Ecology Technical Note

2023/0962 - Land North of Raleigh Drive, Claygate

10th July 2023

This technical note has been prepared by CSA Environmental on behalf of Claygate House Investments Ltd and MJS Investments Ltd in relation to Land North of Raleigh Drive, Claygate (hereafter referred to as 'the Site'). CSA Environmental have provided technical ecological input into the preparation of development proposals at the Site; from early concept stage through to submission of the planning application to Elmbridge Borough Council (EBC) earlier this year.

1.1 The Site is subject to an outline planning applicati up to 60 dwellings, associated landscaping and open space, which was supported by an Ecological Impact Assessment (EcIA; CSA/3230/04) and Biodiversity Net Gain (BNG) Assessment (CSA/3230/06). Further to their review of these materials, several consultees have made comments on the planning application relevant to matters of ecology and biodiversity, including:

Natural England (05 May 2023)
EBC Countryside Estates Officer (02 June 2023)
Surrey Bat Group (09 June 2023)
Surrey Wildlife Trust (SWT; 12 June 2023)

1.2 Natural England consider that the proposed development will not have significant adverse impacts on designated sites and has no objection to the application. Furthermore the Surrey Bat Group has commented that there should be no serious negative impacts on local bat populations. Some queries have been raised by Surrey Wildlife Trust and the EBC Countryside Estates Officer, which this technical note will seek to address.

<u>Reptiles</u>

1.2 The SWT has noted that temperatures during three of our seven reptile surveys were at or above 20°C, and have queried whether this may have caused the baseline population to be underrepresented, and by extension the mitigation proposals to be insufficient.

1.2 The accepted survey method for reptiles is in large part based upon the distribution and checking of darkly coloured artificial refuges, which warm up in the sun and are sought out by reptiles, which ectothermic (sometimes colloquially referred to as 'cold blooded';

meaning they take their thermal energy from their environment). The method therefore relies upon the refugia being warmer than their surroundings, though not so warm as to be avoided. Such conditions are often best achieved in the spring and early summer, however where possible it is advantageous to spread surveys across a longer period to account for seasonal variation in spatial distribution through the active season. In later months, and by the time the sun is high enough in the sky to convey any benefit to the refuges, this will inevitably mean that the ambient temperatures are higher. The seven surveys at the Site were conducted between May and August, at temperatures between 14°C and 23°C, averaging 19°C.

1.2 As described in the submitted EcIA, there is a relative lack of current published best-practice guidance concerning reptile surveys, however the position as regards optimum survey temperatures of the three key resources cited in the EcIA is summarised below:

HGBI 1998 – silent on the matter
Froglife 1998 – "*generally best..when the air temperature is between 9°C and 18°C*"
Natural England 2011 (rescinded) – "*In general, surveys should be targeted to.. Air temperature: 10-20°C*"

1.2 Members of the Surrey Amphibian and Reptile Group (SARG) will additionally be able to access their very insightful Statistics Engine, based at the time of writing on nearly 47,000 reptile observations at SARG monitoring sites since 2009. Averaging across all species, genders and life-stages, this shows mean reptile sightings per hour to drop off below 9°C and above 22°C. There is however marked variability between species, genders and life-stages.

1.2 It is noteworthy that the survey visit undertaken at the Site at the maximum temperature of 23°C yielded the joint highest peak count, of one slow worm. With this peak count being so low, i.e. at the very bottom of the range within which we'd draw the conclusion of a low population of slow worms being present, the conclusion that was drawn is robust, and it is hoped that the foregoing provides reassurance in this regard. It should be added that, as stated in the submitted EcIA, updated surveys would be expected in support of any reserved matter application, to inform the detailed package of mitigation measures and landscape proposals, adding a further safeguard.

Bats

1.2 The SWT has noted the absence of reporting in respect of any preliminary ground level roost assessment, to determine the potential for roosting bats, within trees likely to be impacted by the development. This was regrettably down to human error. An assessment was completed on 24

November 2022, led by Mark Rose MCIEEM (bat class licence CL18 reference 2015-13991-CLS-CLS). The findings are presented below.

Table 1 Results of the preliminary ground level roost assessment.

Tree Reference	Species	Description	Bat roost potential
H2	Lawson cypress	4.5m high hedgerow.	Negligible
G7	Hazel, bramble	Widespread deadwood present but gener insufficient stem diameter, otherwise completely shrouded in ivy. No Potential Roc Features (PRFs) identified.	Negligible
T5	English oak	Large woodpecker hole c. 3.5m south, likely leading to trunk cavity. Generally little can deadwood, suggesting former manageme No PRFs identified within lower branches extending south and generally sparse ivy cladding. Other PRFs may be present within the higher tree canopy. Tree to be retaine but development to encroach into root protection area.	High
T6	English oak	No PRFs identified within lower branches extending south and generally sparse ivy cladding. Other PRFs may be present within the higher tree canopy. Tree to be retaine but development to encroach into root protection area.	Low
T17	English oak	Nesting hole c. 5m east, indicating trunk cavity. Evidence of previous management including branch and ivy removal, leading t a relative absence of canopy deadwooc Other PRFs may be present within the higher tree canopy. Tree to be retained, but development to encroach into root protection area.	High
T18	Cherry	Ornamental flowering cherry 3m high. No PRFs identified.	Negligible
T20	Ash	Moderately ivy-cladded 11m ash tree. No PRFs were identified.	Negligible

1.9 The submitted Arboricultural Impact Assessment (AIA) Trees T18 and T20 are likely to require removal to accommodate the proposals, along with sections of Group G7 and Hedgerow H2. Despite some limited incursion of root protection areas, the AIA identifies no requirement for facilitation pruning in respect of T5, T6 and T17 (and, particularly in respect of T5 and T17, the principal potential roost features are in any event associated with the main stems).

1.10 In view of the findings of the preliminary ground level roost assessment, it can be concluded that the proposed development is unlikely to impact roosting bats, and will instead result in a net increase in roosting opportunities due to the incorporation of bat boxes within ne dwellings.

Great crested newts

1.11 The SWT have requested an assessment of the suitability o -site ditch to support great crested newts. The submitted EcIA describes this feature as a shallow channel on the eastern boundary of the Site, set within the mature tree line, with a gentle northward flow during winter and stagnant water in early summer. It is steep-sided, contains shallow water, is heavily shaded, has significant scrub encroachment and very limited emergent and floating aquatic flora.

1.10 It is proposed that the on-site ditch be enhanced for wildlife, through removal of excessive shading and scrub encroachment to promote marginal aquatic vegetation. It was in large part the lack of such vegetation which led to CSA's conclusion that the feature was unlikely to support great crested newt breeding, though it is acknowledged this wasn't expressly stated in the EcIA. To provide a definitive answer, water samples were collected by Mark Rose MCIEEM (great crested newt class licence reference 2019-44313-CLS-CLS) on 23 June 2023 and submitted to ADAS for environmental DNA (eDNA) analysis. Appended to this note is the laboratory result, which found the samples to be negative for great crested newt eDNA. This supports the conclusion of the EcIA that great crested newts are likely absent from the Site, and will not be affected by the proposed development.

Biodiversity Net Gain

1.10 The SWT have noted that the submitted assessment concludes that achieving an overall, quantified net gain will require off-site compensation, and have requested further details of where this will be delivered. The EBC Countryside Estates Officer has made similar comments.

1.10 While the applicant has actively engaged with potential offset providers, in the absence of a contractual agreement it would not be appropriate to identify them. An off-site unit requirement to deliver BNG has been calculated and presented within the submitted BNG Assessment, though this is of course based only on the illustrative layout, and is itself therefore illustrative. The final offset requirement will need to be conclusively determined at the reserved matters stage of planning; informed by the detailed layout and soft landscaping proposals. The ultimate offset will be secured through S106 planning obligation, and will deliver an overall net gain of at least 10%. This is well in excess of current local or national policy requirements, and consistent with forthcoming legal requirements.

1.10 It is important to be clear that there is no conflict with any local or national policy, or the Environment Act 2021, in achieving BNG using off-site compensation, provided that the mitigation hierarchy has been correctly observed (as it has here, by biasing built form to the least ecologically valuable on-site habitats). In many cases this will

undoubtedly deliver better outcomes for biodiversity, by focusing resources on consolidated habitat creation in more strategically desirable locations than development edge.

1.10 The SWT has also requested a copy of the completed Biodiversity Metric. This was issued with the submission materials, and it is therefore assumed that there is an issue affecting this having been published on EBC's planning webpages. CSA would be happy to send this directly to the SWT planning team, if helpful.

Pre-commencement conditions

1.10 The pre-commencement conditions recommended by the SWT are appropriate, and largely mirror those advocated within the submitted EcIA and BNG Assessment.

Client: Sophie Vines,
CSA Environmental

ADAS
Spring Lodge
172 Chester Road
Helsby
WA6 0AR
[redacted]
www.adas.uk

Sample ID: ADAS-1818	Condition on Receipt: Low Sediment	Volume: Passed
Client Identifier: Ditch 1, 3230	Description: pond water samples in preservative	
Date of Receipt: 30/06/2023	Material Tested: eDNA from pond water samples	

Determinant	**Result**	**Method**	**Date of Analysis**
Inhibition Control[†]	2 of 2	Real Time PCR	04/07/2023
Degradation Control[§]	Within Limits	Real Time PCR	04/07/2023
Great Crested Newt*	0 of 12 (GCN negative)	Real Time PCR	04/07/2023
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10^{-4} ng/µL)[#]	4 of 4	Real Time PCR	As above for GCN
Report Prepared by:	Dr Helen Rees	Report Issued by:	Dr Ben Maddison
Signed:	[redacted]	Signed:	[redacted]
Position:	Director: Biotechnology	Position:	MD: Biotechnology
Date of preparation:	05/07/2023	Date of issue:	05/07/2023

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

[†] Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.

[§] No degradation is expected within time frame of kit preparation, sample collection and analysis.

[#]Additional positive controls (10^{-1}, 10^{-2}, 10^{-3} ng/µL) are also routinely run, results not shown here.

Appendix 1: Interpretation of results

Sample Condition

Upon sample receipt we score your samples according to quality: good, low sediment, medium sediment, high sediment, white precipitate, and presence of algae.

There are three reasons as to why sediment should be avoided:

1. It is possible for DNA to persist within the sediment for longer than it would if it was floating in the water which could lead to a false positive result i.e. in this case GCN not recently present but present a long time ago
2. In some cases sediment can cause inhibition of the PCR analysis used to detect GCN eDNA within samples which could lead to an indeterminate result.
3. In some cases sediment can interfere with the DNA extraction procedure resulting in poor recovery of the eDNA which in turn can lead to an indeterminate result.

Algae can make the DNA extraction more difficult to perform so if it can be avoided then this is helpful.

Sometimes samples contain a white precipitate which we have found makes the recovery of eDNA very difficult. This precipitate can be present in such high amounts that it interferes with the eDNA extraction process meaning that we cannot recover the degradation control (nor most likely the eDNA itself) at sufficient levels for the control to be within the acceptable limits for the assay, therefore we have to classify these type of samples as indeterminate.

What do my results mean?

A positive result means that great crested newts are present in the water or have been present in the water in the recent past (eDNA degrades over around 7-21 days).

A negative result means that DNA from the great crested newt has not been detected in your sample.

On occasion an inconclusive result will be issued. This occurs where the DNA from the great crested newt has not been detected but the controls have indicated that either: the sample has been degraded and/or the eDNA was not fully extracted (poor recovery); or the PCR inhibited in some way. This may be due to the water chemistry or may be due to the presence of high levels of sediment in samples which can interfere with the DNA extraction process. A re-test could be performed but a fresh sample would need to be obtained. We have successfully performed re-tests on samples which have had high sediment content on the first collection and low sediment content (through improved sample collection) on the re-test. If water chemistry was the cause of the indeterminate then a re-test would most likely also return an inconclusive result.

The results will be recorded as indeterminate if the GCN result is negative and the degradation result is recorded as:

1. evidence of decay - meaning that the degradation control was outside of accepted limits
2. evidence of degradation or residual inhibition - meaning that the degradation control was outside of accepted limits but that this could have been due to inhibitors not being removed sufficiently by the dilution of inhibited samples (according to the technical advice note)