Norish Ltd. Wrexham Industrial Estate

784-B067397

Great Crested Newt Conservation Plan

TSL Projects Ltd.

March 2025

Document prepared on behalf of Tetra Tech Group Limited. Registered in England number: 01959704

TETRA TECH

Tetra Tech Manchester, 11 York Street, 2nd Floor, Manchester, United Kingdom, M2 2AW

Tetra Tech Group Limited. Registered in England number: 01959704
Registered Office: 3 Sovereign Square, Sovereign Street, Leeds, United Kingdom, LS1 4ER

DOCUMENT CONTROL

Document:	Great Crested Newt Conservation Plan
Project:	Norish Ltd. Wrexham Industrial Estate
Client:	TSL Projects Ltd.
Project Number:	784-B067397
File Origin:	\\lds-dc-vm-101\Data\Projects\784-B067397_Wrexham_Industrial_Estate\60 Project Output\63 Published\

Version:	1	**Prepared by:**	Bronwyn Dennis BSc Hons **Consultant Ecologist** [redacted]
Date:	19/02/2025	**Checked by:**	Gareth Parry BSc MSc (hons) ACIEEM **Principal Ecologist** [redacted]
Status:	FINAL	**Approved By:**	Rachel Kerr Cecol MCIEEM **Technical Director** [redacted]
Version:	2 Address comments raised by NRW response 20.03.25	**Updated by:**	Bronwyn Dennis BSc Hons **Consultant Ecologist** [redacted]
Status:	REVISED	**Date:**	21/03/2025

TABLE OF CONTENTS

1.0 INTRODUCTION 6
1.1 Background 7
1.2 National Planning Policy 8
1.3 Wrexham Biodiversity Action Plan 9
2.0 ROLES AND RESPONSIBILITIES 10
2.1 Contractor Responsibility 10
2.2 Thermotraffic LTD. 10
2.3 Biodiversity Champion 10
3.0 BIOSECURITY 12
3.1 Invasive non-native species (INNS) 12
3.2 Amphibian Diseases 13
3.2.1 Chytrid 13
3.2.2 Ranavirus 14
3.3 Good Practice Guidelines 15
4.0 HABITAT CREATION AND ENHANCEMENT 18
5.0 GCN MITIGATION 19
6.0 CONSTRUCTION MANAGEMENT PLAN 26
6.1 Toolbox Talk 26
6.2 Fencing 27
6.3 Mitigation Area 27
6.4 Lighting Strategy 27
6.5 Retained Habitats 28
6.5.1 Woodland and Scrub 28
6.5.2 MG9 and Neutral Grassland 28
6.5.3 Water bodies 28
6.6 Gullies and drainage management 28
7.0 OPERATIONAL MANAGEMENT PLAN 30
7.1 Habitat Monitoring 30
7.2 Fencing 30
7.3 Grassland Management 30

7.4 Pond Management 31
7.4.1 Vegetation Management 31
7.4.2 Open Water 32
7.4.3 Algal Blooms 33
7.4.4 Fish Removal 33
7.5 Hibernacula 34
8.0 PROGRAMME 35
9.0 REFERENCES 39
FIGURES 40
APPENDICES 41

APPENDICES

APPENDIX A: REPORT CONDITIONS
APPENDIX B: LEGISLATION & POLICY
APPENDIX C: WATERBODY DESCRIPTIONS AND PHOTOGRAPHS
APPENDIX D: PROPOSED DEVELOPMENT PLAN
APPENDIX E: PROPOSED LANDSCAPE PLAN
APPENDIX F: PROPOSED GREEN INFRASTRUCTURE PLAN
APPENDIX G: PROPOSED DRAINAGE PLAN
APPENDIX H: ECOLOGICAL COMPLIANCE AUDIT EXAMPLE

1.0 INTRODUCTION

Tetra Tech Limited (Tetra Tech) was commissioned by TSL Projects Ltd. in December 2024 to prepare a great crested newt (GCN) *Triturus cristatus* Conservation Plan to discharge Condition 3 as detailed within the Decision Notice P/2024/0247 (07/02/2025) Wrexham Borough Council.

Condition 3 states that:

"*No development or phase of development, including site clearances shall commence until a Great Crested Newt Conservation Plan has been submitted to and approved in writing by the Local Planning Authority. The Conservation Plan shall build upon the principles outlined in the submitted ecological reports (Dennis, B. 2024. Norish Limited, Wrexham Industrial Estate: Biodiversity Mitigation Strategy. Tetra Tech. and Dennis, B. 2024. Norish Limited, Wrexham Industrial Estate: Great Crested Newt Survey Report. Tetra Tech. Report No 784-B067397) and include by not necessarily be limited to:*

a) *The submission (to include proposed timescales and reporting requirements) of further details and associated plans concerning GCN avoidance and mitigation measures including, but not limited to:*
   - *Fence specifications, locations, construction and maintenance*
   - *Monitoring and maintenance requirements and supervised removal*

b) *The submission of habitat creation and enhancement proposals*

c) *The submission of a long-term site management plan (not less than 25 years) that includes:*
   - *Details of habitats and ecological features present or to be created, both in written form and shown on appropriate drawings, including planting plans*
   - *Defined aims and objectives (including defined key performance indicators for long term monitoring indicators)*
   - *Details of the desired condition for each habitat and criteria to determine when habitats have achieved this*
   - *Details of short and long-term habitat management prescriptions to both achieve and maintain the desired condition*
   - *Details for monitoring methodologies for habitat(s) and species*
   - *Details of scheduling and timings of activities*
   - *Contingency measures if fish or invasive non-native species (INNS) are detected*
   - *Current and any proposed changes to the freehold tenure of the local compensation area (tenure of the ecology to be approved by the Local Planning Authority)*
   - *Persons or bodies responsible for undertaking management and surveillance together with the required skills and competencies*
   - *Site liaison and wardening*
   - *Licensing requirements*
   - *Biosecurity measures which consider INNS and specific diseases (e.g. chytrid) to prevent the introduction and where present control, removal or the long-term management of invasive species both during construction and operation*
   - *Details of reporting, review and update of the plan (informed by monitoring) at specific intervals as agreed*

d) *The submission of detailed measures including plans designed to prevent the accidental capture/killing of GCN during operational phases of the scheme (including the installation and*

maintenance of an amphibian-friendly surface water management system that does not include gully pots or other similar features)

e) *Details of timing, phasing and duration of construction activities and conservation measures*

f) *Post-construction monitoring and record dissemination for a period of not less than 25 years. Methodology shall include biennial GCN abundance counts and Habitat Suitability Index (HSI) assessments, being made annually if there is a presence of fish or other invasive non-native species. All ponds (including SuDS water bodies) to be added to the Wales GCN Monitoring Scheme, and individuals/bodies being identified as being responsible for monitoring the works"*

The following document will also support a GCN European Protected Species Mitigation Licence (EPSML) application to Natural Resources Wales (NRW).

The GCN Conservation Plan considers the unique features of the site, the local area and the proposed development and is based on currently available information. If the development proposal is altered substantially, or significant new ecological information comes to light, then this plan should be revised accordingly by the Project Ecologist.

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

GCN are a European Protected Species (EPS), full details of that protection, including types of offences and relevant environmental and planning policy position are provided in Appendix B.

1.1 BACKGROUND

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 (OS NGR) SJ 38036 50371 (Figure 1). The site 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 MG9 grassland, 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 is a ditch, and a pond complex comprised of two waterbodies (labelled within this report as Pond 1A and Pond 1B) which have combined and formed a pond complex (Figure 2). Pond 1A is located within the willow carr, and Pond 1B is located adjacent to the marshy grassland and is surrounded by mixed scrub.

The chilled food distribution centre is proposed to be 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 Appendix C drawing 'TCSW-ASA-90-VS.ZZ-D-A-9003_(S2-P15)_GA Site Plan – Overall', terrestrial habitat comprised of MG9 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.

Prior to this report, associated surveys undertaken in the site included (and these reports should be read in conjunction with this document);

- Preliminary Ecological Appraisal (Just Mammals Ltd., 2024)
- GCN eDNA Survey (Marches Ecology, 2024)
- Norish Limited, Wrexham Industrial Estate GCN Survey Report (Tetra Tech, 2024)
- Norish Limited, Wrexham Industrial Estate National Vegetation Classification (Tetra Tech, 2024)
- Norish Limited, Wrexham Industrial Estate: Biodiversity Mitigation Strategy (Tetra Tech, 2024)

A 'small' GCN population was identified during the population assessment (English Nature, 2001), (Tetra Tech, 2024) in addition to breeding being confirmed during both the eDNA (Marches Ecology, 2024) and population assessment surveys.

Although the population within the site is 'small', there is anecdotal evidence that suggests that the site forms part of a metapopulation within the wider industrial estate, with connectivity between the waterbodies on site and waterbodies in the wider area (Figure 2).

1.2 NATIONAL PLANNING POLICY

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). A short summary of the main points directly relevant to the ecological assessment of the development is provided below.

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 6.4.5 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.

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'.

1.3 WREXHAM BIODIVERSITY ACTION PLAN

The Wrexham Local Biodiversity Action Plan (LBAP) was adopted in 2011. Local planning guidance note 32 pertains to biodiversity and development. A short summary of the main policies directly relevant to the ecological assessment of the development is provided below.

- Policy PS2 states that development must not materially detrimentally affect countryside, landscape / townscape character, open space, or the quality of the natural environment.
- Policy PS11 states that encouragement will be given to proposals which improve the biodiversity value of sites and to the establishment of local nature reserves where the nature conservation and landscape interest of the land will be protected and enhanced.
- Policy EC6 states that development within or close to sites of biodiversity interest will only be permitted where the need for development outweighs the need to safeguard the intrinsic nature of conservation value of the site. Where such development is permitted, damage should be kept to a minimum and compensation should be provided. Measures to improve the biodiversity value of sites and enhance their natural conservation interest will be supported.

Further detail of Wrexham LBAP policies relating to biodiversity and development are provided in Appendix B.

2.0 ROLES AND RESPONSIBILITIES

2.1 CONTRACTOR RESPONSIBILITY

Contractor responsibilities during the Construction Phase include appointment of an Ecological Clerk of Works (ECoW) to conduct a site walkover with the Biodiversity Champion (see 2.3) at the beginning of the project to identify features and points of ecological interest. The ECoW will be a GCN licence holder or an accredited agent on the licence.

This management plan will be distributed to all relevant personnel involved in the construction works.

The contractor responsibilities include the following:

- To adhere to the relevant provisions made within this document;
- To appoint a Biodiversity Champion for the duration of the construction period;
- Provide a toolbox talk which will include high-level details of the protected species on site, the presence of a restricted access Mitigation Area area, invasive plant and animal species and biosecurity measures; and
- To contact the Biodiversity Champion, and/or if necessary, the ECoW, regarding any uncertainties or activities that may impact on ecological features on site.

2.2 THERMOTRAFFIC LTD.

The land manager / owner responsibilities during Operational Phase include the following:

- To adhere to the relevant provisions made within this document for at least 25 years.
- To ensure / secure ongoing funding is available to be able to adhere to the relevant provisions made within this document for at least 25 years.
- To ensure the site is appropriately managed by granting either a long-term lease or long-term management agreement to a body that accords with the definition of “responsible” under Part 7 of the Environment Act (2021).
- To appoint a Biodiversity Champion (see 2.3) to oversee that the created habitats on site are managed as per the management plan for at least 25 years.
- To appoint a suitability qualified ecologist to monitor the condition of habitats and report on success / failure of establishment, including making recommendations for any remedial action.
- Keep record of habitat monitoring for at least 25 years.
- Ensuring that remedial action is taken where necessary for at least 25 years.
- Contact a suitably qualified ecologist when further information if required.

2.3 BIODIVERSITY CHAMPION

A Biodiversity Champion (BC) will be nominated to influence site activities during the Construction and Operational Phases in line with the recommendations of this report. The BC does not need to be an ecologist but will be familiar with this report as well as the site and have sufficient authority and presence on site to influence activities. Usually, a member of the lead contractor team takes this role during the site

Construction Phase. The BC nominated during the construction phase may not have regular site presence; therefore, the role of BC can be transferred to a new individual (such as the management agent or land agent) once management of the site is transferred into the Operational Phase.

During the Operational Phase the role of a BC is to provide advice to the site workers on all pertinent ecological issues as highlighted by this document as well as associated preceding documents and to check that the ecological protection and mitigation measures as specified, are correctly implemented.

General responsibilities of the BC are:

- Overseeing that all site contractors know to report any ecological concerns/issues to BC (e.g. any invasive non-native species (INNS)and specific diseases on site);
- Make sure all contractors are aware of and adhering to the biosecurity measures outlined in this document (also specific section to GCN and amphibians in section 3);
- Check and record that an overview of the site's ecological constraints are included within the contractor/worker inductions as appropriate;
- Undertaking weekly checks of the semi-permanent newt fencing during March-October, reducing to monthly checks during November-February;
- Supervising and monitoring the implementation and habitat creation measures as set out in this document;
- Transferring information of the BC role to the next BC between the Construction Phase and Operational Phase or prior to leaving the position for any reason; and
- Contacting an ecologist with uncertainties about ecological issues surrounding the project proposals.

General responsibilities of the BC during the Operational Phase are:

- Overseeing that the created habitats on site are managed as per the management plan;
- Overseeing the maintenance of ecological fencing and the (ecological) mitigation area;
- Overseeing mowing as per the requirements in this document;
- Checking the success of new habitats and ensuring that remedial action is taken where necessary;
- Checking the health of any animals found on site (e.g. Chytrid and Ranavirus);
- Liaising with an appropriately licensed ecologist to organise required GCN monitoring; and
- Contacting ecologist or relevant organisation if any issues arise.

Where additional issues are identified, or where it is considered that revised maintenance regimes are needed, the BC must contact a suitably qualified ecologist who can make changes to management prescriptions as appropriate. Note that any fundamental changes to management may require a licence modification where GCN are likely to be impacted.

The BC will take photographs, make logbook entries of inspections and produce progress reports as appropriate to evidence that the above responsibilities are being upheld. This monitoring and review process will be carried out as an integral part of the overall management plan.

The licensed ecologist or an accredited agent on the mitigation licence, will attend site quarterly during the first year, and once annually for the remainder of the 25 year monitoring period to conduct a GCN licence compliance check.

3.0 BIOSECURITY

Biosecurity procedures will be followed throughout the construction and operational phase, for a period of no less than 25 years. This is to prevent and minimise the risk of an impact from invasive plants, animals or disease on the GCN population on site.

The Norish site is a secure site with no public access, which will restrict access to the pond area thereby minimising any risk of introduction of invasive or undesirable species i.e. fish. Furthermore, the site is largely comprised of hardstanding, with herras/orange flexinet fencing used to restrict any personnel from accessing the Mitigation Area. This will further reduce the risk of spreading invasive plant and animal species, undesirable species and disease within the site, that are not already present within wild populations in the wider industrial estate.

To date, no INNS have been identified within the site.

3.1 INVASIVE NON-NATIVE SPECIES (INNS)

It is unlawful to aid the dispersal of any INNS listed under Schedule 9 of the Wildlife and Countryside act.

Part 14 of the Act states that 'if any person plants or otherwise causes to grow in the wild, plants which are included in Part II of Schedule 9, he shall be guilty of an offence'. Therefore, it is unlawful to plant or otherwise cause to grow in the wild any plant which is listed in Part II of Schedule 9 of the WCA. The Act also states that persons must take all reasonable steps and must exercise due diligence to avoid committing an offence. It is not an offence to have plants listed under Schedule 9 on your land, however it would be an offence to cause the spread of these plants to new areas.

Table 1: List of invasive plant species listed in Part II of the Schedule 9 of the Wildlife and Countryside Act 1981.

Common Name	Scientific Name	Common Name	Scientific Name
Australian swamp stonecrop or New Zealand pygmyweed	*Crassula helmsii*	Japanese knotweed	*Reynoutria japonica*
Californian red seaweed	*Pikea californica*	Japanese rose	*Rosa rugosa*
Curly waterweed	*Lagarosiphon major*	Yellow azalea	*Rhododendron luteum*
Duck potato	*Sagittaria latifolia*	Parrot's-feather	*Myriophyllum aquaticum*
Entire-leaved cotoneaster	*Cotoneaster integrifolius*	Perfoliate alexanders	*Smyrnium perfoliatum*
False Virginia creeper	*Parthenocissus inserta*	Pontic rhododendron	*Rhododendron ponticum*
Fanwort or Carolina water-shield	*Cabomba caroliniana*	Purple dewplant	*Disphyma crassifolium*
Few-flowered garlic	*Allium paradoxum*	Red algae	*Grateloupia luxurians*
Floating pennywort	*Hydrocotyle ranunculoides*	Rhododendron	*Rhododendron ponticum*

Common Name	Scientific Name	Common Name	Scientific Name
Floating water primrose	*Ludwigia peploides*	Small-leaved cotoneaster	*Cotoneaster microphyllus*
Giant hogweed	*Heracleum mantegazzianum*	Three-cornered garlic	*Allium triquetrum*
Giant kelp	*Macrocystis* spp.	Variegated yellow archangel	*Lamiastrum galeobdolon* subsp. *argentatum*
Giant knotweed	*Fallopia sachalinensis*	Virginia creeper	*Parthenocissus quinquefolia*
Giant rhubarb	*Gunnera tinctoria*	Wakame	*Undaria pinnatifida*
Giant salvinia	*Salvinia molesta*	Wall cotoneaster	*Cotoneaster horizontalis*
Green seafingers	*Codium fragile*	Water fern	*Azolla filiculoides*
Himalayan cotoneaster	*Cotoneaster simonsii*	Water hyacinth	*Eichhornia crassipes*
Hollyberry cotoneaster	*Cotoneaster bullatus*	Water lettuce	*Pistia stratiotes*
Hooked asparagus seaweed	*Asparagopsis armata*	Water primrose	*Ludwigia grandiflora*
Hottentot fig	*Carpobrotus edulis*	Water primrose	*Ludwigia uruguayensis*
Hybrid knotweed	*Fallopia japonica* × *Fallopia sachalinensis*	Waterweeds	*Elodea* spp.
Indian (Himalayan) balsam	*Impatiens glandulifera*		

Table 2: List of invasive amphibian species in the UK

Common Name	Scientific Name	Common Name	Scientific Name
**Alpine newt	*Mesotriton alpestris*	Marble newt	*Triturus marmoratus*
Midwife Toad	*Alytes obstetricans*	Edible frog	*Pelophylax esculentus*
Marsh frog	*Pelophylax ridibundus*	Italian crested newt	*Triturus carnifex*
Bull frog	*Lithobates catesbeianus*	African clawed toad	*Xenopus laevis*

**Alpine newt is the most likely invasive amphibian species to encounter within this site.

3.2 AMPHIBIAN DISEASES

3.2.1 Chytrid

Chytridiomycosis is caused by two species of microscopic fungi *Batrachochytrium dendrobatidis* ("Bd") which is present in the UK and *B. salamandrivorans* ("Bsal") which is not currently found in wild populations in the UK. Both strains are often simply referred to as "chytrid".

The chytrid fungus Bsal which translates as salamander skin-eating fungus threatens native amphibian populations in the UK. The fungus has recently devastated fire salamander population in Netherlands and Belgium in as little as 2-3 years and has entered the UK through the pet trade via newt species imported from SE Asia. The disease is fatal to UK amphibian species including GCN which is genetically similar to salamander, thus could pose a catastrophic threat if not contained and protected against.

Symptoms of infection in adult amphibians include lethargy, emaciation, reddening of the skin, excessive shedding or "sloughing" of skin, skin ulceration (especially at the tips of the toes), abnormal posture, apparent "seizures" or unusual behaviours such as nocturnal species being active during the day (see photographs 1 and 2 below).



Photograph 1: Newt with suspected chytrid symptoms i.e. excessive shedding of skin, ulceration of the limbs



Photograph 2: Chytrid in natterjack toad *Epidalea calamita*- dorsal skin reddening and ulceration

3.2.2 Ranavirus

Ranavirus is found mainly in common frogs, occurring less commonly in other amphibians. It causes two forms of disease in frogs: skin ulcers and internal bleeding. In the first case ulcers can readily be seen on the skin, especially on the underside of the pelvic region and on the hind limbs and feet, in extreme cases causing loss of digits. Bleeding is sometimes evident from the mouth or cloaca or as a reddening of the underside (see photograph 3).

The clearest indications that a frog population is suffering from ranaviral disease are mass mortalities of adults in or around the pond in summer, particularly if you notice frogs that are very thin or lethargic a few days before.



Photograph 3: Ranavirus in frog - skin ulcers and internal bleeding

3.3 GOOD PRACTICE GUIDELINES

This section sets out the general good practice activities required on site during pre-construction habitat clearance, the Construction Phase and the Operational Phase of the proposed development. These activities have been designed to reduce the likelihood that any negative impacts will occur to ecological receptors on or adjacent to the site.

3.3.1 INNS

To minimise the risk of spreading INNS the following must be adhered to and must be monitored by the Biodiversity Champion:

- All operatives and consultants working on the site should be provided with a toolbox talk provided by the Ecological Clerk of Works (ECoW) or Biodiversity Champion, which highlights relevant INNS (see Tables 1 and 2), the identification of INNS through key identifying features and photographs, and describes the strategy used for marking and identifying them during site clearance (if found to be present). The toolbox talk will also detail how to prevent and minimise the spread of INNS, adhering to biosecurity measures as detailed below. Toolbox to be signed by contractors on site during construction and operational phases.
- Should any INNS be identified on site, the stand/plant should be clearly marked to limit the potential for accidental spread, an ecologist or specialist contractor should be contacted for guidance. Should INNS animals be found, the animal should be removed from the site and kept in a 'contained holding' that it cannot escape from. An ecologist should be contacted for guidance on how to proceed.
- High visibility tape or netting should be erected around any invasive stands, wherever possible to 7m from the outer edge of the stand in all directions as the roots can spread significantly underground. Where practicable, all INNS should be marked in the same way or with high visibility line paint where possible with an exclusion zone of 3m from the outer edge of the stand/plant.
- An appropriate vehicle and equipment washdown area should be designated to contain the spread of any invasive plant material from site. Vehicles and other equipment must be thoroughly cleaned in the designated wash down area before being used in uncontaminated areas.
- The wash-down area should be provided to clean boots and tools as soon as contractors leave this area to prevent spread of any invasive plant material from site.

- All material resulting from vehicle wash-down must be collected and disposed of at a landfill site which is licenced to receive Schedule 9 plant waste.
- An annual monitoring visit by a suitably qualified ECoW, botanist or contractor may be required between April and September for several years after completion to determine whether species such as Japanese Knotweed have colonised site and require further treatment.
- Any personnel that are required to access the Mitigation Area such as the BC, will sanitise their boots following the disinfection procedures outlines in Section 3.3.3 before and after entering the Mitigation Area.

3.3.2 Amphibian Diseases

To minimise the risk of spreading disease the below guidance must be adhered to and must be monitored by the Biodiversity Champion:

General guidance

- Vegetation and site clearance to be completed under supervision of an Ecological Clerk of Works.
- Handle common amphibians only when necessary.
- GCN should only be handled by an appropriately licensed ecologist. Non-license holders can only handle a GCN if an individual is in danger of being killed or injured. This type of emergency handling must immediately be reported to the project ecologist for further advice.
- If handling amphibians, or if contact with standing water is necessary, wear powder-free disposable vinyl gloves which you rinse before contact with the amphibians. Use vinyl rather than latex or nitrile because the latter two may be harmful to amphibians.
- If entering water, footwear should be washed and disinfected (see disinfection procedures below) immediately after entering water.
- Do not release amphibians anywhere except at the place of capture.
- Treat dead or sick amphibians as a high infection risk and do not handle unless necessary.
- If dead or diseased amphibians are found, this should be registered with the Garden Wildlife Health project and send a sample.

3.3.3 Disinfection Procedures

Disinfect any equipment that has come into contact with amphibians or standing water. This includes footwear (boots) and any ground moving equipment.

To disinfect equipment the following will be required:

- a bucket or washing up bowl
- a brush
- disinfectant (bleach or Virkon refer to list below)
- disposable or washing up gloves (to wear while disinfecting)
- a source, or container, of clean water

1. Use brush to scrub off any debris, plant fragments, mud etc.

2. Rinse with water.

3. Soak in bleach solution for at least 5 minutes, or Virkon for the recommended contact time as per the manufacturer's instructions.

4. Rinse with clean water.

5. If possible, allow to dry before next use.

Disinfection solutions that can be used in line with Advice Note 4: Amphibian Disease Precautions: A Guide for UK Fieldworkers (ARGUK, 2017) are detailed below:

Bleach (diluted with water to produce a 4% solution) Bleach is usually diluted in water at 1:10 or 1:100 (depending on manufacturer).

Virkon (10mg/ml, as per supplier's instructions).

Virkon-S (licensed for veterinary/animal livestock applications but not human use) can also be purchased in tablet form. One 5mg tablet can be dissolved in 500ml of water.

4.0 HABITAT CREATION AND ENHANCEMENT

The proposed development will result in the loss of 0.7ha of good quality terrestrial habitats for GCN. No waterbodies will be lost as part of the development; however, the closest developmental point is located within 40m of the GCN breeding ponds see Figure 3.

A provision of onsite losses, gains/enhancements and retained habitat is detailed below:

Losses

- 0.7ha of good quality terrestrial habitat for GCN, in the form of MG9 grassland. This area also houses larval foodplants for dingy skipper *Erynnis tages* and grizzled skipper *Pyrgus malvae*

Gains/Enhancements

- 0.18ha of MG9 grassland will be enhanced by adopting a management regime which promotes the establishment and abundance of larval foodplants for dingy and grizzled skipper. This will aim to increase invertebrate abundance and diversity, and as such increase the suitability of the grassland as a GCN foraging resource.
- Scrapes for the butterflies will be implemented in the MG9 grassland within the Mitigation Area to increase structural heterogeneity, which will also increase the suitability of the terrestrial habitat for GCN by creating more microhabitats.
- 0.06ha strip of other neutral grassland will be enhanced and managed to provide additional MG9 habitat, increasing the suitability of the terrestrial habitat for GCN foraging and commuting.
- Waterbodies 1A and 1B currently function as one pond complex. They will be reprofiled to form two distinct ponds (ponds 1 and 2), which will increase the net number of available GCN breeding ponds onsite.
- The ponds will be enhanced through plug planting to increase the quantity of marginal vegetation, which will provide suitable egg-laying substrate and make the ponds more suitable for GCN breeding.
- The terrestrial habitat within the Mitigation Area will be enhanced to provide hibernation and sheltering habitat for GCN. Three hibernaculum and five refugia (i.e. log piles) will be provided.

Retained

- Approximately 1.7ha of woodland and scrub will be retained as part of the proposed development.

5.0 GCN MITIGATION

A 'small' sized population (English Nature, 2001) of GCN has been recorded during surveys of ponds located within the site. Both ponds 1A and 1B were confirmed as GCN breeding ponds (Tetra Tech, 2024). The aim of the mitigation strategy is to maintain or improve the current population onsite as part of supporting the wider metapopulation, which in doing so will maintain the favourable conservation status.

Two other common amphibian species (smooth newt *Lissotriton vulgaris* and common toad *Bufo bufo*) are also present within the waterbodies on site. The common toad in Wales is listed under Section 7 of the Environment (Wales) Act 2016. Both species will also be considered within the mitigation process with GCN.

A high-level summary of the proposed mitigation measures are provided below; note these measures are detailed in full (i.e. not in summary form) with the European Protected Species Mitigation License (EPSML) and supporting ecology documents submitted to Natural Resources Wales (NRW) (March 2025).

5.1.1 Mitigation Strategy

Temporary Amphibian Fencing

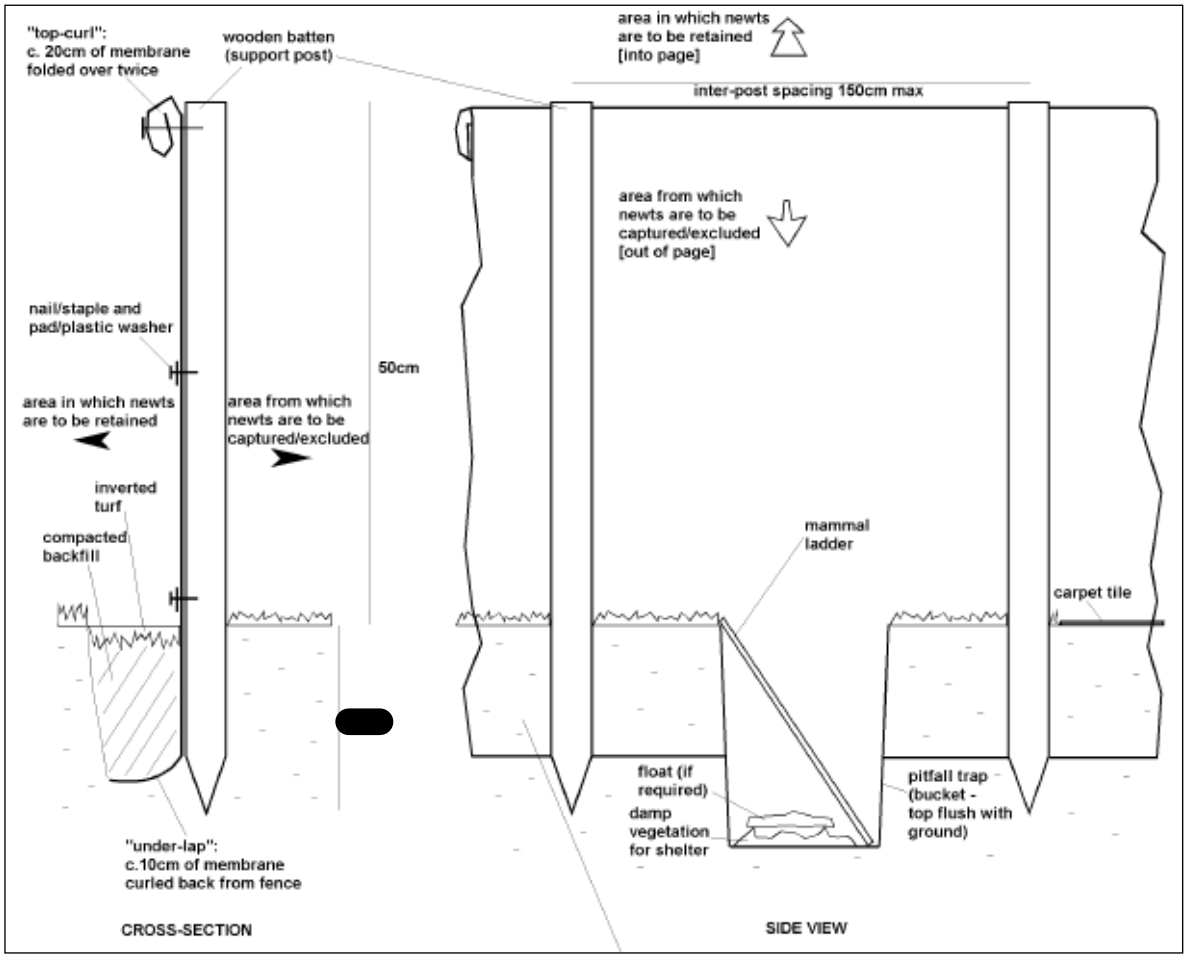
Prior to development clearance and construction commencing on the site, semi-permanent, temporary amphibian fencing (TAF) will be erected within the site boundary along the perimeter of the woodland boundaries encompassing the main works area (Figure 4) to prevent amphibians from entering the development area.

The semi-permanent newt fence will extend vertically below ground, to prevent burrowing animals getting underneath it and will extend vertically above ground sufficiently high to deter animals climbing over (see Drawing 1). Please note that Drawing 1 shows a depth of 20cm as per the great crested newt mitigation guidelines (English Nature, 2001). However, the depth of the fencing used on site will extend to a depth of 35cm following comments from NRW received on 20th March 2025.

Drift Fencing and Pitfall Trapping

Prior to the construction phase, drift fencing will be installed within the perimeter of the semi-permanent TAF in accordance with the Great Crested Newt Mitigation Guidelines (2001). At approximately 5 m intervals, a minimum of 50 pitfall traps / ha will be sunk into the ground running alongside the drift fencing (refer to Figure 4). All attempts will be made to install pitfall traps as per Figure 4, however this will be subject to ground conditions. Where it Is not possible to install a pitfall trap a refuge mat will be used. Pitfall traps will comprise plastic buckets which are sunk into the ground flush with fencing, with the top of the plastic buckets just below ground level. These will be installed by hand. Plastic containers will have a small drainage hole drilled into the base of each. Pitfall traps will have some damp vegetation placed within to provide shelter and cover for animals that are captured. Please note, pitfall trapping is restricted to the active season for amphibians (mid-March to October inclusive). The pitfall traps will be checked daily by a GCN licensed surveyor, before 10am (or temperatures in excess of 15°C). Once identified and recorded all captured GCN, smooth newts, palmate newts *Lissotriton helveticus*, common toads and common frogs *Rana temporaria* will be transported in a lidded bucket with moist vegetation to the dedicated receptor site within the Mitigation Area. Captured individuals will be placed in the newly created hibernacula and refugia piles.

Installation of drift fencing and pitfall traps will be undertaken under the supervision of a GCN licenced ECoW.



Drawing 1. TAF: Semi-permanent / Drift Fencing with Pitfall Trap Installation Specification as shown in Section 8.4 of the great crested newt mitigation guidelines (English Nature, 2001). Note depth to be 35cm [redacted]

Refuge Mats

To improve capture efficiency and increase the capture effort, refuge mats will also be laid out at approximate 5 m intervals within the perimeter of the TAF (in addition to the drift fencing and pitfall traps). These refuge mats will be checked daily by a GCN licensed surveyor, before 10am (or temperatures in excess of 15˚C).

Once identified and recorded all captured GCN, smooth newts, palmate newts, common toads and common frogs will be transported in a lidded bucket with moist vegetation to the dedicated translocation GCN receptor site established in the eastern MG9 grassland and southern boundary semi-improved neutral grassland. All animals captured will be recorded by species, sex and life-stage before being transported to the dedicated translocation receptor site within the Mitigation Area. Captured individuals will be placed in the newly created hibernacula and refugia piles.

Trapping Duration

This process will continue for a minimum of 30 days, with traps and refuge mats checked every morning. After 25 days, the first five day set of consecutive days with no recorded GCN captures will mark the end of the trapping and translocation process.

GCN Exclusion Completion

Upon completion of GCN trapping an ECoW accredited to the licence will be present for the removal of the internal drift fencing and back filling of the pitfall trap holes to ensure no GCN have crawled into any small crevices or gaps. Where spoil heaps, brash or potential refuge sites are present the ECoW will undertake a fingertip search for GCN to ensure no GCN are still present.

Following the supervised removal of the drift fencing and a final hand search of the site (see 5.1.2), clearance activities may proceed within the semi-permanent TAF perimeter without supervision of the ECoW.

The TAF will remain in place and be regularly monitored by the BC and maintained to ensure its efficacy, for the duration of the Construction Phase. Checks of the TAF should occur daily when the site is active and during the active season for amphibians (mid-March to October inclusive). During the hibernation period (November to February inclusive), checks of the TAF should occur monthly.

The named licenced ecologist will attend site quarterly to carry out licence compliance checks.

Mitigation Area

Terrestrial Habitat

0.18ha of MG9 grassland will be enhanced by adopting a management regime which promotes the establishment and abundance of larval foodplants for dingy and grizzled skipper.

Scrapes for the butterflies will also be implemented in the MG9 grassland within the Mitigation Area to increase structural heterogeneity. This will aim to increase invertebrate abundance and diversity and create microhabitats within the grassland which will increase the suitability of the grassland as a GCN foraging and commuting resource.

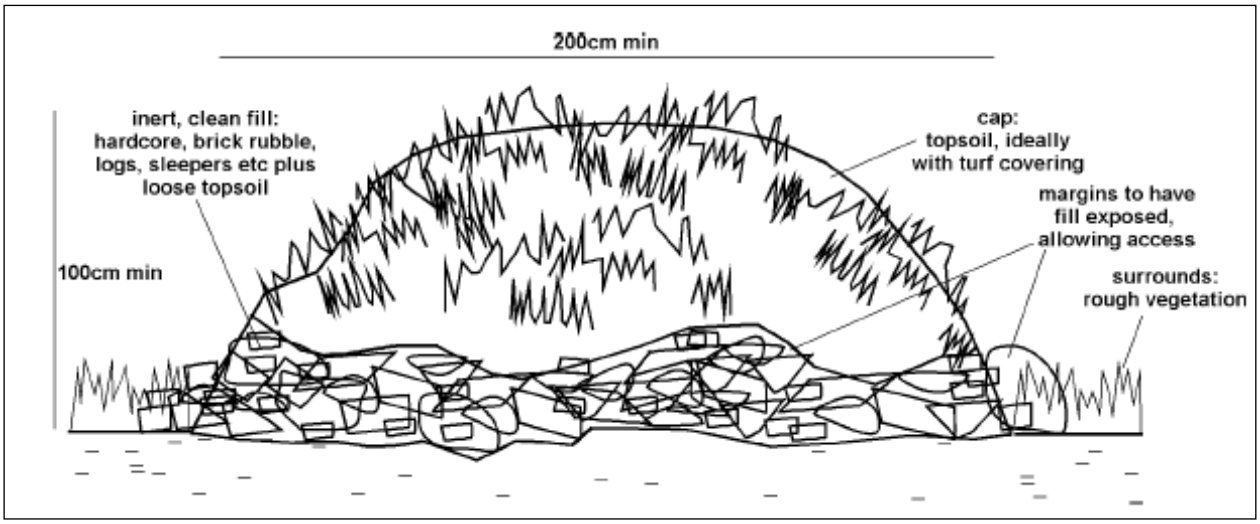
0.06ha strip of heavily managed other neutral grassland will be planted with local seed to enhance the area to MG9 habitat. The mowing regime will be reduced to include one annual meadow cut which will increase the suitability of the terrestrial habitat for GCN foraging and commuting.

Hibernaculum and Refugia

In total three dedicated GCN hibernaculum will be created in the Mitigation Area.

An additional five refugia will also be created within the receptor area by stacking logs, brash, branches, removed site vegetation and leaf litter during site clearance activities. The piles should be stacked neatly and uniformly, which creates a more tightly packed refugia. As they decompose, the refugia will hold more moisture and become increasingly valuable habitat (Amphibian and Reptile Conservation Trust, 2024).

The design of the hibernacula will follow that set out in the *Great Crested Newt Mitigation Guidelines* (English Nature 2001 - Drawing 2 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 m in diameter, 4 m in length and c. 1 metre in height.



Drawing 2 (Taken from the Great Crested Newt Mitigation Guidelines 2001)

Pond Enhancement

Pond Reprofiling

Ponds 1A and 1B will be reprofiled and made into two distinct ponds (Pond 1 and 2). The surface area of each reprofiled pond will be 150-300m^2 with the final pond shapes to be based upon site topography and condition of the ground. The ponds will be drained of water to enable the best shapes and gradients to be achieved.

The works will be undertaken by an external contractor who has experience completing habitat management works for conservation. The works will be undertaken using plant machinery and will be supervised by a GCN licenced ECoW. Toothed buckets will be used on plant machinery where possible to prevent accidental injuring or killing of GCN.

The pond draining will be undertaken with ECOW supervision in October-November 2025, when adult and juvenile newts are likely to have left the ponds. This will ensure that any individuals found during the pond works can be safely moved before they enter the terrestrial hibernation/ aquatic overwintering period. The water levels will be lowered in a controlled manner using a pump which will be fitted with a fine mesh membrane that will catch any individuals present within the pond. Water levels will be lowered and reinstated in such a manner so that one water body will always hold some water. Pumping will be closely monitored by the ECoW, with any individuals moved from one water body to the other, until the reprofiling works have been completed. It is acknowledged that this may result in some individuals being 'double handled', however this solution is considered preferable to holding animals potentially overnight in temporary containers should both waterbodies be fully pumped out.

Excess leaf litter sediment build up in Pond 1 will be removed once the pond is drained. Leaf litter over time can lead to excess sediment in the pond and reduces the areas of suitable live egging material. Leaf litter break down over time can also impact water quality by increasing the nitrogen content and biological oxygen demand. The requirement for dredging of leaf litter will be assessed biennially throughout the 25-year management period.

Following the re-profiling the ponds, the (clean) spoil arising from the digging will be left as non-compacted mounds to allow the formation of the three proposed hibernacula on site combined with other materials. The ponds will then be left to refill naturally.

The ponds will offer a range of deep water with variable depths made (up to a maximum of 2m centrally), marginal and marshy zones will also be re-formed around the edges. These profiles and features supply a range of microhabitats for pond fauna and will also allow for the MG9 grassland immediately surrounding the ponds to be retained.

Scrub Management

Pond 1A (Pond 1) is located within dense scrub and is heavily shaded by willow, Pond 1B (Pond 2) lies adjacent to this and is also bordered by dense scrub. Areas of the surrounding scrub and woodland will need to be removed to enable access to complete the reprofiling works.

Management of the scrub surrounding the ponds will be conducted under the presence of a GCN licenced ECoW throughout the 25-year management period (October-February inclusive). 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.

Management will include selective removal of overhanging vegetation to create open and sheltered areas in addition to increasing sunlight in the pond. 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). The removal of scrub around the pond edges will also help reduce the need for dredging the pond due to leaf litter in the future.

Trees, branches and scrub that are felled as part of this habitat management should be retained onsite to contribute to onsite refugia and for the creation of new log and brash piles in the future.

Pond Planting:

To provide suitable breeding conditions for the following breeding season, both ponds will have native plug planting provided at a suitable density of 2-3 marginal plants per metre, number and maturity to provide suitable conditions.

Planting will be undertaken in early spring/ summer months and will follow the guidance provided by the provider.

Shallow areas, less than 10cm -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). Some native and locally occurring aquatic vegetation will be introduced to the enhanced ponds based on the recommendations provided below.

Floating and submerged plants to be 100 % of one or more of the following species:

- Broad leaved pondweed Potamageton natans
- Fringed water lily *Nymphoides peltata*
- Curled pondweed *Potmogeton crispus*
- Rigid hornwort *Ceratophyllum demersum*
- Water starwort(s) *Callitriche spp.*

Emergent vegetation (20 %) will be made up of one or more of the following species:

- Branched bur-reed *Sparganium erectum*
- Reed sweet grass *Glyceria maxima*
- Greater pond sedge *Carex riparia*

Marginal and fringing vegetation (80%) will be made up of from one or more of the following species with a minimum introduction of 40 individual plants:

- Water mint *Mentha aquatica*
- Lesser spearwort *Ranunculus flammula*
- Soft rush *Juncus effusus*
- Jointed rush *Juncus articulatus*
- Common spike rush *Eleocharis palustris*
- Water forget me not *Myosotis scorpioides*
- Purple loosestrife *Lythrum salicaria*
- Ragged robin *Lynchnis flos-cuculi*
- Marsh marigold *Caltha palustris*
- Marsh woundwort *Stachys palustris*
- Gipsywort *Lycopus europeaus*
- Cuckoo flower *Cardamine pratensis*
- Water plantain *Alisma Plantago aquatica*
- Brooklime *Veronica beccabunga*
- Wild angelica *Angelica sylvestris*
- Yellow flag iris *Iris pseudocurus*
- Reed canary grass *Phalaris arundinacea*

The ponds will be managed to prevent the loss of open water habitat; similarly, marginal and emergent vegetation will require management to ensure habitat types are maintained and do not succumb to natural colonisation.

Habitat management of the Mitigation Area will be adhered to throughout the Construction and Operational phases for a period of no less than 25 years. Further detail is provided in Sections 6 and 7.

Monitoring

Upon completion of the works, the onsite GCN population will require monitoring to ensure that the mitigation and management of the site are functioning.

Although the onsite population was recorded as “small” (English Nature, 2001), it likely contributes to the larger metapopulation present within wider Wrexham Industrial Estate. As such population size class assessments and HSI assessments of the ponds will be required biennially for the duration of no less than 25 years (2026, 2028, 2030, 2032, 2034, 2036, 2038, 2040, 2042, 2044, 2046, 2048, and 2050). The population size class assessments will be based on 2-3 torch counts; with the results being uploaded to the Wales GCN Monitoring scheme.

If fish or other INNS are recorded, then these surveys will be carried out annually. INNS, fish and amphibian disease all pose major threats to the GCN population on site. Annual monitoring will therefore allow for the health and dynamics of the GCN population to be closely assessed. Furthermore, it will allow for the

observation of INNS and fish removal measures to ensure that they are successful or if further intervention is needed (see Section 7.4.4 for further details regarding fish removal).

Section 6.4.36 of the Planning Policy Wales (Edition 12) and its relevance to the planning decision process includes a requirement that the proposal will not be detrimental to the maintenance of a favourable conservation status for species within the natural range. The proposals therefore consider the capability of demonstrating no detriment to a favourable population. As GCN have a longevity of 12-15 years and favourable conservation status needs to be considered over multiple generations, long-term surveillance is required for informing both the current conservation status (CCS) of a population and the detail of management works and so a 25-year monitoring plan will be put in place.

5.1.2 Destructive Search

Following translocation of amphibians to the Mitigation Area a destructive search shall be conducted of the site during the vegetation clearance and soil strip in order to prevent accidental harm to any other amphibians still within the working area.

Toolbox Talk

- A Toolbox Talk will be provided to the vegetation clearance and soil strip contractors, outlining which habitats on site are suitable to support amphibians, their legislative protection and recommended actions should amphibians be identified on site.

Ecologist Supervision

Vegetation clearance/soil strip works will need to be supervised by a suitably GCN Licenced/Accredited Agent ECoW using the following methods:

- The ECoW will conduct a hand search of the grassland area to be cleared. The vegetation will be strimmed to a 15cm height.
- Strimming should commence directionally (south to north) across the site to allow amphibians the opportunity to disperse. A further hand search will commence.
- Once the ECoW has searched the area to be cleared, strimming can commence to strip the site. This should also proceed directionally (south to north). Any animals found will be collected and moved by the ECoW to the designated receptor sites within the Mitigation Area.
- A search, by hand, by an ECoW will be carried out immediately prior to removing any dense vegetation and brash piles. This should be undertaken during both the breeding and hibernation periods. Should any animals be found during these searches, a buffer zone will be determined by the ECoW.
- Once all vegetation has been cleared a GCN licenced ECoW shall also supervise the soil strip of the working area. A toothed bucket will be used where possible to reduce chances of accidental injuring or killing of GCN and other amphibians.

6.0 CONSTRUCTION MANAGEMENT PLAN

6.1 TOOLBOX TALK

All construction workers will be provided with a 'Toolbox Talk' presentation prior to commencing work on site so that they are made aware of the ecological issues relating to the site, particularly the presence of GCN. Other potential ecological constraints included within the toolbox talk will include the presence of a mitigation area nesting birds, badger *Meles meles*, hedgehogs *Erinaceus europaeus* and common toad.

The toolbox talk will follow this document as well as the Biodiversity Mitigation Strategy (Tetra Tech, 2024), and detail the important ecological features on site, identifying their locations and the reasoning for conservation/mitigation measures. Initially this presentation will be delivered by a licenced GCN ecologist however it is anticipated that subsequent presentations will be incorporated into the general Health and Safety briefing which is given to all workers when they first visit the site.

A copy of this GCN Conservation Plan, the Toolbox Talk and Biodiversity Mitigation Strategy (Tetra Tech, 2024) will be kept on site at all times.

6.1.1 General Good Practice

A safe system for the correct storage of materials / chemicals on site should be implemented to ensure that materials are stored in a suitable manner as to avoid potential impacts on vegetation. This is particularly important with liquids/ chemicals which should not be stored near vegetated areas or watercourses and should be stored on an impermeable base. This will protect habitats to be retained within the site and habitats adjacent to the site.

Appropriate cleaning / maintenance of machinery / tools on site should be undertaken at a sufficient distance from vegetated areas. Failure to do so may result in contaminated water entering the soil and reducing / increasing soil pH and increasing contaminant / sediment levels. It is anticipated that an appropriate Pollution Prevention Control Plan will be in place during the construction phase.

Although the presence of construction waste on site is unavoidable, it is recommended that all waste is stored appropriately and is removed at the earliest opportunity to avoid contamination of the ground and degradation of soil quality. Contractors should also avoid leaving construction waste on site as it may be used as a place of refuge for wildlife, which may then become injured/killed when the waste is removed.

In order to minimise the risk of harm to wildlife:

- All excavations should be either covered at the end of the day (preferable) to prevent access and if this is not possible, they should be left with a ramp, to allow anything which has fallen in, with a means of escape;
- All pipes over 200 mm in diameter should be capped at night, to prevent animals, such as badgers, from entering;
- To minimise disturbance of nocturnal species, night-time working should be avoided wherever possible and if necessary, light spill should be minimised and directed away from mature and boundary vegetation; and
- Maintain access across the construction site for wildlife by not blocking or storing equipment along retained habitats, such as hedgerows and woodland edges.

6.2 FENCING

During construction ecological features and retained habitats will be protected against inadvertent damage during works by the erection of protective fencing (orange flexinet, heras fencing or similar) prior to works on site commencing, under the supervision of the ECoW and in line with other protections measures (such as root protection zones) (Martin Boardman & Associates, 2024).

The features that will be protected include the designated Mitigation Area, which comprises;

- the eastern MG9 grassland,
- the strip of neutral grassland- semi-improved (Just Mammals Ltd., 2024) along the southern boundary of the site;
- woodland;
- scrub; and
- the onsite waterbodies (ponds 1A and 1B).

The fencing will be inspected daily for damage during March-October, and monthly during November-February. The fencing will be repaired as required.

6.3 MITIGATION AREA

Prior to construction, a Mitigation Area will be established (Figure 5) in the eastern MG9 grassland and southern boundary semi-improved neutral grassland through a series of habitat enhancements and the creation of ecological features for GCN (refer to Section 5.0). This area will also include designated receptor areas for any translocated individuals.

Contractors will be made aware of the presence of Mitigation Area during the Tool Box Talk and instructed to not enter it under any circumstances.

6.4 LIGHTING STRATEGY

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) and the Institute of Lighting Professionals Guidance Note 08/23 (ILP, 2023). The lighting strategies should:

- Avoid construction lights illuminating retained habitats (e.g. hedgerows 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 55 nm or use glass lantern covers to filter ultra violet light;
- 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.

6.5 RETAINED HABITATS

6.5.1 Woodland and Scrub

The woodland and scrub are not proposed to be impacted during the proposed development and barriers should be installed to establish woodland and scrub protection zones.

Should removal of any woodland or scrub be required, the project ecologist should be contacted for advice, and an ECoW will be required due to potential constraints posed by GCN, nesting birds, badger, hedgehogs and common toad.

6.5.2 MG9 and Neutral Grassland

The MG9 on the western side of the site and the neutral grassland to the south of the site are excluded from the development and will be managed sympathetically for protected species through relaxed mowing regimes (one autumn annual hay cut). This area will be protected by barriers to prevent the vegetation and soil being compacted and damaged from site works.

6.5.3 Water bodies

All water bodies within the site will be retained and are located within Mitigation Area. GCN, common toad and other common amphibians are potential constraints to the water bodies within the site. These areas will be protected by barriers (in the form of orange Flexinet / Heras fencing or similar) to separate them from the construction works areas.

Additional General Good Practice measures as detailed in Section will further protect water features.

6.6 GULLIES AND DRAINAGE MANAGEMENT

During the construction phase, any new gullies/ gully pots will need to be fitted with suitable amphibian escape ladders. The amphibian escape ladders, frog ladders or amphibian gully pot ladders allow amphibians and other animals such as reptiles, shrews, mice, etc to exit from storm drains, light shafts, ventilation shafts and other death traps. These are generally formed with a plastic mesh however some mats such as ‘Sytec Terramat S’ include a polyethylene back which should be removed before installation so not to cause a build-up of organic material onto the ladder (see photograph 4 below).



Photograph 4: example gully pot ladder for amphibians (British Herpetological Society, 2025)

7.0 OPERATIONAL MANAGEMENT PLAN

This section provides details of the proposed management of the retained, enhanced and created habitats and features following the completion of the construction programme. The management proposals below assume that created habitats have established successfully; if created habitats and vegetation (or parts thereof) have failed, then remedial action should be taken to re-establish them in the next annual cycle under the guidance of the Project Ecologist.

Please note that it is the responsibility of Thermotraffic Ltd. and the appointed BC to ensure that the mitigation and management of the site is completed and maintained (see Section 2.1 Roles and Responsibilities).

Wildlife-friendly practices will be employed where possible, with species selection and management practices (e.g. dead-heading) working towards providing flowers throughout spring and summer, to maximise the nectar resource across the site. This will in-turn increase invertebrate diversity across the site and provide food for other species.

7.1 HABITAT MONITORING

Following completion of the construction works the habitats on site will be monitored annually by an appropriately experienced ecologist to assess the condition of the habitats, and the success of the management plan.

If at any time habitat management practices need to change, this document shall be revised and consultation with NRW undertaken to approve any changes.

This document will be reviewed at a minimum of every 5 years and updated as required.

7.2 FENCING

At the end of the construction phase the semi-permanent TAF will be removed under supervision of an ECoW and under the correct conditions i.e. March to September inclusive and in temperatures above 5°c.

As best practice it is recommended that the receptor area for GCN be fenced off using orange flexi-net or heras fencing in addition to informative signage which highlights that the area is a Mitigation Area. This will promote the success of new planting and seeds establishing through reduced disturbance and degradation of habitat. It will also reduce direct disturbance to wildlife (GCN) using these areas and waterbodies.

Permanent fencing erected at the end of construction phase should be checked annually for damage and repaired as required.

7.3 GRASSLAND MANAGEMENT

The remaining areas of grassland on site will be managed sympathetically for GCN.

Selective areas within all areas of retained grassland should be subject to ground scarification. This will create areas of early successional habitats and bare ground that produces a habitat mosaic. A maximum

area of scrapes should not cover more than 10 % of the total habitat area. Scrapes are created by removing a triangular wedge of soil approximately 20 cm deep using machinery. The scrapes should be included within the grassland management regime. The overall aim is to maintain about 50 % of the surface of the scrapes area as bare ground with 50 % covered by early successional vegetation. Therefore, it is recommended that these remain unseeded. Once the area of bare ground falls below 50 %, management will be required. Young scrub should be cut and pulled up by the roots at an early stage. If the scrapes become too vegetated, the process should be repeated by re-scraping the surface. How frequently these areas will require intervention will depend on the soil type. This will be assessed by the licensed ecologist during annual licence compliance checks for the duration of no less than 25 years following the completion of the works.

Relaxing typical intensive management regimes (e.g. mowing) for grassland can benefit wildlife and allow colonisation by native species without necessarily detracting from existing public amenity value. Grassland to be subject to an annual autumn hay cut to maintain glade and remove scrub. This will ensure that the seed has dropped from the herbs and grasses present. The mowers / cutting method should be undertaken so that a sward height of 20 cm is retained as ground cover. This will prevent ground scalping, which can encourage the invasion of weeds, and will also retain good cover for GCN, maximising the foraging availability as well as ground cover opportunities. Cutting must take place during daylight hours (to reduce the chance that GCN are present) and the operative be vigilant in case GCN are present foraging within the sward.

The timing of cutting is crucial and will be left until after the grasses and other plants have flowered and seeded (usually late June to late August inclusive). A late summer / early autumn mow (with the clippings removed) will help keep scrub and dominant grasses from proliferating.

Providing that the continuity of mowing is maintained over the years, then wildflowers will be able to flower and set seed between cuts. If this mowing regime is varied however and the area cut at another time, then wildflowers will be lost.

Additionally the grasslands will not be fertilised as this will encourage the domination of the sward by a few highly competitive species. The sward must be at its longest in the summer and shortest in the spring and autumn when most grassland species germinate.

Furthermore, grass clippings will be collected after cutting and not allowed to degrade on the lawn surface; this maintains nutrient levels at a low level and encourages species diversity.

7.4 POND MANAGEMENT

7.4.1 Vegetation Management

The pond maintenance will be undertaken in order to ensure that the habitats created are as optimal as possible for GCN breeding.

Vegetation management works within the ponds will be timed to occur between October-February (inclusive) to avoid the amphibian breeding season. The aim of managing the ponds will be to keep at least one third as open water; this will benefit amphibians and prevent vegetation build up which will reduce the flood storage capacity of the pond.

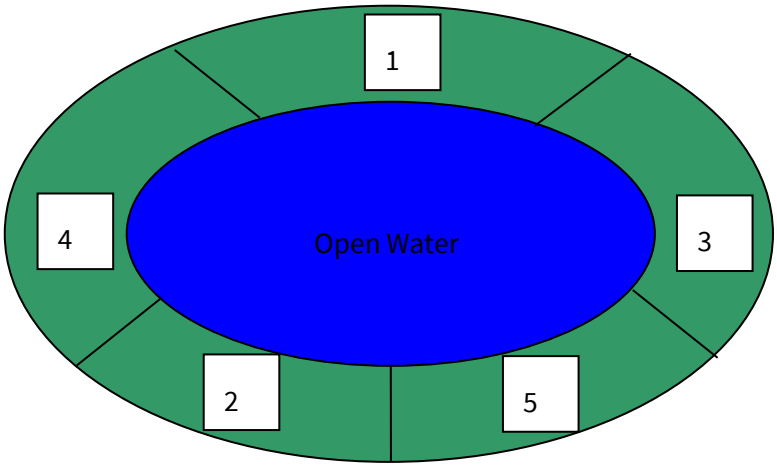
Both ponds will be managed and maintained as described in detail below in addition to the following prescriptions:

- Clearance of shading tree or scrub cover around pond margins to open up the southern and south east aspects;
- Desilting and clearance of leaf fall (as deemed necessary through annual pond management);
- Checking for fish presence and removal through appropriate measures such as piscicides, electrofishing, netting and trapping, and draining of ponds;
- Checking for and removal of dumped rubbish.

All of the planting at both ponds will be covered by an aftercare arrangement, which will stipulate that any plants which die within five years of planting will be replaced. This will ensure that any failing areas are replaced by like-for-like stock to ensure that the site develops as intended.

It is not considered that, beyond the replacement of failed planting, any management of the emergent vegetation planting will be necessary in the first three years. After this time, emergent vegetation in the ponds, should be removed as part of a five-year rotation to open up an equivalent of 20 % of the perimeter area as part of each cut. This will create clear channels out into the main open water areas, helping to maintain a diversity of marginal conditions within the ponds. The arisings should be left for a week to allow invertebrates to move back into the water prior to their removal.

An example of the proposed emergent vegetation management scheme is provided below: if the sections 1 to 5 below represent the areas of emergent vegetation to be cut, then in Year 4: section 1 is cut and removed. In Year 5: section 2 is cut and removed etc. This cutting rotation will continue such that each section is cut once every 5 years.



When clearing out ponds, leave any plants and debris along the edge for a few days or so, before removing. This allows any trapped wildlife to return to the water.

7.4.2 Open Water

It will also be necessary to monitor vegetation encroachment into the open water habitat annually both for potentially invasive species such as common reed, but also to identify the potential establishment of any invasive non-native species such as:

- Canadian pondweed or waterweed
- Floating pennywort
- New Zealand pigmyweed

These INNS can spread rapidly and choke small waterbodies. Should any such encroachment by INNS be identified, it will be necessary to remove these inundations as soon as feasibly possible.

7.4.3 Algal Blooms

Algaes are naturally occurring aquatic plants. Not all are harmful and those that are, often become so only when triggered by a certain environmental condition or a combination of conditions.

Some factors likely to trigger a problem are:

- Increased nutrient levels in the water, which in a domestic situation is often a result of high numbers of fish
- Long periods of calm hot weather
- Low water levels
- Lack of adequate water circulation

7.4.4 Fish Removal

Fish may colonise ponds naturally, as well as being accidentally and deliberately introduced. There is a very low risk of accidental or deliberate introduction of fish on site, due to the secure nature of the site and restricted access to the Mitigation Area.

GCN and their eggs are extremely vulnerable to predation by fish such as sticklebacks *Gasterosteidae* sp. and perch *Perca* sp., and fish presence may deter GCN from breeding in such ponds (Armphibian and Reptile Conservation, 2010). To halt the decline and maintain the existing range and viability of GCN populations, should fish populations become established in the onsite ponds, eradication will be required.

The selection and application of control methods is important to minimise the impact work on other pond wildlife. As such, fish control should be avoided during the GCN aquatic phase (mid-February to mid-October). The life cycle of fish present will also need to be considered (Armphibian and Reptile Conservation, 2010).

Methods of fish control include:

- Piscicides
- Electric fishing
- Netting and trapping
- Draining/ drying out ponds
- Desilting

Note that some methods for removing fish will require Environment Agency consent. Furthermore, dead fish are considered controlled waste, and the Environment Agency should be contacted regarding their disposal.

Should fish be discovered on site, an ecologist should be contacted to determine which method of fish control will be considered most appropriate and for what period of time that control is to be delivered over.

7.5 HIBERNACULA

The GCN Hibernacula will not require maintenance once constructed. The hibernacula should be inspected once annually during the first five years to check that the overlying turf is establishing and check for damage. If required, the management team should be contacted to undertake remedial action. A GCN licenced Ecologist will need to be present during remedial works given the protected status of this species.

8.0 PROGRAMME

Table 3 sets out the ecological receptor, timing, actions and monitoring during the construction and operational phases.

Table 3: Ecological Receptor and Habitat Management Timetable

Overarching Action	Details	Year/s	Timing
Biosecurity measures (Section 3.0)	Adherence to biosecurity measures for the control of disease and INNS	All years (to include construction period and 25-year monitoring period)	All year round
General 6.1.1 (Section 6.1.1)	General good practice measures	All years (to include construction period and 25-year monitoring period)	All year round
Ecological compliance checks (Appendix G)	Licence compliance checks to be completed by the licensed ecologist	Quarterly during the first year of the licence (2025/2026). Annually for no less than the 25-year monitoring period	All year round
Toolbox talk (TBT) to be delivered by ECoW or BC (Section 6.1)	TBT in particular reference to amphibians.	When required, see timing.	Pre-commencement and upon commencement of new site personnel during construction phase.
ECoW Supervision	Required during: • fence and trap installation • fence and trap removal • other digging works • pond creation • pond management • habitat creation • terrestrial vegetation removal ECoW should also be consulted during unexpected finds.	When required, see timing.	During construction and operational phases depending on activity.

Overarching Action	Details	Year/s	Timing
Habitat Creation (Section 4.0)	Creation of three GCN hibernacula	2025 and 2026	Two to be completed pre-commencement (April-May 2025) and one upon completion of the works (2026).
	Creation of five refuge piles (log piles)	2025 and 2026	Three pre-commencement (April-May 2025) and two upon completion of pond scrub management following works (2026).
Trapping and Translocation (Section 5.1.1)	Installation of newt fencing (including semi-permanent and drift), pitfall traps and refuge mats	2025	Pre-commencement (March-October)
	Trapping of GCN terrestrial habitat due to be lost to proposed development.	2025	Minimum of 30 trapping days to take place March – October inclusive
	Removal of drift fencing, pitfall traps and refuge mats	2025	Following successful trapping period (March-October)
	Removal of semi-permanent fencing	When required, see timing.	Upon completion of the construction phase (March-October)
Pond creation/reprofiling works (Section 4.0)	Scrub clearance around waterbodies 1A and 1B to allow access	2025	To be completed alongside hibernacula and refugia creation (March/April). Any further removal required to be undertaken October-February
	Drainage of pond water in waterbodies 1A and 1B	2025	October-November
	Reprofiling of waterbodies 1A and 1B to create two distinct ponds (Ponds 1 and 2)	2025	October-November following drainage of water

Overarching Action	Details	Year/s	Timing
	Planting of new aquatic marginal plants	2026	Early spring. Planting to be completed upon completion of pond creation. Should any planting fail, re-planting will be required.
	Weed growth removal (by hand or excavator)	2025	October/November following pond reprofiling works
Pond management (Sections 6.5.3 and 7.4)	Clearance of shading tree/ scrub cover around pond margins	Every 2 years (2025, 2027, 2029, 2031, 2033, 2035, 2037, 2039, 2041, 2043, 2045, 2047, 2049); to be reviewed annually	October-February
	Desilting and clearance of leaf fall	Every 3 years (2025, 2028, 2031, 2034, 2037, 2040, 2043, 2046, 2049); to be reviewed annually	October-February (November-January for any desilting within the ponds)
	Checking for fish presence and removal through appropriate measures	Annually for the duration of the 25-year monitoring period	October-February to avoid breeding amphibians.
	Checking for and removal of dumped rubbish	Annually for the duration of the 25-year monitoring period	October-February to avoid breeding amphibians.
	Checking for vegetation encroachment into open water habitat (invasive species)	Annually for the duration of the 25-year monitoring period	October-February to avoid breeding amphibians.
	Checking for invasive animal species and any signs of disease	Annually for the duration of the 25-year monitoring period	March-October (during active period).
	Monitoring of algal blooms	Annually for the duration of the 25-year monitoring period	March-August as this is when algal blooms are most likely to develop.
Population monitoring (Section 4.0)	Population monitoring of onsite GCN	To be undertaken biennially (2026, 2028, 2030, 2032, 2034,	March-June (three torching visits to be

Overarching Action	Details	Year/s	Timing
		2036, 2038, 2040, 2042, 2044, 2046, 2048 and 2050). **Should fish or invasives be found in the waterbodies, monitoring years will become annual.**	undertaken and HSI of waterbodies).

9.0 REFERENCES

Amphibian and Reptile Conservation Trust. (2024, July). *Helping Amphibians*. Retrieved from arc-trust: https://www.arc-trust.org/help-amphibians

ARG UK. (2010). *Great Crested Newt Habitat Suitability Index.*

ARGUK. (2017). *Advice Note 4: Amphibian Disease Precautions: A Guide for UK Fieldworkers.*

Baker, J., Beebee, T., Buckley, J., Gent, A., & Orchard, D. (2011). *Amphibian Habitat Management Handbook.* Bournemouth: Amphibian and Reptile Conservation.

Baker, J., T, B., Buckley, J., Gent, A., & Orchard, D. (2011). *Amphibian Habitat Management Handbook.* Bournemouth: Amphibian and Reptile Conservation.

British Herpetological Society. (2025). *Shop. The BHS Amphibian Gully Pot Ladder*. Retrieved from British Herpetological Society: https://www.thebhs.org/the-bhs-amphibian-gully-pot-ladder

Butterfly Conservation. (2024, July). *Butterfly Conservations UK Conservation Strategy 2025.* Retrieved from Butterfly Conservation: https://butterfly-conservation.org/our-work/our-conservation-strategies

Butterfly Conservation. (2024). *Creating a butterfly bank.* Retrieved from https://butterfly-conservation.org/sites/default/files/2024-01/Butterfly%20Bank%20Factsheet_FINAL.pdf

Edgar, P., Foster, J., & Baker, J. (2010). *Reptile Habitat Management Handbook.* Bournemouth: Amphibian and Reptile Conservation.

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

ILP. (2023). *Bats and Artficial Lighting at Night.*

JNCC. (2007). *UK Biodiversity Action Plan. List of UK BAP Priority Terrestrial Invertebrate Species.* Joint Nature Conservation Committee.

Just Mammals Ltd. (2024). *Preliminary Ecological Appraisal.*

Marches Ecology. (2024). *GCN Report.*

Martin Boardman & Associates. (2024). *Arboriculture Report.* Martin Boardman & Associates.

North Wales Wildlife Trust. (2020). *Wrexham Industrial Estate. Towards a Living Landscape.* Retrieved from https://www.northwaleswildlifetrust.org.uk/sites/default/files/2020-05/Wrexham%20Industrial%20Estate%20Living%20Landscape_Towards%20a%20Living%20Landscape_Report.pdf

Rodwell, J. (1992). *British Plant Communities, Volume 3: Grasslands and montane communities.* Cambridge: Cambridge University Press.

Tetra Tech. (2023). *Biosecurity Policy V2.*

Tetra Tech. (2024). *Biodiversity Mitigation Strategy.*

Tetra Tech. (2024). *Wrexham GCN Report.* Tetra Tech.

Tetra Tech. (2024). *Wrexham Industrial Estate National Vegetation Classification.* Tetra Tech.

FIGURES

Figure 1 – Site Location Plan

Figure 2 – Waterbody Location Plan

Figure 3 – Development Impacts

Figure 4 – Capture and Exclusion Plan

Figure 5 - Mitigation Enhancement Plan



Site Location Plan

Wrexham Industrial Estate

Thermotraffic Ltd.

Legend

Site boundary

Notes:

Drawn by: CARYS.LAWSON

Checked by: BD

Office: Southampton

Figure No. 1

Revision No. A

08 January 2025

0 30 60 90 120 Meters

Scale 1:3,000 @A3

British National Grid

NGR: 338072E 350402N

© Crown Copyright All rights reserved. License number: 100019980



TETRA TECH

3 Sovereign Square
Sovereign Street
Leeds
United Kingdom
LS1 4ER

© OpenStreetMap (and) contributors, CC-BY-SA, Maxar, Microsoft

Waterbody Location Plan

Wrexham Industrial Estate

TSL Projects Ltd.

Legend

- Site boundary
- Site boundary buffer (500m)
- Site boundary buffer (250m)
- Site boundary buffer (50m)
- Waterbodies
- Ditches
- Connectivity

Notes:

Drawn by: lily.dunwell

Checked by: Bronwyn Denniss

Figure No. 2

Revision No. A

06 February 2025

0 50 100 150 200 Meters

Scale 1:5,000 @A3

British National Grid

NGR: 338127E 350366N

© Crown Copyright All rights reserved. License number: 100019980

TETRA TECH

3 Sovereign Square
Sovereign Street
Leeds
United Kingdom
LS1 4ER

Tetra Tech Limited.
Registered in England
number: 01959704

© Tetra Tech Limited

© OpenStreetMap (and) contributors, CC-BY-SA, Maxar, Microsoft

Development Impacts

Wrexham Industrial Estate

Thermotraffic Ltd.

Legend

- Site boundary
- Permanent area lost
- Temporary area damaged
- No development impact
- Pond
- Mitigation area
- Pond buffer (500m)
- Pond buffer (250m)
- Pond buffer (50m)
- Orange flexinet/herras fencing

0.028ha

0.092ha

Pond 2

Pond 1

© Tetra Tech Limited

Notes:

Drawn by: lily.dunwell

Checked by: Bronwyn Dennis

Figure No. 3

Revision No. A

13 February 2025

0 20 40 60 80 Metres

Scale 1:1,500 @A3

British National Grid

NGR: 338072E 350402N

© Crown Copyright All rights reserved. License number: 100019980



TETRA TECH

3 Sovereign Square
Sovereign Street
Leeds
United Kingdom
LS1 4ER

Tetra Tech Limited.
Registered in England
number: 01959704

© OpenStreetMap (and) contributors, CC-BY-SA, Maxar, Microsoft

Capture and Exclusion

Wrexham Industrial Estate

Thermotraffic Ltd.

Legend

- Site boundary
- Mitigation Ponds
- Mitigation area
- Semi-permanent newt fencing
- Temporary drift fencing
- Orange flexinet/herras fencing
- Pitfall traps
- Refuge mats
- Receptor area

Pond 1

Pond 2

© Tetra Tech Limited

Notes:

Please note that locations of pitfall traps and refuge mats are indicative only. Where possible, pitfall traps will be placed every 5m, and replaced by refuge mats should the ground conditions be unsuitable on the day of installation.
The fencing, pitfall trap and refuge mat locations are indicative only.

Drawn by: lily.dunwell

Checked by: Bronwyn Dennis

Figure No. 4

Revision No. A

13 February 2025

0 20 40 60 80 Metres

Scale 1:1,500 @A3

British National Grid

NGR: 338072E 350402N

© Crown Copyright All rights reserved. License number: 100019980



TETRA TECH

3 Sovereign Square
Sovereign Street
Leeds
United Kingdom
LS1 4ER

Tetra Tech Limited.
Registered in England
number: 01959704

© OpenStreetMap (and) contributors, CC-BY-SA, Maxar, Microsoft

Mitigation and Enhancement Plan

Wrexham Industrial Estate

TSL Projects Ltd.

Legend

- Site boundary
- Pond
- Mitigation area
- Orange flexinet/herras fencing
- Butterfly bank
- Butterfly scrapes
- Hibernacula
- Refugia

Notes: The pond complex will be re-profiled to create two distinct waterbodies. Locations are indicative only, dependent on topography and ground conditions.

Drawn by: dylan.gussman

Checked by: Sam King

Figure No. 5

Revision No. A

05 March 2025

0 20 40 60 80 Metres

Scale 1:1,500 @A3

British National Grid

NGR: 338054E 350421N

© Crown Copyright All rights reserved. License number: 100019980

TETRA TECH

3 Sovereign Square
Sovereign Street
Leeds
United Kingdom
LS1 4ER

Tetra Tech Limited.
Registered in England
number: 01959704

© Tetra Tech Limited

© OpenStreetMap (and) contributors, CC-BY-SA, Maxar, Microsoft

APPENDICES

Appendix A – Report Conditions

Appendix B – Legislation and Policy

Appendix C – Waterbody Descriptions and Photographs

Appendix D – Proposed Development Plan

Appendix E – Proposed Landscape Plan

Appendix F – Proposed Green Infrastructure Plan

Appendix G – Proposed Drainage Plan

Appendix H – Ecological Compliance Audit Example

APPENDIX A: REPORT CONDITIONS

This Report has been prepared using reasonable skill and care for the sole benefit of TSL Projects Ltd. ("the Client") for the proposed uses stated in the report by Tetra Tech Environment Planning Transport Limited]("Tetra Tech"). Tetra Tech exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder's permission.

No liability is accepted or warranty given for; unconfirmed data, third party documents and information supplied to Tetra Tech or for the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report. Tetra Tech does not purport to provide specialist legal, tax or accounting advice.

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/uksi/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 or 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.

Wrexham 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.

Within the Wrexham LBAP, policies PS2, PS11, EC4 and EC6 pertain to 'Biodiversity and Development'. A summary of these policies is provided below:

- **Policy PS2**: Development must not materially detrimentally affect countryside, landscape/townscape character, open space, or the quality of the natural environment

- **Policy PS11**: Encouragement will be given to proposals which improve the biodiversity value of sites and to the establishment of local nature reserves where the nature conservation and landscape interest of the land will be protected and enhanced.
- **Policy EC4**: Development proposals should provide for the conservation and management of hedgerows, trees, orchards, woodland, wildlife and other natural landscape and water features, and include new planting in order to enhance the character of the landscape and townscape. Development which results in the loss or significant damage to valuable trees, important hedgerows or ancient woodland sites will not be permitted.
- **Policy EC6**: Development either within or close to sites of biodiversity interest will only be permitted where it can be clearly demonstrated that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum, and compensatory measures should be provided. Measures to improve the biodiversity value of sites and enhance their natural conservation interest and landscape quality including the establishment of local nature reserves, will be supported.

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 *Juncus effusus*.			

APPENDIX D: PROPOSED DEVELOPMENT PLAN "TCSW-ASA-90-VS.ZZ-D-A-9003_(S2-P08)_GA SITE PLAN – OVERALL"

Do not scale this drawing
ashton smith to be notified of discrepancies in figured dimensions
Contractors must check all dimensions from site
This drawing is copyright and is for use on this site only
This drawing is to be used solely for information as entitled
For other information refer to the latest revision of any cross referenced drawing

N

Fire Road

Fire Road

Proposed Plant Building No1

Plant Room

Refrigeration Switch Room

Electrical Switch Room

Proposed Blast Freezer plant Building

Plant Room

UP

Maintenance Corridor

Proposed Cold Store

Existing Cold Store Building

UP

Proposed Production Extension

14 Overspill Car Parking Spaces

Existing Service Yard

Proposed Loading Docks

Level Access

39 Car Parking Spaces

Existing Office

HGV Parking

Car Access & Egress

HGV Access & Egress

1 GA Site Plan - Overall
1 : 250

0m 5m 10m 15m 20m 25m
VISUAL SCALE 1:250

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

REVISIONS

PROJECT TITLE
Project Sakura

DRAWING TITLE
GA Site Plan - Overall

RIBA STAGE	STATUS		DRAWN BY	CHECKED BY
3	PLANNING		RAA	-
SHEET	SCALE	DATE	SUITABILITY	REVISION
A0	1 : 250	2024-01-15	S2	P08

DRAWING NO.
TCSW - ASA - 90 - VS.ZZ - D - A - 9003 _ (S2 - P08)
BIM MODEL NUMBER: TCSW-ASA-ZZ-VS.ZZ-M3-A-0001_(S0-P05)

CLIENT
TSL
Thermotraffic
TEMPERATURE CONTROLLED LOGISTICS

AshtonSmith
Beyond Design
Ashton Smith, Belvedere House, 2 Victoria Avenue, Harrogate, North Yorkshire, HG1 1EL
Tel: 01423 522882 Fax: 01423 565104
www.ashtonsmith.co.uk

JOB NO. 21158

APPENDIX E: PROPOSED LANDSCAPE PLAN – TC24206 LA1 LANDSCAPE STRATEGY V6

Project Sakura

Landscape Strategy

LA.**1**

Ash House

T23
T25
T26
T29
T30
T20
T03

Proposed Plant Building No1

Proposed Cold Store

Existing Cold Store Building

Proposed Blast Freezer Plant Building

Proposed Production Extension

Existing Service Yard

Existing Office

HGV Parking

Car Access & Egress

HGV Access & Egress

Level Access

Application boundary line

Extent of land under same ownership

Existing trees to be retained. Black dash denotes root protection area

Existing trees to be removed

Existing vegetation (predominately scrub) to be retained - approximate extent. **NOTE:** Measures are recommended along the northern edge of the scrub habitat to encourage bee orchids to colonise. Refer to Just Mammal's Preliminary Ecological Appraisal which also suggests hand broadcasting of a cover crop such as Emorsgate EM6 seed mixture.

Marshy grassland to be retained

Neutral grassland to be retained

Existing pond to be retained

Proposed tree planting to mitigate for trees lost due to the development and to help increase biodiversity.

Proposed tree species within the marshy grassland to the east to include Alnus glutinosa (common alder), Betula pubescens (downy birch), and Salix alba (white willow).

Proposed tree species within the semi-improved neutral grassland at the north, south and west to include Quercus robur (common oak), Caprinus betulus (hornbeam), Sorbus aucuparia (rowan) and Tilia cordata (small leaved lime).

Proposed planting areas including the rain garden to the north for amenity and biodiversity value.

Proposed plant species around the new car park in the south to include:

Choisya ternata (Mexican orange blossom), Prunus laurocerasus 'Zabeliana' (cherry laurel 'Zabeliana'), Lonicera nitida 'Maygreen' (shrubby honeysuckle), Pachysandra terminalis (Japanese spurge), and Cistus x corbariensis (hybrid rock rose).

Proposed plant species at the rain garden to the north to include:

Cornus alba 'Sibirica' (westonbirt dogwood), Hydrangea 'Preziosa' (Hydrangea), Hypericum calycinum (rose of Sharon), and Geranium 'Johnson's Blue' (Cransebill).

Swales to be seeded with a suitable species-rich grass mix such as Emorsgate EM8 'Meadow Mixture for Wetlands'.

Indicative location of proposed crevice bat rocket box, on a 5m pole. Placement to be located at the border of the scrub and marshy grassland and not too close to trees

Indicative location of proposed bird box, to be installed along the eastern boundary on mature trees.

Indicative location of proposed Hibernacula

Indicative location of proposed Refugia

Indicative location of Wildlife Receptor Area Fencing

Indicative location of Protective fencing

Indicative location of Butterfly bank

Indicative location of Butterfly scrapes

* Refer to Biodiversity Mitigation Strategy (Tetra Tech, July 2024) for further detail regarding installation and timings of provision

0 5 10 15 20 25 metres

Scale 1:400 @ A0

North

TC24206 Landscape plans v6.dwg

20 August 2024

tir collective LANDSCAPE ARCHITECTS

Floor 7, Brunel House, 2 Fitzalan Road, Cardiff, CF24 0EB

© Tir Collective Limited 2024. Registered Company No. 13489264

APPENDIX F: PROPOSED GREEN INFRASTRUCTURE PLAN – TC24206 GI1 GREEN INFRASTRUCTURE STATEMENT AND PLAN V6



Building with Nature (BwN): Standards Framework

BwN describes "individual Standards that collectively form a definition of **high-quality green infrastructure**." There are 6 Core Standards, 2 Wellbeing Standards, 2 Water Standards and 2 Wildlife Standards as below. This GI Plan/Statement signposts the standards:

CORE Standards

Standard 1 - Optimises Multifunctionality and Connectivity
Standard 2 - Positively Responds to the Climate Emergency
Standard 3 - Maximises Environmental Net Gains
Standard 4 - Champions a Context Driven Approach
Standard 5 - Creates Distinctive Places
Standard 6 - Secured Effective Place-keeping

WELLBEING Standards

Standard 7 - Brings Nature Closer to People
Standard 8 - Supports Equitable and Inclusive Places

WATER Standard

Standard 9 - Delivers Climate Resilient Water Management
Standard 10 - Brings Water Closer to People

WILDLIFE Standards

Standard 11 - Delivers Wildlife Enhancement
Standard 12 - Underpins Nature's Recovery

Developments should seek to retain existing habitats within the proposal and avoid the loss of vegetation where possible. If this is not possible, developments should seek to mitigate for the loss of habitats and/or provide enhancement measures to provide net benefits for biodiversity.

The wider development seeks to implement, enhance and manage new habitats within the Landscape Character Areas. Within the site, new planting includes trees, shrubs herbaceous plants, and grass seeding

New tree planting will be proposed within the site. **[BwN 1, 2, 3, 7, 11,12]**

Ground cover planting at the rain garden to the north and around the car park area will provide visual interest, and increase biodiversity. **[BwN 1, 2, 3, 7, 11]**



Ornamental and rain garden planting

Project Sakura

Green Infrastructure Plan / Statement GI.**1**

- Application boundary line
- Extent of land under same ownership
- Existing trees to be retained. Black dash denotes root protection area
- Existing trees to be removed
- Existing vegetation (predominately scrub) to be retained - approximate extent. **NOTE:** Measures are recommended along the northern edge of the scrub habitat to encourage bee orchids to colonise. Refer to Just Mammal's Preliminary Ecological Appraisal which also suggests hand broadcasting of a cover crop such as Emorsgate EM6 seed mixture.
- Marshy grassland to be retained
- Neutral grassland to be retained
- Existing pond to be retained
- Proposed tree planting to mitigate for trees lost due to the development and to help increase biodiversity.
- Proposed planting areas including the rain garden to the north for amenity and biodiversity value.

  Proposed plant species around the new car park in the south to include:

  Choisya ternata (Mexican orange blossom), Prunus laurocerasus 'Zabeliana' (cherry laurel 'Zabeliana'), Lonicera nitida 'Maygreen' (shrubby honeysuckle), Pachysandra terminalis (Japanese spurge), and Cistus x corbariensis (hybrid rock rose).

  Proposed plant species at the rain garden to the north to include:

  Cornus alba 'Sibirica' (westonbirt dogwood), Hydrangea 'Preziosa' (Hydrangea), Hypericum calycinum (rose of Sharon), and Geranium 'Johnson's Blue' (Cransebill).
- Swales to be seeded with a suitable species-rich grass mix such as Emorsgate EM8 'Meadow Mixture for Wetlands'.
- Indicative location of proposed crevice bat rocket box, on a 5m pole. Placement to be located at the border of the scrub and marshy grassland and not too close to trees
- Indicative location of proposed bird box, to be installed along the eastern boundary on mature trees.
- Indicative location of proposed Hibernacula
- Indicative location of proposed Refugia
- Indicative location of Wildlife Receptor Area Fencing
- Indicative location of Protective fencing
- Indicative location of Butterfly bank
- Indicative location of Butterfly scrapes

* Refer to Biodiversity Mitigation Strategy (July 2024) for further detail regarding installation and timings of provision

0 10 20 30 40 50 metres

Scale 1:750 @ A0

North

TC24206 Landscape scheme v6.dwg 20 August 2024

tir collective LANDSCAPE ARCHITECTS
Floor 7, Brunel House, 2 Fitzalan Road, Cardiff, CF24 0EB
© Tir Collective Limited 2024. Registered Company No. 13489264

Introduction

This **Green Infrastructure Plan/Statement** relates to a proposed extension building, new access, and parking at the Norish chilled food distribution centre, Wrexham industrial estate, North Wales. The site currently comprises *"semi-improved neutral grassland, marshy grassland, standalone water, dense scrub (including willow carr), mixed woodland, hardstanding and buildings"* (Ref: Just Mammals Limited).

Refer also to the Landscape Strategy by Tir Collective Landscape Architects, the Preliminary Ecological Appraisal by Just Mammals Limited, the Biodiversity Mitigation Strategy by TSL Projects Ltd. on behalf of Tetra Tech Group Ltd. and the Arboricultural Report by Martin Boardman & Associates.

Policy Context

Planning Policy Wales (PPW)

PPW aims to contribute towards the delivery of sustainable development, embedding the principles of the Well-being of Future Generations (Wales) Act 2015. PPW ingrains Placemaking Wales Charter and how sustainable development can be achieved through implementing placemaking.

Section 6.2 sets out **green infrastructure** should be given early consideration in development proposals and how it should be integrated into developments.

Paragraph 6.2.12 states " A **green infrastructure statement should be submitted with all planning applications**. This will be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal... The green infrastructure statement will be an effective way of demonstrating **positive multi-functional outcomes** which are appropriate to the site in question and must be used for demonstrating how the **step-wise approach has been applied**."

Paragraph 6.2.14 states "Development proposals should be informed by the priorities identified in green infrastructure assessments and locally based planning guidance. The **Building with Nature standards** represent good practice and are an effective prompt for developers to **improve the quality of their schemes and demonstrate the sustainable management of natural resources**."

Section 6.4 describes **biodiversity and ecological networks** and provides a summary of the **Step-Wise Approach** and how it should be used to "**maintain and enhance biodiversity, build resilient ecological networks and deliver net benefits for biodiversity** by ensuring that any adverse environmental effects are firstly avoided, then minimised, mitigated, and as a last resort compensated for."[1]

Paragraph 6.4.12 states "providing evidence in the Green Infrastructure Statement that the step-wise approach has been followed, a scheme of enhancements must be provided to ensure a **net benefit for biodiversity**."

In relation to **trees, woodland and hedgerows, paragraph 6.4.37** sets out their importance for biodiversity and "connecting habitats for resilient ecological networks and make an essential wider contribution to landscape character, culture, heritage and sense of place..."

The **planting of new trees, hedgerows, groups of trees and areas of woodland** should be promoted as part of new development. Existing trees/ groups of trees, hedgerows and areas of woodland must be protected "where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial green infrastructure function."[2]

In relation to the permanent removal of trees, woodland and hedgerows, it "will only be permitted where it would achieve significant and clearly defined public benefits."[3]

The step-wise approach must also be followed. Where loss is unavoidable, PPW sets out the requirements of replacement planting, which "shall be at a ratio equivalent to the quality, environmental and ecological importance of the tree(s) lost and this must be preferably onsite, or immediately adjacent to the site, and at a minimum ratio of **at least 3 trees of a similar type and compensatory size planted for every 1 lost.**"[4]

1. Paragraph 6.4.11, Planning Policy Wales Edition 12, February 2024
2. Paragraph 6.4.19 Planning Policy Wales Edition 12, February 2024
3. Paragraph 6.4.42 Planning Policy Wales Edition 12, February 2024
4. Paragraph 6.4.42 Planning Policy Wales Edition 12, February 2024

The stepwise approach to maintaining and enhancing biodiversity

The stepwise approach for this Green Infrastructure Plan/Statement is an eight-step process, inspired by Swansea Council's Biodiversity Supplementary Planning Guidance. It is a useful SPG which demonstrates a stepwise approach to development, not just for within Swansea but for developments in other jurisdictions including Wrexham. It comprises the following which are referred to in this GI plan/statement:

- **Step A: Identify and Assess** existing or potential important habitats or species and ecological connectivity corridors.
- **Step B: Avoid** loss of any existing or potential important habitats or species, or fragmentation of ecological connectivity.
- **Step C: Respond and Design -** Identify and assess existing or potential important habitats or species and ecological connectivity corridors.
- **Step D: Mitigate** for any unavoidable harm or loss to important habitats or species or the fragmentation of ecological connectivity.
- **Step E: Compensate -** Address the residual effects of a proposal after avoidance and mitigation have been considered and provide appropriate compensation.
- **Step F: Enhance -** Explore all opportunities to enhance biodiversity and ecosystem resilience, proportionate to the scale and nature of the proposal.
- **Step G: Manage -** Submit and implement long term management plan of agreed and appropriate mitigation, compensation and enhancement measures.
- **Step H: Monitor -** Submit and implement a monitoring plan to ensure that the development and associated mitigation, compensation and enhancement measures deliver the attributes or resilience post-construction.

Landscape Strategy

The landscape strategy is based on retaining where possible existing habitats which immediately surround the existing and proposed buildings and the parking/access area in the south. The existing habitats comprise semi-improved neutral grassland, marshy grassland, and scattered trees as identified by Just Mammals' Preliminary Ecological Appraisal. Further detailed assessment of individual trees and groups of trees/vegetation have been identified within the Arboricultural Report by Martin Boardman & Associates. Wider site habitats which include scrub and woodland will be retained, but any encroachment into these areas will be minimal.

Several existing trees and blocks of vegetation will need to be removed to accommodate the development, but others will need to be removed due to arboricultural reasons, regardless of development plans.

The tree planting will be provided where possible which will help contribute towards amenity and biodiversity values. Species selection will be suitable for location such as those which can tolerate damp conditions. Tree species will also be native and include long-lived, keystone species.

Ornamental shrubs will be provided around the new parking area for visual interest, and species selection will include a combination of flowering evergreen and deciduous plants. The drainage strategy includes swales, but there will be a rain garden to the north. The rain garden will be planted with shrub species to provide year-round interest.

Green Infrastructure

The elements that are considered to form the existing green infrastructure of the site and surrounding context are:

- Mixed woodland, dense scrub and standing water
- Individual trees
- Neutral and Marshy grasslands
- Other habitats of ecological value

The green infrastructure elements are described further here; identifying and assessing existing or important habitat or species and ecological connectivity corridors which have been informed by desktop studies and specialists' reports. The following paragraphs also describe how each green infrastructure element is to be retained, mitigated, and /or enhanced.

Mixed woodland, dense scrub, and standing water

The mixed woodland and dense scrub make an important contribution to landscape character. They are also important green infrastructure elements for their biodiversity and habitat value.

The mixed woodland is *"confined to a small area on a north-east facing slope in the northern area of the site."* (Ref: Just Mammals). The proposals at the site will not affect the mixed woodland area. It will all be retained - **Step A and Step B.**

The dense scrub is *"located around the periphery of the site. It varies in density, ranging between relatively open at the base to complete and impenetrable thicket."* (Ref: Just Mammals) **Step A.**

Some minor areas will be affected by the development proposals, but the majority of the scrub will be retained. The landscape scheme does not propose replacement scrub planting because the vast majority will not be affected by the development. **Step C.**

The scrub area includes species such as bramble, blackthorn, hawthorn, field rose and dogwood which should naturally regenerate in areas where there will be disturbance due to the development. Opportunities for mitigation scrub planting could be created within the neutral grassland area to the north if necessary. **Step D.**

There are *"two distinct areas of standing water or ponds... in the south-east... water levels appear to be relatively low, although it is apparent that water is present all year-round due to the presence of certain floral species."* (Ref: Just Mammals) shown in images below. (Ref: Tetra Tech).



Existing pond 1A



Existing pond 1B

A small sized population of Great crested newts has been recorded during surveys in these areas, along with common toads and other amphibians, and they have been confirmed as breeding ponds. (Ref: Tetra Tech, 2024) **Step A.** To ensure the proposed development will not affect the population of great crested newts mitigation measures have been provided within the Biodiversity Mitigation Strategy (BMS) by TSL Projects Ltd. on behalf of Tetra Tech Group Ltd. This includes detailed descriptions of installation, maintenance and time of provision for mitigation methods, a brief description of which is described below:

- Temporary Amphibian Fencing (TAF) is to be erected around the site boundary to prevent amphibians from entering the development area. Drift fencing will also be installed within the perimeter of the TAF, accompanied by adjacent pitfall traps at 5m intervals, the active use of which to be mid-March to October inclusive. **Step B and Step D**.
- Five Refugia to be created, three prior to commencement of pitfall trapping and two upon completion of the works. These to consist of stacked logs, brash, branches, removed site vegetation and leaf litter during site clearance. **Step E and Step F.**
- Three Hibernacula to be created, two prior to commencement of pitfall trapping and one upon completion of the works. These to consist of brick rubble, logs and loose top soil with a covering of turf. **Step E and Step F.**
- Enhancement of existing ponds. This will involve the selective removal of overhanging vegetation around the water bodies to create open and sheltered areas, in addition to increasing sunlight in the pond. No more than 60% of the pond shoreline should be shaded, with less shading preferable, especially for the southern shoreline. Material removed as part of this enhancement should be retained to contribute to building the Refugia and for new refugia in the future. It is also recommended that pond 1A be de-silted, as a build up of leaf litter is noted to be negatively impacting the water quality and suitable live egging material. **Step E and Step F.**

Individual trees

An Arboricultural Report has been prepared by Martin Boardman & Associates. The tree categorisation within the report forms a source of data for Stepwise approach, **Step A.** The tree survey has identified trees on site and provided categorisations. It noted that there are no Tree Preservation Orders (TPOs) on the site. The survey identified 11 category U trees will need to be removed due to arboricultural reasons.

In order to facilitate the development, 12 trees are to be removed, which are all low category trees (C category).

To address tree loss at the site, the green infrastructure proposals include **Step D**, **Step E** and **Step F**. Mitigation for tree loss is provided through planting 36 new native species trees.

Proposed tree species within the marshy grassland to the east to include Alnus glutinosa (common alder), Betula pubescens (downy birch), and Salix alba (white willow).

Proposed tree species within the semi-improved neutral grassland at the north, south and west to include Quercus robur (common oak), Caprinus betulus (hornbeam), Sorbus aucuparia (rowan) and Tilia cordata (small leaved lime).



Neutral and Marshy Grasslands

Neutral grassland is *"present surrounding the majority of the existing buildings on site. it appears to be regularly managed and is of a uniform height."* (Ref: Just Mammals). In addition *"a collection of circa **20 bee orchid (Ophrys apifera) rosettes** was identified at the southern edge of the site."* **Step A.**

The neutral grassland will be predominantly affected due to the extension building in the west, the creation of a new car park and access road in the south, and smaller building extensions in the east. The bee orchid rosettes will also be affected by the creation of the parking area.

Mitigation for the Orchids as noted in Just Mammal's report include encouraging bee orchids to *"colonise along the northern edge of the scrub habitat through scarifying an area of soil to mimic the level of soil disturbance favoured by bee orchids, as well as enriching the existing soil with lime to create a more calcareous character..."* and "*Hand-broadcasting seeds of a 'cover crop' species...*" such as *"...Emorsgate EM6."* **Steps C, D and E.**

The marshy grassland in the east will be partially affected due to the creation of a swale and mitigation tree planting, although the creation of these features will help increase biodiversity, contribute towards managing rainwater runoff, and mitigate for existing vegetation being removed.

Other habitats of ecological value

The Preliminary Ecological Appraisal (PEA) prepared by Just Mammals Limited and provides a point of reference for mitigation and biodiversity enhancements. **Step A.**

The PEA provides mitigation recommendations for orchids (see previous paragraphs), otters and badgers, nesting birds and bats.

The mitigation summary provided by the PEA outlines:

- **Orchids** - as per the previous paragraphs.
- **Otters and badgers** - precautionary measures to be undertaken during the construction phase.
- **Nesting birds** - demolition works to be undertaken outside thee bird nesting season and installation of three bird boxes to be provided on mature trees along the eastern boundary.
- **Additional enhancement measures: Bats** - installation of two crevice bat rocket boxes, each on a 5m pole, located at the border of scrub and marshy grassland along the eastern boundary.

All recommendations within the PEA have been reflected and included within the green infrastructure proposal for the site, reflecting **Step D, Step E** and **Step F**.

The Biodiversity Mitigation Strategy (BMS) provides detail of measures to be implemented and maintained in order to avoid and minimise impacts on the following:

- **Great crested newt (and other amphibians)** -- as per mitigation measures stated in earlier section of this document under 'Mixed woodland, dense scrub, and standing water'
- **Dingy skipper and grizzled skipper (Butterflies)** - installation of butterfly banks and butterfly scrapes. For detail of construction and maintenance refer to BMS.
- **Badgers and Hedgehogs** - a pre-commencement survey is recommended two to six months before the scheme's start date to establish if any new badger setts have been established. Works will also be restricted to daylight hours and kept to as short a time period as possible. Qualified ecologist to supervise vegetation clearance and implement appropriate measures if any hedgehogs or badgers are discovered.

All recommendations within the BMS have been reflected and included within the green infrastructure proposal for the site, reflecting **Step A, B, D, E** and **F**.

APPENDIX G: PROPOSED DRAINAGE PLAN – 23284-JUB-ZZ-XX-DR-C-0501 P5



KEY

- EXISTING DRAIANGE TO BE REMOVED/DIVERTED
- PROPOSED FOUL MH
- PROPOSED FOUL NETWORK
- PROPOSED SURFACE WATER MH
- PROPOSED SW DRAINAGE RUN
- HB PROPOSED MANHOLE WITH FLOW CONTROL DEVICE
- PROPOSED GULLY
- LINED PERMEABLE PAVEMENT WITH PERFORATED PIPE OUTLET
- PROPOSED LINEAR DRAIN - LOAD CLASS F 900
- GEOCELLULAR ATTENUATION
- RAIN GARDEN
- SURFACE WATER FLOW DIRECTION
- EXISTING FW DRAINAGE RUN

NOTES:

1. THIS DRAWING IS FOR SAB SUBMISSION ONLY.
2. PROPOSED FOUL AND SURFACE WATER NETWORK SHOWN INDICATIVELY, DETAILS TO BE CONFIRMED AT DETAILED DESIGN.
3. THE SPECIFICATION IN ALL RESPECTS SHALL BE IN ACCORDANCE WITH THE CURRENT WREXHAM COUNTY COUNCIL (WCC) SPECIFICATION AND CONSTRUCTION PUBLICATIONS IN FORCE IN THE COUNTY AT THE TIME OF CONSTRUCTION.
4. DRAINAGE STRATEGY IS SUBJECT TO APPROVAL FROM THE LLFA, WCC, DWR CYMRU WELSH WATER (DCWW) AND NATURAL RESOURCES WALES (NRW).
5. ALL PRIVATE DRAINAGE WILL BE CONSTRUCTED IN LINE WITH BUILDING REGULATIONS PART H.
6. ALL ADOPTED DRAINAGE WILL BE CONSTRUCTED INLINE WITH LLFA REQUIREMENTS.
7. KERBING SURROUNDING SuDS FEATURES IS TO BE INSTALLED TO ENSURE ADEQUATE DRAINAGE OF THE SURROUNDING IMPERMEABLE AREAS. KERBS ARE TO BE FLUSH, OR WHERE UPSTANDS ARE REQUIRED, THE KERBS ARE TO BE SPACED TO FACILITATE DRAINAGE.
8. ROOT BARRIERS ARE TO BE INSTALLED WHERE SEWERS ARE WITHIN 1.5m OF PROPOSED/ EXISTING TREES.
9. PIPE MATERIAL AND SPECIFICATION TO BE AGREED BETWEEN THE CONTRACTOR AND LLFA PRIOR TO COMMENCING WORK.
10. ALL TRAFFICKED COVERS AND GRATINGS TO BE TO D400 LOAD CLASSIFICATION AND B125 FOR NON-TRAFFICKED.
11. PROPOSED CONNECTION TO FOUL SEWER SUBJECT TO DCWW APPROVAL.
12. OTHER DCWW SEWER DIVERSIONS/ DIVESTMENTS ARE NOT ILLUSTRATED ON THIS DRAWING.
13. EXISTING DRAINAGE TO BE REMOVED AND DIVERTED WITHIN THE PROPOSED BUILDING FOOTPRINT.
14. SURFACE WATER DISCHARGE REQUIRES LLFA, SAB AND NATURAL RESOURCES WALES APPROVAL.
15. FOUL DESIGN CONNECTS ONTO THE EXISTING SEWER WITHIN THE SITE AND WILL FORM THE POINT OF CONNECTION FOR THE PROPOSED BUILDINGS. CONNECTION REQUIRES A S106 AGREEMENT WITH DCWW.
16. CONDENSATE DRAINS DISCHARGE ARE ASSUMED TO BE TRADE EFFLUENT AND REQUIRE A TRADE EFFLUENT AGREEMENT WITH DCWW.
17. TOGGLEBLOCK INCLUDED AS EMERGENCY SHUT OFF ON CHAMBER SW35. ADDITIONAL TOGGLEBLOCK MAY BE REQUIRED.

Rev	Date	Description	By	Apvd
P5	25.03.24	ISSUE FOR PLANNING	WS	GS
P4	06.03.23	ISSUE FOR REVIEW	JH	GS
P3	19.02.23	ISSUE FOR REVIEW	JA	GS
P2	12.10.23	PRE-APP SAB SUBMISSION	JA	GS
P1	28.08.23	PRELIMINARY ISSUE	JA	GS

PROJECT:
Project Sakura

TITLE:
PROPOSED DRAINAGE STRATEGY

CLIENT:
TSL Limited

SCALE@A1:
1:500

PROJECT REF:
23284

DRAWING No: 23284-JUB-ZZ-XX-DR-C-0501

REV: P5

Revision Referencing
P = Preliminary A = Approval T = Tender C = Construction

Jubb
Bristol, Cardiff, Plymouth, Winchester
2A Oak Tree Court, Cardiff Gate Business Park, Cardiff
jubb.uk.com
+44(0)292 052 4444

APPENDIX H: ECOLOGICAL COMPLIANCE AUDIT EXAMPLE

Cyfoeth Naturiol Cymru

Natural Resources Wales

Ecological Compliance Audit

Species: Great Crested Newt

A. Licensing

Natural Resources Wales licence reference number:		Site name:	
		Site grid reference:	
Name of licence holder:		Name of developer if different from licence holder:	
Name of Licence Ecologist and Organization:		Planning Permission Condition	Yes/No If yes: Application No:

Name and Organization of Ecological Compliance Auditor		Type Of Audit	☐ Internal ☐ External ☐ Combination of Internal and External ========== ☐ Ecological Clerk of Works
Name and Organization of Ecological Compliance Audi Verifier	☐ Not Applicable ☐ Name and Address:	Type of Verification	☐ Internal ☐ External
Number of Ecological Compliance Audits (ECA')		Intervals between Audits	☐ 3 Months ☐ 4 Months ☐ 6 Months ☐ Other
Date licence issued (dd/mm/yy):	Date licence expired:	Licence implemented between (dd/mm/yy)	
		From:	To:

Amendment 1			
Amendment 2			

B. Schedule of Ecological Compliance Audit Completion and Dissemination

Audit Number	Date Completed	Date Issued to Licence Holder	Date Issued to NRW/Other
1			
2			
3			
4			

C. Performance Indicators

The audit to be conducted in accordance with NRW compliance audit guidelines.

No	**Performance Indicator**	**Evidence required** - this list should be adapted to reflect the agreed method statement	**Pass (Yes/No), comments.** **State if photographic evidence has been used**	**What action is required as a result of findings?**
1	Before starting work the licensee will advise NRW Species Officer of the date the works will start.	Written or electronic documentation of notification of start of works.	☐ Yes ☐ No	
2	A suitably experienced licensed ecologist will be appointed and retained during the life time of this licence to provide on-site advice.	Letter, contract or other document outlining the appointment of an Ecologist for the lifetime of the project. This to be supplied.	☐ Yes ☐ No	
3	Prior to the start and throughout the duration of any works on site, all site workers will be inducted by the Project Ecologist. This induction will cover the legal status of the species, the method of working, and action to be taken if protected species are encountered.	Copy of documents from ecological induction, showing content of induction. List of induction attendees will be provided.	☐ Yes ☐ No	
4	Preparation and implementation of a bio-security risk assessment	Bio-security risk assessment is available for inspection.	☒ Yes ☐ No	

	as detailed in E.5 of the method statement	Log of implementation of bio security measures is available for inspection and shows that they have been implemented. Field observations shows that physical evidence of biosecurity measures are available, eg footwashes		
5	Licence available for inspection by any police constable or employee of Natural Resources Wales	Licence is available for inspection on site	☐ Yes ☐ No	
6	No agent of the licensee shall act under licence unless they are in possession of a letter signed by the licensee appointing them by name as the duly accredited agent of the licensee for the purposes of this licence, and shall carry with them the said letter and a copy of this licence and shall produce them to any police constable or employee of the Natural Resources Wales or other authorised person on demand	All relevant accredited agents have copies of licence holder's letter of authorization. Licence holder's letter is available for inspection.	☐ Yes ☐ No	
	E.1 GCN capture and exclusion			

7	Different species of newt and other amphibians to be held and transported in separate containers		Log of activities, including use of containers is available for inspection Log shows that amphibians have been transported within separate containers Containers are available for inspection	☐ Yes ☐ No	
8	Netting to be used only when all other methods		Log of activities, including use of netting, is available for inspection Log shows that netting was onmly use		
9	Design and installation of amphibian fencing to the specifications provided in the CCW guidance sheets/ EN (2001) and as detailed in the method statement:			☒ Yes ☐ No	
10	Amphibian fencing has been subject to inspection and maintenance according to CCW guidance sheets/ EN (2001) and as detailed in the method statement throughout the			☒ Yes ☐ No	

	translocation and construction periods.			
11	Works within amphibian habitats will not commence until working areas are confirmed to be clear of amphibians by the licensed ecologist.	Log of activities, including clearance activities, is available for inspection recording captures.	☒ Yes ☐ No	
12	Any works outside the amphibian fence are to be in accordance with a methodology as approved by NRW supervised by a licensed person.	Log of works undertaken, including evidence of licensed person on site, available for inspection. The log book will be kept at; A log book will be kept available that demonstrates all works done under licence and in accordance with the method statement that has been agreed.	☒ Yes ☐ No	
	E.2/E3 GCN habitat modification and creation for mitigation and compensation			
13	All mitigation and compensation measures have been implemented as per section E2 and E.3 of the Method Statement:	Log of works demonstrates habitat creation /enhancement implementation which is provided in the sites ecological management plan.	☒ Yes ☐ No	

14	The habitat conservation areas on site has been subject to appropriate management during construction as specified in section E.2.1 of the Method Statement	Log and field observation show that appropriate management activities have been implemented.	☒ Yes ☐ No	
15	The implementation of measures or procedures to evidence development and associated works, including any mitigation and or compensation, are being carried out in compliance with licence condition and provisions of the method statement.	Log and/or other recording systems that evidences procedures and other measures document compliant implementation of the method statement. This may include log maintained by the licensed ecologist to provide a record of all measures implemented to ensure compliance with the relevant parts of E.2/ E.3.	☒ Yes ☐ No	
	F and H: Long Term Site proposals			
16	Implementation of habitat/site management and maintenance and, habitat monitoring as detailed in F.1 and F.2 of the method statement	If audit undertaken during development phase: - Habitat management plan demonstrates measures are in place to ensure ongoing ecological land management are	☒ Yes ☐ No	

		in line with the ecological management plan which has been produced for the site.		
17	Implementation of <u>population monitoring</u> as detailed in F.2 of the method statement	If audit undertaken <u>during development phase</u>: - monitoring plan demonstrates measures are in place to undertake GCN population monitoring post-development. If audit undertaken <u>post-development</u>: - log or report demonstrate monitoring plan has been implemented log or report demonstrate results passed to local record centre including upload of data into the online Wales GCN Monitoring Scheme	☒ Yes ☐ No	
18	Implementation of long term site safeguard proposals as detailed in F.4, H.1 and H.2 of the method statement	Log of works demonstrates implementation eg: (i) land transfer or other legal interest proposal (ii) mitigation/compensation site been listed as a local land charge (iii) proposed legal agreements and contracts been completed (iv) wardening requirements implemented to proposed timescales and	☒ Yes ☐ No	

		in accordance with the submitted Method Statement (v) financial plan in place to resource mitigation, compensation, monitoring, site management or wardening		

Any other points to note/comments from auditor:			
Photographic Evidence ☒ Yes ☐ No		**If Yes, Please attach to completed report**	
Auditor Name		**Date Completed**	
Auditor Signature			
Date ECA Submitted to License Holder		**Date ECA Submitted to License Holder**	

Copy of this to be sent to;

Name	Organization	Date

Draft Oct 2019