

Revision	Purpose	Originated	Checked	Authorised	Date
		CB	JBA	JBA	December 2021
A	Minor changes regarding client comments	CB	SR	JBA	December 2021
Job Number: 19/291		JAMES BLAKE  Title: Ecological Enhancement Strategy for Land East of Drove Lane, Yapton, West Sussex			

Disclaimer

James Blake Associates Ltd have made every effort to meet the client's brief. However, no survey ensures complete and absolute assessment of the changeable natural environment. The findings in this report were based on evidence from thorough survey. It is important to remember that evidence can be limited, hard to detect or concealed by site use and disturbance. When it is stated that no evidence was found or was evident at that point in time, it does not mean that species are not present or could not be present at a later date. The survey was required because habitats are suitable for a given protected species, and such species could colonise areas following completion of the survey.

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Non-technical Summary

Site:	Land East of Drove Lane, Yapton, West Sussex
Ordnance Survey National Grid Reference:	SU 97358 03143
Report Commissioned by:	Barratt Homes Southern Counties
Date of report:	10 th December 2021

Considerations	Description	Potential impacts
Production of an ecological mitigation and enhancement strategy	Mitigation measures include timing of vegetation clearance to avoid the nesting bird season and a sensitive lighting scheme for bats, particularly on the eastern boundary. Enhancement measures include creation of new native hedgerows, native tree and shrub planting, provision of bat and bird boxes, provision of hibernacula and hedgehog gaps in fences.	Safeguarding of any protected species using the site during construction. Improvement of conditions on site for bats, birds, great crested newts, hedgehogs, reptiles, small mammals and invertebrates.
Addressing the conditions relating to ecology	This report should address Condition 2 on the Reserved Matters Application.	N/A

1. INTRODUCTION

Background

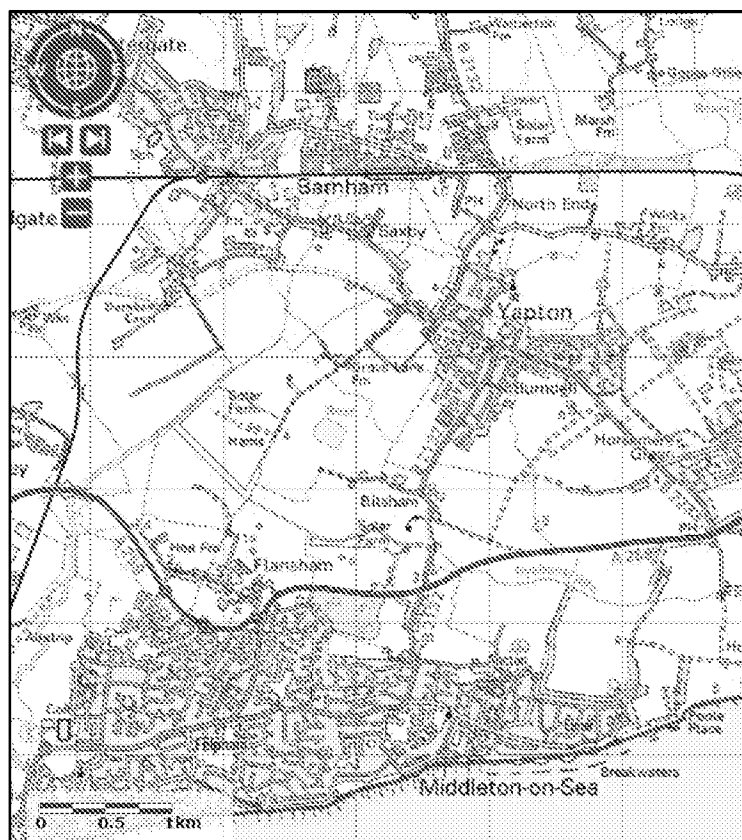
- 1.1 James Blake Associates Ltd. (JBA) was commissioned by Barratt Homes Southern Counties to provide an ecological enhancement strategy for the proposed development site at land east of Drove Lane, Yapton, West Sussex (Ordnance Survey National Grid Reference: SU 97358 03143, taken from the centre of the site).
- 1.2 This letter report addresses Condition 2 on the Reserved Matters Application, Y/49/21/RES (Arun District Council). The conditions are as follows:

“No development above damp proof course (DPC) level shall take place unless and until full details of the biodiversity enhancements referred to in the submitted Biodiversity Net Gain Statement (ref. JBA 19/291 ECO02 AC, 18/08/20) have been submitted to and approved in writing by the Local Planning Authority. These shall include the various bird/bat nesting opportunities and log piles referred to on the Appendix 1 plan and also the location of hedgehog gaps in fences within the site. The approved details shall be implemented in full and permanently retained in good working condition thereafter.”
- 1.3 The site has outline planning permission (planning application ref: Y/92/17/OUT) for development for up to 300 dwellings, link road, surface drainage, open space and landscaping.
- 1.4 James Blake Associates (JBA) undertook an Updated Ecological Walkover Survey of the site in 2020, which updated previous surveys undertaken by (Lizard Landscape Design, 2016). Also; ‘Lizard Ecology (2018) *Habitat and Ecology Enhancement Management Plan*: July 2018 Rev 02. LLD1320-ECO-EDS’. Further surveys to establish the presence or absence of reptiles was undertaken during 2016. Low numbers of reptiles were found and concluded works should be conducted outside the active reptile season (March to October) and a method statement should be in place to ensure no reptile is recklessly or intentionally killed or injured during the construction (Lizard Landscape Design, 2016).
- 1.5 This report covers the application site (red-line boundary) and the requirement to provide further details regarding ecological enhancements.

Site Description

- 1.6 The site is located adjacent to the east of Drove Lane and south of the B2233 in Yapton, West Sussex. See Figure 1 for site location.
- 1.7 The site consists of arable land encompassed by an intensely managed hedgerow to the north, fencing with scattered trees to the north east, a ditch leading onto a public footpath transitioning into a small section of trees to the east, a small bund to the south and a wet ditch to the west.

Figure 1: Site location



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Aims and objectives

- 1.8 The aim of this report is to provide an ecological enhancement plan for the site to be used in support of the development to enable the discharge of Condition 2 on the reserved matters application (ref: Y/49/21/RES).

Wildlife Legislation and Planning Policy

- 1.9 The relevant wildlife legislations and planning policies are listed below:

- Wildlife and Countryside Act, 1981 (as amended) (WCA). [Amended by the Countryside and Rights of Way Act (2000)].
- The Natural Environment and Rural Communities Act, 2006 (NERC).
- The Wild Mammals (Protection) Act, 1996.
- The Hedgerows Regulation, 2007.

2. ECOLOGICAL ENHANCEMENT STRATEGY

Purposes and conservation objectives for the proposed works

- 2.1 The purpose of the proposed works outlined within this document is to enhance the site for wildlife following construction.
- 2.2 The conservation objectives for the proposed works are to provide an element of native plant species and habitats within the landscape design for open spaces and to provide bat and bird boxes on proposed new dwellings, where appropriate. These measures will contribute to the biodiversity interest of the area in the long term.

Mitigation measures before and during construction

- 2.3 A timetable for the implementation of ecological mitigation and enhancement works has been drawn up (see Appendix A).
- 2.4 To summarise, before construction:
- Pre-commencement badger survey undertaken within 6 months of the start of works. To ensure no badgers and their setts (if present) are to be impacted by the works.
 - Toolbox talk to include all the ecological measures relevant to construction.
 - Protective guards to be placed around habitat to be retained, such as hedgerows, ditches, trees etc. to protect from damage during construction.
 - Any areas of habitat which may be used by nesting birds which are required to be cleared should be done outside the nesting season (i.e. outside the period March to August inclusive). If these timings are not possible then a nesting bird check should be carried out by a suitably qualified ecologist/ECoW no more than 48 hours prior to vegetation/building clearance. If birds are building a nest or

sitting on eggs or chicks, then any clearance work should be stopped until all chicks have fledged.

2.5 During construction:

- All trenches left open overnight to be covered or an escape ramp provided to enable hedgehogs, other small mammals etc. to climb out.
- Security lighting will be kept to a minimal level (as necessary for safety and security), to be set on short times, and to be sensitive to large moving objects only.
- The surrounding hedgerows and ditches contain areas which will allow for reptiles to both commute and shelter. If the majority of suitable areas are to be impacted by the development, an updated reptile survey will be required to assess the reptile population using the site. However, if only minor suitable areas are to be impacted then destructive search precautionary methods highlighted within the Detailed Reptile Survey Report (Lizard Landscape Design and Ecology, 2016) should be followed.
- Bat and bird boxes to be erected on retained boundary trees and/or integrated into new buildings. Boxes should not be lit by security lighting.
- Initial landscape planting to take place.

2.6 Following construction:

- Construction of reptile hibernacula.
- Final landscape planting to take place.
- Management and maintenance of ecological features to be undertaken.

Detailed design to achieve the stated objectives

2.7 The detailed soft landscape design for the development has been drawn up by James Blake Associates (JBA, 2020) (see Appendix B for the Illustrative Landscape Master Plan and Appendix C for detailed soft landscaping proposals).

2.8 There is scope for ecological enhancements to be incorporated within proposed public open spaces (POS), attenuation ponds, boundary treatments, private gardens and dwellings. The enhancements are based on the recommendations detailed

within the species-specific survey reports and walkover reports. The enhancements proposed were as follows:

- Landscaping could incorporate native or wildlife attracting trees and shrubs as these would likely be of benefit to a variety of wildlife including, birds, bats and invertebrates,
- Installation of bird and bat boxes in suitable locations (if appropriate),
- As stated in the previous report (Lizard Landscape Design, 2016) a dark corridor to the eastern boundary is recommended to create minimal disturbance to bats,
- Areas of dense bramble on the site boundaries could be retained to provide hibernation habitat for hedgehogs. Hedgehog gaps in fences (13cm x 13cm) could be left in garden fences to create connectivity; it is anticipated that about 20% of fences will have these installed, connecting with the boundary habitats,
- Log piles/compost heaps to benefit reptiles, hedgehogs etc.
- Note that the final location of enhancements should be determined during construction by an Ecological Clerk of Works.

- 2.9 Approximately 315 deciduous trees are proposed to be planted across the site. Native species include field maple (*Acer campestre*), beech (*Fagus sylvatica*), pedunculate oak (*Quercus robur*), silver birch (*Betula pendula*), hornbeam (*Carpinus betulus*) and alder (*Alnus glutinosa*). In addition, varieties of native species will be planted as well as non-native trees which will have some ecological value.
- 2.10 A total of 27 coniferous trees are proposed to be planted across the site. Native species include common yew (*Taxus baccata*) and scots pine (*Pinus sylvestris*).
- 2.11 Approximately 408m of native hedgerows and 1131m of ornamental hedges are proposed to be planted in and around the site. The native hedgerow mix consists of dog rose (*Rosa canina*), hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*), spindle (*Euonymus europaeus*), wayfaring tree (*Viburnum lantana*), guelder rose (*Viburnum opulus*) and dogwood (*Cornus sanguinea*).
- 2.12 Amenity areas will be seeded with 'EG22' seed mix by (Emorsgate Seeds), and areas to be turfed will be seeded with a grass mix (Medallion).

- 2.13 The base of the attenuation basins and areas around will be seeded with a wet wildflower mix, such as Emorsgate Seeds EM8. Areas of wildflowers will be seeded with an 'EM2' mix. Planting specifications are provided on the detailed soft landscape plans.
- 2.14 Existing vegetation at boundaries will be retained and managed. Vegetation will be gapped up with native hedgerow mix to create a 2m wide buffer. There is also the creation of over 400m of new native species-rich hedge.
- 2.15 The plant species diversity of formal landscaped areas will be increased by the planting of bulbs, grasses, sedges and shrubs although the majority of these will be non-native.
- 2.16 Schwegler 2FN bat boxes and improved crevice bat boxes will be erected onto retained mature boundary trees. Schwegler 1FR bat tubes will be erected on retained mature boundary trees and installed on new buildings. A variety of bird boxes that include; Schwegler 2GR bird boxes and traditional open-fronted nest boxes will be installed onto existing trees/hedgerows and primarily on to new buildings. WoodStone swift boxes and Schwegler 1SP sparrow terraces will be integrated onto new buildings, as well as slide-out house martin double nest boxes, particularly at the north of the site facing the attenuation basin and also throughout the site in areas of POS and other attenuation basins. The final locations may need to be determined by an ECoW during construction.
- 2.17 Reptile hibernacula will be incorporated at suitable and secluded locations to the west of the site, however final location may need to be determined by the ECoW during construction. Provisionally, two hibernacula have been sited by the western boundary. Both should be protected and fenced off during construction. The hibernacula will be constructed by digging a hole and filling it with logs, bricks and stones. Cut vegetation will be placed on top, followed by a layer of soil or upturned turves. For more information, see Wildlife Trust's "How to build a hibernaculum for amphibians and reptiles" [here](#). Signage will be displaced outside the hibernaculum area to inform public of the importance to keep the habitat undisturbed.
- 2.18 Hedgehog friendly fencing installation will be achieved by leaving gaps in fences (about 13cm x 13cm) between domestic gardens and under gates to allow the free movement of hedgehogs across the site. The final locations will be determined by an ECoW. The location of hedgehog gaps will be marked by a hedgehog highway plaque.

Extent and location of works on scale plans

- 2.19 The suggested locations of selected biodiversity enhancements are given in the proposed site layout mark-up (see Appendix D). The plan base is produced by JBA, 2020: drawing number Ref: PLN-1-5000, revision I (2020).

Type and source of material to be used where appropriate, e.g. native species of local provenance

- 2.20 The following bird and bat boxes are recommended. Please note that these can be replaced with similar products if not available at time of construction (to be agreed with ecologist).

To be erected:

- 2 no. 2FN Schwegler Bat Box; bat boxes should be erected on retained mature trees, south east to south west facing and at least 4m high.
 - 2 no. 1FR Schwegler bat tubes and 2 improved crevice bat boxes should be erected on retained mature trees, south east to south west facing and at least 4m high and integrated onto proposed new buildings. These should be south east to south west facing and at least 4m high.
 - 2 no. Schwegler bird nest boxes of various entrance hole sizes and 1 no. traditional open-fronted nest box; bird boxes should be erected on retained mature trees, north west to north east facing and at least 3m high.
 - 5 no. slide-out house martin double nest boxes should be installed at least 5m high, ensuring that there is unobstructed access for birds entering and leaving.
 - 6 no. WoodStone swift nest boxes; boxes should be built-in and installed at least 5m high, ensuring that there is unobstructed access for birds entering and leaving. If possible, some boxes should also be sited under the shelter of eaves or overhanging roofs.
 - 7 no. 1SP Schwegler Sparrow terraces; terraces should be erected on new buildings, north west to north east facing and at least 3m high.
- 2.21 Planting should include trees and shrubs of local provenance where possible. Wildflower planting should use plugs and seed mixes of native origin, such as Emorsgate Seeds.

Timetable to implementation demonstrating that works are aligned with the proposed phasing of development

- 2.22 A timetable for the implementation of ecological works has been drawn up (see Appendix A).

Persons responsible for implementing the works

- 2.23 Initial construction works and installing the various forms of enhancement to be implemented by Barratt Homes Southern Counties Site Management Team and suitable appointed contractors, such as landscape contractors, fencers, brick layers etc.

Details of initial after care and long-term maintenance

- 2.24 Ecologically sensitive management measures should include the following:
- Rotational scrub/hedgerow trimming on a three-or four-year cycle to ensure that a section of the hedgerow can be allowed to bear fruit and seed every year. Inter-planted sections can be trimmed as necessary to prevent them becoming overshadowed. This is achieved by trimming one third of the hedgerow length in any one year and wherever possible leaving one side of each hedgerow uncut each year.
 - Hay cutting of general wildflower grassland in summer in combination with autumn, and possibly spring, mowing. Meadow grassland is not cut from spring through to late July/August to allow species an opportunity to flower and set seed. Undesirable species should be controlled as required.
- 2.25 All bat boxes proposed are 'self-cleaning' and would not require annual cleaning; however, these should be inspected annually from the ground for any damages and should be replaced if broken, following ecologist advice.
- 2.26 Bird boxes should be inspected and cleaned annually outside of the breeding season; the breeding season is deemed to be between March and September. Damaged boxes should be replaced as and when required.

3. CONCLUSIONS

- 3.1 An Ecological Enhancement Strategy has been drawn up which will increase the potential of the proposed development site to support wildlife by the addition of new hedgerows, grassland and other landscaping, and the provision of hibernaculum and bat and bird boxes. Suggestions for the management of enhancements are included.
- 3.2 The Ecological Enhancement Strategy was required to address Condition 2 on the Reserved Matters Application.

References

JBA (2020) *Ecological Walkover Survey: January 2020*

JBA (2020) *Detailed Landscape Proposals for Plots and POS Drawings numbered 01 to 10 REV H.*

JBA (2020) *Illustrative Landscape Master Plan, Rev I.*

JBA (2020) *Proposed site layout – enhancement mark-up*

National Planning Policy Framework HMSO (February 2019)

Web references:

MAGIC:

<https://magic.defra.gov.uk/>

Wildlife trust:

<https://www.wildlifetrusts.org/actions/how-build-hibernaculum-amphibians-and-reptiles#:~:text=Hibernacula%20are%20underground%20chambers%20that,ponds%2C%20bogs%20and%20compost%20heaps>

Appendix A. Suggested timetable for implementation of ecological works

Timings		Feature/species of interest	Action	Person responsible
When to Undertake	Year			
Prior to any works commencing on site	2022	Badger	Pre-commencement badger survey	Ecologist
Prior to any works commencing on site	2022	Reptiles (and other small animals)	Toolbox talk to include all the ecological measures relevant to construction	Ecological Clerk of Works (ECoW)
Prior to any works commencing on site	2022	Reptiles	Precautionary measures for site clearance	Ecological Clerk of Works (ECoW)
Prior to construction starting on site	2022	Retained habitats, trees etc	Erect protective fencing around features to be retained	Site manager with advice from ECoW
During construction	From 2022	Small mammals etc	Trenches to be covered overnight or escape ramp left to enable animals to find their way out	Site manager
During construction	2022	Bats and birds	Bird and bat boxes to be erected on retained boundary trees	Site manager and ECoW
During construction	From 2022	Bats and birds	Bird and bat boxes to be erected on new dwellings at time of build	Site manager with advice from ECoW
During construction	From 2022	Hedgehogs	Hedgehog gaps to be created in fences at time of build	Site manager with advice from ECoW
As required	From 2022	Reptiles	Creation of reptile hibernaculum	Site manager with advice from ECoW
Autumn/winter	From 2022	Retained tree and hedgerow habitat and new hedgerow creation	Coppicing, thinning, shrub planting etc. as required	Site manager with advice from ECoW and arboriculturist
During construction - Spring/summer/autumn	From 2022	Wildflower meadow creation	Preparation of substrate, sowing seed, removing any invasive weed species etc	Site manager under ECoW supervision
During construction - Spring/summer/autumn	From 2022	Wetland habitat creation	Attenuation basin habitat creation which includes planting up with native seed mix	Site manager under ECoW supervision
Post-construction	From 2022	Bats	Annual check for damages from the ground	Appointed management company. If boxes require replacing/fixing then ECoW advice should be sought
Post-construction	From 2022 (between October and February)	Birds	Annual cleaning and check for damages (outside breeding bird season)	Appointed management company

Appendix B. Illustrative Landscape Master Plan



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10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200

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801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900

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Appendix D. Proposed site layout – enhancement mark-up (plan base is produced by James Blake Associates, 2020)

