

Report Title	Proposed Residential Development, Lane End, Penley, Wrexham – Great Crested Newt Pond Scoping Exercise & Reasonable Avoidance Measures Method Statement
Client	Greenspace Architects Ltd
Date	May 2014

this report was produced by

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Figure 1 – Waterbodies within 500 m of the Proposed Development Site

Appendix 1 – Proposed Habitat Compensation; a Greenpeace Architects plan entitled 'Lane at Lane End, Penley – Proposed Site Layout Plan', drawing no. 11-26 A101 Rev A, dated 01/05/14

1 INTRODUCTION

1.1 Project Background

1.1.1 Marches Ecology was commissioned by Greenspace Architects Ltd to undertake a Great Crested Newt (*Triturus cristatus*) pond scoping exercise (and associated Habitat Suitability Index (HSI) assessment (as per ARG UK 2010)) in relation to a proposed residential development at Lane End, Penley, Wrexham, LL13 OLN (approximate OS Grid Ref: SJ 418 397). A planning application has been submitted to Wrexham County Borough Council (WCBC) for the proposed development.

1.1.2 The pond scoping exercise was undertaken further to review of the following report:

- Solum Environmental (2014). *Land at Lane End, Penley, Wrexham – Ecological Scoping Report*. Prepared on behalf of Cass Associates.

1.1.3 Solum Environmental (2014) concluded the following with regards Great Crested Newts:

'A number of waterbodies and watercourses lie within 500 m of this site. Desktop records exists for GCNs in ponds within 1 km of the north, south and east of the site, some of which are within 500 m of the site boundaries, albeit beyond roads and residential areas. There are no records of GCNs in the nearest ponds which lie 265m+ to the west, near Big Green Farm.

'There is less than 500 m between the nearest pond with GCN present in the south and the ponds to the west of the site, with only a minor road acting as a barrier to dispersal. It is therefore possible that GCN could also be present in these ponds. It is recommended that these ponds should initially undergo an Habitat Suitability Indices (HSI) assessment survey. Should positive results be obtained full optimum-season GCN survey may be required of these ponds'.

1.1.4 Initial consultation was sought with both Matthew Ellis (Senior Species Officer, Natural Resources Wales) and Emma Broad (Ecology Officer, WCBC) by 'phone on 10th March 2014; the requirement for/ scope of the pond scoping exercise/ HSI assessment were agreed with both parties. The pond scoping exercise/ HSI assessment was subsequently completed on 30th April 2014; a site familiarisation visit of the proposed development site was also undertaken on the same day in order to review/ aid interpretation of the Solum Environmental report. Further consultation was sought with both Matthew Ellis and Emma Broad by 'phone on 2nd and 01st and May 2014 respectively. The results of the pond scoping exercise/ HSI assessment were discussed and it was agreed with both parties that a Method Statement detailing Reasonable Avoidance Measures (RAMs) to be implemented prior to and during the construction period would be produced.

1.1.5 This report provides both the results/ interpretation of the pond scoping exercise/ HSI assessment and a RAMs Method Statement; it will be submitted to WCBC as supporting information to the planning application.

1.2 Proposed Development

- 1.2.1 The proposed development is illustrated on a Greenspace Architects plan entitled '*Land at Lane End, Penley – Proposed Site Layout Plan*', drawing no. 11-26 A101, dated 20/12/13. This indicates that the proposed development comprises construction of seven residential dwellings (to include four detached houses, a bungalow, and a pair of semi-detached houses) and associated infrastructure/ gardens. The proposed development site is approximately 0.3 hectares in size.

1.3 Legislation and Policy

- 1.3.1 This sub-section provides a brief summary of key relevant legislation. It should not be considered a comprehensive review and is not meant to be so. It is provided here for information only and is not intended to replace specialised legal advice. It does not replace the text of the legislation, but summarises the salient points.
- 1.3.2 Great Crested Newts are listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive full protection under *Section 9*. The 1981 Act was amended by the *Countryside and Rights of Way Act 2000* (the CROW Act) which further extends the protection. It is also listed on *Annexes II and IV* of the European Union Directive on Natural Habitats and Wild Fauna and Flora (*Council Directive 92/43/EEC*), which is implemented in the UK by *The Conservation of Habitats and Species Regulations 2010* (as amended). It is included on *Schedule 2* of the Habitats Regulations which gives it full protection under *Regulation 40(1)*. The Great Crested Newt is therefore a so-called European Protected Species. The legislation applies to all life stages of the Great Crested Newt, including eggs, larvae, juveniles and adults.
- 1.3.3 Under the above legislation it is an offence to intentionally or recklessly:
- kill, injure or take an individual of such a species;
 - possess any part of such species either alive or dead;
 - damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection or breeding;
 - disturb such a species whilst using any place of shelter or protection; or
 - sell or attempt to sell any such species.
- 1.3.4 The Great Crested Newt is a priority species in the UK Biodiversity Action Plan (UK Biodiversity Steering Group 1995, 1998a & b), which includes objectives and targets to protect and restore newt habitats and to create new sites through habitat management and re-creation. *Section 42* of the *Natural Environment and Rural Communities Act 2006* (NERC Act 2006) provides a list of habitats and species of principal importance for the conservation of biological diversity in Wales. The Great Crested Newt is included on this list. There is also a SAP for Great Crested Newts in Wrexham (Wrexham County Borough 2003). The Wrexham BAP is a supplementary planning guidance document.

1.4 Structure of this Report

1.4.1 The remainder of this report is structured as follows:

Section 2 describes the survey methodology;
Section 3 describes the results;
Section 4 presents the method statement; and
Section 5 gives references.

2 METHODOLOGY

2.1 Site Familiarisation Visit

- 2.1.1 A site familiarisation visit was completed by Max Ellson of Marches Ecology on 30th April 2014; the weather was dry and warm. The aim of this visit was to review/ aid interpretation of the Solum Environmental report, particularly with regards the habitats present and their potential value to Great Crested Newts. This visit did not comprise an (Extended) Phase 1 Habitat Survey or similar; notes made/ photos taken during the visit have been utilised as required within this report (although separate e.g. target notes are not provided).

2.2 Pond Scoping Exercise

- 2.2.1 The pond scoping exercise involved a two-stage process; 1) a detailed desk study to locate ponds on internet-based aerial photography and mapping (including Ordnance Survey¹, Google² and MAGIC³) within 500 m of the proposed development site, and 2) a subsequent walkover survey to field-truth and scope any ponds for their potential to support Great Crested Newts. Where permission was provided ponds were directly accessed, otherwise use was made of public-rights-of-way (PROWs). The walkover survey also aimed to locate any ponds that were not identified during the desk study; it was completed by Max Ellson of Marches Ecology on 30th April 2014.
- 2.2.2 Each pond encountered was subject to a Habitat Suitability Index (HSI) assessment (as detailed within ARG UK (2010)) in relation to its potential value for Great Crested Newts. It should be noted that some of the HSI criteria (including presence/ absence of fish) and water quality (based on invertebrate populations) were assessed in a subjective manner (as, for example, no netting was specifically undertaken to sample for invertebrates or fish). ARG UK (2010) details that assessment of ponds should be completed in the main newt breeding season (March to May). A detailed egg-search was not completed during the pond scoping exercise, however if newt eggs were located they would have been recorded.
- 2.2.3 Potential constraints with regards the pond scoping exercise are limited to the following:
- Access permission was limited to Pond 1; all other ponds were viewed from access boundaries or PROWs. It was not possible to undertake HSI assessments for ponds not directly visible.
 - It is possible that a pond/ ponds could be located within private gardens within the pond scoping area.

¹ <http://www.getamap.ordnancesurveyleisure.co.uk/>

² <https://www.google.co.uk/maps/>

³ <http://www.magic.gov.uk/>

2.3 Contextual Information

2.3.1 Where deemed relevant use has been made of the following additional information:

- Extended Phase 1 Habitat Survey results and Great Crested Newt data/ assessment provided in Solum Environmental (2014).
- Previous Great Crested Newt survey work at Ponds 1, 2, 3, 6, 7, 8, 9, 11, 12, 13 and 16 (see *Figure 1*) (undertaken for unrelated projects in 2008 by Marches Ecology).
- Previous pond scoping exercise at Pond 14 (see *Figure 1*) (undertaken for an unrelated project in 2010 by Marches Ecology).
- Pond scoping/ HSI assessment information for Pond 4 (see *Figure 1*) provided in EVR Ecology (2014). Use of the information contained within this report has been authorised by Roy Evison (Big Green Farm).

3 RESULTS

3.1 Site Description

- 3.1.1 Further to an Extended Phase 1 Habitat Survey completed in January 2014, Solum Environmental (2014) provides the following description of the habitats present on the proposed development site (reference should also be made to the associated Extended Phase 1 Habitat map provided in *Section 5.1* of the report⁴).

'The site for redevelopment.....comprises....[a] parcel of land containing five derelict buildings set within uneven ground with patchy vegetation cover and moss-covered rubble. The site is edged with fencing and scattered broadleaved and conifer trees with a bramble...and bamboo...understorey. The central portion of land contains areas of overgrown amenity grassland....around the former house...To the south lie trimmed areas of bracken..., hard rush..., and tall herb (predominantly willowherb...species) while the remainder of the site has patches of ephemeral/ short perennials and areas of damp bare ground with moss cover and patchy grass. Vegetation clearance and tree felling has taken place across the site and the remains have been piled into mounds, along with mounds of bricks and slates.'

- 3.1.2 During the site familiarisation visit it was established that the site supports significantly less bare ground than indicated on the Extended Phase 1 Habitat map (refer to photos below). These areas mostly support developing tall-herb vegetation; this vegetation is characterised by co-dominant *Urtica dioica* (Common Nettle) and *Galium aparine* (Cleavers) with locally abundant *Aegopodium podagraria* (Ground-elder)/ *Chamerion angustifolium* (Rosebay Willowherb) and lesser amounts of *Cirsium arvense* (Creeping Thistle). Incipient young, low-growing *Rubus fruticosus* agg. (Bramble) is locally frequent throughout this resource. This vegetation is also encroaching into the amenity grassland resource, which is itself unmanaged and rank. Piles of cut brash were confirmed as being frequent across the whole site with the remains of cut tree stumps and piles of stacked bricks/ slates occasionally evident. Remaining scrub/ trees are largely limited to a narrow zone around the majority of the boundary (as indicated on Extended Phase 1 Habitat map, although the current resource appears to be significantly narrower than that shown), as well as within the area demarcated by the building remains in the north of the site (here the scrub appears to be denser than shown on the Extended Phase 1 Habitat map, and is associated with tall-herbs). Occasional mature trees have been retained across the site.

⁴ Solum Environmental (2014) also considers the proposed access road for the development which utilises Lane End (an existing hard surfaced road), e.g. refer to *Section 5.2* of the report. It is understood that some works will also be required to remodel the junction with the A539 – here the footprint is dominated by hard-standing, with three small areas of isolated amenity grassland. Due to the habitats present, the access road proposals have not been considered in detail in this report.



General views of the proposed development site (March 2014), showing developing all-herb vegetation and brash piles being frequent throughout. Lower two photos provide examples of brick and slate piles.



3.2 Pond Scoping Exercise

Desk study

- 3.2.1 The 500 m search area from the proposed development site boundary, as well as the pond numbers that are used below, are shown on *Figure 1*. The desk study identified sixteen known or potential ponds/ waterbodies within the 500 m search area; a summary of these is provided in *Table 1* below.

Table 1 – Summary of Desk-based Pond Scoping Results

Ref.	Approx. OS Grid Reference	Approx. distance to proposed development site	Notes
Ponds within 0 to 250 m of proposed development site			
16	SJ 419 399	240 m	Subject to Great Crested Newt presence/ absence survey by Marches Ecology in 2008 (as part of a separate, unconnected project), during which a medium population⁵ of Great Crested Newts was recorded.
Ponds within 250 to 500 m of proposed development site			
1	SJ 415 397	270 m	Subject to Great Crested Newt presence/ absence survey by Marches Ecology in 2008 (as part of a separate, unconnected project), during which a small population⁶ of Great Crested Newts was recorded.
2	SJ 415 396	265 m	Subject to Great Crested Newt presence/ absence survey by Marches Ecology in 2008 (as part of a separate, unconnected project), during which no amphibians were recorded.
3	SJ 413 397	415 m	Subject to Great Crested Newt presence/ absence survey by Marches Ecology in 2008 (as part of a separate, unconnected project), during which a small population of Great Crested Newts was recorded.
4	SJ 414 394	400 m	Subject to HSI assessment, single netting/ torch and egg survey in March 2014 (EVR Ecology 2014); no amphibians were recorded. HSI concluded to be 'excellent' (0.83).
5	SJ 417 393	355 m	Present on OS, but absent on MAGIC and Google (improved grassland field).
6	SJ 416 391	495 m	Subject to Great Crested Newt presence/ absence survey by Marches Ecology in 2008 (as part of a separate, unconnected project), during which a small population of Great Crested Newts was recorded. GCN record noted at this pond in Solum Environmental (2014).
7	SJ 417 392	470 m	Subject to Great Crested Newt presence/ absence survey by Marches Ecology in 2008 (as part of a separate, unconnected project), during which a small population of Great Crested Newts was recorded. GCN record noted at this pond in Solum Environmental (2014).

⁵ A medium population equates to a maximum count of between 11 and 100 individuals, as defined by English Nature (2001).

⁶ A small population equates to a maximum count of 10 individuals, as defined by English Nature (2001).

Ref.	Approx. OS Grid Reference	Approx. distance to proposed development site	Notes
8	SJ 418 392	420 m	Subject to Great Crested Newt presence/ absence survey by Marches Ecology in 2008 (as part of a separate, unconnected project), during which a small population of Great Crested Newts was recorded. GCN record noted at this pond in Solum Environmental (2014).
9	SJ 420 393	415 m	Present on OS, MAGIC and Google (open water visible but appears heavily shaded).
10	SJ 420 393	410 m	Present on OS, but absent on MAGIC and Google (improved grassland field).
11	SJ 421 396	320 m	Subject to Great Crested Newt presence/ absence survey by Marches Ecology in 2008 (as part of a separate, unconnected project), during which Great Crested Newts eggs were recorded. GCN record noted at this pond in Solum Environmental (2014).
12	SJ 422 396	365 m	Subject to Great Crested Newt presence/ absence survey by Marches Ecology in 2008 (as part of a separate, unconnected project), during which a medium population of Great Crested Newts was recorded. GCN record noted at this pond in Solum Environmental (2014).
13	SJ 422 398	390 m	Subject to Great Crested Newt presence/ absence survey by Marches Ecology in 2008 (as part of a separate, unconnected project), during which a small population of Great Crested Newts was recorded. GCN record noted at this pond in Solum Environmental (2014).
14	SJ 421 400	480 m	Subject to pond scoping exercise by Marches Ecology in 2008 (as part of a separate, unconnected project), which concluded that this pond provides ' <i>sub-optimal aquatic habitat for Great Crested Newts and may not be suitable for breeding</i> '.
15	SJ 418 402	480 m	Present on OS, MAGIC and Google (open water visible).

Walkover survey

- 3.2.2 A description (and photos where possible) of each pond located during the pond scoping exercise is provided in *Box 1* below. Ponds 5 and 10 were confirmed as being absent. Access permission was gained to Pond 1 only. The locations of Ponds 2, 3, 4, 6, 7, 9, 11, 12, 13 and 16 were either viewed from PROWs or access boundaries and are included in *Box 1*. One additional feature was located: Pond 5a – at SJ 417 395 (located approximately 160 m from the proposed development site); a description/ photo is provided in *Box 1*.

Box 1 – Pond Descriptions and Photos

Pond 1. Located on the edge of an amenity playing field, and bordered/ overhung by a hedge and Alder trees (some trees are growing within the pond itself). Shallow. Heavily shaded (65 – 70%). Virtually no marginal vegetation; very occasional Creeping Bent and Water Forget-me-not are only suitable egg-laying plants. Alien invasive New Zealand Pigmyweed is locally abundant.



Pond 2. Located on a ditch-line on the boundary between an arable field and an improved grassland field. Roughly circular 15 m by 15 m. Abundant fish Stickleback known to be present in 2008. Shading limited to 10%. Approximately 85% of the pond is characterised by emergent vegetation (this is dominated by Floating Sweet-grass, with locally abundant Water-cress and Yellow Iris), and lesser amounts of Fine-leaved Water-dropwort and Cyperus Sedge. Abundant potential egg-laying plants present.



Pond 3. A linear pond at the edge of a small copse and arable field. 30 m x 10 m. Floating Sweet-grass occupies approximately 20% of the pond surface. Marginal vegetation mostly limited to side opposite copse where shading limited; comprises emergent Yellow Iris and Soft-rush. Other potential egg laying plants limited to locally frequent Creeping Bent and very occasional Bittersweet. **Great Crested Newt eggs** located.



Pond 4. Location viewed from adjacent PROW. The following description is taken from EVR Ecology (2014): 'A large water body (900 m²). It showed signs of enrichment, with some filamentous algae below the surface, [Least Duckweed] over 50% of the surface. The habitat around the pond is very good on 2 sides, where it abuts...woodland'.



Pond 5a. Location viewed from adjacent PROW. A stand of Bulrush located within a shallow depression within an improved grassland field; no open water visible. Approximately 10 m by 5 m in size. No open water is visible at this location on Google.



Pond 6. Location viewed from adjacent PROW. A small pond in a large hollow dominated by two Crack Willow trees. The margins appear to be shallow and dominated by Floating Sweet-grass. It is heavily shaded by the trees and adjacent scrub.



Pond 7. Location viewed from adjacent PROW.
Pond itself not visible.



Pond 9. Location viewed from adjacent PROW.
Pond itself not visible.



Pond 11. Location viewed from adjacent PROW.
Pond itself not visible.



Pond 12. Location viewed from adjacent PROW. Pond itself not visible.



Pond 13. Location viewed from adjacent PROW. Pond visible but not sufficiently to enable a detailed description.



Pond 16. Location viewed from adjacent PROW. Circular; 20 m diameter. An ornamental garden pond on the edge of formal managed garden. Bordered to west by housing. Locally abundant marginal vegetation around approximately 50% of pond edge including Floating Sweet-grass, occasional Yellow Iris and Bulrush. Occasional floating-leaved vegetation evident. Approximately 30-40% shaded by trees; abundant leaf litter in pond.

Habitat Suitability Index

- 3.2.3 A Habitat Suitability Index (HSI) Scoring Table is provided for Ponds 1, 2, 3, 6, and 16 in Tables 2 to 6 below. All other ponds were not directly accessible, even if viewed from afar it has not been possible to obtain HSI scores.

Table 2 – Habitat Suitability Index Scoring Table, Pond 1

<i>HSI Category</i>	Description	Score
SI₁ Location	Zone A, optimal	1.0
SI₂ Pond area	Approximately 400 m ²	0.8
SI₃ Pond drying	Sometime dries	0.5
SI₄ Water Quality	Poor (estimated – heavily shaded, abundant leaf litter)	0.33
SI₅ Shade	65%	0.9
SI₆ Fowl	Minor (estimated as no evidence recorded)	0.67
SI₇ Fish	Possible (e.g. Stickleback)	0.67
SI₈ Ponds		1.0
SI₉ Terrestrial Habitat	Moderate (connecting hedgerows, nearby copse and some infrequently managed grassland in school grounds, otherwise agricultural/ amenity fields)	0.67
SI₁₀ Macrophytes	5%	0.35
Total HSI score		0.0125057255
10th Root		0.65
Pond suitability		<i>Average</i>

Table 3 – Habitat Suitability Index Scoring Table, Pond 2

<i>HSI Category</i>	Description	Score
SI₁ Location	Zone A, optimal	1.0
SI₂ Pond area	Approximately 225 m ²	0.4
SI₃ Pond drying	Sometimes dries	0.5
SI₄ Water Quality	Moderate (estimate – possible runoff from fields, connected to a ditch)	0.67
SI₅ Shade	10%	1.0
SI₆ Fowl	Minor (estimated as no evidence recorded)	0.67
SI₇ Fish	Major (large Stickleback population recorded in 2008)	0.01
SI₈ Ponds		1.0
SI₉ Terrestrial Habitat	Moderate (connecting hedgerows, nearby copse, otherwise agricultural/ amenity fields)	0.67
SI₁₀ Macrophytes	85%	0.95
Total HSI score		0.0005714497
10th Root		0.47
Pond suitability		<i>Poor</i>

Table 4 – Habitat Suitability Index Scoring Table, Pond 3

<i>HSI Category</i>	Description	Score
SI₁ Location	Zone A, optimal	1.0
SI₂ Pond area	Approximately 300 m ²	0.6
SI₃ Pond drying	Sometimes dries	0.5
SI₄ Water Quality	Poor (estimated – heavily shaded, abundant leaf litter)	0.33
SI₅ Shade	60%	1.0
SI₆ Fowl	Minor (estimated as no evidence recorded)	0.67
SI₇ Fish	Possible (e.g. Stickleback)	0.67
SI₈ Ponds		1.0
SI₉ Terrestrial Habitat	Moderate (connecting hedgerows, adjacent copse, otherwise agricultural/ amenity fields)	0.67
SI₁₀ Macrophytes	20%	0.5
Total HSI score		0.0148877685
10th Root		0.66
Pond suitability		<i>Average</i>

Table 5 – Habitat Suitability Index Scoring Table, Pond 6

<i>HSI Category</i>	Description	Score
SI₁ Location	Zone A, optimal	1.0
SI₂ Pond area	Approximately 100 m ²	0.2
SI₃ Pond drying	Sometimes dries	0.5
SI₄ Water Quality	Moderate (estimate – possible runoff from improved fields)	0.67
SI₅ Shade	60-70%	0.9
SI₆ Fowl	Minor (estimated as no evidence recorded)	0.67
SI₇ Fish	Possible (e.g. Stickleback)	0.67
SI₈ Ponds		1.0
SI₉ Terrestrial Habitat	Moderate (connecting hedgerows, nearby gardens, otherwise agricultural fields)	0.67
SI₁₀ Macrophytes	20%	0.5
Total HSI score		0.0090680045
10th Root		0.62
Pond suitability		<i>Average</i>

Table 6 – Habitat Suitability Index Scoring Table, Pond 16

HSI Category	Description	Score
SI₁ Location	Zone A, optimal	1.0
SI₂ Pond area	Approximately 400 m ²	0.8
SI₃ Pond drying	Rarely	1.0
SI₄ Water Quality	Moderate (garden pond, but heavily shaded with abundant leaf litter)	0.67
SI₅ Shade	40%	1.0
SI₆ Fowl	Minor (minor grazing evidence recorded)	0.67
SI₇ Fish	Absent (in 2008)	1.0
SI₈ Ponds		1.0
SI₉ Terrestrial Habitat	Good (garden habitat)	1.0
SI₁₀ Macrophytes	30%	0.6
Total HSI score		0.2154720000
10th Root		0.86
Pond suitability		Excellent

- 3.2.4 HSI scores relate to a categorical scale and as such ponds can be classed as 'poor', 'below average', 'average', 'good' or 'excellent'. An HSI score is provided for six ponds: Pond 2 is classed as 'poor', Ponds 1, 3 and 6 as 'average', and Pond 16 as 'excellent' in terms of their suitability to support Great Crested Newts and therefore likelihood that this species may be present. Great Crested Newt eggs were recorded at Pond 3. Great Crested Newts have previously (2008) been recorded from Ponds 12 and 16 (medium population) 1, 3, 6, 7, 8, and 13 (small population) and 11 (eggs only).

3.3 Summary of Results and Implications

- 3.3.1 Solum Environmental (2014) concluded that 'No GCNs or evidence of GCNs was found during the initial scoping survey. However the mounds of brick rubble, slate tiles and brash all provide potential refugia for GCNs. The remaining terrestrial habitat is less suitable for GCNs now vegetation clearance has occurred. However prior to this the site would have been highly suitable for amphibians including GCNs.' Further to the site familiarisation visit, during which the site was found to be dominated by developing tall-herb vegetation, with frequent piles of cut brash/ occasional stacked bricks/ slates, it can be concluded that the site offers habitat of potential high value for Great Crested Newts (foraging/ hibernation and dispersal). However the potential presence of Great Crested Newts in terrestrial habitat is governed more by the proximity of a suitable breeding pond than by the quality of the terrestrial habitat.
- 3.3.2 There are no waterbodies within/ immediately adjacent to the proposed development site. Although Great Crested Newts can travel over 1 km from breeding sites most inhabit an area much smaller than this. There is a great deal of variation but Great Crested Newts

commonly move between ponds that are within 250 m of each other (English Nature 2001). There are thirteen known waterbodies (Ponds 1, 2, 3, 4, 6, 7, 8, 9, 11, 12, 13, 14 and 16) within 500 m of the proposed development site, with two further possible waterbodies (Ponds 5a and 15). Only one known waterbody (Pond 16) and one possible waterbody (Pond 5a) are located within 250 m. Pond 16 supported a medium population of Great Crested Newts in 2008; it is located approximately 240 m northeast of the proposed development site, from which it is entirely separated by housing and roads (including the A539). Pond 5a appears to comprise a small stand of Bulrush located within a shallow depression in an improved grassland field; no open water was visible and it is possible that this could be the remains of a waterbody only/ a seasonally damp depression. This feature is considered unlikely to provide suitable breeding habitat for Great Crested Newts.

- 3.3.3 Of the twelve known waterbodies within 250 to 500 m of the proposed development site, nine are known to support/ have supported breeding Great Crested Newts. The closest such waterbody to the proposed development site is Pond 1 (270 m); the majority of the other such waterbodies are at a distance of significantly more than 350 m from the proposed development site. All such ponds are separated from the proposed development site by an intensively farmed agricultural landscape (dominated by large improved grassland fields), albeit with associated hedgerows which could act as dispersal corridors. However there does not appear to be any potential significant dispersal corridors connecting known Great Crested Newt breeding ponds to the proposed development site.
- 3.3.4 No aquatic habitat will be directly or indirectly impacted by the proposed development. The proposals will result in the loss of the majority of the terrestrial habitat provided by the site, although the scheme includes for the provision of gardens/ associated soft landscaping/ plantings which would become available to amphibians following the completion of the construction. It is considered unlikely that any significant obstruction of potential dispersal routes would occur.
- 3.3.5 Considering the above, and principally based on the distances of the waterbodies from the proposed development site (with there being only one known Great Crested Newt pond within 250 m which is separated from the site by housing/ roads), and the overall intensively farmed landscape where the majority of ponds are located, the likelihood of Great Crested Newts utilising the terrestrial habitats within the proposed development site and/ or dispersing across them is considered to be low. As such the risk of disturbance or killing of animals is considered to be low/ negligible.
- 3.3.6 It is therefore proposed in the first instance to implement a non-licensed Reasonable Avoidance Measures (RAMs) scheme in order to minimise/ avoid any impacts on amphibians that may be present in the area. If, during the undertaking of this precautionary RAMs scheme, a Great Crested Newt is found, it is likely to be necessary to suspend all works and consult Natural Resources Wales (NRW). It is possible that in this instance, a NRW 'development' licence might be required in order to lawfully proceed with the works. As such this RAMs Method Statement details a precautionary approach to avoid any impacts on [individual] Great Crested Newts. Subject to appropriate implementation of this RAMs scheme no impacts due to the proposed development on the local Great Crested Newt population are envisaged. The proposed RAMs scheme was discussed by 'phone with Matthew Ellis and Emma Broad on 02nd and 1st May 2014 respectively, and agreed in principle. It was also agreed that three hibernacula features would be provided in small

areas of retained habitat on the western edge of the proposed development site; a specification for these features is provided in the RAMs Method Statement.

4 METHOD STATEMENT

4.1 Identification

4.1.1 This sub-section of the document is provided for reference in the event that any amphibians are found on site during the proposed development/ preparatory works and while the ecologist is not present. It will be discussed with all site personnel prior to the start of work. Identification of any newts that may be found is likely to require the confirmation of a suitably qualified ecologist.

4.1.2 Great Crested Newts are the largest of the three British species of newt; adult males can reach 15 cm in length, with females slightly larger at 18 cm. The upper surface and flanks are dark brown or black and distinctly warty, with a row of white/silver dots present along the side of the head and body. Males develop a characteristic jagged dorsal crest (which has a marked break where the tail joins the body) during the breeding season (although this lies flat when newts are on dry land). The belly is dark orange or yellow with a distinct pattern of black blotches. The throat is whitish and thickly spotted with brown/black.



Male Great Crested Newt on land (above) and female (below).



4.1.3 The Great Crested Newt may be confused with the Smooth Newt (*Lissotriton vulgaris*), although adults of this species are generally smaller (at 10-11 cm). In addition, although the male Smooth Newt develops a dorsal crest, this is unbroken from head to tail and is also undulating, as opposed to jagged. The male has brown/olive green or tan skin with black spots and the female a light brown colouration with darker spots or speckles. The belly of both the male and female is creamy yellow or orange, and the throat slightly lighter, both with dark spots or speckles.



Male Smooth Newts on land.

- 4.1.4 The third species of British Newt is the Palmate Newt (*Lissotriton helveticus*). It is slightly smaller than the Smooth Newt at 7-11 cm in length, although is superficially similar to the Smooth Newt. The two species can be difficult to distinguish, particularly females. The male Palmate Newt has a much less developed dorsal crest (which is also straight edged as opposed to undulating) than a male Smooth Newt. The male Palmate has a 4-7 mm tail filament and black frills / well developed webbing on the hind feet. Typically, the throat of males and females is pure white/pinkish and very rarely spotted (in contrast to Smooth Newts).

4.2 Preparatory

- 4.2.1 Table 7 below provides a summary of the RAMs scheme.

Table 7 – RAMs Scheme Summary

Work Element	Notes
<u>Stage 1: Site walkover</u>	➤ To be undertaken prior to any works being completed – ecologist and site manager. ➤ Exact boundaries to be confirmed. Boundaries to be subject to temporary fencing or hazard tape etc.
<u>Stage 2: Hibernacula construction</u>	➤ Prior to the start of Stage 3; refer to <i>Section 4.5</i>.
<u>Stage 3: Controlled vegetation removal</u>	➤ Under supervision of the ecologist – in conjunction with visual/ hand-searches. ➤ To be completed during mild weather conditions (<i>i.e.</i> above 5 °C temperature for the day and subsequent night).
<u>Stage 4: Visual-/ hand-/ destructive-searches of potential hibernacula</u>	➤ As controlled vegetation removal. Potential hibernacula to be destructively searched and potential for use removed (as far as is reasonably possible). May require use of a mini-digger or equivalent machine.

Work Element	Notes
<u>Stage 5: Site inspection ahead of vegetation/ soil stripping</u>	➤ To be completed by the ecologist. ➤ To be completed during mild weather conditions (as detailed above).
<u>Stage 6: Watching brief</u>	➤ Ecologist on stand-by. ➤ Implementation of general procedures by site personnel/ contractors.

4.2.2 This RAMs Method Statement will be discussed in detail with all personnel/ contractors involved with the proposed construction project before any works are carried out. This will take the form of a toolbox talk/ site meeting to be presented by the ecologist and will identify:

- the known status of Great Crested Newts in the area;
- legal protection afforded Great Crested Newt and associated penalties;
- identification features of Great Crested Newts;
- responsibilities of site personnel/ on-site contractors with regards implementation of a working protocol (to include provision of a watching brief);
- the areas within which activity should be restricted, and
- the procedure to follow should a Great Crested Newt be located during the works.

4.2.3 A signed copy of the method statement will be retained by the ecologist to confirm that site personnel/ contractors have understood the method statement. A copy of this document will then be kept on site for the duration of the construction period. The contact details of the ecologist responsible for implementing this RAMs Method Statement will be provided to all site personnel before the start of work. This method statement must be strictly adhered to by all site personnel/ contractors involved with the proposed works.

4.3 Working Protocol

Introduction

- 4.3.1 Visual-/ hand- and destructive-searches as detailed below will be undertaken by a suitably qualified ecologist (holding a Natural Resources Wales (NRW) Great Crested Newt 'survey and disturbance' licence). To prevent unnecessary potential disturbance to Great Crested Newts (or other amphibians), and exposing them to potential harmful conditions, all visual-/ hand- and destructive-searches will be undertaken during mild weather (*i.e.* above 5 °C temperature for the day and subsequent night).
- 4.3.2 If a Great Crested Newt is found during the searches (*i.e.* by a suitably qualified ecologist) it will be removed from the development site (for reasons of welfare only) to a suitable 'receptor site' (refer to detail on proposed hibernacula in *Section 4.5*). All work would then be suspended and NRW consulted. It is possible that in this instance or if a Great Crested Newt is found at any other time during the work, a NRW 'development' licence may be required in order to lawfully proceed. Other amphibians that may be found during the implementation of the RAMs scheme would also be moved to the 'receptor site'.

- 4.3.3 A watching brief will be maintained by site personnel who have attended a tool-box talk. Should a Great Crested Newt (or other newt) be discovered during the watching brief (*i.e.* when the ecologist is off-site), the following procedure must be undertaken:

- Site personnel/ contractors will halt all work immediately and inform the site manager/ ecologist. A suitably qualified ecologist will provide verbal advice on identification before any action is taken.
- If the ecologist confirms that the amphibian is *e.g.* a Smooth Newt, then site personnel/ contractors can move it to an appropriate location outside the development site (as outlined above), firstly making sure their hands are damp.
- If the ecologist verbally confirms that the amphibian is/ may be a Great Crested Newt then site personnel will wait for the ecologist to arrive to confirm identification and remove it to an appropriate location outside the development site (as outlined above);
- If a Great Crested Newt is confirmed, all works will then be suspended and NRW consulted as appropriate. It is possible that in this instance, a NRW 'development' licence might be required in order to lawfully proceed.

If another amphibian such as a Common Frog (*Rana temporaria*) or Common Toad (*Bufo bufo*) is found during work, and confidently identified, site personnel should move the animal outside the development site (firstly making sure their hands are damp). Appropriate records should be kept of such measures.

Detailed Procedures

- 4.3.4 The RAMs will be completed in a six stage process as summarised in *Table 7* above and detailed below. The amount of vegetation to be cleared will be kept to the minimum required to enable the development to be achieved within the parameters established by this Method Statement.

Stage 1: Site walkover.

- This will be completed by the ecologist and the site manager in order that the boundaries of the development site can be formally agreed. The development site will subsequently be subject to temporary protective fencing (*e.g.* Heras) or bounded by hazard tape (or similar) and all site personnel made aware of its purpose. Subsequently no works (including use of machinery and storage of materials *etc.*) will be undertaken outside of the fence/ tape without the prior knowledge of the ecologist.

Stage 2: Hibernacula construction

- Three hibernacula will be constructed as detailed in *Section 4.5*. These features will be used as the 'receptor site' for any captured amphibians. They will be appropriately fenced/ signed to ensure that site personnel are aware of their purpose.

Stage 3: Controlled vegetation removal

- Vegetation will be initially cut down to approximately 10-15 cm above ground level using hand-held tools (*e.g.* chain saws, strimmer, brush cutter); no wheeled/ tracked machinery should be utilised during this stage.
- Cut logs and brash from trees/ shrubs must be carried by hand (and not *e.g.* dragged across the ground) to a suitable hard-standing area (or *e.g.* skip) outside of the development site, where they can be further processed. Other cut vegetation will be

raked up (using a spring-tined rake) and carried by hand, or blown (using a back-mounted leaf blower) and deposited outside the development footprint.

- Further to the vegetation being cut down to approximately 10-15 cm above ground level a suitably qualified ecologist will then undertake a visual-/ hand-search. This search will concentrate in particular on any potential refugia such as the base of grass tussocks, around the base of tree/ shrub stumps, in leaf litter *etc.* Any potential surface refugia that can be easily moved (such as old brash, bricks, slates, rocks, wood *etc.*) will also be removed from the area (and stored e.g. in a skip); otherwise this will be completed as part of Stage 4.
- Further to this initial vegetation cut and hand-/ visual-search, any remaining vegetation will be cut to ground level, again using hand-held tools, and the arisings removed off-site. Leaf litter will also be raked up and deposited off-site. This will ensure, as far as is reasonably practical, that the surface of the development footprint is unsuitable for Great Crested Newts (although refer to Stage 4 as well).

Stage 4: Visual-/ hand-/ destructive-searches of potential hibernacula.

- Any potential refugia/ hibernacula features exposed during vegetation clearance that could not be moved by hand will be subject to a destructive search by the suitably qualified ecologist. This process will also (as far as is reasonably possible) seek to identify and destructively search potential subterranean hibernacula (such as rabbit burrows, other small mammal holes, crevices, foundations associated with buildings *etc.*) which may conceal newts. It will be assisted by a mini digger or equivalent machine as required. Any removed features will be taken off-site and stored appropriately (e.g. in a skip).
- This stage will also include the removal of any tree/ large shrub bases. These will be carefully extracted from the ground using a digger or similar machine – where considered necessary by the ecologist, this will be undertaken by slowly pulling the shrubs out of the ground (rather than scooping the shrubs and roots up whole with the bucket); the ecologist will supervise this process and will search through any roots/ loose soil *etc.* as the tree/ shrub bases are removed.

Stage 5: Site inspection ahead of vegetation/ soil stripping

- Further to the vegetation/ potential hibernacula clearance, soil-stripping/ site clearance works can be initiated. If these activities are to be undertaken as a separate task to Stages 3/4, an additional detailed visual/ hand-search will be undertaken by an ecologist at the start of each working day when stripping is to be undertaken. Areas that have not been subject to visual/ hand-searches will be clearly marked with hazard tape or similar and site personnel/ contractors will be made aware not to access such areas. Where possible, the soil stripping will incorporate associated ground preparation to ensure that the ground is compacted and that no potential refugia are created within the development site.

Stage 6: Watching Brief

- The ecologist will then remain on stand-by (off-site) during the remainder of the construction works. All site personnel and on-site contractors (who have attended a tool-box talk) will maintain a watching brief throughout the construction works.
- All construction works will be limited to the footprint(s) previously subject to vegetation/ clearance and hand-/ visual-searches (the boundaries of which will be appropriately

fenced/ taped as detailed above); no works (including access by machinery, storage of equipment, materials, tools etc.) will be undertaken outside of this area. In the event that this is required, the ecologist should be contacted in order that additional vegetation clearance and visual-/ hand-searches etc. can be undertaken.

- At the start of each working day (immediately prior to the start of work or e.g. vehicles/ machinery accessing the site) the footprint will be subject to a walkover/ visual search by site personnel/ on-site contractors. When stored materials/ equipment/ temporary structures are moved, they should be lifted vertically, and particular attention paid to determine if any amphibians are located underneath. Should an amphibian be observed during this process, or throughout any aspect of the construction works when the ecologist is off-site, then the procedure as outlined in *paragraph 4.3.3* should be followed.

General Procedures

4.3.5 In addition to those measures outlined above, the following will be undertaken:

- Any excavated soil that may be stored on site overnight should ideally be stored in skips or similar. Where this is not possible soil mounds will be subject to compaction on creation. This will ensure, as far as is practicable, that the creation of potential refugia (i.e. formed by cracks/ un-compacted material) associated with the mounds is limited.
- If the footprint of any soil mound has not previously been subject to a vegetation/ soil strip, a detailed visual/ hand-search will be undertaken by a suitably licensed ecologist prior to installation of the soil mound.
- The ecologist should be contacted prior to dismantling any soil mounds. The ecologist will determine whether these structures should be destructively searched – this will largely depend on factors such as the size/ structure of the mounds, the duration they have been in situ, the time of year, and capture rates up to that point.
- Any loose building materials/ bricks etc. that may be stored on site overnight should ideally be stored in skips or similar. If this is not possible such items must be placed on plastic sheeting on top of a pallet (or similar) so that it is raised off the ground and wrapped in visqueen or similar (to prevent access by newts).
- Ideally, any trenches/ excavations should be back-filled prior to the end of the working day. Where this is not possible, they will incorporate features to ensure newts/ other amphibians have a means of escape (such as leaving a ramp (or similar structure) to allow newts to easily exit). Furthermore a visual search of any trenches/ holes will be undertaken by site personnel at the start of each day to ensure no amphibians are present.
- Machinery, equipment and vehicles must remain on existing hard surfaces, or areas subject to vegetation cutting/ detailed visual-/ hand-searches. No machinery or other materials will be stored on any vegetation overnight.

- Any servicing, repair or refuelling of machinery or vehicles will be carried out on hard-standing and not near any waterbody (in accordance with the appropriate Environment Agency Pollution Prevention Guidelines and all other relevant pollution guidance).
- Any areas of vegetation that may be retained and/or develop within the development footprint should be kept as short as possible (*e.g.* by regular mowing/ strimming).
- The site boundaries will be appropriately fenced to ensure no accidental ingress by machinery into areas of adjacent terrestrial habitat.

Site personnel/ on-site contractors should contact the ecologist if they have any queries regarding this Method Statement.

4.4 Signatories

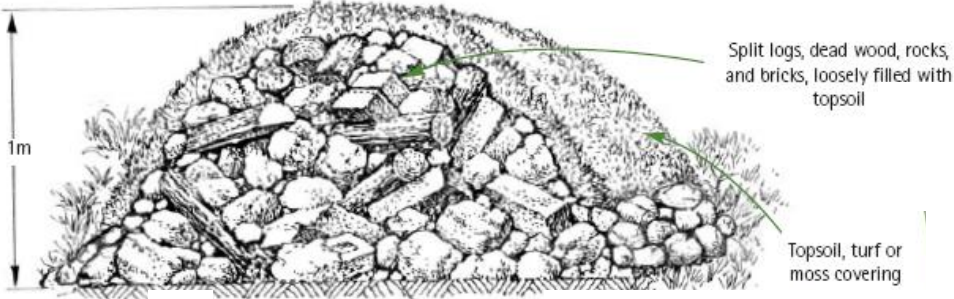
I have read and understand the requirements of this method statement.

Print	Signed	Company	Date

4.5 Proposed Habitat Compensation

- 4.5.1 A Greenspace Architects plan entitled '*Land at Lane End, Penley – Proposed Site Layout Plan*', drawing no. 11-26 A101 Rev A, dated 01/05/14 (included in *Appendix 1*) indicates the location of three proposed hibernacula that are to be established in areas of retained habitat on the western boundary of the site. These will be built prior to the start of construction and will be used as the 'receptor sites' for amphibians captured during implementation of the RAMs scheme. Details concerning construction of the hibernacula are provided in the *Box 2* below.

Box 2 – Amphibian Hibernacula

Rationale
Three hibernacula are to be provided to enhance the site and mitigate for the loss of any refugia/hibernacula from the site due to the proposed development. They will be constructed to the specifications outlined below. As Great Crested Newts are known to spend a considerable proportion of their terrestrial phase either underground or just above ground under refuge sites, it is of great benefit to provide artificial sites, known as hibernacula, which they can utilise. Aside from Great Crested Newts, these will be used by other amphibians e.g. other newts, Common Toads and Common Frogs.
Creation of Hibernacula
Suitable rubble and soil (and/or other materials, refer below) will be used to create a single hibernacula. Dimensions should not be below 2 m length x 1 m width x 1 m height. The construction is straightforward – a mixture of hardcore, brick rubble, logs, sleepers etc, and loose topsoil is piled into a mound which is then covered with a topsoil cap and, ideally, a turf covering. The lower margins of the mound should be exposed to facilitate access. The following diagram is from page 31 of Langton <i>et al</i> (2001).  Split logs, dead wood, rocks, and bricks, loosely filled with topsoil Topsoil, turf or moss covering 1m Constructed on gentle slope to prevent flooding
Management
None required.

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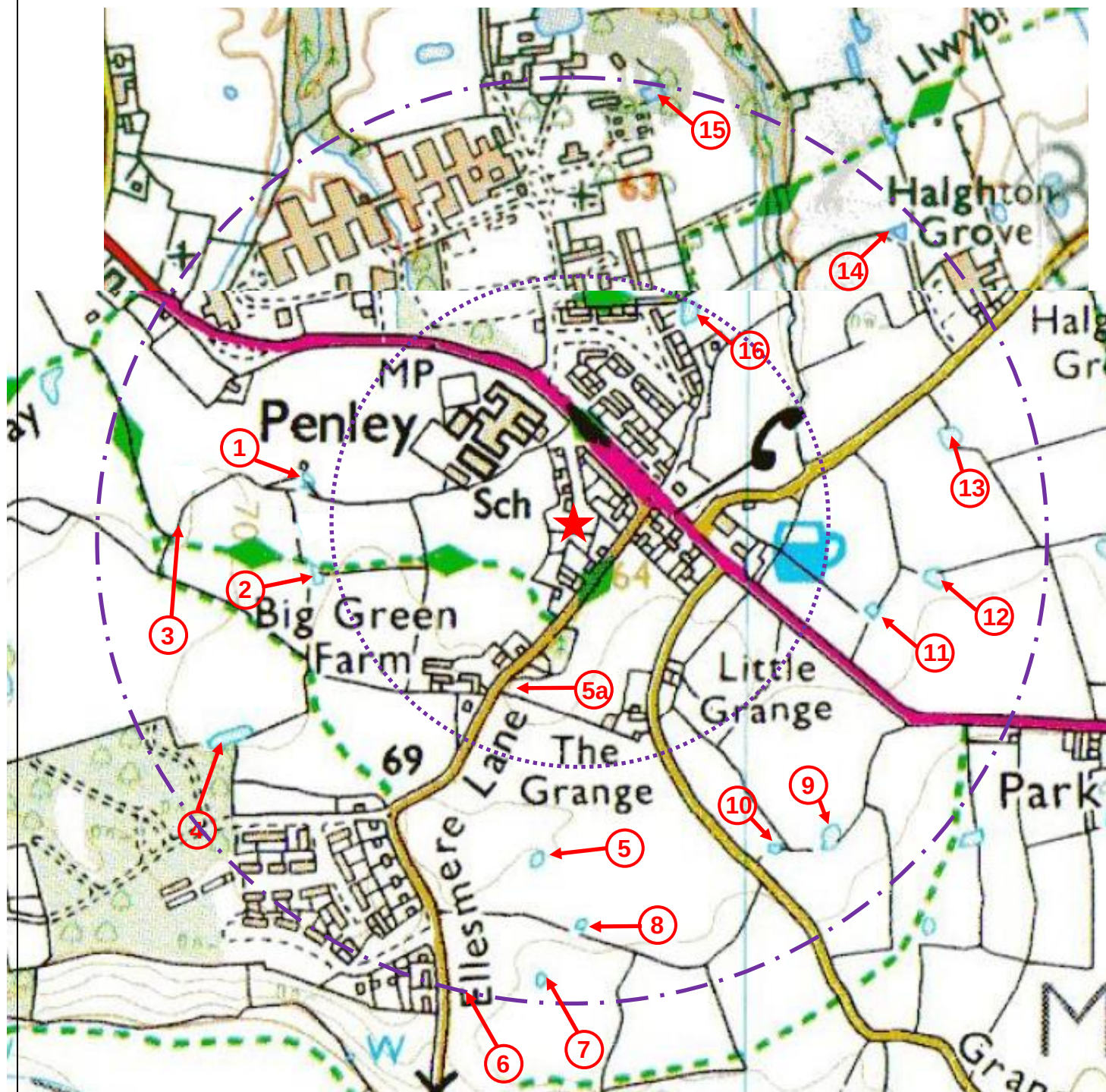
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marches ecology

C253 Proposed Residential Development, Lane End, Penley, Wrexham – Great Crested Newt Pond Scoping Exercise & Reasonable Avoidance Measures Method Statement

Figure 1 – Waterbodies within 500 m of the Proposed Development Site

Drawn by: ME
Checked by: TK
Date: 01.05.14

Key

- ★ Proposed development site (SJ 418 397)
- ① Waterbody
- Approximate 250 m boundary
- - - - - Approximate 500 m boundary

Appendix 1 – Proposed Habitat Compensation

Greenpeace Architects plan entitled '*Lane at Lane End, Penley – Proposed Site Layout Plan*', drawing
no. 11-26 A101 Rev A, dated 01/05/14

