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ECOLOGICAL DESIGN STRATEGY

At

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1 INTRODUCTION

1.1 Author and qualifications

This report is compiled and written by Tom Kenwright BSc MSc ACIEEM, UES Senior Ecologist.

It has been verified by Toby Hart BSc MCIEEM PIEMA, UES Managing Director.

1.2 Development proposals 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.

A suite of ecological survey work was undertaken of the site by UES between 2021 and 2023 to inform the planning applications. These are detailed in Section 1.4 of this report, and summarised in the accompanying Ecological Impact Assessment (EcIA), report reference UES03448/22. The EcIA identified various impacts due to the presence, or potential presence, of protected or species / habitats of principal importance within the site boundary or the surrounding area.

1.3 Objectives and scope

This Ecological design strategy (EDS) details the mitigation measures that will be implemented during the construction phase of the development to protect wildlife and habitats on and adjacent to the proposed development site.

This document has also been prepared in order to discharge Condition 32 of the approved planning permission P/2023/0280. Condition 32 reads as follows:

"No development shall take place until full details of an Ecological Clerk of Works for the duration of the construction works have been submitted to and approved in writing by the Local Planning Authority. Development shall thereafter be carried out in strict accordance with the approved details."

Whilst this document has not been prepared to discharge Condition 35, the implementation of the mitigation measures detailed within this document will ensure compliance with the requirements of the condition. Condition 35 reads as follows:

"Any vegetation clearance must be undertaken outside the bird nesting season (March to August inclusive), unless a detailed bird nesting survey by a suitably experienced ecologist has been carried out immediately prior to clearance and written confirmation provided that no active bird nests are present which has been agreed in writing with the Local Planning Authority."

1.4 Structure of the report

This report sets out the baseline ecological information and the key ecological receptors that this report focuses on, before detailing the mitigation measures that will be implemented to protect these receptors during the construction phase of the development and to provide sufficient habitat during the operational phase.

This report should be read in conjunction with Appendix 1 – 4, as well as the following supplementary reports:

- Preliminary Ecological Appraisal V3 – UES, 30th March 2023, reference: UES03448/01
- Ground Level Tree Assessment V2 – UES, 30th March 2023, reference: UES03448/06
- Great Crested Newt Impact Assessment V2 – UES, 30th March 2023, reference: UES0338/07
- Reptile Presence / Absence Survey V2 – UES, 30th March 2023, reference: UES03448/08
- Great Crested Newt Population Size Class Assessment V3 – UES, 18th December 2023, reference: UES03448/09
- Breeding Bird Survey V2 – UES, 30th March 2023, reference: UES03448/11
- Bat Activity Survey V2 – UES, 30th March 2023, reference: UES03448/12
- National Vegetation Classification Survey V3 – UES, 30th March 2023, reference: UES03448/13
- Pond Assessment: Predictive System for Multimetrics (PSYM) V2 – UES, 30th March 2023, reference: UES03448/14
- Dingy Skipper Survey – UES, 30th September 2022, reference: UES03448/15
- Bat Aerial Tree Assessment & Presence / Absence Survey V2 – UES, 30th March 2023, reference: UES03448/16
- [redacted]
- Invertebrate Assessment – Conops Ecology Ltd, 29th September 2022, report number 19.22
- Ecological Impact Assessment V4 – UES, 18th December 2023, reference: UES03448/22
- Great Crested Newt Method Statement V3 – UES, 18th December 2023, reference: UES03448/23
- [redacted]
- Landscape and Ecology Management Plan – UES, 10th June 2024, reference: UES03448/25
- Amphibian Conservation Plan – UES, 22nd July 2024, reference: UES03448/45
- Invertebrate Monitoring and Enhancement Plan – UES, 22nd July 2024, reference: UES03448/46
- Planting Plan and Schedule – PGLA Landscape Architects, reference WRE2205_PP01
- Ecological Area Landscape Strategy – PGLA, reference WRE2205_LPA02

2 BASELINE ECOLOGICAL INFORMATION

The land parcel has an area of approximately 20.9ha and was formerly used for industrial and agricultural purposes, prior to being left unmanaged for several years. The site contains large semi-improved species-rich grassland fields interspersed with ponds, small stands of woodland, hedgerows and scattered trees. Large areas of the site have succeeded into dense scrub and areas of bare ground and ephemeral / short perennial are present on previously developed land within the south-eastern section of the site. The south-western section of the site contains an area of amenity grassland and a large hardstanding compound used to store vehicles. A shallow stream runs along the northern site boundary and wet ditches are present along the western and part of the eastern site boundaries.

An additional 4.5ha of adjacent land has been included within the development boundary which will be used as an ecological compensation area, to provide enhancements for biodiversity in order to offset the biodiversity loss elsewhere onsite: This land comprises two agricultural grassland fields that are divided and bordered by hedgerows and trees. A dry and unvegetated ditch runs along part of the eastern boundary, and a pond, surrounded by willow *Salix sp.* scrub, is present within the northernmost field.

A suite of ecological survey work has been undertaken on the site by UES between 2021 and 2023. These are detailed in Section 1.4 of this report, as summarised in the accompanying Ecological Impact Assessment (EcIA), report reference UES03448/22.

The following ecological receptors have been identified as having the potential to be impacted by the development proposals:

- **Amphibians**: A medium population of great crested newts (GCNs) *Triturus cristatus* is present within the onsite ponds, and a small population is present within two of the off-site ponds within 500m of the proposed development boundary. Additionally, the site supports a large population of common toads *Bufo bufo*, a medium population of smooth newts *Lissotriton vulgaris*, a medium population of common frogs *Rana temporaria* and a small population of palmate newts *Lissotriton helveticus*.

- [redacted]

- **Bats**: The site supports high quality habitats for foraging and commuting bats: Bat activity transects, and static detector analysis identified moderate levels of use of the site by common and widespread bat species. The majority of bat activity was associated with the onsite woodland, tree lines, hedgerows and lines of scrub at the site and field boundaries. There are no buildings on site suitable for use by roosting bats, however 18 mature trees contain features suitable for use by roosting bats; 10 were assessed as having low potential, 5 as having moderate potential and 3 as having high potential. These trees were subjected to bat presence / absence surveys where required. No bats (or evidence of bats) were found within the trees.

- **Breeding birds**: Breeding bird surveys found the site to support a typical bird assemblage (both diversity and density) for the habitats present. The variety of habitats present offer suitability for a variety of nesting bird species, however no Schedule 1[1] species were found to be breeding on site.

[1] Schedule 1 species – as per the Wildlife and Countryside Act 1981 (as amended)

- **Butterfly species of principal importance**: Suitable habitats for dingy skipper *Erynnis tages* and grizzled skipper *Pyrgus malvae* are present in the southern section of the site, and records were returned from within 2km of the site. Butterfly surveys particularly targeting dingy skipper that were undertaken of the southern section of the site observed peak counts of two dingy skippers, four small heath *Coenonympha pamphilus* and seven grizzled skippers. All three butterfly species were observed using both the unimproved grassland and the open mosaic area; however, all three species showed a greater affinity for the open mosaic habitat. As such, the southern section of the site is considered to support small-moderate size populations of all three species.

- **General terrestrial invertebrate communities:** Terrestrial invertebrate surveys found the site to support a moderately rich invertebrate fauna that includes a number of localised and specialised species. The presence of scarce and declining butterfly species being of particular note, and the presence of other specialised and demanding ground and aerial (deadwood)-nesting bee and wasp species is also notable.

- **Grassland:** The site contains numerous fields and areas of grassland of varying quality and botanical composition: Unimproved neutral grassland (MG5[2]), semi-improved neutral grassland (MG9 and MG1), marshy grassland (MG10) and species poor-semi-improved grassland. MG5 is considered to meet the criteria to qualify as lowland meadow, a habitat of principal importance[3].

- **Hedgerows:** The site supports eight hedgerows (of varying quality). Given the low number of component species, they are not considered to qualify as important for ecological reasons as per the Hedgerow Regulations, however they qualify as habitats of principal importance[3] due to their percentage of native species cover.

- **Invasive species**: Single stands of the invasive species Himalayan balsam *Impatiens glandulifera* (see Appendix 1, Target Note 9), hollyberry cotoneaster *Cotoneaster bullatus* (see Target Note 11) and an additional unidentified cotoneaster species (see Target Note 10) were observed on site. The additional cotoneaster species identified is not considered to be one of the species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), however for the purposes of this assessment, it will be considered as an invasive species as most cotoneaster species can exhibit invasive tendencies, particularly within species-rich grasslands and the vegetative communities associated with open mosaic habitats.

- **Open mosaic habitat:** The southern section of the site features areas of high botanical diversity on gravel and other loose material; previously developed land. It meets the assessment criteria for open mosaic habitat, a habitat of principal importance [3].

- **Ponds:** Four of the ponds on site have been assessed as pond habitats of principal importance[3] as they support GCNs (Ponds 3, 4, 5 and 6). The three ponds (Ponds 1, 2 and 4) which are due to be removed to facilitate the development proposals were assessed for their ecological importance via the Predictive System for Multimetrics (PSYM) method: none of these ponds returned a PYSM score of greater than 75%, and therefore none of the ponds qualify as Priority Ponds for their invertebrate or aquatic plant populations.

[2] As per the National Vegetation Classification (NVC) survey methodology
[3] Section 41 of the NERC Act 2006

- **Trees:** Numerous trees are scattered across the site (as well as those located within areas of woodland). No veteran trees were identified, and no trees are present which are subjected to tree preservation orders (TPO). Some of the trees form lines which provide habitat continuity and commuting corridors for a variety of taxa.

- **Watercourse and ditches:** Wet ditches are present at the western and eastern site boundaries, which adjoin a minor stream which flows at the northern site boundary. These ditches are generally poor examples of this habitat.

- **Woodland and dense scrub:** There are three areas of woodland on site, which are isolated from each other; they are likely to have originated from planting and generally feature semi-mature specimens and feature relatively poor woodland ground-flora communities. A narrow strip of woodland is present at the northern site boundary which is more mature and offers a greater species diversity. Various areas of dense scrub are present across the site. Although they are not considered as habitats of principal importance, they are likely to be of high ecological value, especially where they provide habitat continuity throughout the site and to offsite areas.

Where necessary, the impacts on these receptors will be mitigated for through formal mitigation agreements (licences and / or method statements) which have been designed through consultation with Natural Resources Wales (NRW) and Wrexham County Borough Council; these are summarised within the following section of this report.

A Landscape and Ecology Management Plan (LEMP) has already been submitted to and accepted by Wrexham Borough Council (see report reference UES03448/25) and details the compensation for loss of habitats as a result of the proposed development, in addition to providing a 30-year management plan and details of proposed monitoring surveys.

3 ECOLOGICAL DESIGN STRATEGY

This section of the report details how impacts on the previously detailed ecological receptors will be avoided or mitigated during the development. It has been split into subsections which address the design and working methods that will be implemented to protect each ecological feature.

3.1 Habitats

3.1.1 Woodland and dense scrub

Retained woodland and scrub

Some areas of woodland and dense scrub on site will be retained and enhanced by the development proposals. Retained areas will be protected throughout the construction phase of the development in accordance with BS5837 (2012): Root protection areas (RPAs) will be adequately protected by appropriately designed protective barriers and ground protection, where necessary, throughout the entire development process.

Woodland and scrub removal

Where woodland and scrub are to be removed, it will be undertaken outside of the breeding bird season and should not be undertaken from March to August inclusive. If this is not possible and vegetation removal works need to take place during this period, a pre-commencement nesting bird check will be undertaken by an appropriately experienced ecologist within a maximum of 48 hours prior to the works. In the event that an active nest is observed, a sufficient buffer zone (At least 4m, to be determined by the species and advised by the ecologist) will be set up around the nest. No works will take place within this buffer zone until it can be confirmed by an appropriate experienced ecologist that the nest if no longer active.

The proposed losses are to be compensated for through scrub and tree planting as detailed in the accompanying LEMP.

3.1.2 Hedgerows and scattered trees

Retained hedgerows and trees

Many of the existing trees will be retained by the development proposals, as will five of the existing hedgerows: These will be protected throughout the construction phase of the development in accordance with BS5837 (2012).

If any arboricultural works are required to any retained trees (for example of preservation of public safety), these should be undertaken by an appropriately qualified arboriculturist (to BS3998 (2010)) and undertaken outside of the breeding bird season and should not be undertaken from March to August inclusive. If this is not possible and vegetation removal works need to take place during this period, a pre-commencement nesting bird check will be undertaken by an appropriately experienced ecologist within a maximum of 48 hours prior to the works.

The retained hedgerows are to be enhanced though planting up any gaps with new plants (of native species) and introducing additional species to species-poor sections. Planting methods are detailed within the accompanying LEMP, but care will be taken to protect the existing hedge throughout the process.

Hedgerow and tree removal

Hedgerows 2, 3 and 4 (see Appendix 1) are due to be removed as part of the development proposals. These existing hedges are species-poor, and their loss will be compensated for through the planting of 1772m of new native, species-rich hedgerow (as detailed within the accompanying LEMP.

The trees at the site boundaries and in the southern and eastern section of the site will be retained, however a number of mature trees in the centre of the site are proposed for removal (see accompanying AIA for full details). Tree removal works will be undertaken by appropriately qualified arboriculturists to BS3998 (2010), Section 12, and undertaken outside of the breeding bird season and should not be undertaken from March to August inclusive. If this is not possible and vegetation removal works need to take place during this period, a pre-commencement nesting bird check will be undertaken by an appropriately experienced ecologist within a maximum of 48 hours prior to the works.

Where any trees have been highlighted as having bat roost potential (as per the accompanying Bat Aerial Tree Assessment & Presence / Absence Survey), potential roosting features (PRFs) should be subjected either to soft-felling techniques or a pre-commencement inspection for presence of bats, undertaken by a suitably licenced bat ecologist.

3.1.3 Ponds and watercourses

Retained ponds and watercourses

Ponds 3, 5 and 6 will be retained as part of the development proposals and will be subject to enhancement measures and ongoing management (as detailed within the accompanying LEMP).

The watercourse and ditches at the western, northern and eastern site boundaries will remain unaffected by the development proposals, however in order to protect any potential connected aquatic habitats and to minimise the risk of pollution events to the lowest practicable levels, industry standard best practice measures (see Environment Agency's Pollution Prevention Guidelines for further details) will be implemented throughout the construction phase of the development. As a minimum, these measures will include:

- All material storage and disposal areas will be located as far away as possible from ponds and ditches.

- Any necessary fuel and oil will be stored in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001. Refuelling will only be undertaken in a designated area, designed to contain contaminated run-off, and by trained personnel. Emergency spill kits will be available on each machine.

- Waste segregation areas will be established utilising containers of an appropriate design to ensure that no waste can escape.

- Contractors and on-site staff will adhere to best practice measures and will follow relevant pollution prevention guidelines (PPGs) at all times.

- Site staff will to be provided with the knowledge and the means to contain and clean up and spills.

To specifically reduce the potential impact from pollution events from the use of concrete and cement, the following mitigation measures will be implemented during the construction phase of the development:

- The washing and cleaning of any concrete / cement mixing equipment and tools will be undertaken off site, or in a designated area on site, located as far away as possible from surface water drains and the ditches.

- Concrete and cement mixing will only be undertaken in a designated area of the site. This area should be sited on an impermeable surface e.g. on hardstanding and not on bare ground or grassland. Where possible, this designated mixing area will be located away from any surface water drains and will be located as far away as possible from the ditches.

- Any surplus concrete or cement will be removed from site and will be disposed of offsite and transported using a registered waste carrier.

- Any used cement bags will be sealed after use, stored appropriately to prevent leaks or dust (preferably in a waterproof building or storage container) and disposed of legally off site, never buried or burned.

In addition to the above pollution prevention measures, a no works buffer zone (excluding habitat creation and enhancement works) of at least 3m will be maintained along the length of the ditches and around retained ponds. As such, it is considered that the proposed buffer zone, when implemented in conjunction with the aforementioned pollution prevention measures, is sufficient to mitigate and reduce potential pollution and disturbance impacts on watercourses and ponds to the lowest practicable level.

<u>Pond removal</u>

Ponds 1, 2 and 4 (Appendix 1) are due to be removed in order to facilitate the development. This will include draining the ponds prior to earth moving / site levelling works.

An Ecological Clerk of Works will be present throughout the pond draining works to ensure works adhere to this method statement and any wildlife is safely protected through this phase of the works.

Pond 4 was found to support a small population of GCNs (peak count of 6 adults during PSCA surveys), as well as other common amphibian species (smooth newt, palmate newt and common frog); as such, it is considered a Priority Pond. Ponds 1 and 2 are not considered to qualify as Priority Ponds (as per PSYM), however they are likely to feature wildlife (such as common amphibian species and fish) which will be directly affected by the pond removal works.

PSYM Surveys found the ponds do not contain invertebrate species of conservation concern or species which are afforded specific protection.

Amphibians will be adequately protected during the construction phase of the development through implementation of the mitigation measures detailed within the Amphibian Conservation Plan that has been submitted to Wrexham Borough Council to discharge planning Condition 31. This includes the installation of amphibians fencing and a period of trapping and translocation, including aquatic funnel trapping of the three ponds that are to be removed as part of the proposals.

In addition to these measures, all ponds due to be removed 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.

3.1.4 Open mosaic habitat

The areas of existing open mosaic habitat are not due to be directly affected by the development proposals, other than for habitat improvement works; they are located in the southern section of the site which will be retained as an ecology zone.

Open mosaic habitats benefit from ground disturbance; this can cause creation of micro-habitats and new exposure of the seed bank. No soils from this section of the site will be removed from the site, so the seedbank will be retained in situ.

3.1.5 Grassland

Grasslands 1, 2 and 3 will be removed in order to facilitate the development. During NVC surveys, these grasslands were not found to meet qualifying criteria for grassland Habitat of Principle Importance, and as such will not require specific mitigation through the development.

The development landscape plan includes restoration and creation of over 3ha of grassland. Given the existing status of these grasslands and the proposed methods of sowing with wildflower mixes, it is not considered necessary or appropriate to harvest seed from the grasslands which are due to be removed.

3.2 Amphibians

An EPS mitigation licence for GCNs will be secured from NRW prior to the commencement of works and amphibians will be adequately protected during the construction phase of the development through implementation of the mitigation measures detailed within the Amphibian Conservation Plan that has been submitted to Wrexham Borough Council to discharge planning Condition 31. Full details are provided within the Amphibian Conservation Plan, which should be read in conjunction with this document.

[redacted]

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[redacted]

3.4 Bats

Trees

No bats were found to be roosting within any of the trees which were assessed as having bat roost potential during the presence / absence surveys. However, bats use tree roosts in a very transient way and their remains some, albeit very low potential for bats to use the trees in the future and at the time of the felling and arboricultural works. As such, if any trees identified as having bat roosting potential are to be directly affected by the works, soft felling techniques should be implemented: This involves felling the tree or removing large branches in sections, any of which that contain potential roosting features will be lowered to the ground and left for a period of 24 hours with the cavity entrance facing upwards before removing them from the site. Alternatively, where possible, a licenced ecologist can undertake a pre-commencement aerial inspection to confirm the absence of roosting bats prior to the felling works.

Appendix 4 shows the location of all trees identified as having bat roosting potential and full details / descriptions of these trees are provided within the Bat Aerial Tree Assessment and Presence / Absence Survey Report (report reference UES03448/16).

External lighting

Any temporary external lighting used during the construction phase of the development will be designed or located to avoid overspill onto all hedgerows, trees, ditches and site boundaries. The lighting scheme has been designed to ensure that lighting in use during the operational phase of the development avoids overspill into the hedgerows, ditches and ecological corridor along the site boundaries.

3.5 Breeding birds

Arboricultural works and vegetation removal (including enabling works) should be undertaken outside of the breeding bird season and should not be undertaken from March to August inclusive. If this is not possible and works need to be undertaken during this period, a targeted breeding bird nest check survey will be conducted within 48 hours prior to the start of the of the works. If areas of vegetation are considered to be too dense to be confidently surveyed, such as dense bramble scrub, an ecological clerk of works will be appointed to oversee the clearance works using hand tools.

If any breeding birds are found to be present within the working area, the works in this locality will stop immediately and a no works buffer zone of at least 4m (potentially larger depending on the species and at the discretion of the appointed ecologist) will be implemented around the nest until after the young have fledged, as confirmed by the project ecologist.

3.6 Terrestrial invertebrates

The habitats of key value for terrestrial invertebrates are located in the southern section of the site, which will only be developed for ecological compensation and enhancement. As such, minimal habitat destruction is expected, and direct impacts on terrestrial invertebrate communities are considered to be negligible.

No specific mitigation measures regarding terrestrial invertebrates are required.

3.7 Invasive species

The areas of Himalayan balsam and cotoneaster spp. on site will be subject to control measures prior to the start of works on site and will be eradicated as part of the development.

Preventing spread

1. In order to avoid contamination around the site, all site operatives will receive training in invasive species identification and best practice procedures for avoidance of spreading any species throughout the site.

2. Good site hygiene will be maintained:

    - All stands of the invasive species will be recorded, isolated and fencing erected around the contaminated area to restrict access.

    - Stockpiles of contaminated soils will be clearly marked and isolated.

- The use of vehicles within the contaminated areas will be avoided where possible, if not, vehicles will be washed at a designated area to remove any plant fragments and soil, taking care that contaminated wastewater does not spread off site.

3. New contamination of the site will be avoided by maintaining site security to minimise the risk of fly-tipping waste onto the development, not importing infested topsoil for use on site, and inspecting new vehicles entering the site, particularly any caterpillar tracks.

4. Reusing treated soils onsite is possible without the need for a waste management licence. However, to minimise the potential problems there could be if the soil was not treated adequately, soil should only be used again where there is little risk of spreading such as away from watercourses, amenity lawns, site boundaries and in areas not disturbed heavily by people.

Treatment

As there is the possibility that these species could be disturbed by contractors throughout the construction period, any invasive species will be subjected to control measures prior to start on site. As the method for invasive species treatment will have negligible effect on GCNs, this may be undertaken prior to implementation of GCN mitigation measures. The following procedures will be followed:

1. Identify all existing and emerging stands within the site area and mark all clumps with a single stake (for small clumps), 2 or 3 stakes (for bigger clumps). Each stake shall be driven until firm by hand. All stakes shall be 75mm diameter x 2.5m long peeled, tanalised softwood with the top painted for ease of identification. Stake on the edge of all identified clumps. Mark all areas on a site plan and take a photographic record, which will be provided to the site manager and shown to all contractors working on site prior to the eradication of the invasive species. This should be undertaken by a suitability qualitied ecologist capable of confidently identifying invasive species.

2. A 3m exclusion zone around each clump will be marked out on site.

3. Access to all infected areas shall be on foot at all times. No plant or vehicles shall pass within 3m of the identified stands or staked areas.

4. No excavation or tipping of any material shall be allowed within 5m of any identified stands or staked areas.

5. All site staff shall be briefed upon the identification of invasive species and the need to avoid contact or cross contamination within the site, including points 2, 3 and 4 above. The following steps then need to be followed according to each invasive species.

6. If possible, removal works are not to take place during the period when the plants are in seed, as this could result in the spread of seeds off the site (skip to step 7). If this is not possible, the plants should be sprayed using an appropriate herbicide, at an appropriate concentration, by a competent person.

7. If no seeds are present on the plants, they may be removed by pulling / cutting the plants by hand. Balsam requires no further treatment once removed, however cotoneaster plants should be treated with herbicide appropriate for stump treatment. The cleared vegetation should then be transported as contaminated waste to a landfill site.

8. New stands that grow in the future should be pulled / cut early in the season before the seed heads / berries develop, ensuring that no seeds are inputted into the seed bank. This

process will require ongoing management to fully eradicate Himalayan balsam and cotoneaster from site.

Future contamination, monitoring and responsibility

Invasive species, particularly Himalayan balsam, can re-appear on site after treatment through subsequent growth of dormant seeds or through future contamination of the site.

It is important that regular monitoring be undertaken to assess any regrowth and prevent the spread of any invasive species.

The responsibility of the initial treatment and future monitoring rests with the landowner / developer (FI-REM) and any appointed contractors. The effectiveness of monitoring will be increased through onsite training given to the site operatives. Any regrowth will be further assessed and an appropriate method of treatment carried out.

If the developed site is sold, the responsibility for future monitoring and treatment of invasive species will also be passed on to the new site owners.

4 REQUIREMENT FOR ECOLOGICAL CLERK OF WORKS

The below table details all activities and further surveys that will need to be undertaken by, or under the supervision of, an appropriately experienced (and licensed where necessary) ecologist. This table includes all future works detailed in this document, the LEMP and the Amphibian Conservation Plan.

Table 1 – Requirements for ecological clerk of works or further involvement of an ecologist

Activity	Description
Mitigation measures detailed within this EDS	
Vegetation clearance	A pre-commencement nesting bird check will need to be undertaken by an ecologist within 48 hours prior to any vegetation clearance works undertaken from March to August inclusive. This includes tree felling, scrub removal, hedgerow removal and arboricultural works.
Drainage of ponds	An ecologist will be present during the drainage of Ponds 1, 2 and 4, to undertake pre-drainage netting and to search for amphibians following the completion of the drainage.
[redacted]	[redacted]
Removal of trees identified as having bat roosting potential	Soft felling techniques can be implemented of any trees assessed has having bat roosting potential without the need for an ecologist to be present. Alternatively, to avoid the need for soft-felling techniques, where possible, an ecologist can undertake a pre-commencement inspection of the potential roosting features within the tree.
Identification and demarcation of all stands of invasive species	Prior to the commencement of site clearance or construction works (excluding works associated with GCN trapping and translocation), an ecologist is required to identify all stands of invasive species. The ecologist will mark all stands with a single stake (for small stands), 2 or 3 stakes (for bigger stands) and will record all locations on a site plan, which will be provided to the site manager and shown to all contractors working on site prior to the eradication of the invasive species.
Mitigation measures detailed within the Amphibian Conservation Plan	
Removal of vegetation to facilitate installation of GCN fencing	A pre-commencement nesting bird check will need to be undertaken by an ecologist within 48 hours prior to any vegetation clearance works undertaken to facilitate the installation of the GCN fencing.
Fingertip search of proposed vehicular access route across site	A GCN licenced ecologist or their accredited agent must undertake a comprehensive finger-tip search of the proposed vehicular access route across the site, to locate and remove any GCNs or other amphibians present.
Review of GCN fencing installation	Following its installation, both the perimeter and external fencing and associated pitfall traps will be reviewed by a suitability experienced ecologist to confirm that it has been installed correctly.
Monthly inspections of GCN fencing and grids	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.
Trapping and translocation of GCNs	Pitfall trapping and aquatic funnel trapping to remove GCNs and other amphibians from the proposed development area, as detailed fully in the Amphibian Conservation Plan.
Toolbox talk	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.
Destructive search of potential refugia	Following the completion of the trapping and translocation period, a final destructive search of any features which could shelter GCNs will be undertaken by, or under the supervision of, a licenced ecologist or their accredited agent. To ensure that no amphibians remain within the fenced working area.
Removal of internal drift fencing	Following the completion of the trapping and translocation exercise, the internal drift fencing will be removed in suitable weather conditions (i.e. when nighttime temperatures exceed 5°C) under ecological supervision.
Mitigation measures detailed within the LEMP	
Creation and enhancement of the existing open mosaic habitat	Works to create new areas and to enhance the existing open mosaic habitat within the southern section of the ecological compensation area are to be undertaken under the supervision and direction of a suitably experienced ecologist, as detailed fully in the LEMP.
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.
Creation of butterfly and beetle mounds	Created using spoil from ponds; mixed with clean sand if required. Sown with WFM1 seed mix. Under the supervision and direction of the onsite ecologist.
Annual inspections and site meetings	Following habitat creation and enhancement works, 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, including the project ecologist.
Annual GCN population monitoring surveys of retained and newly created ponds.	These monitoring surveys must be undertaken by an ecologist holding an appropriate NRW GCN survey licence, or their accredited agent. Full details are provided within the LEMP.
Butterfly monitoring surveys	Following completion of the construction works and establishment of the habitats, further butterfly monitoring surveys will be undertaken of the ecological compensation areas by an appropriately skilled ecologist, with particular focus on dingy skipper, grizzled skipper and small heath butterflies. Full details are provided within the LEMP.
Invertebrate monitoring surveys	Following completion of the construction works and establishment of the habitats, further invertebrate monitoring surveys will be undertaken of the ecological compensation areas by an appropriately skilled ecologist. Full details are provided within the LEMP.

5 CONCLUSION

Once implemented, the ecological measures set out in this EDS will ensue that protected species and ecologically valuable habitats on and immediately adjacent to the proposed development site are safeguarded throughout the construction phase of the development.

Full details of compensatory habitat creation and enhancement are provided within the accompanying LEMP (see report reference UES03448/25).

APPENDICES

Appendix 1 – Phase 1 Habitat Plan

Target Note 1 - Common frog

Target Note 2 - Dead tree with bat roosting potential

Target Note 3 - Oak tree with bat roosting potential

[redacted]

Target Note 5 - Fox scat

Target Note 6 - Deer footprints

Target Note 7 - Adult deer

Target Note 8 - Rabbit warren with multiple burrows and droppings

Target Note 9 - Himalayan balsam

Target Note 10 - Cotoneaster

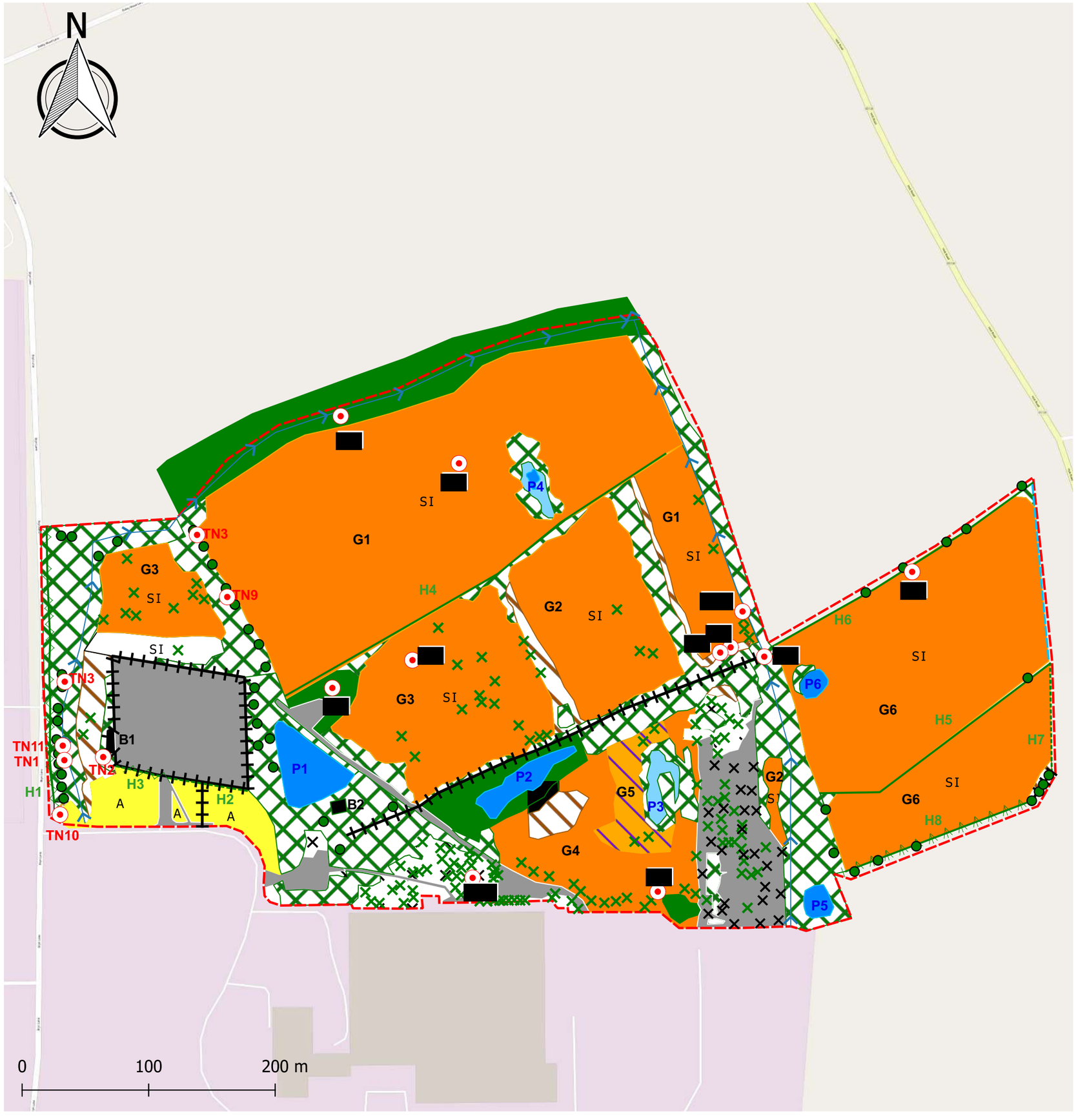
Target Note 11 - Hollyberry cotoneaster

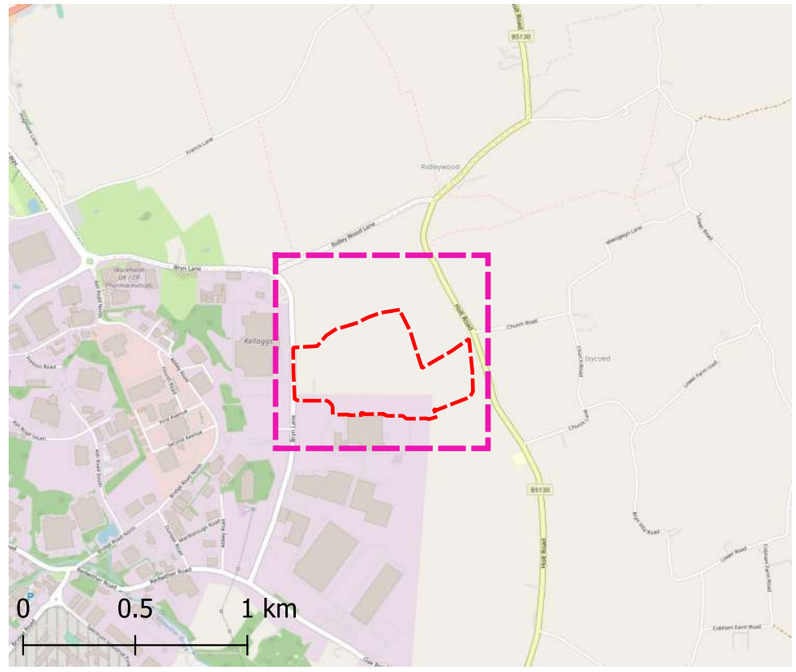
Target Note 12 - Area of ephemeral / short perennial vegetation with increased botanical diversity and calcicolous species

Target Note 13 - Small area of grassland with increased botanical diversity

Preliminary Ecological Appraisal

Site: Plot 3a, Wrexham Industrial Estate
NGR: SJ 39340 50457
Author: Tom Kenwright
Date: 27/09/2022





KEY:

- A1.1.1 - Broadleaved woodland - semi-natural
- A2.1 - Scrub - dense/continuous
- A2.2 - Scrub - scattered
- A3.1 - Broadleaved scattered trees
- SI B2.2 - Semi-improved neutral grassland
- B5 - Marshy grassland
- SI B6 - Poor semi-improved grassland
- C3.1 - Tall ruderal
- F1 - Swamp
- G1 - Standing water
- G2 - Running water
- A J1.2 - Amenity grassland
- J1.3 - Ephemeral/short perennial
- J1.4 - Introduced shrub
- J2.1.1 - Intact hedge - native species-rich
- J2.1.2 - Intact hedge - species-poor
- J2.2.1 - Defunct hedge - native species-rich
- J2.2.2 - Defunct hedge - species-poor
- J2.3.1 - Hedge with trees - native species-rich
- J2.4 - Fence
- J2.6 - Dry ditch
- J3.6 - Buildings
- J5 - Hardstanding
- Survey boundary
- Target Notes

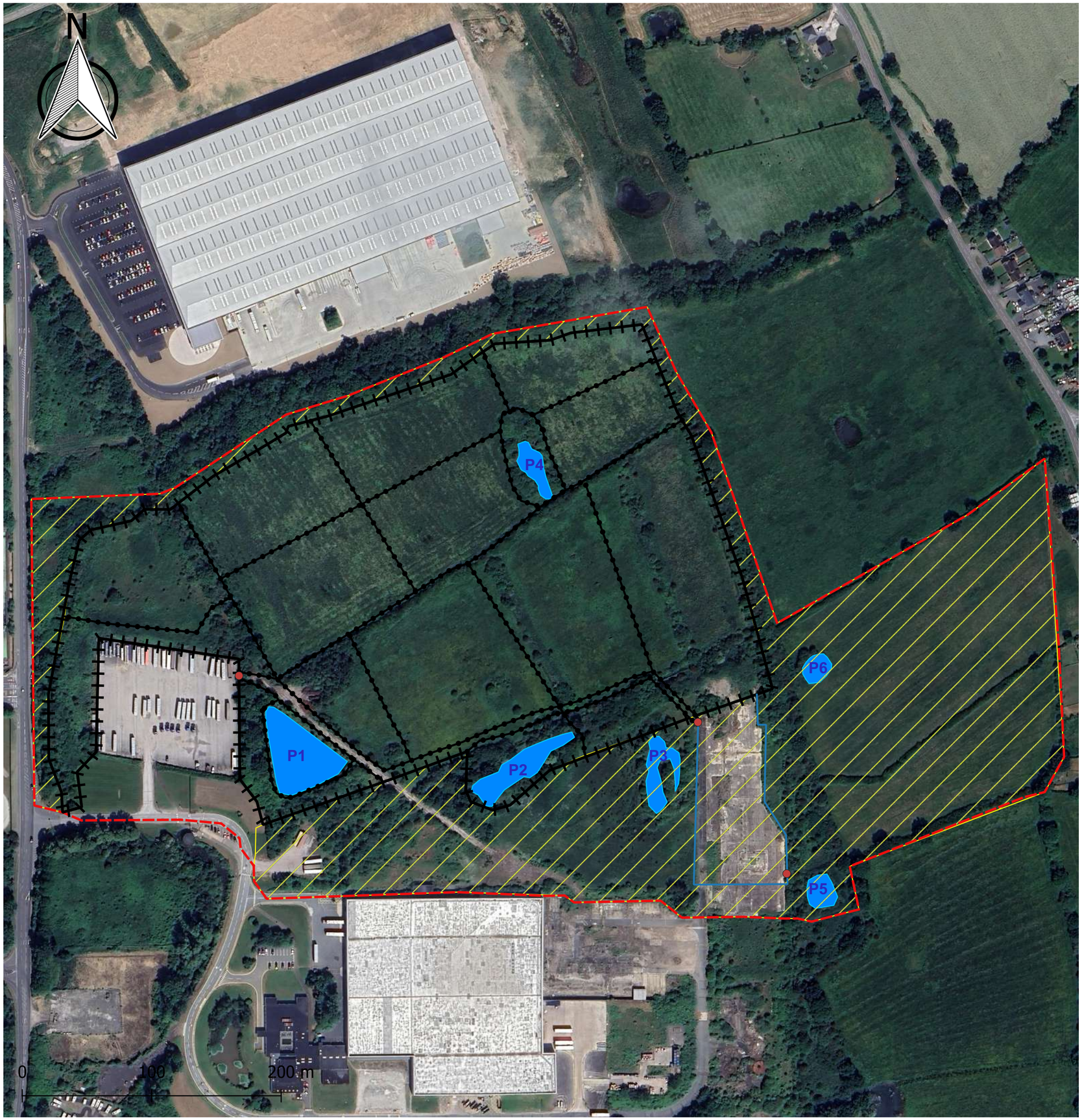
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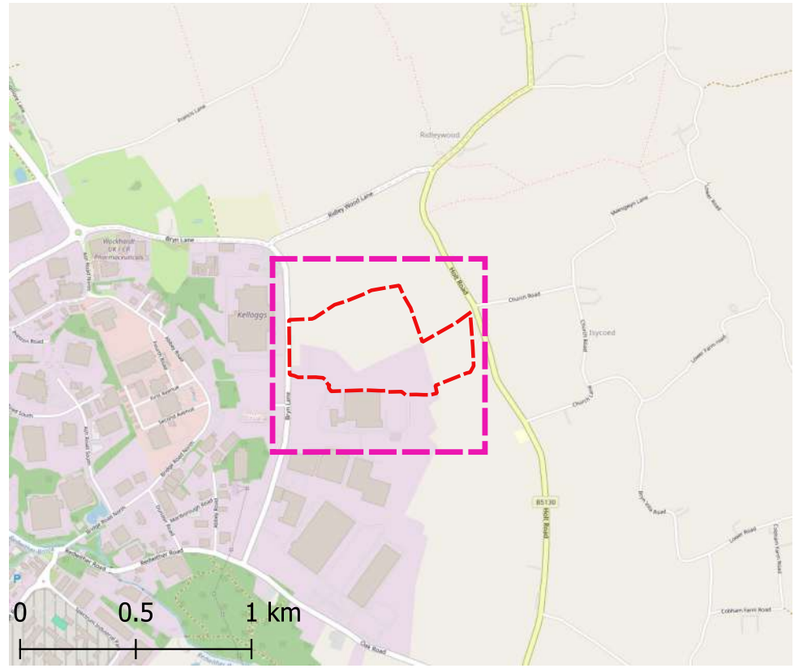
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Appendix 2 – Proposed amphibian fencing plan

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 3 – 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

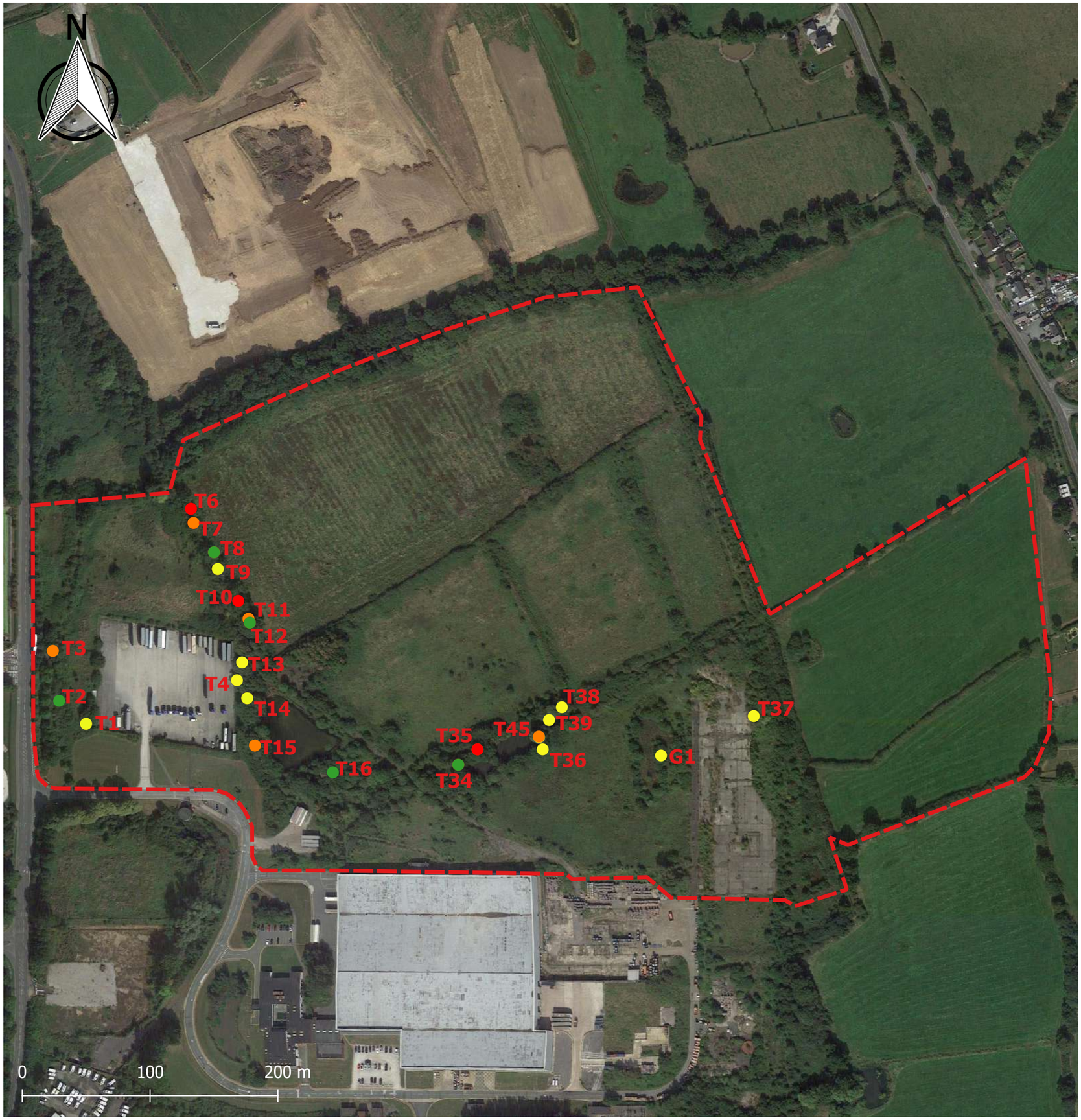
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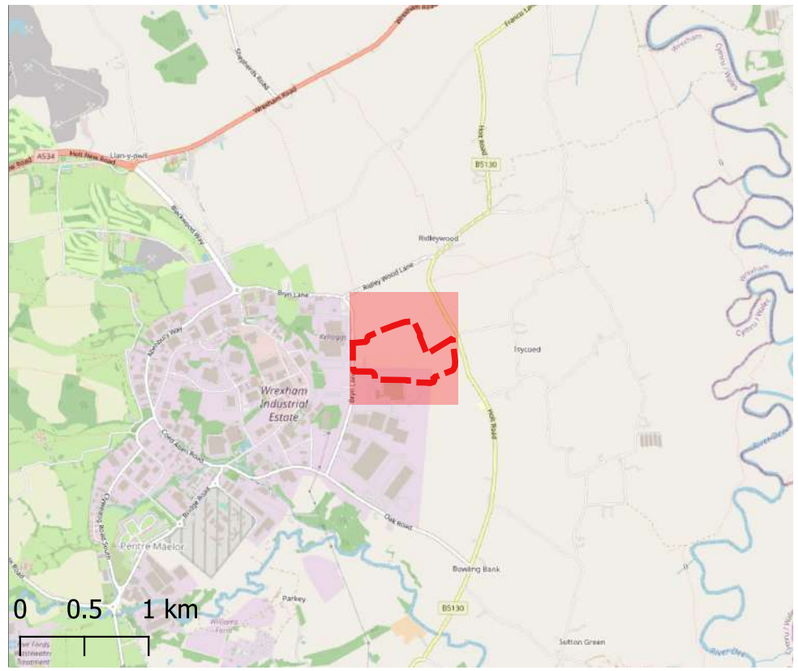
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Appendix 4 – Trees with bat roosting potential

Aerial Tree Assessment

Site: Plot 3A, Wrexham
NGR: SJ 39272 50416
Author: Robert Mooney
Date: 10/10/2022





KEY:

- Development Boundary

Bat Roosting Potential

- High
- Moderate
- Low
- Negligible

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