

[REDACTED]

From: Edward Ledwidge [REDACTED]
Sent: 01 June 2015 09:50
To: Agency Dan McEwan
Subject: RE: Land South of New Road - A/23/15/OUT

OK Dan, we will get the submission to you by close of play Wed.

In the meantime, please find attached the completed Reptile Survey (low population of slow worm and grass snake recorded) and Great Crested Newt Survey (no GCNs present). The reports make the appropriate recommendations for mitigation.

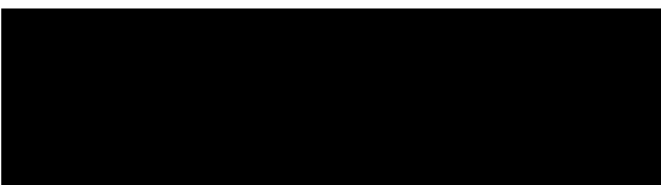
Just to let you know that we have been asked by M&S to make contact with Karl Roberts to follow up on discussions that were held at the pre-app stage.

Kind regards

Edward

Edward Ledwidge MRTPI
Partner

Montagu Evans LLP
5 Bolton Street, London W1J 8BA



From: Agency Dan McEwan [REDACTED]
Sent: 01 June 2015 09:31
To: Edward Ledwidge
Subject: RE: Land South of New Road - A/23/15/OUT

Hello Edward,

I have been asked to prepare the committee report by the 12th June.

To enable Arun's consultant to review your submission, can I have your revised impact statement by Wednesday 3rd June? If not, I have little option but to write this up as a refusal.

Appreciate this is not ideal but we'll both have to work to this timescale unfortunately.

Thanks,

Dan McEwan
Strategic Development
Arun District Council
01903 737776

From: Edward Ledwidge [REDACTED]
Sent: 27 May 2015 11:46
To: Agency Dan McEwan
Subject: RE: Land South of New Road - A/23/15/OUT

Hello Dan

It is unlikely that we will be able to get a submission to you by this Friday as we are still assimilating data in respect of the impact. M&S are also inputting directly to the sequential test work. We will therefore try to get a submission to you next week.

We have not yet had anything from the highway authority by way of consultation response. Perhaps you would let me know status.

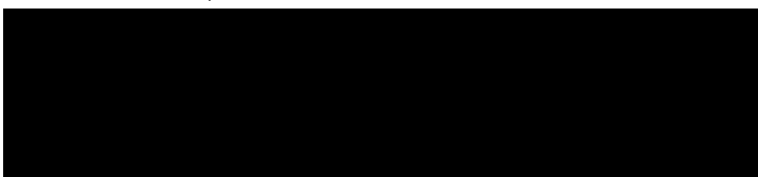
In the meantime, please find attached the Road Safety Audit and designer's response.

Kind regards

Edward

Edward Ledwidge MRTPI
Partner

Montagu Evans LLP
5 Bolton Street, London W1J 8BA



From: Agency Dan McEwan [REDACTED]
Sent: 18 May 2015 10:49
To: Edward Ledwidge
Subject: RE: Land South of New Road - A/23/15/OUT

Thank you Edward.

I'll let DPDS know your timescales to try and ensure a quicker turnaround than before.

As for Waitrose, you'll need to make reasoned assumptions to defend the position you take.

Thanks

Dan McEwan
Strategic Development
Arun District Council
01903 737776

From: Edward Ledwidge [REDACTED]
Sent: 18 May 2015 10:35
To: Agency Dan McEwan
Subject: RE: Land South of New Road - A/23/15/OUT

Morning Dan

We are preparing a response which should be ready for submission 29 May.

Thanks for following up on the Waitrose Store, we have also drawn a blank on this.

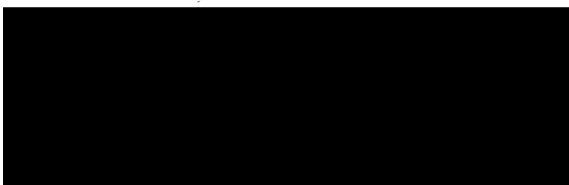
Waitrose have now objected to our planning application. Perhaps you could asked them to shed some light on why they chose to relocate from Littlehampton. There was clearly a commercial viability issue but would be helpful if they could confirm.

Thanks

Edward

Edward Ledwidge MRTPI
Partner

Montagu Evans LLP
5 Bolton Street, London W1J 8BA



From: Agency Dan McEwan [REDACTED]
Sent: 18 May 2015 09:02
To: Edward Ledwidge
Subject: RE: Land South of New Road - A/23/15/OUT

Edward,

I previously requested a timetable from you for an updated Retail Impact Assessment. Please confirm how long you expect this to take.

When we last spoke, you asked whether ADC has any information on the future of the former Littlehampton Waitrose store. At this time, we have no information. If this changes I'll let you know immediately.

Kind Regards,

Dan McEwan
Strategic Development
Arun District Council
01903 737776

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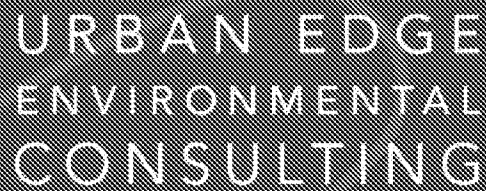
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Land at New Road / Brook Lane, Rustington, West Sussex

May 2015



Land at New Road / Brook Lane, Rustington, West Sussex

Great Crested Newt Survey

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Author:	SP
Checked:	NP
Approved:	NP

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Abbreviations

BAP	Biodiversity Action Plan
EPS	European Protected Species
GCN	Great Crested Newt
HSI	Habitat Suitability Index
NE	Natural England
NPPF	National Planning Policy Framework
SxBRC	Sussex Biological Records Centre
WCA	Wildlife and Countryside Act

0 Executive Summary

0.1 Introduction

- 0.1.1 A great crested newt *Triturus cristatus* survey was carried out for the site of a proposed retail development at Land south of New Road (A259), Rustington in West Sussex (Grid Reference: 505191, 103422).
- 0.1.2 The study was undertaken to establish the presence or likely absence of great crested newt at the site, identify and evaluate potential impacts of the development on great crested newt, and make recommendations accordingly. Four surveys were conducted by a licensed newt ecologist between 23 April and 14 May 2015 in accordance with current good practice guidelines (English Nature, 2001). Three survey techniques were utilised on each survey visit; egg searching, bottle trapping and torchlight surveys.

0.2 Results

- 0.2.1 The data search carried as part of the Preliminary Ecological Appraisal (Middlemarch Environmental, 2014) identified no records of great crested newts within 1km of the site.
- 0.2.2 The site is considered to provide generally good quality terrestrial habitat for great crested newts. Areas of riparian vegetation and the rough grassland which covers the majority of the site provide suitable foraging habitat. Shelter and hibernation opportunities in the form of rubble piles or fissures in the bank sides are plentiful, and the woodland to the south of the site also provides good quality hibernation habitat.
- 0.2.3 The ditch which runs along the southern boundary of the site is approximately 3m wide and 50cm deep, although the depth of silt is likely to be much deeper. The ditch is flowing and appears to be permanently inundated, however, in many areas the flow is almost imperceptible and as a result can be considered as suitable breeding habitat for great crested newts. The ditch contains abundant aquatic vegetation, some of which is suitable for egg laying; including water mint *Mentha aquatica* and water parsnip *Berula erecta*.
- 0.2.4 There are a further five ponds within 500m of the application site. All five ponds were scoped out of the survey due to a combination of their unsuitability for breeding great crested newts, distance from the application site, and the presence of a major barrier to newt dispersal onto the site (the busy A259), or because they could not be accessed during the survey.
- 0.2.5 No great crested newts, eggs or larva were recorded during any of the surveys undertaken in the 2015 survey season. No other amphibian species were recorded during the survey. A reptile survey being carried out at the same time as the newt surveys did not record any great crested newts using artificial refugia or searched log and rubble piles within the site.

0.3 Evaluation

- 0.3.1 It is concluded that great crested newts are likely to be absent from the application site and hence the risk of harm to individual newts during the works is considered to be negligible. It will not be necessary to obtain a Natural England European Protected Species Mitigation licence, or to implement species-specific mitigation for great crested newts prior to carrying out works on the site. As a result, there are no constraints to development (e.g. construction timings or methods) with regards to this species.

0.4 Recommendations

- 0.4.1 Although great crested newts are likely to be absent from the site, its habitats nonetheless provide a resource for amphibians. A number of recommendations are made for improving the range of aquatic and terrestrial habitats within the site for the benefit of amphibians and other wildlife.

1 Introduction

1.1 Background

- 1.1.1 A Preliminary Ecological Appraisal was prepared in November 2014 (Middlemarch Environmental, 2014) to inform a planning application for a proposed retail development on a parcel of land south of New Road (A259), Rustington in West Sussex (Grid Reference: 505191, 103422). It was recommended that a great crested newt *Triturus cristatus* survey be carried out due to the presence of favourable habitats on and near to the site.
- 1.1.2 The Preliminary Ecological Appraisal concluded that habitats within the site are suitable for great crested newt (GCN), and the slow flowing ditch at the site boundary could provide suitable breeding habitat for this species. There are five further ponds within 500m of the site boundary. However, the data search returned no records of GCN previously recorded within 1km of the site. The proposed development at the site will result in the loss of potential foraging and hibernation habitat and could harm or kill individual newts if present during construction. The surveys were therefore required to inform a planning application and determine whether the proposals could negatively impact on GCN, if present.

1.2 Objectives of the Study

- 1.2.1 The approach to establishing the ecological baseline found within this report has been achieved through:
- ❖ A desk study involving a review of records of great crested newts from the local area (1km radius from the centre of the proposed development site);
 - ❖ Information from the Preliminary Ecological Appraisal (carried out by Middlemarch Environmental, 2014) regarding the habitats present within the site boundary and wider area;
 - ❖ Habitat Suitability Indices (HSI) were calculated for the surveyed ponds. These give an indication of the value of a particular pond for breeding great crested newts; and
 - ❖ A presence/absence survey of potential breeding ponds by a licensed newt ecologist, comprising between four and six visits during suitable weather conditions following best practice guidelines.
- 1.2.2 The baseline information was then used to fulfil the following objectives:
- ❖ To determine the presence or likely absence of great crested newts within the waterbodies and, if present, to establish a population estimate;
 - ❖ To identify and evaluate potential impacts of the development on GCN;
 - ❖ To provide sufficient data to inform a European Protected Species Licence application, if required;

- To outline the measures required for avoiding and mitigating negative impacts, including compensation of habitat losses if necessary, and make recommendations for ecological enhancement; and
- To record all other amphibian species observed using the ponds during the survey.

1.1 Survey Area

1.1.1 The northern boundary of the application site is demarcated by New Road (A259), a major trunk road from Littlehampton to Worthing. A spur road off New Road, called Brook Lane, enters the western quarter of the site and leads to Brook Lane Caravan Park. The southern boundary is delineated by Black Ditch, beyond which is the south coast railway line. The wider landscape is dominated by residential and industrial development with Rustington Golf course and open fields to the north and grass fields to the east and west. Figure 1.1 shows the application site boundary.

1.1.2 The application site is dominated by areas of rank semi-improved grassland with tall ruderal vegetation. A narrow strip of broadleaved plantation woodland forms the northern boundary whilst a small area of semi-natural broadleaved woodland is located in the south of the site. A ditch is located along the southern boundary of the site. The topography of the site is generally flat. There are five ponds within 500m of the site (see Appendix I). Four are within Rustington Golf Course to the north of the busy A259; the fifth is c.500m to the west adjacent to the railway line. The GCN survey focused on waterbodies on site and within 500m.

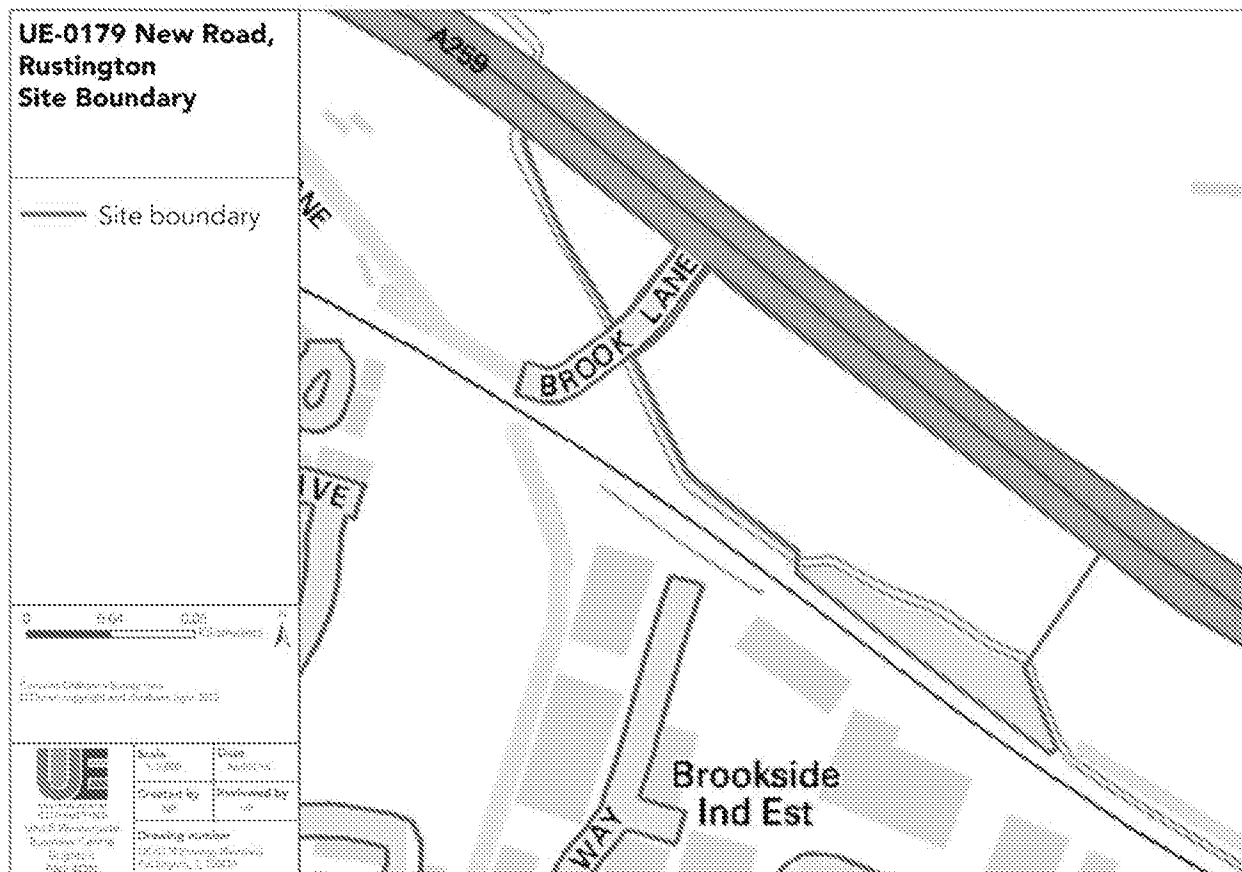


Figure 1.1: Application site boundary

1.2 Proposed Construction Activities

- 1.2.1 Planning consent is being sought to develop the site for an 11,000sqft food retail outlet and a 6,250sqft A3 (TBC) retail unit, together with associated access roads, parking for 210 vehicles and landscaping. A separate but related scheme on land to the east of the site has recently been granted consent. There will also be a requirement to improve existing access to the site which is likely to involve widening of an existing track and construction of a roundabout. The proposals for the site are shown in Figure 1.2.

2 Great Crested Newt Distribution, Ecology and Status

2.1 Distribution

- 2.1.1 There are three native species of newt in the UK. These consist of; smooth newt *Lisotriton vulgaris*, palmate newt *Lisotriton helveticus* and great crested newt (GCN) *Triturus cristatus*.
- 2.1.2 The great crested newt has a widespread distribution in lowland England and Wales but is less frequent in the far south-west and Scotland, in upland areas, intensively farmed landscapes and heavily urbanised areas. It is absent from Ireland. GCN has specific habitat requirements, spending much of its life-cycle on dry land including areas of rough grassland, woodland and hedgerow, and returning to ponds for the breeding season.
- 2.1.3 Great crested newts and their habitats are protected because the species has undergone significant declines over recent decades, primarily due to the loss of suitable breeding ponds as a result of agricultural intensification. The loss of terrestrial and connective habitats due to development has also been detrimental to the species' population. Furthermore, the UK has an internationally important population of great crested newts which have suffered serious decline throughout Europe.

2.2 Ecology

- 2.2.1 The breeding season for great crested newts (which coincides with the survey season) occurs almost immediately after they emerge from their winter dormancy. GCN usually range up to 500m between hibernacula and breeding ponds, however, they have been found to travel up to 1km. GCN are nocturnal and tend to emerge on wet, mild nights when the temperature has risen above 5°C. This usually occurs between February and April, though this is staggered and some newts will not reach their breeding ponds until May.
- 2.2.2 Great crested newts display more specific habitat requirements than other widespread amphibian species. As a general rule, a good breeding pond will not be too shaded by overhanging trees and vegetation, will be located within a network of other ponds, will not contain ducks or fish and contain clean water and abundant aquatic vegetation. Plants such as water mint *Mentha aquatic*, water forget-me-not *Myosotis scorpioides* and water plantain *Alisma Plantago-aquatica* are particularly favoured for egg-laying.
- 2.2.3 Once breeding has taken place the female newts lay eggs individually on the leaves of aquatic or submerged plants. The leaf is then folded around the egg in order to protect it. The amount of time spent in the breeding ponds can vary enormously with some individuals only staying a few days before dispersing back onto land.

- 2.2.4 During the terrestrial phase, great crested newts spend their time foraging and dispersing back to winter habitats. Once the temperature drops below 5°C newts will enter a period of dormancy. GCN will use a variety of hibernation sites, including beneath rubble or dead wood, rabbit burrows, cracks in buildings or even loose soil at the edge of their breeding habitat.

2.3 Status, Legislation and Policy

- 2.3.1 Despite its widespread distribution there is a continuing decline in the great crested newt population. The great crested newt is fully protected under Schedule 5 of the Wildlife and Countryside Act (WCA) 1981 and Schedule 2 of the Conservation of Habitats and Species Regulations 2010, and is a European Protected Species. The legislation makes it an offence to:
- ❖ Intentionally kill, injure or take a GCN.
 - ❖ Possess or control a live or dead GCN, any part of, or anything derived from a GCN.
 - ❖ Intentionally or recklessly damage, destroy or obstruct access to any place that a GCN uses for shelter or protection.
 - ❖ Intentionally or recklessly disturb a GCN while it is occupying a structure or place that it uses for shelter or protection.
 - ❖ Keep, transport, sell or exchange a GCN, or offer or advertise it for sale.
- 2.3.2 The law refers to all stages of a great crested newt's lifecycle, including eggs.
- 2.3.3 Both smooth and palmate newts are partially protected under Schedule 5 of the WCA which prohibits the sale or trade of either species.
- 2.3.4 Local Planning Authorities are obliged to take a wider view of biological conservation when undertaking their functions. Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 states that public authorities must have regard to the conservation of biodiversity. Section 41 of the Act requires the Secretary of State to maintain a list of Habitats and Species of Principal Importance in England; the list includes great crested newt.
- 2.3.5 Furthermore, Government policy is clear that planning decisions must promote protection and recovery of protected and priority species linked to both national and local targets (National Planning Policy Framework – Section 11: Conserving and enhancing the natural environment).

3 Methods

3.1 Guidance and Best Practice

- 3.1.1 The survey was carried out in accordance with current best practice guidelines as issued by English Nature (2001; now Natural England): *Great Crested Newt Mitigation Guidelines*.
- 3.1.2 The following documents are also commonly used for reference:
- ❖ Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10(4), 143-155.
 - ❖ Froglife (2001): *Surveying for Great Crested Newt Conservation*. Advice Sheet 11.
 - ❖ Gent T. and Gibson S. (2003): *Herpetofauna Workers' Manual*.
 - ❖ Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001): *Great Crested Newt Conservation Handbook*.

3.2 Desk Study

- 3.2.1 Sussex Biological Records Centre SxBRC was consulted for records of great crested newts within a 1km radius as part of the Preliminary Ecological Appraisal carried out by Middelmarsh Environmental (2014).

3.3 Habitat Suitability Indices

- 3.3.1 The Habitat Suitability Index (Oldham *et al*, 2000) is a tool used to assess ponds on the basis of their suitability to support breeding great crested newts. The HSI incorporates 10 suitability indices which are considered to affect GCN distribution. These are:
- ❖ Location (in Britain);
 - ❖ Pond area;
 - ❖ Desiccation rate (years out of ten that pond dries);
 - ❖ Water quality (subjective assessment);
 - ❖ Percentage of pond shaded (% of pond margin shaded 1m from the bank);
 - ❖ Number of waterfowl;
 - ❖ Fish population (subjective assessment);
 - ❖ Number of ponds within 1km;
 - ❖ Terrestrial habitat quality; and

- Percentage macrophyte cover.

- 3.3.2 The results of the HSI calculation can then be compared to categorised HSI scores used by the National Amphibian and Reptile Recording Scheme (Oldham *et al*, 2000) to identify the probability of a pond supporting great crested newts. The five categories are summarised in Table 3.1.

Table 3.1: HSI categories

Habitat Quality	HSI Score
Poor	Below 0.5
Below Average	0.5 – 0.59
Average	0.6 – 0.69
Good	0.7 – 0.79
Exceptional	Above 0.8

- 3.3.3 The HSI gives an indication of whether a pond is suitable for breeding great crested newts, however, it should be noted that a low score does not preclude the possibility that GCN are using the pond. A survey of ponds carried out to test the HSI (ARG UK, 2010) found that 20% of ponds which were scored as 'below average' still contained great crested newts, although this increased to an occupation rate of 93% for those ponds scored as 'excellent'. Another important consideration when using the HSI is that pond scores can vary at different times of year, for example, if emergent vegetation is not present (and therefore under recorded) at the time of the HSI assessment.

3.4 Field Surveys

- 3.4.1 The objective of the survey was to establish the presence or likely absence of great crested newts from potentially suitable breeding habitat in and around the application site. This requires a minimum of four survey visits to establish presence/absence, with a further two carried out to establish a population estimate if great crested newts are found.
- 3.4.2 As no GCN were recorded during this survey, a total of four visits were undertaken between 23 April and 14 May 2015. Survey methodology adhered to standard techniques and designs as recommended by English Nature (2001) and Froglife (2001) as follows;
- Egg searching:** for great crested newt eggs was conducted for approximately 20 minutes per water body where submerged vegetation was present. Vegetation was checked for folded leaves. Egg searches were undertaken on all four visits.
 - Bottle trapping:** whereby traps were placed around the pond edges in the evenings and checked the following mornings for great crested newts. Bottle trapping was undertaken on all four survey visits.

- **Torchlight surveys:** using one million candle-power torches were undertaken for approximately 20 minutes per water body on each occasion. Torchlight surveying was undertaken on all four visits.

3.4.3 Surveys were undertaken during suitable weather conditions (mild, with little or no rain and low winds). Surveys were carried out during the optimal survey season, with at least two of the surveys being carried out during the peak great crested newt breeding season which runs from mid-April to mid-May (English Nature, 2001).

3.4.4 A reptile survey which involved the laying and checking of artificial refugia and searching of existing log and rubble piles was carried out at the same time as the newt survey.

3.5 Evaluation of Results

3.5.1.1 Criteria for establishing a population size class assessment are given in English Nature (2001), as follows:

- **'Small'** for maximum counts up to 10;
- **'Medium'** for maximum counts between 11 and 100; and
- **'Large'** for maximum counts over 100.

3.5.1.2 The maximum count is calculated as the peak count by torch survey or bottle-trapping on any one night's survey. This is based on a spring survey of adult GCN numbers only, as egg, larval and juvenile counts can give a misleading indication of overall population size.

3.6 Limitations

3.6.1 A total of six waterbodies are located within 500m of the application site boundary (see Appendix I). "Pond 1" is the Black Ditch which runs along the southern site boundary. Pond 2 is at the western edge of Rustington Golf Course and could be viewed from a footpath; it was scoped out of the survey due to its large size and the presence of numerous waterfowl and fish; which decrease the suitability of the pond for breeding great crested newts. Pond 3 is c.500m west of the site and was also scoped out due to its large size and the presence of waterfowl and fish. Ponds 4, 5 and 6 are located within the golf course on the other side of the A259, a busy dual carriageway, and access could not be gained to assess their suitability or for subsequent survey. The GCN survey was therefore carried out for the Black Ditch ("Pond 1") only.

3.6.2 See Appendix IV for general Legal and Technical Limitations which apply to this document.

3.7 Personnel

3.7.1 Surveys were undertaken by Sam Pottier BSc (Hons) MSc ACIEEM, licenced to undertake surveys for great crested newt under Natural England Class Licence WML-CL08, and Nick Pincombe BA (Hons) MSc CEnv MCIEEM MIEMA. Both have several years' experience of carrying out habitat and protected species surveys.

4 Results

4.1 Desk Study

- 4.1.1 The data search carried as part of the Preliminary Ecological Appraisal (Middlemarch Environmental, 2014) identified no records of great crested newts within 1km of the site.

4.2 Terrestrial Habitat Assessment

- 4.2.1 The site is considered to provide generally good quality terrestrial habitat for great crested newts. Areas of riparian vegetation and the rough grassland which covers the majority of the site provide suitable foraging habitat. Shelter and hibernation opportunities in the form of rubble piles or fissures in the bank sides are plentiful, and the woodland to the south of the site also provides good quality hibernation habitat.

4.3 Aquatic Habitat Assessment

- 4.3.1 The ditch which runs along the southern boundary of the site is approximately 3m wide and 50cm deep, although the depth of silt is likely to be much deeper. The ditch is flowing and appears to be permanently inundated, however, in many areas the flow is almost imperceptible and as a result can be considered as suitable breeding habitat for great crested newts. The ditch contains abundant aquatic vegetation, some of which is suitable for egg laying; including water mint *Mentha aquatica* and water parsnip *Berula erecta*.
- 4.3.2 Due to the linear nature of the ditch it is not suitable for assessment using an HSI calculation (Oldham *et al.* 2000). However, an HSI calculation was undertaken for the other ponds within 500m of the site.

4.4 Surrounding Ponds

- 4.4.1 There are a further five ponds within 500m of the application site (see Appendix I). Four of these are located on the other side of the busy A259 which is likely to represent a major barrier to newt dispersal onto the site. However, the ditch within the site is culverted under the road and flows close to the terrestrial habitat surrounding these ponds. Although it is considered relatively unlikely that newts would move through the culvert on to site due to the good quality habitat close to the offsite ponds, it cannot be entirely ruled out as a possibility.
- 4.4.2 Three of the ponds (Ponds 4, 5 and 6) are located on the golf course and could not be accessed either for HSI assessment or subsequent GCN survey.
- 4.4.3 Pond 2 is a large waterbody close to the golf course which is run as a fishery. It offers poor quality breeding habitat and was not included in subsequent GCN survey.

- 4.4.4 Pond 3 is a large pond located approximately 500m west of the site. This pond is ecologically connected to the site by terrestrial habitat along the railway line. However, the pond is some distance away, again making it relatively unlikely that any newts breeding in the pond would be present on the site. In any case, its size and the presence of waterfowl and fish reduce its suitability as a breeding pond. It was not included in subsequent GCN survey.
- 4.4.5 Table 4.1 gives a description and assessment (where possible) of the waterbodies' suitability to support breeding great crested newts (see Appendix II for full HSI results).

Table 4.1: Pond descriptions

Pond	HSI	Distance	Pond description	Surrounding vegetation
1	n/a	Within the application site boundary	A ditch with imperceptible flow in places and containing abundant aquatic vegetation suitable for egg laying by great crested newts.	
2	0.31 Poor	170m north west	A large fishing lake, surrounded by willow scrub. Very sparse aquatic vegetation limited to occasional stands of pendulous sedge <i>Carex pendula</i> .	
3	0.35 Poor	500m west	A very large ornamental lake on the edges of a housing development. The pond contains numerous wildfowl and is considered highly likely to contain fish.	

4.5 Field Survey

- 4.5.1 Table 4.2 shows a summary of peak counts of amphibian species recorded during the survey of the ditch within the application site boundary ("Pond 1"). The peak count is calculated as the

maximum count for any one species, by any particular survey method on one night's survey. Full survey results are presented at Appendix III.

Table 4.2: Summary of peak count survey results

Visit	Great Crested Newt	Other Newt Species	Frogs / Toads / Others
1	0	0	Fish
2	0	0	Fish
3	0	0	Fish
4	0	0	Fish

- 4.5.2 No great crested newts, eggs or larva were recorded during any of the surveys undertaken in the 2015 survey season. It is concluded that great crested newts are likely to be absent from the ditch within the application site. No other amphibians for example common frog *Rana temporaria* or other newt species were recorded on any of the survey visits.
- 4.5.3 No newts of any species were recorded using the artificial refugia or rubble and log piles surveyed as part of the reptile survey being carried out on the site. It should be noted that terrestrial searches for great crested newts are not considered to be a particularly effective method of survey, and should only be used to provide information in addition to pond surveys.

5 Evaluation

5.1 Summary of Findings

- 5.1.1 The site and its surroundings include six waterbodies potentially suitable for breeding great crested newts. However, five of the ponds were scoped out of the survey due to access issues or subsequent to habitat suitability assessment. The site offers suitable terrestrial habitats for GCN including foraging and hibernation habitats.
- 5.1.2 No great crested newts, eggs or larva were recorded during any of the survey visits undertaken in the 2015 survey season. No other amphibians were recorded during any of the survey visits.

5.2 Presence or Absence of Great Crested Newt

- 5.2.1 It is concluded that the onsite ditch ("Pond 1") is not being used by breeding great crested newts, and that GCN are likely to be absent from the application site. The surveys were carried out during suitable weather conditions, with at least 50% of visits undertaken during the peak breeding season, and are considered to provide a good level of confidence in the absence of great crested newts from the site.

5.3 Impact Assessment and Mitigation

- 5.3.1 It is considered that the ditch at the southern boundary of the site is not being used by breeding great crested newts. As the ditch and its associated bankside vegetation is the only potentially suitable habitat which connects the surrounding water bodies to the site, it is concluded that there is a negligible risk that GCN are present within the application site boundaries. It is therefore concluded that there will be no impact on the local GCN population status, if any are present.
- 5.3.2 Overall it is considered unlikely that great crested newts are present on the site and the risk of harm to individual newts during the works is considered to be negligible. It is concluded that no specific avoidance or mitigation measures need to be implemented, and that a European Protected Species Mitigation licence will not be required for the works.

5.4 Recommended Ecological Enhancements

- 5.4.1 Although great crested newts are likely to be absent from the site, the habitats present provide a potential foraging and hibernation resource for a range of amphibians. This section makes recommendations for the landscaping scheme for the site to improve the available habitats for the benefit of amphibians in general.

- 5.4.2 Although implementation of these recommendations will enhance the site for amphibians and other wildlife, it should be noted that these suggestions are not legally required for the protection of great crested newts or as compensation for the loss of habitats.

Pond creation

- 5.4.3 It is recommended that a pond could be created in the western corner of the site which under the preliminary proposals appears to be undeveloped. This would improve the site's suitability for amphibians and other wildlife post-development. The following design criteria should be considered during creation of the pond to maximise its ecological value:

- ❖ The new pond should be profiled to maximise its suitability for newts and other amphibians. It is recommended that ponds should have gently sloping banks and a variety of water depths, ideally being no more than 1m deep.
- ❖ A planting scheme could include plants suitable for damp margins, such as; amphibious bistort *Persicaria amphibian*, marsh marigold *Caltha palustris*, reed canary grass *Phalaris arundinacea*, brooklime *Veronica beccabunga*, wild angelica *Angelica sylvestris*, purple loosestrife *Lythrum salicaria*, greater bird's-foot trefoil *Lotus uliginosus*, and gypsywort *Lycopus europaeus*. Aquatic vegetation could include native species such as water crowfoot *Ranunculus aquatilis*, water mint *Mentha aquatic* and water forget-me-not *Myosotis scorpioides*, all of which can be used by newts for egg laying.

Terrestrial habitats

- 5.4.4 Great crested newts (and other amphibians) spend a large proportion of the year on land. It is recommended that the landscaping scheme for the development encourages these species by maintaining areas of suitable terrestrial habitats as follows:

- ❖ The area of the site immediately adjacent to the ditch will continue to provide terrestrial habitats for amphibians, including, shelter and foraging opportunities and ecological connectivity through the site. It is recommended that this area remains less intensively managed so that it will continue to provide a resource for wildlife post construction.
- ❖ A hibernaculum could be created close to the recommended new pond in the western corner of the site. Hibernacula are created by partially burying logs and stones in sheltered areas and partially turfing the structure over. This would provide hibernation and shelter opportunities for a range of wildlife including; reptiles and small mammals as well as amphibians.

6 Conclusions

6.1 Introduction

- 6.1.1 A great crested newt survey was carried out for the site of a proposed retail development at Land south of New Road (A259), Rustington in West Sussex.
- 6.1.2 The study was undertaken to establish the presence or likely absence of great crested newt at the site, identify and evaluate potential impacts of the development on great crested newt, and make recommendations accordingly. Four surveys were conducted by a licensed newt ecologist between 23 April and 14 May 2015 in accordance with current good practice guidelines (English Nature, 2001). Three survey techniques were utilised on each survey visit; egg searching, bottle trapping and torchlight surveys.

6.2 Results

- 6.2.1 The data search carried as part of the Preliminary Ecological Appraisal (Middlemarch Environmental, 2014) identified no records of great crested newts within 1km of the site.
- 6.2.2 The site is considered to provide generally good quality terrestrial habitat for great crested newts. Areas of riparian vegetation and the rough grassland which covers the majority of the site provide suitable foraging habitat. Shelter and hibernation opportunities in the form of rubble piles or fissures in the bank sides are plentiful, and the woodland to the south of the site also provides good quality hibernation habitat.
- 6.2.3 The ditch which runs along the southern boundary of the site is approximately 3m wide and 50cm deep, although the depth of silt is likely to be much deeper. The ditch is flowing and appears to be permanently inundated, however, in many areas the flow is almost imperceptible and as a result can be considered as suitable breeding habitat for great crested newts. The ditch contains abundant aquatic vegetation, some of which is suitable for egg laying; including water mint and water parsnip.
- 6.2.4 There are a further five ponds within 500m of the application site. All five ponds were scoped out of the survey due to a combination of their unsuitability for breeding great crested newts, distance from the application site, and the presence of a major barrier to newt dispersal onto the site (the busy A259), or because they could not be accessed during the survey.
- 6.2.5 No great crested newts, eggs or larva were recorded during any of the surveys undertaken in the 2015 survey season. No other amphibian species were recorded during the survey. A reptile survey being carried out at the same time as the newt surveys did not record any great crested newts using artificial refugia or searched log and rubble piles within the site.

6.3 Evaluation

- 6.3.1 It is concluded that great crested newts are likely to be absent from the application site and hence the risk of harm to individual newts during the works is considered to be negligible. It will not be necessary to obtain a Natural England European Protected Species Mitigation licence, or to implement species-specific mitigation for great crested newts prior to carrying out works on the site. As a result, there are no constraints to development (e.g. construction timings or methods) with regards to this species.

6.4 Recommendations

- 6.4.1 Although great crested newts are likely to be absent from the site, its habitats nonetheless provide a resource for amphibians. A number of recommendations are made for improving the range of aquatic and terrestrial habitats within the site for the benefit of amphibians and other wildlife.

References and Bibliography

ARG UK (2010) Advice Note 5: *Great Crested Newt Habitat Suitability Index*. Adapted from Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10(4), 143-155.

English Nature (2001): *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

Froglife (2001): *Surveying for Great Crested Newt Conservation*. Advice Sheet 11.

Gent T. and Gibson S. (2003): *Herpetofauna Workers' Manual*. Joint Nature Conservation Committee, Peterborough.

Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001): *Great Crested Newt Conservation Handbook*, Froglife, Halesworth.

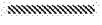
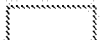
Middlemarch Environmental Ltd (2014): *Land at New Road / Brook Lane, Rustington, West Sussex: Preliminary Ecological Assessment*.

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Appendix I: Waterbodies within 500m

Please see insert.

New Road, Rustington Pond Locations

-  Ditch
-  Pond not accessed
-  Unsuitable pond
-  Site boundary
-  500m buffer

0 0.1 0.2
Kilometers

Contains Ordnance Survey data
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BN2 4CP

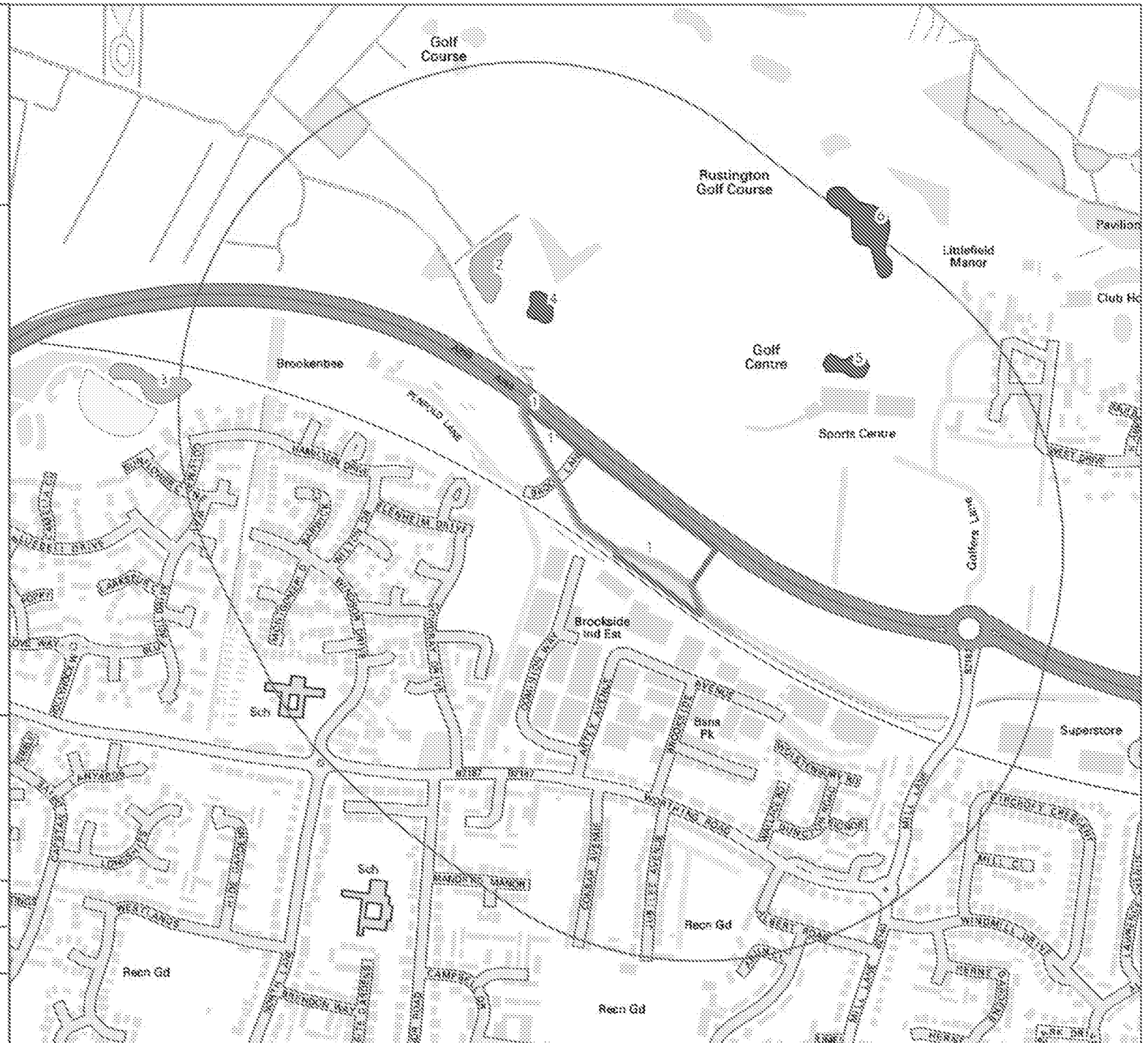
Scale
1:1,000

Date
May 2015

Created by
SP

Reviewed by
MP

Drawing number
UB-0174, Rustington
Ponds, 1.3.5.2015



Appendix II: Habitat Suitability Indices for Accessible Ponds within 500m

	Pond 2		Pond 3	
Variable	Field Score	SI Value	Field Score	SI Value
Location	A	1	A	1
Pond area (m ²)	600	1	600	1
Pond permanence	Permanent	0.9	Permanent	0.9
Water quality	Moderate	0.67	Moderate	0.67
% shaded 1m from bank	90	0.4	50	1
Fowl	Major	0.01	Major	0.01
Fish	Major	0.01	Major	0.01
Pond density (per km ²)	>5	1	>5	1
Terrestrial habitat	Good	1	Good	1
Macrophyte cover %	5	0.36	10	0.41
HSI value	0.59		0.37	
Suitability	Below average		Poor	

Please note that an HSI was not performed on the surveyed ditch (Pond 1) as the HSI methodology is not suitable for this type of waterbody.

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Appendix III: Survey Results

Please see insert.

Pond 1 (Black Ditch)	Temp. °C		Surveyor: SP/NP		Peak	Torch **			Bottle trap			Net			Eggs?	Larvae?	Other species
Survey 1, 23/04/2015	Air:	Water:	Turb.: *	Veg.: *	Count	M	F	J	M	F	J	M	F	J	-	-	-
No. traps: 25	12	10	1	3	0	0	0	0	0	0	0	Not netted			0	0	None
Survey 2, 29/04/2015	Air:	Water:	Turb.: *	Veg.: *	Count	M	F	J	M	F	J	M	F	J	-	-	-
No. traps: 25	13	10	1	4	0	0	0	0	0	0	0	Not netted			0	0	None
Survey 3, 07/05/2015	Air:	Water:	Turb.: *	Veg.: *	Count	M	F	J	M	F	J	M	F	J	-	-	-
No. traps: 25	13	11	1	4	0	0	0	0	0	0	0	Not netted			0	0	None
Survey 4, 14/05/2015	Air:	Water:	Turb.: *	Veg.: *	Count	M	F	J	M	F	J	M	F	J	-	-	-
No. traps: 25	15	9	1	4	0	0	0	0	0	0	0	Not netted			0	0	None

* Turbidity and vegetation cover are noted on a scale of 1 to 5, where 5 denotes highly turbid conditions or a high proportion of vegetation cover.

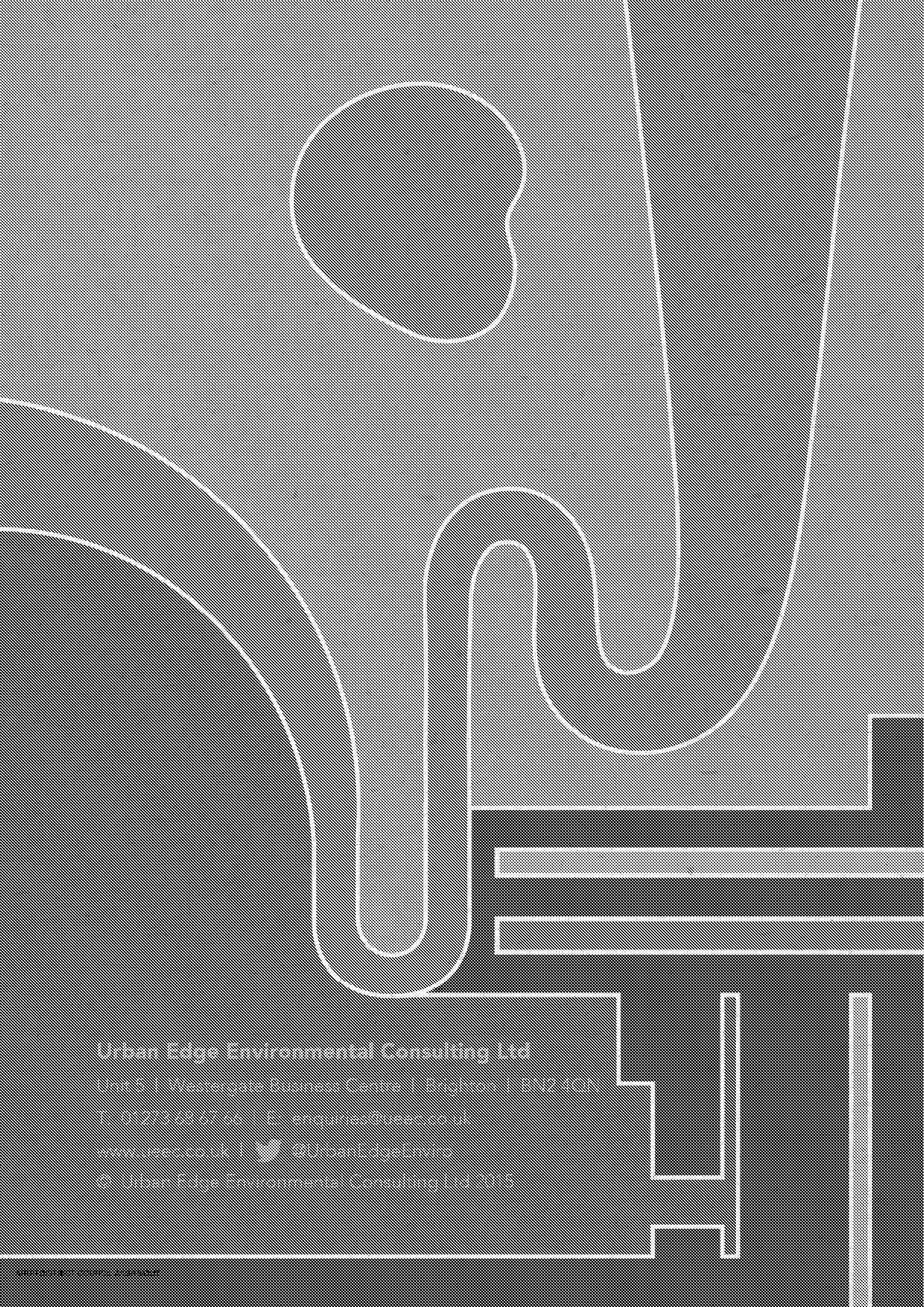
** Torch: Clulite CB2, 1million candle power.

M/F/J: Denotes male, female or juvenile.

Appendix IV: Legal and Technical Limitations

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- Populations of animals and plants are often transient in nature and a single survey visit can only provide a general indication of species present on site. Time of year when the survey was carried out and other variations will also influence the results of the survey (e.g. it is possible that some flowering plant species which flower at other times of the year were not observed). While no biological survey can guarantee that all cues and signs of protected or notable species will be recorded, the authors are confident that key indicators of these species being present on site were noted. The possibility nonetheless exists for other species to be present on the site which were not recorded or otherwise indicated by the survey.
- Any works undertaken as a consequence of the recommendations provided within this report should be subjected to the necessary health & safety checks and full risk assessments.

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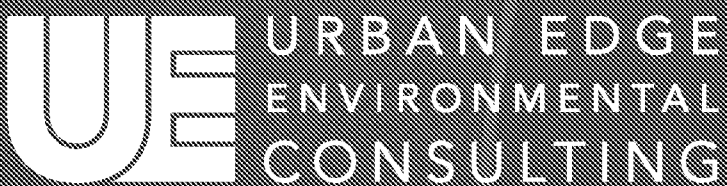
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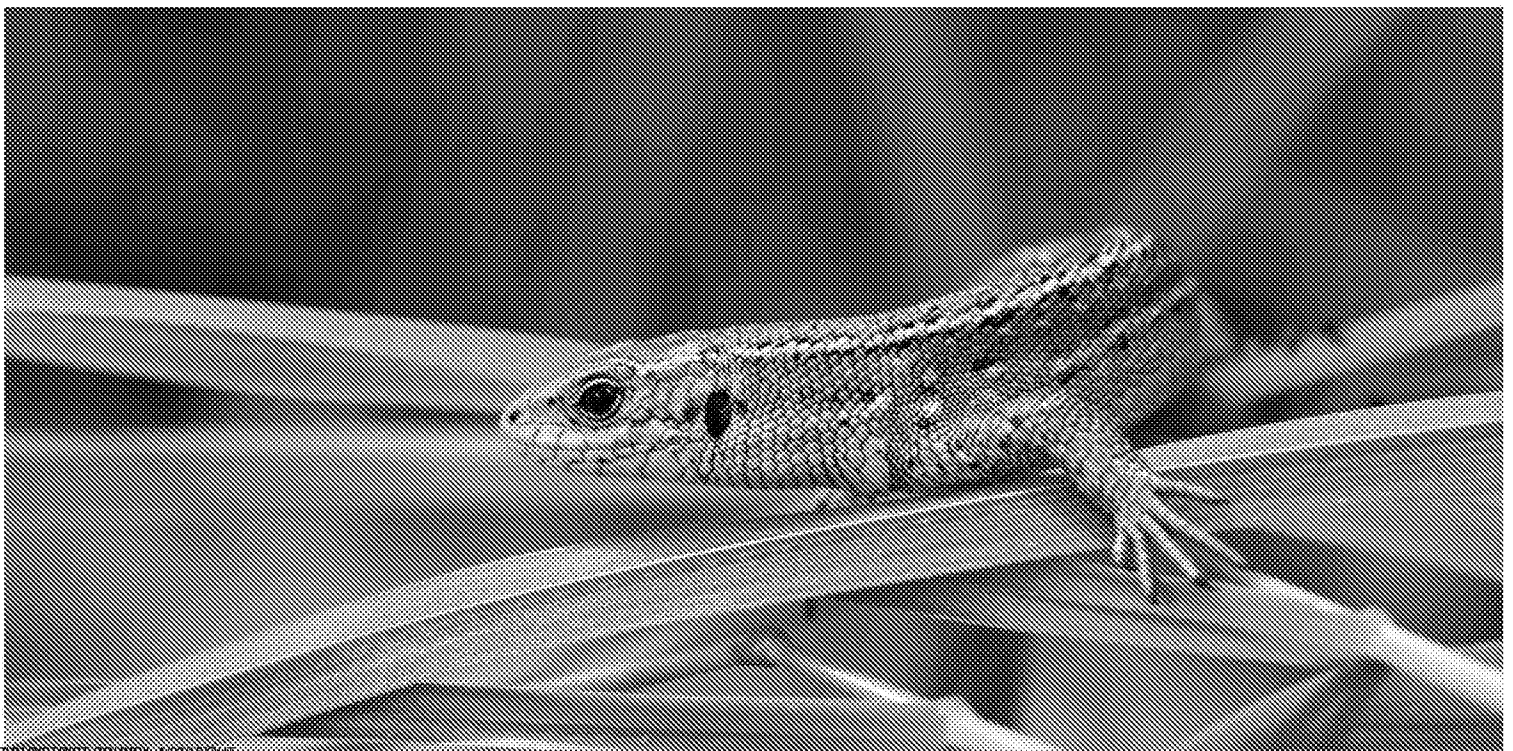
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Land at New Road / Brook Lane, Rustington, West Sussex

Reptile Survey

May 2015



Land at New Road / Brook Lane, Rustington, West Sussex

Reptile Survey

Client:	Montagu Evans LLP
Report No.:	UE-0179 Rustington Reptiles_2_150529
Version:	2
Status:	Final
Date:	May 2015
Author:	SP
Checked:	NP
Approved:	NP

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Abbreviations

ARS	Artificial <i>Refugia</i> Surveys
BAP	Biodiversity Action Plan
BARS	Biodiversity Action Reporting System
CBD	Convention on Biological Diversity
CIEEM	Chartered Institute of Ecology and Environmental Management
IEMA	Institute of Environmental Management and Assessment
LBAP	Local Biodiversity Action Plan
NE	Natural England
NERC	Natural Environment and Rural Communities Act 2006
OS	Ordnance Survey
SxBRC	Sussex Biodiversity Records Centre
VES	Visual Encounter Surveys
WCA	Wildlife and Countryside Act 1981 (as amended)

0 Executive Summary

0.1 Introduction

- 0.1.1 A reptile survey was carried out for the site of a proposed retail development at Land south of New Road (A259), Rustington in West Sussex (Grid Reference: 505191, 103422).
- 0.1.2 The study was undertaken to establish the presence or likely absence of reptiles at the site, identify and evaluate potential impacts of the development on reptiles, and make recommendations accordingly. Seven surveys were undertaken between 17 April and 7 May 2015 in accordance with current good practice guidelines (e.g. Froglife, 1999). Surveys were comprised of walked transects along areas of suitable habitat combined with checks of artificial and pre-existing refuges.

0.2 Results

- 0.2.1 The data search carried as part of the Preliminary Ecological Appraisal (Middlemarch Environmental, 2014) identified no records of great crested newts within 1km of the site yielded records of slow worm and common lizard within 1km of the site, and these species could potentially be using the habitats within the application site boundary.
- 0.2.2 The rough, semi-improved grassland and ruderals throughout the application site are suitable to support foraging and basking reptiles such as grass snake, slow worm and common lizard. The structure of the grassland is tussocky in places with a sward height of 25-35cm during the survey. The site is south-facing with a generally flat topography and mostly unshaded by boundary vegetation, offering good insolation and thermal advantages for basking reptiles.
- 0.2.3 Boundary hedgerows, areas of woodland and log and rubble piles within the site provide shelter and hibernation opportunities. The grassland appears to be infrequently managed with moderately abundant invertebrate (prey) availability, while the ditch at the southern site boundary provides good hunting territory for grass snakes.
- 0.2.4 There is further grassland suitable for reptiles adjacent to the application site's western boundary and suitable habitat is widespread in the surrounding countryside (though this is mostly north of the A259). The site is ecologically connected to offsite areas via the ditch, which runs in culvert under the A259, and railway line to the south.
- 0.2.5 Low populations of the following reptile species were recorded during the survey:
- ❖ Slow worm *Anguis fragilis*; and
 - ❖ Grass snake *Naatrix natrix*.

0.3 Evaluation

- 0.3.1 A low slow worm population was recorded within the application site boundary throughout the survey. The majority of slow worms were recorded in the north of the site adjacent to boundary hedgerows. However, slow worms were also occasionally recorded at the southern boundary of the site suggesting that they are present throughout the suitable habitat which covers the majority of the site.
- 0.3.2 A low grass snake population was recorded using the site intermittently during the survey. Grass snakes were recorded on the ditch bank on two of the visits to the site. It should be noted that this species has an extensive range and as a result the individuals recorded are unlikely to be permanently in residence on the site, but will frequently use it to hunt and potentially for hibernation or egg-laying.
- 0.3.3 It is considered that site clearance and construction activities are likely to result in death or injury to reptiles within the application site boundary. It is therefore recommended that all reptiles within the construction zone are translocated to a suitable receptor site prior to the commencement of works.
- 0.3.4 The translocation should be carried out under a Method Statement once the development plans are finalised, which will detail exclusion fencing specifications, capture methodology and the location and management of a suitable receptor site.

0.4 Recommendations

- 0.4.1 In addition to the above requirements, a range of recommendations are made in relation to the landscape designs for the development in order to maintain a degree of habitat suitability and connectivity through the site for reptiles and other wildlife post-construction.

1 Introduction

1.1 Background

- 1.1.1 A Preliminary Ecological Appraisal was prepared in November 2014 (Middlemarch Environmental, 2014) to inform a planning application for a proposed retail development on a parcel of land south of New Road (A259), Rustington in West Sussex (Grid Reference: 505191, 103422). It was recommended that a reptile survey be carried out due to the presence of favourable habitats on the site.
- 1.1.2 The Preliminary Ecological Appraisal identified the presence of rough grassland throughout the site as suitable habitat for foraging and basking reptiles such as grass snake *Natrix natrix*, slow worm *Anguis fragilis* and common lizard *Zootoca vivipara*. Shelter habitat and hibernation opportunities were also present in the form of woodland, hedgerows, tree lines, log and rubble piles within and adjacent to the application site boundary. The proposed development at the site could harm or kill individual reptiles if present during construction. The surveys were therefore required to inform a planning application and determine whether the proposals could negatively impact on reptiles, if present.

1.2 Objectives of the Study

- 1.2.1 The approach to establishing the ecological baseline found within this report has been achieved through:
- ❖ A desk study involving a review of reptile records from the local area (1km radius from the centre of the proposed development site);
 - ❖ Information from the Preliminary Ecological Appraisal (carried out by Middlemarch Environmental, 2014) regarding the habitats present within the site boundary and wider area;
 - ❖ An assessment of habitat suitability and the presence of ecological features important to reptiles ('hotspots', potential hibernacula, refuges and egg laying sites), to gauge overall site suitability for reptiles and identify the location of transects and optimum positions for artificial refugia to be utilised in the pending field surveys; and
 - ❖ A reptile field survey involving seven visits at different times of the day at a suitable time of year and during favourable weather conditions. This was undertaken across all potentially suitable habitats within the site to establish the presence or likely absence of any reptile species.
- 1.2.2 The baseline information was then used to fulfil the following objectives:
- ❖ To determine the presence or likely absence of reptiles within the survey area;
 - ❖ To establish the baseline assemblage and relative abundance of reptile species;

- » To identify and evaluate potential impacts of the development on reptiles; and
- » To outline the measures required for avoiding and mitigating negative impacts, and make recommendations for ecological enhancement.

1.2.3 Due to the location and habitats of the site in relation to the known geographical distribution and ecology of reptile species, the presence of species protected under the Conservation of Habitats and Species Regulations 2010 (i.e. sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*) was extremely unlikely; a European Protected Species (EPS) survey license was not required.

1.3 Survey Area

1.3.1 The northern boundary of the application site is demarcated by New Road (A259), a major trunk road from Littlehampton to Worthing. A spur road off New Road, called Brook Lane, enters the western quarter of the site and leads to Brook Lane Caravan Park. The southern boundary is delineated by Black Ditch, beyond which is the south coast railway line. The wider landscape is dominated by residential and industrial development with Rustington Golf course and open fields to the north and grass fields to the east and west. Figure 1.1 shows the application site and survey boundary.

1.3.2 The application site is dominated by areas of rank semi-improved grassland with tall ruderal vegetation. A narrow strip of broadleaved plantation woodland forms the northern boundary whilst a small area of semi-natural broadleaved woodland is located in the south of the site. A ditch is located along the southern boundary of the site. The topography of the site is generally flat.

1.4 Proposed Construction Activities

1.4.1 Planning consent is being sought to develop the site for an 11,000sqft food retail outlet and a 6,250sqft A3 (TBC) retail unit, together with associated access roads, parking for 210 vehicles and landscaping. A separate but related scheme on land to the east of the site has recently been granted consent. There will also be a requirement to improve existing access to the site which is likely to involve widening of an existing track and construction of a roundabout. The proposals for the site are shown in Figure 1.2.

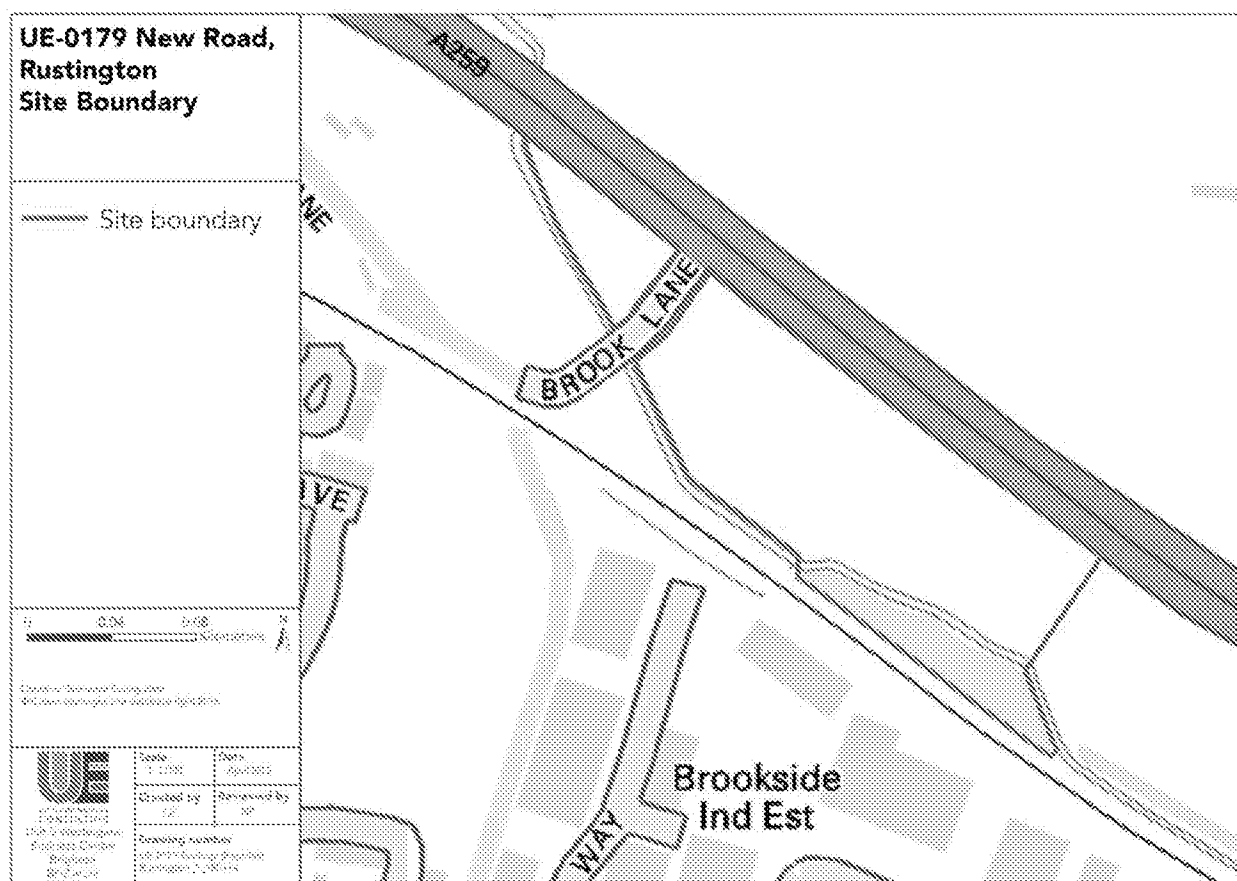


Figure 1.1: Application site boundary

2 Reptile Distribution, Ecology and Status

2.1 Distribution

- 2.1.1 There are six native terrestrial species of reptile found in the UK which are often grouped into two categories; 'widespread' reptiles and rare reptiles.
- 2.1.2 The widespread species consist of two lizard species, viviparous lizard (*Zootoca vivipara*) and slow-worm (*Anguis fragilis*), and two snake species, adder (*Vipera berus*) and grass snake (*Natrix natrix*). Both lizards are found throughout England in a range of habitats, including brownfield sites. Grass snakes are also found throughout England, sometimes encountered in urban areas such as gardens and often associated with water bodies. Adder distribution is patchier and they are scarce in some counties. They are most often found on heathland, meadows and in woodland glades.
- 2.1.3 There are two rare species of reptile, both restricted in their distribution due to their exclusive habitat preferences. Sand lizards (*Lacerta agilis*) are found on heathland and dunes, mainly in southern England (majority of populations are in Dorset, with small numbers elsewhere). Smooth snakes (*Coronella austriaca*) are found exclusively on a number of heathlands in southern England, from Surrey to Dorset.
- 2.1.4 There are some introduced reptile species but these consist of the occasional individual or small localised colonies. The most abundant species that has colonised a number of parts of southern England (although native in the Channel Islands) is the wall lizard (*Podarcis muralis*).

2.2 Ecology

- 2.2.1 Reptiles may be found in a range of habitats, depending on the species, such as heaths, moors, rough grassland and woodland edges. They are also found in semi-urban habitats, including golf courses, brownfield sites, allotments, gardens, road embankments and railway corridors. Grass snakes and adders are transient in behaviour, often travelling several kilometres each year and making use of different habitats and habitat corridors (English Nature, 2004). Adders in particular have a seasonal migration.
- 2.2.2 Reptile activity varies according to the species and is highly seasonal and weather dependent. Generally they hibernate when the temperature becomes unfavourable, usually from October to March and are active outside of these times. However, during the active period their behaviour is affected by weather conditions and breeding activity. Typically they are active in warm, dry weather, but avoid prolonged exposure to the sun on very hot days. British reptiles normally take refuge during heavy rain and are mostly inactive at night.
- 2.2.3 Reptiles only feed during periods of activity and can survive for a considerable time without eating. The diet of British reptiles varies across species as each have specific prey preferences.

Prey abundance can be an indicator of the extent a site can support a species or population. The lizards feed on a wide range of small insects and other invertebrates, including worms, slugs and snails. Prey preference often reflects the habitat and behavioural traits. For example, sand lizards will mostly prey on insects, whilst the more subterranean slow-worm will often feed on slugs.

- 2.2.4 The snakes tend to feed mainly on larger prey items (although juveniles and hatchlings will consume smaller animals), including rodents, amphibians, birds and other reptiles. However, each species' diet varies depending on the time of year and habitat that they frequent. Grass snakes are often associated with water and will also eat fish, whilst smooth snakes prefer dry heaths and predominantly eat other reptiles, including other snakes.

2.3 Status, Legislation and Policy

- 2.3.1 Many reptile populations are declining, partly due to habitat loss, fragmentation and changes in land use. The 'widespread' species have a greater geographical extent than the rare species but are only locally common, and there is evidence to suggest species across the UK are in decline in many areas.

- 2.3.2 All six native reptiles are protected in Britain under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (WCA), as extended by the Countryside and Rights of Way Act 2000 (CROW); see Table 2.1. However, the widespread species (grass snake, common lizard, slow-worm and adder) are only partially protected under Schedule 5 of the WCA. The legislation makes it an offence to intentionally kill or injure any of these species, and/or sell, or attempt to sell, any part of the species, alive or dead.

- 2.3.3 The sand lizard and smooth snake receive greater protection, set out by both European and UK legislation, which gives full protection to the species and its habitat. It is an offence to:

- ❖ Intentionally kill, injure or take a sand lizard or smooth snake;
- ❖ Possess or control a live or dead sand lizard or smooth snake, any part of, or anything derived from it;
- ❖ Intentionally or recklessly damage, destroy, or obstruct access to any structure or place used by a sand lizard or smooth snake for shelter or protection;
- ❖ Intentionally or recklessly disturb a sand lizard or smooth snake while it occupies such a structure or place; and
- ❖ Keep, transport, sell or exchange a sand lizard or smooth snake, or offer or advertise it for sale.

- 2.3.4 Local Planning Authorities are obliged to take a wider view of biological conservation when undertaking their functions. Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 states that public authorities must have regard to the conservation of biodiversity. Section 41 of the Act requires the Secretary of State to maintain a list of Habitats and Species of Principal Importance in England; the list includes all native species of reptile. All six native reptile species are UK and Sussex Biodiversity Action Plan (BAP) priority species.

- 2.3.5 Furthermore, Government policy is clear that planning decisions must promote protection and recovery of protected and priority species linked to both national and local targets (National Planning Policy Framework – Section 11: Conserving and enhancing the natural environment).

Table 2.1: Summary of Wildlife and Countryside Act 1981 (as amended) and the Conservation Regulations 1994 (now consolidated under the Conservation of Species and Habitats Regulations 2010) as they relate to levels of protection for herpetofauna (after Froglife, 1998)

Species	Species Protection				Habitat Protection
	Killing	Injury	Disturbance	Handling	Damage, obstruct or disturb habitat
Adder	•	•			
Grass snake	•	•			
Common lizard	•	•			
Slow-worm	•	•			
Sand lizard	•	•	•	•	•
Smooth snake	•	•	•	•	•

2.4 Guidance and Best Practice

- 2.4.1 There is no definitive guidance on presence / likely absence surveys for reptiles, although new Natural England guidelines are scheduled to be issued in future¹. However, the following documents are commonly used for reference:

- ❖ Hill et al (2007): *Handbook of Biodiversity Methods Survey, Evaluation and Monitoring*;
- ❖ Froglife (1999): *Reptile Survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*; and
- ❖ Gent and Gibson (eds.) (2003): *Herpetofauna Worker's Manual*.

- 2.4.2 The survey presently being reported on was designed with reference to these documents.

¹ At time of writing the latest Reptile Mitigation Guidelines (Natural England, 2011) had been withdrawn following early feedback from ecological consultants. Previously published guidance should be followed in the interim period.

3 Methods

3.1 Desk Study

- 3.1.1 Sussex Biological Records Centre SxBRC was consulted for records of great crested newts within a 1km radius as part of the Preliminary Ecological Appraisal carried out by Middlemarch Environmental (2014).

3.2 Habitat and Site Suitability Assessment

- 3.2.1 The site was assessed for general reptile habitat suitability, the presence of ecological features favourable to reptiles and connectivity to surrounding areas that may be used by reptiles.
- 3.2.2 Although each species has differing habitat and site requirements, general suitability can be gauged from characteristics favoured across species as well as those specific to individual species. Suitability assessment observes a number of characteristics including: site location (in relation to species range), vegetation structure, insolation, aspect, topography, surface geology, connectivity, prey abundance, refuge opportunity, hibernation potential, levels of disturbance and egg-laying potential (Natural England, 2011). This relatively broad approach enables overall suitability to be ascertained.
- 3.2.3 Reptile 'hotspots' and areas of suitable habitat were marked on a map and used to focus field survey effort (Gent and Gibson, 2003). Reptile hotspots are particularly favoured micro habitats, such as ponds, compost heaps, embankments, old stone walls, log and rubble piles, woodland clearings and hedgerows (Froglife, 1999).
- 3.2.4 Identified areas of suitable habitats were targeted for the selection of survey transects and positioning of artificial *refugia*. Appendix I illustrates the position of transects (and therefore *refugia*).

3.3 Field Surveys

- 3.3.1 The objective of the survey was to detect reptile presence. An approach based on the standard presence / likely absence reptile detection protocol (Hill *et al.*, 2007; Froglife, 1999; Gent and Gibson, 2003) was adopted. Surveying combined two main methods: Visual Encounter Surveys (VES) and Artificial '*Refugia*' Surveys (ARS). A combination of the two approaches is the most effective method when surveying for all reptile species (Reading, 1996).
- 3.3.2 VES comprise walked transects along suitable reptile habitats to record any animals foraging or basking in open sunshine. Transect surveys were conducted by looking 3-4 m ahead, focusing on potential basking spots such as rubble piles or banks in sunlight and *refugia* surfaces.

Natural and pre-existing refuges were searched (on top of and if possible beneath). If presence was suspected the spot was revisited to confirm any reptile presence.

- 3.3.3 ARS comprise the laying of artificial *refugia* across the survey area, focused on areas of suitable habitat, which are subsequently checked for use by reptiles. As ectotherms, reptiles use *refugia* to thermo-regulate and are therefore attracted to artificial *refugia* especially in the early and later parts of the day. Artificial *refugia* are approximately 0.5m² in size and made from a range of materials (e.g. flat and corrugated roofing felts, corrugated tins), and provide shelter and thermal advantages to reptiles.
- 3.3.4 In total, 75 artificial *refugia* were used within and adjacent to the proposed site boundary, distributed across approximately 2ha of suitable habitat. Guidelines recommend that 10 mats are used per hectare of land surveyed (mat density during this survey = c.38/ha). To give reptiles time to locate and habituate to new *refugia* in their environment they were placed on 10 April 2015, seven days prior to the start of the main survey period. *Refugia* locations were adjusted during the survey period if locations became overgrown or sub-optimal.
- 3.3.5 Both VES and ARS targeted areas of identified suitable reptile habitat and at potential reptile 'hotspots'. Identified hotspots at the site include the banksides of the Black Ditch, and sections of grassland close to hedgerows, treelines and woodland. An area of woodland at the south-east end of site was not included in the survey. This area was considered to be sub-optimal for reptile survey; although reptiles will use woodland, particularly for shelter and hibernation, the probability of detecting reptiles in the grassland was much greater and so the survey focused on this area.
- 3.3.6 Seven survey visits were conducted during April and May 2015. Survey protocol was in line with Froglife Advice Sheet 10 (Froglife, 1999) and the Herpetofauna Workers Manual (Gent and Gibson, 2003). Although detection is highly variable depending on species, time of year and weather conditions, generally optimal survey conditions consist of; an air temperature between 9 and 18 °C, conducted from 0900 – 1200 and/or 1500 – 1800 (although these optimal timings depend on air temperature at the time), and in the absence of rain and strong wind.
- 3.3.7 Survey data and findings were recorded using a standard template, with the following fields; species count (including sloughed skins or eggs), animal sex (if possible), maturity and location. The following survey covariates were also recorded; time, duration, ground conditions, cloud cover (%), wind speed, precipitation and air temperature (minimum and maximum).
- 3.3.8 A risk assessment was carried out for the field work. Handling of animals is generally not required for this type of survey, although individuals are identified where possible, which can require handling. The risks of encountering venomous species (i.e. adder) were low, and so the risk assessment focused primarily on working practices.

3.4 Evaluation of Results

- 3.4.1 The 'Key Reptile Site Register' (developed by Froglife, 1999) was designed to define and safeguard important sites for the widespread species of reptile (whose habitat is otherwise unprotected by law). The criteria for site selection for the register are shown in Box 1 and Table

3.1. Both provide a basic method for classification and objective evaluation of the relative size and importance of reptile populations based on a presence / likely absence survey (Froglife, 1999). It should be noted that the population size class assessment in Table 3.1 provides an approximate estimate only. For a more precise population assessment to be made, an increased number of survey visits is necessary.

Box 1: Key reptile site criteria (after Froglife, 1999)

To qualify for the Key Reptile Site Register, the site surveyed must meet at least one of the following criteria:

1. Supports three or more reptile species
2. Supports two snake species
3. Supports an exceptional population of one species (see Table 3.1)
4. Supports an assemblage of species with a combined score of at least 4 (see Table 3.1)
5. Does not satisfy 1 - 4 but is of particular regional importance due to local rarity

Table 3.1: Population size class assessment (after Froglife, 1999)

Species	Low Population Score =1	Good Population Score =2	Exceptional Population Score =3
Adder	<5	5 - 10	>10
Grass snake	<5	5 - 10	>10
Common lizard	<5	5 - 20	>20
Slow-worm	<5	5 - 20	>20

3.5 Limitations

3.5.1 No difficulties in gaining access to carry out the surveys were encountered and the entire site was accessible throughout the survey. All survey visits were undertaken during suitable weather conditions and at an appropriate time of year to detect reptile presence. Refugia density within areas of favourable habitat was approximately four-times that recommended by current guidelines. No limitations of consequence were noted

3.5.2 See Appendix II for general Legal and Technical Limitations which apply to this document.

3.6 Personnel

3.6.1 Surveys were undertaken by Sam Pottier BSc (Hons) MSc ACIEEM and Nick Pincombe BA (Hons) MSc CEnv MCIEEM MIEMA. Both have several years' experience of carrying out habitat and protected species surveys.

4 Results

4.1 Desk Study

- 4.1.1 The desk study (Middlemarch Environmental, 2014) yielded records of slow worm and common lizard within 1km of the site and these species could potentially be using the rough grassland and riparian habitats within the application site boundary. However, all four widespread reptile species (common lizard, slow-worm, adder and grass snake) are known to be present in Sussex.

4.2 Habitat and Site Suitability Assessment

- 4.2.1 The rough, semi-improved grassland and ruderals throughout the application site are suitable to support foraging and basking reptiles such as grass snake, slow worm and common lizard. The structure of the grassland is tussocky in places with a sward height of 25-35cm during the survey. The site is south-facing with a generally flat topography and mostly unshaded by boundary vegetation, offering good insolation and thermal advantages for basking reptiles.
- 4.2.2 Boundary hedgerows, areas of woodland and log and rubble piles within the site provide shelter and hibernation opportunities. The grassland appears to be infrequently managed with moderately abundant invertebrate (prey) availability, while the ditch at the southern site boundary provides good hunting territory for grass snakes.
- 4.2.3 There is further grassland suitable for reptiles adjacent to the application site's western boundary and suitable habitat is widespread in the surrounding countryside (though this is mostly north of the A259). The site is ecologically connected to offsite areas via the ditch, which runs in culvert under the A259, and railway line to the south.

4.3 Field Survey

- 4.3.1 The Visual Encounter Surveys and Artificial *Refugia* Surveys (including natural/pre-existing refuges) yielded records of slow worm and grass snake within the application site. A summary of the survey results is displayed in Table 4.1, accompanied by the weather conditions at the time of each visit. A map of indicative locations of reptile sightings is provided in Appendix I.
- 4.3.2 Slow worms were recorded throughout the survey, the majority being located at the northern edge of the site adjacent to the hedgerow which separates the site from the A259; a number of individuals were also recorded within tall ruderal or rough grassland areas close to the edge of the ditch to the south. It is considered that the site supports at least a 'low' population (see Table 3.1) of slow worms.

- 4.3.3 Grass snake was recorded twice during the surveys. On both occasions the individual was not basking but was sighted moving through vegetation along the ditch banks. It is considered that a 'low' population (see Table 3.1) of grass snakes uses the site.

Table 4.1: Summary of field survey results and variables

Survey	1	2	3	4	5	6	7
Date	17 April	20 April	23 April	24 April	29 April	30 April	7 May
Time	11.00	10.00	18.00	08.30	18.30	09.00	18.00
Max. air temp °C	11°C	11°C	13°C	11°C	13°C	11°C	12°C
Min. air temp °C	12°C	11°C	12°C	11°C	12°C	11°C	11°C
Ground conditions	Dry	Dry	Dry	Dry	Damp	Damp	Dry
Cloud cover	60%	10%	20%	100%	50%	10%	40%
Wind speed	Light	None	Moderate	Light	Moderate	Light	Light
Precipitation	None	None	None	None	None	None	None
Common lizard	0	0	0	0	0	0	0
Slow worm	2 male and 1 juvenile	2 juvenile	2 male	2 male, 1 adult (unsexed)	2 male, 1 female	1 male, 1 female	1 female, 1 juvenile
Grass snake	1 adult	None	None	None	1 adult	None	None
Adder	0	0	0	0	0	0	0

5 Evaluation

5.1 Habitat and Site Suitability Assessment

- 5.1.1 In its current state, the rough grassland which covers almost the whole site offers suitable habitat features and vegetation structure for foraging, breeding and dispersing reptiles. The woodland in the southern part of the site, hedgerows and rubble piles also provide potential hibernacula and shelter habitats. The site is connected to areas of suitable grassland habitat in the wider area, particularly the riparian habitat associated with the flowing ditch at the southern site boundary.

5.2 Presence or Absence of Reptiles

- 5.2.1 The survey findings show that slow worms and grass snakes are present within the application site boundary. Both species were recorded in low numbers, however, the aim of this survey was to establish presence or likely absence and greater survey effort would be required in order to obtain a reliable population estimate for each species.
- 5.2.2 Surveys were carried out in suitable weather conditions at an appropriate time of year for reptile surveys and the density of refugia was well above the recommended level (85 refugia were used across approximately 2ha of suitable habitat). The survey results are therefore considered to provide a good level of confidence in the presence of slow worms and grass snakes, and absence of common lizards and adders on the site.
- 5.2.3 The majority of slow worms were recorded within the areas of rough, semi-improved grassland in the north of the site adjacent to the A259. There were also three records obtained from the southern site boundary adjacent to the ditch. As a result it is considered likely that slow worms are present throughout the suitable habitat which covers the majority of the site.
- 5.2.4 Grass snakes were recorded on the ditch bank on two of the visits to the site. It should be noted that this species has an extensive range and as a result the individuals recorded are unlikely to be permanently in residence on the site, but will frequently use it to hunt and potentially for hibernation or egg-laying.

5.3 Impact Assessment and Mitigation

- 5.3.1 It is considered that activities within the construction zone are likely to result in the following impacts, with consequent risk of death or injury to individual reptiles:
- » Temporary or permanent loss of habitats due to vegetation removal, ground clearance, construction activities and landscaping works.

- 5.3.2 It is therefore recommended that a translocation of reptiles to a suitable receptor site, either within the application site boundary or nearby, be carried out prior to site preparation and construction. The translocation should be implemented in accordance with a Method Statement which has been agreed with the Local Planning Authority and relevant wildlife organisations. This is likely to include the following:
- ✧ Dependant on the suitability of the proposed receptor site, habitat management may be required prior to the commencement of the translocation to enhance the receptor site's capacity to support a population of reptiles.
 - ✧ Erection of reptile exclusion fencing surrounding the areas to be translocated. This should be left in-situ following the completion of the translocation, to ensure that reptiles do not re-colonise the site during construction. Its condition should be periodically checked by the project ecologist during the works to ensure that an effective barrier is maintained.
 - ✧ Laying of artificial refugia within the translocation area in order to maximise capture success. This should be done at a higher density than for the presence/absence survey.
 - ✧ At least a 30 day capture period will be required for completion of the translocation. Capture visits should take place daily during suitable weather conditions and should continue until the 30 day period has elapsed. If reptiles are still being captured after this period the translocation should continue until such a time as five consecutive visits are undertaken where there are no reptile captures or sightings.
- 5.3.3 The precise translocation methodology should be prepared once the development layout has been finalised and a receptor site is agreed upon, as this will have a bearing on the areas which will require translocation.

5.4 Recommended Ecological Enhancements

- 5.4.1 In addition to the above mitigation requirements, it is recommended that landscape designs for the proposed development incorporate some or all of the following features in order to provide foraging, hibernation and connective habitats for reptiles and other wildlife post-construction:
- ✧ Buffers of less intensively managed vegetation (e.g. rough grassland or wildflower meadow planting, including the use of tussock-forming grass species) should be maintained alongside the ditch and hedgerows that are retained at the site boundaries, and within the smaller parcel of land within the site to the west of Brook Lane. This will maintain ecological connectivity through the site for reptiles, amphibians and other wildlife.
 - ✧ Creation of hibernacula within areas of retained rough grassland or marginal vegetation, particularly at the edges of the site close to the ditch and hedgerows and within the translocation receptor site. These would provide an additional resource for reptiles and amphibians and can be created by partially burying logs or rubble and covering over with earth or turf.
- 5.4.2 There are likely to be further opportunities to design enhancement recommendations once more detail is available on site layout, drainage and landscaping strategies.
-

6 Conclusions

6.1 Introduction

- 6.1.1 A reptile survey was carried out for the site of a proposed retail development at Land south of New Road (A259), Rustington in West Sussex.
- 6.1.2 The study was undertaken to establish the presence or likely absence of reptiles at the site, identify and evaluate potential impacts of the development on reptiles, and make recommendations accordingly. Seven surveys were undertaken between 17 April and 7 May 2015 in accordance with current good practice guidelines (e.g. Froglife, 1999). Surveys were comprised of walked transects along areas of suitable habitat combined with checks of artificial and pre-existing refuges.

6.2 Results

- 6.2.1 The data search carried as part of the Preliminary Ecological Appraisal (Middlemarch Environmental, 2014) identified no records of great crested newts within 1km of the site yielded records of slow worm and common lizard within 1km of the site, and these species could potentially be using the habitats within the application site boundary.
- 6.2.2 The rough, semi-improved grassland and ruderals throughout the application site are suitable to support foraging and basking reptiles such as grass snake, slow worm and common lizard. The structure of the grassland is tussocky in places with a sward height of 25-35cm during the survey. The site is south-facing with a generally flat topography and mostly unshaded by boundary vegetation, offering good insolation and thermal advantages for basking reptiles.
- 6.2.3 Boundary hedgerows, areas of woodland and log and rubble piles within the site provide shelter and hibernation opportunities. The grassland appears to be infrequently managed with moderately abundant invertebrate (prey) availability, while the ditch at the southern site boundary provides good hunting territory for grass snakes.
- 6.2.4 There is further grassland suitable for reptiles adjacent to the application site's western boundary and suitable habitat is widespread in the surrounding countryside (though this is mostly north of the A259). The site is ecologically connected to offsite areas via the ditch, which runs in culvert under the A259, and railway line to the south.
- 6.2.5 Low populations of the following reptile species were recorded during the survey:
- ❖ Slow worm; and
 - ❖ Grass snake.

6.3 Evaluation

- 6.3.1 A low slow worm population was recorded within the application site boundary throughout the survey. The majority of slow worms were recorded in the north of the site adjacent to boundary hedgerows. However, slow worms were also occasionally recorded at the southern boundary of the site suggesting that they are present throughout the suitable habitat which covers the majority of the site.
- 6.3.2 A low grass snake population was recorded using the site intermittently during the survey. Grass snakes were recorded on the ditch bank on two of the visits to the site. It should be noted that this species has an extensive range and as a result the individuals recorded are unlikely to be permanently in residence on the site, but will frequently use it to hunt and potentially for hibernation or egg-laying.
- 6.3.3 It is considered that site clearance and construction activities are likely to result in death or injury to reptiles within the application site boundary. It is therefore recommended that all reptiles within the construction zone are translocated to a suitable receptor site prior to the commencement of works.
- 6.3.4 The translocation should be carried out under a Method Statement once the development plans are finalised, which will detail exclusion fencing specifications, capture methodology and the location and management of a suitable receptor site.

6.4 Recommendations

- 6.4.1 In addition to the above requirements, a range of recommendations are made in relation to the landscape designs for the development in order to maintain a degree of habitat suitability and connectivity through the site for reptiles and other wildlife post-construction.

References and Bibliography

English Nature (2004): *Reptiles: guidelines for developers*. English Nature, Peterborough.

Froglife (1998): *The planning system and site defence – How to protect reptile and amphibian habitats*. Froglife Advice Sheet 9, Froglife, Halesworth.

Froglife (1999): *Reptile Survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10, Froglife, Halesworth.

Gent, T., and Gibson, S., eds. (2003): *Herpetofauna Workers Manual*. Peterborough: Joint Nature Conservation Committee.

Hill, D., Fasham, M., Tucker, G., Shrewry, M. and Shaw, P(eds) (2007): *Handbook of Biodiversity Methods Survey, Evaluation and Monitoring* (4th edition). Cambridge University Press, Cambridge.

Natural England (2011): *Natural England Technical Information Note TIN102 – Reptile Mitigation Guidelines* (draft). Natural England.

Middlemarch Environmental (2014) *Land at New Road/Brook Lane, Rustington, West Sussex, Preliminary Ecological Assessment*

Reading, C. (1996): *Evaluation of Reptile Survey Methodologies – Final Report*. English Nature Research Reports, No 200. English Nature, Peterborough.

Sewell, D., Griffiths, R.A., Beebee, T.J.C. (2011): *Occupancy modelling of reptiles, in support of the National Amphibian and Reptile Recording Scheme (NARRS)*. Unpublished report to Esmée Fairbairn Foundation.

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Appendix I: Indicative Locations of Reptiles Recorded

Please see following page.

New Road, Rustington Reptile Records

- Grass snake
- Slow worm
- Reptile transects
- ▨ Ditch
- ▬ Site boundary

0 0.025 0.05
Kilometers



Contains Ordnance Survey data
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Date
May 2015

Created by
SP

Reviewed by
MP

Drawing number
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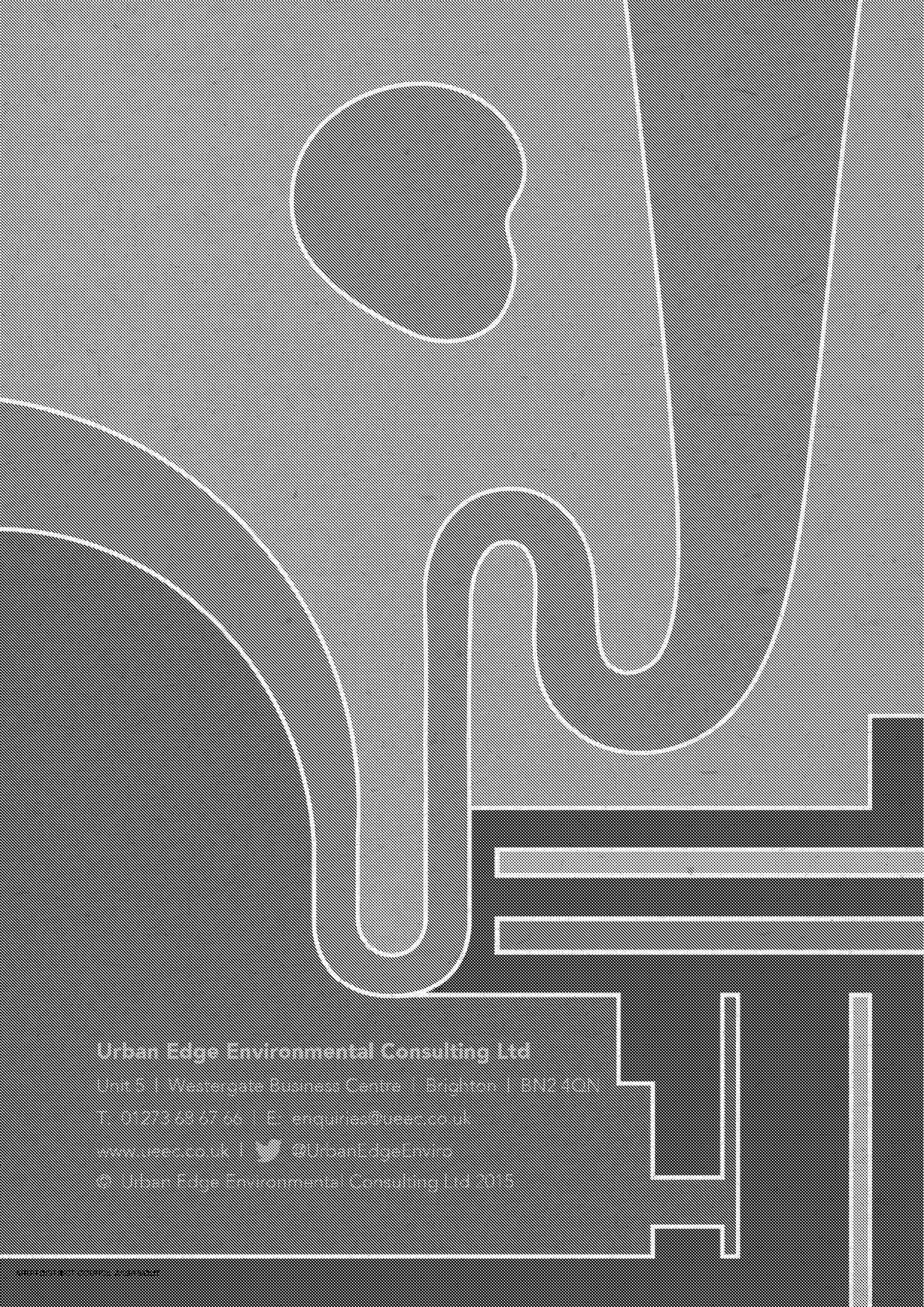


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Appendix II: Legal and Technical Limitations

- This report has been prepared by Urban Edge Environmental Consulting Ltd (UEEC Ltd) with all reasonable skill, care and diligence within the terms of the contract made with the Client to undertake this work, and taking into account the information made available by the Client. No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us.
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- The advice provided in this report does not constitute legal advice. As such, the services of lawyers may also be considered to be warranted.
- Unless otherwise stated in this report, the assessments made assume that the sites and facilities that have been considered in this report will continue to be used for their current planned purpose without significant change.
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- This report has been prepared using factual information contained in maps and documents prepared by others. No responsibility can be accepted by UEEC Ltd for the accuracy of such information;
- Populations of animals and plants are often transient in nature and a single survey visit can only provide a general indication of species present on site. Time of year when the survey was carried out and other variations will also influence the results of the survey (e.g. it is possible that some flowering plant species which flower at other times of the year were not observed). While no biological survey can guarantee that all cues and signs of protected or notable species will be recorded, the authors are confident that key indicators of these species being present on site were noted. The possibility nonetheless exists for other species to be present on the site which were not recorded or otherwise indicated by the survey.
- Any works undertaken as a consequence of the recommendations provided within this report should be subjected to the necessary health & safety checks and full risk assessments.

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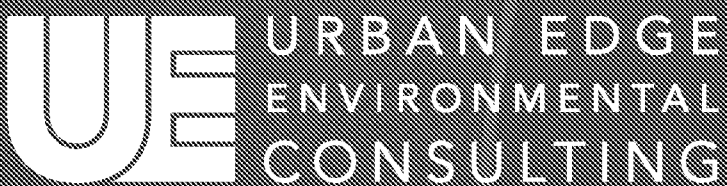
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