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AMPHIBIAN CONSERVATION PLAN

At

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1 INTRODUCTION

1.1 Author and qualifications

This report is written and compiled by Tom Kenwright BSc MSc ACIEEM, Senior Ecologist for United Environmental Services (UES) Ltd. Tom is licensed by Natural Resources Wales (NRW) to disturb, take and handle great crested newts (GCNs) *Triturus cristatus* under licence number S092335/1.

The report has been verified by Toby Hart BSc MCIEEM PIEMA, UES Managing Director. Toby is licensed by NRW to disturb, take and handle GCNs under licence number S093149/1.

1.2 Proposed development and previous survey information

Planning permission (reference P/2023/0280) was granted by Wrexham Borough Council on the 5th July 2024. The granted permission is a hybrid planning permission for:

a) Outline permission (all matters reserved except for means of access) for erection of up to 3 warehouse and distribution units (use class b8); and

b) Full planning permission for demolition, means of access, earthworks, drainage, landscaping, ecology zone and relative ecological mitigation measures, and ancillary works.

A separate planning application (reference P/2023/0640) and European Protected Species (EPS) mitigation licence (reference S093997-1) have already been secured to enable the pond creation works within the ecological compensation area to commence ahead of the main development. These works are currently being undertaken under the approved permission and licence.

To inform the planning permission and licence applications, GCN presence / absence, population size class assessment and eDNA surveys were undertaken of the proposed development site and surrounding ponds by UES across March to June 2022 (see report reference UES03448/09). The objective of the surveys was to establish the presence or likely absence of GCNs in the ponds onsite and within 500m of the proposed development site boundary (where accessible) and, if present, assess the size of the population within each pond, in order to inform the necessary mitigation measures for the development to proceed.

Six ponds and four ditches were identified within the site boundary, and a further forty-seven mapped ponds and nine mapped ditches were identified within 500m of the proposed development site (see Appendix 2 – Pond Plan). During the surveys a medium population of GCNs was recorded in Ponds 3, 4, 5, 6, 24 and 26 (combined peak adult count of forty-nine). However, several ponds did not have access granted, therefore, it is likely the GCN population in the area will be higher.

The peak count of adult GCN onsite was thirty-three individuals which infers that the development site hosts a “medium” GCN population. GCNs were recorded onsite in Ponds 3 – 6; of which only Pond 4 is due to be removed and Ponds 3, 5 and 6 are due to be retained as part of the proposed development.

1.3 Report objectives and structure

This document has been prepared in order to discharge Condition 31 of the approved planning permission P/2023/0280. Condition 31 read as follows:

"No development shall take place until an Amphibian Conservation Plan to support the translocation of great crested newts has been submitted to and approved in writing by the Local Planning Authority. The Conservation Plan shall include, but not necessarily be limited to:

a) *Build upon the principles outlined in the ecological report (Smith, D. (2023). Great Crested Newt Method Statement: Plot 3A, Wrexham Industrial Estate, Bryn Lane, Wrexham, LL13 9UT, United Environmental Services Ltd. (Unpublished Report No UES03448/23));*

b) *Submission of details and associated plans concerning GCN avoidance and mitigation measures including: fence design, specifications and proposed locations; fence monitoring and maintenance requirements; and supervised removal of barrier fences. Submission to include proposed timescales and reporting requirements;*

c) *Submission of further details concerning on-site and/or off-site compensatory proposals including plans, extent, access, current and proposed management (management to accord with a body defined as responsible under Part 7 of the Environment Act 2021). Details shall identify areas of terrestrial and aquatic habitat to be retained, enhanced and created. Submission to include timescales and reporting requirements;*

d) *Submission of a long term site Landscape and Ecology Management Plan (LEMP) (for a duration of not less than 25 years) that includes:-*

    i. *defined aims and objectives (including targets that can be used as key performance indicators for monitoring purposes);*
    ii. *habitat management prescriptions for aquatic and terrestrial habitats;*
    iii. *appropriate amphibian reasonable avoidance measures;*
    iv. *contingency prescriptions if fish and/or invasive non-native species (INNS) are detected;*
    v. *site liaison, wardening, incident reporting and response arrangements;*
    vi. *detail of the skills and competencies required by those undertaking the works or activities including whether they require European Protected Species licenses for the activities proposed;*
    vii. *provision for periodic review mechanism for the Environment Management Plan; and*
    viii. *contingency measures that are capable of being implemented in the event of failure to undertake or appropriately implement / correct management or surveillance prescriptions including any required actions arising from unforeseen situations;*
    ix. *current and proposed changes to management of the ecology area (management of the ecology area to accord with a body defined as responsible under Part 7 of the Environment Act 2021) to ensure appropriate management over the land is established and the effective targeted delivery of long-term actions (not less than 25 years);*
    x. *details of persons or bodies responsible for undertaking management and surveillance together with required skills and competencies; and*

xi. reporting requirements associated with species surveillance and habitat management.

The Amphibian Conservation Plan shall be carried out in accordance with the approved details."

An EPS mitigation licence will need to be granted by NRW prior to the commencement of works or the implementation of the mitigation and compensation measures detailed within this document. These measures are subject to review by NRW as the licencing authority, and hence may be subject to minor changes as a result of the licence application process. Any changes will be implemented in accordance with the approved licence.

An LEMP addressing all of the requirements of section D of Condition 31 has already been submitted to and accepted by Wrexham Borough Council (see report reference UES03448/25). As such this Amphibian Conservation Plan only addresses sections A-C of Condition 31 and should be read in conjunction with the LEMP.

This report should also be read in conjunction with Appendices 1-2.

2 IMPACT ASSESSMENT

2.1 Impacts without mitigation

The GCN surveys showed that the site supports a medium-sized population of GCNs with max counts of eight, six, thirteen and six individuals in Ponds 3, 4, 5 and 6, respectively. No GCNs were recorded within onsite Ponds 1 and 2, which both returned negative eDNA results, nor were they recorded within any of the ditches at the site boundaries.

GCNs were also observed within two offsite ponds; Ponds 24 and 26. Ponds 24 and 26 both support a small-sized population of GCN with a peak count of eight individuals each. However, it is considered that Ponds 3, 4, 5, 6, 24 and 26 all form part of a wider meta-population within the industrial estate and the surrounding landscape.

The development proposals are for the construction of three industrial units with associated parking and access roads. Ponds 1, 2 and 4 will be removed, whereas Ponds 3, 5 and 6 will be retained as part of the proposed development. All onsite ditches will be retained, except for a small section that will be culverted.

Without mitigation, the development could have the following impacts on GCNs and their associated habitats:

- Killing or direct harm
- Disturbance
- Loss of terrestrial habitat
- Loss of aquatic habitat, including breeding habitat

2.2 European Protected Species mitigation licence

Due to the anticipated impacts on GCNs without mitigation, works will need to proceed under the mitigation and compensation measures detailed in sections 3 and 4 of this report. Works will not commence until an EPS mitigation licence has been obtained from NRW.

The information provided below will be used by NRW to determine whether the proposed activity affecting the European protected species meets the requirements of Regulations 55(2)(e), 55(9)(a) and 55(9)(b) within The Conservation of Habitats and Species Regulations 2017. These are known as the 'purpose', 'no satisfactory alternatives' and 'favourable conservation status' tests.

2.2.1 Consideration of Regulation 55(2)(e): The 'Purpose' Test

Regulation 55(2)(e) "in the interests of preserving public health or public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment".

The development is proposed in part for reasons of overriding public interest and for socio-economic reasons. The site has been allocated for employment development in Wrexham's Unitary Development Plan (UDP) 1996-2005 (adopted February 2005). The UDP 'provides for a significant amount of employment land at a variety of locations to ensure sufficient potential for inward investment, service sector diversification and the expansion/relocation of existing businesses. Its employment policies, together with other policies, which seek to maximise

access to local facilities, are consistent with the Council's aims of reducing poverty and unemployment and promoting equal opportunities.'

The benefits arising from the proposal predominantly include the provision of long-term employment opportunities in an area of high unemployment. The proposed works will also indirectly benefit the local community, for example bringing work and custom to local tradesmen, shops and restaurants / cafes, both in the construction and operational phases of the development.

2.2.2 Consideration of Regulation 55(9)(a): The 'No Satisfactory Alternative' Test

Regulation 55(9)(a) "that there is no satisfactory alternative."

The UDP seeks to identify sufficient land to meet the future employment requirements of the County Borough. The site has been allocated for development in planning policy E3 of the UDP. Planning policy E3 states that '*land is allocated at Owens Corning Fibreglass, Wrexham Industrial Estate for a major single user employment project that requires a site of over 30 hectares for an employment development that cannot be accommodated on allocated employment land or employment land with planning permission.'*

It is considered that there is no satisfactory alternative as the UDP has already identified specific locations for major development which is essential for positive economic growth. In selecting locations for employment development, the UDP gives consideration to other plan policies, especially those relating to protection of high-quality agricultural land, green barriers and countryside.

There is also considered to be no satisfactory alternative when considering site design. Whilst a reasonably large proportion of the site will be used for construction, the development has been designed to retain habitats where possible, including the habitats of the highest value, including the habitat of Principal Importance that are present on site, in addition to the retention of ecological corridors at the site boundaries. Of the six ponds present on site, four are used by GCNs, only one of which will be removed to facilitate the proposals.

2.2.3 Consideration of Regulation 55(9)(b): The 'Favourable Conservation Status' Test

Regulation 55(9)(b) "that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range."

The mitigation measures detailed in this document will ensure that GCNs are safeguarded throughout the development. Large areas of the site will be retained or subject to habitat creation and enhancement. This includes the creation or planting of wildflower grassland, woodland, hedgerows, an orchard, ditches, tussocky rough grassland, ponds and hibernacula. Significant habitat creation and enhancement will be undertaken within the ecological compensation area, which will be managed long term with an emphasis on its suitability to support GCNs. There will be no fragmentation or isolation as a result of the proposed development, so the movement of GCNs within the local area will not be detrimentally affected.

3 MITIGATION MEASURES

As GCNs are known to be present on site, an EPS mitigation licence will need to be granted by NRW to allow the works to commence. This EPS licence can only be granted once planning permission has been secured and will need to be in place prior to the start of any works on site. NRW aim to process licence applications within 30 working days.

Fencing, traps and refugia

As part of the licence, the proposed working area will be fenced with temporary amphibian fencing prior to the start of any works on site (except for vegetation management works to facilitate the fence installation). The fencing will prevent amphibians from entering the construction area during the development works. Newt grids will be installed in three locations within the perimeter fence, to enable vehicular access whilst preventing amphibians from accessing the site. See Appendix 1 – Amphibian fencing plan for the proposed location of the newt grids.

Drift fencing will also be used to compartmentalise the site and therefore maximise the capture probability of amphibians during the trapping and translocation exercise. The proposed fencing plan at Appendix 1 has been designed to reduce impacts on GCNs prior to trapping, by avoiding densely vegetated areas to reduce the amount of vegetation clearance that will be required to install the fencing, hence reducing the risk of disturbance or injury to GCNs. Some vegetation clearance will be required to facilitate the fence installation.

In order to facilitate the installation of the fencing, removal of dense scrub vegetation above 10cm in height along the proposed fence line will be undertaken under the supervision of a licenced ecologist, or an ecologist appointed as an accredited agent who is deemed sufficiently experienced by the licence holder. The removal of vegetation above 10cm in height has no potential to adversely impact GCNs provided it is undertaken sensitively under ecological supervision. If any areas are deemed to have the potential to adversely impact GCNs, these areas will be retained and only removed following the granting of the licence. Following the approval of the GCN licence, the remaining vegetation below 10cm in height will be removed and the fencing will be installed.

Drift fencing will also be installed around the three onsite ponds that are due to be removed. Pitfall traps will be installed at a rate of one trap per 5-10m along the interior of all perimeter fencing, and on both sides of internal drift fencing. With a minimum of one per 5m within pond compartments. In addition, carpet tile refugia will also be installed adjacent to pitfall traps to further increase the capture rate.

Two large areas of hardstanding are currently present on site, neither of which will be surrounded by permitter fencing. The reason being that both areas provide negligible quality habitat for GCNs and will need to be used and accessed during the trapping period. The hardstanding within the western section of the site is currently, and will continue to be used for the storage of vehicles. The hardstanding within the eastern section of the site will be used as the site compound for the construction phase of the development, where the site office and facilities will be sited, in addition to vehicles, material and spoil. Given the very low suitability of this area for GCNs and the difficult of installing pitfall traps, it not considered necessary to fence and trap this area as part of the translocation exercise. However, as the stored materials could be used by sheltering GCNs if they were to access this area whilst in use, the following mitigation measures are proposed:

- The area will be fitted with on-way amphibians fencing, installed at an angle that would allow GCNs to leave this area (in the unlikely event that any are present at the time of fence installation and will be trapped within as a result) but not enter. See Appendix 1 for fence location.

- Carpet trap refugia will be installed along the interior of the one-way fencing at a rate of 1 per 10m. These artificial refugia will be checked as part of the 60-90 day trapping and translocation process and amphibians encountered will be moved outside of the fenced area to the ecological compensation area.

The ecological compensation area is not accessible from the east and the only vehicular access to the area is from Bryn Lane and though the proposed development site. Given the delay in receiving planning approval, which has caused uncertainty of whether the trapping and translocation exercise will be completed in 2024 or partly completed and then paused and continued in 2025, there will need to be continuous access to the ecological compensation area during the trapping period to facilitate ongoing habitat creation and management works. To facilitate this, it is proposed that an access route will be created across the site to link the two areas of hardstanding. This will be achieved though the installation of drift fencing on either side of the proposed route. This narrow access route will then be subject to two-stage vegetation clearance to facilitate a comprehensive finger-tip search by a suitability licenced ecologist (or their accredited agent) to locate and remove any GCNs or other amphibians present. Given the small area that will be used and the proposed mitigation measures, it is considered that GCNs are very unlikely to be present within this area and it is considered that the access route does not need to be subject to trapping or translocation and can be used to facilitate vehicular access to the ecological compensation area during the ongoing trapping and translocation exercise. The access route will make use of an existing hardstanding access track were possible and will be subject to minimal traffic, kept to the minimum required to facilitate the habitat creation works within the ecological compensation area, further reducing the likelihood of GCNs being present within.

Fencing and trapping material specifications

The perimeter fencing material will be semi-permanent, stabilised against ultraviolet (UV) damage and designed to last up to 5 years. An example product is the Caudon Semi-Permanent Newt Fencing.

The internal drift fencing material will be stabilised against UV damage and designed to last up to 2 years. Example products include the Caudon Temporary Newt Fencing Polythene or the Temporary Geo-Textile Newt Fencing from Wildlife Fencing.

Example pitfall traps and carpet tiles include the Caudon Pitfall Trap 5.6L Circular and the Caudon Amphibian Refuge 500x500mm.

All pitfall traps will be fitted with the following:

- Mammal ladder – to allow small mammals that might fall into the pitfall traps to escape, whilst not allowing any amphibians to escape.

- Polystyrene float – to provide refuge for mammals or amphibians and prevent drowning in the event of a flooded pitfall trap.

- Vegetation – such as leaf litter gathered from site and placed in each trap to provide shelter for amphibians from opportunistic predators (e.g. corvids) and to maintain damp and cool conditions during periods of hot weather.

If any of the above are found to be absent from a pitfall trap during the trapping or translocation period, they will be replaced immediately from a collection of spares. If this isn't possible, the specific pitfall trap will be closed (sealed with a lid) until the necessary material can be sourced.

The supplier / make or models of fencing, bucket traps and carpet tiles are to be determined at the time based on availability etc. However, all material used will be sourced from a reputable supplier (such as Caudon or Wildlife Fencing), will be compliant with the requirements of the English Nature Great Crested Newt Mitigation Guidelines (2001) and will be approved by the project ecologist prior to installation.

Maintenance of fence line

Following its installation, both the perimeter and external fencing will be reviewed by a suitability experienced ecologist to confirm that it has been installed correctly. Any issues will be recorded and rectified immediately. Both the perimeter and internal drift fencing will be subject to monthly inspections to ensure that they remain intact and functional, with no potential points of access for amphibians. These monthly inspections will be undertaken by a suitably experienced ecologist. Any issues will be recorded and rectified immediately. The monthly inspections of the fencing will include an inspection of the newt grids, to ensure that they have not been filled with soil or any other material and that they continue to function as a barrier to GCN movement.

Pitfall trapping and translocation

Trapping will continue until 5 consecutive nights without capture have taken place i.e. more than 60 nights trapping will be required unless nights 56-60 have no captures.

The presence / absence surveys undertaken to inform the planning and licence applications concluded that the local area supports a medium population of GCN. However, a large percentage of ponds in the local area could not be surveyed and previous trapping schemes in Wrexham Industrial Estate have captured more GCN than anticipated. Therefore, it is possible that the local area may support a large population of GCN.

The pitfall traps will be open for an initial period of 60 nights (based on the assumption of a medium sized population of GCNs as recorded) where temperatures and weather conditions are suitable for GCN trapping (i.e. above 5°C and without frost). Trapping will only be undertaken when newts are active and will not be undertaken when newts are potentially hibernating. The traps will be checked daily by a suitably licensed ecologist or an accredited agent. Any GCNs or other amphibians found in the traps will be released into suitable areas of cover within the ecological compensation area, which will act as a GCN receptor site. Trapping will continue until 5 consecutive nights without capture have taken place i.e. more than 60 nights trapping will be required unless nights 56 to 60 have no captures. However, if over 100 individual GCN are captured overall during the 60 days trapping, it will be assumed that the site supports a large sized population. Therefore, the trapping period will be extended to 90 days. Similar to the medium sized population methodology, trapping will continue until 5 consecutive nights without capture have taken place i.e. more than 90 nights trapping will be required unless nights 86-90 have no captures. However, this will be on a compartment-by-compartment basis. For example, a 60-day trapping period can be achieved for a single compartment if no GCN are being captured between night 56 and 60 within that specific

compartment.

Removal of drift fencing and pre-commencement mitigation

Following the completion of the trapping and translocation period, but prior to any vehicle or plant access, or the commencement of any works on the site, a toolbox talk will be given to all staff and contractors. The talk will include species identification, ecology, and legal protection of UK amphibians. Site staff and contractors will be instructed not to interfere or access the ecological compensation area, unless with the permission of the site manager or ecologist, or to undertake habitat enhancement works as previously approved. Additionally, a final destructive search of any features which could shelter GCNs will be undertaken to ensure that no amphibians are present within the fenced area. The drift fencing in the centre of site will then be removed in suitable weather conditions (i.e. when night time temperatures exceed 5°C) under ecological supervision.

The ring fencing and newt grids at the perimeter of the site will be left in place until the works on site are complete, and it will be checked daily by the site manager or appointed member of staff, with monthly checks by the project ecologist. If any amphibians are found within the construction area during the works, they will be moved to the GCN receptor site within the ecological compensation area.

Trapping of ponds

Pond 4, which was found to contain a small population of breeding GCNs (max count of 6), will be removed to facilitate the proposals. In addition to compartmentalisation of this pond using drift fencing and the trapping of this compartment with pitfall traps and refugia, the pond will also be subject to a period of aquatic bottle trapping and netting. The pond will be subject to 10 nights of bottle trapping, in addition to netting of the pond immediately prior to setting traps and immediately after checking traps. The bottle traps will be deployed at a density of at least one trap per 2m of shoreline and will only take place when night-time air temperatures are greater than 5°C. Bottle trapping will continue until 5 consecutive nights without capture have taken place i.e. more than 10 nights trapping will be required unless nights 6-10 have no captures.

It is considered that the proposed level of aquatic bottle trapping and terrestrial pitfall and refugia trapping is sufficient given the small number of GCNs observed using this pond during the population size class assessment surveys (max count of six individuals), and considering that the bottle trapping is due to be undertaken at a time of year when newts are unlikely to be encountered in the pond. If works onsite are delayed and bottle trapping is undertaken when newts are more likely to be present within the waterbody (mid-February to August inclusive) then an increased survey effort of 30 nights trapping will be undertaken.

No GCNs were observed within Ponds 1 or 2 and both ponds returned negative eDNA results, indicating that GCNs are not using either pond. Despite this, the ponds are used by common amphibian species such as smooth newts *Lissotriton vulgaris*, common frog *Rana temporaria* and common toad *Bufo bufo*, and their remains some, albeit limited potential for GCNs to use these ponds once the site has been compartmentalised with drift fencing, due to a temporary reduction in habitat availability. As such, the above methodology being applied to Pond 4 will also be applied to Ponds 1 and 2 but with a reduced survey effort and only 10 nights of bottle trapping required regardless of the time of year. Bottle trapping will continue until 5 consecutive nights without capture have taken place i.e. more than 10 nights trapping will be required unless nights 6-10 have no captures.

Following the completion of both aquatic bottle trapping and pitfall trapping within pond compartments, the ponds will be drained and infilled. All ponds will be subject to netting prior to draining and all drainage works will be overseen by a licenced ecologist. Screens with a fine mesh (<1.5mm) will be fitted to any pumps used to drain the water, to prevent any remaining newts (or other wildlife) from being drawn through the pump. Following drainage and prior to infilling, the basin of the pond and vegetation and other debris will be searched for amphibians.

Operational phase of the development

During the operational phase of development, gully pots will be installed on site and will either be set back, covered with a mesh to prevent amphibians from falling within or will be fitted with a means of escape such as an amphibian ladder.

The above measures will also ensure the protection of all common amphibian species using the site.

4 COMPENSATION MEASURES

The proposed development will result in the loss of areas of suitable foraging and commuting habitat for GCNs, namely dense scrub and grassland. Despite this, the layout for the site has been designed to incorporate significant habitat retention, including the retention of habitats at the site boundaries, which will continue to act as ecological corridors and commuting routes for amphibians. Ponds 1, 2 and 4 will be removed as part of the development, however only Pond 4 was found to be in use by GCNs, the other two being used by common amphibian species only.

The measures set out below detail how this loss will be compensated for so that GCNs are provided with long-term terrestrial habitat which fulfills their requirements. Full details of the proposed habitat creation and management are detailed within the LEMP prepared for the development by UES. The habitat creation and compensation measures will also form part of the EPS mitigation licence application and will therefore be agreed with NRW.

4.1 Pond creation

To compensate for the loss of Pond 4, which is a GCN breeding pond, and Ponds 1 and 2 that are used by other common amphibian species, an additional twenty ponds of varying shape, size and depth are being created within the ecological compensation area. These ponds have been designed and will be managed to provide a range of ecological niches, from shallow ponds that dry out on occasion to deep ponds that retain water all year round. Through a mix of initial planting, translocation of material from ponds that are being removed and natural colonisation, it is anticipated that the ponds will support a range of botanical communities, ensuring an abundance and diversity of egg laying opportunities and invertebrate prey on which GCNs and other amphibians can forage.

In addition to these ponds, two ponds / shallow ephemeral scrapes will also be created within the open mosaic habitat within the southern section of the site. Although these aquatic features aren't being designed solely for amphibians, it is expected that they will provide some foraging and breeding opportunities.

Two ditches are also being created within the ecological compensation area. At this stage, it cannot be determined if these ditches will hold sufficient water to provide suitable breeding opportunities for GCNs, however there remains some potential and they will still increase the ecological niches present on site, increasing the availability of plants and invertebrate species and increasing the overall value.

The ponds currently present within the site boundary are in different stages of succession and provide different niches and conditions, supporting a greater diversity of species than they would if they were all of the same age, size and depth. Pond 6, located within the ecological compensation area, is in a late stage of succession and is largely dry, with a small area of standing water and significant cover from willow *Salix sp*. scrub. Ephemeral, late-stage ponds provide optimal conditions for many aquatic invertebrate species, a nationally scare but local example is the mud snail *Omphiscola glabra*. This pond will largely be retained and subject to minimal management. Some selective scrub clearance however will be undertaken every three years, to ensure that no more than 75% of the ponds' margins are heavily shaded, preventing the pond from drying completely and failing to function as an aquatic habitat.

The ponds have primarily been designed and created to provide suitable breeding opportunities

for GCNs, however some of the ponds have been designed and will be managed to target other species

4.2 Terrestrial habitat creation and enhancement

The linear features at the site boundaries and a 10m buffer are to be retained as part of the site layout, in order to provide ecological linkages for GCNs and other amphibian species to continue commuting between the site and offsite habitats within the wider landscape. Whilst areas of suitable GCN and amphibian terrestrial habitat will be lost in the form of semi-improved grassland, dense scrub, hedgerows and small sections of woodland, large areas of suitable habitat within the southern section of the site will be retained and enhanced. In addition, the eastern section of the site is being subject to significant habitat creation and enhancement to create an ecological compensation area that will be managed long term with an emphasis on its suitability to support GCNs.

Of the 25.4ha development boundary, approximately 11.4ha (45%) of the site will be retained or subject to habitat creation and enhancement. This includes the creation or planting of wildflower grassland, woodland, hedgerows, an orchard, ditches and tussocky rough grassland. Additionally, the retained area of open mosaic grassland and unimproved lowland meadow within the southern section of the site will be retained and enhanced. All of the proposed habitat creation and enhancement will provide high-quality terrestrial habitat for GCNs and other amphibians.

4.3 Hibernacula

As an additional ecological enhancement targeting GCNs, ten amphibian hibernacula will be created on site, six of which will be located within the ecological compensation area and the other four within the retained open mosaic habitat within the southern section of the site.

They will be created by excavating pits in the ground (0.5m depth, 2m length, and 1m width). Ideally, these pits will then be filled using materials already present on site, including hay, brash, cut timber / logs and brick / rock hard-core, or the materials can be sourced from elsewhere if necessary. The pits will be piled up to a height of approximately 1000mm above ground level. Hibernacula will then be loosely capped with topsoil and turfed over, ensuring that access is still available through to the lower layers at the margins.

The following diagram provides a visual representation of the hibernacula, with the only additional requirement to the diagram being that a pit is first excavated.

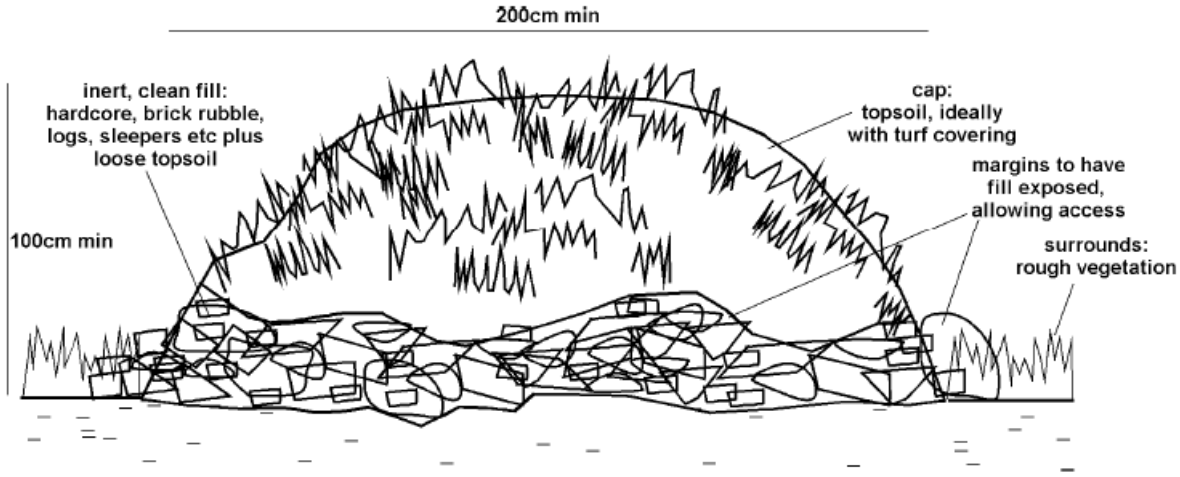


Figure 1 – Hibernacula design.

5 MONITORING AND MANAGEMENT

5.1 Population monitoring

Following the completion of the trapping and translocation exercise, the retained and newly created ponds will be subject to monitoring surveys for a period of 30 years, to assess whether the GCN population has responded favourably to the mitigation, and to inform ongoing long-term habitat management. Monitoring surveys will start the next available survey period (mid-march to June inclusive) following the completion of the trapping and translocation exercise. Monitoring will involve population size class assessment surveys, utilising the industry standard bottle trapping, netting and torching methodology, for all retained and newly created ponds, involving six survey visits each year across mid-March and June (inclusive). The results of the monitoring surveys will be submitted annually to NRW and the local ecological records centre COFNOD.

The responsibility for commissioning ecological monitoring surveys lies with the land owner / developer / licensee (FI-REM), and must be undertaken by suitably qualified and GCN licensed ecologists, or their accredited agents.

5.2 Habitat creation, ongoing management and responsibilities

Responsibility

The responsibility for the initial habitat creation works lies with the landowner / developer / licensee (FI-REM) and the contractors appointed to carry out those works at the time of the development. They will be responsible for ensuring that the habitat creation works are carried out in accordance with this document, the LEMP and the GCN EPS mitigation licence issued by NRW.

Subsequent management of the habitats on site will also be the responsibility of the landowner / developer / licensee (FI-REM). An ecology cooperative is being established that will involve FI-REM, United Environmental Services (as an ecological consultant), North Wales Wildlife Trust and Enfys Ecology Ltd. Butterfly Conservation and Amphibian and Reptile Conservation will also be invited to be members of the cooperative as advisors. Furthermore, whilst Wrexham Borough Council's Ecologist and NRW won't be members of the cooperative, their expertise and advice will be regularly sought from the cooperative.

Through the cooperative, Enfys Ecology and the North Wales Wildlife Trust will be appointed as the management company responsible for undertaking the ongoing habitat management works as detailed within this document, and the LEMP. They must ensure that the ongoing measures detailed within LEMP are implemented.

Habitat monitoring

As part of the 30-year management plan, annual site inspections will be undertaken of the created and retained ecology areas by Enfys Ecology, North Wales Wildlife Trust and / or the project ecologist. Following this, annual meetings will be held and will include all members of the ecology cooperative. The purpose of the meeting will be to discuss any issues, particularly in relation to failed habitat establishment and management, and to determine whether any remedial works are necessary to restore the habitats to a satisfactory standard, or to implement further enhancement measures. This meeting will be held from late summer to

winter, so that the habitats can be assessed when in flower (e.g. wildflower meadows) and to allow for the required remedial works to be arranged.

In addition, a detailed ecological monitoring review will be undertaken in the third year following initial habitat creation, to allow for a review of the ongoing management plan and to allow for remedial changes to the management plan to be implemented based on an informed assessment of the conditions on site. This ecological monitoring will involve a walkover and detailed botanical survey by a suitably experienced ecologist. Information recorded during the walkover survey will be submitted to COFNOD and can be provided to the LPA upon request.

5.3 Mechanisms for ensuring delivery of mitigation and compensation measures

The initial mitigation measures all require a suitably licensed and experienced ecologist to either carry out the works or supervise, which will ensure that they are carried out in accordance with this document and the EPS mitigation licence method statement.

A compliance audit will be carried out each year following the initial works to ensure that the site managers are complying with the method statement and habitat management measures. The proposed works are considered to fall into tier 2 of NRW's compliance audit guidance tiers.

It will therefore be the responsibility of the land owner / developer / licensee (FI-REM) to appoint an ecological consultant to annually undertake an internal audit of compliance with the licence requirements.

The appointed internal audit ecological consultant is responsible for:

- Defining appropriate (key) performance indicators that will inform an inspection, utilising the NRW audit template.
- Determining the minimum number of assessment visits required to demonstrate compliance.
- Defining what documentation, including logs, will be required to inform inspections;
- Progressing remedial or contingency actions identified during audit; and
- Reporting back to the developer and NRW.

Non-compliance identified by the internal auditor needs to be given full consideration in compliance reports. Where non-compliance is identified, this should be assessed, noted and described in the report. In addition, information should be provided about any decisions regarding non-compliance, as well as any action that may be required.

All licensees are required to submit an NRW licence report form at the end of the project. Projects requiring compliance audits will also need to report against performance indicators. In all cases, additional reports may be submitted as supplementary information.

The compliance audit must also ensure that the biosecurity risk assessment is adhered to.

5.4 Timetable of works

Table 1 – Timetable of works relating to GCNs

ACTIVITY	COMMENTS	TIMINGS
Initial habitat establishment and enhancements		
Pond and ditch creation works within the ecological compensation area are currently being conducted under a separate EPS licence S093997-1. Works are being undertaken by an appropriately experienced contractor under supervision of an ecological clerk of works where necessary.		
Mitigation measures		
Initial vegetation removal along amphibian fence line	Removal of vegetation above 10cm in height that won't have any adverse impact on GCNs. Strictly under the supervision of a licenced ecologist or accredited agent.	ASAP
Removal of remaining vegetation along amphibian fence line and fingertip search	Removal or remaining vegetation below 10cm in height. Strictly under the supervision of a licenced ecologist or accredited agent, who will also undertake a fingertip search.	ASAP following approval of licence application and prior to the installation of fencing.
Installation of amphibian fencing, pitfall traps and carpet tile refugia	Under supervision / approval of appointed ecologist.	ASAP following approval of licence application and prior to the commencement of any works on site.
GCN trapping and translocation exercise	Pitfall traps to be open for an initial period of 60 days where temperatures and weather conditions are suitable for GCN trapping. The traps will be checked daily by a suitably licensed and experienced ecologist. Any GCNs or other amphibians found in the traps will be released into suitable areas of cover within the ecological compensation area. Trapping will continue until 5 consecutive nights without capture have taken place. If over 100 individual GCN are captured overall during the 60 days trapping, the trapping period will be extended to 90 days.	ASAP following approval of licence application and prior to the commencement of any works on site. To be undertaken when temperatures and weather conditions are suitable for GCN trapping (i.e. above 5°C and without frost).
Checks of amphibian fencing	To be checked daily by the site manager (during the construction phase of the development, with monthly checks by the project ecologist (from installation until removal)	For as long as the fence is installed.
Trapping of ponds	Ponds 1, 2 and 4 will be subject to 10 nights of bottle trapping and netting, when night-time air temperatures are greater than 5°C. Bottle trapping will continue until 5 consecutive nights without capture have taken place. If works onsite are delayed and bottle trapping of Pond 4 is undertaken when newts are more likely to be present within	ASAP following approval of licence application and prior to the commencement of any works on site. To be undertaken when temperatures

	the waterbody (mid-February to August inclusive) then an increased survey effort of 30 nights bottle trapping will be undertaken.	and weather conditions are suitable for GCN trapping (i.e. above 5°C and without frost).
Removal of internal drift fencing	The drift fencing will be removed in suitable weather conditions under ecological supervision, prior to the start of works onsite.	Following the completion of the trapping exercise and prior to start of development works.
Hand search and removal of potential refugia	Hand search and removal of refugia by / under the supervision of a licenced ecologist or their accredited agent.	
Toolbox talk	Provided to contractors prior to the start of construction works.	
Removal of perimeter fencing	The perimeter fencing will be removed in suitable weather conditions under ecological supervision.	Following the completion of the development works within the fenced area.
Habitat establishment and enhancements – see LEMP for further details		
Tree, scrub and hedgerow planting	To be carried out by an appropriately experienced contractor. Specified species to be used.	During the development, although planting between October and March is preferred.
Sowing of wildflower, tussocky and marshy grassland	Preparatory ground works and sowing to be carried out by appropriately experienced contractor. Specified seed mixes to be used.	During the development, March to April, or September to October.
Remedial works to existing ponds	Removal of 80% of existing scrub around retained ponds. Undertaken using hand tools under ecological supervision. Arisings used to create log / brash piles adjacent to ponds.	November to February.
Planting of oxygenating plants within ponds	Planted within 10 of the newly created ponds in the second year following establishment, once water levels have settled and it can be determined which ponds hold sufficient water.	In second year following establishment.
Open mosaic habitat creation	Breaking up of concrete. Creation of spoil mounds. Agitation of substrate. Creation of sand banks. As directed by onsite ecologist.	Within a year of completion of development works or removal of site compound.
Existing open mosaic habitat	Creation of two sand banks. Creation of bare-ground scrapes and two ephemeral pond scrapes. Under the supervision and direction of the onsite ecologist.	During development, November to February.
Creation of amphibian hibernacula and log piles	Including excavation of pits and filling with suitable materials, before capping with topsoil and turf. Under the supervision and direction of the onsite ecologist.	During the development, October to February.
Ongoing habitat management and maintenance – see LEMP for further details		

Tree / hedge plant establishment assessment	Inspection of newly planted trees / hedgerows to monitor establishment after first growing season. Any trees deemed not to be in sufficient health / sufficiently well-established are to be replaced by the planting contractor.	After first full growing season, in late summer when leaves are still present to provide indication of tree health.
Initial pruning of hedgerows and scrub	To establish dense, bushy growth	Two years after planting. January to February.
Subsequent pruning of hedgerows	To establish dense, bushy growth. Pruning should aim to achieve a height of around 3m and a width of around 2m.	Once every three years following the initial pruning. January to February.
Weed suppression of sown grasslands	To decrease competition for target wildflower species: Prolific weeds (thistles, docks and dominant grasses)	The first April after sowing.
Initial mowing of wildflower grassland	To prevent nutrient enrichment. Sward is to be cut down to 40 – 75mm. Cuttings are to be left *in situ* for 48 hours, then collected and piled up in designated composting areas.	End of October after first year of sowing; this will allow flower to set seed and amphibians to move towards hibernation sites.
Ongoing mowing of wildflower grassland.	Removal of litter or debris from mowing area and checking for sheltering wildlife underneath. Sward is to be cut down to 40 – 75mm. Cuttings are to be left *in situ* for 48 hours, then collected and piled up in designated composting areas. During each cut, the sward should be monitored for establishing weeds, including brambles, and these should be uprooted, cut back or use of appropriate herbicide.	May and October, annually.
Ongoing tussocky grassland management	Minimal maintenance required to form tussocks and rank structure. Monitoring for establishing weeds and scrub to be undertaken and uprooted / cut back if required. Mowing may be required every 2-3 years: done on a rotational basis so that no more than 50% of area is mown in any one year.	October as required and agreed with project ecologist.
Ongoing management of marshy grassland	Removal of litter or debris from mowing area and checking for sheltering wildlife underneath. Sward is to be cut down to 40 – 75mm. Cuttings are to be left *in situ* for 48 hours, then collected and piled up in designated composting areas. During each cut, the sward should be monitored for establishing weeds, including brambles, and these should be uprooted, cut back or use of appropriate herbicide.	October, annually.
Mowing of access paths through grassland in	2m width path mown to minimise risk of use by wildlife.	Monthly mowing from April to September inclusive.

designated ecology zone		
Ongoing pond and wet ditch management	Water level monitoring to ensure no leaks. Hydrological advice and remedial works may be required. Monitoring for invasive species colonisation, including great reedmace. Control may be required as advised by project ecologist. Monitoring scrub encroachment. Ponds and banks to feature no more than 20% scrub cover. To be removed by cutting and treatment with herbicide or uprooting where required. Monitoring of algal blooms. To be raked off if required.	Ongoing monitoring. At least twice per year during first 3 years from creation. April and August. Annually between June and August. October to February, as required. If and when algal blooms develop.
Scrub coppicing	Most mature 10% areas of dense scrub to be highlighted by annual management meeting and subjected to coppicing: cutting to ground level with hand tools, and arisings piled up or chipped.	Annually, October to February.
Ongoing open mosaic management	Monitoring for invasive species colonisation. Control measures undertaken if required. Monitoring of dominant ruderals. Control measures required if dominance not controlled by natural processes. Monitoring of scrub control, at discretion of project ecologist or appointed management company. Continued presence of bare ground required; creation of new areas as initial areas become vegetated. Monitoring of sward height: 50% of area varied sward 20mm – 150mm. To be controlled by natural processes, but remedial action may be required if not.	Annually, June to August. Second year from creation, as required. As required, October to February. As required, October to February. October as required.
Monitoring and auditing		
GCN population size class assessment monitoring surveys of the existing and newly created ponds	Results to be submitted to COFNOD.	The next available survey period (mid-March to June inclusive) following the completion of the trapping and translocation exercise.
Annual internal audit	Appointed internal ecologist to audit the licensable works and provide recommendations or contingency measures if conservation efforts are failing or can be improved. Report to be submitted to NRW.	Every year for a period of 30 years following granting of the licence.
Annual external audit	Appointed external ecologist to audit the licensable works. Report to be submitted to NRW.	Every year for a period of 30 years

		following granting of the licence

6 CONCLUSION

A medium population of breeding GCNs is present within the proposed development footprint, which will require the loss of terrestrial and aquatic GCN habitat.

The development proposals will retain and enhance approximately 45% of the site which includes suitable habitat for breeding, commuting and foraging GCN, although the loss of semi-improved grassland, dense scrub, hedgerows and small sections of woodland will impact terrestrial GCNs. Three ponds will also be lost as part of the proposed development, one of which supports breeding GCNs.

The measures detailed in this document will reduce the risk of harm to GCNs and other amphibians to the lowest practicable levels. They ensure that site staff have the knowledge and processes required to avoid breaches of legislation, and that suitable amphibian habitat is in place for the long-term future. No works will take place until an EPS mitigation licence is obtained from NRW.

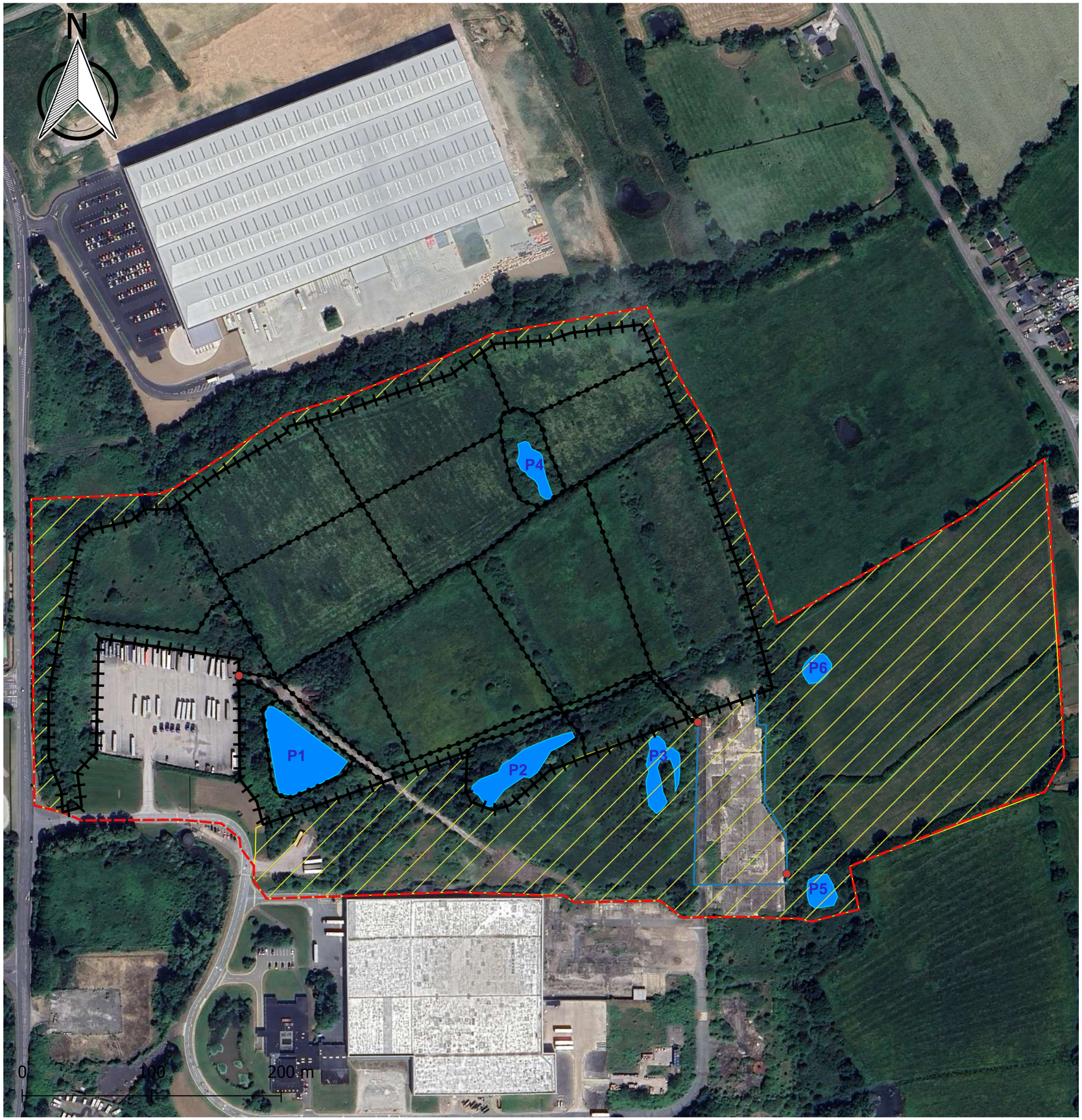
The proposed landscaping of the site will maintain habitat linkages for amphibians and other wildlife around the site. There will be no fragmentation, isolation or long-term impacts on amphibians in the local areas a result of the proposed development.

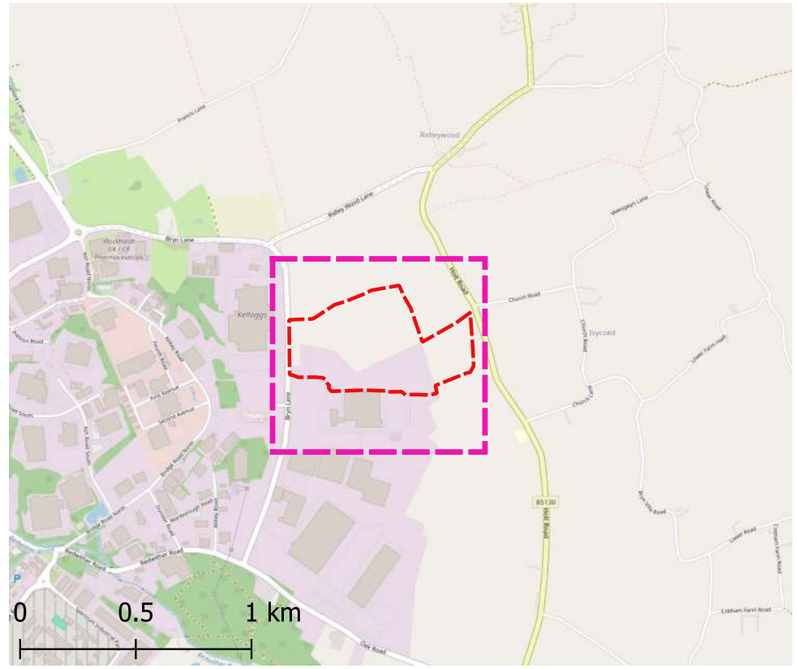
APPENDICES

Appendix 1 – Amphibian fencing plan

GCN Fencing Plan

Site: Plot 3a, Wrexham Industrial Estate
NGR: SJ 39340 50457
Author: Tom Kenwright
Date: 18/06/2024





KEY:

- Site boudnary
- Perimeter ring fencing (in place for entire construction period)
- Drift fencing (in place for trapping period only)
- Retained ecology area and GCN translocation zone
- Newt grid
- One-way fencing

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Appendix 2 – Pond plan



Pond Plan - 500m

Site: Plot 3a, Wrexham Industrial Estate
Author: Tom Kenwright
Date: 24/02/2022

KEY:

- Pond
- Ditch
- Survey boundary
- 500m buffer

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