ECOLOGYSOLUTIONS

Part of the ES Group

Luxus Homes

Land at Dowsetts Farm,
Ware

(Associated with
Land at Pines Hill,
Stansted Mountfitchet)

Off-site Habitat Creation And Management Plan (OHCMP)

June 2023
10486.OHCMP.vf4

ecology solutions for planners and developers

PROTECTED SPECIES

This report contains sensitive information
relating to protected species.
The information contained herein
should not be disseminated without the
prior consent of Ecology Solutions.

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1. INTRODUCTION

Background & Proposals

1.1.1 Ecology Solutions Ltd were instructed by Luxus Homes in February 2023 to assist with the Off-site Habitat Creation and Management Plan (OHCMP) for the site known as 'Land at Pines Hill, Stansted Mountfitchet', hereafter referred to as the 'application site'. The application site is located on the western side of Stansted Mountfitchet, Essex.

1.1.2 The proposals for the application site will see the loss of habitat in order to facilitate the development of new housing, associated infrastructure and landscaping.

1.1.3 In order to mitigate these losses of habitats and to ensure a measurable Biodiversity Net Gain (BNG) can be delivered, approximately 2.42ha of off-site land has been identified which would be suitable for the creation of high-value ecological habitats. This off-site land is hereafter referred to as the 'mitigation site'.

1.1.4 The mitigation site consists entirely of agricultural grassland, and is bordered by arable field margins and further existing arable land. Beyond these are hedgerows and streams. The mitigation site is located to the north of Ware, Hertfordshire, with a location plan included at Appendix 1.

1.1.5 Importantly for the purposes of the BNG offsetting exercise it should be noted that both the application site and mitigation site lie within the same National Character (NCA), NCA 86 - South Suffolk and North Essex Clayland. As set out in the BNG User Guidance[1], off-site habitat provision can be undertaken at a distance from the development site. In order to encourage offsetting within a reasonable radius of the 'impact site', however, off-site habitat creation is penalised if it is deemed to be too far from this location. The 'spatial risk multipliers' are applied based on local planning authority area, National Character Area or Marine Plan Area for intertidal habitats. Table 5-7 of this guidance states that for "compensation inside LPA or NCA of impact site" the multiplier is 1 (ie. unpenalised).

1.1.6 The purpose of this OHCMP is to outline high-level habitat creation principles and long-term management that would need to be undertaken at the off-site mitigation land in order to ensure that measurable net gains to biodiversity can be delivered, when considered in combination with the impacts at the main development site.

[1] STEPHEN PANKS A, NICK WHITE A, AMANDA NEWSOME A, MUNGO NASH A, JACK POTTER A, MATT HEYDON A, EDWARD MAYHEW A, MARIA ALVAREZ A, TRUDY RUSSELL A, CLARE CASHON A, FINN GODDARD A, SARAH J. SCOTT B, MAX HEAVER C, SARAH H. SCOTT C, JO TREWEEK D, BILL BUTCHER E AND DAVE STONE A 2022. Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide. Natural England

Structure

1.1.7 The contents of this document have been written with reference to published guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM) and with regards to guidance produced by Natural England and Defra in regard to BNG.

1.1.8 The OHCMP is set out as follows:

- Mitigation site baseline;
- Management objectives;
- Monitoring and management responsibilities;
- Biodiversity Net Gain Assessment;
- Results; and,
- Work Programme.

2. MITIGATION SITE BASELINE

2.1. The mitigation site was subject to baseline ecological survey work during February 2023. The site was surveyed based around a combination of extended Phase 1 survey methodology and UK Habitat Classification (UKHab) methodology as recommended by Natural England and Defra, whereby the habitat types present are identified and mapped together with an assessment of the general species composition of each habitat recorded at the time. This technique provides an inventory of the basic habitat types present.

2.2. Although outside the optimal botanical survey season, given the nature of the site it is considered that reliable habitat assessment was still possible.

Results

2.3. The mitigation site measures approximately 2.42 ha and consists of the southern part of a large agricultural field. The mitigation site is bordered to the north by further existing arable land, while to the east, south and west lie arable field margins beyond which are tree lines and a stream to the south.

2.4. In order to allow for BNG analysis, all onsite habitats have been assigned a 'best fit' UkHab category.

2.5. The following main habitat / vegetation type was identified during the survey work:

- Non-cereal Crop

2.6. The location and boundary of this habitat is shown on Plan ECO2. A full description is provided below.

Non-cereal Crop

2.7. All land within the mitigation site currently comprises agricultural grassland, otherwise classified as non-cereal crop. This is currently dominated by dense Perennial Rye-grass *Lolium perenne* cover.

2.8. Physically, the site is open and slopes gently to the south.

2.9. The sward itself is uniform in length and relatively featureless. Vegetation coverage is homogenous and there are no significant areas of bare ground or any other 'micro-habitats'.

3. MANAGEMENT OBJECTIVES

3.1. The aims and objectives of this OHCMP are to outline the methodology of habitat creation and long-term management that will create new ecological opportunities within the mitigation site, bolstering it well above that of its current level.

3.2. The anticipated timescales of delivery and management responsibilities are also outlined within this document.

3.3. The following objectives have been identified:

- Objective 1: Maintain and enhance newly created habitats within the mitigation site; and,

- Objective 2: Increase biodiversity by maximising opportunities for flora and fauna.

3.4. Appropriate management options for achieving these objectives are set out below.

Objective 1: Maintain and Enhance Newly Created Habitats Within the Site

Overview

3.5. The purpose of the habitat proposals will be to create large and continuous areas of high biodiversity value habitats within the identified mitigation site.

3.6. Owing to the location and topography of the mitigation site the creation of a species-rich meadow grassland is anticipated to be the most suitable option for the site as well as being complementary with the surrounding areas.

3.7. Details of both the initial creation programme as well as longer-term management for the mitigation site are outlined below. Whilst it is anticipated that the measures set out within this document will be the primary method of delivery, it is noted that there remains flexibility on the exact and final specifics of any off-site mitigation plan. Notwithstanding this, based on the information held to date, it is considered that all the measures set out within this document remain both appropriate for the site, as well as entirely deliverable.

Species-rich wildflower grassland overview

3.8. The entirety of the site will be used to create a large and continuous area of species-rich meadow grassland (approximately 2.42ha).

3.9. These habitats will include a diverse and native species mix which will be of benefit to a range of faunal species, particularly foraging birds and invertebrates, in addition to being of intrinsic ecological value in its own right.

3.10. The distinction of grassland type has been identified based on the suitability of existing conditions on site and seeks to create a grassland mosaic which is structurally, botanically and genetically diverse, with local colonisation also to be encouraged and aided.

3.11. In order to assist with the creation of the target grassland, the mitigation land will first be prepared for seeding through a nutrient stripping exercise.

3.12. Furthermore, to create a species-rich seed mix suited to the local area, the primary creation exercise will look to utilise a locally sourced seed mix, or an appropriate species-rich seed mix sourced from a seed merchant such as *Emorsgate Standard General Purpose Meadow Mixture EM2 / Emorsgate Special Purpose Meadow Mixture EM3*. This mix should include Yellow Rattle *Rhinanthus minor*, a hemi-parasite of grass species, to ensure that a proper grassland meadow can establish.

3.13. Following the establishment of the grassland, longer-term management will seek to reduce soil fertility over time to encourage a botanically diverse and balanced sward.

3.14. The initial creation and longer-term management prescriptions envisaged for the site are outlined in more detail below.

Nutrient stripping (Year 0)

3.15. Prior to the sowing of the new grassland habitat, it is considered that the mitigation site would benefit from a nutrient stripping exercise in order to create a more optimal growing medium for the target grassland.

Option 1

3.16. Due to the nature of the current arable land and the dominance of undesirable agricultural grass species, at this stage it is considered that nutrient stripping would be best achieved through a total removal of the current vegetation through heavy cuts following by deep ploughing (inversion ploughing). This would invert the typically enriched arable topsoil with the nutrient poor subsoils.

3.17. This process would help create a bare and nutrient poor growing medium, suitable for the establishment of a species-rich grassland.

3.18. In the event that there is any time lapse between the deep plough exercise and grassland seeding the fields should be kept free of any vegetation growth (arable weeds etc.) prior to sowing. This can be accomplished through repeated shallow ploughing and / or spraying, through the sensitive use of glyphosate-based chemicals.

Option 2

3.19. At this stage and given the history of the site, Option 1 is considered the most appropriate and effective methodology in terms of ground preparation.

3.20. Notwithstanding this, in the event further assessment work identifies the need for an alternative and more sensitive strategy, the site could instead be prepared through a heavy scarification exercise, following repeated heavy hay cuts (with all arisings removed from site). This would also reduce the nutrient load of the sward as well as create areas of bare ground suitable for sowing.

Creation / Sowing (Year 0/1)

3.21. Following suitable site preparation (outlined above), the field would be sown with the identified target seed-mix.

3.22. The seed mix mixture should be sown at an appropriate density based on the mix chosen (for most mixes a rate of 4g/m^2 will produce optimal results).

3.23. All sown seeds should be sown during the Autumn ideally, but early-Spring is also acceptable. All sown seeds should be sown on bare and lightly-disturbed ground. The seeds should be rolled following sowing to ensure good contact with the soil.

Establishment (Years 1/2)

3.24. Management of the grassland swards in the first years will involve regular maintenance in order to ensure that seedling development is successful, and that the growth of competitive weed species is controlled. Where required, weeding will be undertaken by hand where possible, however the use of appropriate herbicides to weed wipe or spot treat injurious weeds, invasive non-

native species, nettles or bracken may be required in certain instances. Cuttings should be removed immediately from site. For the first few years, it may be necessary to re-seed areas of wildflower grassland in order to ensure that a sufficient, self-sustainable seed-bank can develop.

3.25. Following sowing, the swards will be kept short (for approx. 6 months) such that light can help germination. Swards should be cut three times in the first two years; once each in March, May and September.

Medium to long term management (Year 3+)

3.26. Once the perennial meadow has established, it will need to be subject to traditional hay meadow management. Assuming that this will be purely through mechanical means (i.e. cutting using a mower), it should be subject to (up to) three cuts per year.

3.27. The first cut should be undertaken during early-Spring (March) to a height of approximately 70mm, and arisings should be removed from site. The grassland will then need to be left alone to grow during the main flowering season between March – August.

3.28. The second cut should involve a heavy main summer 'hay' cut, undertaken during August, after flowering. Grassland should be cut to a height of 70mm and all arisings should be left on site for a period of between 5 – 7 days (to allow seeds to drop). After this point, all arisings should be collected and removed.

3.29. If required, a third cut can then be considered during winter (November – January) to supress any undesirable re-growth and to mimic natural grazing.

3.30. To provide year round structural diversity and sheltering opportunities, field margins should be left-uncut / cut on a two-year cycle.

Grassland Conclusion

3.31. The implementation of new seeding and an appropriate management regime within the grassland, as set out above, would greatly increase the ecological interest of these habitats, well beyond that of the current baseline value.

Objective 2: Increase Biodiversity by Maximising Opportunities for Flora and Fauna.

3.32. The targeted habitat creation and the introduction of a management regime to be provided will ensure that a botanically diverse grassland will remain present within the site post-completion. This will be of benefit to several species / groups.

3.33. Primarily, this will benefit bird, bat and invertebrate species through enhanced foraging / resting opportunities via diversification of the grassland, which will not only be a resource in its own right, but also increase prey availability, primarily for insectivores.

3.34. Additionally, through the safeguarding of the site (for a period of 30-years minimum), it will act as a 'wildlife corridor', connecting other high value habitats in the wider area, thereby increasing dispersal opportunities.

3.35. Whilst the site is currently considered sub-optimal to other species groups, such as amphibians, Badgers, reptiles etc., should they be present in the wider area, it is expected that they will also benefit from the proposed habitat management measures for the site.

Management Considerations

3.36. All initial creation and longer-term management proposed for the site will be mindful of protected species constraints and relevant wildlife legislation. If required, this will be guided by the results of future assessment work. In any event, considering the proposals strictly relate to beneficial wildlife habitat creation, there is considered to be amble scope to optimise final design to ensure all works remain legally compliant.

4. MONITORING AND MANAGEMENT RESPONSIBILITIES

Personnel Responsibility for Implementation of the Plan

4.1. Responsibility for implementation of this OHCMP, as well as for its continuation throughout a 30-year minimum period, will be placed with the land owner who will ensure that management undertaken at the site complies with the prescriptions as set out in this document (or future update documents) in order to ensure proper establishment and long-term condition.

4.2. Where required, Ecology Solutions or another suitably qualified ecologist, will be able to advise on any specific questions or queries in regard to any issues concerning ecology or nature conservation which may arise.

Monitoring and Remedial / Contingency Measures triggered by Monitoring

4.3. In order to assess the effectiveness of habitat creation, establishment and the 'conditions' of habitats post-development, specific ecological monitoring surveys are proposed. It is proposed that these habitat surveys are undertaken in the following years (post-creation): 1, 3, 5, 10, 15, 25 and, 30.

4.4. Habitat monitoring will be based around a combination of extended Phase 1 survey methodology and UK Habitat Classification (UKHab) methodology, as recommended by Natural England and Defra, to allow for the condition assessment of respective habitats.

4.5. Based on the results of the programmed survey works, updated management reports outlining any optimisation (if required) to on-going management can be produced. These reports would be issued to the land owner (ie. to provide remedial advice to ensure habitat targets are met), and to the relevant planning authority at agreed pre-determined intervals, the requirements of which will be agreed in a suitably worded legal obligation.

4.6. Outside of the formal review process outlined above, it is considered that any ad hoc or additional monitoring and remedial works be undertaken on an 'as required' basis and do not need to be undertaken by a qualified ecologist and could instead be undertaken by the Management Body employed to undertake the duties prescribed elsewhere in the OHCMP. These works will primarily highlight any immediate site-specific problems that may need addressing (such as disease or damage to flora or the presence of invasive species).

5. BIODIVERSITY NET GAIN ASSESSMENT

5.1. Based on the recorded baseline of the site, as well as the proposed habitat creation and management measures, a full Biodiversity Net Gain (BNG) assessment using the Defra BNG Metric (Version 3.1) has been applied to the mitigation site.

5.2. Any generated units will then be assigned to the main development site, in order to mitigate any residual impacts of the proposed development and additionally ensure that an overall BNG can be provided when considering both sites.

Methodology

5.3. The methodology for undertaking the BNG assessment is based on the guidance provided within the Technical Supplement and User Guide published by Defra, in addition to the application of professional judgement.

5.4. The Metric works by assigning credits to the habitats located within the Development Site (both baseline and post-development). These credits are then used as a proxy to determine the ecological value of the site.

5.5. The respective credit score of each habitat is gauged by calculating key parameters that influence that habitats reported value. These are as follow:

- Habitat type / distinctiveness;
- Habitat area;
- Habitat condition; and,
- Strategic significance.

5.6. For either created or enhanced habitats, the additional main parameters are applied;

- Habitat target type / distinctiveness;
- Habitat target condition;
- Time till target condition; and,
- Difficulty of creation / enhancement.

5.7. The value for hedgerow / treeline habitats and ditch / watercourse habitats are calculated separately, however follow a similar working methodology as those described for area-based habitats above

5.8. The recorded baseline and development proposals for the site have been assessed against the above identified parameters and most recent Condition Assessment Criteria (CAC) provided by Defra.

5.9. In order to account for the use of UK Habitat Classification system (UKHab) within the Metric, a ‘best fit’ approach has been taken in order to ensure the most representative Phase-1 habitat type is being utilised for both the baseline and post-development habitats within the Metric. This has been determined using the technical supplements provided within the Metric in addition to guidance published by the UK Habitat Classification Working Group.

6. Results

6.1. In line with the above methodology, a BNG assessment using the most recent version of the Defra Metric (v3.1) has been undertaken. The baseline of the mitigation site is described in detail in Section 2 and shown graphically at Plan ECO2, the proposed habitat creation / management measures are described in Section 3, and shown graphically at Plan ECO3.

Strategic / Spatial Significance

6.2. The mitigation site has not been identified as being located within areas of strategic or spatial significance. It does lie within land designated as “Rural Area Beyond the Green Belt” within the East Herts District Plan, however this is primarily of relevance to small-scale development and minimising the expansion of village footprints within the area, and is not considered to denote the ecological significance of the site. Whilst not specifically identified as being high spatial significance, the enhancement proposed for the site will perform functions at the landscape scale including facilitating connectivity and improving the seedbank, thereby aiding colonisation of nearby areas with species of benefit to local wildlife.

Area Based Habitats

			Post-development impacts (ha)			
Baseline Habitat	**Baseline Habitat Condition**	**Baseline area (ha)**	**Enhanced**	**Lost**	**Retained**	**Summary Baseline Condition Notes (see Section 2 for detailed notes)**
Non-cereal crops	*Condition assessment N/A*	**2.4281**	0	2.4281	0	Seeded agricultural / temporary grassland. Very low species diversity and dominated by few grass species (>95% Perennial Rye-grass). Uniform sward, regularly managed / cut. Absence of micro-habitats. Condition assessment is not considered relevant for this habitat type, effectively a condition of low is applied by default.

Table 1. Baseline (area) habitats.

Habitat Type	**Area (Ha)**	**Target Condition**	**Target Condition Notes (see Section 3 for detailed notes)**
Other Neutral Grassland	**2.4281**	*Moderate*	Created species-rich grassland, utilising suitable seed mix / source of local origin, where possible. Site to be prepared prior to sowing with appropriate nutrient stripping measures. Initial management will ensure proper establishment, encouraging both botanical and structural diversity. Long-term management to include traditional hay meadow management through ecologically timed cutting regime. Monitoring of site will be undertaken to ensure target habitat type and condition are met, with any optimisation to management undertaken based on site condition and results. With these measures it is considered that the grassland will support a range of wildflower and herb species throughout its sward, that bracken, invasive species and physical damage will be absent, and that an appropriate proportion of bare ground can be maintained (1% - 5%). It is possible that the sward structure may not always achieve the required diversity and therefore on a precautionary basis an overall condition of moderate has been selected.

Table 2. Created (area) habitats.

Results Summary (mitigation site only)

6.3. The Biodiversity Metric returns the following headlines results for the mitigation site:

BNG Baseline and Post-development Scenarios		
Baseline	**Area**	**Units**
Non-cereal crops	2.4281	4.86
Post-development results	**Area**	**Units**
Other Neutral Grassland	2.4281	16.26
Unit change	+11.40	

Table 3. BNG Results (mitigation site)

6.4. The proposals for the Dowsetts Farm mitigation site will deliver a net gain of 11.40 habitat (area) units.

Relationship with Main Development Site

6.5. These 11.40 units will be used to offset the BNG shortfall associated with the application site (Land at Pines Hill, Stansted Mountfitchet).

6.6. In fact, this number of units significantly exceeds the on-site change and so will deliver an uplift in units far in excess of 10% and ensure that significant net gains to biodiversity can be delivered as part of the development proposals.

7. WORK PROGRAMME (MITIGATION LAND ONLY)

Objective	Receptor	Management Prescription and Commencement	Timing, Frequency and Duration of Works	Extent of Works / Objective
MAINTAIN AND ENHANCE RETAINED AND CREATED HABITATS	**Species-rich Wildflower Grassland**	Ground preparation/Creation/ Establishment Years 0 - 2	Ground preparation step-wise cutting regime and inversion ploughing / or managing and scarification of grassland followed by sowing of suitable species-rich seed mix, during Autumn / Spring. First cut of grassland to take place mid-Summer followed by second cut in mid-Autumn.	To allow successful sward establishment
		Long-term management Year 3+	Once meadow is established, grassland will be subject to ecological management. Cuts will be undertaken during Spring (early), Summer 'hay cut' and Autumn/Winter (if required)	To achieve a varied sward.

PLANS

PLAN ECO1

Mitigation Site Boundary and Access

KEY:

SITE BOUNDARY

ACCESS ROUTE

N

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10486: PINES HILL
STANSTED MOUNTFITCHET

PLAN ECO1:
MITIGATION SITE BOUNDARY
& ACCESS

Rev: B

June 2023

PLAN ECO2

Site Baseline Habitats

KEY:

SITE BOUNDARY

NON-CEREAL CROP

N

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10486: PINES HILL
STANSTED MOUNTFITCHET

PLAN ECO2:
SITE BASELINE HABITATS

Rev: B

June 2023

PLAN ECO3

Proposed Habitat Creation

KEY:

- SITE BOUNDARY
- OTHER NEUTRAL GRASSLAND

N

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10486: PINES HILL
STANSTED MOUNTFITCHET

PLAN ECO3:
PROPOSED HABITAT
CREATION

Rev: B

June 2023

APPENDICES

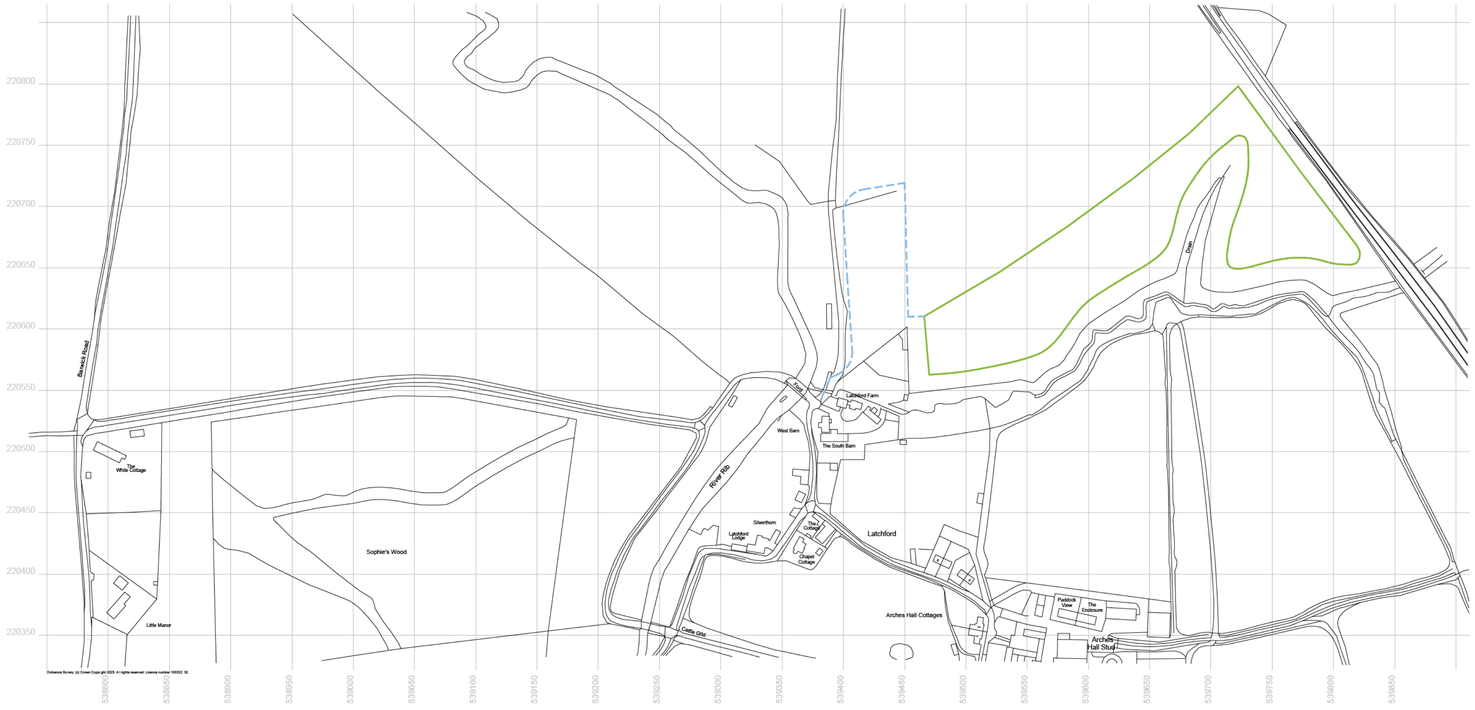
APPENDIX 1

Off-site Offsetting Land Location Plan

Scale:

0 20 60 100 240m

N



Land adjacent to Latchfield Farm, Morley Lane, Standon,
Hertfordshire, SG11 1QZ
TL 39648 20685

Key

Proposed location of off-site land for BNG provision

Proposed access route

Revision Note & Date

Rev	Date	Note	Amended	Checked
P1	06 04 23	Amended in line with comments access route shown	SH	JR

ON ARCHITECTURE

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Project Title
Land at Pines Hill
Stansted Mountfitchet

Clients Details
LUXUS Homes

Drawing Title
Site Location Plan (Off-Site BNG Land)

BIM Number
-

Scale	Date	Drawn	Checked
1:2500@A1	Feb 2023	SH	JR

Drawing Status
Planning

Project No.	Drawing No.	Status	Revision
002.21	002	-	P1

U:\LONDON PROJECT FOLDER\2021 PROJECT FOLDER\002.21 Stoney Common Road, Stansted Mountfitchet\WIP\M2\002.21-002 Site Location Plan (Off-Site BNG Land).dwg

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