GREAT CRESTED NEWT SURVEY & REPORT at Land at Watt Street/Whalley Road Clitheroe BB7 9ED

> **Client:** Skipton Properties

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Quality Assurance

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13611i	Planning Application Version 1	19/09/2017	David Bodenham	11/04/2017	David Bodenham	11/04/2018	David Bodenham	12/04/017	Toby Thwaites

Summary

A report is required at **Land at Watt Street/Whalley Road** to assess the site's potential for supporting great crested newts, in the form of terrestrial habitat and/or aquatic/breeding habitat. The aim of this report is to investigate the potential impact that the proposed development may have on the local/national great crested newt population. The development proposed on this site is the demolition of the existing mill structure and the construction of residential properties. This includes modifications to the mill pond.

The key piece of legislation protecting Great Crested Newts within the UK is the Conservation of Habitats and Species Regulation 2010. Furthermore these species are also protected in England and Wales under the Wildlife and Countryside Act 1981. If it is discovered that any proposed development may impact upon this species (thus leading to an offence being committed) a mitigation plan must be devised and a GCN Mitigation Licence applied for from the relevant government department (i.e. Natural England in England). Gaining a licence will depend on many variables.

A desktop study was undertaken in order to obtain any records of bats and designated sites within a 2km radius of the site to determine the significance of the area for supporting these protected species. A thorough assessment of the habitat was carried out to assess the site's potential for supporting amphibians. A Habitat Suitability Index (HSI) was calculated for all ponds within 500m, and any ponds with a HSI score >0.5 were surveyed for the absence/presence of great crested newts. Ponds within 500m of the development site, without an effective barrier to dispersal between the pond and the development site, a HSI score >0.5 were subjected presence/absence surveys consisting of bottle trapping, torch surveys, egg searching and hand netting. Two out of the required four surveys have been carried out so far.

No GCN have been recorded within 2km of the site. There are seven non-statutorily designated sites within 2km of the site. The closest is Black Hill, located 645m southeast of the proposed development site. All these designated sites are outside the radius of influence of proposed works at the site and the proposed development will not have an effect on these sites.

The mill pond is the only pond within 500m of the proposed development site. This was judged to have an average suitability for GCN. No GCN were caught or identified so far, nor any evidence of breeding GCN were found in ponds during presence/absence surveys so far. At least two more presence/absence surveys will be required to establish if GCN are present/absent in the mill pond.

Acknowledgements

Thank you to Laura Ashton, Jenny Butler and Amanda Beck for assisting with surveys.

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1. Introduction and Terms of Reference

1.1 Purpose of the Report

- 1.1.1 A report is required at Land at Watt Street/Whalley Road to assess the sites potential for supporting amphibians, in the form of terrestrial habitat and/or aquatic/breeding habitat.
- 1.1.2 The aim of this report is to investigate the potential impact that the proposed development may have on the local/national great crested newt population.

1.2 Terms of Reference

1.2.1 I am instructed by **Skipton Properties** to visit the site and prepare my findings in a report. For this purpose, I have been supplied with a site map.

1.3 Scope of the Report

1.3.1 All amphibian surveys and reports are compiled in line with Natural England's (NE) survey guidelines in accordance with the Joint Nature Conservation Committee's (JNCC) Herpetofauna Workers Manual.

1.4 Details of Proposed Development

1.4.1 The development proposed on this site is the demolition of the existing mill structure and the construction of residential properties. This includes modifications to the mill pond.

1.5 Site Description

- 1.5.1 Land at Watt Street/Whalley Road is situated approximately 8km northwest of Burnley town centre, at grid reference: SD 77579 37276.
- 1.5.2 The site itself is a former mill which has fallen into disrepair over the past 15 years. Immediately surrounding it is a strip of riparian woodland, Sabden Brook which flows beneath the mill structure and a mill pond at the southwest of the site.
- 1.5.3 The site is surrounded predominantly by the village of Sabden to the east and pastoral land and woodland strips to the west. A strip of riparian habitat extends west away from the mill, following Sabden Brook. A map of the site, in relation to the surrounding habitats can be seen in **Appendix 4**.

1.6 Amphibians in the UK

1.6.1 There are seven native species of amphibian in the UK; three Newts (Great Crested, Palmate and Smooth), two Frogs (Common and Pool) and two Toads (Common and Natterjack). Of these, the Great Crested Newt (*Triturus cristatus*), Natterjack Toad (*Epidalea calamita*) and Pool Frog (*Pelophylax lessonae*) are fully protected under UK law. Of these three protected species, Great Crested Newts (GCNs) are much more widespread and likely to be encountered by developers.

1.7 Great Crested Newt Ecology

- 1.7.1 Like all UK amphibians, GCNs rely on water bodies for breeding, but spend the majority of their lives on land. GCNs enter hibernation around mid-October to November and emerge around mid-February (depending on local weather conditions). Adults will then seek out suitable water bodies and begin egg laying around mid-March up until around June. After this the adults will adopt a primarily terrestrial lifestyle until the next breeding season begins. Eggs are laid individually wrapped within the leaves of aquatic vegetation, and larvae will remain in the pond over summer, where they will undertake metamorphosis and emerge as adults around August-October.
- 1.7.2 As GCNs are ectothermic, the timings of their lifecycle are determined by local weather conditions and will vary across the country.
- 1.7.3 GCNs will occupy a range of habitats (primarily woodland, rough grassland, and partially vegetated, well lit, medium sized ponds) including brown field sites, where water bodies have arisen due to past works. GCNs are quick to colonise new ponds and are frequently encountered on development sites.

1.8 Great Crested Newts and the Law

- 1.8.1 The key piece of legislation protecting Great Crested Newts within the UK is the Conservation of Habitats and Species Regulations 2017. Furthermore, these species are also protected in England and Wales under the Wildlife and Countryside Act 1981. Under these legislations, it is an offense to:
 - Capture, kill, disturb or injure great crested newts deliberately.
 - Damage or destroy a breeding or resting place.
 - Obstruct access to their resting or sheltering places (deliberately or by not taking enough care).
 - Possess, sell, control or transport live or dead newts, or parts of them.
 - Take great crested newt eggs.
- 1.8.2 If it is discovered that any proposed development may impact upon this species (thus leading to an offence being committed) a mitigation plan must be devised and a GCN

Mitigation Licence applied for from the relevant government department (i.e. Natural England in England). Gaining a licence will depend on many variables.

2. Methodology

2.1 Desktop Study Methodology

- 2.1.1 A desktop study has been undertaken in order to obtain any records of great crested newts and designated sites within a 2km radius of the site.
- 2.1.2 The Multi-Agency Geographic Information for the Countryside (MAGIC) website and the data search was used to locate any designated sites, both statutory and nonstatutory, such as; Local Nature Reserves (LNR), Ramsar Sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Sites of Special Scientific Interest (SSSIs) that may be present within 2km of the survey site.

2.2 HSI Methodology

- 2.2.1 The site was surveyed by lead surveyor David Bodenham *BSc Ind (Hons), MSc WML–CL08-2016-22385-CLS-CLS* for terrestrial and aquatic GCN potential.
- 2.2.2 The Habitat Suitability Index (HSI) is a system that was developed by Oldham *et al.* (2000) for assessing a water body's potential to support Great Crested Newts (GCN). The HSI is a numerical system that scores a pond between 0 and 1 (**Table 1**) depending on 10 quantifiable factors: geographical location, pond area, permanence, water quality, shade, waterfowl, fish, pond count, terrestrial habitat and macrophytes.

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

Table 1: The Habitat Suitability Index (HSI.

- 2.2.3 <u>Limitations:</u> The HSI for great crested newts is a measure of habitat suitability and therefore does not substitute great crested newt surveys. The general trend is ponds with high HSI scores are more likely to support great crested newts than those with low scores. However, the system is not accurate enough to conclude that ponds with a high score will support great crested newts, or that any pond with a low score will not support great crested newts.
- 2.2.4 There is also a positive correlation between HSI scores and the numbers of great crested newts observed in ponds. As a general rule of thumb, high HSI scores are likely to be linked with greater numbers of great crested newts. However, this general relationship is not adequate to predict the numbers of newts a pond. HSI scoring can be

useful in:

- Evaluating the general suitability of a sample of ponds for great crested newts
- Comparing general suitability of ponds across different areas
- Evaluating the suitability of receptor ponds in a proposed mitigation scheme

2.3 Presence/Absence Survey Methodology

- 2.3.1 Ponds within 500m of the development site, without an effective barrier to dispersal between the pond and the development site, a HSI score >0.5 were surveyed by lead surveyor David Bodenham *BSc Ind (Hons), MSc WML–CL08-2016-22385-CLS-CLS* for the presence/absence of GCN,
- 2.3.2 The site has so far been visited two separate occasions out of the planned four surveys, between the months of mid-March and mid-June. All surveys were undertaken during suitable weather conditions (outlined in the Natural England guidelines); night time temperature of more than 5°C, no/little wind or rain.
- 2.3.3 Four different survey methods can be used during the each of the site visits. On this occasion the three methods used were; bottle trapping, a torch survey and netting.
 - Bottle trapping: Funnel shaped traps (constructed out of 2 litre plastic bottle), are positioned, partially submerged, at 2m intervals around the pond margin and left over night. Traps are checked at sunrise for adults and larvae. It is suggested that this technique is the most reliable for presence/absence surveys, although it requires a minimum water level to work.
 - Egg search: Accessible, aquatic vegetation surrounding the pond margin is searched for developing newt eggs. Great crested newt eggs are yellow and around 3-5mm long. These are laid individually and are usually wrapped within a submerged leaf. For identification purposes the leaf often requires unwrapping, which can increase mortality. Therefore, once an egg has been confirmed as a great crested newt, this method should be terminated.
 - Torch survey: This involves walking around the pond margin at night, with a sufficiently bright torch pointed in to the pond. This is most effecting when the pond is not heavily weeded, and the water is clear.
 - Netting. This involved moving the net through the water and examining a catch fror GCN.
- 2.3.4 <u>Limitations:</u> Counts using the above methods can vary dramatically for a single population from day to day. This can be the result of fluctuating weather conditions, especially temperature. The nature of the pond can affect the count, for example, heavy

weed cover can make it difficult to observe newts during a torch survey. Repeating surveys and using different techniques can compensate for variation in conditions and weather.

3. Results

3.1 Desktop Study Results

3.1.1 The records obtained from the Lancashire Environment Record Network for Land at Watt Street/Whalley Road are as follows:

No great crested newts (*Triturus cristatus*) were recorded within 2km of the proposed development site.

Nature Conservation Designations

1.1.1 Nature designations are split into two types; those that confer some form of statutory protection, and other designations. These designated sites are summarised in the table below:

Site Name Designation		Level	Proximity	Description					
Non-statutory Designated Sites									
Read Heights Pasture	Biological Heritage Site	Local	1495m SW	A large species-rich, semi-natural, neutral grassland field, with a flattish plateau on the north side extending down to Back Lane.					
Lower Barn Wood	Biological Heritage Site	Local	665m SW	Woodland and Scrub (Wd1).					
The Rough	Biological Heritage Site	Local	989m NW	The site comprises dry dwarf shrub heath, acid grassland and mire communities.					
Nick of Pendle Quarry	Biological Heritage Site	Local	1288m NW	Lichens (Lila).					
Black Hill	Biological Heritage Site	Local	645m SE	The site comprises a mosaic of dry dwarf shrub heath and marshy grassland situated 0.75 km south of Sabden.					
Huntroyde Demesne	Biological Heritage Site	Local	1259m SE	The site comprises an estate with a high proportion of broad-leaved woodland.					
Pendle Hill	Biological Heritage Site	Local	977m N	The site comprises an extensive and prominent upland area rising to 557m, situated between the Bowland Fells and the Pennines.					

Table 2: Non-statutory designated sites with 2km of the site.

3.2 HSI Results

3.2.1 The site was surveyed on the 22/02/2018 by David Bodenham BSc Ind (Hons), MSc, Natural England Licence WML-CL08-2016-22385-CLS-CLS. Other surveyors included Jenny Butler and Amanda Beck. Survey conditions are summarised in Table 3.

Survey date	Lead surveyor	Temp	Humidity	Wind speed/Direction		Cloud Cover	Precipitation
22/02/2018	David Bodenham	5°C	54%	BF0	N/A	20%	None

 Table 3: Survey times and weather conditions.

3.2.2 One pond was identified within the survey area (**Appendix 1**) and HSI surveys were carried out. The result of the HSI survey is presented in **Table 4** below.

Table 4. The Habitat Suitability Index (HSI) results for ponds surveyed within 500m of Land at WattStreet/Whalley Road.

Pond Ref	Grid Ref	HSI Score	GCN Suitability
P1	SD 77553 37227	0.62	Average

3.3 Presence/Absence Survey Results

3.3.1 The site was surveyed from the 22/03/2018 to the 11/04/2018 by lead surveyor David Bodenham *BSc Ind (Hons), MSc, Natural England Licence WML–CL08-2016-22385-CLS-CLS*. Other surveyors included Jenny Butler and Amanda Beck Survey conditions are summarised in **Table 5**. Please note at least two more surveys are to be undertaken.

Survey date	Bottle survey start time	Torch survey start time	Temp bottle survey	Temp torch survey	Wind speed/Direction	Cloud Cover	Precipitation
22/03/2018 – 23/03/2018	19.00	20:30	7.3°C	6°C	BF0	70%	None
10/04/2018 - 11/04/2018	19:30	21:00	6°C	6°C	BF0	100%	None

Table 5: Survey times and weather conditions.

3.3.2 Presence/absence surveys were undertaken during suitable weather conditions. The minimum night temperature was between 7.3°C and 6°C and the night time

temperature during the torchlight surveys ranged from 6° C to 6° C. Two species of amphibian were recorded in the survey area during the GCN Population Survey: One palmate newt was recorded 23/03/2018 and frogs were recorded on the 22/03/2018. So far, no GCN have been confirmed in the mill pond.

4. Discussion and Analysis of Results

4.1 GCN Records and Nature Conservation Designations

- 4.1.1 No GCN have been recorded within 2km of the site.
- 4.1.2 There are seven non-statutorily designated sites within 2km of the site. The closest is Black Hill, located 645m southeast of the proposed development site. All these designated sites are outside the radius of influence of proposed works at the site and the proposed development will not have an effect on these sites.

4.2 HSI Survey

4.2.1 The mill pond is the only pond within 500m of the proposed development site. This was judged to have an average suitability for GCN.

4.3 Presence/absence Surveys

4.3.1 No GCN were caught or identified so far, nor any evidence of breeding GCN were found in ponds during presence/absence surveys so far. At least two more presence/absence surveys will be required to establish if GCN are present/present in the mill pond.

5. Conclusions and Recommendations

5.1 After conducting a thorough HSI survey, detailed Desktop Study, the mill pond was considered to have potential for supporting breeding GCN. Two presence/absence surveys so far, have found no GCN. Two further surveys are required to give an accurate understanding of if GCN are present or absent.

5. References

Amphibian Habitat Management Handbook. 2011. Baker J., et al.

Great Crested Newt Conservation Handbook. 2001. Langton T., Beckett C. & Foster J. FROGlife.

Great Crested Newt Mitigation Guidelines. 2001. Whitehurst J. English Nature (Natural England).

Herpetofauna workers handbook. 2003. Gent T. & Gibson S. Joint Nature Conservation Committee.

Websites:

Amphibian and Reptile Conservation (ARC). http://www.arc-trust.org/>.

Google Maps. <http://maps.google.co.uk/>

Herpetofauna Conservation Trust (HCT). < http://www.herpconstrust.org.uk/index.php >.

Multiple-Agency Geographic Information for the Countryside (MAGIC). http://www.magic.gov.uk/

Natural England. < http://www.naturalengland.org.uk/>

Nature on the Map. Natural England. <www.natureonthemap.org.uk>

Reptiles and Amphibians of the UK. < http://www.herpetofauna.co.uk/ >

Relevant Legislation:

Wildlife and Countryside Act 1981 <<u>http://jncc.defra.gov.uk/page-3614</u>>

The Conservation of Habitats and Species Regulations 2017 <<u>https://www.legislation.gov.uk/uksi/2017/1012/contents/made</u>>

Countryside and Rights of Way Act 2000 <<u>http://www.legislation.gov.uk/ukpga/2000/37/pdfs/ukpga_20000037_en.pdf?view=interweave</u>>

Appendices







Arboricultural & Forestry Consultants



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Appendix 2: Photographic Evidence



Photo 1: The mill pond in 22/09/2017.

Photo 2: The mill pond 12/12/2017.



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Appendix 3: Map of Surrounding Landscape

Figure 1: Google Maps image of Land at Watt Street/Whalley Road showing the survey site in relation to the surrounding landscape and habitats.



Appendix 4: Glossary

Metamorphosis- The process by which an organism physically develops after birth, an example of this is from tadpole to frog.

Terrestrial- On or of the Earth, with the opposite being aquatic or marine.

Water body- An accumulation of water in a specific area covering the Earth. It is often a result of precipitation such as rainfall or channelization of a water course.

Hibernation- The process by which a living organism passes through the winter in an inactive or dormant state.

Ectothermic- The process by which some organisms generate heat from their surroundings in order to raise or lower their body temperature. In short, their body temperature fluctuates with the surrounding environment.

Cohort- A collective name of all offspring hatched in a calendar year.

Metapopulation- A group of spatially separated population which interact with each other via immigration and emigration of individuals.

Refugia- Areas that provide shelter for amphibian species. They are generally natural but can also be man-made. They are typically constructed from fallen braches and a range of other organic material. Artificial refugia can be made from intertwined branches and ferns and/or corrugated iron strips.

Hibernaculum- Similar to a refuge, but specifically where organisms shelter during hibernation.

Appendix 5: Author Qualifications

Principal Consultant and Managing Director

Jonathan Cocking F.R.E.S., Tech. Cert. (Arbor.A), PDipArb (RFS) FArborA CBiol MSB. MICFor. Jonathan is a Registered Consultant and Fellow of the Arboricultural Association and sits on its Professional Committee. He has 31 years experience in the Arboricultural profession and served for eight years as Senior Arboriculturist with a large local authority before establishing JCA in 1997. Jonathan has since developed JCA's portfolio of services and its extensive client base. He is a Chartered Biologist, a Chartered Arboriculturalist and an Expert Witness with much experience of litigation work.

Technical Director

Toby Thwaites *BSc (Hons), HND (Arboriculture).* Toby joined JCA in 1998 after graduating in Ecology at the University of Huddersfield and has since graduated in Arboriculture at the University of Central Lancashire. A former JCA team leader and Consulting Arboriculturist, Toby is now Technical Director and oversees all office and on-site activities at JCA and is on hand to offer technical support and advice.

Consulting Staff: Arboriculture

Toby Parsons Cert. Arb. (RFS), Tech. Cert. (Arbor:A). Toby joined JCA after spending 6 years working as a senior climber for various Arboricultural contractors in the East Midlands and the South-West. He has gained the Level 2 Certificate in Arboriculture (RFS) and an Arboricultural Technicians Certificate. Toby is LANTRA certified in Professional Tree Inspection.

Scott Reid ND (Arboriculture and Forestry). Scott joined JCA after working with other consultancy companies in the south of England. He specialises in trees in relation to development and holds a National Diploma, various NPTC qualifications and is currently studying for his Level 4 Diploma in Arboriculture.

Andrew Bussey. Andrew joined JCA having spent 12 years working as a tree surgeon for various private companies and a Local Authority. He has various NPTC qualifications, is QTRA qualified and is currently studying for his Arboricultural Technicians Certificate.

Phil Humeniuk *FdSc (Arboriculture).* Phil joined JCA having spent 3 years working for various tree surgery companies and as a Tree Officer for a Local Authority. He also has several years experience working as a consultant both for JCA and for another consultancy. Phil obtained his foundation degree in Arboriculture at the University of Central Lancashire and has various NPTC's and is LANTRA certified in Professional Tree Inspection.

Emily Wilde *FdSc (Arboriculture).* Emily joined JCA having previously worked for various private tree surgery and consultancy companies over the past 8 years. She initially obtained a ND in Forestry & Arboriculture, followed by a FdSc in Arboriculture at Askham Bryan College, York. Emily has various NPTC certificates and is QTRA qualified.

Mick Eltringham *ND* (*Forestry*). Mick joined JCA after spending 12 years working in the industry for various private companies in the north and south of England. He has also spent the last five years working as a consultant for two canopy research projects in the Amazon Rainforest, working with Oxford University and the University of Arizona. He has various NPTC Qualifications.

Charles Cocking (*FdSc Arboriculture*). Charles joined JCA in January 2014 as an Apprentice having previously worked for the company on a part time basis during 2013. Charles obtained his Foundation Degree in Arboriculture at Askham Bryan College, York, and is now part of our qualified Arboricultural consultancy team.

Consulting Staff: Ecology

David Bodenham *BSc Ind (Hons) Zoology, MSc Biodiversity and Conservation.* An advocate of evidence based conservation, he studied Zoology (Ind) at University and moved onto an MSc in Biodiversity and Conservation where he gained the myriad of skills needed as an ecologist. With over 7 years of experience, David specialises in bat and amphibian ecology.

Jenny Butler *Bsc (Hons) Environmental Science.* Jenny joined JCA's ecology department in 2017, bringing with her a bachelor degree in Environmental Science from Bangor University. Jenny has previously worked as an Environmental Consultant for an Agri-Environment company and as a freelance ecological consultant. Jenny specialises in great crested newt and bat ecology.

Amanda Beck *Cert He in Field Ecology.* Amanda joined JCA's ecology department in 2018, previously working as a freelance Ecological Consultant in North Wales and Liverpool and as a trainee Ecologist in South Wales. Amanda has extensive practical experience in surveying for botanical, amphibians, terrestrial and marine mammals along with invertebrate research work. She has practical experience in habitat management and creation and is a CIEEM student member.

Administrative Staff

Sue Guest Administrative Team Leader. **Catherine Cocking** Accounts Manager. **Lisa Hampson** Marketing Manager. Simeon Haigh *BSc (Hons)*. IT Director. Lorraine Spink Administrative Assistant.

I hope that this report provides all the necessary information, but should any further advice be needed please do not hesitate to contact the author.

Signed

Jan Bul

.....

David Bodenham BSc Ind (Hons), MSc

12/04/2018

Proofread by

T. Thwaites

Toby Thwaites BSc (Hons), HND (Arboriculture)

12/04/2018

For and on behalf of JCA Ltd

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Appeals

- Great Crested Newt eDNA Sampling
- Protected Species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- · Code for Sustainable Homes

Ecological Post-Planning Services

- · Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)

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