



Walsingham Planning

# Sandy Lane, Long Crendon

Biodiversity Net Gain Report

2484362

JULY 2023

## RSK GENERAL NOTES

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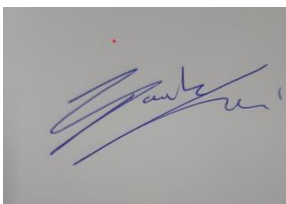
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## EXECUTIVE SUMMARY

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This report presents the results of an updated Biodiversity Net Gain (BNG) assessment of the proposed development site, located at Sandy Lane in Long Crendon, Aylesbury (grid reference SP 689089) and associated potential offsetting area. This work has been undertaken on behalf of Walsingham Planning. The development comprises five residential properties with associated gardens and infrastructure.

This report does not consider any ecological considerations outside of habitats and the delivery of BNG. For consideration of other potential ecological constraints, the PEA report produced by AA Environmental (2022) should be consulted.

The UKHab survey identified that five habitat types were present in the baseline of the development site, resulting in a baseline value of 1.97 habitat Biodiversity Units (BUs). Post-development it is anticipated that all habitats present within the site, with the exception of the existing house and a limited amount of associated hard standing and vegetated garden, will be lost and new areas of hard standing, vegetated garden, other neutral grassland, mixed scrub and rural trees will be created resulting in a net loss of 0.67 habitat BU (-33.76%).

Within the adjacent potential offsetting area two habitat areas and one hedgerow length were present in the baseline resulting in a baseline value of 1.85 habitat BUs and 1.25 hedgerow BUs. It has been assumed that the mixed scrub habitat within this area would be enhanced to good condition and the other neutral grassland habitat would be enhanced to moderate condition to achieve a post-development BU value of 2.75. The hedgerows within the potential offsetting area were assessed as having a baseline condition of good and as such there is no scope to enhance this habitat.

Together this indicates a net gain of habitat BUs across the development site and the potential offsetting site of 0.24 habitat BUs (12.16%) meeting the requirements of 10% BNG.

However, there remains a 0.03 BU deficit in the provision of medium distinctiveness habitats as required to address the loss of other neutral grassland. Given the extremely limited nature of this deficit and that the requirement for 10% net gain is otherwise achieved it is suggested that a conversation is held with the local authority to agree that a variation from the Defra Metric trading rules is justified on this occasion as overall a 12% gain in biodiversity is delivered.

In addition to required BNG enhancements consideration should be given to other biodiversity enhancements that could be implemented within the site including:

- bird / bat boxes
- log piles
- hedgehog highways.

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# 1.0 INTRODUCTION

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## 1.1 Purpose of this report

- 1.1.1 This report presents the results of an updated Biodiversity Net Gain (BNG) assessment of the proposed development zone located at Sandy Lane in Long Crendon, Aylesbury (grid reference SP 689089) on behalf of Walsingham Planning. The aim of this report is to provide a robust baseline habitat assessment and to determine the extent to which biodiversity would be affected by the proposed development and whether or not a net gain in biodiversity can be achieved.
- 1.1.2 The latest version of the Defra Biodiversity Metric, version 4.0, was used to calculate the expected net change in Biodiversity Units (BUs) associated with the proposals.
- 1.1.3 This report considers the habitats present on the site pre- and post-development for the purposes of a BNG assessment only. Details of broader ecological considerations and constraints are addressed in the Preliminary Ecological Appraisal (PEA) report produced by AA Environmental Ltd (2022).
- 1.1.4 The BNG assessment detailed in this report should be considered to be an update on the previous BNG assessment produced in February 2023 (RSK Biocensus, 2023) and uses the results of an updated UK Habitat survey of the site and an updated 'Site Plan' (see Appendix A. Ascot Design, 2022) to calculate revised BU values for baseline and anticipated post-intervention scenarios in order to determine whether BNG would be achieved.

## 1.2 Development proposals

- 1.2.1 The development plans comprise the construction of five new residential dwellings with parking, gardens and associated infrastructure including a road and footpath.
- 1.2.2 The area termed 'the Site' throughout this report is indicated by the red-line boundary shown on Figure 1. A potential area available for the delivery of off-site BNG is indicated by the blue-line boundary also illustrated on Figure 1.

## 1.3 Ecological context

- 1.3.1 The Site has been mapped as 0.559 ha in size<sup>1</sup> and is bordered to the north by residential properties and associated gardens, Sandy Lane to the east, agricultural land to the west and a residential property and garden to the south.
- 1.3.2 The wider landscape comprises the village of Long Crendon, agricultural land and woodland blocks.

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<sup>1</sup> Note. this is rounded to 0.56 within the Defra Biodiversity Metric calculations due to the number of decimal places to which total areas are considered.

## 1.4 Policy context

- 1.4.1 The primary aims of BNG are to secure a measurable improvement in habitat for biodiversity, to minimise biodiversity losses and to help to restore ecological networks whilst streamlining development processes.
- 1.4.2 The Environment Act, 2021, mandates a statutory requirement for developments to deliver a minimum 10% BNG. Additionally the National Planning Policy Framework (NPPF) makes provisions for the delivery of BNG.
- 1.4.3 Buckinghamshire County Council have adopted a supplementary planning document to aid decision making on Planning Applications submitted under the Town and Country Planning Act, 1990 (as amended). Its aim is to ensure that development within the county provides an increase in biodiversity post-development compared to what existed prior to the new development, known as BNG.
- 1.4.4 The latest Buckinghamshire and Milton Keynes local biodiversity action plan (LBAP) list four habitat action plans (HAPs). The local HAPs that are of potential relevance to the proposed development are:
- Scrub and edge habitats and scrubby grassland.

## 2.0 METHODS

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### 2.1 UKHab survey

2.1.1 The baseline habitats present within the Site and potential offsetting area were surveyed using the UKHab survey approach (Butcher et al. 2020). The UKHab classification system is the habitat classification that underpins the Defra Biodiversity Metric and is therefore the favoured habitat classification to use when surveys need to inform a BNG calculation. This included:

- Habitat mapping using a set of standard colours and symbology to indicate habitat types on a habitat map,
- A description of features of possible ecological or nature conservation interest in notes relating to numbered locations on the habitat map, called ‘target notes’.

2.1.2 Vascular plant species were recorded during the survey, although no attempt was made to produce an exhaustive species list (additional species would almost certainly be found during more detailed surveys or repeat surveys at various times of the year).

2.1.3 Plant nomenclature in this report follows Stace (2019) for native and naturalized species of vascular plants. Introduced species and garden varieties were identified using relevant Floras. Plant names in the text are given as common names with the scientific name (in italics) immediately following the first time it is mentioned. Doubtful identifications are preceded by ‘cf’ placed before the specific epithet where the plant is very probably the species indicated, but it could not be distinguished from similar members of the genus with certainty. The survey was undertaken on 3 July 2023 by Daniel Fellman. Daniel is a suitably qualified and experienced ecological consultant, a member of CIEEM and is experienced in carrying out PEA surveys.

### 2.2 BNG assessment

2.2.1 This assessment was undertaken in accordance with guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2021) and British Standard for Biodiversity Net Gain (BS8683).

2.2.2 To calculate BUs for the Site and assess any changes arising from the proposed development, this assessment uses methods set out in the latest Defra Biodiversity Metric 4.0 (hereafter the ‘Defra Metric’) user guide (Natural England, 2023a).

2.2.3 The Defra Metric is designed to quantify biodiversity gains and losses to inform and improve planning, design, land management and decision-making (Natural England, 2023a). It uses three core measurements:

- Habitat area (i.e. habitat BUs),
- Length of linear terrestrial habitats (i.e. hedgerow BUs); and,
- Length of linear aquatic habitats (i.e. watercourse BUs).

2.2.4 Consequently, a site can have three biodiversity unit values, which are assessed using the same metric, but which cannot be summed together. Habitat area is multiplied by



several factors that indicate its quality and value (distinctiveness, condition and strategic location), and this provides its BU value. This can be used for existing and future created habitats.

- 2.2.5 In addition, for those habitats that are to be enhanced or newly-created, the risk of failure is accounted for by applying multipliers for risk factors (difficulty, time to target condition, and off-site risk).

### **Habitat Distinctiveness**

- 2.2.6 Habitats are classified using the phase 1 habitat survey methodology (JNCC 2010) or, ideally, the UK habitat ('UKHab') classification system (Butcher et al., 2020).
- 2.2.7 The metric pre-assigns each habitat type to a distinctiveness band according to its distinguishing features, including its species richness, rarity (at local, regional, national and international scales) and the degree to which it supports species rarely found in other habitats.
- 2.2.8 On rare occasions, the distinctiveness of a habitat can be altered up or down from the preassigned value within the Metric. Any alterations must, however, be fully explained and justified using evidence relevant to the site (for example, an increase in distinctiveness because of rare flora or fauna or a decrease in distinctiveness because of significant damage to the habitat).

### **Habitat Condition**

- 2.2.9 Habitat condition measures the varying quality of similar habitats against what is perceived to be their optimal state. Technical Annex 1 of the Defra Metric (Natural England, 2023b) contains condition sheets for all habitats to which the metric can apply. The condition sheets contain a habitat description, contextual information to aid the assessment, and the assessment criteria. The criteria describe what components need to be present for a habitat to be in good, fairly good, moderate, fairly poor or poor condition.

### **Strategic Location**

- 2.2.10 Strategic location – sometimes called 'strategic significance' – works at a landscape scale, allowing additional value to be added to habitats in 'priority' or 'biodiversity target' areas. They include statutory and non-statutory sites and other areas with biodiversity value or potential (include Local Nature Recovery Strategies (LNRSs), where these have been prepared), and they are mainly identified from local plans and objectives. If a habitat is within such a target area, a multiplier is applied to increase its value.

### **Difficulty of Creation and Restoration**

- 2.2.11 The risks associated with creating new, or enhancing existing, habitats are known as 'difficulty factors'; for example, where habitats can readily fail to establish owing to natural changes in local conditions, incorrect management or for unknown reasons. The Defra Metric contains default values for each habitat based on the average difficulty of creating or enhancing that specific habitat. Occasionally, under exceptional circumstances, these multipliers can also be modified, but any deviation from the default value must again be fully justified.

### **Time to Target Condition**

- 2.2.12 There is often a lag between a habitat being created or enhanced and the new habitats achieving their target condition. This gives reduced biodiversity value for a time. The Defra Metric preassigns the time to target condition based on good practice and typical conditions, and assigns a multiplier based on the number of years required to achieve it.
- 2.2.13 Using bespoke techniques under unique conditions, or creating compensation habitats prior to impacts taking place, the time to target condition can be adjusted. Any changes must again be fully justified.

### **Off-site Risk**

- 2.2.14 Often it will not be possible to compensate adequately for loss of biodiversity within the site boundary, so off-site compensation is required. If the off-site compensation is a significant distance from the development site, then there will be a loss of biodiversity locally, and a negative multiplier is therefore applied to any off-site compensation.

## **2.3 Constraints and limitations**

- 2.3.1 There was limited access into the area, within the applicant's ownership but outside of the red line boundary, which has been identified as a potential location for the provision of off-site biodiversity compensation measures should this be required. From the information that was gathered this area has been assessed as being a continuation of the grassland mixed scrub habitat identified within the red line boundary, with boundary hedgerows. No obvious indicators of a significant change in the condition of these habitats were noted between the habitats within the red and blue boundaries and as such the same habitat conditions have been assumed across comparable habitats in both locations.
- 2.3.2 The site visit comprised a UKHab survey for use in BNG calculations only. As such the survey did not include consideration of other potential ecological constraints (i.e. protected species). For further information on any such constraints the PEA report produced by AA Environmental Ltd (2022) should be consulted.
- 2.3.3 All habitat areas and lengths included within the BNG assessment have been measured manually using ArcGIS based on the UKHab Plan and the proposed Site layout; as such habitat areas are approximations only.
- 2.3.4 The post-development scenario, considered for the Defra Metric calculation is based on the current proposed Site layout. Should amendments be made to the post-development design as the project progresses an updated assessment would be required.
- 2.3.5 The Defra Metric calculation assumes that habitats created as part of the proposed development will be subject to appropriate ongoing management and monitoring to ensure correct establishment and growth. Remedial actions will be required if this does not proceed as expected, otherwise the target condition used in the calculation may not be met and the stated number of BUs may not be achieved.

## 3.0 RESULTS

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3.1.1 The baseline habitats present within the Site and the associated potential offsetting area are illustrated in the form of UKHab classifications on Figure 2. Representative photos taken during the UKHab survey are provided in Appendix B.

### 3.2 Habitats and plants

3.2.1 The Site was found to be comprised of five distinct habitats, namely:

- Artificial unvegetated, unsealed surface (condition assessment not applicable),
- Developed land; sealed surface (including buildings) (condition assessment not applicable),
- Mixed scrub, in moderate and poor condition,
- Other neutral grassland, in poor condition; and,
- Vegetated garden (condition assessment not applicable)

3.2.2 The associated potential offsetting area was assessed as largely representing a continuation of the habitats within the Site with three distinct habitats being identified, namely:

- Mixed scrub, in moderate condition,
- Other neutral grassland, in poor condition; and,
- Native hedgerow with trees, in good condition.

3.2.3 No overt indications of a change in condition between areas of these habitats within the Site and within the potential offsetting area were noted and as such the condition of habitats within the potential offsetting area have been assumed to be consistent with the condition of the same habitat type present within the Site.

### 3.3 Biodiversity Net Gain

3.3.1 The baseline UKHab survey results (Figure 2) have been used to determine that five habitat types occur within the development boundary of the Site. No hedgerow or watercourse lengths are present. Details of these areas and a summary of the BUs this represents within the Site are presented in Table 1.

3.3.2 The baseline UKHab survey results (Figure 2) have also been used to determine that two habitat areas and two hedgerow lengths occur within the potential offsetting area. No watercourse lengths are present. Details of these areas/lengths and a summary of the BUs this represents within the potential offsetting area are presented in Table 2.

3.3.3 The full results of this assessment are provided in Appendix C. In summary there are currently 1.99 habitat BUs within the Site and 1.85 habitat BUs and 1.25 hedgerow BUs within the potential offsetting area.

**Table 1. Baseline habitat area and hedgerow length BUs within the Site**

UKHab Primary	Area - Ha	Condition	Strategic Significance	Baseline BUs
Artificial unvegetated, unsealed surface	0.018	N/A	Area/compensation not in local strategy / no local strategy	0.00
Developed land; sealed surface (inc. Buildings)	0.059	N/A	Area/compensation not in local strategy / no local strategy	0.00
Mixed Scrub	0.013	Moderate	Local ecologically desirable but not in local strategy	0.11
Mixed Scrub	0.005	Poor	Local ecologically desirable but not in local strategy	0.02
Other neutral grassland	0.379	Poor	Local ecologically desirable but not in local strategy	1.67
Vegetated garden	0.084	Condition Assessment N/A	Area/compensation not in local strategy / no local strategy	0.17
<b>Total</b>	<b>0.56</b>	-	-	<b>1.97</b>

**Table 2. Baseline habitat area and hedgerow length BUs within the potential offsetting area**

UKHab Primary	Area - Ha	Condition	Strategic Significance	Baseline BUs
Mixed Scrub	0.176	Moderate	Local ecologically desirable but not in local strategy	1.55
Other neutral grassland	0.068	Poor	Local ecologically desirable but not in local strategy	0.30
<b>Total</b>	<b>0.24</b>	-	-	<b>1.85</b>
UKHab Primary	Length - km	Condition	Strategic Significance	Baseline BUs
Native Hedgerow with trees	0.095	Good	Local ecologically desirable but not in local strategy	1.25
<b>Total</b>	<b>0.095</b>	-	-	<b>1.25</b>

### 3.4 BNG good practice principles for development

3.4.1 The Defra Metric 4.0 has been designed as a tool to help inform plans and decisions; however, when undertaking BNG assessments this must be undertaken in accordance with set principles outlined in the user guide (Natural England, 2023a). These are outlined in Table 3 below, along with a full justification of how each principle has been considered.

**Table 3. Defra Metric 4.0 good practice principles and justification**

Principal	Justification of how principal has been applied
<p><b>Principle 1:</b> The metric does not change the protection afforded to biodiversity.</p>	<p>Existing levels of protection afforded to protected species and habitats are not changed by use of this or any other metric. Statutory obligations will still need to be satisfied.</p>
<p><b>Principle 2:</b> Biodiversity metric calculations can inform decision-making where application of the mitigation hierarchy and good practice principles conclude that compensation for habitat losses is justified.</p>	<p>The mitigation hierarchy has been applied to the design of the proposed development. The development will result in most baseline habitats being lost; however, the habitats that will subsequently be created will be appropriate and of the correct distinctiveness to compensate for the habitats that will be impacted.</p>
<p><b>Principle 3:</b> The metric's biodiversity units are only a proxy for biodiversity and should be treated as relative values.</p>	<p>RSK Biocensus acknowledges that the metric has been kept deliberately simple to be of practical use, and the output does not represent absolute values. The calculations have been undertaken by specialists and input is underpinned by robust baseline evidence and ecological knowledge and experience.</p>
<p><b>Principle 4:</b> The metric focuses on typical habitats and widespread species; important or protected habitats and features should be given broader consideration.</p>	<p>Impacts to protected and notable species and habitats have been assessed as part of the PEA undertaken for the proposed development. For details of this survey please consult the separate PEA report (AA Environmental, Ltd).</p> <p>No irreplaceable habitats or designed sites for nature conservation are present on the development site.</p>
<p><b>Principle 5:</b> The metric design aims to encourage enhancement, not transformation, of the natural environment.</p>	<p>Where new habitats will be created, these will be in keeping with the local conditions of the site and will be of a better condition/distinctiveness than they currently are, where practicable.</p>
<p><b>Principle 6:</b> The metric is designed to inform decisions, not to override expert opinion.</p>	<p>The habitats chosen for creation and enhancement have been done so based on the existing site conditions and local context, not purely to achieve the greatest possible BNG. The post-development habitats will be managed and maintained in accordance with a management plan which will ensure the habitats are become fully established and are maintained long-term.</p>
<p><b>Principle 7:</b> Compensation habitats should seek, where practical, to be local to the impact.</p>	<p>Where offsite habitat compensation/offsetting is required, this will aim to be as local to the proposed development site as possible, with the offsetting site selected being as similar in composition to the proposed development site as possible.</p>
<p><b>Principle 8:</b> The metric does not enforce a mandatory minimum 1:1 habitat size ratio for losses and</p>	<p>Where possible, in the first instance the same habitat type of better condition will be created. If conditions do not allow for the same</p>



Principal	Justification of how principal has been applied
compensation, but consideration should be given to maintaining habitat extent and habitat parcels of sufficient size for ecological function.	habitat type to be created, consideration will be given to the creation of different habitats of the same distinctness or higher.

### 3.5 Post-development habitat creation and enhancement

3.5.1 The following new habitats are proposed to be created in the place of baseline habitats that will be lost to the proposed development:

- Developed land; sealed surface – buildings,
- Vegetated garden,
- Developed land; sealed surface,
- Mixed scrub; and,
- Other neutral grassland.

3.5.2 The location and extent of these post-development habitats is illustrated on Figure 3 and a breakdown of the total areas for the proposed habitats post-development and a summary of the BUs this represents, are presented in Table 4. The full results of this assessment are presented in Appendix C.

3.5.3 In summary, based on the proposed site plan, there would be a total of 1.31 habitat units post-development, based on the assumption that areas of newly-created habitat would be created and maintained in moderate condition. Condition assessment criteria for newly created habitats are provided in Appendix D.

**Table 4. Post-development habitat area and hedgerow length BUs within the development boundary**

UKHab Primary	Area - Ha	Condition	Strategic Significance	Baseline BUs
<b>Retained</b>				
Developed land; sealed surface (inc. Buildings)	0.037	N/A – Other	Area/compensation not in local strategy/no local strategy	0
Vegetated garden	0.02	Condition Assessment N/A	Area/compensation not in local strategy/no local strategy	0.04
<b>Created</b>				
Developed land; sealed surface (inc. Buildings)	0.242	N/A - Other	Area/compensation not in local strategy/no local strategy	0
Mixed scrub	0.055	Moderate	Location ecologically desirable but not in local strategy	0.41
Other neutral grassland	0.055	Moderate	Location ecologically desirable but not in local strategy	0.41

Vegetated garden	0.208	Condition Assessment N/A	Area/compensation not in local strategy/no local strategy	0.40
Rural trees	0.0163	Moderate	Location ecologically desirable but not in local strategy	0.05
<b>Total</b>	<b>0.56<sup>2</sup></b>	-	-	<b>1.31</b>

- 3.5.4 It is proposed that within the potential offset area, mixed scrub will be enhanced from moderate to good condition and the other neutral grassland will be enhanced from poor to moderate condition. The hedgerows would be retained in their current good condition.
- 3.5.5 The breakdown of the total areas for the potential offset area habitats post-development, and a summary of the BUs this represents are presented in Table 5. The full results of this assessment are presented in Appendix C.
- 3.5.6 In summary, based on the proposed enhancements there would be 2.75 habitat BUs and 1.25 hedgerow BUs within the potential offsetting area post-development, based on the assumption that the habitats would be enhanced and maintained in the conditions identified in Table 5 below. Condition assessment criteria for enhanced habitats are found in Appendix D.

**Table 5. Post-development habitat area and hedgerow length BUs within the potential offsetting area**

UKHab Primary	Area - Ha	Condition	Strategic Significance	Baseline BUs
Mixed Scrub	0.176	Good	Local ecologically desirable but not in local strategy	2.24
Other neutral grassland	0.068	Moderate	Local ecologically desirable but not in local strategy	0.51
<b>Total</b>	<b>0.24</b>			<b>2.75</b>
UKHab Primary	Length - km	Condition	Strategic Significance	Baseline BUs
Native Hedgerow with trees	0.095	Good	Local ecologically desirable but not in local strategy	1.25
<b>Total</b>	<b>0.095</b>	-	-	<b>1.25</b>

## 3.6 Change in biodiversity value

- 3.6.1 Under the current proposals, there will be gain of 0.24 habitat BUs, equivalent to a 12.16% net gain. This is shown in Table 6.

<sup>2</sup> Within the Defra Biodiversity Metric the area of rural trees is not included as part of the overall site size.

**Table 6. Change in habitat area and hedgerow length BUs calculation**

Location of habitat area BUs	Post-development habitat area BUs	Baseline habitat area BUs	Change in BUs
Within the Site	1.31	1.97	-0.67
Within the potential offsetting site	2.75	1.85	+0.91
<b>Total</b>	<b>4.06</b>	<b>3.82</b>	<b>+0.24</b>
Location of hedgerow length BUs	Post-development hedgerow length BUs	Baseline hedgerow length BUs	Change in BUs
Within the Site	0	0	0
Within the potential offsetting site	1.25	1.25	0
<b>Total</b>	<b>1.25</b>	<b>1.25</b>	<b>0</b>

## 4.0 EVALUATION AND RECOMMENDATIONS

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- 4.1.1 Unless the site changes significantly the UKHab survey carried out for this report should remain valid for at least 18 months, and potentially up to three years (CIEEM, 2019).

### 4.2 Habitats and plants

- 4.2.1 The habitats present in the Site offer some, albeit limited, botanical interest and are in keeping with the habitats present across the wider landscape. The hedgerows around within the potential offsetting area, provide connectivity to the wider landscape and will be retained post-development.

### 4.3 Biodiversity net gain and other enhancements

#### **Biodiversity net gain**

- 4.3.1 The proposed development and associated enhancements identified for the potential offsetting area would deliver a sufficient percentage net gain in habitat area BUs, at 12.16%, to meet 10% BNG requirements.
- 4.3.2 However, despite this, not all of the trading rule requirements of the Defra Biodiversity Metric have been met, with a 0.03 BU deficit occurring in the delivery of medium distinctiveness habitats to replace the loss of other neutral grassland.
- 4.3.3 It should be noted that the Defra Biodiversity Metric is only intended to be a tool and variations from the requirements set out in the Metric are permissible providing they are agreed with all relevant parties (i.e. local authorities and other relevant stakeholders). Given the minimal nature of the deficit for this site and the overall net gain achieved (12%) it is possible that a departure from the Metric's trading rules could be agreed; however, this would be dependent on the expectations of the local authority and could not be determined without further conversations with the local authority. But, our professional opinion is that given the 12% gain delivered an exception to the trading rules should be permissible on this occasion.

#### **Habitat establishment and maintenance**

- 4.3.4 To establish and maintain the proposed post-development habitats a degree of intervention will be required. Following initial creation, establishment and enhancement interventions, these habitats would require regular management to maintain the required condition over 30 years. It is recommended that the implementation, creation and enhancement of habitats post-development are outlined in a Landscape Ecological Management Plan (LEMP) which will specify a suitable management and monitoring regime.
- 4.3.5 The LEMP should detail the adaptive management plan that would guide all habitat management at the site. The LEMP should also include necessary interventions should habitats fall short of their desired future condition.

4.3.6 The LEMP should include detailed drawings, management proposals and timetables, as well as a plan to define who is responsible for these activities. However, a brief summary of the likely habitat management requirements is detailed in Appendix E.

#### **Opportunities for enhancements**

4.3.7 In addition to the delivery of BNG, other opportunities for biodiversity enhancement should be considered including:

- **Bird / Bat boxes:** these should be incorporated into the development design and include boxes suitable for a range of bat species, swifts, house sparrow and/or starling. These features would provide additional roosting/nesting sites for these species groups and help offset impacts associated with habitat loss.
- **Log piles:** should be incorporated into quiet and varied habitats in the development to offer refuge for reptiles, amphibians and/or hedgehogs. Ideally, they should be created using logs resulting from vegetation clearance or come from native and local wood.
- **Hedgehog highways:** these are holes approximately 13cm<sup>2</sup> that can be provided in garden fences thereby improving habitat connectivity for hedgehogs



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# FIGURES

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**Figure 1. Site Location Plan**

**Figure 2. Baseline Habitat Survey**

**Figure 3. Post-development Scenario Habitats**





- Legend:
- Site Boundary
  - Potential Offsetting Area

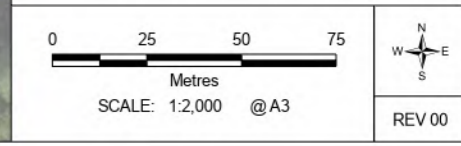


Rev	Date	Description	Drn	Chk	App
00	11/07/2023	2484362	RS	RG	KS

Sandy Lane Long Crendon



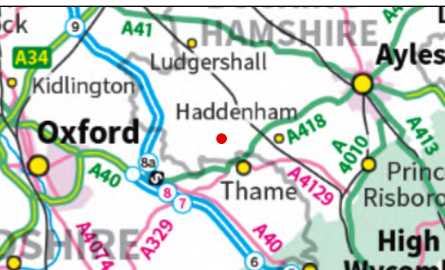
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Site Location Plan







- Legend:**
- Site Boundary
  - Potential Offsetting Area
  - UKHab Habitats**
  - Other Neutral Grassland
  - Mixed Scrub
  - Built-up Areas and Gardens
  - Vegetated Garden
  - Building
  - Artificial Unvegetated, Unsealed Surface
  - Hedgerows
  - Built Linear Features

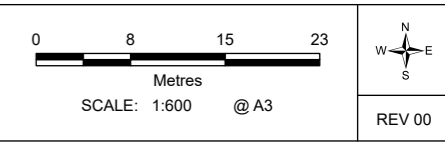


Rev	Date	Description	Drn	Chk	App
00	21/07/2023	2484362	RS	RG	KS

**Sandy Lane Long Crendon**



TITLE: Figure 2:  
Baseline Habitat Survey





468840 468860 468880 468900 468920 468940 468960 468980 469000 469020 469040

208980  
208960  
208940  
208920  
208900  
208880  
208860  
208840



- Legend:**
- Site Boundary
  - Potential Offsetting Area
  - UKHab Habitats**
  - Other Neutral Grassland
  - Mixed Scrub
  - Built-Up Areas And Gardens
  - Vegetated Gardens
  - Developed Land; Sealed Surface
  - Buildings
  - Built Linear Features
  - Hedgerows
  - Individual Trees



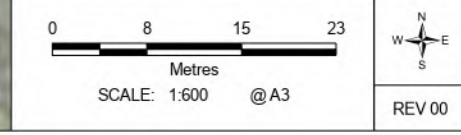
Rev	Date	Description	Drn	Chk	App
00	19/07/2023	2484362	RS	RG	KS

**Sandy Lane Long Crendon**



**RSK**  
**biocensus**  
EXPERTS IN ECOLOGY

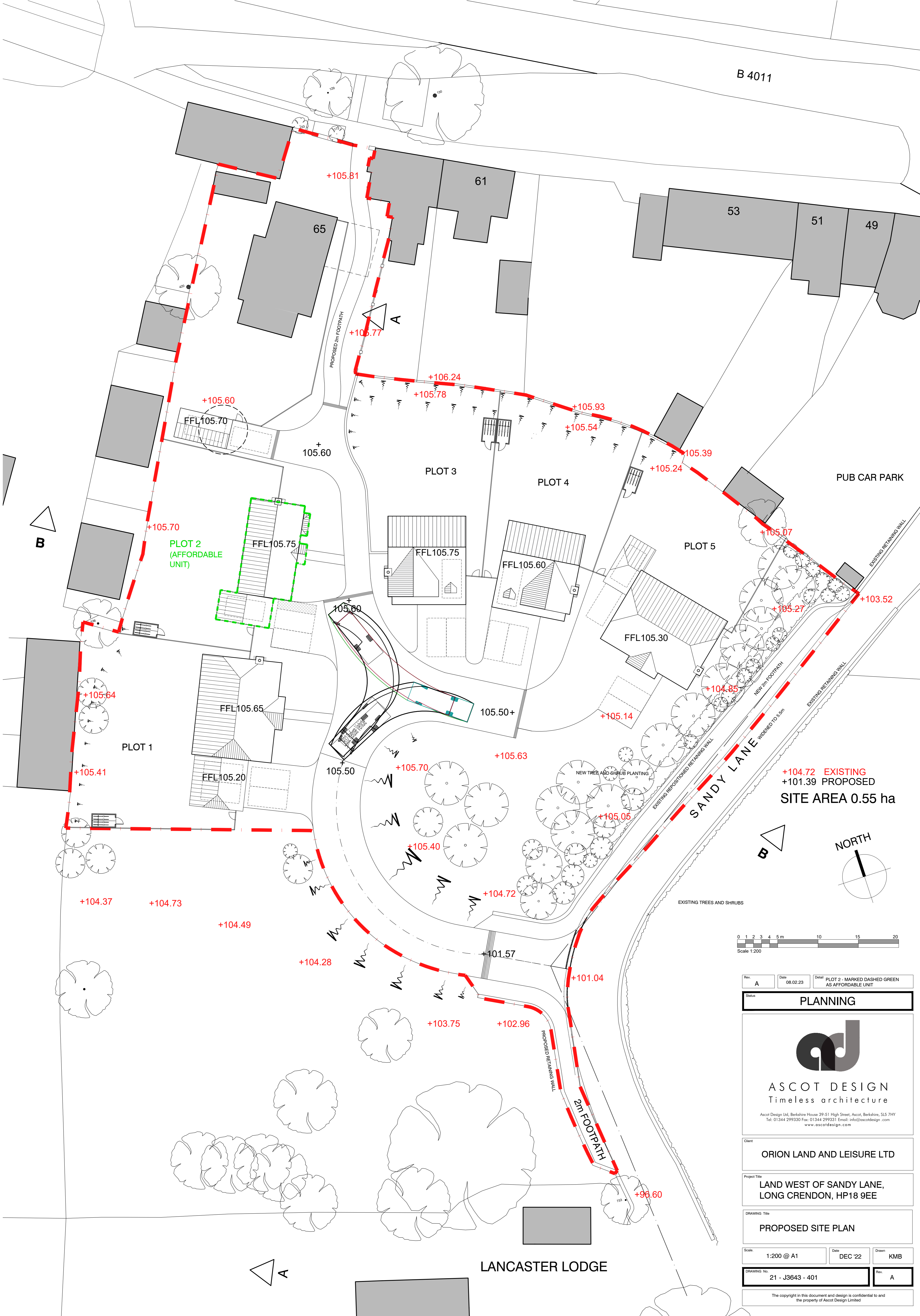
TITLE: Figure 3:  
Post-Development Scenario Habitats



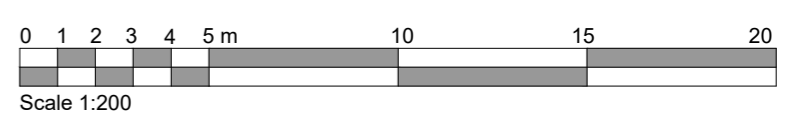


## **APPENDIX A – SITE PLAN**

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+104.72 EXISTING  
 +101.39 PROPOSED  
**SITE AREA 0.55 ha**



Rev.	Date	Detail
A	08.02.23	PLOT 2 - MARKED DASHED GREEN AS AFFORDABLE UNIT
Status		
<b>PLANNING</b>		
 <b>ASCOT DESIGN</b> Timeless architecture		
<small>Ascot Design Ltd, Berkshire House 39-51 High Street, Ascot, Berkshire, SL5 7HY                  Tel: 01344 299330 Fax: 01344 299331 Email: info@ascotdesign.com                  www.ascotdesign.com</small>		
Client		
<b>ORION LAND AND LEISURE LTD</b>		
Project Title		
<b>LAND WEST OF SANDY LANE, LONG CRENDON, HP18 9EE</b>		
Drawing Title		
<b>PROPOSED SITE PLAN</b>		
Scale	Date	Drawn
1:200 @ A1	DEC '22	KMB
Drawing No.		Rev.
21 - J3643 - 401		A
<small>The copyright in this document and design is confidential to and the property of Ascot Design Limited</small>		



## APPENDIX B – EXEMPLAR UKHAB SURVEY PHOTOS

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Exemplar photo of vegetated gardens



Exemplar photo of mixed scrub





Exemplar photo of other neutral grassland

## **APPENDIX C - METRIC CALCULATION**

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### Plate 1. On-site baseline habitats

Existing area habitats			Distinctiveness	Condition	Strategic significance	Required Action to Meet Trading Rules	Ecological baseline	Retention category biodiversity value					
Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Condition	Strategic significance		Total habitat units	Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost
Urban	Artificial unvegetated, unsealed surface	0.018	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Compensation Not Required	0.00	0	0	0.00	0.00	0.02	0.00
Urban	Developed land; sealed surface	0.059	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Compensation Not Required	0.00	0.037	0	0.00	0.00	0.02	0.00
Heathland and shrub	Mixed scrub	0.013	Medium	Moderate	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required (a)	0.11	0	0	0.00	0.00	0.01	0.11
Grassland	Other neutral grassland	0.379	Medium	Poor	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required (a)	1.67	0	0	0.00	0.00	0.38	1.67
Urban	Vegetated garden	0.084	Low	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required (a)	0.17	0.02	0	0.04	0.00	0.06	0.13
Heathland and shrub	Mixed scrub	0.005	Medium	Poor	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required (a)	0.02	0	0	0.00	0.00	0.01	0.02
<b>Total habitat area</b>		<b>0.56</b>					<b>1.97</b>	<b>0.06</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.50</b>	<b>1.93</b>
<b>Site Area (Excluding area of Individual trees and Green walls)</b>		<b>0.56</b>											

**Total area lost (excluding area of Individual trees and Green walls)** 0.50

### Plate 2. On-site post-development habitats

Broad Habitat	Proposed habitat	Area (hectares)	Post development/ post intervention habitats							Habitat units delivered
			Distinctiveness	Condition	Strategic significance	Temporal multiplier	Difficulty			
			Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition (years)	Final difficulty of creation		
Urban	Developed land; sealed surface	0.242	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	0	Medium	0.00	
Heathland and shrub	Mixed scrub	0.055	Medium	Moderate	Location ecologically desirable but not in local strategy	Standard time to target condition applied	5	Low	0.41	
Grassland	Other neutral grassland	0.055	Medium	Moderate	Location ecologically desirable but not in local strategy	Standard time to target condition applied	5	Low	0.41	
Urban	Vegetated garden	0.208	Low	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	1	Low	0.40	
Individual trees	Rural tree	0.0163	Medium	Moderate	Location ecologically desirable but not in local strategy	Standard time to target condition applied	27	Low	0.05	
<b>Total habitat area</b>		<b>0.58</b>							<b>1.27</b>	
<b>Site Area (Excluding area of Individual trees and Green walls)</b>		<b>0.56</b>								

### Plate 3. Off-site baseline habitats

Existing area habitats			Distinctiveness		Condition		Strategic significance			Required Action to Meet Trading Rules	Spatial risk multiplier		Ecological baseline
Broad habitat	Habitat type	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		Spatial risk category	Total habitat units	
Heathland and shrub	Mixed scrub	0.176	Medium	4	Moderate	2	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same broad habitat or a higher distinctiveness habitat required (b)	Compensation inside LPA boundary or NCA of impact site	1.55	
Grassland	Other neutral grassland	0.068	Medium	4	Poor	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same broad habitat or a higher distinctiveness habitat required (b)	Compensation inside LPA boundary or NCA of impact site	0.90	
<b>Total habitat area</b>		<b>0.24</b>										<b>1.85</b>	
<b>Site Area (Excluding area of Individual trees and Green walls)</b>		<b>0.24</b>											

### Plate 4. Off-site baseline hedgerow

Existing hedgerow habitats				Distinctiveness		Condition		Strategic significance			Required Action to Meet Trading Rules	Spatial risk multiplier		Ecological baseline
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		Spatial risk category	Total hedgerow units	
1		Native hedgerow with trees	0.095	Medium	4	Good	3	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same distinctiveness band or better	Compensation inside LPA boundary or NCA of impact site	1.25	
2														
3														
4														
5														
			<b>0.10</b>										<b>1.25</b>	

### Plate 5. Off-site post-development habitats

Prepared Habitat (Pre-Populated but can be overridden)		Part development / part intervention habitats						Spatial risk multiplier			Habitat units delivered	
Prepared Broad Habitat	Prepared Habitat	Change in distinctiveness and condition		Area ha	Distinctiveness	Condition	Strategic significance	Temporal multiplier		Difficulty multiplier		Spatial risk category
		Distinctiveness change	Condition change					Standard or adjusted time to target condition	Final time to target condition (years)			
Heathland and shrub	Mixed scrub	Medium-Medium	Moderate-Good	0.176	Medium	Good	Location ecologically desirable but not in local strategy	Standard time to target condition applied	3	Low	Compensation inside LPA boundary or NCA of impact site	2.24
Grassland	Other neutral grassland	Medium-Medium	Poor-Moderate	0.068	Medium	Moderate	Location ecologically desirable but not in local strategy	Standard time to target condition applied	10	Low	Compensation inside LPA boundary or NCA of impact site	0.51
<b>Total habitat area</b>		<b>0.24</b>									<b>2.75</b>	



**Plate 6. Results summary**

Sandy Lane, Long Crendon		Return to results menu								
<b>Headline Results</b>										
Scroll down for final results ▲										
On-site baseline	Habitat units	1.97								
	Herpeton units	0.00								
	Water course units	0.00								
On-site post-intervention <small>(including habitat creation, creation &amp; restoration)</small>	Habitat units	1.31								
	Herpeton units	0.00								
	Water course units	0.00								
On-site net change <small>(units &amp; percentage)</small>	Habitat units	-0.67	-33.76%							
	Herpeton units	0.00	0.00%							
	Water course units	0.00	0.00%							
On-site net gain is less than target net ▲										
Off-site baseline	Habitat units	1.85								
	Herpeton units	1.25								
	Water course units	0.00								
Off-site post-intervention <small>(including habitat creation, creation &amp; restoration)</small>	Habitat units	2.75								
	Herpeton units	1.25								
	Water course units	0.00								
Off-site net change <small>(units &amp; percentage)</small>	Habitat units	0.91	48.99%							
	Herpeton units	0.00	0.00%							
	Water course units	0.00	0.00%							
Combined net unit change <small>(including all on-site &amp; off-site habitat creation, creation &amp; restoration)</small>	Habitat units	0.24								
	Herpeton units	0.00								
	Water course units	0.00								
Spatial risk multiplier (SRM) deductions	Habitat units	0.00								
	Herpeton units	0.00								
	Water course units	0.00								
<b>FINAL RESULTS</b>										
Total net unit change <small>(including all on-site &amp; off-site habitat creation, creation &amp; restoration)</small>	Habitat units	0.24								
	Herpeton units	0.00								
	Water course units	0.00								
Total net % change <small>(including all on-site &amp; off-site habitat creation, creation &amp; restoration)</small>	Habitat units	12.16%								
	Herpeton units	0.00%								
	Water course units	0.00%								
Total net gain achieved is less than target net ▲										
Trading rules satisfied?	No - Check Trading Summaries ▲									
<b>Unit Type</b>	<b>Target</b>	<b>Baseline Units</b>	<b>Units Required</b>	<b>Unit Deficit</b>						
Habitat units	10.00%	1.97	2.17	0.00						
Herpeton units	10.00%	0.00	0.00	0.00						
Water course units	10.00%	0.00	0.00	0.00						
<table border="0"> <tr> <td style="width: 150px;">Habitat units</td> <td>Not required met or surpassed ✓</td> </tr> <tr> <td>Herpeton units</td> <td>Not required met or surpassed ✓</td> </tr> <tr> <td>Water course units</td> <td>Not required met or surpassed ✓</td> </tr> </table>					Habitat units	Not required met or surpassed ✓	Herpeton units	Not required met or surpassed ✓	Water course units	Not required met or surpassed ✓
Habitat units	Not required met or surpassed ✓									
Herpeton units	Not required met or surpassed ✓									
Water course units	Not required met or surpassed ✓									

## APPENDIX D – CONDITION ASSESSMENTS

This appendix presents the baseline habitat condition assessments for habitats within the Site and the potential offsetting area as well as details of the condition assessment criteria that will be required for the proposed post-development habitats.

### Other neutral grassland - baseline

<b>UKHAB Habitat</b>	Grassland - Other neutral grassland
<b>Distinctiveness</b>	Medium
<b>Condition Result</b>	Poor
<b>Justification</b>	
<p>The habitat does not have a varied sward height.</p> <p>There is a complete absence of bare ground within this habitat.</p> <p>Undesirable species, in particular creeping thistle, were present across more than 5% of the total habitat area.</p> <p>The habitat does not support 10 or more vascular plant species per m<sup>2</sup>.</p>	

### Mixed scrub 1 – baseline

<b>UKHAB Habitat</b>	Heathland and shrub - Mixed Scrub
<b>Distinctiveness</b>	Medium
<b>Condition Result</b>	Moderate
<b>Justification</b>	
<p>The habitat does not have a good age range due to the absence of mature shrubs.</p> <p>There are no clearings, glades or rides present within the scrub.</p>	

### Mixed scrub 2 – baseline (located along the eastern boundary of the Site)

<b>UKHAB Habitat</b>	Heathland and shrub - Mixed Scrub
<b>Distinctiveness</b>	Medium
<b>Condition Result</b>	Poor
<b>Justification</b>	
<p>The habitat does not have a good age range due to the absence of mature shrubs.</p> <p>The scrub does not have a well defined edge.</p> <p>There are no clearings, glades or rides present within the scrub.</p>	

### Other neutral grassland – post-development

<b>UKHAB classification</b>	Grassland – other neutral grassland
<b>Distinctiveness</b>	Medium
<b>Habitat Description</b>	
<p>Other neutral grassland - Neutral grassland that does not meet the definition of either g3a or g3b. Perennial Ryegrass (<i>Lolium perenne</i>) is likely to be present at &lt;30% with between 9 and 15 further species (m<sup>2</sup>) also present.</p>	

Many of the species rich swards that were previously described as “semi-improved neutral grassland” will fall here, together with rank and unmanaged swards on neutral soil.

Condition Assessment Criteria	
1. The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. <b>NB - This criterion is essential for achieving moderate condition for non-acid grassland types only.</b> 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. 3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens. 4. Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%. 5. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition <sup>1</sup> and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. 6. There are 10 or more vascular plant species per m <sup>2</sup> present, including forbs that are characteristic of the habitat. <b>NB - This criterion is essential for achieving good condition (non-acid grassland types only).</b>	
Condition Assessment Results	Condition Assessment Score
Passes 5 of 6 criteria, including essential criterion 1 and 6.	Good (3)
Passes 3 or 4 of 6 criteria, including essential criterion 1.	Moderate (2)
Passes 0, 1, 2 criteria of 6 criteria; OR Passes 3 or 4 criteria excluding criterion 1 and 6	Poor (1)

## Mixed scrub – post-development

<b>UKHAB classification</b>	Heathland and shrub – Mixed scrub
<b>Distinctiveness</b>	Medium
<b>Habitat Description</b>	
Dense scrub comprising a mixture of species without a single species dominant.	
<b>Condition Assessment Criteria</b>	
1. Habitat is representative of UKHab description (where in its natural range). At least 80% of scrub is native and there are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover). 2. Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present. 3. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition make up less than 5% of ground cover. 4. The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s). 5. There are clearings, glades or rides present within the scrub, providing sheltered edges.	
<b>Condition Assessment Results</b>	<b>Condition Assessment Score</b>
Passes 5 of 5 criteria	Good (3)
Passes 3 or 4 of 5 criteria	Moderate (2)
Passes 0, 1 or 2 of 5 criteria	Poor (1)

## Individual trees – post-development

<b>UKHAB classification</b>	Individual trees
<b>Distinctiveness</b>	Medium
<b>Habitat Description</b>	
Young trees over 7.5cm in diameter at breast height whose canopies are not touching	

Condition Assessment Criteria	
1. The tree is a native species (or at least 70% within the block are native species) 2. The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being <5m wide. <b>NB. Individual trees automatically pass this criterion.</b> 3. The tree is mature (or more than 50% within the block are mature) 4. There is little or no evidence of an adverse impact on tree health by human activities (e.g. vandalism, herbicide or detrimental agricultural activity) and there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height 5. Natural ecological niches for vertebrates and invertebrates are present, such as the presence of deadwood, cavities, ivy or loose bark 6. More than 20% of the tree canopy area is oversailing vegetation beneath	
Condition Assessment Results	Condition Assessment Score
Passes 5 or 6 criteria	Good (3)
Passes 3 or 4 criteria	Moderate (2)
Passes 2 or fewer criteria	Poor (1)

## APPENDIX E – HABITAT CREATION AND MANAGEMENT RECOMMENDATIONS

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### Mixed scrub – within the development boundary

The following measures are proposed to create mixed scrub of ‘moderate’ condition indicated as tree and shrub planting on the Landscape MasterPlan:

- A range of native scrub species should be chosen for planting comprising at least five species such as Blackthorn (*Prunus spinosa*), Dogwood (*Cornus sanguinea*), Hawthorn (*Crataegus monogyna*), Crab Apple (*Malus sylvestris*), Guelder-rose (*Viburnum opulus*) Bramble (*Rubus fruticosus* agg.) Rowan (*Sorbus aucuparia*) and Hazel (*Corylus avellana*).
- The scrub should be managed to provide a good age range with the following present: seedlings, young shrubs and mature shrubs with no one species comprising more than 75% of the cover.
- The scrub should be managed in order to create a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent grassland habitat to provide an ecotone, with clearings, glades or rides present within the scrub, providing sheltered edges.

### Other neutral grassland – within the development boundary

The following measures are proposed to create neutral grassland of ‘moderate’ condition within the open area and attenuation basin shown on the Landscape MasterPlan:

- A flower rich seed and grass meadow mix will be used, aiming for a sward where there are greater than 9 species per m<sup>2</sup>, 30% or more of the vegetation to be made up of wildflowers and less than 30% rye grass species. Given the proposals for the site are to use the ‘other neutral grassland area’ as a balancing facility it is proposed that a seed mix comprising native species tolerant of occasional wet ground conditions is used such as meadow mixture for wetlands (EM8) which corresponds to the British National Vegetation Classification (NVC) category MG4.
- Seed sowing should take place between late-July and early-September with a mix suitable for the site. Seeds will need to be sown on bare ground and rolled.
- During Year 1 the grassland areas should be watered if unseasonal conditions result in a lack of adequate rainfall to aid germination of seed, watering should be undertaken as necessary to ensure the establishment and continued thriving of all seedlings and subsequent maintenance of the grassland areas.
- In subsequent years the grass to be cut in late autumn, with no cutting during the period May to the end of July, to reduce competition of self-seeded annual plants. Risings removed from site.
- Control problem species i.e., docks and thistles should be undertaken where necessary to ensure these species do not dominate grassland areas.

- Plug planting of additional species should be undertaken where necessary.

### **Mixed scrub – potential offsetting area**

The following measures are proposed to enhance the offsite scrub habitat:

- The scrub should be managed to provide a good age range with the following present: seedlings, young shrubs and mature shrubs with no one species comprising more than 75% of the cover.
- A proportion of the scrub should be coppiced to ground level each year to improve structural diversity and provide clearings, glades or rides present within the scrub.
- The areas of scrub should be monitored and cut back if it appears the scrub is encroaching on more than 5% of the grassland area.

### **Other neutral grassland – potential offsetting area**

4.3.8 The following measures are proposed to enhance the offsite grassland habitat:

- Management should focus on improving the species diversity and structural diversity.
- The areas of grassland should be cut on rotation, only cutting one third every 3 years. The frequency of the cutting regime of the grassland should be limited to once a year, leaving all areas of grassland on site unmown during the months of May to July to allow plants to flower and set seed with arisings removed from the site following each cut to restrict additional nutrient input.



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