory Biodiversity Net Gain Minimum Reporting Requirements

- 3.7 The Government's BNG Planning Practice Guidance (PPG)¹ sets out the minimum requirements for any planning application subject to mandatory BNG, to be presented as part of any submission to validate the application. For ease of reference, the minimum information required has been set out in Table 1 below.
- 3.8 Additional detail and information appropriate to the application is provided within this report to assist St Albans City and District Council in their decision-making process and to provide confidence that the scheme will be able to demonstrate a mandatory BNG through the provision of a Biodiversity Gain Plan following receipt of planning permission, in accordance with the PPG.

¹ Gov.uk (2024), Biodiversity Net Gain. Available at: Biodiversity net gain - GOV.UK

Table 1: Checklist of Minimum BNG Reporting Requirements for Planning Application Validation

Minimum Requirements in BNG PPG	Statement of Relevance to Site
<i>Confirmation that the Site is believed to be subject to the mandatory BNG condition.</i>	The Site does not meet any of the exemption criteria and so it is understood that the site will be subject to the mandatory BNG condition.
<i>The pre-development biodiversity value of the Site, either on the data of application or an earlier proposed date (as appropriate).</i>	The accompanying Statutory Metric completed for the scheme provides the pre-development biodiversity value of the Site. The values are also presented within this report.
<i>Where an earlier date is proposed, provide the reasons for proposing that date.</i>	The 'relevant date' is proposed to be the latest date that a Site survey was completed during which observations were made to check if any significant changes in habitats had occurred. For the Site, this will be 04 June 2024. This is considered an appropriate date, as it falls within the period when ecological data is considered valid (two years, as recommended by CIEEM).
<i>The completed metric calculation showing the calculations of the pre-development biodiversity value of the on-site habitat on the data of application (or proposed earlier date) including the publication date of the biodiversity metric used.</i>	The Statutory Biodiversity Metric, published in July 2025, was used to calculate the Site's pre-development value. The completed metric has been provided alongside this BNG report.
<i>A statement whether activities have been carried out prior to the date of application (or proposed date), that result in loss of on-site biodiversity value (degradation).</i>	This statement confirms that FPCR, Bloor Homes, and Pigeon are not aware of any on-site habitat degradation.
<i>A description of any irreplaceable habitat (as set out in column 1 of the Schedule to the Biodiversity gain Requirements (Irreplaceable Habitat) Regulations 2024) on the Site, that exists on the date of application (or an earlier proposed date)</i>	This statement confirms that no irreplaceable habitat has been identified on-site.
<i>Plan(s), drawn to an identified scale and showing the direction of North, showing on-site habitat existing on the date of application (or earlier proposed date) including any irreplaceable habitat (if applicable).</i>	Figure 1 shows the baseline habitats present on-site on the proposed relevant date, 04 June 2024. This includes the minimum requirement to show an identified scale and north arrow.

4.0 METHODOLOGY

Baseline Habitat Assessment

- 4.1 A baseline habitat survey was completed broadly following the UK Habitat Classification System and the Statutory Biodiversity Metric Condition Assessment Criteria. This involved a systematic walkover of the Site to map all habitats present for the purposes of completing the Statutory Biodiversity metric Calculation Tool and their current condition.
- 4.2 A habitat survey was conducted on the northern land parcel in April 2023 and on the southern land parcel in May 2023. Survey methods broadly followed the UK Habitat Classification System² (UKHab) to map habitats present onsite. This involved a systematic walkover of the Site to classify the broad habitat types, which were broadly mapped in the field.
- 4.3 Habitat condition assessment surveys were subsequently completed on 4th June 2024 in accordance with the Statutory Biodiversity Metric Habitat Condition Assessments. The summary results of the habitat condition assessment survey are presented in this report and detailed in Appendix A.
- 4.4 Further details of the survey methodologies employed to assess the ecological baseline for the Site are provided in the accompanying Biodiversity Chapter (FPCR, 2025).

Biodiversity Net Gain Calculation

- 4.5 Defra's Statutory Biodiversity Metric calculation tool was used to inform this BNG Report. It is an MS Excel spreadsheet used to quantify the predicted net change in biodiversity value ("biodiversity units") of a proposed development site before and after development. It treats area-based habitats and linear features such as hedgerows and lines of trees separately and is based on predetermined values and published guidance from a Natural England-led team of experts.
- 4.6 The development Site was surveyed and mapped, as described above. The survey results were digitised using QGIS, with the existing habitats identified and areas automatically generated.
- 4.7 On-Site post-development habitats were determined from the latest Illustrative Masterplan – Rev P by Mosaic (Drawing No: 005-1) with proposed habitats mapped and digitised using QGIS to generate areas for each of the habitats proposed for enhancement.
- 4.8 These pre- and post-enhancement habitat areas were then input into the Statutory Biodiversity Metric Calculation tool. The metric automatically assigns a habitat distinctiveness score for each of the baseline and proposed habitats.
- 4.9 The metric then assigns a range of pre-assigned factors to each of the proposed habitats. Subject knowledge experts have advised these and are universal multipliers generated by the metric itself for the following variables relevant to habitat creation, enhancement or restoration proposals:
- difficulty of creating or restoring/enhancing a habitat: This pre-assigned score is based on how complex a particular habitat type is to create or restore/enhance

² Butcher, B., Edmonds, B., Norton, L., & Treweek, J. (n.d.). The UK Habitats Classification System V2. UKHab. Available at: <https://ukhab.org/>

- temporal risk: this is the 'time to target condition' for any particular habitat and determines how long a particular habitat type is likely to take to reach the condition score that the desired condition score assigned to it.
- spatial risk: this score is based on the distance between the site of habitat loss and any habitats creation or enhancement proposals at any off-site offsetting solutions.

4.10 A desk study review has informed the strategic significance multiplier within the metric. Full details of the desktop study undertaken are provided in the accompanying Ecological Impact Assessment.

4.11 Two metric calculations were undertaken to determine the Biodiversity Net Gain (BNG) score for the proposed development under different SANG scenarios. The first calculation assessed a Basic SANG, representing standard greenspace provision without additional habitat enhancements, and established a BNG score. The second calculation considered an Enhanced SANG, incorporating habitat improvements and ecological enhancements beyond the standard provision. This demonstrates additionality by quantifying the measurable biodiversity gains achieved through the additional enhancements.

4.12 Full details of the calculation methodology are provided in The Statutory Biodiversity Metric User Guide.

Limitations

4.13 There are no limitations considered with the assessment.

5.0 RESULTS

Strategic Significance

- 5.1 The Hertfordshire Local Nature Recovery Network Strategy and local guidance have been consulted to assign strategic significance.
- 5.2 Although parts of proposed neutral grassland within the north-east of the Site fall within the mapped measure "Grassland Action 3: Create more good quality neutral grassland," of the LNRS, the grasslands are proposed poor condition other neutral grassland (within Basic SANG proposals) and moderate neutral grassland (within enhanced SANG proposals), which are not considered to meet the criteria of good quality neutral grassland, which appears to be more closely related to the lowland meadow classification.
- 5.3 The rest of the site does not fall within an 'Area that Could become of Particular Importance for Biodiversity'. As such, all habitats in the baseline and proposed scenarios for both the Basic and Enhanced SANG proposals have been assigned low strategic significance.

Biodiversity Units

Habitats

- 5.4 A summary description and baseline conditions of the baseline habitats are provided in Table 2 below, and an illustration is provided in Figures 1 and 2.
- 5.5 Full survey results, baseline condition assessment scores and baseline unit scores are provided in Appendix A.

Table 2: Baseline Habitats Summary

Ref	Habitat	Condition	Distinctiveness	Description
C1, C2, C3, C4, C5	Cereal and non-cereal crops	N/A	Low	The majority of the Site comprises of large arable field compartments. The field margins are not well defined and comprise of long unmanaged swards with ruderals, including perennial rye-grass <i>Lolium perenne</i> , cock's foot <i>Dactylis glomerata</i> , false oat grass <i>Arrhenatherum elatius</i> , with herbaceous species including cow parsley <i>Anthriscus sylvestris</i> common hogweed <i>Heracleum sphondylium</i> and curled dock <i>Rumex crispus</i> .
C6, C7	Temporary grass	N/A	Low	Located in the centre of the Site is a large area of grassland managed by annual cutting and dominated by perennial rye-grass and/or Italian rye grass <i>Lolium rigidum</i> . Floral diversity is low due to the input of fertiliser, pesticide and herbicide.
G1	Modified grassland	Poor	Low	A small grassland compartment towards the south of the Site with a low species diversity at less than 6 species per m ² . The grassland comprises frequent Yorkshire fog <i>Holcus lanatus</i> , crested dogs-tail <i>Cynosurus cristatus</i> and rough meadow grass <i>Poa trivialis</i> along with occasional meadow fescue <i>Festuca pratensis</i> , meadow foxtail <i>Alopecurus pratensis</i> and meadow buttercup <i>Ranunculus acris</i> . Perennial rye <i>Lolium pratense</i> , and creeping buttercup <i>Ranunculus repens</i> , were also present. Due to the limited forbs and dominance of Yorkshire Fog, along with the presence of limited neutral grassland indicator species and reversion from ex-arable land, this was therefore assessed as modified grassland under BNG.

Ref	Habitat	Condition	Distinctiveness	Description
W1	Other woodland; broadleaved	Moderate	Medium	The western Site boundary comprises of a narrow woodland strip. The woodland comprises frequent pedunculate oak <i>Quercus robur</i> , field maple <i>Acer campestre</i> and ash <i>Fraxinus excelsior</i> , with occasional cherry <i>Prunus avium</i> , blackthorn <i>Prunus spinosa</i> and dog-rose <i>Rosa canina</i> . The ground flora includes bracken <i>Pteridium aquilinum</i> , wood avens, remote sedge <i>Carex remota</i> and common nettle <i>Urtica dioica</i> . The woodland has very little regeneration and shows signs of disturbance and enrichment with a limited ground flora.
W2	Other woodland; broadleaved	Poor	Medium	There is a narrow strip of woodland running north to south through the most southerly field compartment. This woodland comprises pedunculate oak, hawthorn <i>Crataegus monogyna</i> , field maple, hazel <i>Corylus avellana</i> , ash blackthorn with a ground flora including wood avens <i>Geum urbanum</i> , cleavers <i>Galium aparine</i> , garlic mustard <i>Alliaria petiolata</i> , creeping thistle <i>Cirsium arvense</i> and barren brome <i>Bromus sterilis</i> . This woodland shows signs of enrichment and disturbance, has limited ground flora and regeneration and has 3 to 4 native tree and shrub species.
S1	Mixed scrub	Poor	Medium	There is a small area of mixed scrub around a pond comprising of elder <i>Sambucus nigra</i> , ash, English elm <i>Ulmus procera</i> , hawthorn and dog-rose, with ground flora including nettles and broad-leaved dock <i>Rumex obtusifolius</i> . This scrub does not have rides, glades or clearings and lacks a well developed edge associated with tall grassland.
P1	Pond (non-priority)	Poor	Medium	A pond is located towards the centre of the Site. It is heavily shaded due to the scrub surrounding it and has poor water quality. The pond has no aquatic or marginal vegetation and held very little water at the time of survey.
N/A	Developed land, sealed surface	N/A	N/A	The access track through the centre of the Site to Great Revel End Farm is comprised of a sealed surface and supports no vegetation.
T1, T2, T3, T4, T7, T8 & T9	Individual tree	Good	Medium	1 x native – medium-sized trees (oak) 5 x native – large-sized trees (oak & ash) 1 x native – very large sized trees (oak)
T5, T6	Individual tree	Moderate	Medium	2 x native medium-sized trees (hybrid black poplar)

Hedgerows

- 5.6 A summary description and baseline conditions of the baseline hedgerows is provided in Table 3 below and an illustration is provided in *Figure 1 and 2*.
- 5.7 Full survey results, baseline condition assessment scores and baseline unit scores are provided in Appendix A.

Table 3: Baseline Hedgerow Summary

Ref	Hedgerow Type	Condition	Distinctiveness	Description
H4, H5 & H11	Native hedgerow with trees	Poor	Medium	Gappy hedgerows showing signs of nutrient enrichment and lacking an undisturbed margin with species including blackthorn, hawthorn, ash and pedunculate oak.

Ref	Hedgerow Type	Condition	Distinctiveness	Description
H3, H7, H17, H18, H20 & H21	Native hedgerow with trees	Moderate	Medium	Gappy hedgerows showing signs of nutrient enrichment, including pedunculate oak, ash, field maple and hawthorn.
EH1, EH2	Native hedgerow with trees	Good	Medium	Intact hedgerow dominated by hawthorn with large oak standards and medium-sized cherry tree standards. Tall ruderals such as cow parsley, hogweed and nettle were present along the hedgerow margin.
H1, H2 H6, H12 – H16, H19, & H29	Native hedgerow	Moderate	Medium	The hedgerows showed some signs of nutrient enrichment with nettles and cow parsley along the base. Some were also gappy and/or lack an undisturbed margin. Species include pedunculate oak, hawthorn, hazel, ash and field maple.
H28	Native hedgerow	Good	Medium	The hedgerow included pedunculate oak, elder, hawthorn, ash, and elm. Greater than 1.5m in height and width with few gaps. Lacks undisturbed margins, and the margins that are present show signs of damage from human activity.
H9, H25 & H26	Species-rich native hedgerow with trees	Moderate	High	The hedgerows supported at least five woody species per 30 metre length, with some areas lacking undisturbed ground, including elm, hawthorn, pedunculate oak and hazel.
H10, H22 & H27	Species-rich native hedgerow with trees	Good	High	The hedgerows supported at least five woody species per 30 m, with signs of nutrient enrichment and non-native species in the margins. Species including field maple, ash, pedunculate oak and hawthorn.
H23 & H24	Species-rich native hedgerow	Moderate	Medium	The hedgerows supported at least five woody species per 30m length, with signs of nutrient enrichment, non-native species and damage to the margins. Species including hawthorn, ash, field maple and hazel.
H8	Species-rich native hedgerow	Good	Medium	The hedgerows supported at least five woody species per 30m length and were greater than 1.5m in height and width, showing signs of nutrient enrichment with species including blackthorn, hazel, hawthorn and field maple.

6.0 PROPOSALS

- 6.1 Proposed habitats are shown on *Figures 4, 5 and 6*, while proposed habitat retention is shown on *Figure 3*. The proposals are summarised below, with broad creation, enhancement and management methods outlined in Table 4, as subject to detailed design.
- 6.2 At this outline design stage, planting plans and detailed habitat creation and ongoing management measures have not yet been fixed. Therefore, assumptions regarding proposed habitat types and conditions have been made during this assessment. This includes a 70:30 ratio of urban–developed land: sealed surfaces to urban–vegetated garden for residential areas outlined for housing. The habitat type and condition targets outlined within this section have been informed by the Illustrative Framework Masterplan – Rev P (Drawing No 005-1) and ecological professional judgement.
- 6.3 The SANG guidelines state that BNG on a SANG site can take place for the benefit of a development. Nonetheless, it must be demonstrated that habitat creation and/or enhancement offers a measurable benefit beyond the minimum required for a SANG to serve as an alternative recreational area, thereby reducing visits to SPAs/SACs. Consequently, a basic SANG design has been developed to include the key features outlined in the SANG guidelines, as well as an enhanced design. This is to demonstrate that the SANG is designed to provide biodiversity benefits beyond the SANG requirements. Both designs are outlined below.
- 6.4 Two separate metric calculations are presented in this Appendix B and Appendix C, the first based on the provision of a basic SANG, and the second incorporating enhanced SANG measures. This comparison is provided to clearly illustrate the additionality achieved through the proposed enhancements.

Proposals with Basic SANG

Habitats

Habitat Retention

- 6.5 Habitats proposed for retention include most individual trees, existing scrub, existing woodland and the existing pond (P1).
- 6.6 All arable land will be lost along with an area of modified grassland (G1) as part of the proposals.

Habitat Creation

- 6.7 Proposed habitat creation includes:
- Modified grassland in poor condition is proposed within the southern area of the SANG and in the form of sports pitches and school grounds within the Development area.
 - Modified grassland in moderate condition is proposed within the greenspace surrounding the development parcels.
 - Other neutral grassland in poor condition is proposed within the northern area of the SANG and within the southern area of the green space.
 - Mixed scrub in poor condition will be planted within the SANG and around the development parcels.

- Other broadleaved woodland in poor condition will be planted within the SANG.
- Allotments in poor condition are proposed within the north of the Site.
- Small individual trees in moderate condition are proposed to be planted throughout the Site, including along the STC and with fruit-bearing trees planted in the north of the Site to create a community orchard.
- Sustainable Urban Drainage Systems (SuDS) in poor condition are proposed within green spaces across the Development.
- Vegetated gardens will be created in association with the residential dwellings (in a ratio of 30:70, respectively).
- Developed land; sealed surface will be created in the form of the built environment and roads.

Table 4: Proposals with Basic SANG Outline Habitat Creation and Management Proposals

Habitat	SANG / Landscaping Habitat	Description	Condition	Distinctiveness
Modified Grassland	New Meadow Grassland	These areas will be created using a flowering lawn seed mix and managed informally to encourage a more diverse sward throughout. Where any excessive areas of bare ground are established or signs of damage are observed, reseeded will be undertaken.	Moderate	Low
Modified Grassland	Amenity grassland areas	These areas will be created using a flowering lawn seed mix. The grasslands in proximity to the Development will be mown regularly due to their status as formal amenity spaces, whereas the grassland within the SANG will be mown less frequently. Where any excessive areas of bare ground are established or signs of damage are observed, reseeded will be undertaken.	Poor	Low
Other neutral grassland	New Meadow Grassland	The grassland will be created by seeding the area with a suitable seed mix containing at least 15 species suited to neutral soils (such as an Emorsgate Meadow seed mix or a Naturescape Meadow mix). The grasslands will be managed informally to encourage a diverse sward throughout.	Poor	Medium
Other Woodland; broadleaved	New Woodland	The woodlands will be planted with a mixture of native woodland species, including hazel, hawthorn, hornbeam, and English oak. This habitat should be managed through pruning and coppicing to allow a range of plant ages to develop. These areas should also be kept free from invasive non-native species.	Poor	Medium
Mixed Scrub	New Woodland Edge/Scrub	This habitat will be planted using a diverse range of native scrub species. The scrub will be monitored for invasive species, which will be removed if found.	Poor	Medium

Habitat	SANG / Landscaping Habitat	Description	Condition	Distinctiveness
Individual trees	Street trees	New tree planting will be included throughout the Site. Long-term management will promote tree health and include replacing failed specimens where required.	Moderate	Medium
Individual trees	Orchard trees	Tree planting includes fruit tree planting within a community orchard area to the north of the Site.	Moderate	Medium
Allotments	Allotments	An allotment area has been included to the north of the development area. This will not be included in a management plan as they do not significantly contribute to the BNG and so do not have a condition target, but they will still add ecological value to the Site	Poor	Low
Sustainable drainage system (SuDs)	SuDs	A series of attention basins and swales will be created and seeded with a wildflower seed mix tolerant of wet ground conditions. Any permanently wet areas will be managed to ensure the drainage function of the basins/swales.	Poor	Low
Developed land; sealed surface	N/A	The built environment may provide opportunities for additional tree planting, hedgerows, and landscape planting, which will be considered at the detailed design stage and will help further increase the BNG score for the Site.	N/A	V. Low
Artificial unsealed surface	N/A	Play areas, such as LEAPs, and any footpaths through the Site.	N/A	V. Low

Hedgerows

Hedgerow Loss and Retention

- 6.8 All hedgerows to be retained, with partial losses of hedgerow EH1, EH2, H16, H18, H20 and H21 to facilitate access into and within the Site. One very-large tree (T9) and two large trees (T7 & T8) that lie within hedgerows are to be lost and so are mapped separately in this assessment.

Hedgerow Creation

- 6.9 Species-rich native hedgerows and species-rich native hedgerows with trees in moderate condition are proposed throughout the Site, bordering development parcels and within green spaces. These hedges will be planted with a minimum of 5 native species and managed in the long-term through rotational cutting to encourage the establishment of bushy hedgerows. Species-rich hedgerows with trees will be planted, featuring marked standards that will not be subject to cutting.

Proposals with Enhanced SANG

- 6.10 As part of the proposals for the enhanced SANG, the habitat types remain the same; however, areas of mixed scrub within the proposed SANG will be managed to achieve a moderate rather than poor condition. Other broadleaved woodland within the SANG will also be targeted to

attain a moderate condition rather than poor. Furthermore, some areas of modified grassland in moderate condition are planned for the northern and southern parts of the SANG, away from footpaths. These changes are illustrated in *Figure 6*.

Table 5: Proposals with Enhanced SANG Outline Habitat Creation, Enhancement and Management Proposals

Habitat	SANG / Landscaping Habitat	Description	Condition	Distinctiveness
Other Woodland; broadleaved	New Woodland	The woodlands will be planted with a mixture of native species, ensuring at least five native tree species occupy over 80% of the canopy. This habitat should be managed through pruning and coppicing to allow a range of plant ages to develop. The woodlands will be managed to ensure most trees are in healthy condition and free from invasive non-native species and woodland ground flora encouraged.	Moderate	Medium
Mixed Scrub	New Woodland Edge/Scrub	This habitat will be planted using a diverse range of native scrub species. It will incorporate glades, rides, and clearings and be managed to maintain these. Edge habitat will be maintained by cutting annually in late summer/early autumn. The scrub will be monitored for invasive species, which will be removed if found.	Moderate	Medium
Other neutral grassland	New Hay Meadow	The grassland will be created by seeding the area with a suitable seed mix containing at least 15 species suited to neutral soils. The grasslands will be managed, with one or two cuts annually to encourage a diverse sward throughout. Management will be less intensive than that of poor condition other neutral grassland.	Moderate	Medium
Modified Grassland	New Meadow Grassland	These areas will be created using a flowering lawn seed mix and managed informally to promote a more diverse sward throughout. The grassland will be managed through cut-and-collect to prevent nutrient build-up and allow a variety of grasses with some forbs to establish. Management will be less intensive than that of poor condition modified grassland.	Moderate	Low

7.0 CONCLUSION

- 7.1 The habitat retention, enhancement and creation proposals highlighted within this report have all been input into the Statutory Biodiversity Metric. *Table 6* provides a summary of the headline results of the assessment completed for the proposals

Table 6: Statutory Biodiversity Metric Headline Results

Calculation type:		Proposals with Basic SANG	Proposals with Enhanced SANG
Baseline	Habitat Units	219.07	219.07
	Hedgerow Units	41.39	41.39
	Watercourse Units	N/A	N/A
Post-Intervention	Habitat Units	214.12	253.43
	Hedgerow Units	48.22	48.22
	Watercourse Units	N/A	N/A
Total Net Unit Change	Habitat Units	-4.95	34.25
	Hedgerow Units	6.88	6.88
	Watercourse Units	N/A	N/A
Total Net Percentage Change	Habitat Units	-2.26%	+15.68%
	Hedgerow Units	+16.51%	+16.51%
	Watercourse Units	N/A	N/A

- 7.2 The Statutory Metric has demonstrated that the scheme with the basic SANG would result in a net loss of -2.26% habitat units and a net gain of 216.51% hedgerow units.
- 7.3 The enhanced SANG proposals show that with additional habitat enhancements to the SANG (beyond the features required to meet the SANG requirements), a net gain of 15.68% habitat units and 16.51% hedgerow units will result. This demonstrates that the development with the enhanced SANG will yield an additional gain of over 10% compared to the proposals with the basic SANG, ensuring additionality.

Habitat Trading Rules

- 7.4 All trading rules for area and hedgerow habitats are met within the enhanced SANG proposals.

Biodiversity Net Gain Hierarchy

- 7.5 The Biodiversity Net Gain hierarchy is provided within the Government's PPG and sets out guidance on how to prioritise habitat avoidance, retention and compensation for more valuable habitats. The BNG Hierarchy has influenced the Site design through the following measures:
- Habitat loss has, for the most part, been restricted to low or very low distinctiveness habitats, which have very limited ecological value.
 - Proposals have sought to retain medium distinctiveness habitats where possible, including the retention of most hedgerows on-site, existing woodland and the existing pond.
 - The partial loss of some existing hedgerows have been compensated for on-site.

Securing BNG

- 7.6 This BNG report outlines the approach and measures proposed to achieve a measurable net gain in biodiversity as part of the development. It demonstrates how the current design and habitat proposals are expected to achieve the required BNG target in accordance with the Environment Act 2021 and associated national and local planning policy. However, the assessment and calculations are based on the information available at this stage and may change as the project design, landscaping, and management details are refined through the planning process or as additional ecological information becomes available. Any updates will be reflected in the Biodiversity Gain Plan to ensure continued compliance with statutory requirements.
- 7.7 Further details on habitat creation, enhancement and management can be provided at the detailed design stage of the proposals, where ecologists will input directly into landscape planting. A Habitat Management and Monitoring Plan will also be included in the Biodiversity Gain Plan, which, in accordance with the requirements of the Environment Act, will be issued following receipt of full planning permission. This HMMP will provide details on how the creation, retention, and enhancement of habitats across the Site that significantly contribute to the Site's BNG will be managed for a minimum of 30 years.

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Appendix A: Baseline Condition Assessment Results

GRASSLAND (LOW DISTINCTIVENESS)	
Condition Criteria	Grassland Reference
	Modified Grassland G1
1 There must be 6-8 species per m2, including at least 2 forbs. Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving moderate or good condition.	Fail
2 Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Pass
3 Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Pass
4 Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	Pass
5 Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	Fail
6 Cover of bracken less than 20%.	Pass
7 There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981)	Pass
Total Passes	5
Passes 6 or 7 criteria including non-negotiable criterion 1 Good Passes 4 or 5 criteria including non-negotiable criterion 1 Moderate Passes 3 or fewer criteria; Poor OR Passes 4-6 criteria (excluding criteria A) Condition	Poor (does not pass non-negotiable criterion)

INDIVIDUAL TREES		
Condition Criteria	Trees Reference	
	T1, T2, T3, T4, T9	T5, T6
1 The Tree is a native species (or more than 70% within the block are native species)	P	F
2 Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	P	P
3 The tree is mature (or more than 50% within the block are mature). A mature tree is 2/3 its expected fully mature height for the species	P	F
4 There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	P	F
5 Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark.	P	F
6 More than 20% of the tree canopy area is oversailing vegetation beneath.	P	P
Total Passes	6	4
Condition		
Passes 5 or 6 criteria Good (3)	Good	Moderate
Passes 3 or 4 criteria Moderate (2)		
Passes 2 or fewer criteria Poor (1)		

PONDS	
Condition Criteria	Pond Reference
	Non-priority Pond
1 The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	Fail
2 There is semi-natural habitat (i.e. moderate distinctiveness or above) for at least 10 m from the pond edge for its entire perimeter.	Fail
3 Less than 10% of the pond is covered with duckweed or filamentous algae.	Pass
4 The pond is not artificially connected to other waterbodies, either via agricultural ditches or artificial pipework.	Pass
5 Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams, pumps or pipework.	Pass
6 There is an absence of non-native plant and animal species as listed on the WFD UKTAG High Impact Species List ¹ .	Pass
7 The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Pass
Additional Criteria for non-woodland ponds	
8 Emergent, submerged or floating (excluding duckweeds) ² plants cover at least 50% of the pond area that is less than 3 m deep.	Fail
9 The surface is no more than 50% shaded by adjacent trees and scrub.	Fail
Total Passes	5
Condition	Poor
Woodland ponds: Passes 7 of 7 criteria Non-woodland ponds: Passes 9 of 9 criteria	
Woodland ponds: Passes 5 or 6 of 7 criteria Non-woodland ponds: Passes 6 to 8 of 9 criteria	
Woodland ponds: Passes 4 or fewer criteria Non-woodland ponds: Passes 5 or fewer criteria	

WOODLAND		
Condition Criteria	Woodland Reference	
	W1	W2 & W3
1 Age of trees (see notes) 3pts – 3 age classes; 2pts – 2 age classes; 1pt – 1 age class	2	3
2 Wild, domestic and feral herbivore damage 3pts – none; 2pts – <40% of woodland; 1pt – >40% of woodland	2	2
3 Invasive plant species (see notes) 3pts – none; 2pts – <10% cover AND no rhododendron or laurel; 1pt – ≥10% cover & invasives OR rhododendron or laurel present	3	3
4 Number of native tree and shrub species 3pts – five or more; 2pts – 3-4 species; 1pt – 0-2 species	2	3
5 Cover of native tree and shrub species 3pts – >80% of canopy and understorey are native; 2pts – 80% of canopy and 50-80% of canopy and understorey are native; 1pt – <50% of canopy and understorey are native.	3	3
6 Open space within woodland 3pts – 10-20% temporary open space (0-20% if woodland area is <10ha); 2pts – 21-40% temporary open space; 1pt – <10% (if woodland more than 10ha has <10% temp open space, please see good category) or >40% temporary open space	3	3
7 Woodland regeneration (see notes) 3pts – all three classes 4-7cm diameter at breast height; 2pts – one or two classes only present; 1pt – no classes or coppice regrowth in woodland	1	1
8 Tree health 3pts – <10% mortality and no pests/diseases/crown dieback; 2pts – 11-25% mortality and/or dieback, low risk pests/disease present 1pt – >25% mortality or high-risk pests/disease present	3	3
9 Vegetation and ground flora 3pts – strong ancient woodland indicators; 2pts – recognisable woodland NVC* community; 1pt – no recognisable woodland NVC community	1	1
10 Woodland vertical structure (upper, complex, middle, lower, shrub) 3pts – 3+ storeys; 2pts – 2 storeys; 1pt – 0-1 storeys	2	2
11 Veteran trees 3pts – 2+/ha; 2pts – 1/ha; 1pt – none	1	1
12 Amount of deadwood 3pts – 50% survey plots; 2pts – 25-50% survey plots; 1pt – <25% survey plots	1	1
13 Woodland disturbance 3pts – no enrichment/damage; 2pts – <1ha enriched and/or <20% area damaged ground l; 1pt – >1ha enriched and/or >20% area damaged ground	1	1
Total Score	25	27
Condition		
Total score >32 (33-39) Good (3)		
Total score 26-32 Moderate (2)		
Total score <26 (13-25) Poor (1)		
	Poor	Moderate

NATIVE HEDGEROWS																				
Functional Group	Statutory Condition Criteria	Hedgerow Reference																		
		H7 & H8	H10	H28	H22 & H27	H13	H9	H3	H1 & H26	H25	H16, H23 & H24	H18	H19 - H21	H12	H17	H2	H11	H4-5 & 29	H14 & H15	H6
A	A1 Height >1.5m average along length	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	F	P	F
	A2 Width >1.5m average along length	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
B	B1 Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	P	P	P	P	P	P	F	P	P	P	P	P	P	P	P	F	F	P	P
	B2 Gaps make up <10% of total length and no canopy gaps >5 m (access points and gates excluded from <5m)	F	P	P	P	P	F	F	P	P	P	F	P	P	F	F	F	F	P	F
C	C1 >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on at least one side of the hedge (at least)	P	F	F	P	P	P	P	F	P	P	P	P	F	P	P	F	F	F	P
	C2 Plant species indicative of nutrient enrichment (nettles, docks, cleavers) dominate <20% cover of the area of undisturbed ground	F	P	P	P	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
D	D1 >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA3) and recently introduced species.	P	P	P	F	P	P	P	P	F	F	P	P	P	P	P	P	P	P	P
	D2 >90% of the hedgerow or undisturbed ground is free of damage caused by human activities	P	P	P	P	F	F	P	P	F	F	F	F	F	F	F	F	F	F	F
Additional group – applicable to hedgerows with trees only																				
E	E1 There is more than one age-class (or morphology) of trees present (young, mature, veteran, ancient) and there is on average at least one present per 20-50m of hedgerow. (A mature tree is one that is at least 2/3 expected fully mature height for the species)	N/A	P	N/A	P	N/A	N/A	P	P	P	N/A	F	F	N/A	P	F	P	P	F	P
	E2 At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an	N/A	P	N/A	P	N/A	N/A	P	P	P	N/A	F	F	N/A	F	P	P	F	F	F

	adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity																			
Total Fails		2	1	1	1	2	3	3	2	3	3	5	4	3	4	4	5	7	5	5

Legend

 Redline Boundary

Habitats Baseline

 Cereal crops

 Developed land; sealed surface

 Mixed scrub

 Modified grassland

 Non-cereal crops

 Other woodland; broadleaved

 Ponds (non-priority habitat)

 Temporary grass and clover leys

Hedgerow Baseline

 Native hedgerow

 Native hedgerow with trees

 Species-rich native hedgerow

 Species-rich native hedgerow with trees

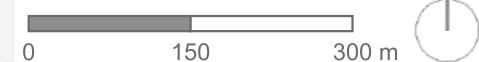
Individual tree Baseline

 Existing Very Large Urban Tree

 Existing Large Urban Tree

 Existing Medium Urban Tree

North Hemel Hempstead Figure 1 - Baseline Habitat Plan



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Legend

 Redline Boundary

Habitats Proposed

-  Allotments
-  Artificial unvegetated, unsealed surface
-  Developed land; sealed surface
-  Mixed scrub
-  Modified grassland
-  Other neutral grassland
-  Other woodland; broadleaved
-  Ponds (non-priority habitat)
-  Sustainable drainage system
-  Residential
-  School

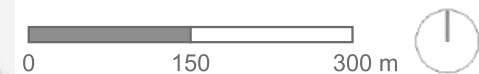
Hedgerow Proposed

-  Native hedgerow
-  Native hedgerow with trees
-  Species-rich native hedgerow
-  Species-rich native hedgerow with trees

Individual tree Proposed

-  Proposed Small Urban Tree
-  Retained Large Urban Tree
-  Retained Medium Urban Tree

North Hemel Hempstead Figure 2 - Proposed Habitat Plan



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Legend

 Redline Boundary

Habitat Retention

 Retained

 Lost

Hedgerow Retention

 Retained

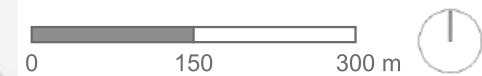
 Lost

Individual tree Retention

 Retained

 Proposed Lost

North Hemel Hempstead Figure 3 - Habitat Retention Plan



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Legend

 Redline Boundary

Baseline Habitat Condition

 Moderate

 Poor

 N/A - Other

 Condition Assessment N/A

Baseline Habitat Distinctiveness

 Medium

 Low

 V.Low

Baseline Hedgerow Condition

 Good

 Moderate

 Poor

Baseline Hedgerow Distinctiveness

 High

 Medium

 Low

Baseline Individual Distinctiveness

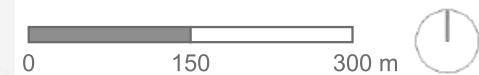
 Medium

Baseline Individual tree Condition

 Moderate

 Good

North Hemel Hempstead Figure 4 - Baseline Habitat Condition & Distinctiveness Plan



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Legend

 Redline Boundary

Proposed Habitat Condition

 Moderate

 Poor

 N/A - Other

 Condition Assessment N/A

Proposed Habitat Distinctiveness

 Medium

 Low

 V.Low

Proposed Hedgerow Condition

 Good

 Moderate

 Poor

Proposed Hedgerow Distinctiveness

 High

 Medium

 Low

Proposed Individual tree Condition

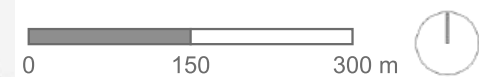
 Moderate

 Good

Proposed Individual Distinctiveness

 Medium

North Hemel Hempstead Figure 5 - Basic SANG Proposed Habitat Condition & Distinctiveness Plan



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Legend

 Redline Boundary

Proposed Habitat Condition

 Moderate

 Poor

 N/A - Other

 Condition Assessment N/A

Proposed Habitat Distinctiveness

 Medium

 Low

 V.Low

Proposed Individual tree Condition

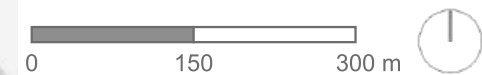
 Moderate

 Good

Proposed Individual Distinctiveness

 Medium

North Hemel Hempstead Figure 6 - Enhanced SANG Proposed Habitat Condition & Distinctiveness Plan



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