

SEAWARD PROPERTIES LTD

Land at Lake Lane, Barnham, West Sussex

– Detailed Phase 2 Amphibian Survey

Approved By: Joe Jackson

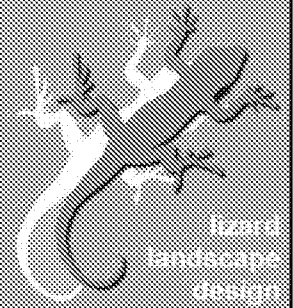
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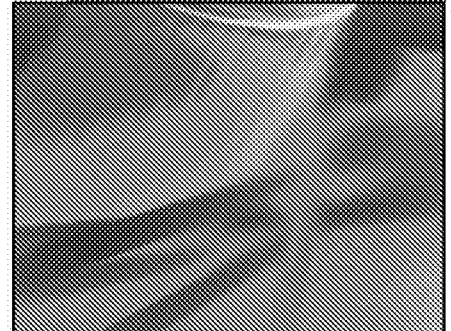
Date: 29th November 2016

November 2016 – Planning Issue

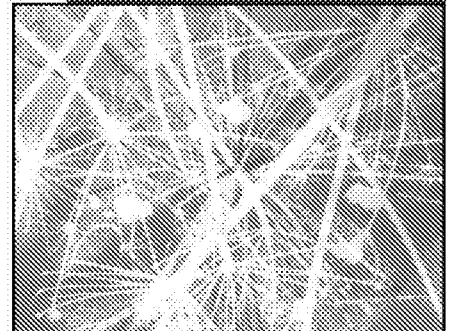
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Landscape Architecture



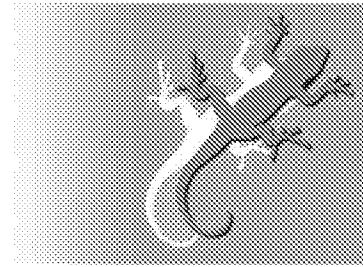
Environmental Design



Landscape Planning

Lizard Landscape Design

Lizard Landscape Design and Ecology



CONTENTS

	PAGE
SUMMARY	01
1.0 INTRODUCTION	02
2.0 SCOPE OF SURVEY	04
3.0 SURVEY METHODOLOGY	04
4.0 RESULTS	06
5.0 DISCUSSION	07
6.0 MITIGATION	08
7.0 REFERENCES	09

TABLES

Table No. 1 – HSI Evaluation Criteria

Table No. 2 – Details of Weather Conditions during the Amphibian Surveys

Table No. 3 – System for Assigning Population Status of Numbers of Newts

Table No. 4 – HSI Results

FIGURES

Figure No. 1 – Location of Ponds and Ditches

APPENDICES

Appendix No. 1 – Full Survey Results

SUMMARY

Seaward Properties Ltd have commissioned Lizard Landscape Design to undertake a Detailed Phase 2 Protected Species Survey for amphibians, specifically great crested newts (*GCN*), within 250.0 metres of the proposed development site at Lake Lane, Barnham (*Grid Reference: SU 965 047*– hereafter referred to as '*the site*'). The survey has been recommended from the Preliminary Ecological Appraisal undertaken on 9th September 2015, due to habitat identified as having potential to support protected species of amphibian.

A good population of common toad was noted during the first survey with a low population found during subsequent visits. A peak count of 21 no. individuals was recorded on the first survey visit on 30th March 2016. Smooth newts were recorded on all occasions. The peak count for smooth newts was 4 no. of individuals, recorded during the 1st and 2nd site visit. Palmate newts were recorded with a maximum number of 5 no. individuals recorded during the 3rd survey visit on 13th April 2016. This is considered to represent '*low*' populations of both species according to the metric described in Table No. 2 below.

No great crested newts (*GCN*) were found during the surveys of April 2016. The surveys have been supervised by a licensed experienced ecologist and to a suitably detailed specification. The survey data was obtained during the optimum survey season for each species group and surveys were adapted using best-practice protocols.

The absence of *GCN* within the waterbodies surveyed is likely contributed to a number of factors; pond P1 contained a higher than expected number of fish while ditch D1 lacked areas of open water for displaying and ditches D2 and D3 were largely dry at the time of the survey.

A good population of common toad *Bufo bufo* was found in pond P1 during the first survey undertaken on 30th March 2016. This had reduced to a low population for subsequent surveys. No toads were found during terrestrial searches of the site undertaken as part of these surveys. The toads present within pond P1 are suspected to spend their terrestrial phase within woodland to the north-west of pond P1 or within areas of suitable habitat within the residential garden itself. The development proposals are not considered to remove any habitat which supports large numbers of common toad at any time during the year.

No specific mitigation measures are considered necessary for this site.

1.0 INTRODUCTION

1.1 Seaward Properties Ltd have commissioned Lizard Landscape Design to undertake a Detailed Phase 2 Protected Species Survey for amphibians, specifically great crested newts (*GCN*), within 250.0 metres of the proposed development site at Lake Lane, Barnham (*Grid Reference: SU 965 047– hereafter referred to as 'the site'*).

1.2 As part of the proposed development an amphibian and great crested newt survey was undertaken during March/April 2016. The survey has been recommended from the Preliminary Ecological Appraisal undertaken on 9th September 2015, due to habitat identified as having potential to support protected species of amphibian. This report outlines the results of these surveys and has been prepared by Catherine O'Reilly (*BSc; Assistant Ecologist, Lizard Landscape Design*). All field surveys were carried out by Catherine O'Reilly and George Sayer.

Survey Rationale

1.3 The Preliminary Ecological Appraisal identified large swathes of dense scrub/tall ruderal habitat within the site area. The habitat cover and numerous refuges within the area may provide suitable conditions for protected species of amphibian during the terrestrial phase of their life-cycle. Moreover the freshwater pond adjacent to the north-east of the site was considered to offer potential freshwater / breeding habitat for protected species of amphibian while ditches around the site offer further breeding/commuting opportunities.

Site Information

1.4 The development site is located due south of Lake Lane, towards the eastern edge of Barnham, West Sussex. The site is approximately 8.00 metres above sea level and measures approximately 0.40 hectares. The site is comprised in the majority by tall ruderal, scrub and tree lines with a central gravel access drive. The site is located within the village of Barnham, one of a string of villages and small towns located between Chichester and Littlehampton. The village of Barnham extends for approximately 1.0 kilometre to the west of the site, while land to the south is dominated by horticultural developments for at least 400.00 metres. Similar developments exist to the north-east of the site area; however, land directly to the north opens to a mixture of farmland and woodland approximately 50.0 metres from the site boundary.

- 1.5 The surrounding landscape is formed of a matrix of pastoral and arable farmland delineated by hedgerows and small pockets of woodland. The nearest patch of woodland can be found 100.00 metres north (*4.4 hectares of broadleaved woodland*). This woodland is listed on *The National Inventory of Trees and Woodland* and encompasses 1.07 hectares of ancient semi-natural woodland.

Development Proposals

- 1.6 The development proposals consist of the construction of 5 no. new residential units on the site. This survey has been undertaken on the assumption that development proposals would incorporate a large percentage of the available site area; to include associated residential properties; hard standing and amenity / garden areas.

Summary of Legal Protection – GCN and CT

- 1.7 The great crested newt is included on *Schedule 2 of The Conservation of Habitats and Species Regulations 2010* which makes it an offence, amongst other things, to deliberately capture, injure, kill or disturb any such species. In addition this notification also prohibits the deliberate taking or destroying of any eggs and the damaging or destroying of a breeding site or resting place of any such species. The common toad (*Bufo bufo*) is a target of UK and Local Biodiversity Action Plans and listed as *Species of Principle Importance under Section 41 of the Natural Environment and Rural Communities Act 2006*. Local Authorities are obliged to have regard to the purpose of conserving biodiversity with particular emphasis on targeted species.
- 1.8 The National Planning Policy Framework (*published in 2012*) states that the planning system should minimise impacts on biodiversity and provide net gains, where possible.

2.0 SCOPE OF SURVEY

- 2.1 The aim of the amphibian and great crested newt survey was;
- *To identify presence / absence of amphibians (including great crested newt [GCN]) within the water bodies identified on site, and those adjacent to the site;*
 - *To suggest population size classes for newt species recorded;*
 - *To complete all data requirements for possible application to Natural England for a mitigation licence if required; and;*
 - *To suggest mitigation to avoid / minimise impacts of the scheme to Protected Species if necessary.*

3.0 METHODOLOGY

HSI Assessment

- 3.1 The *Habitat Suitability Index (HSI)* was developed by *Oldham et al (2000)* as a way of providing a numerical index allowing a direct comparison to be made between different water bodies. This index assesses ponds against 10 no. different criteria, each of which have a bearing on the likelihood of great crested newts (*Triturus cristatus*) being present in the pond under consideration.

- 3.2 The 10 no. attributes against which ponds are assessed are:

- *Geographic Location;*
- *Pond Area (at its highest level);*
- *Permanence;*
- *Water Quality;*
- *Perimeter Shading;*
- *Numbers of Wildfowl;*
- *Numbers of Fish Present;*
- *Pond Count (within a 1.0 km radius);*
- *Terrestrial Habitat (within 250.0 m);*
- *Macrophyte Coverage.*

- 3.3 The HSI results in a score between 1 and 0; with 1 being optimal conditions and 0 being unlikely to support a population. However, the index merely gives an indication as to whether a pond has the potential to support GCNs and is not a substitute for more detailed presence / absence surveys for protected species of amphibian. The evaluation criteria is shown in table No. 01 below.

Table No. 01 – HSI Evaluation Criteria

HSI Score	Pond Suitability
<0.5	Poor
0.5-0.59	Below Average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

Survey Methodology

- 3.4 In line with best practise, 4 no. GCN surveys were undertaken in the appropriate season (*Mid-March – June*) with at least 2 no. surveys between mid-April and mid-May. Three survey techniques were employed: torching, netting and egg searching. Torch surveys were undertaken after dark using CB2 Culites for around 1.5 hours to ascertain presence / absence data and to ascertain a peak count of individuals. The dates of survey and weather information for each amphibian survey are outlined in Table No. 2 below.

Table No. 2 - Detail of Weather Conditions during the Amphibian Surveys

Survey	Date of Visit	Weather	Temp
1	30.03.16	Calm, Dry	8°C
2	06.04.16	Slight Breeze, Dry	7°C
3	13.04.16	Calm, Dry	9°C
4	21.04.16	Slight Breeze, Dry	10°C

Constraints

- 3.5 It was not possible to utilise bottle traps within this pond due to the presence of an artificial liner. Visibility during the surveys was limited by the presence of brown algae within the water. Suitable access was available to all waterbodies and no further constraints were noted.

Evaluation Methodology

- 3.6 To evaluate numbers of amphibians found on site, the guidance from Natural England Mitigation Guidelines (2001) was used. Table No. 2 below outlines the scoring system for amphibians.

**Table No. 3 - System for Assigning Population Status of Numbers of Newts
(Seen or Netted)**

Species	Methods	Population Scores		
		'Low'	'Good'	'Exceptional'
Great Crested Newts.	Seen or Netted.	< 5	6 - 50	> 50
	Counted at Night.	< 10	11 - 100	> 100
Smooth or Palmate Newts.	Seen or Netted.			
	Counted at Night.	< 10	11 - 100	> 100

4.0 RESULTS

HSI Assessment

- 4.1 The results of the HSI assessment undertaken on the adjacent pond are highlighted in table no. 3 below.

Table No. 4 – HSI results

HSI Criteria	P1
<i>SI1 - Location</i>	1.00
<i>SI2 - Pond Area</i>	0.4
<i>SI3 - Permanence</i>	0.90
<i>SI4 - Water Quality</i>	0.67
<i>SI5 - Shade</i>	1.00
<i>SI6 - Wildfowl</i>	0.67
<i>SI7 - Fish</i>	0.33
<i>SI8 - Ponds</i>	0.3
<i>SI9 - Terrestrial Habitats</i>	0.67
<i>SI10 - Macrophyte Coverage</i>	0.60
HSI Score	0.6
Suitability	Average

Survey Results

- 4.1 No great crested newts were recorded during any of the survey visits.
- 4.2 A good population of common toad was noted during the first survey with a low population found during subsequent visits. A peak count of 21 no. individuals was recorded on the first survey visit on 30th March 2016.
- 4.3 Smooth newts were recorded on all occasions. The peak count for smooth newts was 4 no. of individuals, recorded during the 1st and 2nd site visit. Palmate newts were recorded with a maximum number of 5 no. individuals recorded during the 3rd survey visit on 13th April 2016. This is considered to represent 'low' populations of both species according to the metric described in Table No. 2 above.
- 4.4 Ditch D2 and D3 were both largely dry at the time of the survey with high levels of leaf litter and debris throughout. No amphibians were found within these watercourses during any of the survey visits. A terrestrial search of the proposed development site was also undertaken during each survey visit; no amphibians were found.
- 4.5 Full results of the amphibian surveys undertaken at the Lake Lane site are detailed in *Appendix No. 01 – Survey Results*.

5.0 EVALUATION

- 5.1 No great crested newts (*GCN*) were found during the surveys of April 2016. The surveys have been supervised by a licensed experienced ecologist and to a suitably detailed specification. The survey data was obtained during the optimum survey season for each species group and surveys were adapted using best-practice protocols.
- 5.2 Absence is difficult to prove unequivocally however the results of this survey cannot be interpreted to indicate presence of a significant breeding population of great crested newt within the freshwater systems surveyed. The level of survey effort imparted; the time of year the surveys were undertaken; and the experience of the surveyors conducting the survey add credence to this assertion.

- 5.3 The absence of GCN within the waterbodies surveyed is likely contributed to a number of factors. P1 was of a good size with good macrophyte cover and water quality. During the torching surveys however it became apparent that a high number of sticklebacks were present in the pond as well as the very small number of fish which had been introduced by the owner of the property. This is likely to have had a hugely detrimental effect upon the ability of GCN to successfully breed within the pond.
- 5.4 Ditch D1 contained 4 no. different amphibian species at varying points throughout the surveys, however no GCN were identified within the waterbody. At the time of the survey the water course contained a great deal more macrophyte cover than when the HSI assessment was undertaken, a coverage of up to 100% in places. Areas such as these are not favoured by GCN due to the lack of open water in which the males can display. 2 no. further ditches were largely dry at the time of the survey with heavy leaf litter in the sections which did contain water. Such conditions are not conducive to supporting a breeding population of GCN.
- 5.5 A good population of common toad *Bufo bufo* was found in pond P1 during the first survey undertaken on 30th March 2016. This had reduced to a low population for subsequent surveys. Low populations of common toad were also recorded in ditch D1. No toads were found during terrestrial searches of the site undertaken as part of these surveys. The toads present within pond P1 are suspected to spend their terrestrial phase within woodland to the north-west of pond P1 or within areas of suitable habitat within the residential garden itself. The development proposals are not considered to remove any habitat which supports large numbers of common toad at any time during the year.

6.0 MITIGATION

- 6.1 No great crested newts were identified during the amphibian surveys undertaken during April 2016. Smooth newts, palmate newts and common toads were identified during the surveys however these species do not receive the same level of legal protection as the GCN. Development proposals are not considered to be detrimental to the population of common toad identified during these surveys. As such **no mitigation or further works are recommended** with respect to this species.

7.0 REFERENCES

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Griffiths, R. A. and Inns, H. (1998) *Surveying*. In: *Herpetofauna Workers' Manual*;

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English Nature (2001). *Great crested newt mitigation guidelines*. Natural England, Peterborough

Baker, J., Beebee T., Buckley, J., Gent, A. and Orchard, D. (2011). *Amphibian Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.

Appendix No. 01 – Full Survey Results – Lake Lane, Barnham

Survey	Date	Weather	°C	Pond Ref	Survey Type	GCN	Sex	Other sp.	Sex	Notes
1	30.03.16	Calm, dry	8	P1	Net	0	n/a	LV - 1	F	Small no. of stickleback caught
								BB - 1	M	
					Torch	0	n/a	LV - 4	3F, 1M	Small no. of stickleback seen
								BB - 26	n/a	
					Egg Search	0	n/a	0	0	
				D1	Net	0	n/a	0	0	
								BB - 1	F	Clear water, no fish
					Torch	0	n/a	LH - 1	M	
								RT - 1	F	
					Egg Search	0	n/a	0	0	
				D2	Net	0	n/a	0	0	
					Torch	0	n/a	0	0	
					Egg Search	0	n/a	0	0	
				D3	Net	0	n/a	0	0	
					Torch	0	n/a	0	0	
					Egg Search	0	n/a	0	0	

Survey	Date	Weather	°C	Pond Ref	Survey Type	GCN	Sex	Other sp.	Sex	Notes
2	06.04.16	Wind Force 2, dry	7	P1	Net	0	n/a	LV - 1	F	Small no. of stickleback caught
					Torch	0	n/a	LV - 4	F	Small no. of stickleback seen
								BB - 2	M	
				D1	Egg Search	0	n/a	0	0	
					Net	0	n/a	LH - 1	M	
					Torch	0	n/a	LH - 3	3F, 1M	
								LV - 1	F	
								RT - 1	F	
					Egg Search	0	n/a	0	0	
				D2	Net	0	n/a	0	0	
					Torch	0	n/a	0	0	
					Egg Search	0	n/a	0	0	
				D3	Net	0	n/a	0	0	
					Torch	0	n/a	0	0	
					Egg Search	0	n/a	0	0	

Survey	Date	Weather	°C	Pond Ref	Survey Type	GCN	Sex	Other sp.	Sex	Notes
3	13.04.16	WF1, Dry	9	P1	Net	0	n/a	0	0	
					Torch	0	n/a	LH - 1	F	Small no. of stickleback seen
								BB - 2	2M	
				D1	Egg Search	0	n/a	0	0	
					Net	0	n/a	0	0	
					Torch	0	n/a	RT - 1	F	
								BB - 1	M	
								LV - 5	5F	
					Egg Search	0	n/a	0	0	
				D2	Net	0	n/a	0	0	
					Torch	0	n/a	0	0	
					Egg Search	0	n/a	0	0	
				D3	Net	0	n/a	0	0	
					Torch	0	n/a	0	0	
					Egg Search	0	n/a	0	0	

Survey	Date	Weather	°C	Pond Ref	Survey Type	GCN	Sex	Other sp.	Sex	Notes
4	21.04.16	WF2, Dry	10	P1	Net	0	n/a	0	0	
					Torch	0	n/a	0	0	Large no. of stickleback seen
					Egg Search	0	n/a	0	0	
				D1	Net	0	n/a	0	0	
					Torch	0	n/a	LH/LV - 5	F	Excessive macrophyte coverage
								RT - 1	n/a	
					Egg Search	0	n/a	0	0	
				D2	Net	0	n/a	0	0	
					Torch	0	n/a	0	0	
					Egg Search	0	n/a	0	0	
				D3	Net	0	n/a	0	0	
					Torch	0	n/a	0	0	
					Egg Search	0	n/a	0	0	

Species: LV = Smooth Newt *Lissotriton vulgaris*, LH = Palmate Newt *Lissotriton helveticus*, BB = Common Toad *Bufo bufo*, RT = Common Frog *Rana temporaria*