

Norish Ltd., Wrexham Industrial Estate

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Great Crested Newt Survey Report

TSL Projects Ltd.

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GLOSSARY

Acronyms/Abbreviations	Definition
CEcol	Chartered Ecologist
ECow	Ecological Clerk of Works
EPS	European Protected Species
EPSL	European Protected Species Licence
GCN	Great Crested Newt
LPA	Local Planning Authority
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
NERC Act	Natural Environment and Rural Communities Act 2006
NRW	Natural Resources Wales
PEA	Preliminary Ecological Appraisal

EXECUTIVE SUMMARY

Contents	Summary
Site Location	The site is located at Norish Ltd, Unit 13 Ash Rd South, Wrexham Industrial Estate, LL13 9UG in Wrexham and is centred at Ordnance Survey National Grid Reference SJ 38036 50371 (Figure 1).
Proposals	It is proposed that the current Norish Ltd. chilled food distribution centre is extended to include a new cold store, blast freezer, plant building and production extension. The proposal also includes the associated landscaping works to include a new car park, loading docks and to improve site access (P/2024/0247). As part of the proposal, terrestrial habitat comprised of grassland will be lost in the western area of the site, in addition to some small areas of grassland adjacent to the existing cold store building in the east.
Scope of this Survey(s)	- Review all available relevant ecological information for the site; - Carry out HSI assessment of the two accessible waterbodies (Pond 1A and Pond 1B) onsite; - Undertake population size class estimate surveys of the accessible waterbodies onsite; and, - Determine potential impacts on GCN population on site as a result of the development.
Results and Evaluation	Summary of results: - The ponds were found to have combined forming a pond complex and the combined HSI of the two waterbodies confirmed average suitability to support GCN on site. - Traditional GCN surveys confirmed GCN were present and breeding in both waterbodies. - A small population size class was recorded onsite but it is considered highly likely that they form part of the Wrexham Industrial Estate larger metapopulation. - There will be permanent destruction of good quality terrestrial habitat to facilitate the proposed development. - Temporary damage and disturbance of terrestrial habitat is also anticipated as a result of construction activity.
Recommendations	- An EPS licence will be required to proceed with development on site; - Mitigation will be detailed within a mitigation strategy as part of the license and agreed with NRW; - Future habitat management to enhance aquatic habitat at both waterbodies; - GCN monitoring surveys; - A lighting plan for the construction and operational phases should be designed and implemented to minimise disturbance to GCN; and,

Contents	Summary
	Enhancements to compensate for the loss of terrestrial habitat should include a minimum of five brash piles, three hibernacula and the creation of a new pond.
Conclusions	An EPS mitigation licence will be required to proceed with proposed development of the site. Note EPS mitigation licence can only be applied and secured once planning permission granted. This report is valid for 12 months.

1.0 INTRODUCTION

Tetra Tech was commissioned by Carney Sweeney on behalf of TSL Projects Ltd. 15th May 2024 to undertake a great crested newt (GCN) *Triturus cristatus* survey of site Norish Ltd., Wrexham Industrial Estate, hereafter referred to as “the site”.

This report has been prepared by Tetra Tech Consultant Ecologist Bronwyn Dennis, BSc (Hons) and the conditions pertinent to it are provided in Appendix A.

GCN are a European protected species, full details of that protection, including types of offences and policy position are provided in Appendix B.

1.1 SITE LOCATION

The site is located at Norish Ltd, Unit 13 Ash Rd South, Wrexham Industrial Estate, LL13 9UG in Wrexham and is centred at Ordnance Survey National Grid Reference SJ 38036 50371 (Figure 1). It comprises a large metal industrial building, a smaller brick office building and areas of hard standing for associated parking and access. The buildings are surrounded by an area of other neutral grassland, dense scrub predominantly comprised of willow *Salix* sp. and hawthorn *Crataegus monogyna*, and broadleaf woodland. There is also willow carr onsite and an area of marshy grassland.

Within the area of scrub and woodland to the south-east of the site, there are two waterbodies (Pond 1A and Pond 1B) which have combined and formed a ‘pond complex’. Pond 1A is located within the willow carr and Pond 1B is located adjacent to the marshy grassland and is surrounded by mixed scrub.

1.2 DEVELOPMENT PROPOSALS

It is proposed that the current Norish Ltd. chilled food distribution centre is extended to include a new cold store, blast freezer, plant building and production extension. The proposal also includes the associated landscaping works to include a new car park, loading docks and to improve site access (P/2024/0247). As part of the proposed plans in drawing ‘TCSW-ASA-90-VS.ZZ-D-A-9003_(S2-P08)_GA Site Plan – Overall’, terrestrial habitat comprised of grassland will be lost in the western area of the site, in addition to some small areas of grassland adjacent to the existing cold store building in the east.

It is currently understood that the extensive area of grassland in the eastern area of the site, Ponds 1A and 1B, and the areas of scrub and woodland across the site will be retained as part of the development proposal.

1.3 PURPOSE OF THE REPORT

The purpose of this assessment is to:

- Determine the population size-class of GCN.
- Determine if any potential impacts on GCN are likely to arise from the proposed development.
- Provide preliminary advice and outline strategies to avoid/mitigate/compensate for any likely impacts on GCN.

The details of this report will remain valid for a period of 12 months until 21/06/2025 after which the validity of this assessment should be reviewed to determine whether further updates are necessary. The recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or development proposals which this report was based on.

Note that scientific names are provided at the first mention of each species and common names (where appropriate) are then used throughout the rest of the report for ease of reading.

2.0 METHODOLOGY

2.1 HISTORIC SURVEYS

Previous reports made available and relevant to the site have been reviewed to inform this report. These were:

- Just Mammals Ltd (2024). Preliminary Ecological Appraisal (Just Mammals Ltd., 2024); and
- Marches Ecology (2024). GCN Report (Marches Ecology, 2024).

2.2 DESK STUDY

A data search obtained from COFNOD in June 2024 of records of GCN within 1 km of the site boundary. A search of 1 km was completed due to the context of the site being within Wrexham Industrial Estate, which supports a nationally important and well documented population of GCN.

2.3 FIELD SURVEYS

For the purpose of the field surveys, Ponds 1A and 1B were surveyed as one pond complex, due to high water levels combining the ponds.

Biosecurity

All surveys were conducted in accordance with standard best practice and Tetra Tech's Biosecurity Policy V2 (Tetra Tech, 2023).

Habitat Suitability Index (HSI) Assessment

An HSI Assessment was carried out on Ponds 1A and 1B shown on Figure 2, by Tom Redman (NRW GCN Licence S092017/2) Bronwyn Dennis on 20/05/2024. As the ponds formed a pond complex, a combined HSI assessment was conducted.

The HSI approach provides an objective method for assessing the suitability of a waterbody as habitat to support GCN (Oldham et al., 2000; Herpetological Conservation Trust, 2008). The system provides an index between 0 and 1, with 0 indicating likely unsuitable habitat and 1 optimal habitat. Ten suitability indices are used to calculate the index score, each representing a factor considered to affect GCN. These factors are listed and briefly explained below:

1. *Location*: i.e., where the pond is located in the British Isles. Lowlands are generally thought to be most suitable; suitability declines with increases in altitude;
2. *Pond area*: i.e., the water surface area of a pond. Suitability peaks at approximately 800m²;

3. *Pond drying*: how often a particular pond dries out. Ponds which dry out more frequently are less suitable;
4. *Water quality*: an indication of water quality based on the invertebrate diversity present. High invertebrate diversity indicates high water quality and suitability;
5. *Shade*: an estimate of the total shaded perimeter of a pond. Shoreline shade below 60% is optimal;
6. *Fowl*: indication of impact by waterfowl. High waterfowl numbers are generally considered detrimental;
7. *Fish*: indication of fish abundance. High fish numbers are generally considered detrimental;
8. *Pond count*: based on the density of ponds occurring within 1km of a particular pond. Suitability is positively correlated with pond density;
9. *Terrestrial habitat*: based on the availability of suitable habitat in the pond vicinity, e.g. rough grassland, scrub and woodland. For this assessment, the categories provided in the NARRS Survey Pack (Herpetological Conservation Trust, 2008) were used. This differs from the assessment criteria by Oldham et al. (2000), and is based on work by Lee Brady (unpublished); and
10. *Macrophytes*: based on an estimate of the percentage cover by emergent and aquatic vegetation. Suitability peaks at between 70% and 80% cover.

The results are then compared against a categorical scale developed by Lee Brady (unpublished) to give an overall rating as follows:

- <0.5 = **Poor**
- 0.5 – 0.59 = **Below Average**
- 0.6 – 0.69 = **Average**
- 0.7 – 0.79 = **Good**
- >0.8 = **Excellent**

Presence / Likely Absence & Population Estimate

All surveys were undertaken by the following Natural Resources Wales (NRW) survey license holders:

- Tom Redman (licence number: S092017/2);
- Mark Pritchard (licence number: S092470/1); and
- Bronwyn Dennis as an accredited agent under Tom Redman's licence.

Six surveys were undertaken in accordance with the *Great Crested Newt Mitigation Guidelines* (English Nature, 2001) methodology – using three of the survey methods described below - to determine a population size class estimate of Ponds 1A and 1B within the site. The additional waterbodies within 500 m of the site were not surveyed due to access constraints. However, a desk study of GCN records from within 1 km of the site was completed.

All six surveys were undertaken within the GCN survey season (i.e. between mid-March and mid-June) with one of the six surveys undertaken during the 'peak period' for GCN activity (i.e. mid-April to mid-May)- see Table 1 and Limitations 2.4 for details.

The maximum adult count per night per waterbody as recorded through a single survey technique is the number used to inform the population size-class estimate for that waterbody. Where there is a reasonable

certainty of a regular interchange of animals between waterbodies (typically those within 250 m of each other) counts can be summed across those waterbodies to derive the population size-class of that metapopulation.

The populations are then classified as follows:

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

Table 1 Survey Dates and Weather Conditions

Survey No.	AM/PM	Date	Time		Air Temperature (°C)		Wind Speed	Cloud Cover (%)	Precipitation (%)
			Start	End	Initial	Final			
1	AM	21/05/2024	05:15	06:20	11	11	2	20	0
	PM	20/05/2024	20:00	23:00	16	15	1	10	0
2	AM	30/05/2024	05:45	06:40	11	11	1	100	0
	PM	29/05/2024	20:30	22:45	13	12	2	90	0
3	AM	07/06/2024	04:45	05:50	10	10	1	50	0
	PM	06/06/2024	20:30	23:00	13	12	2	80	0
4	AM	12/06/2024	04:45	05:45	7	8	0	10	0
	PM	11/06/2024	20:30	23:00	10	10	1	30	0
5	AM	18/06/2024	04:50	05:45	10	10	1	100	0
	PM	17/06/2024	21:00	23:00	14	12	0	0	0
6	AM	21/06/2024	05:00	05:45	19	18	1	10	0
	PM	20/06/2024	21:00	23:00	14	14	1	20	0

The following survey methods were used during the survey:

Bottle Trapping

Plastic bottle traps are set around the margins of the waterbodies and areas of aquatic vegetation within the pond approximately every 1 m where access allowed, shortly before dusk. The traps are left in-situ overnight and checked & removed the following morning before 10 am (wherever possible) for welfare reasons. All surveys are undertaken when the predicted air temperature exceeded 5°C, when GCN are most active.

Torchlight Survey

This technique involves a visual search for individual newts inhabiting each waterbody. High-powered torches are used to search the waterbodies after nightfall. Waterbody perimeters are walked taking care to

count all the individuals seen. To maximise the reliability of this technique, all torch surveys are conducted on evenings where the air temperature exceeded 5°C, when newts are generally considered being most active.

Egg Search

GCN eggs are searched for among submerged, floating and other aquatic vegetation. When laying their eggs, GCN folds leaves of aquatic plants around the egg, although dead leaves and a variety of artificial materials are also known to be used. This behaviour is exploited to demonstrate that GCN are breeding in a particular waterbody. However, egg numbers cannot be used to estimate population size due to predation and high mortality rates. In order to limit disturbance, this method is ceased as soon as a GCN egg has been positively identified in a waterbody.

2.4 LIMITATIONS

Only 60-70% of the pond complex could be surveyed due to dense scrub preventing access around all areas of the pond shoreline and the full south-eastern aspect.

In line with the Great Crested Newt Mitigation Guidelines (English Nature, 2001), bottle traps should be placed around the pond margin at a density of one trap per every two metres of shoreline. However, there was approximately 40% of the pond complex within the willow carr (Pond 1A), where the pond margins were shallow and lacked banks with an incline suitable for deploying bottle traps. As such, a distance of 1 m between bottle traps was adopted along suitable margins. Bottle traps were also placed adjacent to areas of aquatic vegetation to increase the survey effort by targeting the areas considered most suitable for newts.

Due to the timing of commission, only one of the six survey visits was undertaken during the peak activity time for GCN (i.e. mid-April to mid-May) despite the GCN Mitigation Guidelines stating that three surveys should be carried out within this time period to ensure an accurate population estimate. The presence (and breeding) of GCN on site was already known, however, due to GCN eggs being found during a eDNA survey conducted by Marches Ecology in April 2024 and existing records of presence (and breeding) within the wider industrial estate. Consultation with NRW and the LPA ecologist was sought in May 2024 (prior to the surveys), to ensure that results from sub-optimally timed surveys would be accepted and it was confirmed that the survey effort suggested would be sufficient. It can therefore be concluded that the timings of surveys were not a significant constraint to the results and that the conclusions within this report are reflective of the population on site.

Notwithstanding the limitations highlighted above, the survey effort applied is considered sufficient to meet the aims of the survey and this report, in accordance with the aforementioned guidelines.

Note that the recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or development proposals which this report was based on.

3.0 RESULTS

3.1 HISTORIC SURVEYS

The surveys undertaken by Just Mammals Ltd. (Just Mammals Ltd., 2024) and Marches Ecology (Marches Ecology, 2024) had identified the presence/likely absence of GCN in the vicinity of the site. A summary of these surveys is provided below.

A PEA identified two waterbodies on site which were assessed as having potential to support GCN (Just Mammals Ltd., 2024). There was also a ditch identified on site which was holding water.

Consequently, an eDNA survey was conducted to determine presence/likely absence (Marches Ecology, 2024). The eDNA results returned a negative result for GCN DNA within the waterbodies but GCN eggs were found while conducting the water sampling for the eDNA. It can therefore be concluded that the eDNA returned false negative results.

3.2 DESK STUDY

The data provided by COFNOD included a total of 48 records GCN within 1km of the site. 18 of these records were from within the past 10 years. The closest record was located approximately 500 m from the site at the Village Bakery, with a peak count of 19 adult GCN. Connectivity between this location and the site is restricted due to the presence of roads and industrial buildings, however, suitable habitat corridors within the industrial estate are present via areas of woodland, hedgerows and grassland verges.

The data also identified the presence the Wrexham Industrial Estate non-statutory wildlife site which is anecdotally known to support GCN. The wildlife site is located 350 m south-west of the site. There is no direct connectivity to the site due to the network of roads, but the roads within the industrial estate are narrow and bordered by grassland or woodland verges and there is therefore potential for GCN to commute to/from the wildlife site.

3.3 HABITAT SUITABILITY INDEX ASSESSMENT

Detailed descriptions of Ponds 1A and 1B within the pond complex are provided in Appendix B along with photographs, see Figure 2 for the location.

Table 2 HSI Score and Calculations for Ponds 1A and 1B

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.2
3	Pond permanence	1
4	Water quality	0.67
5	Shade	0.3
6	Waterfowl effect	1
7	Fish presence	1

SI No	SI Description	SI Value
8	Pond Density	0.95
9	Terrestrial habitat	0.67
10	Macrophyte cover	0.6
HSI Score		0.66
Pond Suitability		Average

3.4 PRESENCE/LIKELY ABSENCE SURVEYS & POPULATION ESTIMATE

Table 3 shows the results from the six surveys which were conducted to establish the estimated GCN population size.

GCN results are presented as either number of adults and juveniles and a yes / no for egg presence. Where a particular survey method was not used, this is indicated as not applicable (N/A) (please see 2.4 Limitations).

Table 3 Population Size Class Estimate Survey Results

Pond #	Survey 1 20/05/2024			Survey 2 29/05/2024			Survey 3 06/06/2024			Survey 4 11/06/2024			Survey 5 17/06/2024			Survey 6 20/06/2024		
	Bottle	Torch	Egg	Bottle	Torch	Egg	Bottle	Torch	Egg	Bottle	Torch	Egg	Bottle	Torch	Egg	Bottle	Torch	Egg
1	0	♂ x1 ♀ x1	Yes	0	♀ x1	-	0	♀ x2	-	0	♀ x1	-	♂ x1	♀ x1 (L) x1	-	0	(L)x1	-
Key	♂ male, ♀ female, juv juveniles, (L) larvae																	

There was a peak count of two adult GCN identified during the torchlight surveys in Survey visits 1 and 3. A peak count of two indicates a small class-size population estimate on site.

During the surveys a number of other amphibians were also recorded on site, with the results provided in Table 44. Peak survey counts of smooth newts are given as for GCN, whilst common frog and common toad numbers are presented as observed (including presence of spawn). This information is considered relevant as it provides further indication of the quality of the habitats for amphibians.

Table 4 Other Amphibians Recorded During Surveying

Pond #	Smooth/Palmate Newt	Common Toad
1	17	1

3.5 SUMMARY OF RESULTS

- GCN were recorded and confirmed breeding in Ponds 1A and 1B.
- The peak count of adult GCN recorded was 2.
- The results equate to an overall population size-class of small.

4.0 DISCUSSION

GCN were confirmed as present and breeding in Ponds 1A and 1B on site. The peak count of two adult GCN indicates a **small population**.

Desk study records from within 1 km of the site evidence presence of GCN within 500 m of the site. Furthermore, the Wrexham Industrial Estate has well recorded populations of GCN with a number of managed mitigation areas currently in place to safeguard this species (North Wales Wildlife Trust, 2020).

Given the connectivity within the Wrexham Industrial Estate, the GCN population on site is likely to form part of an interconnected metapopulation, breeding and living in a cluster of waterbodies within the wider estate, with an interchange of newts between these waterbodies.

Smooth newt and common toad were also recorded during the survey, indicating the pond complex and terrestrial habitat within the site offer good suitability for use by amphibian species (ARG UK, 2010).

The proposed development scheme layout has undergone changes and is not yet finalised. The recommendations within this report should be used to inform the development design.

To determine the likely requirement for an EPS license, it is necessary to consider the likely extent of adverse impacts on GCN.

4.1 IMPACTS

There are likely to be adverse effects on GCN through loss of terrestrial habitat, killing and injury and disturbance during the construction and operational phase. Upon completion of a final plan, areas of temporary/ permanent habitat loss and disturbance will be identified.

The current understanding based on the proposed plan drawing 'TCSW-ASA-90-VS.ZZ-D-A-9003_(S2-P08)_GA Site Plan – Overall' (Appendix D) is that the waterbodies will not be impacted but there will be permanent loss of good quality terrestrial habitat. This will include grassland to the west of the site that will be lost completely and an area of grassland adjacent to the existing building in the east. The total estimated loss of terrestrial habitat is 0.7 ha across the site.

Based on the current proposed plan, it is our understanding that connectivity across the site and to the wider habitat will be maintained, with the good quality terrestrial habitat adjacent to the waterbodies in the eastern area of the site not being permanently impacted.

GCN are a nocturnal species and are sensitive to light spill. GCN on site are therefore also likely to be impacted by any additional lighting required during the construction and operational phases.

4.2 MITIGATION

Without appropriate mitigation the current proposals will likely result in the following offences being committed (see Appendix B for detailed legislation):

- GCN disturbance to a resting place/ place of shelter through noise vibration and lighting;
- GCN killed/injured e.g., through collision with vehicles and and/or machinery and being caught in open excavations;

- GCN dispersal interrupted (isolation and fragmentation) during the works; and
- GCN foraging and resting habitat damaged or destroyed.

The mitigation hierarchy principles are:

- Avoidance – to avoid adverse effects as far as possible by designing out or using preventative measures during the construction process thus resulting in an environmental effect of neutral significance.
- Reduction – to minimise adverse effects as far as possible.
- Compensation – involves measures of the same value to off-set the impact.

4.2.1 License

As adverse effects upon GCN are anticipated which cannot be avoided, suitable mitigation will need to be included in an EPS licence application to NRW to permit otherwise unlawful activities.

An EPS licence application can only be submitted once full planning permission is received and all planning conditions relevant to wildlife have been discharged.

To secure a licence the following three derogation tests must be satisfied:

1. The activity to be licensed must be for the purpose of preserving public health or public safety or other imperative reasons of overriding public interest;
2. There must be no satisfactory alternative; and
3. The favourable conservation status of the species must be maintained.

Traditional EPS licensing usually requires commitment to GCN habitat management and maintenance, as well as future monitoring of GCN ponds. The detail of this will be determined through the license application process. An outline of likely measures required under a licence are set out at 4.3 and 4.4, although this is not exhaustive.

Please note, processing of a licence application by NRW takes a minimum of 30 working days– although delays are commonplace during busy periods.

4.3 RELOCATION & MONITORING

Given the proposed loss of terrestrial habitat, and the offences likely to be committed whilst GCN are in their terrestrial phase it is likely that GCN will need to be excluded from the construction area. To do this the site will require fencing off with temporary amphibian fencing until the development is complete and a programme of translocation using pitfall traps and artificial refuges undertaken to remove GCN from the construction area to a 'safe' receptor site. GCN capture can be undertaken during the active season, between March – October inclusive, but the efficiency varies greatly according to timing and methods. It is unacceptable to attempt to capture GCN once they have started to hibernate (Natural England). Typically, the best time to capture GCN is during the breeding migration i.e. when they are most likely to be moving around between terrestrial and aquatic habitats i.e. March to June.

Once captured, the GCN will need translocating to a suitable receptor site. This land would need to be within a suitable distance and of similar condition to the areas where GCN were recorded on site i.e. Ponds 1A and 1B.

Once the site has been 'trapped out' and GCN translocated, any remaining suitable refuges on site should be finger tipped searched prior to destruction and clearance activities. Following site clearance, the newt fence should be maintained throughout the construction phase to ensure GCN do not re-enter the construction area.

All translocation works, fingertip searches and fence installation/removal should be undertaken under the supervision of a GCN licensed Ecological Clerk of Works (ECoW). The ECoW should be on site to provide supervision, guidance and advice regarding GCN and provide a toolbox talk to site contractors before any site works commence.

Timing restrictions will also apply to the removal of vegetation. Vegetation clearance should be undertaken during the warmer months (May – September) under the supervision of the ECoW, although care will also need to be taken to avoid nesting birds between March and September. The rationale for this is that GCN hibernate over winter. Hibernation sites should not be disturbed or sheltering places (e.g. rock piles, logs, and vegetation) dismantled during winter. During this time GCN enter a period of low activity and are more vulnerable to killing and injury. The summer disturbance of a GCN resting place is less likely to result in mortality.

The licence and mitigation strategy will include requirements for monitoring the GCN population within the receptor area into the future. The level of monitoring required will be determined during the licensing process.

4.4 LIGHTING STRATEGIES

A lighting plan for the construction and operation phases should be designed and implemented in accordance with the outdoor lighting guidance provided within Gunnel *et al* (2012). The lighting strategies should:

- Avoid construction lights illuminating retained habitats (e.g. hedgerows ponds and woodland edges);
- Not provide excessive lighting i.e. use minimum required for health and safety;
- Eliminate upward pointing light such that light spill is at or near horizontal;
- Use light sources that emit minimal ultra-violet light and avoid blue and white wavelengths;
- Lights should peak higher than 55nm or use glass lantern covers to filter UV;
- Reduce height of lighting columns;
- Use embedded road lights to illuminate roadways;
- Light only high-risk stretches of road/areas;
- Limit times of lighting to provide dark periods;
- Use lighting design software to predict where light spill will occur before instructing lighting plans;
- Avoid using reflective surfaces under lights; and
- Use temporary close boarded fencing until vegetation matures to shield sensitive areas from lighting.

4.5 ENHANCEMENT

It is recommended as part of the mitigation package that management is undertaken on the ponds to improve and maintain a good quality habitat for GCN. An overview of management that could be undertaken is set out below and will be detailed in a mitigation strategy which will support a EPS licence application.

Pond 1A is located within dense scrub and is heavily shaded by willow, Pond 1B lies adjacent to this and is also bordered by dense scrub. Management could include selective removal of overhanging vegetation to create open and sheltered areas in addition to increasing sunlight in the pond. Warm ponds are favourable for amphibian growth and development and although trees and scrub can help maintain a warm microclimate, excess shading can reduce pond water temperature. No more than 60% of the pond shoreline should be shaded, with less shading preferable. The southern shoreline is also best unshaded (Baker, T, Buckley, Gent, & Orchard, 2011).

Pond 1A also has experienced moderate levels of sediment build up as a result of excess leaf litter. Leaf litter over time can lead to excess sediment in the pond and reduces the areas of suitable live egg laying material. Leaf litter break down over time can also impact water quality by increasing the nitrogen content. It is recommended that the pond is de-silted. The removal of scrub around the pond edges, as noted above, will also help to control this in the future.

Shallow areas, less than 10 cm and less than 30 cm deep, support the greatest range of pond plants which creates an optimal habitat for aquatic invertebrates. Beds of submerged aquatic vegetation provide egg-laying substrates for newts, microhabitat for prey species and refuge from predators (Baker, T, Buckley, Gent, & Orchard, 2011). Therefore, aquatic planting to increase suitable egg laying material should occur.

The creation of a new additional new pond with aquatic planting in an appropriate location within retained habitats will likely be required. Proposed locations include within the areas of woodland along the eastern boundary of the site, or in the wet depressions identified in the grassland. The new pond should be designed with gently sloping sides and a range of pond depths. Gently sloping pond edges (gradient of 1 in 10 or if possible 1 in 20) create a wide drawdown zone which encourages a diversity of plants and invertebrates. For amphibian ponds, the water depth should not exceed 1.2m (Baker, T, Buckley, Gent, & Orchard, 2011).

Removed scrub should be used to create hibernacula and brash piles around the site. A minimum of five brash piles should be implemented in suitable terrestrial areas as smaller refuges for daytime shelter throughout the areas of retained habitat. These should be situated above the flood line but within proximity to the waterbodies to provide areas of immediate cover for young amphibians leaving the ponds. Brash piles will decompose over time. Therefore, cut timber and scrub that will be removed as part of the ongoing recommended pond management should be added over time.

There should be at least one hibernacula situated adjacent to the new pond, and at least two hibernacula created to support Ponds 1A and 1B. Hibernacula should be located within 250 m maximum of the breeding ponds and in areas unlikely to flood. The hibernacula should also be located in an area with minimal disturbance (Baker, Beebe, Buckley, Gent, & Orchard, 2011). Proposed locations for hibernacula should be decided upon final completion of site plans and in correspondence with an ecologist.

The design of the hibernacula will follow that set out in the *Great Crested Newt Mitigation Guidelines* (English Nature, 2001)- Figure 1 below, and will include the use of brick rubble, logs and loose topsoil, with

a covering of turf. The standard hibernacula will each be c. 2 metres in diameter, 4m in length and c. 1 metre in height.

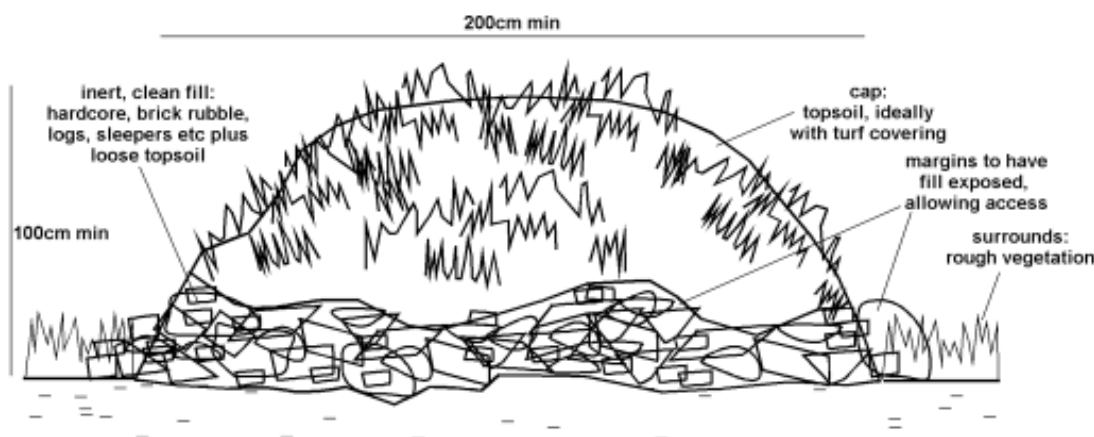


Figure 1: Suggested hibernaculum design (English Nature, 2001)

4.6 OTHER AMPHIBIANS

The common toad in Wales is listed under Section 7 of the Environment (Wales) Act 2016; therefore, it is recognised as a 'Species of Principal Importance' for the conservation of biodiversity.

Reasonable avoidance measures should therefore be followed to prevent harm to common toad during the proposed works. These measures will indirectly prevent harm to other amphibian species present on the site and should include EcOW supervision, sensitive timing of works (i.e., avoiding the hibernation period (November to February inclusive) and finger-tip searches prior to 2-stage, directional habitat clearance).

Any amphibian species found during the relocation exercise should also be translocated in accordance with Section 4.3.

5.0 SUMMARY

- GCN are present on site in a low population and are breeding on site.
- GCN on site are likely to be part of a larger, well established and documented metapopulation across the Wrexham Industrial Estate.
- The proposed development will result in the likely permanent loss of 0.7 ha of good quality GCN terrestrial habitats.
- A EPS licence will be required from NRW to allow works to proceed lawfully.
- Trapping and translocation of the terrestrial habitat will be likely be required.
- A mitigation strategy will be required to support the licence application.
- Management of the ponds on site will likely be required as part of enhancements.
- Terrestrial habitat requirement likely to include creation of at least five brash piles and at least 3 hibernacula in association with existing and created waterbodies.
- A sensitive lighting strategy will be required avoiding illumination of ponds trees and woodland edges.
- At least one additional pond should be implemented in the retained terrestrial habitat.
- A level of monitoring of GCN on the site will likely be required and will be determined during the licencing process.

6.0 BIBLIOGRAPHY

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FIGURES

Figure 1 – Site Location Plan

Figure 2 – Water Body Location Plan



Site Location Plan
Wrexham Industrial Estate

Thermotrafic Ltd.

Legend

Site boundary



Notes:

Drawn by: DYLAN.GUSSMAN
Checked by: BD
Office: Southampton

Figure No. 1
Revision No. A
19 August 2024

0 30 60 90 120 Meters
Scale 1:3,000 @A3

British National Grid
NGR: 338072E 350402N

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3 Sovereign Square
Sovereign Street
Leeds
United Kingdom
LS1 4ER



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Waterbody Location Plan

Wrexham Industrial Estate



TSL Projects Ltd.

Legend

- Site boundary
- Site boundary buffer (500m)
- Waterbodies
- Ditches

Notes:

Drawn by: DYLAN.GUSSMAN
Checked by: BD
Office: Southampton

Figure No. 2
Revision No. A
19 August 2024

0 50 100 150 200 Meters
Scale 1:5,000 @A3

British National Grid
NGR: 338127E 350366N

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APPENDICES

APPENDIX A: REPORT CONDITIONS

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including; its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

APPENDIX B: LEGISLATION & POLICY

Habitats Directive

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, or the 'Habitats Directive', is a European Union directive adopted in 1992 in response to the Bern Convention. Its aims are to protect approximately 220 habitats and 1,000 species listed in its several Annexes.

In the UK, the Habitats Directive is transposed into national law via the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales, and via the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland.

Conservation of Habitats and Species Regulations 2017 (as amended)

The 2018 amendments mainly related to the impact of the *People Over Wind* decision and some implications arising for neighbourhood plan development and a range of other planning tools including Local Development Orders and Permission in Principle – see here for full details:

<https://www.legislation.gov.uk/ukxi/2018/1307/note/made>

The 2019 amendments related to the EU exit. Most of these changes involved transferring functions from the European Commission to the appropriate authorities in England and Wales. All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant. The obligations of a competent authority in the 2017 Regulations for the protection of sites or species do not change. – see here for full details:

<https://www.legislation.gov.uk/ukdsi/2019/9780111176573>

The Regulations make it an offence to deliberately capture, kill, disturb or trade in great crested newt.

Wildlife & Countryside Act 1981 (as amended)

This is the principal mechanism for the legislative protection of wildlife in the UK. Since it was first introduced, the Act has been amended several times.

The Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any great crested newt;
- interfere with places used for shelter or protection, or intentionally disturbing great crested newt occupying such places; and
- The Act also prohibits certain methods of killing, injuring, or taking great crested newt.

Environment (Wales) Act

As part of the Welsh Government's commitment to reversing the decline in biodiversity in Wales and increasing the resilience of its ecosystems, the Environment (Wales) Act 2016 aims to build greater resilience into our ecosystems. Biodiversity and well-functioning ecosystems provide natural solutions that build resilience, which in turn help society create jobs, support livelihoods and human well-being, adapt to the adverse impacts of climate change and contribute to sustainable development.

Part 1 of the Environment Act sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act.

Section 6 under Part 1 of the Act places an enhanced duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. This duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty.

Section 7 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales. The Welsh Ministers must also take all reasonable steps to maintain and

enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps. Certain public authorities will also be required to consider the section 7 list, in complying with the new biodiversity duty under section 6 of the Act. The list is important in assisting public bodies to identify potential issues that they may wish to address in meeting their well-being objectives, in addition to contributing to the well-being goal 'a resilient Wales' (Goal 2). The current Section 7 lists are interim lists which are exactly the same as the previous list under Section 42 of the NERC Act, and is under review in consultation with NRW.

Part 1 of the Act, including Sections 6 and 7, came into force on 21st May 2016.

National Planning Policy (Wales)

The national planning policy guidance is found principally in Planning Policy Wales Edition 11 (PPW) dated February 2021 (Welsh Government, 2021). The document is supported by a series of Technical Advice Notes (TANs) with the most relevant for ecology being TAN 5: Nature Conservation and Planning (Welsh Government, 2009), which provides advice on how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. A summary of the main points relevant to the ecological assessment of the development is provided below.

Paragraph 6.4.2 states that local planning authorities, along with other public bodies, as part of the Environment (Wales) Act 2016 have a duty to take reasonable steps, consistent with the proper exercise of their functions, to further the conservation and enhancement of biodiversity and help maximise contributions to achieve well-being goals.

Paragraph 6.4.3 states that the planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement. Addressing the consequences of climate change should be a central part of any measures to conserve biodiversity and the resilience of ecosystems. Development plan strategies, policies and development proposals must consider the need to:

- support the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- ensure statutorily and non-statutorily designated sites are properly protected and managed;
- safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and
- secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.

Paragraph 6.4.4 states that biodiversity and resilience considerations should be taken into account at an early stage in development planning. All reasonable steps must be taken to maintain and enhance biodiversity and promote the resilience of ecosystems which should be balanced with the wider economic and social needs of business and local communities.

Paragraph 6.4.5 states that planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions, and that development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity. The diversity of, connections between, the scale, the condition and the adaptability of ecosystems must be taken into account.

Paragraphs 6.4.11, 6.4.14 and 6.4.22 state that planning authorities must have regard to the relative significance of international, national and local designations in considering the weight to be attached to nature conservation interests, and that the international and national responsibilities and obligations for conservation should be fully met. Statutorily designated sites must be protected from damage and deterioration, with their important features conserved and enhanced by appropriate management. Statutorily protected species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 are material considerations if a development would result in disturbance or harm to the species or its habitat, and the range and population of the species should be sustained

Paragraph 6.4.21 states 'Planning authorities must follow a step-wise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for; enhancement must be secured wherever possible'.

Paragraphs 6.4.24-26 also gives emphasis to the importance of trees, hedgerows and woodlands (especially ancient woodland) and states 'Ancient woodland and semi-natural woodlands and individual ancient, veteran and heritage trees are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees and woodlands should be afforded protection from development which would result in their loss or deterioration unless there are significant and clearly defined public benefits; this protection should prevent potentially damaging operations and their unnecessary loss. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW.'

Related to these Biodiversity and Ecological Network policies, Section 6.2 gives weight to the protection and enhancement of multi-functional green infrastructure, which is important for sustainable management of natural resources. Green infrastructure should be incorporated into development through appropriate site selection and use of creative design.

Circular Letter CL-05-04 reaffirmed the Welsh Government's commitment to ensuring that designated sites and species of nature conservation importance are protected from damage and deterioration, with their important features conserved by appropriate management. The letter advised that under specific circumstances a pre-commencement condition should be attached to planning consents requiring the applicant to provide the LPA with a copy of their European Protected Species (EPS) Licence (once issued by NRW). The Circular Letter was withdrawn in March 2018 in an attempt to reduce the number of pre-commencement conditions, with LPA's advised to instead use a replacement informative (to be attached to all relevant consent notices) to avoid unnecessary duplication controls of other legislation.

Local Biodiversity Action Plan (LBAP)

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level) and are usually drawn up by a consortium of local Government organisations and conservation charities.

Some LBAP's may also include Habitat Action Plans (HAP) and/or Species Action Plans (SAP), which are used to guide and inform the local decision-making process.

APPENDIX C: WATERBODY DESCRIPTIONS AND PHOTOGRAPHS

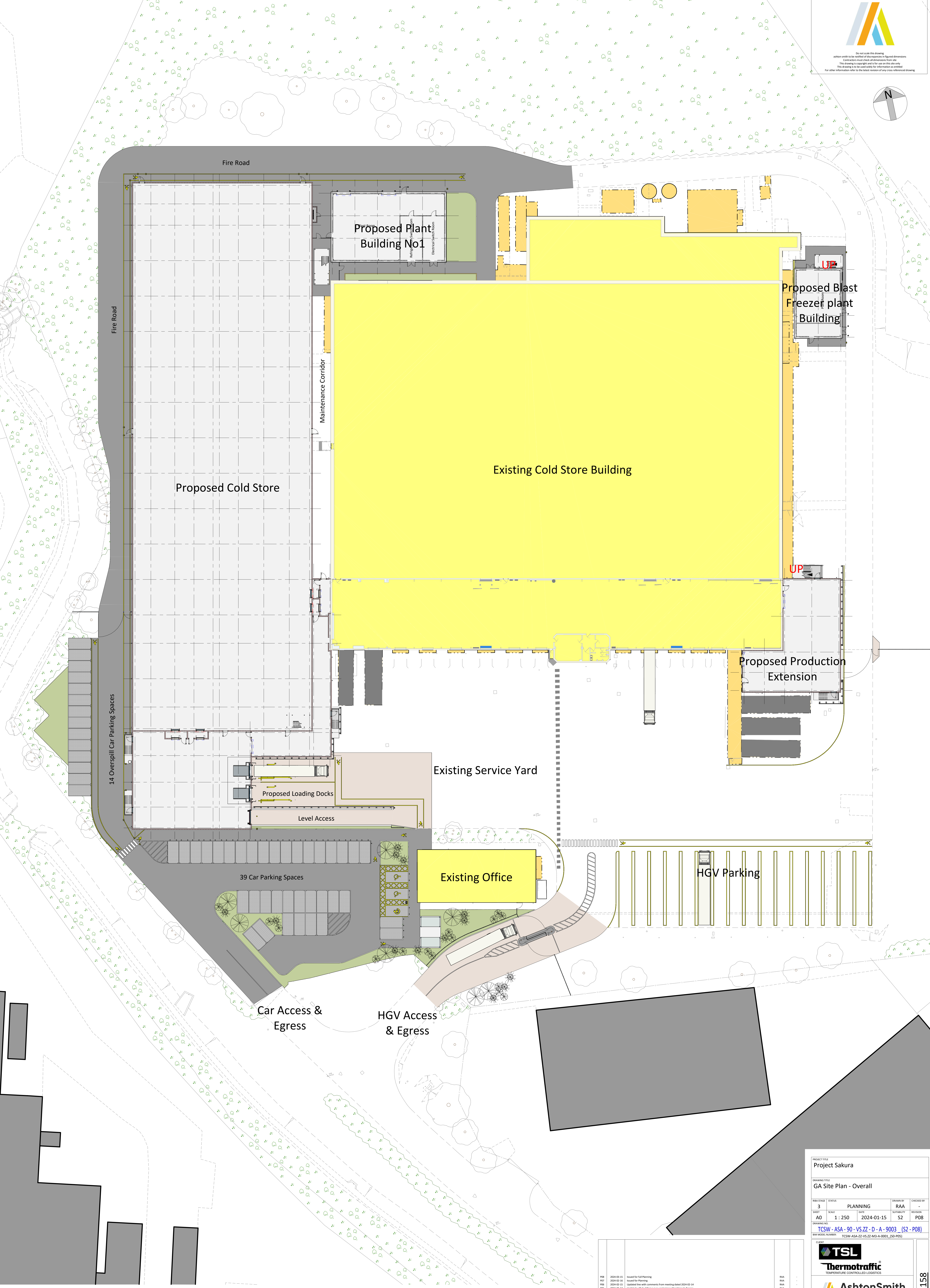
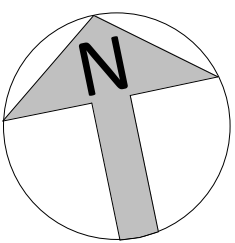
Waterbody Descriptions & HSI Score

The purpose of these descriptions is to help determine the waterbodies' suitability as breeding habitat for GCN. Therefore, where available, information on water depth, water quality, bank profile, presence of aquatic, emergent and surrounding vegetation, as well as suitability of the surrounding terrestrial habitat has been provided. A grid reference is provided for each waterbody; see Figure 2 for their locations.

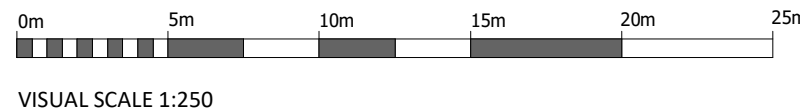
#	OS grid Ref.	Approx. size	Description	Photograph of pond	HSI	
					Score	Category
1A	SJ 38198 50266	600 m ²	Pond located within willow carr.		0.66	Average

1B	SJ 38161 50254	200 m ²	Pond surrounded by mixed scrub and other neutral grassland with tall herbs. The pond contains high cover of emergent aquatic vegetation including soft rush <i>Juncus effusus</i> .			
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APPENDIX D: PROPOSED PLAN DRAWING 'TCSW-ASA-90-VS.ZZ-D-A-9003_(S2-P08)_GA SITE PLAN - OVERALL'



1 GA Site Plan - Overall



REV	DATE	DESCRIPTION	DRAWN BY	CHECK BY
P08	2024-01-15	Issued for Full Planning	RAA	
P07	2024-02-16	Issued for Planning	RAA	
P06	2024-03-15	Updated for all comments from meeting dated 2024-02-14	RAA	
P05	2024-03-12	Updated with building survey and minor alterations to fences	RAA	
P04	2024-02-05	Preliminary, Services and additional details added	RAA	
P03	2024-01-30	Site layout updated	RAA	
P02	2024-01-18	Site layout updated	RAA	
P01	2024-01-18	Initial Drawing Issue	RAA	

PROJECT TITLE
Project Sakura

DRAWING TITLE
GA Site Plan - Overall

3
A0

PLANNING
1 : 250

2024-01-15

S2
P08

RAA

RAA

RAA

RAA

RAA

RAA

TCSW - ASA - 90 - VS.ZZ - D - A - 9003 (S2 - P08)

TCSW-ASA-ZZ-VS.ZZ-M3-A-0001 (S0-P05)

TSL
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