



THE
ENVIRONMENT
PARTNERSHIP



LAND NORTH OF BRYN LANE - POND APPLICATION

WREXHAM

HABITAT MANAGEMENT PLAN

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1.0 Introduction

Purpose of the Management Plan

- 1.1 This Habitat Management Plan has been produced by The Environment Partnership (TEP) Limited on behalf of Net World Sports Ltd. This document supports a standalone planning application for the creation of a pond and surrounding landscaping, in advance of forthcoming hybrid application for a commercial development off Bryn Lane, Wrexham Industrial Estate.
- 1.2 In order to accommodate a proposed unit, referred to as 'Unit 2', there will be a loss of aquatic and terrestrial habitat, which support great crested newt (GCN). A replacement pond and enhanced landscaping are required to mitigate for this loss. This Management Plan details the management responsibilities and requirements for the new wildlife pond and surrounding area, in the unlikely event that the wider commercial development does not come forward.
- 1.3 This document will be superseded by a revised long-term management plan submitted at a later date, should the commercial units develop. The extent to which this Management Plan relates only covers the necessary mitigation area associated with Unit 2 and will henceforth be referred to as 'the Site'.

Scope of the Management Plan

- 1.4 The Management Plan describes the Site in terms of landscape elements and management operations and provides recommendations for the duration of 5 years.
- 1.5 The Management Plan should be read in conjunction with the Proposed Wildlife Pond Details (TEP ref: D9134.001C) and the Pond Application Technical Note (TEP ref: 9134.020).

Structure of the Management Plan

- 1.6 Chapter 2.0 provides a summary of the factors influencing management. Chapter 3.0 outlines the long-term aims and objectives for management and Chapter 4.0 sets out how the success of the plan will be monitored, reviewed and updated over time.
- 1.7 Appendix A is the Proposed Wildlife Pond Details (TEP ref: D9134.001C), Appendix B provides a table of maintenance operations, Appendix C summarises relevant legislation and Appendix D includes the Pond Application Technical Note (TEP ref: 9134.020).

Site Location

- 1.8 The Site lies to the north of Wrexham Industrial Estate, approximately 5km east of Wrexham town centre. Francis Lane and arable fields lies to the north of the site, arable and improved grassland fields and associated hedgerow boundaries with scattered trees lie to the east and west, with Bryn Lane and Wrexham industrial estate to the south.

2.0 Site Management Considerations

Responsibility for Site Management

- 2.1 The landowner will be responsible for operational management and maintenance of the landscape within the site boundary. If at any time the land is sold the management of the associated landscaping would be transferred for long-term management to the new owner.

Management Objectives

- 2.2 The long-term management objectives of this plan are:
- To manage the GCN mitigation area as an enhanced habitat for amphibians, bats, birds and invertebrates;
 - To ensure new planting establishes to create a high-quality landscaping scheme to provide an attractive and desirable setting to the development;
 - To ensure the scheme is successfully maintained; and
 - To comply with legal obligations and constraints.

Ecological Factors

Amphibians

- 2.3 Positive GCN eDNA results were confirmed within the pond situated on Site detailed as P1 within the Pond Application Technical Note (TEP ref: 9134.020). This pond will be removed and compensated with a new pond within the southeast of the Site. All identified GCN will be translocated to the proposed pond and will be supported by proposed planting including marginal planting. Further details are included in the Pond Application Technical Note (TEP ref: 9134.020). Survey results are illustrated on the Great Crested Newt Survey Results Plan (TEP ref: G9134.034)
- 2.4 GCN are a priority species under Section 7 of the Environment (Wales) Act (2016) and are listed on the Wrexham's Biodiversity Action Plan. GCN and their aquatic habitat are protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended, and the Conservation of Habitats and Species Regulations as amended (2017). Under this legislation it is an offence to intentionally kill, injure or capture GCN. It is also an offence to intentionally or recklessly damage, destroy or obstruct access to places used by GCN for shelter or protection or to disturb them whilst they are occupying these habitats.
- 2.5 GCN spend most of their life on land sheltering in hedges, woods, walls and rough grassland. Adults return to the pond for a few weeks in spring to lay eggs. Eggs hatch into larvae which stay in the ponds until autumn when they leave the water.
- 2.6 GCN tend to favour well established ponds with good vegetation and no fish. They can forage up to 500m away from the pond. GCN prefer older woodlands as there is more dead wood. Hedgerows, rough grassland and scrub areas are used by GCN for refuge.

Birds

- 2.7 The surrounding hedgerows and ponds provide suitable habitat for commuting and foraging bird species. There are limited opportunities for ground nesting bird species due to regular sheep grazing on the Site.
- 2.8 All UK wild birds are protected while at the nest. Effectively, this means that if removal of habitats (which can include buildings, trees, hedges, scrub and grassland) cannot be timed to avoid the bird breeding season (March to August inclusive), then a survey by a suitably experienced ecologist will be required to ensure no nesting birds will be affected. There is generally no process to gain a licence to disturb nesting birds; therefore, if active nests are present works will need to avoid the area of the nest until the young have fledged.

Bats

- 2.9 A single tree situated near the eastern access gate was assessed as having 'low' potential for roosting bats. Ten additional trees within the associated Site boundary were assessed as having roosting potential and will not be impacted by the proposed development.
- 2.10 Bats and their roosts are protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended and the Conservation of Habitats and Species Regulations
- 2.12 Badgers and their setts are safeguarded under the Protection of Badgers Act (1991). Under this legislation it is illegal to interfere, damage or destroy a sett, obstruct access to a sett, or disturb a badger whilst it is occupying a sett.

Legal Factors

- 2.13 Management of the Site must be in line with all legislation relating to health and safety and the environment. A review of the relevant legislation affecting site management is at Appendix C.

3.0 Management Intentions and Operations

Landscape Elements

- 3.1 The Site will comprise the following landscape elements to be managed as shown on the Proposed Wildlife Pond Details (TEP ref: D9134.001C) included in Appendix A.
- 3.2 Existing landscape features include:
- Trees; and
 - Hedgerows.
- 3.3 Proposed landscape features include:
- Waterbody;
 - Wet Grassland Seeding;
 - Aquatic planting;
 - Amphibian hibernacula.

All Areas: Cleansing

Management Intentions

- 3.4 Cleansing will be carried out to retain biodiversity value. Cleansing refers to the removal of general litter, debris, detritus, broken glass, building rubble and timber.

Management Operations

- 3.5 There is a small risk of fly-tipping. This will be removed as soon as possible in order to discourage reoccurrences.
- 3.6 The Site including the waterbody is to be included as part of this routine cleanse which will include all floating and submerged debris. Cleansing will be undertaken every 6 months.

Constraints

- 3.7 Care must be taken during cleansing to check for wildlife which may be hiding in or under items. Any wildlife found will be returned to suitable cover.
- 3.8 When removing material from within or near to the waterbodies, care must be taken to check for amphibians which may be hiding in or under items. Any amphibians, found (except GCN), will be returned to suitable cover. It is an offence to handle GCN unless under a specific licence from Natural Resources Wales (NRW).

Chemical Use

- 3.9 It should be recognised that plants considered as weeds can provide suitable habitat for invertebrates.

- 3.10 Weed control where feasible should be undertaken by hand pulling. However, in certain instances, herbicide may be the most effective measure to remove unwanted species during the planting establishment period. Where herbicide application is needed this should be in small, controlled areas and should only target the undesirable species. Herbicides should comply with the Control of Pesticides Regulations as amended (1997) and be on the current list of approved products.
- 3.11 Consideration would need to be given to the fact that chemicals can prevent growth of grasses and woody species in landscape schemes.
- 3.12 Where herbicides are to be used within 10m of waterbodies care must be taken to only use formulations of Glyphosate which are approved for use close to water. It is essential that NRW are notified, and an authorisation letter obtained (Form AqHerb01: Agreement to use herbicides in or near water).
- 3.13 Fertiliser is not to be applied to any of the meadow areas in order to conserve the development of a diverse sward.

Trees Retained

Management Intentions

- 3.14 Existing scattered trees border the Site and will be maintained to retain their biodiversity value for local wildlife. Trees provide foraging, shelter and commuting opportunities for GCN and other wildlife.

Management Operations

- 3.15 Any deadwood found on site will be stacked and kept onsite where possible as it is of value to invertebrates.

Constraints

- 3.16 An arboriculturist and ecologist must be consulted prior to undertaking any major tree works within the Site. Any works with the potential to disturb bats will be subject to a bat survey prior to the works being undertaken. Tree works will be carried out outside of the bird nesting season (between March and August). Should any works be required within the bird nesting season an assessment will be undertaken by a suitably qualified ecologist before any works commence.

Hedgerow Retained

Management Intentions

- 3.17 Existing hedgerows that border the Site and will be maintained to retain their biodiversity value for local wildlife.

Management Operations

- 3.18 The hedgerows bordering the Site will be cut using appropriate hand or power tools. Where appropriate hand tools will be used for management, instead of machinery.
- 3.19 The hedge will be cut in an 'A' shape to maintain a wide base for GCN hibernation and nesting birds. The 'A' shape profile of the hedge should be maintained annually by cutting the current season's growth.

- 3.20 If possible, only one side will be cut annually. Cutting every 2 years rather than annually will create a bushier hedge for wildlife nesting/refuge and allows for berry production in the alternate years.
- 3.21 Hedgerows can be cut between September to February to avoid bird nesting season. The later hedges are cut the bigger the advantage they provide to foraging wildlife from providing berries and fruits.

Constraints

- 3.22 Any hedgerow management will be carried out outside of the bird nesting season (between March and August). Should any works be required within the bird nesting season an assessment will be undertaken by a suitably qualified ecologist before any works commence.

Proposed Waterbody and Aquatic Planting

Management Intentions

- 3.23 The maintenance of open water and provision of dense stands of emergent, tall herbs and wet grasslands are important to support a diverse and healthy population of small mammals, amphibians, insects and waterfowl. Management should focus primarily on maximising the nature conservation potential of component features.
- 3.24 Once the pond has established, it should be managed in the long term to retain at least 35-60% of the surface area as open water. This should be achieved through the pulling or cutting back of marginal and emergent vegetation.

Management Operations

Inspection

- 3.25 An annual inspection of the waterbody will be undertaken to assess bank stability, presence of fish, water quality, and coverage of aquatic/marginal vegetation, drainage and depths.
- 3.26 The pond will be regularly inspected and kept free from litter and debris which may have a detrimental effect on biodiversity. However, in the event that soft pliable debris is noted within the water during the period April to August inclusive, these items will be left in situ as they may potentially support amphibian eggs. A full cleanse after mid-September will be implemented once eggs are hatched and most larvae are developed. Water quality will be visually monitored during these inspections for any signs of pollutants (e.g. scum, excessive algal growth and discolouration) and dominant species. Remedial actions will be implemented accordingly. The advice of an ecologist will be sought if required, if remedial actions may significantly affect the ecology of the pond.

- 3.27 In the event monitoring identifies the presence of fish as a concern to the viability of the pond (specifically its suitability for maintaining the GCN population), fish removal will be implemented in accordance with current best practice. At the time of writing, guidance set out by Amphibian and Reptile Conservation is the most relevant (Fish Control Methods for Great Crested Newt Conservation, September 2010). The first option for fish removal will include draining down ponds in winter and leaving them to dry to remove fish. This may be combined with trapping or electrofishing, during the dormant period during late autumn or early spring. It should be noted that the NRW no longer issue consents for Rotenone application for this type of activity.

- 3.28 No fertilisers or pesticides will be used within the wet grassland or within such proximity to the associated pond so that drift will affect the wet grassland or pond.

Proposed Aquatic Planting

- 3.29 To ensure the diversity of aquatic flora species, macrophytes will be cut back or pulled out if they are starting to become particularly dominant, to allow space for other species to grow and avoid the pond silting up.
- 3.30 Marginal and emergent vegetation control will be implemented during the autumn. Cutting or pulling will be implemented by hand. Arisings will be placed onto protective membrane around the pond edge for 48 hours to allow invertebrate to re-enter the pond. The arisings will then be removed from Site.

Desilting

- 3.31 Should water levels within the deepest area of the pond fall below half a metre in two consecutive years, de-silting will be required. These works will be undertaken within the period November to January inclusive. Desilting will be undertaken by a long armed excavator and entry and access to the pond will be limited to one point or section of bank. Ground protection will be utilised to reduce damage to marginal habitats. De-silting will be restricted to the central section of the pond with marginal vegetation retained. The top third of a metre of silt will be temporarily placed around the margins of the excavated pond, onto protective membrane, to allow the invertebrate assemblage to repopulate the pond. After a period of 48hrs, the silt and the protective membrane will be removed from Site.
- 3.32 In the event dominant or harmful species are identified, a treatment plan will be drawn up; spot treatment or pulling by hand will be the preferred method.
- 3.33 In the event significant works are required to the pond more than one year after its completion (such as draining to fix levels or desilting), a licensed GCN ecologist will be appointed to carry out an amphibian survey prior to the works.

Proposed Wet Grassland Seeding

Management Intentions

- 3.34 Wet grassland seeding is proposed to provide GCN refuge and foraging habitat around the pond edge. The management of marginal vegetation should ensure that these areas retain their aesthetic function within the landscape, whilst also enhancing species diversity and valuable wildlife habitats.
- 3.35 The principal management requirement of these areas is to ensure ruderal species and succession of shrubs and tree saplings are not permitted to compromise the integrity of the grassland composition or habitat value.

Management Operations

- 3.36 Cut the vegetation to a height of 150mm (approx.) annually and remove arisings.
- 3.37 In order to avoid disturbance to terrestrial habitat it is recommended that areas are cut in sections (e.g., one third of the grassland area) on a weekly rotation to ensure areas of uncut vegetation are retained as refuge for amphibians and small mammals.
- 3.38 The cutting of all grass areas is to be carried out using manual methods with particular care, using 'strimmers' fitted with guards so as to protect obstacles from damage.
- 3.39 The necessary health and safety precautions must be undertaken when cutting grass on steep slopes. All cuttings must be removed from these areas in order to prevent nutrient enrichment and retain the desired species composition but can be stacked within suitable areas to provide additional habitat. Arisings will be lightly raked off, with great care being taken to avoid disturbance to amphibians or damaging hibernacula hidden in the grass.
- 3.40 Noxious weeds such as docks, thistles, nettles, ragwort and willowherb will be controlled by hand pulling.

Proposed Amphibian Hibernacula

Management Intentions

- 3.41 Amphibian hibernacula are to be created and maintained in a viable condition so as to function to provide shelter and winter refuge to amphibians.

Management Operations

- 3.42 Amphibian hibernacula will be inspected yearly to ensure they are in a viable condition. Access points into the hibernacula will be maintained free of blockages (debris and silt, for example).
- 3.43 Grass or shrub atop the hibernacula and within 0.5m will be left uncut to avoid disturbance.
- 3.44 In the event their condition deteriorates to a point that maintenance cannot ensure its viability, a new hibernaculum will be recreated nearby. The existing feature will be maintained in situ in its existing condition; if this is not desirable, an ecologist licensed to handle GCN (to ensure competency) will be appointed by the landowner to supervise the dismantling of the non-functioning feature.

- 3.45 Dead wood arising from any tree or hedgerow maintenance (where this cannot be left in situ) will be stacked in piles within the species-rich grassland or shrub surrounding or atop to supplement their function.

4.0 Monitoring and Review

Monitoring

- 4.1 With respect to monitoring habitat creation, an annual habitat walkover survey with a suitably qualified ecologist will be carried out annually for the initial five-year establishment period to ensure that habitats created are viable for their intended purpose and to inform future management policies.

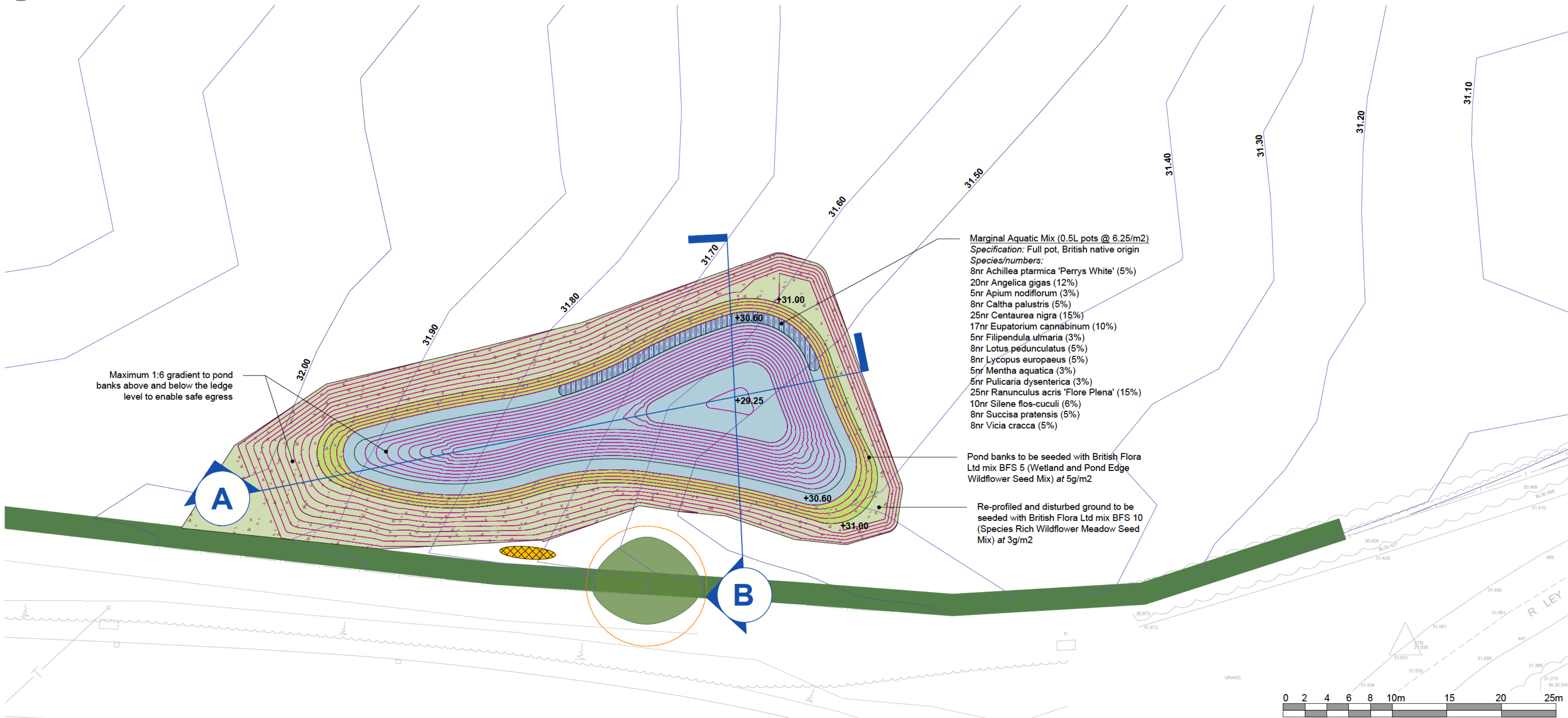
Review

- 4.2 The Management Plan will be reviewed on an annual basis by the landowner to ensure that the plan is meeting the original management aims and objectives and responding to the developing needs of the Site.
- 4.3 Following the end of the initial five-year period of this management programme, the Management Plan will be re-assessed and updated.

APPENDIX A: Proposed Wildlife Pond Details (TEP ref: D9134.001C)

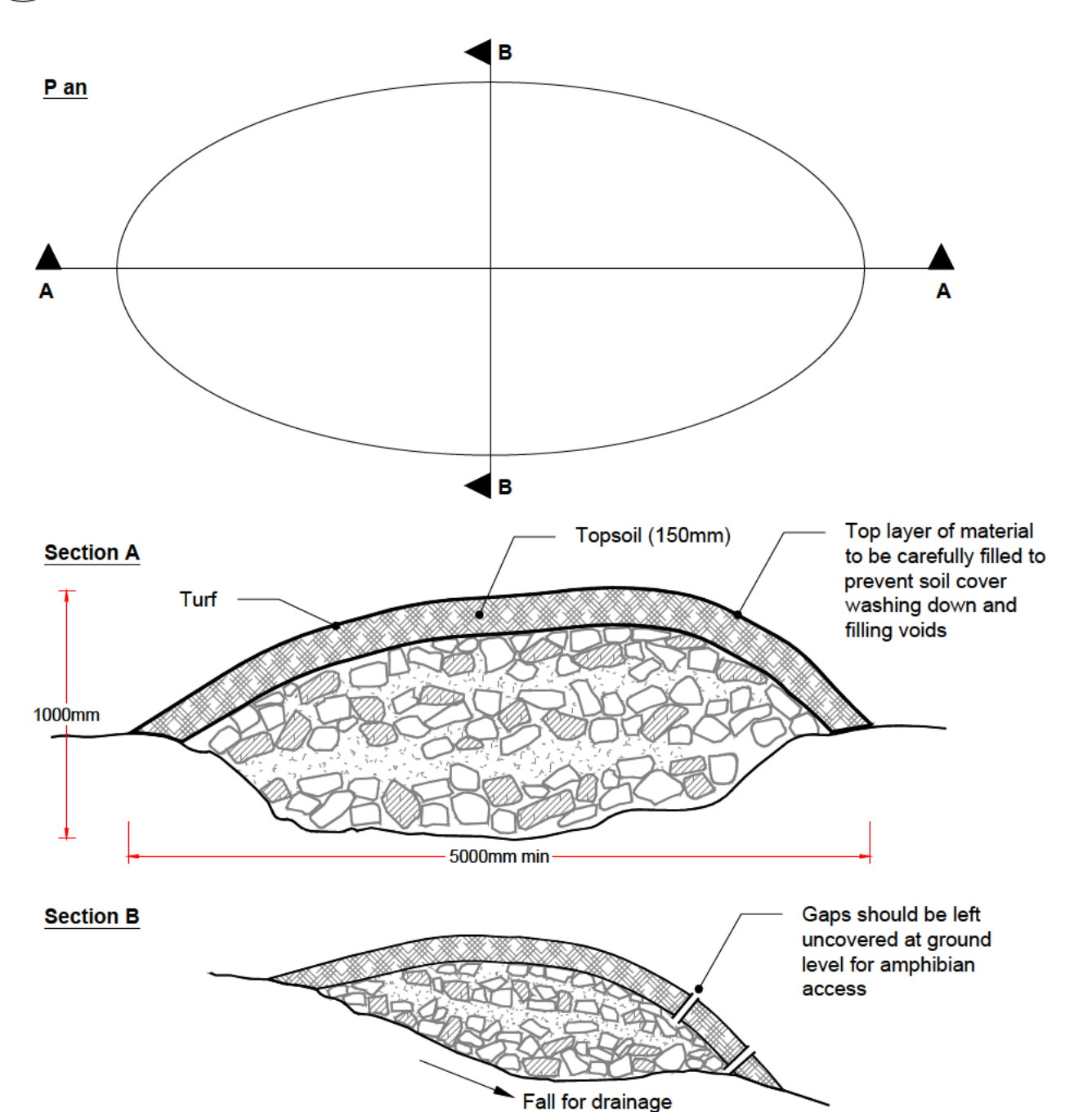
1 Pond layout

Scale: 1:250



2 Hibernacula detail

Scale: Not to scale



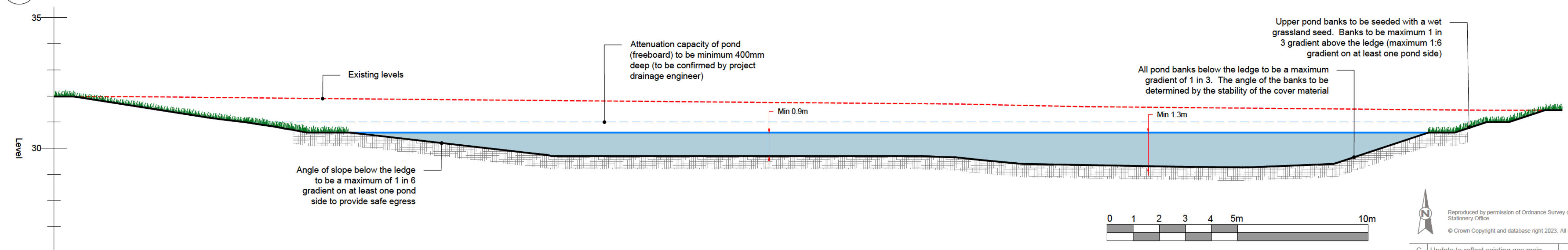
- Hibernacular Notes**
- Hibernacula to be set on high ground away from potential flooding
 - The hibernacula is to be no less than 5m length x 1m width x 1m height.
 - Turfs are removed from the site for re-use.
 - The hibernacula is to be constructed from new, clean bricks (bricks to be hand placed full brick)
 - The hibernacula and/or urea logs.
 - Vertical gaps between hibernacula to be no more than 50mm filled with soft /vegetative material so that amphibians can pass.
 - Bricks or logs locally found to be hand placed, roughly coursed with some braced in 300mm layers.
 - The mound is to be covered with 150mm topsoil.

- Key**
- Existing features**
- Trees retained
 - Root protection area
 - Hedgerow retained
 - Contours
- Proposed features**
- Waterbody
 - Wet grassland seeding
 - Meadow grassland seeding
 - Aquatic planting
 - Contours
 - Amphibian hibernacula

- Earthworks Notes**
- Levels are in metres relative to ordnance datum, unless noted otherwise.
 - A cut and fill balance exercise has not been undertaken as part of the production of the drawings as this will have to be based on quantity of quarried material by the Client.
 - All earthworks to be undertaken in accordance with BS3882.
 - Soil management, handling and placement shall be undertaken in accordance with 'Code of Practice for the Sustainable use of Soils on Construction Sites' (Defra, 2011).
 - Separate stockpiling of different materials (ie. topsoil, clay, sand, etc) must be undertaken.
 - Care to be taken where soiling around existing trees and hedgerows. Soil levels should not be altered within the root protection area or drip line, whichever is greater.
 - Subsoil should be used to raise level below topsoil finishes in soft landscaped areas to the required depth to support the final finish (ie. grass seeding, shrub planting, tree planting, etc).
 - Topsoil and subsoil within 250mm of finished surface shall be free from stones in excess of 50mm diameter, wood, metal, debris, etc.
 - A subsoil surface will be required for seeding areas containing wildflower within the seed mix.
 - Specification and depth of the puddled clay liner to be determined by project engineer/hydrologist to suit the site geology/ground conditions.

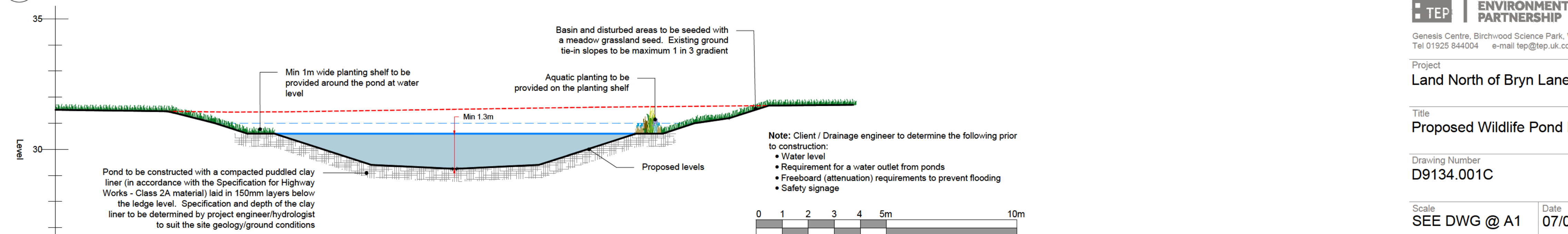
A Section A - Wildlife pond detail

Scale: 1:100



B Section B - Wildlife pond detail

Scale: 1:100



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C	Update to reflect existing gas main	RC	LGr	03/10/23
B	Update to reflect future substation	RC	LGr	29/09/23
A	Update on annotations	RC	GDA	17/08/23
Rev	Description	Drawn	Approved	Date

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Project
Land North of Bryn Lane, Wrexham

Title
Proposed Wildlife Pond Details

Drawing Number
D9134.001C

Scale	SEE DWG @ A1	Date	07/07/2023
Drawn	RJC	Checked	LGr
		Approved	LGr

APPENDIX B: Landscape Maintenance Schedules

Works not to be carried out in these months

Bird breeding and nesting season

Works to be carried out in these months

[illegible]

APPENDIX C: Summary of Relevant Legislation

Summary of Relevant Legislation

The following legal obligations, among others must be considered in carrying out any management operations:

Legislation	Obligations
Health and Safety Legislation	
The Health and Safety at Work Act 1974	All operations carried out on the Site must only be undertaken by trained personnel, using methods and equipment approved by the Health and Safety Executive (HSE).
Occupiers Liability Act 1984	Management organisation must ensure that every reasonable care is taken to remove any risks to both legitimate visitors and to any trespassers. In compliance it will be necessary: To make sure that all footpaths and any other structures are safe; To remove any hazardous objects; and To conduct an annual safety audit in order to identify any further hazards.
Environmental Legislation	
Conservation of Habitats and Species Regulations (as amended) (2017)	The Habitat Regulations assign a greater level of protection to a variety of native species of animals and plants listed, which are known as European Protected Species (EPS).
Wildlife and Countryside Act 1981	There is an obligation to comply with legislation for UK species protected (including amphibians, reptiles and bats) under this Act.
Environmental Protection Act 1990	There is an obligation to keep the Site free from litter and refuse.
Countryside and Rights of Way Act 2000	Imposes a new right of access on foot to registered common land and other areas of 'open countryside' which under certain circumstances allows access without being confined to footpaths.

APPENDIX D: Pond Application Technical Note (TEP ref: 9134.020)

TECHNICAL ADVICE NOTE

Reference:	9134.020
Version:	3.0
Date:	17.08.2023
Author:	Shona Redman
Approved:	Lee Greenhough



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Land North of Bryn Lane Wrexham:

Pond Application Technical Note

LAND NORTH OF BRYN LANE, WREXHAM – POND APPLICATION TECHNICAL NOTE

The Environment Partnership (TEP) was commissioned in July 2023 by Net World Sports Ltd to prepare an ecological technical note to inform a planning application for the creation of a pond and adjacent amphibian terrestrial habitat, including a hibernaculum, in a field north of Bryn Lane, Wrexham (central OS grid reference: SJ 38794 50953). This field is hereafter referred to as 'the site' and the boundary is displayed in Drawing G9134.035. Pond location is illustrated at Drawing G9134.036. Habitat proposals are illustrated in Drawing D9134.001. Access will be via an existing gate in the south-western corner of the site.

Methods

Habitats and Flora

An extended Phase 1 habitat survey of the site was undertaken by TEP principal ecologist Alun Evans (MCIEEM) as part of a survey of the wider area on 3rd and 7^h December 2021. This was carried out in accordance with the Phase 1 habitat assessment methods¹ and Guidelines for Preliminary Ecological Appraisal².

This survey provides an overview of key habitats within the site and identifies any features of ecological value, as well as the presence, or potential presence, of any protected or notable species. Particular note was made of any statutorily protected species or habitats such as Section 7 (S7) species/habitats of principal importance, as listed under the Environment (Wales) Act 2016.

Limitations

The Phase 1 habitat survey was undertaken in December, outside of the optimal Phase 1 habitat survey window of April to early October. Therefore, there are seasonal limitations to the survey. However, as the site was re-walked as part of a hedgerow survey in August 2022, including a search for protected plant species, this is not considered a significant limitation.

¹ JNCC (2010) Handbook for Phase 1 Habitat Survey: A technique for environmental audit.

² CIEEM (2013) Guidelines for Preliminary Ecological Appraisal.

Fauna

In addition to the extended Phase 1 habitat survey, targeted surveys and assessments were undertaken for great crested newt *Triturus cristatus* (GCN), bats and badger *Meles meles*.

Great crested newt

A search of Ordnance Survey mapping was undertaken to identify ponds within a 250m radius of the site. Ponds that were separated from the site by significant barriers, such as a river or major road, were excluded from the search. One pond (P1) was identified in the survey area with a further five ponds (P5a, P5b, P6, P11 and P12) within the 250m radius (as shown in Drawing G9134.034).

Habitat suitability index (HSI)³ is a standard measure of calculating the suitability of a pond to support breeding GCN based on an assessment of ten characteristics (indices). The overall assessment of a pond's suitability is ranked on a categorical scale from 'Poor' to 'Excellent'. The HSI assessment of all ponds within 250m of the site was undertaken by Alun Evans alongside the extended Phase 1 habitat survey.

Sampling for GCN eDNA was undertaken at the pond in the survey area and three ponds within 250m. This was undertaken by licensed ecologists Angela McEwan and Lee Greenhough on 20th and 21st June 2022. Samples were taken in accordance with the methods set out in the DEFRA funded study endorsed by Natural England and Natural Resources Wales⁴.

Bats

All trees within the survey area were subject to a daytime ground level tree assessment (GLTA) for their suitability to support roosting bats. The GLTA was undertaken on 25th and 29th March 2022 by TEP ecologist Stephanie Davies. Trees were viewed from the ground using binoculars and their suitability was categorised in accordance with the Bat Conservation Trust (BCT) Survey Guidelines (Collins, 2016)⁵.

The suitability of habitats in the survey area for foraging and commuting bats was also categorised in accordance with the BCT Guidelines.

Badger

A specific search for badger signs was undertaken as part of the survey. The standard methodology as recommended by Harris, Cresswell and Jefferies (1989)⁶ was followed to complete a thorough search for evidence, which would indicate the presence of badgers both on the site and locally. Evidence of badger occupation and activity includes setts, latrines, footprints, paths and hairs.

³ ARG UK Advice Note 5 (May 2010) Great Crested Newt Habitat Suitability Index.

⁴ Biggs et al 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Defra Project WC1067. Freshwater Habitats Trust: Oxford.

⁵ Collins, J (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

⁶ Harris, S., Cresswell, P. and Jeffries, D. (1989) Surveying Badgers. The Mammal Society, London.

Limitations

The HSI assessment was undertaken in December, outside of the optimum survey period of April to October. As the HSI score is based on a variety of factors, some of which can vary throughout the year, it is possible that the HSI score calculated does not reflect the condition of the ponds during the GCN breeding season.

P5a within 250m of the survey area could not be eDNA sampled as it was dry at the time of survey. Additionally, P12 has been infilled as part of the Network HQ SITE and is no longer present. The eDNA sample from P5b came back indeterminate. However, these are not considered significant limitations to the survey or recommendations as GCN were confirmed present in the pond within the survey area.

Some potential roosting features (PRFs) could not be fully categorised from the ground due, for example, to the angle of view or elevation of the PRF. In these instances, trees were categorised based on ground-based view of the PRF.

Results

Habitats and Flora

At the time of the survey the field was an arable field planted with ley crops. Perennial rye-grass *Lolium perenne* is abundant, with rare broad-leaved dock *Rumex obtusifolius*, common mouse-ear *Cerastium fontanum*, creeping buttercup *Ranunculus repens*, dandelion *Taraxacum officinale* agg., greater plantain *Plantago major*, moss species and white clover *Trifolium repens*. The arable field does not qualify as a priority habitat.

Native species-poor intact hedgerows with trees form the field boundaries with blackthorn *Prunus spinosa* and hawthorn *Crataegus monogyna* consistently abundant across all four hedgerows. Other woody species rarely present include goat willow *Salix caprea*, pedunculate oak *Quercus robur* and rose species *Rosa* sp. The ground flora is mostly limited to ruderal species and rank grasses but lords-and-ladies *Arum maculatum* is present rarely at the base of the northern hedgerow. The hedgerows do not contain enough woody species per 30m stretch to qualify as 'Important' under the Hedgerows Regulations 1997 but they do qualify as a priority habitat under Section 7 of the Environment (Wales) Act 2016.

There is an existing pond in the centre of the field surrounded by swamp vegetation comprised predominantly of bulrush *Typha latifolia*.

No invasive or protected plant species were recorded within the survey area.

The results of the habitat survey are illustrated in Drawing G9134.035.

Fauna

Invertebrates

The pond in the field has some suitability for lesser silver water beetle *Hydrochara caraboides* but this will not be impacted by the proposals. The remaining habitats (arable field and hedgerows) have some limited suitability for invertebrates but are unlikely to support protected species or notable invertebrate assemblages. There are no implications to the proposals with regards to invertebrates and they are therefore not considered further.

Amphibians

The pond within the survey area (P1) was assessed as having 'Excellent' suitability for GCN and it was positive for the presence of GCN eDNA. Of the ponds within 250m, P12 was no longer present, P6 was assessed as having 'Average' suitability for GCN and P5a, P5b and P11 were assessed as having 'Poor' suitability. eDNA samples did not confirm GCN presence in any of these ponds though P6 does have historic presence of GCN (as ascertained by TEP surveys for the Networld HQ development Planning Ref P/2108/00977).

The arable field offers sub-optimal habitat for foraging and commuting amphibians, but the hedgerow field boundaries offer optimal habitat for foraging, commuting, refuge and hibernation.

Reptiles

The arable field offers sub-optimal habitat for foraging and commuting reptiles, but the hedgerow field boundaries offer optimal habitat for foraging, commuting, refuge and hibernation. No reptiles were incidentally observed during the surveys, but targeted reptile surveys were not undertaken.

Birds

The hedgerows and pond provide suitable nesting and foraging habitat for common bird species. There are limited opportunities for ground-nesting birds as the site is subject to regular sheep grazing.

The arable field provides suitable foraging and roosting habitat for wintering birds. However, there are large adjacent areas that wintering birds can move into and it is unlikely that construction of a pond would cause significant disturbance. As such, there are no implications to the proposals with regards to wintering birds and they are therefore not considered further.

Bats

Tree 67 is located directly east of the existing access gate. It was assessed as having 'Low' potential for roosting bats due to the presence of lifted bark and desiccation features on a north-west extending branch. Ten further trees within the field boundaries were assessed as having roosting potential but these are unlikely to be impacted by the proposals.

The hedgerows and pond provide suitable foraging habitat for bats and the hedgerows also provide commuting habitat with good connectivity to further habitats in the wider landscape. As such, the survey area is assessed to have 'Moderate' suitability for foraging and commuting bats.

Water vole and otter

There are no suitable habitats for water vole *Arvicola amphibius* or otter *Lutra lutra* within the survey area. There are no implications to the proposals with regards to these species and they are therefore not considered further.

Other Mammals

The hedgerows provide suitable habitat for foraging, commuting, refuging and hibernating hedgehog *Erinaceus europaeus*. The arable fields offer some suitability for foraging and commuting. There is good connectivity to further habitat in the wider landscape.

A brown hare *Lepus europaeus* was flushed from a field to the north of the survey area, during a survey of the wider area. The arable field within the survey area is suitable for sheltering, foraging and commuting brown hare and provides opportunities for brown hare to establish forms. The hedgerows provide additional suitable sheltering and foraging habitat. There is good connectivity to further habitat in the wider landscape.

Recommendations

Habitats and Flora

The arable field does not qualify as a priority habitat. The hedgerows do qualify as a S7 but not as 'Important' hedgerows. The pond in the survey area qualifies as a S7 habitat due to the presence of GCN but this habitat will not be impacted by the proposals. The proposed habitats will likely result in increased value to wildlife. As such, there are no recommendations in relation to habitat loss.

A buffer should be maintained around retained trees and hedgerows to prevent damage during the works. This buffer should be minimum 2m for hedgerows and minimum of the root protection zone for trees.

Fauna

Amphibians

GCN were confirmed present in the pond within the survey area. Construction of the pond will occur in sub-optimal habitat for GCN and other amphibians. Due to the low risk of impacts upon GCN, the proposals can be conducted under the precautionary working method statement (PWMS) provided as Appendix A, rather than under a Natural Resources Wales (NRW) mitigation licence.

Reptiles

Construction of the pond will occur in sub-optimal habitat for reptiles. As the proposed works are small-scale and primarily in sub-optimal habitat, reptile surveys are not considered proportionate to the anticipated impacts. Instead, works should be undertaken in accordance with the PWMS provided as Appendix A.

Birds

Any vegetation clearance should be undertaken outside of the nesting bird season (typically taken to be March to August inclusive) to prevent disturbing, damaging or destroying a nest. If this is not possible, a nesting bird check by an ecologist must be undertaken no more than 24 hours prior to clearance. If any active nests are identified, a buffer will be set up within which no works can occur until the chicks have fledged. The size of the buffer zone will depend upon the species nesting.

Bats

No trees are anticipated to be impacted by the proposals.

Although unlikely, if any artificial lighting is required during the works a sensitive lighting strategy will be required to ensure the lighting levels remain suitable for bats and other nocturnal species. This would include directing lighting towards the works area only and away from retained habitats, namely the hedgerow boundaries.

Other Mammals

Brown hare and hedgehog may be present in the site during the works. To safeguard these species, the works must adhere to the PWMS provided as Appendix A.

Enc: Drawings

G9134.034 Great Crested Newt Survey Result

G9134.035 Phase 1 Habitat Survey

G9134.036 Site Location Plan

D9134.001 Proposed Wildlife Pond Details

Appendix A – Precautionary Working Method Statement

Background

This PWMS has been prepared to safeguard amphibians (including GCN), reptiles, nesting birds, badger and other mammals during the proposed creation of a pond and surrounding terrestrial habitat, including a hibernaculum, in a field north of Bryn Lane. The proposals aim to provide suitable breeding and terrestrial habitat for GCN and other amphibians.

The design of the site will incorporate one new pond with both marginal and aquatic planting. A neutral water meadow grassland mix (Germinal Seeds RE3 mix) will be sown around the pond and one hibernaculum constructed to the south-west of the pond, adjacent to a retained hedgerow. The design and location of these habitat features and planting details are shown within drawing D9134.001. Along with this statement, this drawing illustrates the key objectives of landscape and ecology

These can be summarised as follows:

- Creation of one new pond;
- Aquatic planting and seeding of wet meadow mix to ensure sufficient GCN egg laying material and refuge/foraging cover around the pond edge;
- Creation of one hibernaculum to provide hibernation habitat, which the majority of the site is currently lacking;
- Retention of mature trees and hedgerows;
- Creation of an area which will not only serve to preserve GCN but also support other amphibians, reptiles, birds, bats and invertebrates; and
- Enhancement of biodiversity across the site through the planting of locally supplied native species to create a sustainable, high quality and low maintenance landscape framework.

Relevant Legislation

Great crested newt

GCN is listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and receives full protection under Section 9. GCN is also a European Protected Species listed on the Conservation of Species and Habitats Regulations 2017 (as amended). This makes it an offence to:

- Deliberately capture, injure or kill a GCN;
- Deliberately disturb a GCN (in such a way as to be likely to significantly affect, (i) the ability of a significant group of GCN to survive, breed or rear/nurture their young; and (ii) the local distribution or abundance of the species concerned);
- Deliberately take or destroy GCN eggs;
- Damage or destroy a breeding site or resting place of GCN; and
- Possess, control, transport, sell, exchange or offer a GCN for sale or exchange.

All GCN resting and breeding sites receive legal protection even when GCN are not present.

Common toad *Bufo bufo* is a species of principal importance under Section 7 of the Environment (Wales) Act 2016 which makes them a material consideration for public bodies when performing their biodiversity duty.

Reptiles

Common UK reptile species are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), in respect of Section 9(5) and part of Section 9(1). This makes it an offence to:

- Intentionally or deliberately kill or injure a reptile; and
- Sell or attempt to sell any part of a reptile alive or dead.

Badger and Other Mammals

Badgers are protected in Britain under the Protection of Badgers Act 1992 and Schedule 6 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat a badger, or attempt to do so;
- Intentionally or recklessly interfere with a sett by damaging or destroying it;
- Obstruct access to, or any of, a badger sett; and
- Disturb a badger when it is occupying a sett.

Hedgehog and brown hare are species of principal importance under Section 7 of the Environment (Wales) Act 2016 which makes them a material consideration for public bodies when performing their biodiversity duty. Hedgehog are also protected under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) which protects them from being killed, injured or taken by certain methods.

Precautionary Measures

Amphibians and Reptiles

Most of the site is comprised of arable fields with limited refuge opportunities for amphibians and reptiles. Suitable habitat is limited to field margins and hedgerow bases. The following measures are required to safeguard amphibians and reptiles during the proposed works. These measures have been broken down into appropriate work stages and listed in order of a typical worksite-setup and project schedule.

Pre-commencement and work schedule phase

- All staff working on the site will be made aware for the potential presence of GCN on-site and their status as a UK and European protected species. As part of this, this PWMS and the identification guide included at the end of this document will be disseminated so that staff are aware of what amphibians look like and what to do if amphibians or reptiles are found during works. A copy must be kept in the site cabin at all times;
- An ecological clerk of works (ECoW) will be appointed to provide site supervision/advice as required throughout the duration of the works. They will be an experienced amphibian ecologist holding an NRW GCN survey licence;
- TEP must be provided with an accurate work schedule to determine which tasks require ECoW supervision;
- In the event works changes for a particular day, TEP must be contacted before works commence to assess the potential risk to amphibians and reptiles. Work should not proceed until it is thoroughly assessed by the ECoW;
- All appropriate personnel must be informed that if a GCN or reptile is found, all work **must** stop and TEP must be contacted. If a GCN is found this is likely to cause a significant delay to the works;
- In the event the working area changes, TEP must be informed as any changes to the working area may result in a potentially greater impact on GCN and reptiles; and
- The compound should be designed to store all machinery, equipment and materials in such a way that they do not form a potential refuge e.g. locked away or stored off the ground.

Site setup and pre-commencement phase

- If a GCN or reptile is found, all work **must** stop. If found by site personnel, the ECoW must be informed immediately. If other amphibian species are found, these can be moved out of the works area into an area of undisturbed terrestrial habitat such as a hedgerow base;
- Access to the site must be via the existing farm access gate off Bryn Lane in the south-west corner of the field. If this needs to be widened, habitat removal should be limited to the minimum necessary;

- Vegetation removal must be completed along the access route to the proposed works area before any works commence. This must be performed under an ecological watching brief. The arable field is unsuitable for hibernation and should preferentially be cleared during this period (typically November to mid-March inclusive) when amphibians and reptiles are least likely to be present. However, any hedgerow clearance must be undertaken outside the amphibian hibernation period (which is considered to be November to mid-March inclusive) or cut down to no lower than 150mm above ground during the hibernation period using hand tools only. Vegetation below 150mm should then be removed outside of the hibernation period which is typically from the end of March depending on weather conditions and temperature;
- Prior to vegetation clearance, the clearance method will be explained to, and agreed by the ECoW. Where appropriate, vegetation removal should be done so using hand tools only such as brush cutters and chainsaws. Cuts should be made from the centre of the works site outwards in order to drive any amphibians and reptiles that could be in-situ away from the works. Effort needs to be made to ensure they do not become isolated in fragmented areas of habitat;
- Vegetation removal must be completed in two stages at all times of year. The first stage will reduce the height of the vegetation to c.150mm. The area will then be checked again by an ecologist before a second cut to ground level can be completed. A minimum of 48 hours must pass between the two cuts;
- All cut vegetation must be removed from the site to prevent creating possible refuges;
- Any refuges e.g. logs, stones or debris, located in, or adjacent to, the works area must remain undisturbed until they have been hand searched by the ECoW. These cannot be disturbed if there is a risk of hibernating amphibians or reptiles;
- The ECoW must supervise all tree stump and hedgerow root removal, and undertake a fingertip search immediately before any tree stump grinding. All excavated tree stumps or hedgerow roost must either be taken off site immediately or stored in high sided waste disposal containers or skips;
- The minimum vegetation removal will be undertaken to allow the works to be undertaken safely and efficiently;
- If a compound area is constructed, this should be from crushed stone laid on top of geo textile membrane. The stone must be tightly compacted to reduce the risk of amphibians and reptiles using the stone as a refuge. Where practicable, the stone must be delivered to site the same day as it is proposed to be laid out/spread; and
- If Heras fencing is used, the rubber feet/blocks must be laid flush to the ground and soil must be compacted within the holes and along the edges.

Main Works Phase

- If a GCN or reptile is found, all works **must** stop. If found by site personnel, the ECoW must be informed immediately. If other amphibian species are found, these can be moved out of the works area into an area of undisturbed terrestrial habitat such as a hedgerow base;

- The use of bog mats for access should be avoided where possible due to incidents of reptiles and amphibians being crushed beneath them;
- If the use of bog mats cannot be avoided then the ECoW must undertake a fingertip search of undisturbed land immediately prior to topsoil removal and undertake a watching brief during topsoil removal works and bog mat installation;
- Topsoil should be removed to a depth which allows the bog mats to lay level with the ground, thus reducing movement when machinery is tracked across. To ensure the bog mats lay flush to the ground, all large rocks will be removed and soil compacted to a smooth finish;
- Immediately after each bog mat has been installed, soil will be compacted around the edges and within any holes;
- The topsoil and sub-soil bunds must be stored within the area but away from retained trees and hedgerows. The bunds will be tightly compacted and large stones on the surface removed to reduce the risk of them being used as a refuge;
- In the event that the stripped ground and soil bunds start to crack due to high temperatures, they should be kept wet to prevent any cracks large enough to be used as a refuge;
- All materials, equipment and machinery must be stored on areas of hardstanding or at least 150mm above ground;
- The pond should be created during the hibernation period when amphibians and reptiles are least likely to be present in the field. If this is not possible, the pond base should be checked daily by the ECoW (or site supervisor if the ECoW is not required that day) to ensure no amphibians or reptiles are present before works start; and
- If soil inversion is used to reduce nutrient levels for grassland seeding, the soil must be compacted and prepared for seeding at a later date, ensuring there are no large gaps or crevices within the soil that could be used as hibernation features.

Badger and Other Mammals

The following measures are required to safeguard these species during the proposed works. These measures have been broken down into appropriate work stages and listed in order of a typical worksite-setup and project schedule.

Pre-commencement and work schedule phase

- All staff working on the site will be made aware for the potential presence mammal species on-site and their protection in the UK. As part of this, this PWMS will be disseminated so that staff are aware of the required measures and what to do if mammals (or signs of) are found during works. A copy must be kept in the site cabin at all times; and

Main Works Phase

- Open excavations i.e. the pond will be covered overnight or a suitable ramp installed to allow mammals to exit freely;
- Open excavations will be inspected each morning by the ECoW (or site supervisor if the ECoW is not required that day) to ensure no mammals are present before works start;
- Soil bunds will be compacted to reduce the likelihood of sett excavation, and checked daily to ensure no digging has been attempted;
- Fuel/chemicals/oil will be stored securely and contained in such a way that they cannot be accessed or knocked over by mammals;
- Construction activities should be restricted to daylight hours only, finishing at sunset at the latest;
- Any construction lighting must not illuminate habitats nocturnal mammals may use such as hedgerows;
- Attention will be paid to site hygiene; food wrappings will be disposed of appropriately;
- If a badger sett is discovered on site during the works, works must stop until advice from the ECoW has been sought;
- Hedgerow clearance to ground level should occur between April and October inclusive to avoid harm to hibernating hedgehogs. Clearance to c.300mm above ground level can occur during the winter months to avoid the nesting bird season but only if this leaves enough cover for hibernating individuals; and
- If any hedgehogs are found during the works, they should be left to disperse of their own accord before works continue.



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