

Date: August 2020

Land west of Ravensden Road, Salph End

(1005175)

Biodiversity Impact Calculator (BIC) Assessment

1 Introduction

- 1.1 Aspect Ecology Ltd is acting on behalf of Manor Oak Homes in relation to ecological matters at the site, located west of Ravensden Road, Salph End in Bedfordshire, centred at OS grid reference TL 074 528.
- 1.2 The site is proposed for development to provide up to 400 residential dwellings, land for a new primary school, open space, drainage, footpath improvements and vehicular access via 25 Hookhams Lane. The proposals have been informed by ecological survey and appraisal work, the results of which are set out at Aspect Ecology's report entitled "Land west of Ravensden Road, Salph End: Ecological Appraisal", dated September 2019 (ref: 5175 EcoAp vf), which was submitted to inform an outline planning application (ref: 19/01974/MAO) for the proposals.
- 1.3 Planning permission was refused by Bedford Borough Council, dated June 2020, with none of the reasons for refusal relating to ecological matters.
- 1.4 However, the associated planning officer's report refers to ecological matters, noting in particular (section 2.15) that, *"...on the matter of net biodiversity gain officers agree with The Wildlife Trust that, ... if development were to progress to the detailed design stage the developer would need to commit to using a recognised biodiversity impact assessment calculator based on the Defra Biodiversity Metric to demonstrate that the development would, at the very least, deliver 10% biodiversity net gain. As this matter could potentially be addressed by way of a planning condition it is not considered that the failure to demonstrate compliance with the requirements of BBLP Policy 43 at the outline stage is in itself a reason to refuse the application."*
- 1.5 Accordingly, notwithstanding the outline stage of the proposals, along with the confirmation that this matter could suitably be resolved by means of an appropriately worded planning condition associated with any outline planning permission, in order provide further consideration in regard to the potential for the proposed scheme to result in net gain for biodiversity in line with the stated requirements, and demonstrate the commitment of the applicant to incorporate appropriate consideration, the proposed outline development scheme has been considered using the Defra Biodiversity Metric 2.0, the results of which are set out within this note.

2 Limitations and considerations associated with calculations

- 2.1 Given the outline stage of the proposals and associated indicative nature of the specific layout/parameters information, the figures shown are necessarily indicative and based on a number of assumptions, albeit are considered to be realistic and provide a suitable guide as to the likely final calculations associated with any resultant detailed development proposals under the parameters shown.
- 2.2 In terms of hedgerows in particular, with the exception of the central dividing hedgerow (located along the retained drainage corridor/flood zone), the remaining hedgerows are limited to the site boundaries and accordingly, with the exception of small breaks to provide

access (in particular from Ravensden Road and also through No. 25 Hookhams Lane), are anticipated to be retained and enhanced as part of the proposals.

3 Results and Discussion

Habitat Biodiversity Impact Calculations

- 3.1 As set out within the submitted Ecological Appraisal report, the internal areas of the site are formed almost entirely of intensively managed arable (cereal crop) land, with the only remaining habitats being the field boundary vegetation (hedgerows – including hedgerow H6 extending through the internal part of the site), along with the existing residential property at 25 Hookhams Lane (formed by the residential building, associated hardstanding and garden areas).
- 3.2 Given the outline nature of the proposals, clearly no detailed layout design or habitat provision is available, however the assessment has been carried out on the basis of the land uses and associated areas set out within the proposed Parameters Plan (RG+P Drawing Ref: 40986 013F – see Appendix 5175/BNG1), which was submitted with the application.
- 3.3 As shown at the proposed parameters plan (Appendix 5175/BNG1), substantial areas of open space are proposed, focussed on the western and southern areas forming wide swathes (including the entirety of the western field and associated drainage corridor/flood zone), along with narrower corridors along the northern and north eastern boundaries. These areas will include considerable new native habitats (with land identified separately for sports pitch provision within the parameters information, which is therefore treated separately) and will therefore form the focus of the wider scale habitat enhancement measures at the site.
- 3.4 Nonetheless, given the outline nature of the proposals and need to ensure open space areas also incorporate amenity and drainage functions, a precautionary approach to available habitat provision has been taken at this stage. In particular, an indicative split of 10% scrub, 10% woodland planting, 40% wildflower grassland and 40% amenity grassland has been assumed for the general open space areas (it is considered likely that greater proportions of the higher distinctiveness habitats could be achieved in reality), whilst poor condition is assumed to be achieved in relation to the majority of new habitats (greater condition is likely to be achievable in a number of cases).
- 3.5 Even using this approach, on the basis of the considerations and proposals set out (including the assumptions and limitations set out above and within the comments in the spreadsheet tool), the DEFRA 2.0 Metric calculator provides an indicative Habitat Biodiversity Impact Score for the proposals of **+9.82 Habitat Units** representing a gain of **25.04%** such that it appears clear that a suitable layout and detailed design could be designed to achieve a substantial calculated net gain.

Hedgerow Impact Assessment

- 3.6 Of the existing hedgerows within the development site, the vast majority will be retained and protected, albeit small sections will be lost in order to facilitate the required access for the development, including in order to facilitate access from Ravensden Road (H4) and Hookhams Lane (via number 25 Hookhams Lane – H2).
- 3.7 Retained and new hedgerows will be subject to a sensitive management regime as part of the wider open space to increase their biodiversity value wherever possible (albeit for the purpose of the BIA calculation, no enhancement is assumed at this stage).

- 3.8 On the basis of the calculations, in order to achieve a calculated positive result (i.e. biodiversity gain) under the Hedgerow Impact Assessment using DEFRA 2.0 Metric calculator (and ignoring any direct enhancement of retained hedgerows, or gains achieved through the implementation of favourable management, which will likely result in additional gains), a minimum length of approximately 70m new native species rich hedgerow would need to be provided as part of the proposals, which would clearly be achievable under any detailed layout.
- 3.9 Using the same assumptions, given the overall size of the site and associated considerable lengths of existing hedgerows (the majority of which will be retained), in order to result in a calculated gain of 10% in relation to hedgerow units using the metric tool, a length of approximately 510m new native species rich hedgerow would need to be provided. This level of provision is likely to be achievable at the site, albeit would be dependent on the final detailed design and landscaping proposals. New native hedgerows will be composed of at least 5 native woody species, and will be managed to maximise their biodiversity value. It is considered likely that over time, with appropriate management, a minimum ‘moderate’ condition is achievable for the new hedgerow planting.
- 3.10 On the basis of the above considerations, identifying a minimum provision of as little as 70m new native species rich hedgerow managed for wildlife value, (and ignoring any likely further enhancement through supplementing and managing retained hedgerows), the DEFRA 2.0 Metric calculator indicates a small net gain in Hedgerow Biodiversity Impact Score for the proposals, whilst the provision of 510m such hedgerows within the proposals would result in a calculated net gain of at least 10%.

4 Summary and Conclusions

- 4.1 Overall, based on the above considerations and the previously submitted information, including the Ecological Appraisal information and proposed Parameters Plan (Appendix 5175/BNG1), the results of the consideration with the Defra Biodiversity Metric 2.0 are summarised below at Table 3.1., whilst relevant sheets from the Biodiversity Metric 2.0 Calculation Tool are included at Appendix 5175/BNG2.

Table 3.1. Summary results of consideration using Defra Biodiversity Metric 2.0

Existing baseline value		Calculated Biodiversity ‘value’ under the proposals	Identified net change based on proposed landscape strategy	Identified net % change
Habitat units	39.20 units	49.02 units	+9.82 units	+25.04%
Hedgerow units	19.86 units	21.85 units <i>(Based on minimum provision of 510m new native species-rich hedgerows and disregarding enhancements through additional management and complementary planting to existing retained hedgerows.)</i>	+1.99 units <i>(Based on minimum provision of 510m new native species-rich hedgerow. Provision of 70m such hedgerow would ensure overall net gain under the calculations).</i>	<i>(+10.01% based on minimum provision of 510m new native species-rich hedgerow)</i>

- 4.2 Accordingly, subject to the provision of detailed proposed habitat creation and enhancement measures under any detailed design (in particular relating to the proposed open space and attenuation/flood zone areas) and in line with the previously submitted information and proposed parameters information, the consideration using the Defra Biodiversity Metric 2.0 Calculation Tool clearly demonstrates that a substantial calculated biodiversity net gain can be appropriately achieved under the proposals.

Appendix 5175/BNG1:

Proposed Parameters Plan

RG+P Drawing Ref: 40986 013 F



- Site area 19.65ha
- Open Space 3.25ha
- Developable area 10.75ha
Includes primary route
- School area 2.1ha
- Attenuation basins 0.59ha
Area excluded from open space calculation
- Flood zone 1.88ha
- Sports pitches 1.08ha
- Primary route
- Indicative vehicular access and parking
for sports pitches.
- Easement
- Heritage Buffer

Revision:	Date:	Author:
A	12.08.19	HW/DW
B	20.08.19	HW/DW
C	22.08.19	HW/DW
D	02.09.19	HW/DW
E	07.11.19	CW
F	14.11.19	CW



Architects · Project Managers · Quantity Surveyors
 130 New Walk
 Leicester, LE1 7JA
 Tel: 0116 204 5800, Fax: 0116 204 5801
 email: design@rg-p.co.uk, www.rg-p.co.uk

Project: A development at Salph End, Bedford

Client: Manor Oak Homes

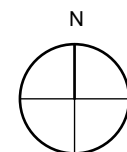
Sheet title: Parameters Plan

Ref: 40986 013F

Scale: 1:2500 @ A3

Date: 25.07.19

Drawn: HW **Checked:** DW



All dimensions to be checked on site. This drawing is the copyright of the Architect, and not to be reproduced without their permission. Ordnance Survey map information reproduced with permission of HMSO Crown Copyright reserved. rg+p Ltd. Trading as rg+p

Appendix 5175/BNG2:

Relevant pages from the Biodiversity Metric 2.0 Calculation Tool

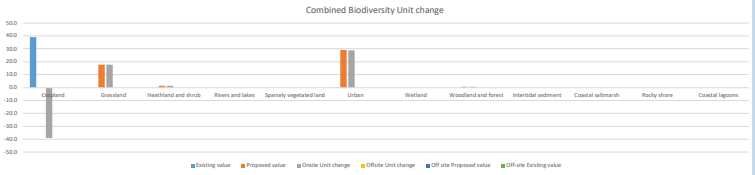
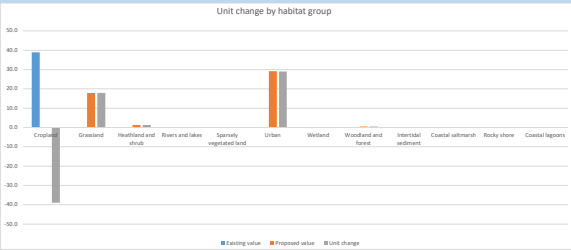
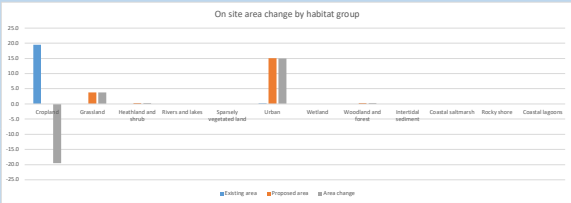
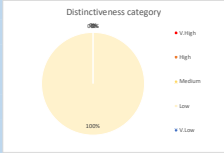
On-site baseline	<i>Habitat units</i>	39.20
	<i>Hedgerow units</i>	19.86
	<i>River units</i>	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	49.02
	<i>Hedgerow units</i>	21.85
	<i>River units</i>	0.00
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	<i>Habitat units</i>	9.82
	<i>Hedgerow units</i>	1.99
	<i>River units</i>	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	<i>Habitat units</i>	25.04%
	<i>Hedgerow units</i>	10.01%
	<i>River units</i>	0.00%

Summary Figures

Net project biodiversity units (Including all on-site & off-site habitat retention/creation)		Habitat units	5.83
		Hedgegrow units	1.95
		River units	0.00
Total project biodiversity % change (Including all On-site & Off-site Habitat Creation + Retained Habitats)		Habitat units	25.04%
		Hedgegrow units	10.01%
		River units	0.00%

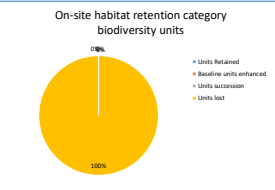
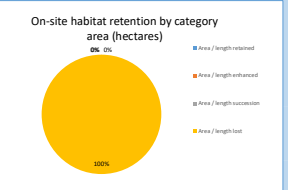
On-site habitat retention and enhancement			
	Habitats	Hedgegrow	Rivers
Total site area / length	19.65	1.91	0.00
Total site units	39.20	19.86	0.00
Area / length retained	0.00	1.86	0.00
Units Retained	0.00	19.56	0.00
Area / length enhanced	0.00	0.00	0.00
Baseline units enhanced	0.00	0.00	0.00
Area / length succession	0.00		
Units succession	0.00		
Area / length lost	19.65	0.05	0.00
Units lost	39.20	0.30	0.00

Loss of distinctiveness		
Category	Area lost (hectares)	Area lost (%)
V.High	0	
High	0	
Medium	0	
Low	19.6	100
V.Low	0	



Habitat group	On-site		Baseline		Post development on site		Onsite Change	
	Existing area	Existing value	Proposed area	Proposed value	Area change	Onsite Unit change		
Cropland	19.5	39.0	0.0	0.0	-19.5	-39.0		
Grassland	0.0	0.0	3.8	17.8	3.8	17.8		
Heathland and shrub	0.0	0.0	0.3	1.3	0.3	1.3		
Rivers and lakes	0.0	0.0	0.0	0.0	0.0	0.0		
Sparsely vegetated land	0.0	0.0	0.0	0.0	0.0	0.0		
Urban	0.2	0.2	15.1	29.2	14.9	29.0		
Wetland	0.0	0.0	0.0	0.0	0.0	0.0		
Woodland and forest	0.0	0.0	0.3	0.5	0.3	0.5		
Intertidal sediment	0.0	0.0	0.0	0.0	0.0	0.0		
Coastal saltmarsh	0.0	0.0	0.0	0.0	0.0	0.0		
Rocky shore	0.0	0.0	0.0	0.0	0.0	0.0		
Coastal lagoons	0.0	0.0	0.0	0.0	0.0	0.0		

Overall Change	
Area change	Unit change
-19.5	-39.0
3.8	17.8
0.3	1.3
0.0	0.0
0.0	0.0
14.9	29.0
0.0	0.0
0.3	0.5
0.0	0.0
0.0	0.0
0.0	0.0
0.0	0.0



Habitat group	Off-site		Baseline		Post development Off-site		Off-site Change	
	Existing area	Existing value	Proposed area	Proposed value	Area change	Offsite Unit change		
Cropland	0.0	0.0	0.0	0.0	0.0	0.0		
Grassland	0.0	0.0	0.0	0.0	0.0	0.0		
Heathland and shrub	0.0	0.0	0.0	0.0	0.0	0.0		
Rivers and lakes	0.0	0.0	0.0	0.0	0.0	0.0		
Sparsely vegetated land	0.0	0.0	0.0	0.0	0.0	0.0		
Urban	0.0	0.0	0.0	0.0	0.0	0.0		
Wetland	0.0	0.0	0.0	0.0	0.0	0.0		
Woodland and forest	0.0	0.0	0.0	0.0	0.0	0.0		
Intertidal sediment	0.0	0.0	0.0	0.0	0.0	0.0		
Coastal saltmarsh	0.0	0.0	0.0	0.0	0.0	0.0		
Rocky shore	0.0	0.0	0.0	0.0	0.0	0.0		
Coastal lagoons	0.0	0.0	0.0	0.0	0.0	0.0		

Habitat group	Combined		Baseline		Combined Post development		Combined change	
	Existing area	Existing value	Proposed area	Proposed value	Proposed area	Proposed value		
Cropland	19.5	39.0	0.0	0.0	-19.5	-39.0		
Grassland	0.0	0.0	3.8	17.8	3.8	17.8		
Heathland and shrub	0.0	0.0	0.3	1.3	0.3	1.3		
Rivers and lakes	0.0	0.0	0.0	0.0	0.0	0.0		
Sparsely vegetated land	0.0	0.0	0.0	0.0	0.0	0.0		
Urban	0.2	0.2	15.1	29.2	14.9	29.0		
Wetland	0.0	0.0	0.0	0.0	0.0	0.0		
Woodland and forest	0.0	0.0	0.3	0.5	0.3	0.5		
Intertidal sediment	0.0	0.0	0.0	0.0	0.0	0.0		
Coastal saltmarsh	0.0	0.0	0.0	0.0	0.0	0.0		
Rocky shore	0.0	0.0	0.0	0.0	0.0	0.0		
Coastal lagoons	0.0	0.0	0.0	0.0	0.0	0.0		

Land west of Ravensden Road, Salph End
A-1 Site Habitat Baseline

Condense / Show Columns Condense / Show Rows
 Main Menu Instructions

Ref	Habitats and areas			Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Ecological Baseline Total habitat units
	Broad Habitat	Habitat type	Area (hectares)						
1	Cropland	Cropland - Cereal crops	19.5	Low	N/A - Agricultural	N/A	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	39.00
2	Urban	Urban - Vegetated garden	0.1	Low	Poor	N/A	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	0.20
3	Urban	Urban - Developed land, sealed surface	0.05	V.Low	N/A - Other	N/A	Area/compensation not in local strategy/ no local strategy	Compensation Not Required	0.00
4									
5									
6									
7									
8	Total site area ha			19.65					39.20

Retention category biodiversity value							Bespoke compensation agreed for unacceptable losses	Comments	
Area retained	Area enhanced	Area succession	Baseline units retained	Baseline units enhanced	Baseline units succession	Area lost		Units lost	Assessor comments
			0.00	0.00	0.00	19.50	39.00		
			0.00	0.00	0.00	0.10	0.20		
			0.00	0.00	0.00	0.05	0.00		
0.00	0.00	0.00	0.00	0.00	0.00	19.65	39.20		

Land west of Ravensden Road, Salph End
A-2 Site Habitat Creation

Condense / Show Columns Condense / Show Rows
 Main Menu Instructions

Post development/ post intervention habitats										
Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological		Temporal multiplier	Difficulty of creation category	Habitat units delivered	Comments	
				Ecological connectivity	Strategic significance				Assessor comments	Reviewer comments
Urban - Suburban/ mosaic of developed/ natural surface	10.75	Low	Poor	N/A	Area/compensation not in local strategy/ no local strategy	1	Low	20.75	Developable area (houses and gardens) from Parameters plan	
Grassland - Other neutral grassland	1.88	Medium	Poor	N/A	Area/compensation not in local strategy/ no local strategy	1	Low	7.26	Flood Zone (from parameters plan)	
Grassland - Other neutral grassland	0.59	Medium	Moderate	N/A	Area/compensation not in local strategy/ no local strategy	10	Low	3.31	Attenuation Basin	
Urban - Amenity grassland	1.08	Low	Poor	N/A	Area/compensation not in local strategy/ no local strategy	1	Low	2.08	Sports Pitches	
Urban - Suburban/ mosaic of developed/ natural surface	2.1	Low	Poor	N/A	Area/compensation not in local strategy/ no local strategy	1	Low	4.05	School area (from parameters plan)	
Heathland and shrub - Mixed scrub	0.33	Medium	Poor	N/A	Area/compensation not in local strategy/ no local strategy	1	Low	1.27	Open space (Total 3.25 - assumed arbitrary precautionary split in the absence of detailed proposals: 10% scrub, 10% woodland, 40% wildflower grassland and 40% amenity grassland)	
Woodland and forest - Other woodland; mixed	0.32	Medium	Poor	N/A	Area/compensation not in local strategy/ no local strategy	15	Medium	0.50	Open space (Total 3.25 - assumed arbitrary precautionary split in the absence of detailed proposals: 10% scrub, 10% woodland, 40% wildflower grassland and 40% amenity grassland)	
Grassland - Other neutral grassland	1.3	Medium	Moderate	N/A	Area/compensation not in local strategy/ no local strategy	10	Low	7.28	Open space (Total 3.25 - assumed arbitrary precautionary split in the absence of detailed proposals: 10% scrub, 10% woodland, 40% wildflower grassland and 40% amenity grassland)	
Urban - Amenity grassland	1.3	Low	Poor	N/A	Area/compensation not in local strategy/ no local strategy	1	Low	2.51	Open space (Total 3.25 - assumed arbitrary precautionary split in the absence of detailed proposals: 10% scrub, 10% woodland, 40% wildflower grassland and 40% amenity grassland)	
Totals	19.65							49.02		

Land west of Ravensden Road, Salph End
B-1 Site Hedge Baseline

Condense / Show Columns Condense / Show Rows

Main Menu Instructions

Baseline ref	Hedge number	UK Habitats - existing habitats Hedgerow type	length KM	Habitat	Habitat	Ecological	Strategic significance	Suggested action to address habitat losses	Ecological baseline Total hedgerow units	Retention category biodiversity value						Comments	
				distinctiveness	condition	connectivity				Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost	Assessor comments	Reviewer comments
1	H1	Hedge Ornamental Non Native	0.06	V.Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0	0.06		0	0	0	0		
2	H2	Native Hedgerow	0.25	Low	Good	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	1.5	0.23		1.38	0	0.02	0.12	Max loss 30m representing section adjacent to 25 Hookhams Lane to provide access	
3	H3	Native Hedgerow	0.12	Low	Good	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.72	0.12		0.72	0	0	0		
4	H4	Native Hedgerow with trees	0.23	Low	Good	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	1.38	0.2		1.2	0	0.03	0.18	Assumed 30m section lost to provide access from Ravensden Road	
5	H5	Native Hedgerow with trees	0.31	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	1.24	0.31		1.24	0	0	0		
6	H6	Native Hedgerow - Associated with bank or ditch	0.46	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	Like for like or better	5.52	0.46		5.52	0	0	0		
7	H7	Native Species Rich Hedgerow with trees - Associated with bank or ditch	0.48	High	Good	Medium	Area/compensation not in local strategy/ no local strategy	Like for like	9.504	0.48		9.504	0	0	0		
8																	
9																	
10																	
11																	
12																	
Total Site length/KM			1.91						19.86	1.86	0.00	18.56	0.00	0.05	0.30		

Land west of Ravensden Road, Salph End

B-2 Site Hedge Creation

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

Baseline ref	New hedge number	Proposed habitats		Habitat distinctiveness	Habitat condition	Multipliers		Temporal multiplier	Hedge units delivered	Comments	
						Spatial quality				Time to target condition/years	Assessor comments
		Habitat type	Length km	Ecological connectivity	Strategic significance						
1		Native Species Rich Hedgerow	5.1	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	5	22.88		
2											
3											
4											
5											
6											
		Creation Length/KM	5.10						22.88		

Copyright

The copyright of this document remains with Aspect Ecology. All rights reserved. The contents of this document therefore must not be copied or reproduced in whole or in part for any purpose without the written consent of Aspect Ecology.

Legal Guidance

The information set out within this report in no way constitutes a legal opinion on the relevant legislation (refer to the original legislation). The opinion of a legal professional should be sought if further advice is required.

Liability

This report has been prepared for the exclusive use of the commissioning client and unless otherwise agreed in writing by Aspect Ecology, no other party may use, or rely on the contents of the report. No liability is accepted by Aspect Ecology for any use of this report, other than for the purposes for which it was originally prepared and provided. No warranty, express or implied, is made as to the advice in this report.

landscape planning • ecology • arboriculture

aspect

Aspect Ecology Ltd
West Court
Hardwick Business Park
Noral Way
Banbury
Oxfordshire OX16 2AF

T: 01295 276066
F: 01295 265072
E: info@aspect-ecology.com
W: www.aspect-ecology.com