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Proposal: P/2021/0670- Erection of agricultural building.
P/2021/0729- Erection of rural enterprise dwelling and associated work.
P/2021/0822- Installation of slurry store and associated works.

Location: Torriad Farm, Bowling Bank, Wrexham, LL13 9RT.

Document title: Amphibian Conservation Strategy.

Date: 10/12/2021

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Reviewed by: William Prestwood BSc Director

Requested by: Roger Parry and Partners

1 BACKGROUND

Full planning consent is being sought for: the erection of an agricultural building, the erection of a rural enterprise dwelling and associated work and the installation of a slurry store and associated works at Torriad Farm at Bowling Bank in Wrexham.

Preliminary assessment of the site in June 2021 found there to be three ponds within 250m of the land surrounding the main farm yard. Of these, one pond to the north was not accessible during the survey. The second waterbody was found to be a slurry lagoon and therefore no further assessment with regard to GCN was carried out. Pond 1 which sits to the south of the farm yard was found to have 'good' suitability as a breeding site for great crested newt.

Pond 1 is a small field pond which is fed by run-off from the farmyard. There is a buffer around the pond which consists of rough grassland. Emergent vegetation covers around 70% of the pond and includes: foals watercress, creeping buttercup, yellow iris, cursed crowfoot and water plantain. During the survey, an egg search was carried out amongst the emergent vegetation. No newt eggs were found during the inspection. The pond sits at various distances from the proposed developments on site, as follows: 50m from the proposed dwelling, 115m from the proposed agricultural shed and 100m from the slurry lagoon to be extended.

The proposed development site for the rural enterprise dwelling offers poor terrestrial habitat to GCN and it is unlikely that the species would be found on site. The proposals will result in the loss of approximately 350m² of land. The proposed development site for the agricultural building provides even less suitable terrestrial opportunities with approximately 40% of the ground made up of bare earth and the remainder patchy ryegrass and dock. The building will cover approximately 500m².

The slurry store application will result in the extension of an existing store and will therefore impact an area of land which is subject to regular disturbance. The land to be included within the extended store measures approximately 300m² and is mainly composed of bare earth with some vegetation remaining in isolated patches to include ryegrass, broadleaved dock, chickweed and creeping buttercup.

Pond 1 is immediately surrounded by rough grassland which links to hedgerow to the south. It is therefore reasonable to assume that the species would favour these optimal habitat types over short, improved grassland with regular bare earth patches as found on all of the proposed development sites.

Natural Resources Wales has requested an overarching GCN Conservation Strategy in order to ensure that GCN will be maintained at a favourable conservation status, in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended), when granting any planning approval. The requested strategy will consider cumulative impacts upon GCN and provide mitigation and compensation at a site-wide level.



2 PREDICTING THE IMPACT OF DEVELOPMENT

Pre- and Mid-Development impacts

- Potential harm to individual GCN: The majority of the work is unlikely to impact GCN given that the habitats to be impacted are sub-optimal for foraging with no sheltering opportunities. Impacts could arise from the incidental creation of rubble piles from works which could be used by newts on the site and the eventual clearance of such material could then lead to killing or injury. Installation of drainage on site could cause newts to become trapped in ditches or pipework.

Long-term impacts

- Loss/damage to aquatic habitats: the proposed development will **not** result in loss or damage to aquatic habitats.
- Loss of terrestrial habitat: the proposed developments on site will lead to the loss of approximately 0.1ha of very poor terrestrial habitat which includes a large proportion of bare ground. These areas are unlikely to support GCN in their current state.
- Fragmentation and isolation: the proposed developments will not interrupt any likely commuting routes i.e. hedgerows or other vegetative corridors. The proposals will not result in any isolation of Pond 1.
- Post-interference impacts: the main issues which may arise following development of the site is the introduction of fish or invasive species to the pond. The introduction of fish to the pond on site could lead to degradation of a potential breeding site.

An extract from Section 6.5 of the GCN Mitigation Guidelines highlights the main issues which will arise from the proposed developments at Torriad Farm. There will be no impact to Pond 1 or any other waterbodies within 250m of the site and the immediate terrestrial habitat which surrounds Pond 1 will remain undisturbed. Bare earth and patchy improved grassland from 50-115m from Pond 1 will be subject to partial destruction and re-surfacing which indicates a 'low' impact.

The agricultural building, once complete, is likely to provide subterranean brumation opportunities beneath its concrete slab and the dwelling will provide a variety of habitat types of greater value to GCN than the existing patchy improved grassland. The actual likely risk of GCN being impacted by the proposals are minimal and restricted to the construction phase of the three projects.

Proportionate mitigation is put forward for each project which will ensure that the process has no impact upon GCN. With equal significance, habitat enhancement and managements proposals are also presented which will contribute to the resilience of any existing GCN population.



Habitat feature	Development effect	Scale of impact		
		Low	Medium	High
Breeding pond	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Temporary disturbance	✓		
	Post-development interference			✓
Other pond used by great crested newts	Destruction		✓	
	Isolation caused by fragmentation		✓	
	Partial destruction; modification	✓		
	Temporary disturbance	✓		
	Post-development interference	✓		
Immediate terrestrial habitat (approx <50m from breeding pond)	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction		✓	
	Modified management, resurfacing, etc		✓	
	Temporary disturbance	✓		
	Post-development interference		✓	
Intermediate terrestrial habitat (approx 50–250m from breeding pond)	Temporary destruction, then reinstatement	✓		
	Destruction		✓	
	Isolation caused by fragmentation		✓	
	Partial destruction	✓		
	Modified management, resurfacing, etc	✓		
	Temporary disturbance	✓		
Distant terrestrial habitat (approx >250m from breeding pond)	Post-development interference	✓		
	Temporary destruction, then reinstatement	✓		
	Destruction	✓		
	Isolation caused by fragmentation	✓		
	Partial destruction	✓		
	Modified management, resurfacing, etc	✓		
	Temporary disturbance	✓		
	Post-development interference	✓		
	Temporary destruction, then reinstatement	✓		
	Destruction	✓		
	Isolation caused by fragmentation	✓		

3 MITIGATION

3.1 Amphibian exclusion and avoidance

Rural enterprise dwelling

Induction of contractors

A toolbox talk will be given to all site personnel in order to make them aware of the possible presence of GCN, how to identify this species and the avoidance measures to be used on site.

A paper copy of the avoidance measures will be retained on site together with the contact details of the GCN licensed ecologist.

One-way fencing

One-way fencing will be installed around the proposed development site boundary at least 30 days before works begin on site. The fencing will be installed as an avoidance measure on the recommendation of NRW Species Officer.



Any improved grassland to be disturbed on site will be cut to, and maintained at, a height of 10cm before March (in any given year) in order to reduce the number of potential resting/feeding opportunities on site.

Any stored materials will be removed from site during the GCN active season. This will aim to remove any materials which could act as a refuge for GCN.

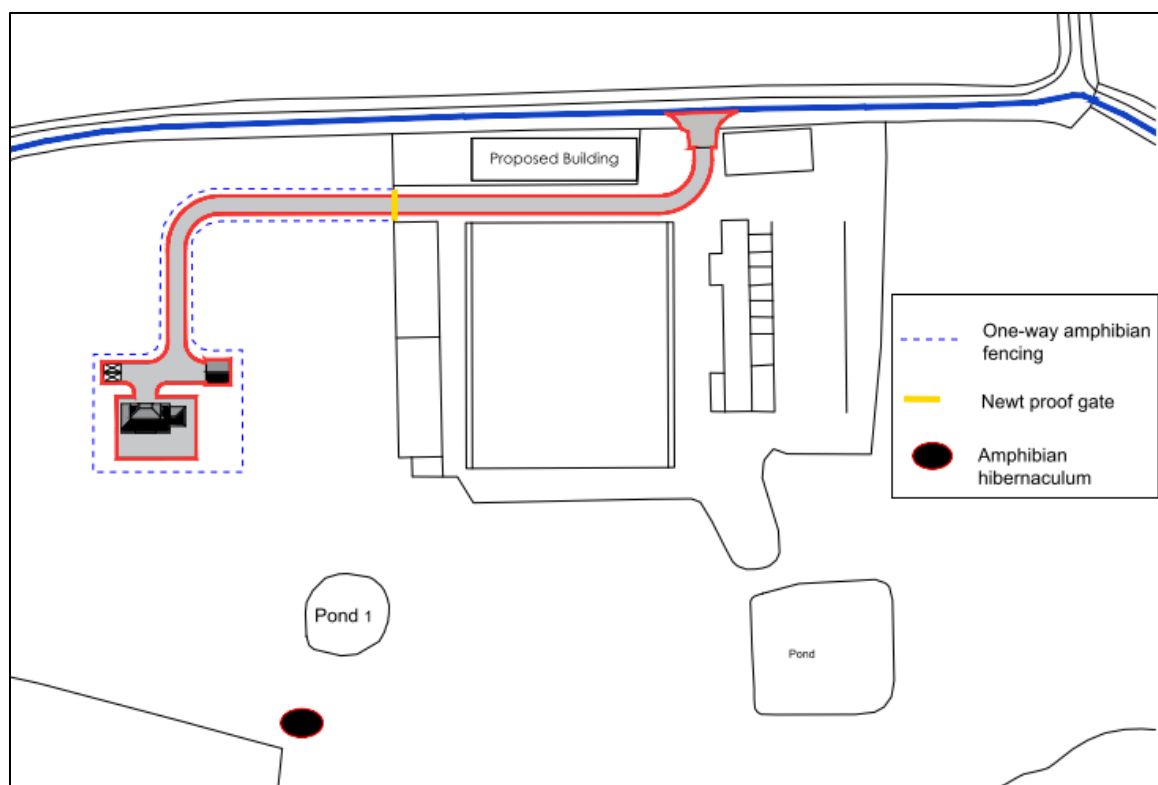
One-way fencing will be installed at a 45° angle to the ground, the fence making contact with the ground on the development side.

A bespoke newt gate will be installed at the gate between the farm yard and field site within the fence line to allow machinery to access the site whilst preventing GCN from gaining access to the site. The gate will consist of a heavy plastic flap secured to the base of a timber structure. The plastic flap will sit flush with the concrete ground and will be weighed down with sandbags overnight. The gate will be closed every evening after works have finished.

The fence line will be marked on the ground using spray paint and all vegetation will be maintained at 10cm height or less in the lead-up to fencing.

A licenced ecologist will carry out a finger-tip search of the fence line on the day it is installed to ensure that there are no GCN present on site.

If GCN are found at any point during the search, works will not continue until a European Protected Species Mitigation Licence is obtained from NRW.



Timing

One-way fencing can be installed between March and September or until night time temperatures are consistently below 5°C.

After the one-way fencing has been in place for 30 days, works on site can commence.

All works will take place during daylight hours when GCN are unlikely to be moving around the area.

Maintenance

The fencing will be inspected on a daily basis (every 24 hours) and appropriate repairs undertaken immediately.

Destructive search

The proposed development site will be inspected by a licenced ecologist no more than 24 hours before works are due to begin on site.

Mid-construction

The one-way fence will remain in-situ until the building works have been completed. It will be maintained for the life of the development to ensure that they are as newt-proof as reasonably possible. They will then be removed under supervision to allow free movement of GCN to/from the wider site.

All work will follow an approved bio-security protocol.

Site compound

The site compound will be situated on an area of existing hard-standing within the adjacent farm yard to avoid creating GCN resting places beneath stored materials etc.

All site materials will be stored on pallets or other raised objects to avoid creating resting places/refuges for GCN.

Any toxic or poisonous materials will be safely stored within a locked container.

Special precautions

All excavated materials/waste will be stored in skips or similar and not on the ground where it could be used as a refuge/resting area by amphibians. Alternatively, all waste will be removed from site daily.

All stored building materials that might be used as temporary resting places by amphibians will be stored off the ground on pallets or similar.

Agricultural building & slurry store extension

Timing & duration

All ground works/excavations will be undertaken between October and February when GCN are rarely active above ground.

Site clearance

Any improved grassland to be disturbed on site will be cut to, and maintained at, a height of 10cm before March (in any given year) in order to reduce the number of potential resting/feeding opportunities on site.

Any stored materials will be removed from site during the GCN active season. This will aim to remove any materials which could act as a refuge for GCN.

Site compound

The site compound will be situated on an area of existing hard-standing within the adjacent farm yard to avoid creating GCN resting places beneath stored materials etc.

All site materials will be stored on pallets or other raised objects to avoid creating resting places/refuges for GCN.

Any toxic or poisonous materials will be safely stored within a locked container.

Construction methods and special precautions

All excavations on site will be covered at night or ramps will be provided to allow amphibians to exit excavations. All excavations will be checked for amphibians each morning prior to the re-commencement of works.

All exposed new pipework and drains will be capped at night so as to avoid trapping amphibians.

All excavated materials/waste will be stored in skips or similar and not on the ground where it could be used as a refuge/resting area by amphibians. Alternatively, all waste will be removed from site daily.

All stored building materials that might be used as temporary resting places by amphibians will be stored off the ground on pallets or similar.

If GCN are found at any point during the development or activities outlined above, works must stop and an appropriately qualified ecologist should be contacted for advice, as well as Natural Resources Wales.

Biosecurity Protocols and Compliance Audit apply to all three applications.



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3.3 Drainage scheme

The land owner intends to use a Sustainable Urban Drainage Scheme. This will eliminate the need for traditional kerbs and gully pots which essentially act as traps for GCN and result in the incidental injury and killing once the development is complete. The SUDS will incorporate porous surfaces such as swales, buffer strips, and filter beds, all of which provide suitable habitat for GCN whilst reducing the risk of mortality.

Where necessary French drains will be used for areas expected to produce high run-off and therefore requiring access into storm drains.

3.4 Post interference impacts

A continued agreement with the site owner will ensure that fish are not released into the pond on site. The land usage surrounding the pond will not change and therefore no post-interference impacts are predicted.

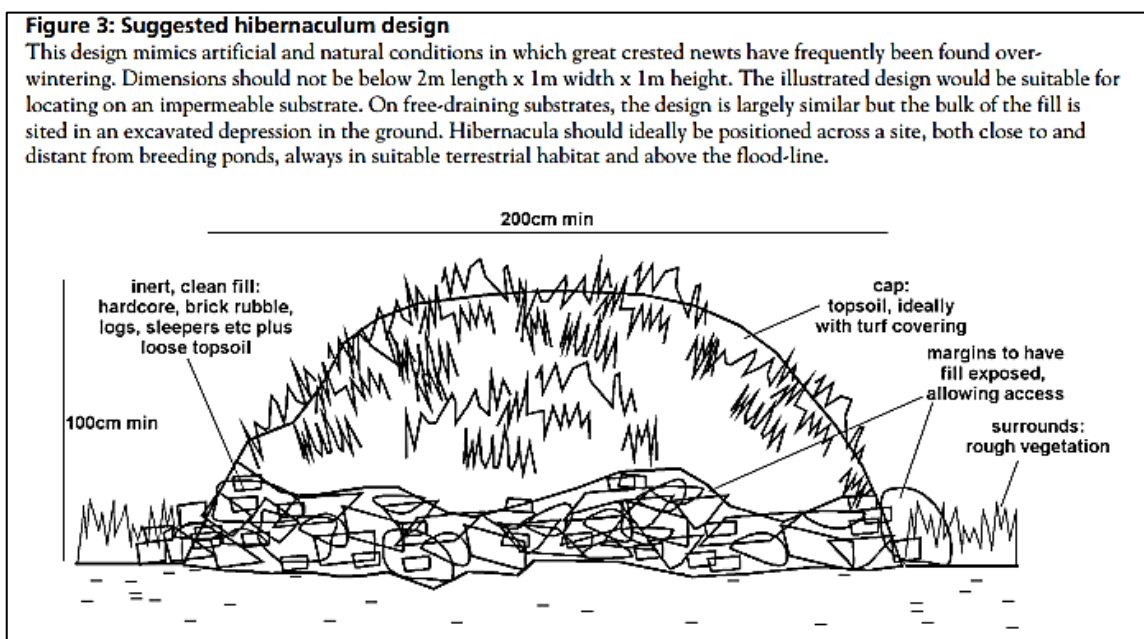
A Biosecurity Risk Assessment has been prepared and can be found in Appendix 1.

4 HABITAT ENHANCEMENT & CREATION

Habitat Creation

One large hibernacula will be created next to Pond 1 to provide high quality terrestrial opportunities which are otherwise lacking on site.

This will be based on the suggested hibernaculum design within the GCN Mitigation Guidelines and will remain a permanent feature for use by GCN and other amphibians. The base of the hibernacula will be constructed using hard-core, brick rubble, logs, rough timber and loose topsoil. There should be sufficient ground-level gaps between the materials to allow



newts to enter in several locations. The hibernacula will be built up in layers and overlaid with topsoil and a final layer of turf.

Hedgerow planting

New native species hedgerow planting will be carried out on site in two areas:

- 100m around new dwelling or along new access road
- 100m on top of the banked edges of the slurry store

The hedgerow will consist of the following native species: hawthorn (40%), hazel (20%), field maple (10%), holly (10%), elder (10%), dog rose (5%) and Guelder rose (5%).

Hedgerow planting will take place during the first winter period following completion of the developments.

Pond

Current management of the area around the pond includes the retention of a rough grassland corridor in which Pond 1 sits. This will continue as the vegetation provides good quality terrestrial opportunities and contributes to the pond's value for wildlife.

A 10m buffer zone around the water's edge will be fenced off to prevent livestock from entering. This will ensure that the margins of the pond do not become trampled and also prevent pollution of the water from animal waste.

In order to avoid any ground disturbance of the land surrounding the pond, a temporary fence type will be used e.g. electric ring fence with moveable poles or similar approved. Fencing will be set up during winter months when GCN are not in breeding ponds or moving around above ground. The fencing will be used when livestock are released into the field.

Long term management of the site

The land will be retained by the current owner who will ensure sufficient resources are available for ongoing management. Appendix 1 of the Great Crested Newt Mitigation Requirements (Local planning guidance for Wrexham County Borough) will be used as a guide for the resources needed for successful management.

Table 1 below is an indication of the management options that will be necessary given the proposed habitat creation.

Table 1. Habitat management considerations.		
Assessment	Frequency	Action to be taken
<u>Terrestrial</u>		
Check presence and extent of all hedgerow planting.	Annually for three years.	Replace any plant loss experienced in first 3 years.
Scrub management around pond margins.	Annually.	Scrub development closely monitored. Strimming/cutting where necessary. If woody species take hold in rough grassland areas around Pond 1, an additional cut will be carried out in March with a minimum cut height of 15cm.
<u>Aquatic</u>		
Pond management.	Every other year.	Pond 1 will be assessed based on the Habitat Suitability Index to ensure they continue to provide appropriate opportunities for GCN. Any necessary management prescriptions will be documented and carried out.
All essential management will be carried out under a separate conservation licence where necessary.		
The site owners will be responsible for ensuring that habitat management is carried out when required.		

5 CONTINGENCY PRESCRIPTIONS

Below is a table of possible problems (and their solutions) which may be encountered during and after construction. All issues identified and actions stated will help to ensure the long-term favourable conservation status of the local population of GCN.

Table 4. Contingency measures. All contingency actions will be carried out under licence where necessary.	
Issue	Action to be taken
GCN found on site during construction.	Works in the area will be halted immediately and the project ecologist will be consulted. Any necessary EPS Development Licences will be sought.
Delay to construction works.	All amphibian fences will be maintained during delay as breaches may allow GCN to colonise the site.
Introduction of fish into Pond 1.	Pond will be drained during the winter months under guidance from NRW and any necessary EPS licences.



Introduction of invasive species onto site.	NRW will be informed and the most recent management of identified invasive species will be carried out.
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6 REFERENCES

Department for Environment, Food and Rural Affairs (DEFRA) (2018) European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC): Fourth Report by the United Kingdom Under Article 17 on Implementation of the Directive from January 2013 to December 2018. Conservation status assessment for the species: S1166 Great Crested Newt (*Triturus cristatus*) Defra

English Nature (2001) Great crested newt mitigation guidelines. Version: August 2001.

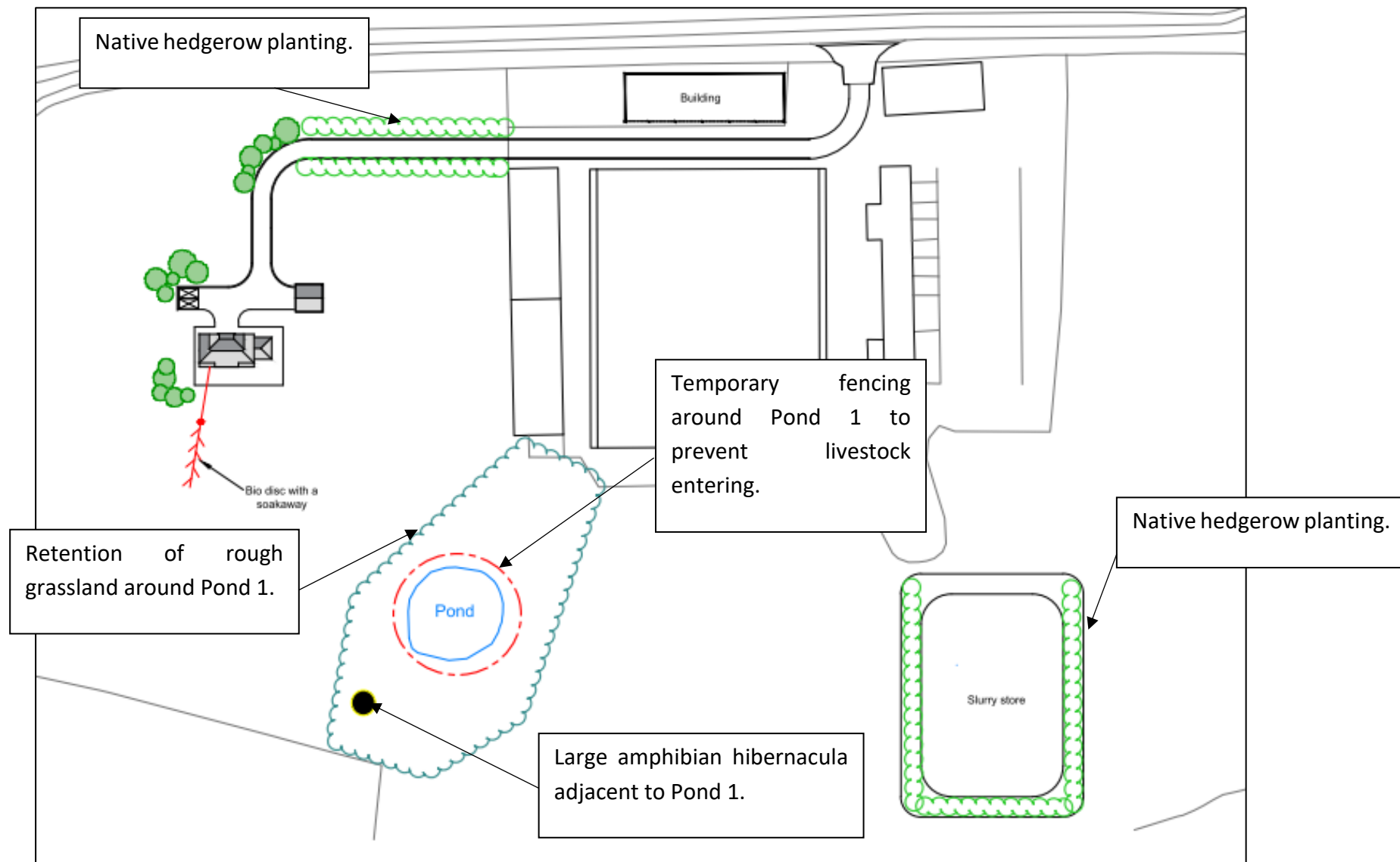
Gleed-Owen, C. (2007) Development of a National Amphibian and Reptile Recording Scheme (NARRS), Phase 2 – Historic, current and future conservation status of the great crested newt (*Triturus cristatus*) in northeast Wales. Final report for CCW: contract UC29-006 and RQ03-022. Countryside Council for Wales

Haubrock, P.J. and Altrichter, J. (2016) Northern crested newt (*Triturus cristatus*) migration in a nature reserve: multiple incidents of breeding season displacements exceeding 1km. The Herpetological Bulletin, 138, pp.31-33.

Jehle, R. and Arntzen, J.W. (2000) Post-breeding migrations of newts (*Triturus cristatus* and *T. marmoratus*) with contrasting ecological requirements. Journal of Zoology, 251(3), pp.297



Figure 1. Habitat creation and enhancement measures



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Appendix 1. Biosecurity Risk Assessment

Species	Potential Contamination Route	Likelihood of Risk	Operational Procedures/Actions required to minimise risks
Himalayan balsam	Introduction of species via construction machinery. Introduction of seeds via contaminated soil.	Low. Himalayan Balsam is not known to be present on site or in the locality. Low. There are no requirements to import soil.	Ensure owner and contractors know what Himalayan Balsam looks like. If any plants are identified these should be pulled up and left to dry before the seeds set (July/August).
Japanese knotweed	Introduction of species via construction machinery. Introduction of fragments via contaminated soil.	Low. Japanese knotweed is not known to be present on site or in the locality. Low. There are no requirements to import soil.	Ensure contractors know what Japanese knotweed looks like. If it is identified on site, refer to the Environment Agency's Japanese knotweed Code of Practice.
Invasive aquatic plants: Water fern, <i>Azolla filiculoides</i> Parrot's-feather, <i>Myriophyllum aquaticum</i> Floating pennywort, <i>Hydrocotyle ranunculoides</i> Australian swamp stonecrop <i>Crassula helmsii</i> Water hyacinth, <i>Eichornia crassipe</i> Water primrose, <i>Ludwigia peploides</i> , <i>Ludwigia uruguayensis</i> (= <i>L. grandiflora</i>)	Introduction of species via construction machinery and as propagules on boots, waders, bottle traps, nets etc.	Medium. Surveyors (and to a lesser extent, contractors) may well have previously been to sites where these species are present.	Avoid entering ponds whenever possible. Consider using survey techniques that constitute a lower bio-security risk (eg torching). Use bottle traps on a site-specific basis. Consider using nets and other equipment on a site-specific basis where non-native species have been recorded. Clean equipment, boots/waders and clothes after each survey. Where surveys entail surveys of two or more ponds, consider provision of duplicate equipment including boots/waders.



Species	Potential Contamination Route	Likelihood of Risk	Operational Procedures/Actions required to minimise risks
Canadian waterweed, <i>Elodea canadensis</i> Curly waterweed. <i>Lagarosiphon major</i> Nuttall's waterweed, <i>Elodea nuttalli</i> Waterweeds (other Elodea), <i>Elodea spp</i> Least duckweed, <i>Lemna minuscula</i>			Based on degree of risk, consider surveying ponds supporting invasive species last or use a team to specifically survey ponds supporting non-native species.
Fish (all species)	Deliberate introduction.	Low: The owner has agreed to a strict policy of no fish introduction.	Continued agreement by the owner.
Chytrid fungus	Ecologists, aquatic survey equipment.	The Chytrid fungus has been identified in Powys. This fungus has affected amphibian globally and has caused the extinctions of species. The risk is low but serious.	Ecologists and other contractors to disinfect boots and equipment before entering site/ponds.
Tree diseases including Chalara, Phytophthora	Planting of infected trees.	Low	Ensure trees purchased from nurseries registered as disease-free.



Appendix 2. Ecological Compliance Audit

No	Key Performance Indicator	Evidence required - this list should be adapted to reflect the agreed method statement	Pass (Yes/No) Comment	What action is required as a result of findings?
1	A suitably experienced licensed ecologist will be appointed and retained during the life time of this project to provide on-site advice.	Letter, contract or other document outlining the appointment of an Ecologist for the lifetime of the project.		
2	Before starting work the consent holder will advise Wrexham Local Planning Authority of the date the works will start.	Written or electronic documentation of notification of start of works.		
3	Prior to the start of any works on site, all site workers will be inducted by the ECoW. This induction will cover the agreed GCN Method Statement, the legal status of the species, the method of working, and action to be taken if protected species are encountered.	Copy of documents from ecological induction, showing content of induction. List of induction attendees.		
4	Preparation and implementation of a bio-security risk assessment as detailed in the method statement.	Bio-security risk assessment is available for inspection. Log of implementation of bio security measures is available for inspection and shows that they have been implemented. Field observation shows that bio security measures are in place e.g. foot washes.		
	E.1 GCN exclusion			



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5	Installation of one-way fencing as an avoidance measure. The grass sward on the site will have been closely mown and kept short throughout. A finger-tip search for GCN will have been carried out prior to groundworks starting.	Record and photographs of measures.		
	E.2/E3 GCN habitat modification and creation for mitigation and compensation			
6	Habitat enhancement measures including hibernacula and hedgerow planting.	Confirmation from landowner as measures are implemented.		
Auditor name and organisation		Signature	Date	



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