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# GLAN CLWYD HOSPITAL BODELWYDDAN ECOLOGICAL ASSESSMENT (SITE 1)

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## **APPENDICES**

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APPENDIX B:	Target Notes Report
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## **DRAWINGS**

Drawing 1 - G8166.030 - Phase 1 Habitat Survey (Site 1)

Drawing 2 - G8166.005C - Pond and Ditch Location Plan

Drawing 3 - Powell Dobson Architects Drawing AOPMHU-PDA-ZX-00-DR-A-20100 Rev  
P017 - Ground Floor Combined GA



## Executive Summary

1. TEP was commissioned by BAM Construction Ltd in March 2021 to carry out an ecological assessment of a site within the campus of Glan Clwyd Hospital in Bodelwyddan, Denbighshire ("Site 1"). This assessment is required to inform proposals for the construction of a new adult and older persons mental health unit.
2. A planning application for the construction of the adult and older persons mental health unit is due to be submitted in early 2023. TEP was therefore recommissioned by BAM Construction Ltd in January 2023 to update the ecological assessment for Site 1, given the time elapsed since the report was last updated.
3. Site 1 comprises an area of hardstanding and buildings, with areas of dense scrub, species-poor modified neutral grassland, amenity grassland, tall ruderal, running water, standing water, swamp and bare ground. Several scattered broad-leaved trees are also present to the north and west of the site. The proposed development will predominantly be constructed on the existing hardstanding habitat, although there will also be a small permanent loss of grassland habitat. All other habitats will be retained.
4. No impacts to any statutory or non-statutory designated sites are anticipated from the proposals.
5. Ditches and ponds are located within the site boundary. The implementation of best practice pollution prevention measures will be required to minimise impacts to ditches and ponds, and their associated species, which are in close proximity to each site.
6. All retained trees on and adjacent to the site will be protected from incidental damage and disturbance during construction in accordance with current standards (BS5837:2012).
7. No protected (listed under Schedule 8 of the Wildlife and Countryside Act 1981) plant species were identified on site.
8. A single stand of cotoneaster, with similarities to the invasive species *Cotoneaster simonsii* (listed under Schedule 9 of the Wildlife and Countryside Act 1981) was identified in the east of the site. No works are proposed in this area therefore there are currently no implications for the development with regard to invasive non-native species. However, if any works are required in this part of the site in future an Invasive Species Method Statement will be required.
9. Great crested newts are confirmed to be breeding within two of the three waterbodies on site. The grassland and scrub habitats provide suitable terrestrial habitat for this species and the built structures on site additionally provide potential hibernation habitat. A great crested newt development licence will therefore be required for the construction of Site 1. Updated great crested newt surveys will be required in 2023 to inform the licence application.
10. The site and adjacent land provides suitable habitat for badger, although no evidence of badger was found during the site survey. A pre-construction survey for badger by

a suitably qualified ecologist will be required to ensure badgers have not moved into the area in the intervening period.

11. No tree loss is currently anticipated. However, six trees to the north and west of Site 1 have been assessed as being suitable for supporting roosting bats. If any works to these trees are required in future, an aerial inspection must be undertaken initially to determine the presence of bats and need for further survey. Depending on the findings of the aerial inspection, nocturnal surveys may be required. This would involve up to three surveys spread across the period May to August inclusive.
12. A sensitive lighting design will be required to ensure there are no adverse impacts on nocturnal species such as bats using the site following completion of the development.
13. A nesting bird check prior to construction works is required if clearance of suitable nesting habitat is undertaken during the nesting bird season (March - August inclusive).
14. Water voles were confirmed to be present within Pond P4 on site. As works will fall within 3-5 m of the top of this pond bank, a licence from Natural Resources Wales will be required. Updated water vole surveys will be required in 2023 to confirm the presence of water vole and inform any future licence application. There are opportunities to manage and enhance this pond for water voles as part of post-development biodiversity enhancement measures.
15. A Reasonable Avoidance Measures Method Statement (RAMMS) for reptiles and hedgehogs will be required to ensure any reptiles and hedgehogs that may be present within Site 1 are suitably protected during construction. Measures to ensure protection of any common amphibians during development of the site will be included in the great crested newt licence.
16. Further recommendations for biodiversity enhancement in line with local planning policy are outlined in Chapter 5.

## 1.0 Introduction

- 1.1 TEP was commissioned in March 2020 by BAM Construction Ltd to carry out an ecological assessment of a parcel of land within the campus of Glan Clwyd Hospital in Bodelwyddan, Denbighshire. The ecological assessment was requested to inform an outline planning application for the construction of a new Adult and Older Persons Mental Health Unit (AOPMHU).
- 1.2 An outline planning application for the AOPMHU and a proposed multi-storey car park (MSCP) on a site to the east of the hospital campus (Site 2) was submitted to Denbighshire County Council in October 2020 (Planning Application Ref: 40/2020/0813). Planning permission was refused in January 2021 owing to the proximity of the proposed development on Site 1 to existing residential properties.
- 1.3 In light of this decision, the location of the proposed AOPMHU was moved to the north-west of the hospital campus (hereafter referred to as "Site 1"). TEP was commissioned in March 2021 to produce an ecological assessment of Site 1 and an updated ecological assessment of Site 2 to inform a new planning application.
- 1.4 Submission of the revised planning application was delayed and is now due to be submitted to Denbighshire County Council in early 2023. TEP was therefore recommissioned by BAM Construction Ltd in January 2023 to update the ecological assessments for Sites 1 and 2, given the time elapsed since the reports were last updated.
- 1.5 This report has the following objectives:
  - To describe the existing vegetation and give an overview of the habitats present on site;
  - To identify whether there are any features of conservation value such as legally protected species or habitats of biodiversity importance;
  - To advise of further surveys or mitigation requirements that may be needed prior to development on the site; and
  - To identify opportunities to provide biodiversity enhancement within the proposed development.

### Site Description

- 1.6 Site 1 (central grid reference SJ 00100 76154) is approximately 0.95 ha in size and is located in the north-west corner of the Glan Clwyd Hospital campus. The site is bounded to the south and east by existing hospital buildings and access roads, to the west by an existing drainage pond and to the north by agricultural land.
- 1.7 The wider area surrounding the hospital campus comprises agricultural land to the north, east and west of the campus, and residential development to the south. The main A55 dual carriageway is located beyond the residential area.
- 1.8 The extent of the area covered by the ecological assessment is represented by the red line boundaries in the site location plan (Figure 1).



Figure 1: Site location and local context.

## 2.0 Methods

### Ecology Desk Study

- 2.1 Information regarding planning policies, historic species records and protected sites within a 2 km buffer, as a minimum, of the site was collated from a variety of sources (Table 1).

*Table 1: Sources and details of desk study information obtained.*

Source of Information	Nature of Information
MAGIC Map: Multi-Agency Geographic Information for the Countryside	Online mapping system identifying statutory protected sites, habitat designations etc.
North Wales Environmental Information Service (COFNOD)	Designated nature conservation sites and protected/notable species
Wales Biodiversity Partnership	Lists habitats and species considered to be locally important and the plans that are in place to help conserve them
Denbighshire County Council Local Development Plan (adopted 4th June 2013)	Local planning policy
Ordnance Survey/Google Maps	OS and aerial imagery

### Extended Phase 1 Habitat Survey

- 2.2 An extended Phase 1 habitat survey of Site 1 was undertaken by TEP ecologist Damian Young, on 16th March 2021. The survey was carried out following the Phase 1 habitat survey method, which standardises the way habitats and characteristic vegetation are recorded (JNCC, 2010). Habitat types were subsequently mapped and both dominant and invasive vegetation species were recorded in the form of target notes.
- 2.3 The extended Phase 1 habitat survey method also assesses habitats for their suitability and potential to support both protected species, species of conservation concern and invasive species, following the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).

#### *Limitations*

- 2.4 The survey was carried outside of the recommended survey season however, due to the types of habitats present, this is not thought to be a limitation.

#### Updated Extended Phase 1 Habitat Survey

- 2.5 An updated extended Phase 1 habitat survey of the site was carried out by TEP ecologist Cameron Campbell on 25th January 2023.
- 2.6 The aim of the updated survey was to assess if habitats had changed and to search for signs indicating the presence of protected species, in particular badger. The same methods, as outlined above and below, were employed during the survey.

### Limitations

- 2.7 The updated Phase 1 habitat survey was completed outside the recommended survey season of mid-April to mid-October. Although enough vegetation was visible during the updated surveys to enable a broad categorisation of the habitats present, there is a risk some protected (i.e. those listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) and invasive non-native species (i.e. those listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and/or Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019) could have been missed.

### Preliminary Roost Assessment for Bats

- 2.8 A ground-level inspection of all trees within Site 1, including those along the site boundaries, was undertaken to assess their potential to support roosting bats. The inspection was completed concurrently with the habitat survey. This was undertaken in line with Bat Conservation Trust (BCT) guidance (Collins, 2016).
- 2.9 A preliminary roost assessment (PRA) of all built structures on site was also undertaken to assess their suitability to support roosting bats. The survey included a detailed examination of the exterior of built structures from ground-level for any evidence of use by bats and any potential roost features (PRFs), which may provide suitable roosting habitat.
- 2.10 In addition, the habitats within and surrounding the survey area were assessed for their potential to support foraging and commuting bats.
- 2.11 Following the daytime inspection trees, buildings and habitats were categorised based on the criteria listed within Table 2 below.

*Table 2: Evaluation criteria for the potential suitability of trees, buildings and habitats for bats (taken from Table 4.1 of the BCT guidance)*

Suitability	Roosting habitats	Commuting/foraging habitats
Negligible	No potential roost features are present that are likely to be used by bats.	No features present that are likely to be used by commuting or foraging bats. A general lack of linear features and low habitat, structural or floristic diversity.
Low	A structure or tree with one or more potential roost features that could be used by individual bats opportunistically, but which do not offer sufficient space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats.	Habitat that could be used by small numbers of commuting bats (e.g. a gappy hedgerow or an unvegetated stream) or foraging bats (e.g. a lone tree or small patch of scrub) but which is isolated from the surrounding countryside.
Moderate	A structure or tree with one or more potential roost features that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat, but which is unlikely to support a roost of high conservation status (maternity or hibernation).	Continuous habitat connected to the wider landscape that could be used by bats for commuting (e.g. lines of trees or scrub or linked back gardens), or foraging bats (e.g. trees, scrub, water, grassland).



Suitability	Roosting habitats	Commuting/foraging habitats
High	A structure or tree possessing one or more potential roost features that are suitable for use by larger numbers of bats on a regular basis and potentially for longer periods of time, due to their size, shelter, protection, conditions and surrounding habitat.	Continuous high quality habitat that is strongly connected with the wider landscape that is likely to be used regularly by commuting bats (e.g. river valley, vegetated stream, woodland edge, hedgerow with trees) or foraging bats (e.g. broad-leaved woodland, grazed parkland, tree-lined watercourses or ponds).

### Limitations

- 2.12 Access was only permitted within the site boundary. As the trees were located off-site, only the aspect facing the site could be assessed. A precautionary approach was therefore taken with the roost categorisation, based on the features visible and the age and size of the tree.
- 2.13 There are no strict seasonal constraints for ground-level tree inspections, however visibility could be restricted by the presence of foliage and vegetation during the summer months. As the updated inspection was undertaken in late winter no such constraints, nor any other significant limitations, were encountered.
- 2.14 No internal access to the buildings was permitted. However, this is not considered a significant limitation as, given the nature of the buildings present on site, it was possible to categorise the bat roost habitat suitability of the buildings from the exterior only.

### Badgers

- 2.15 Signs of use of the site by badger *Meles meles* were also searched for during the Phase 1 habitat survey. The standard methodology as recommended by Harris, Cresswell and Jefferies (1989) 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: including earth mounds, evidence of bedding and runways between setts;
  - Latrines: often located close to setts, at territory boundaries or adjacent to favoured feeding areas;
  - Prints and paths or trackways;
  - Hairs caught on rough wood or fencing;
  - Other evidence: including snuffle holes, feeding and playing areas and scratching posts.
- 2.16 Badgers are active all year round, so a survey can be carried out at any time of year. However, depending upon the level of vegetation cover, this species is often best surveyed over the winter months when the vegetation has died back.

### Limitations

- 2.17 Access to the whole site was possible, however no access was granted to land within 30 m of the site. Therefore, there is the possibility that badger setts within this radius could have been missed.



## 3.0 Results

### Ecology Desk Study

- 3.1 A summary of the key findings from the desk study are outlined below. Full results of the desk study, as well as maps of designated sites and habitats of importance, are set out in Appendix A.

### Planning Context

- 3.2 Neither the site nor any adjacent land is currently allocated for biodiversity purposes under the Denbighshire County Council Local Development Plan (adopted 4th June 2013).
- 3.3 The following policies relating to biodiversity are most relevant to this assessment:
- Policy RD1 - Sustainable Development and Good Standard Design;
  - Policy VOE1 - Key Areas of Importance; and
  - Policy VOE5 - Conservation of Natural Resources.

### Designated Sites

#### Statutory Designations

- 3.4 There are five internationally designated sites within 10 km of the site.
- 3.5 Elwy Valley Woods Special Area of Conservation (SAC) is located approximately 4.1 km south of the site and is designated for its woodland habitats.
- 3.6 Liverpool Bay Special Protection Area (SPA) is located approximately 5.3 km to the north of the site and is designated for its breeding populations of little tern and common tern, as well as its overwintering population of common scoter, red-throated diver, little gull, red-breasted merganser and great cormorant.
- 3.7 The Dee Estuary (Wales) Ramsar, SAC and SPA are all located approximately 10 km to the north-east of the site.
- 3.8 Dee Estuary (Wales) Ramsar is designated for its intertidal habitats, its breeding population of natterjack toad, and its overwintering bird species, including breeding dunlin and black-tailed godwit.
- 3.9 Dee Estuary (Wales) SAC is designated for its intertidal habitats as well as its population of sea lamprey, river lamprey and petalwort.
- 3.10 Dee Estuary (Wales) SPA is designated for its breeding population of common tern and little tern, population of migratory sandwich tern and redshank and overwintering bird species, including bar-tailed godwit.
- 3.11 There is one nationally designated site within 5 km of the site.
- 3.12 Coedydd Ac Ogofau Elwy a Meirchion Site of Special Scientific Interest (SSSI) is located approximately 4.1 km to the south of the site and is designated for its woodland habitats and its assemblage of bryophytes and rare flowering plants, as well as the geological features of its cave system.

- 3.13 There is one statutory locally designated site within 2 km of the site.
- 3.14 Rhuddlan Pond LNR is located approximately 2 km to the north-east of the site and is designated for its habitats.

#### Non-Statutory Designations

- 3.15 There are four non-statutory locally designated sites within 2 km of the site.
- 3.16 Coed Pen y Garreg Local Wildlife Site (LWS) is located approximately 1.2 km to the south-west of the site and is designated for its ancient woodland habitat.
- 3.17 Clwyd Estuary and Adjacent Fields LWS is located approximately 1.3 km to the north-east of the site and is designated for its estuarine habitats and its population of overwintering wader and wildfowl species.
- 3.18 Coed Parc Kinmel LWS is located approximately 1.6 km to the west of the site and is designated for its coniferous woodland habitats.
- 3.19 Morfa Rhuddlan LWS is located approximately 1.8 km to the north-west of the site and is designated for its grazing marshland habitat.

#### **Habitats and Flora**

- 3.20 The ecology desk study found no priority habitats (i.e., those listed under Section 7 of the Environment (Wales) Act 2016) on or immediately adjacent to the site.
- 3.21 The site is located within an area of mosaic habitat, as identified on Natural Resources Wales LANDMAP. An area of residential/green space habitat is located immediately to the east of the site.
- 3.22 The 2023 survey update revealed minor changes to the habitats previously identified. The habitats present within Site 1 are described below and mapped in TEP Drawing G8166.030. More detail is provided in the Target Notes at Appendix B.

#### Trees and Scrub

##### *Scattered broad-leaved trees*

- 3.23 In the east of the site are several scattered broad-leaved trees which are generally young to middle-aged. Wild cherry *Prunus avium*, field maple *Acer campestre* and ash *Fraxinus excelsior* are all occasionally present (TN6).
- 3.24 Several semi-mature to mature scattered broad-leaved trees are present immediately adjacent to the site, to the west and the north, with branches overhanging into the site. These trees are all pedunculate oak *Quercus robur*,

##### *Dense scrub*

- 3.25 In the east of the site is an area of dense scrub, with frequent bramble *Rubus fruticosus* agg. and occasional rose *Rosa* sp., common hawthorn *Crataegus monogyna* and snowberry *Symphoricarpos albus* (TN6). A single cotoneaster sp. individual is also present within the scrub.

- 3.26 Along the length of the western site boundary is an outgrown hedgerow which now forms a swathe of dense scrub dominated by blackthorn *Prunus spinosa* (TN3). Ivy *Hedera helix* and bramble *Rubus fruticosus* agg are abundant in this area, with frequent common nettle *Urtica dioica* and occasional common hawthorn, ash and rose species.
- 3.27 In the north-west of the site there is a small area of dense bramble scrub (TN1).  
*Scattered scrub*
- 3.28 Scattered bramble and blackthorn scrub is present in the north-west of the site (TN1), with scattered grey willow *Salix cinerea* scrub is located in the west (TN2).  
Grassland  
*Species-poor modified neutral grassland*
- 3.29 In the south and west of the site is a large area of species-poor modified neutral grassland<sup>1</sup>. The grassland in the south is growing on top of a large mound, which is raised above the rest of the site. Meadow foxtail *Alopecurus pratensis* and cock's-foot *Dactylis glomerata* are abundant, with frequent perennial rye-grass *Lolium perenne* and Yorkshire-fog *Holcus lanatus*. Yarrow *Achillea millefolium*, ribwort plantain *Plantago lanceolata* and creeping cinquefoil *Potentilla reptans* are occasionally present (TN1). The remnants of an old amphibian fence, associated with the historic installation of two mitigation ponds on site, runs north to south through the grassland.
- 3.30 In the north of the site there is a narrow strip of species-poor modified neutral grassland, with abundant red fescue and frequent cock's foot (TN5). Bristly ox-tongue *Helminthotheca echinoides*, creeping buttercup *Ranunculus repens* and cleavers *Galium aparine* are occasional.
- 3.31 The species-poor modified neutral grassland across the site is generally unmanaged, however where the grassland borders the existing car park a narrow strip of this habitat has been strimmed.  
*Amenity grassland*
- 3.32 There are several areas of amenity grassland around the existing car park area and in the south of the site. Perennial rye-grass and mosses are abundant, with frequent yarrow and Yorkshire-fog (TN4). Cock's-foot, daisy and creeping buttercup are occasionally present within the grassland.

<sup>1</sup> The neutral grassland categories detailed within the Phase 1 Habitat Survey Handbook are concentrated on grassland associated with rural situations (pastures and meadows), as such it was agreed with JNCC in 2005 (P. Gateley, pers. comm.) that neutral grassland habitats that don't easily fit within these categories, usually within urban or industrial areas, can be referred to as modified neutral grassland –

'Modified neutral grassland is not derived from agricultural grassland and the terms semi-improved and improved do not apply. Some modified neutral grassland may be species-rich but many swards are dense, coarse and species-poor. Modified neutral grassland naturally regenerates on disturbed ground and is unmanaged. It most commonly occurs in urban areas and on post-industrial land'.

- 3.33 In the east of the site there is a strip of amenity grassland with similar species composition to TN4 (**TN6**). This grassland borders one of the hospital access roads and is raised in places.

Tall Herb

*Tall Ruderal*

- 3.34 Tall ruderal vegetation is interspersed amongst the grassland habitat in the west of the site (**TN1**). Common knapweed *Centaurea nigra*, hogweed *Heracleum sphondylium* and common ragwort *Jacobaea vulgaris* are frequent, with occasional creeping thistle *Cirsium arvense* and common fleabane *Pulicaria dysenterica*. In the south of this grassland there is a bank of tall ruderal vegetation dominated by broad-leaved dock *Rumex obtusifolius*.

Running and Standing Water

*Running Water*

- 3.35 A narrow stream with steep banks is located along the western boundary of the site. At time of survey the stream had a moderate flow to the north. A concrete outfall is present in the north of the site, on the western bank of the ditch, which is likely connected to a further outfall within the site. The banks of the ditch are steep sided and are dominated by ivy *Hedera helix* (**TN3**).

*Standing Water*

- 3.36 In the south-west of the site there are two small square ponds, each of which are lined and bordered by wooden fences (**TN7**). Occasional greater reedmace *Typha latifolia* and algae is present within each pond, although vegetation cover is denser in the southern-most pond. These ponds were built as newt mitigation ponds when the buildings to the south of the site were constructed (Appendix C).

*Swamp*

- 3.37 In the west of the site, beyond the proposed development area, is an area of swamp habitat. This area was originally created as a surface water balancing pond when the adjacent pathology building was constructed. The swamp is dominated by greater reedmace with frequent great willowherb *Epilobium hirsutum*, common fleabane and occasional purple loosestrife *Lythrum salicaria* (**TN2**).

Other Habitats

*Hardstanding*

- 3.38 A large portion of the site comprises a hardstanding car park, which is in active use.

*Bare ground*

- 3.39 At the northern end of the grassland mound in the south of the site part of the mound has been removed, leaving an area of bare ground. To the east of these works a small parking bay formed from compacted gravel has been created.

### *Buildings*

- 3.40 Several built structures are located throughout the site. These are predominantly single-storey cabins with flat roofs that are in use as offices (B1, B4a, B4b), with the exception of B5 which is a two-storey structure. Additional metal containers have been installed throughout the site which are used for storage (B3, B4c, B6).
- 3.41 An open-ended temporary tent structure has been installed near the southern entrance to the car park, adjoining B2 (Figure 2). A generator has also been installed immediately to the east of B2.

### Protected and Non-native Invasive Plant Species

- 3.42 The protected plant species native bluebell *Hyacinthoides non-scripta* (WCA8) has been recorded within 2 km of the site. The closest record of bluebell is located approximately 1.2 km from the site.
- 3.43 The invasive plant species montbretia *Crocasmia x crocosmiiflora* (WCA9), Japanese knotweed *Reynoutria japonica* (WCA9), small-leaved cotoneaster *Cotoneaster microphyllus* (WCA9), Himalayan balsam *Impatiens glandulifera* (WCA9; IAS), water-fern *Azolla filiculoides* (WCA9), variegated yellow archangel *Lamium galeobdolon ssp. galeobdolon* (WCA9) and giant hogweed *Heracleum mantegazzianum* (WCA9; IAS) have all been recorded within 2 km of the site. The closest record of an invasive plant species is montbretia, located approximately 0.6 km from the site.
- 3.44 No Schedule 8<sup>2</sup> protected plant species were identified on Site 2 at the time of survey.
- 3.45 A single stand of cotoneaster resembling the Schedule 9<sup>3</sup> species *Cotoneaster simonsii* is located within the dense scrub habitat in the east of the site. No IAS<sup>4</sup> invasive plant species were recorded on site, however.

### Connectivity with the Wider Landscape

- 3.46 Site 1 has limited connectivity with habitats to the south and east due to the presence of existing hospital development. There is good connectivity with habitats to the north and west, however, as the site is bordered by agricultural land and there are no major barriers between the site and this area.

### **Fauna**

- 3.47 The potential for the site to support legally protected and notable species has been assessed using the results of the desk study and observations made during the site survey of habitats within and immediately surrounding the site. Habitats present within the Site are suitable for the following species; further consideration is given below to the likelihood for these species to be present within the site:

- Amphibians;
- Bats;
- Badger;
- Birds;

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<sup>2</sup> Species listed on Schedule 8 of the Wildlife Countryside Act 1981, as amended.

<sup>3</sup> Species listed on Schedule 9 of the Wildlife Countryside Act 1981, as amended.

<sup>4</sup> Species listed on Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019.

- Invertebrates;
- Otter/water vole;
- Reptiles; and
- Hedgehog.

3.48 The site does not provide suitable habitat for other protected or notable species beyond those listed above. These other species will not be considered further within this report.

#### Amphibians

3.49 Records of great crested newt *Triturus cristatus* (EPS<sup>5</sup>, WCA5<sup>6</sup>, S7<sup>7</sup>, LBAP<sup>8</sup>) and common toad *Bufo bufo* (S7) were returned within the 2 km desk study search. The closest record of great crested newt is approximately 0.4 km to the south-east. Other amphibians recorded within 2 km of the site include smooth newt *Lissotriton vulgaris* and palmate newt *Lissotriton helvetica*.

3.50 There are four waterbodies within the wider Glan Clwyd Hospital campus and two waterbodies within 500 m of the campus (TEP Drawing G8166.005B). During the 2023 habitat suitability index (HSI) assessment, the ponds within the campus (P1 - P4) ranged from below average to excellent suitability for supporting breeding great crested newts. Although the two off-site ponds were not accessed, these were assessed to have below average to good suitability for supporting breeding great crested newts in 2020. One pond previously recorded as dry (P1) was found to be holding water during 2023 HSI survey.

3.51 Great crested newt eDNA and traditional surveys were undertaken on waterbodies P2 - P6 in 2020. During these surveys, two ponds within Site 1 tested positive for the presence of great crested newt DNA (P2 and P3) and great crested newts were sighted in both of these ponds (P2 and P3). An additional pond approximately 120 m to the north-west of the site (P5) also returned a positive eDNA result.

3.52 Full results of the 2020 great crested newt habitat suitability index assessment, eDNA and traditional surveys are presented in Appendix C.

3.53 The waterbodies and swamp habitats on site provide suitable breeding habitat for amphibians including great crested newt. The 2023 HSI survey assessed Ponds 2 and 3 to have Average suitability for supporting breeding great crested newts whilst Pond 4 was assessed to have Excellent suitability.

3.54 The dense scrub, species-poor modified neutral grassland and tall ruderal habitats on site provides suitable terrestrial habitat for sheltering, hibernating, foraging and commuting great crested newts and other common amphibians. There is also potential for amphibians to hibernate under the built structures on site, where these adjoin grassland habitat.

<sup>5</sup> Species listed under Schedule 2 of The Conservation of Habitats and Species Regulations 2017.

<sup>6</sup> Species listed under Schedule 5 of the Wildlife and Countryside Act 1981, as amended.

<sup>7</sup> Species listed under Section 7 of the Environment (Wales) Act 2016.

<sup>8</sup> Species listed under Denbighshire Local Biodiversity Action Plan (as identified by COFNOD)



### Badger

- 3.55 Badger *Meles meles* (PBA<sup>9</sup>, LBAP) have been recorded within 2 km of the hospital campus.
- 3.56 No evidence of badger activity was found on the site during the site survey. Paths consistent in size to those used by badgers were recorded amongst the dense scrub/outgrown hedge along the western boundary of the site, but no other evidence of badger was identified in this area.
- 3.57 The dense scrub, species-poor modified neutral grassland and tall ruderal habitats in the west of the site provide some, albeit limited, sett-building habitat for badger. These habitats also provide opportunities for foraging and commuting.

### Bats

- 3.58 Within the 2 km search radius, the following bat records have been reported:
- Common pipistrelle *Pipistrellus pipistrellus* (EPS, WCA5, S7, LBAP);
  - Soprano pipistrelle *Pipistrellus pygmaeus* (EPS, WCA5, S7, LBAP);
  - Myotis bat *Myotis sp.* (EPS; WCA5);
  - Noctule *Nyctalus noctula* (EPS, WCA5, S7, LBAP); and
  - Whiskered/Brandt's bat *Myotis mystacinus* (EPS, WCA5).
- 3.59 The built structures on site (B1 - B6) are unsuitable for supporting roosting bats, owing to the nature of these structures with no suitable access or egress points for bats (Figure 2). As such they are categorised as having Negligible suitability for roosting bats.



Figure 2: B2 in the south-east of the site showing a typical design of the built structures on site

<sup>9</sup> Protection of Badgers Act 1992 (as amended)

- 3.60 The six mature oak trees located off-site to the north and west contain a range of potential roost features for bats (Table 3). These trees range from having Low to High suitability for supporting roosting bats.
- 3.61 The areas of dense scrub, modified neutral grassland, running water, standing water and swamp on site provides suitable foraging and commuting habitat for bats.

*Table 3: Trees with Bat Roost Habitat Suitability*

Tree ID (AIA Tree Ref)	Tree and Potential Roost Feature (PRF) Description	BCT Roost Suitability Categorization	Figure Ref
T1 (T27)	8 m tall mature oak tree in adjacent to improved grassland field, located approx. 5 m to the north of the hospital boundary fence. Branches overhanging into site. Several PRFs present including a large crack in western-most stem at 3m height; branch snaps on western aspect at 2 m and 5 m height; cavity on western-most branch (south-facing) at 5 m height; large rot hole at 4 m height on eastern stem (south-facing); branch snap on eastern stem at 4 m height; branch snap with trunk cavity on south-east facing stem at 6 m height.	High	3
T2 (T26)	6 m tall semi-mature oak with single branch overhanging into site. Branch snap present at 3 m height on south side.	Moderate (precautionary)	4
T3 (T25)	12 m tall mature oak with multiple branches overhanging into site. PRFs include branch split on south-east facing side at 3 m and 6 m height; south-east facing cavity at 4 m and 6 m; cavity at 10 m on west side facing SE	High	5
T4 (T24)	6 m tall semi-mature oak tree. PRFs include sheltered, south-facing branch snap at top of trunk; Cavity on south-eastern aspect at 3 m height.	Moderate	6
T5 (T23)	10 m tall semi-mature oak. At 6 m height there is a south-facing rot hole on eastern branch.	Moderate	7
T6 (T29)	Mature oak tree with light ivy cover and branches overhanging into site.	Low (precautionary)	8





*Figure 3: T1*



*Figure 4: T2*



*Figure 5: T3*



*Figure 6: T4*



*Figure 7: T5*



*Figure 8: T6*

### Birds

- 3.62 Numerous bird records have been reported within 2 km of the site, including:
- Barn owl *Tyto alba* (WCA1<sup>10</sup>, LBAP)
  - Black-headed gull *Chroicocephalus ridibundus* (S7, BRd<sup>11</sup>)
  - Bullfinch *Pyrrhula pyrrhula* (S7, BAm<sup>12</sup>, LBAP);
  - Common gull *Larus canus* (BAm);
  - Dunnock *Prunella modularis* (S7, BAm);
  - House sparrow *Passer domesticus* (S7, BAm);
  - Linnet *Linaria cannabina* (S7, BRd, LBAP); and
  - Starling *Sturnus vulgaris* (S7, BRd).
- 3.63 Herring gull *Larus argentatus* (S7, BRd) have previously been recorded within the hospital campus.
- 3.64 The hardstanding, bare ground, buildings and amenity grassland habitats on site are unsuitable for supporting nesting birds. However, the scattered broad-leaved trees and areas of dense scrub ruderal habitat provides suitable nesting opportunities. There are some, albeit limited, opportunities for the species-poor modified neutral grassland and tall ruderal habitats to support ground-nesting species.
- 3.65 Although the swamp habitat could support nesting waterbirds, the two waterbodies on site are unlikely to provide suitable nesting habitat for birds given their small size.

### Invertebrates

- 3.66 Within the 2 km search radius, a number of invertebrate records have been reported, including August thorn *Ennomos quercinaria* (S7), buff ermine *Spilosoma lutea* (S7), cinnabar *Tyria jacobaeae* (S7), dingy skipper *Erynnis tages* (S7) and white ermine *Spilosoma lubricipeda* (S7).
- 3.67 The scattered broad-leaved trees, dense scrub, modified neutral grassland, tall ruderal, amenity grassland and swamp habitats within Site 1 provide breeding, foraging and sheltering opportunities for invertebrates.

### Otter/water vole

- 3.68 Otter *Lutra lutra* (EPS, WCA5, S7, LBAP) and water vole *Arvicola amphibius* (WCA5, S7, LBAP) have both been recorded within 2 km of the site. The closest record for otter is approximately 1.9 km to the south of the site, and the closest record for water vole is approximately 1.1 km to the north-west.
- 3.69 There are two ditches on Site 1. One ditch (D1) is located along the western boundary of the site and another ditch (D5) to the north-east of the site, beyond the existing hospital access road. These ditches are considered unsuitable for supporting otter.

<sup>10</sup> Species listed under Schedule 1 of the Wildlife and Countryside Act 1981, as amended

<sup>11</sup> Red listed Birds of Conservation Concern in Wales (BoCC 4, December 2022)

<sup>12</sup> Amber listed Birds of Conservation Concern in Wales (BoCC 4, December 2022)

- 3.70 D1 is heavily shaded by the dense scrub vegetation and therefore is considered unsuitable for supporting water vole however D5 provides some, albeit limited, burrowing and foraging opportunities for water vole.
- 3.71 The two ponds on site (P2 and P3) are unsuitable for supporting water vole given their small size and lack of suitable burrowing habitat and foraging habitat. However, the swamp habitat (P4) in the west of the site does provide suitable habitat for water vole. Otter are highly unlikely to be present in these waterbodies, however.
- 3.72 Water vole surveys of P4 and D5 were undertaken by TEP in 2021. Water vole presence was confirmed in P4 during these surveys. D5 was not included in the survey scope as the red line boundary did not incorporate this ditch at the time and no works were due to fall within 3-5 m of the top of the bank of this ditch.
- 3.73 Full results of the 2021 water vole survey is presented in Appendix D.
- 3.74 A shallow depression within the improved grassland field immediately to the north of the site, which is seasonally wet as it drains water from the adjacent field into D1, is considered unsuitable for supporting otter or water vole owing to a lack of bankside habitat for water vole burrows and a lack of suitable foraging and commuting opportunities for otter.

#### Reptiles

- 3.75 Within the 2 km search radius, the following reptile records have been reported:
- Common lizard *Zootoca vivipara* (WCA5, S7, LBAP); and
  - Grass snake *Matrix natrix* (WCA5, S7, LBAP).
- 3.76 Common lizard have been recorded within the hospital campus previously.
- 3.77 The areas of dense scrub, modified neutral grassland, tall ruderal and swamp on Site 1 provide limited foraging, commuting, sheltering and hibernation habitat for reptiles. However, there is no suitable basking habitat available and there is limited connectivity between this site and other suitable reptile habitat in the wider area.

#### Hedgehog

- 3.78 Hedgehog *Erinaceus europaeus* (S7) have been recorded within 2 km of the site. The closest record for hedgehog is approximately 175 m to the south of the site.
- 3.79 The dense scrub, species-poor modified neutral grassland and amenity grassland habitats on and adjacent to Site 1 provides potential foraging and sheltering habitat for hedgehog and may also offer limited dispersal opportunities to the north and west.

## 4.0 Conclusions

### Site Proposals

- 4.1 This section will conclude the potential impacts on the ecological receptors of the development proposed at Site 1. The proposals are for the construction of a new Adult and Older Persons Mental Health Unit (Powell Dobson Architects Ground Floor Combined GA Drawing AOPMHU-PDA-ZX-00-DR-A-20100 Rev P017).

### Planning Context

- 4.2 The site is not allocated for biodiversity purposes under the Denbighshire County Council Local Development Plan (adopted 4th June 2013).
- 4.3 Biodiversity-related planning policies from the Denbighshire County Council Local Development Plan (adopted 4th June 2013) are applicable to the site.
- 4.4 Under Policy RD1 of the Denbighshire County Council Local Development Plan, developments are expected to protect and enhance the natural environment and incorporate appropriate landscaping to enhance biodiversity.
- 4.5 Policy VOE1 expects developments to protect and enhance both statutory and non-statutory sites of nature conservation, as well as local sites designated for their biodiversity value.
- 4.6 Policy VOE5 requires any developments that may impact a protected species or site of nature conservation value to provide mitigation or enhancement for any feature impacted, in line with the Denbighshire county goal to conserve, enhance and restore habitats and species. These measures must be outlined in a biodiversity statement.
- 4.7 Under the Planning Policy Wales Edition 11 (2021), opportunities to provide a net benefit for biodiversity within developments should be pursued.
- 4.8 If the recommendations outlined within Chapter 5 of this document are implemented and biodiversity enhancements are incorporated into the scheme it is anticipated that the requirements of the biodiversity-related planning policies will be met.

### Designated Sites

#### Statutory Designations

- 4.9 Elwy Valley Woods SAC is designated for its woodland habitats. Given the distance between this designation and the site (4.1 km), no impacts to this internationally designated site are anticipated from the proposals.
- 4.10 Liverpool Bay SPA, Dee Estuary (Wales) Ramsar, Dee Estuary (Wales) SAC and Dee Estuary (Wales) SPA are all located over 5 km from the proposals. Due to the distance between the site and these designations, and the lack of suitable habitat on site for the qualifying bird species associated with these designations, no impacts on these internationally designated sites are anticipated as a result of the proposals.

- 4.11 Coedydd Ac Ogofau Elwy a Meirchion SSSI is located approximately 4.1 km to the south of the site and is designated for its woodland habitats, assemblage of bryophytes and its geological features. Given the distance between this designation and the site, no impacts to this designation are anticipated from the proposals.
- 4.12 Rhuddlan Pond LNR is located approximately 2 km to the north-east of the site and is designated for its habitats. Given the nature of the proposals and the distance between the site and this designation, no impacts to this LNR are anticipated from the proposed development.

#### Non-Statutory Designations

- 4.13 There are four non-statutory locally designated sites within 2 km of the proposals. These designations are all located over 1 km from the site and are all designated for their habitats. Clwyd Estuary and Adjacent Fields LWS, located approximately 1.1 km to the north-east, is additionally designated for supporting overwintering wader and wildfowl species.
- 4.14 Given the distance between the proposals and these sites, as well as the nature of the proposals and lack of suitable habitat on site for supporting the species associated with Clwyd Estuary and Adjacent Fields LWS, no impacts to any non-statutory designation are anticipated as a result of the proposed development.

#### **Habitats and Flora**

- 4.15 The two mitigation ponds in the west of the site qualify as S7 priority habitat. These ponds are due to be retained as part of the proposals. The swamp habitat does not meet the S7 priority habitat definition for that habitat type, however.
- 4.16 Site 1 is identified on Natural Resources Wales LANDMAP as falling within an area of mosaic habitat, adjacent to an area of residential/green space habitat. These habitats do not qualify as S7 priority habitat. No impacts on any priority habitats are therefore anticipated from the proposals.
- 4.17 The site predominantly comprises areas of hardstanding and species-poor modified neutral grassland habitat, with small areas of amenity grassland, tall ruderal, dense scrub, running water, standing water, swamp and bare ground also present. A small number of built structures are located within the site and several scattered broad-leaved trees are situated along the boundaries of the site.
- 4.18 The indicative development proposals indicate that construction works on this site will be predominantly restricted to the areas of hardstanding of no ecological value. All built structures currently present on site will also be demolished. Small areas of species-poor modified neutral grassland in the north and west of the site, including the eastern bank of P4, and all areas of amenity grassland habitat around the existing buildings on site will be additionally lost to facilitate the proposed development.



- 4.19 No post-development landscaping proposals were available at the time of writing. However, the indicative proposals show that new gardens will be created to the north and west of the new AOPMHU. There are opportunities to introduce landscape planting in areas to the north, west and south of the new building and to enhance retained habitats in the south-west and east of the site. Any new planting and enhancement measures should be designed to mitigate for the loss of species-poor modified neutral grassland and amenity grassland habitat, which will help to ensure there is no overall loss of biodiversity on the site.

#### Protected and Non-native Invasive Plant Species

- 4.20 No protected plant species were identified on site. Therefore, there are no implications for the proposals with regard to protected plant species.
- 4.21 A single cotoneaster was identified within the dense scrub habitat in the east of the site (TN6). Although it was not possible at the time of survey to confirm if this was a Schedule 9 species, it bears similarities to the Schedule 9 species *Cotoneaster simonsii*. No works are currently proposed in this area therefore it is considered that the risk of spreading this species is low. Currently there are no implications for the proposals with regard to invasive non-native species however if any works are required in this area, measures to deal with the removal of this species will need to be implemented as a precaution.

#### Connectivity with the Wider Landscape

- 4.22 Connectivity with habitats to the north and west of the site will be maintained as a result of the retention of tall ruderal habitats adjacent to the site.

### **Fauna**

- 4.23 The results of the desk study, Phase 1 habitat survey and protected species assessment highlighted the potential presence of several protected species or species of conservation concern within the Site, or within the immediate surroundings of the Site. These include amphibians, badger, bats, birds, invertebrates, otter/water vole, reptiles and hedgehog. The legal protection afforded to these species is outlined below and, where appropriate, the requirement for further survey and/or mitigation measures is identified.

#### Amphibians

- 4.24 Great crested newts are a European Protected Species under The Conservation of Habitats and Species Regulations 2017 and are afforded protection under Schedule 5 of the Wildlife and Countryside Act 1981. Common toad is a species of principal importance under Section 7 of the Environment (Wales) Act 2016.
- 4.25 The great crested newt surveys undertaken on ponds within 500 m of the site in 2020 confirmed that great crested newts are present within P2, P3 and P5. Given the time elapsed since these surveys were undertaken, and as P1 which was dry in 2020 is now holding water, updated great crested newt surveys will be undertaken in 2023.
- 4.26 Although P2 and P3 fall within the red line boundary of Site 1, these ponds will not be impacted by the proposed development.

- 4.27 A new outfall is due to be constructed on P4. This pond returned a negative eDNA result in 2020 but was assessed as having excellent suitability to support breeding great crested newts during the HSI assessment in 2023. As such, there may be implications for the proposals with regard to breeding great crested newts if now present within this waterbody.
- 4.28 As the proposed development is located within 50 m of P2 and P3 where great crested newts have historically been recorded and as there is suitable foraging and commuting habitat for great crested newts between these ponds and the proposed development, there is potential for great crested newt to range into the development area. In addition, there is potential for great crested newts to hibernate under the built-structures on site where these adjoin grassland habitats. Therefore, there is a risk of killing or injury to occur to great crested newt at this site during demolition, site clearance and construction works.
- 4.29 The terrestrial habitats within and adjacent to Site 1 are suitable for supporting other common amphibian species, including common toad. As works will occur to the species-poor modified neutral grassland habitats in Site 1 there is potential, albeit limited, for these species to be directly impacted during site clearance works.

#### Badger

- 4.30 Badgers and their setts are protected under the Protection of Badgers Act 1992.
- 4.31 Although the habitats within Site 1 have limited suitability for supporting badger setts, badgers could establish setts within the agricultural land to the north and west of the site. No impacts with regard to badger are currently anticipated from the proposals but there may be implications for the proposals if any setts are found within 30 m of the site in future.
- 4.32 No impacts to foraging badgers are anticipated, however, given the small area of suitable foraging habitat to be lost and the abundance of suitable habitat within and to the north and west of Site 1.

#### Bats

- 4.33 Bats are designated as European Protected Species under The Conservation of Habitats and Species Regulations 2017 and are afforded protection under Schedule 5 of the Wildlife and Countryside Act 1981.
- 4.34 No impacts to roosting bats are anticipated to arise from the demolition of the buildings on Site 1, owing to a lack of suitable roost features in these structures.
- 4.35 Six trees to the north and west of Site 1 were assessed to have Low to High suitability for supporting roosting bats. These trees are located off-site but branches of these trees overhang into the site. No works to these trees are currently anticipated however, if the proposals change and works to these trees are required, there will be implications with regard to roosting bats.

- 4.36 The dense scrub, modified neutral grassland, running water, standing water and swamp habitats in Site 1, as well as habitats to the north and west of the site, provide suitable foraging and commuting habitat for bats. Although these habitats will be retained under current proposals, their value to bats may be impacted as a result of additional light spill from the completed building. Therefore, there could be implications with regard to foraging and commuting bats as a result of the proposals at this site.

#### Birds

- 4.37 Under the Wildlife and Countryside Act, 1981 (as amended) it is an offence to take, damage or destroy the nest of any wild bird whilst it is in use or being built.
- 4.38 The scattered broad-leaved trees, dense scrub, species-poor modified neutral grassland, tall ruderal and swamp habitats within Site 1 provide opportunities for nesting birds, including ground-nesting species. With the exception of a small area of species-poor modified neutral grassland, these habitats are due to be retained under current proposals. The small area of grassland that is to be lost is located immediately to the west of the existing car park and as such will be subject to regular disturbance, making it sub-optimal for ground-nesting birds. However, a precautionary approach should be taken with regard to nesting birds if clearance of this habitat is undertaken within the nesting bird season (March to August inclusive), given the proximity of the grassland to other suitable nesting habitat such as the swamp.

#### Invertebrates

- 4.39 The scattered broad-leaved trees, dense scrub, modified neutral grassland, tall ruderal, amenity grassland and swamp habitats on Site 1 provide breeding, foraging and sheltering opportunities for invertebrates of local provenance. Given the small area of suitable grassland habitat to be lost and the abundance of suitable habitat in the wider area, including the retained habitats on site, this loss is not considered to be significant. Therefore, there are no implications with regard to invertebrates from development of Site 1.
- 4.40 There are opportunities to provide additional foraging resources for invertebrates through landscape planting.

#### Otter and Water Vole

- 4.41 Otter are designated European Protected Species and are afforded protection under The Conservation of Habitats and Species Regulations 2017 and Schedule 5 of the Wildlife and Countryside Act 1981. Water voles are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Both otter and water vole are species of principal importance under Section 7 of the Environment (Wales) Act 2016.
- 4.42 As works may fall within 3-5 m of P4 and a low to medium population of water vole has been recorded in this pond, there is potential for direct impacts to occur to water vole during construction. In addition, there is potential for indirect impacts to occur from run-off during construction activities. Therefore, there will be implications for the development of Site 1 with regard to water vole.



- 4.43 Although D1, P2 and P3 are not due to be impacted by the development proposals, if any works to these features are required, for example for drainage, there will be no implications with regard to water vole as these features are considered unsuitable for supporting this species. However, D5 does provide some suitable habitat for water vole. Therefore, if any works to this ditch are required, appropriate measures to prevent adverse impacts on water voles will need to be implemented under a licence from Natural Resources Wales.
- 4.44 All ditches and ponds on site are unsuitable for supporting otter, given their small size, lack of food sources and limited connectivity to other watercourses. Therefore no impacts with regard to otter are anticipated as a result of the proposals.

#### Reptiles

- 4.45 Slow worm, common lizard, grass snake and adder are reptile species afforded protection under Schedule 5 of the Wildlife and Countryside Act 1981.
- 4.46 The habitats on Site 1 offer potential foraging and sheltering opportunities for reptiles. Common lizard has been recorded close to this site in the past and there are habitats within the wider area that may support other reptile species such as slow worm and grass snake. Therefore, there is a risk of reptiles being present on site and as such there will be implications for development with regard to reptiles.

#### Hedgehog

- 4.47 Hedgehog are a species of principal importance under Section 7 of the Environment (Wales) Act 2016.
- 4.48 The retained habitats in the west of the Site 1, as well as habitats to the north and west, are suitable for supporting foraging and sheltering hedgehog, whilst the amenity grassland in the north and east of Site 1 also provides limited foraging opportunities for this species. The proposals will result in the permanent loss of a small area of species-poor modified neutral grassland and amenity grassland habitat. Given the abundance of alternative foraging habitat for hedgehog in the wider area and as new gardens will be created as part of the development, this loss is unlikely to significantly impact foraging hedgehog. However, there is potential for injury to occur to any hedgehog that may range into the site at night. Therefore, there will be implications for this species as a result of the development of Site 1.

## 5.0 Recommendations

- 5.1 This section sets out appropriate recommendations for impact avoidance, mitigation and enhancement as stated in Section 4.0. Further survey requirements are also described where relevant.

### **Planning Context**

- 5.2 The development should be undertaken with due consideration to policies RD1, VOE1 and VOE5 of the Denbighshire County Council Local Development Plan (adopted 4th June 2013) and Planning Policy Wales Edition 11 (2021).

### **Habitats and Flora**

- 5.3 All retained trees and hedgerows on and adjacent to each site will be protected from incidental damage and disturbance during construction in accordance with current standards (BS 5837:2012 Trees in relation to design, demolition and construction – recommendations).
- 5.4 Best practice pollution prevention measures should be implemented to ensure any indirect impacts on the ponds and ditches on and adjacent to the site and their associated species, such as great crested newts and water vole, will be avoided.
- 5.5 If any works to the dense scrub habitats in the east of the site are required (TN6), an Invasive Species Method Statement will be required to outline the approach for dealing with the invasive species on site. This may include on-site treatment, burial or off-site disposal.
- 5.6 If any trees or areas of dense scrub are lost to facilitate the development, these should be replaced as these areas provide valuable habitat for several species, including breeding birds. This could be done by tree or scrub planting, using native species, within areas of open space within the completed development, for example within the new courtyard or garden areas of the AOPMHU or in areas to the north, south and west of the new building. These measures would also enable the requirements of Policy RD1 of the Denbighshire County Council Local Development Plan to be met.

### **Fauna**

#### Amphibians

- 5.7 A great crested newt development licence from Natural Resources Wales will be required for the construction of the new AOPMHU. Updated great crested newt surveys will be required in spring 2023 to confirm the current population of great crested newts in ponds within 500 m of the site, which will be used to inform a future licence application.
- 5.8 A great crested newt mitigation strategy will also need to be prepared and submitted with the planning application.
- 5.9 Implementation of the licence will also ensure that killing or injury of any common amphibian species which may be present on site such as common toad is avoided during vegetation clearance works.

### Badger

- 5.10 There are currently no implications for the development proposals with regards to badger. However, a pre-construction walkover of Site 1 by a suitably qualified ecologist will be required to ensure badgers have not moved into the area in the intervening period. This should include a check of all suitable habitats within Site 1 as well as the agricultural fields within 30 m of the site for badger setts.

### Bats

- 5.11 Under current proposals the trees with bat roost habitat suitability to the north and west of Site 1 will be retained. However, if the proposals change and any pruning or felling works to these trees are required, an aerial inspection will initially be required to determine the presence of bats and need for further survey. Following the aerial inspection, nocturnal surveys may be required.
- 5.12 The number of nocturnal surveys required will vary depending on the categorisation given during the aerial inspection. For trees with High suitability for roosting bats, three nocturnal surveys will be required in line with BCT guidelines. For trees with Moderate suitability for roosting bats, two nocturnal surveys will be necessary. Trees with Low suitability do not need nocturnal surveys but a Reasonable Avoidance Measures Method Statement (RAMMS) will be required to fell or work on the tree. This will include a requirement for each potential roost feature to be inspected by a licenced bat ecologist immediately prior to felling.
- 5.13 New lighting on the new Adult and Older Persons Mental Health Unit should be designed in line with the Institution of Lighting Professionals Guidance Note 08/18 Bats and Artificial Lighting in the UK. A Sensitive Lighting Strategy should also be produced to avoid impacts of lighting on nocturnal species, primarily bats.

### Birds

- 5.14 Notwithstanding the removal of hardstanding, buildings and amenity grassland habitats, any vegetation clearance undertaken at Site 1 during the nesting bird season (March to August inclusive) must be subject to a nesting bird check prior to works commencing. The nesting feature will be checked by a suitability qualified ecologist no more than 24 hours prior to any clearance works. If nests are identified, works must cease in that area and an appropriate buffer zone established around the nest until the young have fledged. This will require monitoring by an ecologist who will advise when works within the buffer zone can proceed.
- 5.15 Any loss of nesting bird habitat should be mitigated through replacement of appropriate habitat in order to maintain or increase the amount of breeding and nesting habitat available to birds. This could include tree planting, scrub planting and planting fruiting tree and shrub species within the new courtyards or gardens to provide additional foraging resources and/or installing nest boxes on retained trees or the new building.

### Water vole

- 5.16 A licence for works to P4 from Natural Resources Wales will be required as works will fall within 3-5 m of the top of the pond bank. Given the time elapsed since the surveys were last completed, updated surveys should be undertaken in 2023 to confirm presence of water vole and inform any future licence application.
- 5.17 Displacement of voles to prevent killing or injury must be undertaken in either the period mid-February to mid-April, or from mid-September to the end of October. Any losses of bank habitat will need to be compensated by enhancement for water voles elsewhere on the pond.
- 5.18 The licence application will need to demonstrate a conservation gain. This could be done through enhancement of suitable riparian habitat on site, such as by clearance and management of areas of encroaching scrub on the banks of the pond or elsewhere within the hospital campus. Enhancement must be provided prior to construction works commencing on site.

### Reptiles

- 5.19 A reptile RAMMS will be required to ensure that killing or injury of any reptiles that may be present within Site 1 are avoided during vegetation clearance at that site. The RAMMS will need to include methods such as staged strimming, hand searching and removal to a safe location of any reptiles found.

### Hedgehog

- 5.20 A hedgehog RAMMS will be required to ensure that killing or injury of hedgehog that may be present within Site 1 are avoided during site clearance. This RAMMS can be combined with the reptile RAMMS and will include methods to prevent entrapment of hedgehogs, including closure of excavations overnight and providing an escape route, as well as safe relocation of any hedgehogs found.
- 5.21 Upon completion of the development at Site 1, it is recommended that approximately 13 cm diameter holes are cut into the bottom of fences, where applicable, to allow hedgehogs and other small mammals to pass freely through the completed development. Hedgehogs need easy and safe access over a large area, but fences, walls and other barriers reduce the habitat available to them and force them into dangerous situations such as crossing roads. Linking open spaces with access gaps provides valuable habitat links for hedgehogs.

## **Biodiversity Enhancement**

- 5.22 Under the Planning Policy Wales Edition 11 (2021) and in line with Welsh Government guidance on securing biodiversity enhancements<sup>13</sup>, developments should aim to minimise impacts on biodiversity and provide net benefit for biodiversity.

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<sup>13</sup> Welsh Government (2019). *Securing Biodiversity Enhancements* [Online] Available at: <https://www.gov.wales/biodiversity-enhancements-guidance-heads-planning> [Accessed 03.02.23].

- 5.23 New landscape planting could be focussed within the proposed courtyard and garden areas and around the new AOPMHU building. Planting should aim to utilise native species appropriate to the local area and should maximise berry-bearing and nectar and pollen rich species. These can provide a valuable foraging resource for a range of pollinators and other invertebrates, which in turn benefits wildlife such as bats, small mammals and many bird species. Native wildflower seed mixes, suitable to the soil type at the application site, are available commercially and could be planted on site. This would also be beneficial to invertebrates such as bees and butterflies.
- 5.24 A wildflower meadow of similar or larger size to the areas of amenity grassland and species-poor modified neutral grassland habitats that will be lost could be created within the landscaped areas of the new Adult and Older Persons Mental Health Unit, which will mitigate for this loss of habitat and improve species diversity.
- 5.25 Consideration could also be given to the enhancement of retained habitats in the west of the site. The species-poor modified neutral grassland habitats could be managed and seeded with a wildflower mix, which will increase the species diversity on site. Further tree planting could also be undertaken using native species. This will also meet the requirements of Denbighshire County Council Policy RD1, to enhance the local environment by providing landscaping that will improve biodiversity.
- 5.26 Bat and bird boxes could be incorporated onto the new building to provide roosting opportunities for bat species and nesting opportunities for birds. Nest boxes should be appropriate to species that occur locally. Bat and bird boxes should be located at an appropriate height and aspect (north-east for birds and south-west for bats), with suitable lighting levels and close to vegetation.

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## **APPENDIX A: Ecology Desk Study (Confidential)**

## **APPENDIX B: Target Notes Report**



# Target Notes Report

## Site 1

KEY - D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

### Target Note 01

Large area of species poor modified neutral grassland to the south and west of the proposed development area. The grassland in the west of the site is growing around a large SUDS pond whilst in the south of the site it is growing over a large mound, at the top of which are two small square mitigation ponds (see TN7). The sward is generally long and tussocky, although areas of grassland immediately adjacent to the car park have been recently strimmed. Scattered broad-leaved trees, scrub and tall ruderal vegetation are present throughout the grassland.

<i>Alopecurus pratensis</i>	Meadow foxtail	A
<i>Lolium perenne</i>	Perennial rye-grass	A
Mosses	Moss species	A
<i>Centaurea nigra</i>	Common knapweed	F
<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Festuca rubra</i>	Red fescue	F
<i>Galium aparine</i>	Cleavers	F
<i>Heracleum sphondylium</i>	Hogweed	F
<i>Holcus lanatus</i>	Yorkshire-fog	F
<i>Jacobaea vulgaris</i>	Common ragwort	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Rumex obtusifolius</i>	Broad-leaved dock	F
<i>Achillea millefolium</i>	Yarrow	O
<i>Cirsium arvense</i>	Creeping thistle	O
<i>Juncus effusus</i>	Soft rush	O
<i>Plantago lanceolata</i>	Ribwort plantain	O
<i>Potentilla reptans</i>	Creeping cinquefoil	O
<i>Prunus spinosa</i>	Blackthorn	O
<i>Pulicaria dysenterica</i>	Common fleabane	O
<i>Rosa</i> sp.	Rose species	O
<i>Salix</i> species	Willow species	O
<i>Urtica dioica</i>	Common nettle	O
<i>Juncus inflexus</i>	Hard rush	R



## Target Note 02

Large SUDS pond (P4) in the west of the site, dominated by greater reedmace. A concrete outfall is present in each corner. Scattered willow scrub is also present at the southern end of the pond.

*Typha latifolia*

*Epilobium hirsutum*

*Salix cinerea*

Greater reedmace

Great willowherb

Grey willow

D

F

O



Target Note 03

Area of very dense continuous scrub dominated by blackthorn, formed from an outgrown hedgerow along the western boundary of the site. The scrub is growing over a narrow stream with steep banks, flowing to the north. The stream is heavily shaded by the scrub and is therefore unsuitable for supporting water vole.

<i>Prunus spinosa</i>	Blackthorn	D
<i>Hedera helix</i>	Ivy	A
<i>Rubus fruticosus</i> agg.	Bramble	A
<i>Urtica dioica</i>	Common nettle	F
<i>Crataegus monogyna</i>	Common hawthorn	O
<i>Fraxinus excelsior</i>	Ash	O
<i>Galium aparine</i>	Cleavers	O
<i>Quercus</i> sp.	Oak species	O
<i>Rosa</i> sp.	Rose species	O
<i>Geranium molle</i>	Dove's-foot crane's-bill	R





Target Note 04

Hardstanding car park with several buildings and portacabins present around the edge. The buildings are bordered by small areas of amenity grassland.

<i>Lolium perenne</i>	Perennial rye-grass	A
Mosses	Moss species	A
<i>Achillea millefolium</i>	Yarrow	F
<i>Holcus lanatus</i>	Yorkshire-fog	F
<i>Bellis perennis</i>	Daisy	O
<i>Dactylis glomerata</i>	Cock's-foot	O
<i>Helminthotheca echioides</i>	Bristly-oxtongue	O
<i>Jacobaea vulgaris</i>	Common ragwort	O
<i>Plantago lanceolata</i>	Ribwort plantain	O
<i>Ranunculus repens</i>	Creeping buttercup	O
<i>Rumex obtusifolius</i>	Broad-leaved dock	O
<i>Cirsium vulgare</i>	Spear thistle	R



## Target Note 05

Narrow strip of modified neutral grassland in the north of the car park area. Immediately to the north of the site within an improved grassland field is a line of hawthorn and apple scrub with several scattered semi-mature to mature oak trees also present. A very shallow depression is likely to carry surface water following periods of heavy rainfall.

<i>Festuca rubra</i>	Red fescue	A
<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Rumex obtusifolius</i>	Broad-leaved dock	F
<i>Urtica dioica</i>	Common nettle	F
<i>Anthriscus sylvestris</i>	Cow parsley	O
<i>Cirsium arvense</i>	Creeping thistle	O
<i>Epilobium hirsutum</i>	Great willowherb	O
<i>Galium aparine</i>	Cleavers	O
<i>Helminthotheca echioides</i>	Bristly-oxtongue	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Ranunculus repens</i>	Creeping buttercup	O
<i>Rosa sp.</i>	Rose species	O
<i>Digitalis purpurea</i>	Foxglove	R



## Target Note 06

Short strip of amenity grassland, raised in places, adjacent to an area of dense scrub and young scattered broad-leaved trees in the east of Site 1. A short section of open ditch is present in the north-east of this area. The ditch holds a small amount of shallow water and has limited flow.

<i>Lolium perenne</i>	Perennial rye-grass	A
<i>Festuca rubra</i>	Red fescue	F
<i>Galium aparine</i>	Cleavers	F
<i>Hedera helix</i>	Ivy	F
<i>Holcus lanatus</i>	Yorkshire-fog	F
Mosses	Moss species	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Urtica dioica</i>	Common nettle	F
<i>Cirsium arvense</i>	Creeping thistle	O
<i>Cirsium vulgare</i>	Spear thistle	O
<i>Cornus sanguinea</i>	Dogwood	O
<i>Geranium molle</i>	Dove's-foot crane's-bill	O
<i>Prunus</i> sp.	Cherry species	O
<i>Rosa</i> sp.	Rose species	O
<i>Rumex obtusifolius</i>	Broad-leaved dock	O
<i>Symphoricarpos albus</i>	Snowberry	O
<i>Cotoneaster</i> sp.	Cotoneaster species	R
<i>Typha latifolia</i>	Greater reedmace	R





**Target Note 07**

Two small square mitigation ponds located on a mound in the west of the site, built as mitigation when the buildings to the south of the site were constructed.

*Typha latifolia*  
*Juncus effusus*

Greater reedmace  
Soft rush

O  
O



## **APPENDIX C: Great Crested Newt Survey (2020)**



THE  
ENVIRONMENT  
PARTNERSHIP

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# GLAN CLWYD HOSPITAL, BODELWYDDAN GREAT CRESTED NEWT SURVEY

TEP Technical Report July 2020

## TEP

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[illegible]

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## 1.0 Summary

- 1.1 Amphibian surveys have been undertaken at ponds within 500 m of Glan Clwyd Hospital in Bodelwyddan, Denbighshire. The surveys have been undertaken to inform proposals for the construction of a new mental health unit (site 1), a new multi-storey car park (site 2), a new helipad (site 3) and a new open-air car park (site 4) within the hospital campus.
- 1.2 Data searches, Habitat Suitability Assessments, eDNA sampling, torch surveys, netting and egg searches were carried out. Surveys were undertaken within the appropriate season and under the recommended conditions so no survey limitations were encountered.
- 1.3 Several historic records of great crested newt were found within 2 km of the site.
- 1.4 Great crested newts were identified in 2no. ponds within the site and 1no. ponds within 500m of the site. The ponds form a single meta population with a small population size class. A Natural Resources Wales (NRW) development licence will be required to permit development of sites 1, 3 and 4.
- 1.5 Smooth newt were also recorded in ponds within the site and ponds offsite.
- 1.6 No further amphibian surveys are required at this time.

## 2.0 Method

### Scope

- 2.1 Glan Clwyd Hospital is located in Bodelwyddan, Denbighshire. Within the wider hospital campus (hereby known as “the site”) are four sites, which will be developed as follows:
- Site 1 – New Mental Health Unit
  - Site 2 – New Multi-Storey Car Park
  - Site 3 – New Helipad
  - Site 4 – Conversion of existing helipad into an open-air car park
- 2.2 There are 4 no. ponds within the site boundaries, 1 no. pond within 250m of the site boundaries and 1 no. pond within 250m to 500m. The site boundaries are illustrated in Figure 1 and the locations of the ponds are shown in Drawing G8166.005.



Figure 1: Site boundaries

- 2.3 A review of mapping and satellite imagery identified the A55 dual carriageway (grid reference SH 99943 75398), located approximately 525 m to the south of the site, as a barrier to amphibian dispersal. There are no barriers to amphibian dispersal to the north, east or west of the site.



- 2.4 The surveys are designed to determine whether or not great crested newts *Triturus cristatus* are breeding within the site or in ponds within ranging distance of the site. Where great crested newt (GCN) are present survey effort is designed to allow population size class to be assessed. This information is required to inform development proposals including the design of any mitigation and consideration of any relevant legislation and policies. Although surveys target great crested newt other amphibian species will also be detected by the methods employed, these species if encountered are recorded and the results presented in this report.
- 2.5 All 4 no. ponds within the site (P1 to P4) have been included in the field survey scope. Within 500 m of the site boundaries access was granted from third parties to survey 2 no. ponds (P5 to P6).

### **Data Search**

- 2.6 A data request was submitted to North Wales Environmental Information Service (COFNOD) in April 2020 to ascertain if any records of great crested newts (GCN) are within influencing distance of the site. The search zone included the site and within 2 km of the site boundaries.
- 2.7 A web-based search undertaken in April 2020 indicated that habitat adjacent to Site 1 had potential to support GCN.

### **Habitat Suitability Index (HSI) Assessments**

- 2.8 HSI surveys were undertaken at all 6 no. ponds where access had been granted. HSI surveys were undertaken on 21<sup>st</sup> April 2020 (P1-5) and 4<sup>th</sup> May 2020 (P6).
- 2.9 HSI<sup>1</sup> is a standard measure of calculating the suitability of a pond to support breeding great crested newts, based on an assessment of ten characteristics (indices), including size, shading, depth and vegetation profile. The assessment generates a number between 0 and 1 for each of the indices which are combined to provide an overall assessment of a pond's suitability to support GCN on a categorical scale (Table 1). The assessment has not been designed for or tested on other waterbodies such as ditches.
- 2.10 Ponds with a score of below average, average, good or excellent were subject to a full survey. Any ponds assessed to have a 'poor' suitability were reviewed and where sufficient justification could be made, these ponds were scoped out of further surveys.

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1: ARG UK Advice Note 5 (May 2010) Great Crested Newt Habitat Suitability Index

*Table 1: Pond habitat suitability index scoring*

HSI Score	Suitability	Predicted GCN Occupancy of Ponds in each Category
< 0.5	poor	3%
0.5 to 0.59	below average	20%
0.6 to 0.69	average	55%
0.7 to 0.79	good	79%
> 0.8	excellent	93%

#### Qualifications

- 2.11 HSI surveys were undertaken by John Crowder who has held a Natural Resources Wales GCN survey licence since 2007.

#### **eDNA**

- 2.12 Environmental DNA (eDNA) sampling was undertaken at 2no. ponds (P4, P5) on 27<sup>th</sup> April 2020 and 1no. pond (P6) on 4<sup>th</sup> May 2020.
- 2.13 Pond P1 was found to be dry and therefore was unsuitable for this survey method. GCN were sighted within Ponds P2 and P3 prior to the eDNA survey, thereby confirming the presence of this species and as such eDNA sampling of these ponds was not required.
- 2.14 Sample collection was undertaken by TEP. Sample kits and analysis was provided by ADAS. Both organisations followed the relevant sections of the method set out in the DEFRA funded study endorsed by Natural England<sup>2</sup>. In summary the sampling protocol is as follows:
- 20 samples were taken from around the entire perimeter of the waterbody.
  - The surveyor stayed out of the water while taking the samples (extension poles were used in situations where open/sufficiently deep water was at a distance from the dry banks.
  - Survey locations were distributed around the pond perimeter but micro-siting was used to select locations most likely to be used by GCN.
  - At each sample location the water column was stirred prior to taking the sample but care was taken to avoid disturbing the sediment on the base of the pond.
  - Once all 20 samples were taken, 15ml of the total sample were pipetted into each of the 6 sampling tubes, whilst ensuring that the water in the sample bag was mixed before taking each 15ml sample and that only one sample tube was opened at any one time.

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

- At all times the surveyor ensured that the risk of contaminating the sampling equipment was minimised by avoiding the placement of the ladle or pipette on the ground or on any otherwise potentially contaminated surfaces and by changing gloves between the initial sampling stage and the pipetting stages of the method.

#### Chain of custody

- 2.15 On receipt from ADAS the sampling kits were registered on a central database using the unique bar codes. Immediately prior to survey, sampling kits were issued to surveyors with individual Sample Forms using the unique bar code as identification. The site name and date of issue was also recorded on this form (and on the central database). Once in the field and at the ponds, the surveyor confirmed that the appropriate field survey sheet was being completed by checking the bar code on the box and double checking the corresponding bar codes on the sample tubes. The surveyor then filled in the date of survey and the pond ID number (as well as other information relating to survey conditions) on the Sample Form.
- 2.16 On returning to the office the Sample Forms were signed to confirm for each sample who received the samples and checked them into the fridge and the temperature of the fridge. The pond IDs on each form were checked against a site map confirming which ponds had been sampled and this map was stored with the Sample Forms. All this information was also recorded on the central database. The sample preserving tubes were stored in a fridge until the morning of collection by the courier. The Sample Forms and the central database were updated to confirm the date of collection by the courier.
- 2.17 The unique bar codes were used by ADAS to report results. All results were recorded in the central database by one member of staff and cross checked by a second member of staff before issuing to the project leader for review.

#### Qualifications

- 2.18 TEP Associate Director (Ecology) Elizabeth Seal underwent training on the eDNA sampling method with Dr Jeremy Biggs of the Freshwater Habitats Trust<sup>3</sup> on 11th April 2014. A copy of the certificate of this training can be provided on request. Following this Elizabeth devised a TEP internal training course covering theoretical and field based modules on eDNA sampling method, biosecurity measures and record keeping procedures. Only those TEP ecologists with GCN survey licences who have successfully undertaken this course are tasked with eDNA sampling.

### **Torch, Net Surveys and Eggs Searches**

- 2.19 In line with Natural England (NE) guidance<sup>4</sup> and advice previously received from Natural Resources Wales (NRW), a combination of torch surveys and egg searches were used to determine presence/absence and/or assess population size class.

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3: Dr Briggs authored the 2014 DEFRA funded report on the eDNA survey method for great crested newts.

4: Great crested newt mitigation guidelines (2001), English Nature

Where pond turbidity prevented torch survey, hand netting was used instead. Bottle trapping was not used as a survey technique following previous guidance received from NRW.

- 2.20 Surveyors worked in pairs with at least one Natural Resources Wales licensed surveyor in each team. Surveys were undertaken between mid-March and mid-June with at least two visits in the core period of mid-April to mid-May. To ensure effective detection rates torch and bottle surveys were undertaken when nighttime air temperatures were  $>5^{\circ}\text{C}$  and when rain and wind conditions did not affect visibility (only relevant to torch surveys).
- 2.21 Dates and surveyor details are provided at Tables 2 and 3.

#### Torch survey

- 2.22 Torch surveys were undertaken at all ponds holding water within 250 m of the site (P2, P3, P5). P4 was also surveyed during Visit 1, was discounted from all further surveys following receipt of a negative eDNA result. Torch surveys were replaced with netting at pond P5 from Visit 2 onwards due to poor visibility.
- 2.23 Ponds were surveyed by walking the perimeter. Torch surveys were carried out after dusk with a powerful torch (one million candle power). The number, species and (where possible) sex and age class of amphibians seen were recorded. It is not always possible to achieve 100% coverage along pond margins using the torch surveys because of access difficulties, for example dense vegetation or boggy banks. Access was only taken where it was safe to do so. Estimates of the percentage of shoreline of each waterbody surveyed and other factors affecting torching were recorded.

#### Egg search

- 2.24 Egg searches were undertaken on all survey visits at P2, P3, P4 and P5. GCN lay their eggs on the leaves of submerged (live or dead) vegetation, folding the vegetation over the egg to form a protective 'purse'. Aquatic vegetation was searched by walking or wading the shoreline of a waterbody and looking for the characteristic shape of folded leaves. Unwrapping eggs (to identify the species) increases larval failure rates therefore egg searching in any waterbody was ceased as soon as a GCN egg was found.

#### Hand netting

- 2.25 Hand netting was only used at ponds where an alternative third survey method was required. At pond P5 netting replaced torching. Netting can be undertaken at any time of the day but in this instance were carried out at night when adult GCN are more likely to be in open water. The standard procedure for hand netting<sup>5</sup> was used; this required a long handled D-net to be swept vigorously through the water in 2m sweeps with a survey effort of at least 15 minutes per 75 m of shoreline.

### Qualifications and survey dates

- 2.26 Table 2 summarises the timing of the surveys and Table 3 shows the qualifications of the lead surveyors.

*Table 2: Survey details*

Pond ID	Lead Surveyor and Survey Date					
	Visit One	Visit Two	Visit Three	Visit Four	Visit Five	Visit Six
P1	-	-	-	-	-	-
	-	-	-	-	-	-
P2	27.04.20	04.05.20	11.05.20	18.05.20	26.05.20	01.06.20
	J. Crowder	J. Crowder	J. Crowder	J. Crowder	J. Crowder	J. Crowder
P3	27.04.20	04.05.20	11.05.20	18.05.20	26.05.20	01.06.20
	J. Crowder	J. Crowder	J. Crowder	J. Crowder	J. Crowder	J. Crowder
P4	27.04.20	-	-	-	-	-
	J. Crowder	-	-	-	-	-
P5	27.04.20	04.05.20	11.05.20	18.05.20	26.05.20	01.06.20
	J. Crowder	J. Crowder	J. Crowder	J. Crowder	J. Crowder	J. Crowder
P6	-	-	-	-	-	-
	-	-	-	-	-	-

*Table 3: Lead surveyor details*

Surveyor	Current Licence	Licence held since
J. Crowder	S085340/1	2007

## Summary

- 2.27 An overview of the survey methods employed at each pond is presented in **Table 4**.

*Table 4: Summary of field survey methods*

Pond ID	Survey method used at pond and number of survey visits				
	eDNA Survey	Torch Survey	Bottle Survey	Netting Survey	Egg Survey
P1	-	-	-	-	-
P2	-	6	-	-	6

Pond ID	Survey method used at pond and number of survey visits				
	eDNA Survey	Torch Survey	Bottle Survey	Netting Survey	Egg Survey
P3	-	6	-	-	6
P4	Yes	1	-	-	1
P5	Yes	1	-	5	6
P6	Yes	-	-	-	-

## Limitations

- 2.28 The surveys were completed within the recommended survey season and there were no access restrictions to any of the ponds. Therefore there were no survey limitations.

## 3.0 Results

### Data Search

- 3.1 Table 5 presents the findings of the data search. Records identified to the south of the A55 dual carriageway are not shown in this table. Further details are available in the Ecology Desk Study (TEP Report Ref: 8166.001).

*Table 5: Data search results*

Distance From Site	Direction From Site	Notes
<b>Great Crested Newt</b>		
100 m	North-West (associated with P5)	Low numbers, 2008
375 m	North-East (associated with P6)	GCN and larvae sighted, 2009
600 m – 1500 m	West	Low numbers and juveniles sighted in various ponds between 1993 and 2009
<b>Other Newt</b>		
1300 m	North-West	Smooth newt – adult male and female 2009
1700 m	South-East	Smooth newt – recorded between 2006 and 2008
<b>Common Toad</b>		
1700 m	South-East	3x adults recorded 2009
<b>Common Frog</b>		
None recorded		





- 2.29 A web-based search undertaken in April 2020 indicated that ponds P2 and P3 were created as amphibian mitigation ponds as part of construction of the buildings immediately to the north of site 1. The planning application for these buildings was submitted in 2012 (Denbighshire Planning Application Ref: 40/2012/0230). These ponds were designed after great crested newt were confirmed to be present in P5, in surveys undertaken for an unrelated development prior to 2009 (details unknown).

### Habitat Suitability Index (HSI) Assessments

- 3.2 Pond descriptions and photographs are provided in Table 6 and the results of the HSI surveys are presented in Table 7.
- 3.3 The suitability of ponds within the site to support GCN ranged from Average to Excellent. The suitability of ponds offsite site to support GCN ranged from Below Average to Good.



Table 6: Pond descriptions and photos

Pond	Grid Ref.	Description	Photograph
P1	SJ 00116 75938	Completely scrubbed over. Dry pond – no water visible. No further survey requirements.	
P2	SJ 00038 76073	Lined mitigation pond with fencing around it. Some <i>Typha</i> and algae within the pond. Terrestrial habitat surrounding the pond comprises rough grassland and hedge. GCN sighted within the pond.	
P3	SJ 00039 76083	Lined mitigation pond with fencing around it. Less <i>Typha</i> and algae within the pond (compared to P2). Terrestrial habitat surrounding the pond comprises rough grassland and hedge. GCN sighted within the pond.	
P4	SJ 00044 76156	Large pond, heavily vegetated with <i>Typha</i> . Outflow suggests it is a drainage pond. Very shallow. Surrounded by steep grassy embankment with scrub and hedge.	



Pond	Grid Ref.	Description	Photograph
P5	SH 99952 76279	Large field pond used as a drinking hole by cows. Poached edges but drying out in these areas. Small area of bramble and hawthorn scrub adjacent to pond. Pondweed, forget-me-not, hard rush and common reed within the pond.	
P6	SJ 00898 76335	Very shallow field pond, where water has gathered in a field depression.	

Table 7: HSI assessment results

Pond Ref	SI1 Location		SI2 Pond Area		SI3 Permanence		SI4 Water Quality		SI5 Shade		SI6 Waterfowl		SI7 Fish		SI8 Pond Density		SI9 Terrestrial Habitat		SI10 Macrophyte Cover		Overall HSI	
	Measure	Score	Measure	Score	Measure	Score	Measure	Score	Measure	Score	Measure	Score	Measure	Score	Measure	Score	Measure	Score	Measure	Score	HSI	Suitability
P1	POND DRY – NOT SURVEYED																					
P2	A (optimal)	1	<50	0.05	Rarely	1	Good	1	0	1	Absent	1	Absent	1	1.91	0.81	Moderate	0.67	90	0.9	<b>0.69</b>	average
P3	A (optimal)	1	<50	0.05	Rarely	1	Good	1	0	1	Absent	1	Absent	1	1.91	0.81	Moderate	0.67	5	0.35	<b>0.63</b>	average
P4	A (optimal)	1	950	0.96	Rarely	1	Poor	0.33	5	1	Absent	1	Absent	1	1.91	0.81	Moderate	0.67	100	0.8	<b>0.82</b>	excellent
P5	A (optimal)	1	550	1	Rarely	1	Poor	0.33	5	1	Absent	1	Absent	1	1.91	0.81	Poor	0.33	50	0.8	<b>0.77</b>	good
P6	A (optimal)	1	100	0.2	Annually	0.1	Moderate	0.67	5	1	Absent	1	Absent	1	2.23	0.85	Moderate	0.67	5	0.35	<b>0.55</b>	below average

## eDNA

- 3.4 The results of the eDNA surveys are presented in Table 8 and included on Drawing G8166.011. Great crested newt eDNA was identified in pond P5 offsite.

*Table 8: eDNA survey results*

Pond Ref	Survey Date	Surveyor	Score	GCN Present? (Y/N)
P1	-	-	-	-
P2	-	-	-	-
P3	-	-	-	-
P4	28/04/2020	J. Crowder	0/12	N
P5	28/04/2020	J. Crowder	9/12	Y
P6	04/05/2020	J. Crowder	0/12	N

## Torch, Net Surveys and Eggs Searches Summary

- 3.5 The results of the torch surveys are presented in Table 9, the netting survey results are presented in Table 10 and the egg searches in Table 11. These results are also included on Drawing G8166.011. The codes M, F, J and T are used to denote male, female, juvenile and tadpole where known.
- 3.6 Great crested newts were identified in ponds P2 and P3 within the site. No great crested newts were identified in any of the offsite ponds during these surveys.
- 3.7 Smooth newts *Lissotriton vulgaris* were also identified within ponds P2 and P3 on site. No smooth newts were identified in any of the offsite ponds during these surveys. No other amphibian species were recorded in any pond.

Table 9: Torch survey results

Pond Ref	Date	Air Temp °C	Water Temp °C	Turbidity (0-5)	Vegetation Cover (0-5)	Shoreline covered %	GCN adult	Smooth/ Palmate newt adult	Toad	Frog	Fish?	Weather Conditions/ Comments
P1	Not surveyed											
P2	27.04.20	9	17	1	4	100	1 (M)	0	0	0	No	No rain or wind.
	04.05.20	10	12	2	4	100	0	4 (1M, 3F)	0	0	No	No rain, light wind. More algae noted in pond than previously.
	11.05.20	7	9	1	4	100	2 (M)	2 (F)	0	0	No	No rain or wind.
	18.05.20	15	18	2	4	100	1 (M)	2 (M)	0	0	No	No rain, light wind.
P2	26.05.20	16	19	2	3	100	0	4 (M)	0	0	No	No rain, light wind.
	01.06.20	14	17	2	3	100	0	1 (F)	0	0	No	No rain, light wind. Water level has dropped slightly.

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Pond Ref	Date	Air Temp °C	Water Temp °C	Turbidity (0-5)	Vegetation Cover (0-5)	Shoreline covered %	GCN adult	Smooth/ Palmate newt adult	Toad	Frog	Fish?	Weather Conditions/ Comments
P3	27.04.20	9	17	0	1	100	5 (2M, 3F)	4 (2M, 2F)	0	0	No	No rain or wind
	04.05.20	10	12	3	4	100	0	3 (2M, 1F)	0	0	No	No rain, light wind. More algae noted in pond than previously.
	11.05.20	7	9	3	4	100	0	1 (F)	0	0	No	No rain or wind.
	18.05.20	15	18	2	4	100	0	0	0	0	No	No rain, light wind.
P3	26.05.20	16	19	2	3	100	0	4 (3M, 1F)	0	0	No	No rain, light wind.
	01.06.20	14	17	2	3	100	0	1 (F)	0	0	No	No rain, light wind. Water level has dropped slightly.
P4	27.04.20	9	17	1	4	100	0	0	0	0	No	No rain or wind
	04.05.20	Not surveyed – negative eDNA result										
	11.05.20	Not surveyed – negative eDNA result										
	18.05.20	Not surveyed – negative eDNA result										
P4	26.05.20	Not surveyed – negative eDNA result										
	01.06.20	Not surveyed – negative eDNA result										
P5	27.04.20	9	17	5	1	100	0	0	0	0	No	No rain or wind. Bullocks in field.
	04.05.20*	10	12	5	2	90	N/S	N/S	N/S	N/S	No	No rain, light wind. Pond not torched due to turbidity and bullocks in field.

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Pond Ref	Date	Air Temp °C	Water Temp °C	Turbidity (0-5)	Vegetation Cover (0-5)	Shoreline covered %	GCN adult	Smooth/ Palmate newt adult	Toad	Frog	Fish?	Weather Conditions/ Comments
												Water level noted to have dropped since last visit.
	11.05.20*	7	9	5	2	90	N/S	N/S	N/S	N/S	No	No rain or wind. Pond not torched due to turbidity. Water level has dropped again.
	18.05.20*	15	18	5	2	90	N/S	N/S	N/S	N/S	No	No rain, light wind. Pond not torched due to turbidity. Water level has dropped again.
P5	26.05.20*	16	19	5	2	70	N/S	N/S	N/S	N/S	No	No rain, light wind. Pond not torched due to turbidity. Water level has dropped again.
	01.06.20*	14	17	5	3	70	N/S	N/S	N/S	N/S	No	No rain, light wind. Pond not torched due to turbidity. Water level has dropped again.
P6	Not surveyed											

\*Netting survey only, see Table 10

N/S – Not surveyed



*Table 10: Netting survey results*

Pond Ref	Survey Date	Great crested newt	Smooth/ Palmate newt	Toad	Frog
P1	Not surveyed				
P2	Not surveyed				
P3	Not surveyed				
P4	Not surveyed				
P5	27.04.20	N/S	N/S	N/S	N/S
	03.05.20*	0	0	0	0
	11.05.20*	0	0	0	0
	18.05.20*	0	0	0	0
	26.05.20*	0	0	0	0
	01.06.20*	0	0	0	0
P6	Not surveyed				

\*Pond information is conveyed in Table 9.

N/S – Not surveyed

*Table 11: Egg search results*

Pond Ref	Great crested newt	Smooth/ Palmate newt	Toad	Frog
P1	Not surveyed			
P2	No	No	No	No
P3	Yes	No	No	No
P4	No	No	No	No
P5	No	No	No	No
P6	Not surveyed			

## Results Summary

- 3.8 Table 13 summarises the amphibian survey results including the species recorded and the method by which it was recorded. The full amphibian survey results, are illustrated in G8166.011 (all presence/absence survey methods).

*Table 13: Summary of pond survey results*

TEP Pond Ref	HSI Category	GCN	Small Newt	Common Frog	Common Toad
P1	Dry	N/S	N/S	N/S	N/S
P2	Average	Present (T)	Present (T)	Absent (T, E)	Absent (T, E)
P3	Average	Present (T, E)	Present (T)	Absent (T, E)	Absent (T, E)
P4	Excellent	Absent (D, T, E)	Absent (T, E)	Absent (T, E)	Absent (T, E)
P5	Good	Present (H, D)	Absent (T, E, N)	Absent (T, E, N)	Absent (T, E, N)
P6	Below average	Absent (D)	N/S	N/S	N/S

The methods referred to are historic data search (H), eDNA (D), torch survey (T), egg searching (E for eggs, L for larvae) and hand netting (N). N/S denotes not surveyed.

## 4.0 Meta Population and Population Size Class Assessments

### Meta Population Assessment

- 4.1 Great crested newts often exist as a series interlinked subpopulations where individuals disperse between a cluster of ponds. This system is called a meta population. Small, isolated populations based on a single pond are normally less likely to persist in the long term. As such, impacts on a single pond may have knock-on effects on newts in nearby ponds. Studies reveal variation in dispersal distances, but great crested newts commonly move between ponds that are within around 250m of each other.
- 4.2 One meta population has been identified within the influence of the site and this is illustrated in Drawing G8166.011.

### Population Size Class Assessment

- 4.3 The size class is determined by the peak count on any one survey visit using any single survey method at a single pond and then adding these totals together for all ponds within a met population. Population size classes are classified as follows:
- 'small population' for a maximum peak count up to 10 GCN,
  - 'medium population' for a maximum peak count between 11 and 100 GCN,
  - 'large population' for a maximum peak count over 100 GCN.
- 4.4 Table 14 details those ponds supporting GCN and states the associated population size class based on the peak count.

*Table 14: GCN Population Size Class Assessment*

Pond Grouping	Method of Identifying GCN	Peak Counts	Population Size Class
P2, P3 & P5	T (P2, P3, P5) N (P5 only)	5+2+0	Small

---

## 5.0 Further Requirements

### Additional Surveys

- 5.1 There are currently no additional survey requirements. The survey scope and timing is sufficient to inform development proposals and review legal and policy requirements. The surveys have confirmed great crested newts are present in both onsite and offsite ponds and the survey data has been used to make a population size class estimate.
- 5.2 Great crested newt surveys are valid for at least 2 years and potentially 4 years or more depending on the specific use of the data, local conditions and the potential impact predicted on GCN. When data is greater than 2 years old advice should be sought from an appropriately experienced ecologist.

### Licensing / Reasonable Avoidance Measures

- 5.3 Great crested newts have been recorded on site and are likely to be affected by development proposals at Sites 1, 3 and 4. A NRW licence will be required to legally permit works on site. Mitigation for impacts on GCN will be required. Drawing G8166.011 presents the locations of the confirmed GCN ponds along with 50m, 250m and 500m impact zones<sup>6</sup>.
- 5.4 Great crested newts have been recorded approximately 375 m to the west of site 2. However, given the presence of the hospital development between the pond and this site, and the level of disturbance from traffic and pedestrians, it is highly unlikely that GCN will range into this site therefore no implications with regard to GCN are anticipated from development of site 2.

---

6: The zones used in Natural England's Rapid Risk Assessment, within the "GCN method statement for EPS licence application, form WML-A114-2 (December 2015)



## **DRAWINGS**

- Pond Location Plan (G8166.005)
- GCN Survey Results (G8166.011)



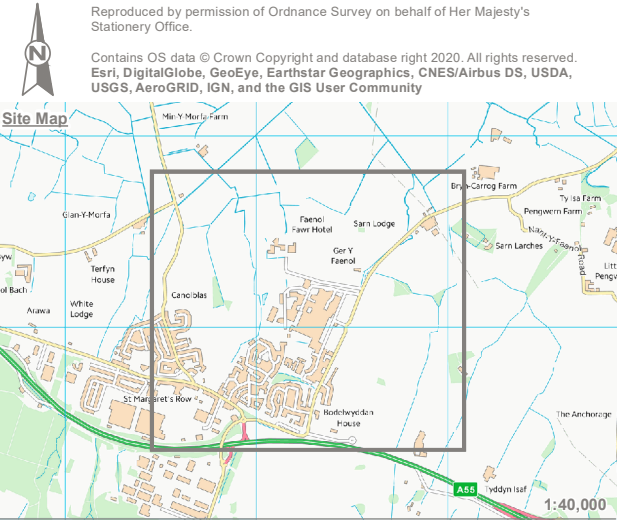


**KEY**

- Approximate site location
- Approximate site locations - 500m buffer
- Approximate pond location

**Note:**

The locations of ponds are indicative.



Rev	Description	Drawn	Approved	Date



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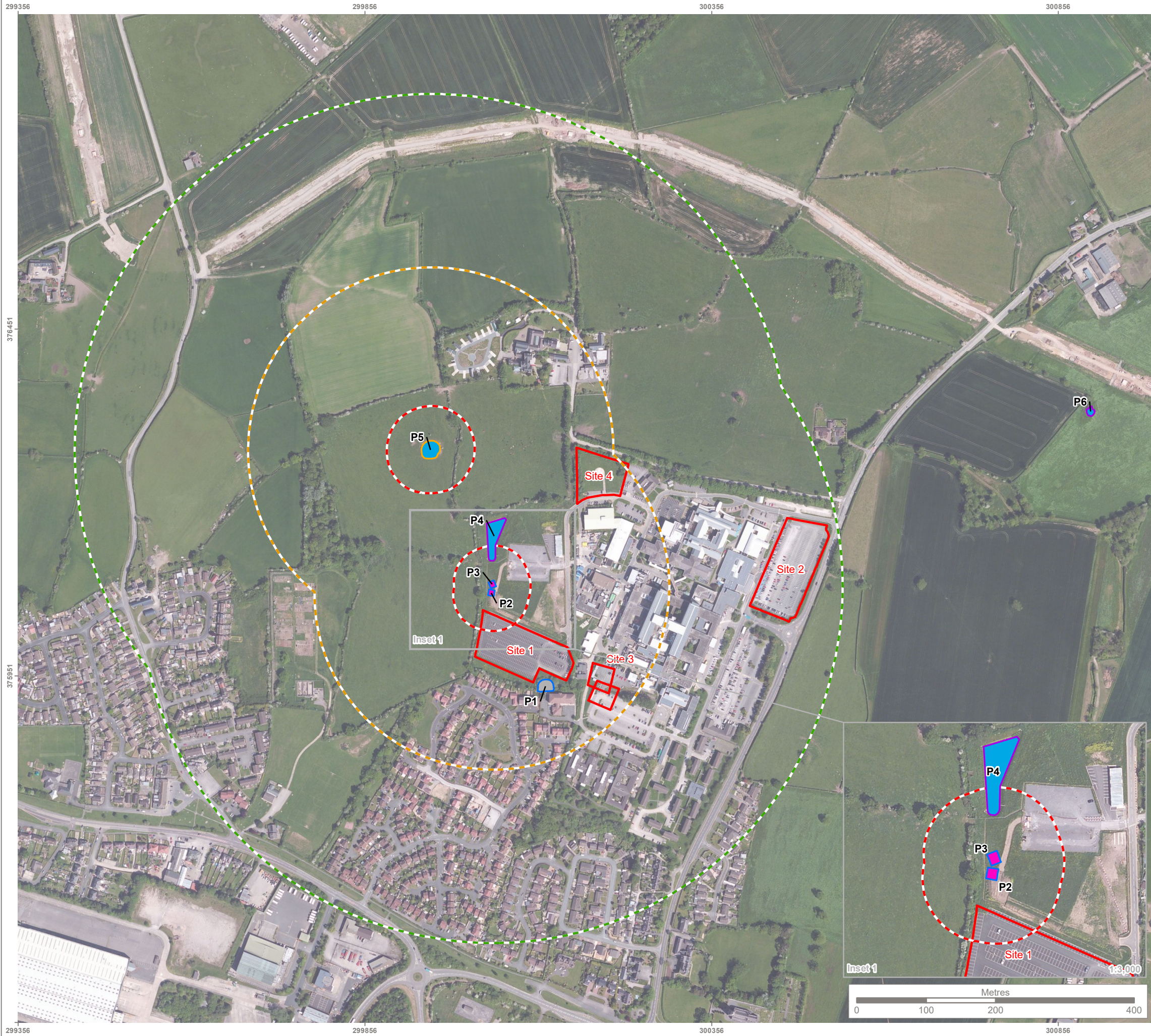
Project  
Glán Clwyd Hospital, Bodelwydd

Title  
Pond Location Plan - Aerial

Drawing Number  
G8166.005

Drawn	Checked	Approved	Scale	Date
CW	MK	CC	1:5,500 @ A3	15/04/2020





### KEY

- Site boundary
- Pond
- Dry pond

### GCN Traditional Survey Results

- Present

### eDNA Results

- Positive
- Negative
- Not surveyed

### GCN Buffer Zones

- Core habitat (0-50m)
- Intermediate habitat (50-250m)
- Distant habitat (250-500m)

**Note:**  
The locations of ponds are indicative.

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Rev	Description	Drawn	Approved	Date



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Project  
Glan Clwyd Hospital, Bodelwydd

Title  
GCN Survey Results

Drawing Number  
G8166.011

Drawn	Checked	Approved	Scale	Date
CW	SA	CC	1:5,500 @ A3	02/07/2020





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## **APPENDIX D: Water Vole Survey (2021)**



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# GLAN CLWYD HOSPITAL BODELWYDDAN WATER VOLE - TECHNICAL REPORT

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Document Title	Water Vole - Technical Report
Prepared for	BAM Construction Ltd
Prepared by	TEP - Warrington
Document Ref	8166.006

Author	Cameron Campbell
Date	April 2022
Checked	Peter Bonney
Approved	Peter Bonney

Amendment History					
Version	Date	Modified by	Check / Approved by	Reason(s) issue	Status
1.0	August 2020	CC	AE	Original issue	Superseded
2.0	April 2022	CC	PB	Updated to include results of 2021 surveys	Current

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## **APPENDICES**

APPENDIX A:     Habitat Suitability of Ditches (100m Sections)

APPENDIX B:     Survey Design

APPENDIX C:     Field Sign Surveys - One Survey or Two?

## **DRAWINGS**

G8166.020 - Water Vole Survey Results - Visit 1

G8166.021 - Water Vole Survey Results - Visit 2

G8166.022 - Water Vole Survey Results - Visit 3

Powell Dobson Architects Drawing - Adult and Older Persons Mental Health Unit Block  
Plans (July 2021)

## Executive Summary

1. TEP was commissioned by BAM Construction Ltd in June 2021, to carry out an updated water vole *Arvicola amphibious* presence/absence survey of suitable watercourses and waterbodies at two sites within the Glan Clwyd Hospital campus in Bodelwyddan, Denbighshire. The updated surveys were required owing to a change in the location of one of the sites.
2. One pond (P4) and one ditch (D2) were identified for survey. Water vole surveys of P4 and D2 were previously undertaken by TEP in 2020. This report supersedes the findings of the 2020 surveys.
3. All surveys followed the new Water Vole Mitigation Handbook 2016 (*Dean et al* 2016). The pond and ditch was assessed to be suitable for supporting water vole.
4. The 2021 surveys confirmed that water voles are present within P4. The field signs observed indicate that the pond supports a low to medium population density of water voles.
5. The type of proposed development works determines the baseline survey data required to prove presence or likely absence of water vole. The indicative development proposals show that there is potential for impacts to occur to water voles and water vole habitat within P4, although the extent and permanence of these impacts is not yet clear.
6. A site-specific development licence for water voles will therefore be required from Natural Resources Wales to enable development to proceed. A conservation net gain must be demonstrated as part of any licence application, and there are opportunities to achieve this within the pond or elsewhere in the hospital campus. The method required to achieve conservation net gain will depend on the nature of the impacts.
7. There is also scope for habitat enhancement and creation by sympathetic clearance and management of areas of encroaching scrub along the banks of the pond.
8. If works have not commenced within 12 months of the date of this report (i.e. by April 2023), an updated water vole survey should be undertaken.

## 1.0 Introduction

- 1.1 The Environment Partnership (TEP) Ltd was commissioned in March 2020 by BAM Construction Ltd to provide ecology services in relation to four sites within the Glan Clwyd Hospital Campus in Bodelwyddan, Denbighshire.
- 1.2 A full planning application for the construction of a new adult and older person's mental health unit (AOPMHU) on Site 1 and a multi-storey car park (MSCP) on Site 2 was submitted to Denbighshire County Council in 2020. Water vole surveys of two ditches adjacent to each site (D1 and D2) were undertaken by TEP in June and August 2020 to inform the planning application.
- 1.3 Planning permission was refused in December 2020, owing to the proximity of the AOPMHU proposals to neighbouring residential properties. An alternative location was subsequently sought for the proposed AOPMHU and site 1 was relocated in February 2021. No changes to the proposed MSCP development on Site 2 have been made.
- 1.4 TEP was re-commissioned by BAM Construction Ltd in June 2021 to undertake updated water vole surveys, to inform a new planning application for Site 1 and Site 2. The new planning application is due to be submitted to Denbighshire County Council in 2022.
- 1.5 The water vole *Arvicola amphibious* survey forms part of a suite of ecology services to provide input into the planning application. This assessment has been requested to inform future decisions regarding the proposed developments on Sites 1 and 2. Plans for Sites 3 and 4 are currently on hold and are not included within the scope of the updated surveys.
- 1.6 The current development plans have indicated that there is potential for the garden areas associated with the proposed AOPMHU to impact water voles and water vole habitat in Pond 4, adjacent to the new building location (Powell Dobson Architects Drawing - Adult and Older Persons Mental Health Unit Block Plans (July 2021)).
- 1.7 The results of the 2021 water vole survey are included in this report as drawings G8166.020 to G8166.022. This report supersedes the findings of the 2020 surveys.

### Site Location and Description

- 1.8 Site 1 (central grid reference SJ 00100 76154) is approximately 0.95 ha in size and is located in the north-west corner of the Glan Clwyd Hospital campus. The site is bounded to the south and east by existing hospital buildings and access roads, to the west by an existing drainage pond and to the north by agricultural land.
- 1.9 Site 2 (central grid reference SJ 00472 76103) is approximately 1 ha in size and is located in the north-east corner of the Glan Clwyd Hospital campus. The site is bounded to the north, south and west by existing hospital access roads, and to the east by a single carriageway road.
- 1.10 The wider area surrounding the hospital campus comprises agricultural land to the north, east and west of the campus, and residential development to the south. The main A55 dual carriageway is located beyond the residential area.

- 1.11 The boundaries of Site 1 and Site 2 are represented by the red line boundaries in the site location plan (Figure 1).



Figure 1 - Site Location Plan

## Legislation

- 1.12 In England and Wales water voles are listed on Schedule 5 of the Wildlife and Countryside Act (WCA) 1981, receiving full protection since 2008. The WCA 1981, together with amending legislation, lists the following as offences:
- Intentionally killing, taking or injuring a water vole (Section 9(1));
  - Possessing or controlling any live or dead water vole, or any part or derivative (Section 9(2));
  - Intentionally or recklessly damaging or destroying a water vole's place of shelter or protection (Section 9(4)(a));
  - Intentionally or recklessly disturbing a water vole whilst it is occupying a structure or place which it uses for shelter or protection (Section 9 (4)(b));
  - Intentionally or recklessly obstruction access a water vole's place of shelter or protection (Section 9(4)(c));
  - Selling, offering for sale, or possessing or transporting for the purposes of sale, any live or dead water vole, or any part or derivative, or advertising any of these for buying or selling (Section 9(5)).
- 1.13 There is no provision under the WCA 1981 (as amended) for licensing what would otherwise be offences for the purpose of maintenance or land management.

- 1.14 Prior to February 2016 if it could be demonstrated that any action that would otherwise have been an offence was the “incidental result” of a lawful operation and could not reasonably have been avoided, this would have constituted as a defence against prosecution. However; since 2016 displacement activities (excluding justifiable mowing) are no longer covered by the “incidental result” defence. Therefore any displacement activities now require a licence.
- 1.15 In England and Wales a licence to displace water vole, will be issued for the purpose of conservation. The proposed project will therefore need to deliver a conservation benefit for water vole. Legal protection for water voles in Scotland differs to that of England and Wales.

## 2.0 Methodology

### Desktop Study

- 2.1 Desktop records were gathered in May 2021 from North Wales Environmental Information Service (COFNOD) up to 2km from the Site. These records were initially used to inform the Ecological Assessments for Site 1 (TEP Report Ref: 8166.007) and Site 2 (TEP Report Ref: 8166.003v2).

### Field Survey

- 2.2 The water vole surveys were led by experienced ecologist Peter Bonney on 24th June 2021 and 9th September 2021, accompanied by a health and safety assistant.
- 2.3 The standard methodology as outlined within the latest guidance by Dean *et al.* (2006)<sup>1</sup> and Strachan *et al* (2011)<sup>2</sup> was followed, to complete a thorough search for evidence which would indicate the presence of water vole and other riparian mammals both on the site and locally, which include:
- Burrows;
  - Feeding remains;
  - Droppings;
  - Footprints;
  - Incidental evidence of other riparian mammals (including otter *Lutra lutra* and North American mink *Neovison vison*)
- 2.4 The weather during the first survey in June was overcast, with light rain at the start of the survey. Weather during the second survey in September was dry and warm. No significant rainfall had occurred in the 48 hours preceding the surveys.

### Survey Design

- 2.5 The type of proposed development works determines the baseline survey data required to prove presence or likely absence of water vole.
- 2.6 Table 1 outlines the watercourses and waterbodies adjacent to each development site, and identifies which of these were included in the 2021 survey scope.

---

<sup>1</sup> Dean, M, Strachan, R., Gow, D. and Andrews, R. (2016) The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series) (2016). Eds Fiona Mathews and Paul Chanin. The Mammal Society.

<sup>2</sup> Strachan, R., Moorhouse, T. & Gelling, M. (2011) Water vole conservation handbook (3rd Ed.). Wildlife Conservation Research Unit, Oxford



Table 1: 2021 Survey Scope

Site	Watercourse / Waterbody Ref	Location in relation to site	Suitable water vole habitat?	Included within survey scope	Rationale for inclusion/exclusion
1	D1	Along western boundary	No - heavily shaded	No	Unsuitable habitat present and located over 5 m from proposed development works.
	D5	Along eastern boundary	No - ditch is dry	No	Unsuitable habitat present and located over 5 m from proposed development works.
	P4	Situated in the west of the site	Yes	Yes	Suitable habitat present and located within 5 m of proposed development works.
2	D2	Along the southern half of the eastern boundary	Yes	No	Located over 5 m from proposed development works.

- 2.7 A precautionary walkover of D2 was undertaken in June 2021, as water voles were recorded along this watercourse during the 2020 surveys. However, as the proposed MSCP development is over 5 m from the ditch, a second survey was not required.
- 2.8 The full suite of two surveys of P4 was undertaken, given the proximity of the proposed development to the eastern bank of the pond. All accessible areas of the pond were subject to survey. The survey areas are shown on Drawing 1.
- 2.9 It was noted during the first survey visit on 24th June 2021 that many of the latrines and feeding remains identified within P4 had been inundated by water, making their identification difficult. As such, ten 60 cm x 30 cm latrine rafts were deployed at 10 m intervals around the edge of P4 during the second survey visit on 9th September 2021. Water voles are naturally inquisitive and will leave droppings and latrines on rafts quite quickly and will use them as feeding platforms if tucked into vegetation (refer to Section 3.3.13 of Water Vole Mitigation Handbook 2016 for more information).
- 2.10 Latrine rafts were positioned within the areas of standing water in P4 and on bankside habitat close to the edge of the water. The rafts were left in situ for seven days and inspected by TEP Ecologists Cameron Campbell and Danielle Langton on 16th September 2021, immediately prior to their retrieval.

- 2.11 The water vole survey was designed taking into account the proposed development and The Water Vole Mitigation Handbook 2016, see Appendix 1 for full details.

Survey Constraints

- 2.12 Access to the full perimeter of the pond was not possible due to dense vegetation cover along the southern bank. The pond was accessed as far as possible and where the surveyors could not survey from within the pond, bankside observations were made.
- 2.13 Although set out to be flush with the water or vegetation surface, several of the latrine rafts were found to have popped up at the time of collection. However, these remained stable enough to provide opportunities for latrine creation and also created habitat underneath that water voles could utilise for additional shelter. As such, this was not considered to be a significant limitation

## 3.0 Results

### Desktop Study

- 3.1 The desk study identified two historic records of water vole within 2 km of the site, from 2009 and 2016. The closest record is approximately 1.3 km to the north-west of the site.
- 3.2 A single water vole was historically sighted on Ditch 3 within the hospital campus in 2013, during vegetation clearance works as part of another development (AEDC Ltd Ref: 0696-GCH/AEDC/QU-09). Ditch 3 is associated with a future development site and is not included within the scope of this assessment.
- 3.3 Surveys undertaken by TEP in 2020 recorded several latrines of adult and juvenile water vole in D2 in June 2020. A single water vole latrine was recorded in P4 during the June and August 2020 surveys.

### Field Survey

#### Habitat Suitability

- 3.4 Full results of the habitat suitability of all the watercourses and ponds subject to survey are provided in the Appendix A.
- 3.5 In summary; D2 and P4 were found suitable for water vole.
- 3.6 D2 is a steep-sided ditch located in the east of site 2, between the site and Rhuddlan Road. Tall ruderal vegetation, predominantly rosebay willowherb *Chamerion angustifolium*, dominates the banks and is shading the ditch channel. The ditch is culverted at both ends and holds slow-flowing water, which is approximately 5 cm deep. It is possible that the northern culvert connects the ditch with another, located approximately 120 m to the north.
- 3.7 P4 is a large SUDS pond located within Site 1. This pond was originally created when the adjacent pathology building was constructed. It is a large waterbody and is heavily vegetated with greater reedmace *Typha latifolia*, frequent marsh marigold *Caltha palustris*, fleabane *Pulicaria dysenterica*, great willowherb *Epilobium hirsutum* and occasional purple loosestrife *Lythrum salicaria*. Two outfalls present in the north of the pond suggests it is a drainage pond. The banks are steep and vegetated with scrub including willow *Salix sp.* and bramble *Rubus fruticosus agg.*. The water level in the pond is generally shallow, with deeper patches (up to 0.5 m).

#### Water Vole Presence/Likely Absence

- 3.8 The results of the water vole presence or likely absence surveys are presented in Table 1 and Table 2 below (refer to Drawings G8166.020/021 for detailed maps). The findings from each latrine raft deployed on P4 are presented in Table 3 and Drawing G8166.003.

*Table 2 - Water Vole Survey Results (first survey round)*

ID	Water Vole Field Evidence:	Date:	24/06/2021
D2	No evidence of water vole.		
P4	3x latrines (one appears to be in regular use).		

*Table 3 - Water Vole Survey Results (second survey round)*

ID	Water Vole Field Evidence:	Date:	09/09/2021
D2	Not surveyed		
P4	3x feeding remains (fresh), 1x feeding remains (old), 2x piles droppings, 1x burrow (confirmed water vole), 2x burrow (possible water vole)		

*Table 4 - Water Vole Survey Results (third survey round)*

ID	Water Vole Field Evidence:	Date:	16/09/2021
P4 - Latrine Raft 1	No evidence of water vole.		
P4 - Latrine Raft 2	No evidence of water vole.		
P4 - Latrine Raft 3	No evidence of water vole.		
P4 - Latrine Raft 4	1x pile droppings (14 individual droppings)		
P4 - Latrine Raft 5	No evidence of water vole.		
P4 - Latrine Raft 6	No evidence of water vole.		
P4 - Latrine Raft 7	No evidence of water vole.		
P4 - Latrine Raft 8	No evidence of water vole.		
P4 - Latrine Raft 9	No evidence of water vole.		
P4 - Latrine Raft 10	1x pile droppings (6 individual droppings)		
P4 - Wooden plank	1x pile droppings (16 individual droppings)		

### Relative Population Density (RPD)

- 3.9 It is not possible to calculate the number of individual water voles from the number of latrine counts; however, the number of latrines indicates a level of water vole activity and density at the site, which can be used to assess potential impacts of the proposed development and to design appropriate avoidance and mitigation (if required).

- 3.10 The number of latrines present give an indication of the relative water vole population size. The number and location of latrines also identify areas of the site most valuable for water vole. The survey area can then be divided into three categories that support water voles at a “high”, “medium” or “low” density.
- 3.11 Relative water vole population density is calculated by combining the number latrines and other confirmatory field signs per 100m of bankside habitat during the first and second survey.
- 3.12 Table 4, below explains the relative population density calculation of water vole taken from The Water Vole Mitigation Handbook 2016 (page 16), with the actual assumed population density based on survey results explained in Table 4.

*Table 5 - Relative Population Density (RPD)*

First half of Survey season (mid-April - June)	Second half of survey season (July - September)	Relative Population Density (RPD)
10 or more	20 or more	<b>HIGH</b>
3 to 9	6 to 19	<b>MEDIUM</b>
Less than 2 or none, but with other confirmatory field signs	Less than 5 or none, but with other confirmatory field signs	<b>LOW</b>

- 3.13 Given the nature of P4, it is not possible to assess population density using the conventional method described above. Across the survey visits, three latrines were identified during the spring visit and three piles of droppings during the second survey visit. Droppings were also identified on three of the ten latrine rafts deployed around the pond. This suggests that there is a low to medium population of water voles present within the pond and associated banks.

### Summary

- 3.14 The habitat within P4 is highly suitable for water voles. Positive evidence of water vole was recorded within P4, with a variety of field signs recorded. Water vole presence was also confirmed within the pond in 2020.
- 3.15 Although D2 provides suitable habitat for water voles, no evidence of their presence was recorded during the 2021 surveys. As evidence was found in June 2020, it is likely water voles are using the wider ditch network rather than this watercourse as a standalone habitat.
- 3.16 No incidental evidence of otter or mink were recorded in D2 or P4 during the survey

## 4.0 Photographs



*Figure 2: Overview of P4, looking south-west*



*Figure 3: Water vole droppings within P4*



*Figure 4: Water vole burrow on east bank of P4*



*Figure 5: Water vole feeding remains in P4*





*Figure 6: Water vole droppings*



*Figure 7: Latrine raft with droppings*



*Figure 8: Water vole droppings on plank of wood within P4*



*Figure 9: Example of latrine raft on bankside habitat*



## 5.0 Evaluation

- 5.1 The survey consisted of two separate site visits on the 24th June and 9th September 2021, to enable adequate coverage of P4 within Site 1. A single visit of D2 adjacent to Site 2 was also undertaken on 24th June 2021.
- 5.2 The first survey was carried out towards the end of June when water vole activity would be almost at its peak with extensive breeding activity and colony creation. The second survey visit was carried out in early September, towards the end of the season when colony dispersal and contraction occurs.
- 5.3 No evidence of water vole activity was found in D2. Although D2 provides suitable habitat for water voles and there is potential for water voles to utilise this ditch in future, given the proposed MSCP works will be over 5 m from the banks of D2, no impacts to water voles are anticipated from the development of Site 2.
- 5.4 Field signs and activity recorded P4 indicates a low to medium density of water voles, with sufficient suitable habitat within the pond for colony expansion and dispersal.
- 5.5 The habitat within P4, primarily the eastern and western banks, is highly suitable for water voles. However, some areas along the banks were found to be scrubbed over with dense willow sp. *Salix sp.* and bramble *Rubus fruticosus agg.* In addition, the nature of the waterbody meant some field signs were inundated with water. Latrine rafts were deployed following the survey on 9th September to mitigate for these limitations. Rafts were set at 10m intervals within the pond to better inform the overall results. The rafts were inspected and collected on 16th September 2021.
- 5.6 Water vole activity was confirmed within the pond during both survey visits. The highest concentration of water vole activity across both survey visits was in the eastern half of the pond, and associated bankside habitats. Some of this bankside habitat will be impacted by the proposed AOPMHU development at Site 1.
- 5.7 Water voles are highly transient and mobile and can move quite easily within suitable habitat within the catchment. Although there is limited connectivity between the pond and the wider ditch network, it is considered that the water vole population within the pond will readily occupy all areas of the catchment at some time, depending on environmental conditions.
- 5.8 No incidental evidence of otter *Lutra lutra* was identified during the water vole surveys undertaken on site in 2020 or 2021.

## 6.0 Recommendations

- 6.1 The survey confirmed water vole presence and activity within P4. The mitigation for the works at Site 1 will be determined to avoid incidental harm to the water vole population (refer to Appendix B). This follows guidance outlined in The Water Vole Mitigation Handbook (2016).
- 6.2 Whilst the preference to avoid potential impacts to existing water vole populations and loss of habitat is to maintain a minimum buffer of 3-5 m from the toe of the bank of the pond, owing to the size of the proposed AOPMHU and the physical constraints of Site 1 it is not possible to achieve this. As such, there is potential for destruction and disturbance of water voles, and their habitat to occur.
- 6.3 The indicative development plans (Powell Dobson Architects Drawing - Adult and Older Persons Mental Health Unit Block Plans (July 2021)) show approximately 100m<sup>2</sup> (0.01 ha) of the eastern bank of the pond will be directly impacted by the proposed development. Although it is currently unclear whether this habitat will be permanently or temporarily lost, the proposed works will directly affect suitable and active water vole habitat.
- 6.4 As the survey identified a low to medium density of water voles within P4, and as the eastern bank provides habitat for water vole burrows, a suitable mitigation strategy and method statement will be required to inform an application for a Site Specific licence from Natural Resources Wales (NRW). The licence application will need to demonstrate a conservation gain, therefore suitable riparian habitat enhancement will need to be demonstrated within the near catchment, prior to the commencement of works, for displacement of water voles from the impacted habitat.
- 6.5 There are opportunities to achieve conservation net gain within the pond or within the wider hospital campus. The method chosen will depend on the permanence of the impacts to the bankside habitat.
- 6.6 Provided the planning application is approved, construction of the new Mental Health Unit is due to commence in December 2023. Measures to achieve conservation net gain will therefore need to be established prior to Spring 2023 to enable the habitat to develop and establish over the summer months, prior to works commencing on site.
- 6.7 There is also scope for habitat enhancement and creation by sympathetic clearance and management of areas of encroaching scrub along the banks of the pond.
- 6.8 Given that water vole are very dynamic within the riparian catchment, and the site is suitable for this species, it is recommended that a repeat of the survey should be undertaken if, after 12 months from the date of this report (i.e. by April 2023), no works have occurred on site.

## References

Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

Government Circular: Biodiversity & Geological Conservation – Statutory Obligations and their impact within the Planning System. ODPM Circular 0/2005, Defra Circular 01/2005 downloadable at <http://www.communities.gov.uk/publications/planningandbuilding/circularbiodiversity><sup>1</sup>

Strachan, R., Moorhouse, T. & Gelling, M. (2011) Water vole conservation handbook (3rd Ed.). Wildlife Conservation Research Unit, Oxford.

The Wildlife & Countryside Act 1981 (As amended)

UK Biodiversity Steering Group (1995) Biodiversity – the UK Steering Group Report. Volume 2: Action Plans. P89 SAP for Pipistrelle. London, HMSO.

## **APPENDIX A:   Habitat Suitability of Ditches (100m Sections)**

<b>D2</b>	<b>Description:</b>
<b>Bank Profile:</b>	Steep, vegetated banks.
<b>Bank Substrate:</b>	Soft earth.
<b>Water Depth:</b>	< 0.2 m
<b>Fluctuations:</b>	Possible
<b>Shading:</b>	Some shading from bankside and in-channel vegetation
<b>Bank Vegetation:</b>	Tall ruderal
<b>In-Channel Vegetation:</b>	Parts of channel are dominated by tall ruderal vegetation
<b>Management:</b>	Engineered culvert outfalls at either end of the ditch. No other obvious management activities observed.
<b>Constraints:</b>	N/A
<b>Suitability:</b>	<b>YES</b>

<b>P4</b>	<b>Description:</b>
<b>Bank Profile:</b>	Steep, vegetated banks. Pond is approx. 50 m long and 20 m wide.
<b>Bank Substrate:</b>	Soft earth
<b>Water Depth:</b>	Up to 0.5 m
<b>Fluctuations:</b>	Possible
<b>Shading:</b>	Overhanging trees and scrub in places
<b>Bank Vegetation:</b>	Grassland, scrub and tall ruderal
<b>In-Channel Vegetation:</b>	Dominated by greater reedmace
<b>Management:</b>	Engineered culvert outfalls in the north-west and north-east corners of the pond. No other obvious management activities observed.
<b>Constraints:</b>	A thorough search of the southern banks was not possible owing to scrub growth. Inundation of water dissolves latrines.
<b>Suitability:</b>	<b>YES</b>

## **APPENDIX B: Survey Design**

Survey Design. (*The Water Vole Mitigation Handbook, Box 1, Page 9*)

<b>1. Type of works:</b> <i>Very small-scale works affecting up to 15m of watercourse</i>	
Example project	Construction of an outfall, bridge repair works, or installation of pipes up to 15m long within a narrow field drains (where these do not form part of a larger development)
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas plus 100m upstream and downstream. A comprehensive desk study exercise will not necessary be required.
Additional information (if water voles present)	Micro-mapping of the habitat and burrow locations to allow design to minimise impacts (when relevant). Further data may be needed to ensure that there is sufficient alternative habitat available to displace water voles into. This may be obtained through desktop study or a habitat assessment combined with ‘spot checks’ for water voles over a wider area (1-2km upstream and downstream of the works).

<b>2. Type of works:</b> <i>Works temporarily affecting up to 50m of watercourse</i>	
Example project	Pipeline crossing a watercourse
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus 200m upstream and downstream of the works. A comprehensive desktop study exercise will not necessarily be required.
Additional information (if water voles present)	Micro-mapping of the habitat and burrow locations to allow design to minimise impacts (when relevant). Further data may be needed to ensure that there is sufficient alternative habitat available to displace water voles into. This may be obtained through desktop study or a habitat assessment combined with ‘spot checks’ for water voles over a wider area (1-2km upstream and downstream of the works).

<b>3. Type of works:</b> <i>Works temporarily affecting more than 50m of watercourse</i>	
Example project	Watercourse re-profiling or repair/reinstatement of bank stabilisation structures
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus at least 200m upstream and downstream of the works. For works affecting more than 500m of watercourse, the study area should increase to 500m upstream and downstream of the works. A comprehensive desk study exercise will not necessarily be required, but would be advisable for works affecting $\geq 250\text{m}$ of watercourse.
Additional information (if water voles present)	Desk study – Site and up to 2-5km around it (or a habitat assessment combined with ‘spot checks’ for water voles) to inform the approach to mitigation and the assessment of fragmentation effects. The study area should be proportionate to the length of habitat affected.



**4. Type of works:** *Works with permanent impacts affecting 15-50m of watercourse*

Example project	Bank side revetment works
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus 100-200m upstream and downstream of the works (proportionate to the length of watercourse affected).  Desk study – site and up to 2km around it (or a habitat assessment combined with ‘spot checks’ for water voles).
Additional information (if water voles present)	Sufficient information is likely to have been provided by the ‘presence/likely absence’ surveys.

**5. Type of works:** *Works with permanent impacts affecting more than 50m of watercourse OR Works requiring permanent culverting of watercourse*

Example project	Bank side revetment works  OR  Highway schemes or some residential/mixed-use developments
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus 200-500m upstream and downstream of the works (proportionate to the likely fragmentation effects).  Desk study – site and up to 2-5km around it, or a habitat assessment combined with ‘spot checks’ for water voles.
Additional information (if water voles present)	The study area for the desk study (or habitat assessment combined with ‘spot checks’ for water voles) may need to be increased to inform the approach to mitigation.

**6. Type of works:** *Very large scale works*

Example project	Coastal re-alignment projects (where there are reasonable grounds to expect the presence of water voles)
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus approximately 1km around it.  Desk study – site and up to 10km around it (or a habitat assessment combined with ‘spot checks’ for water voles).
Additional information (if water voles present)	The study area for the desk study (or habitat assessment combined with ‘spot checks’ for water voles) may need to be increased to inform the approach to mitigation.

## **APPENDIX C: Field Sign Surveys - One Survey or Two?**

## Field sign surveys - one site visit or two?

### *The Water Vole Mitigation Handbook (Page 15)*

The water vole is a mobile species that responds to habitat changes over the course of the breeding season: a single visit can therefore be insufficient to confirm likely absence in many cases. In addition, where water voles are present, survey data based on two visits will allow a more robust assessment of the impacts of the project, particularly where water voles use different parts of a site during different parts of the breeding season. This can also be important in determining the most appropriate approach to mitigation. These guidelines therefore recommend that two field survey visits are routinely undertaken. However, it is recognised that the second visit may not be required in some cases, and it may therefore be possible to make a case for an assessment based on one visit. Examples of scenarios where a single visit (before submitting a planning application) may be sufficient as follows:

#### **1. Water vole presence is confirmed during the first survey visit.**

A second visit may not be needed where the assessment of effects on water voles can be made on a precautionary basis (i.e. water voles are present throughout the site at the maximum density that the habitat could support), and the approach to mitigating incidental mortality (displacement, relocation by trapping, off-site translocation, etc.) can be determined from the first visit alone.

The assessment of the quality of the habitat, and therefore the likely maximum density of water voles, will need to consider changes to the habitat in different parts of the breeding season as a result of natural processes (e.g. changes to water level) and management activities. This can be a difficult assessment to make for many sites.

#### **2. Water vole presence is not confirmed during the first survey visit.**

A second visit may not be needed where the habitat is of very low suitability for water voles and there is a very low likelihood that water voles are present in the surrounding area - up to 2km from the area of the proposed works, or less where significant barriers to water vole dispersal are present.

The assessment of the suitability of the habitats will need to consider changes to the habitat in different parts of the breeding season as a result of natural processes and management activities. This can be a difficult assessment to make for many sites. It will be difficult to make a robust case for not undertaking a second survey where access to surrounding areas is limited or impossible.

A second visit may also not be needed where the assessment of effects on water voles can be made on a precautionary basis (as per point 1 above)

**In all cases, a second visit would be advisable prior to commencing works.**

## **DRAWINGS**

**G8166.020 - Water Vole Survey Results - Visit 1**

**G8166.021 - Water Vole Survey Results - Visit 2**

**G8166.022 - Water Vole Survey Results - Visit 3**

**Powell Dobson Architects Drawing - Adult and Older Persons Mental Health  
Unit Block Plans (July 2021)**



**KEY**

Site boundary

**Water Features**

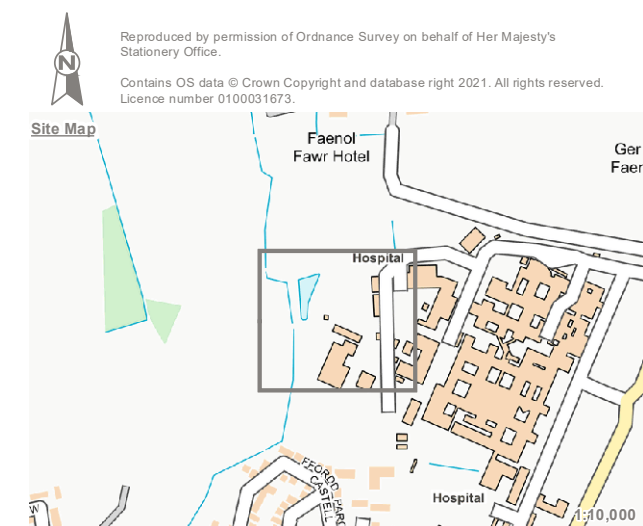
Swamp

**Water Vole Evidence**

Feeding remains

Droppings

Latrine



Rev	Description	Drawn	Approved	Date



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Project  
Glan Clwyd Hospital, Bodelwydda

Title  
Water Vole Survey 2021  
Site 1, Visit 1 - 24<sup>th</sup> June 2021

Drawing Number  
G8166.020

Drawn	Checked	Approved	Scale	Date
MK	CW	CC	1:700 @ A3	07/12/2021



**KEY**

Site boundary

**Water Features**

Swamp

**Water Vole Evidence**

Burrow

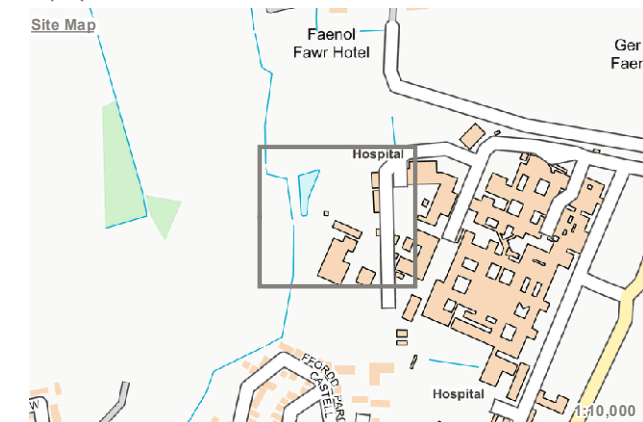
Burrow (inactive)

Feeding remains

Droppings



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Title  
Water Vole Survey 2021  
Site 1, Visit 2 - 09<sup>th</sup> September 2021

Drawing Number  
G8166.021

Drawn	Checked	Approved	Scale	Date
MK	CW	CC	1:700 @ A3	07/12/2021





### KEY

Site boundary

### Water Features

Swamp

### Water Vole Evidence

Plank of wood with droppings

### Raft Locations

Raft with droppings

Raft with no evidence



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Title  
Water Vole Survey 2021  
Site 1, Visit 3 - 16<sup>th</sup> September 2021

Drawing Number  
G8166.022

Drawn	Checked	Approved	Scale	Date
MK	CW	CC	1:700 @ A3	07/12/2021



Adult and Older Persons Mental Health Unit

Block Plans

22<sup>nd</sup> July 2021





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For:

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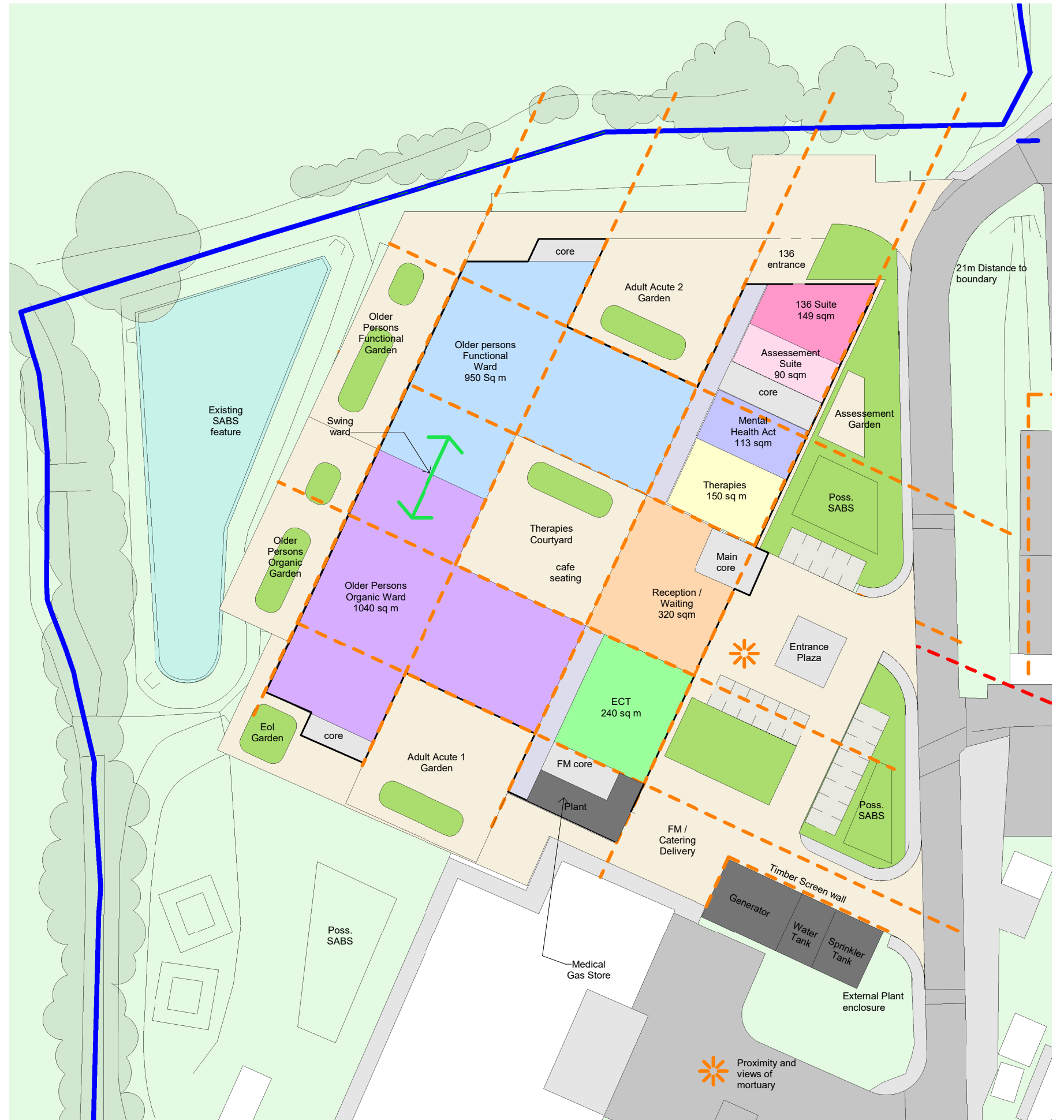
Park, Wern Fawr Lane, Old St Mellons, Cardiff CF3 5EA registered in England & Wales No: 3873802

# Contents

- 1.0 Preferred Option
- 1.1 Ground Floor Plan
- 1.2 First Floor Plan
- 1.3 Second Floor Plan
- 1.4 Massing

## 1.0 Preferred Option

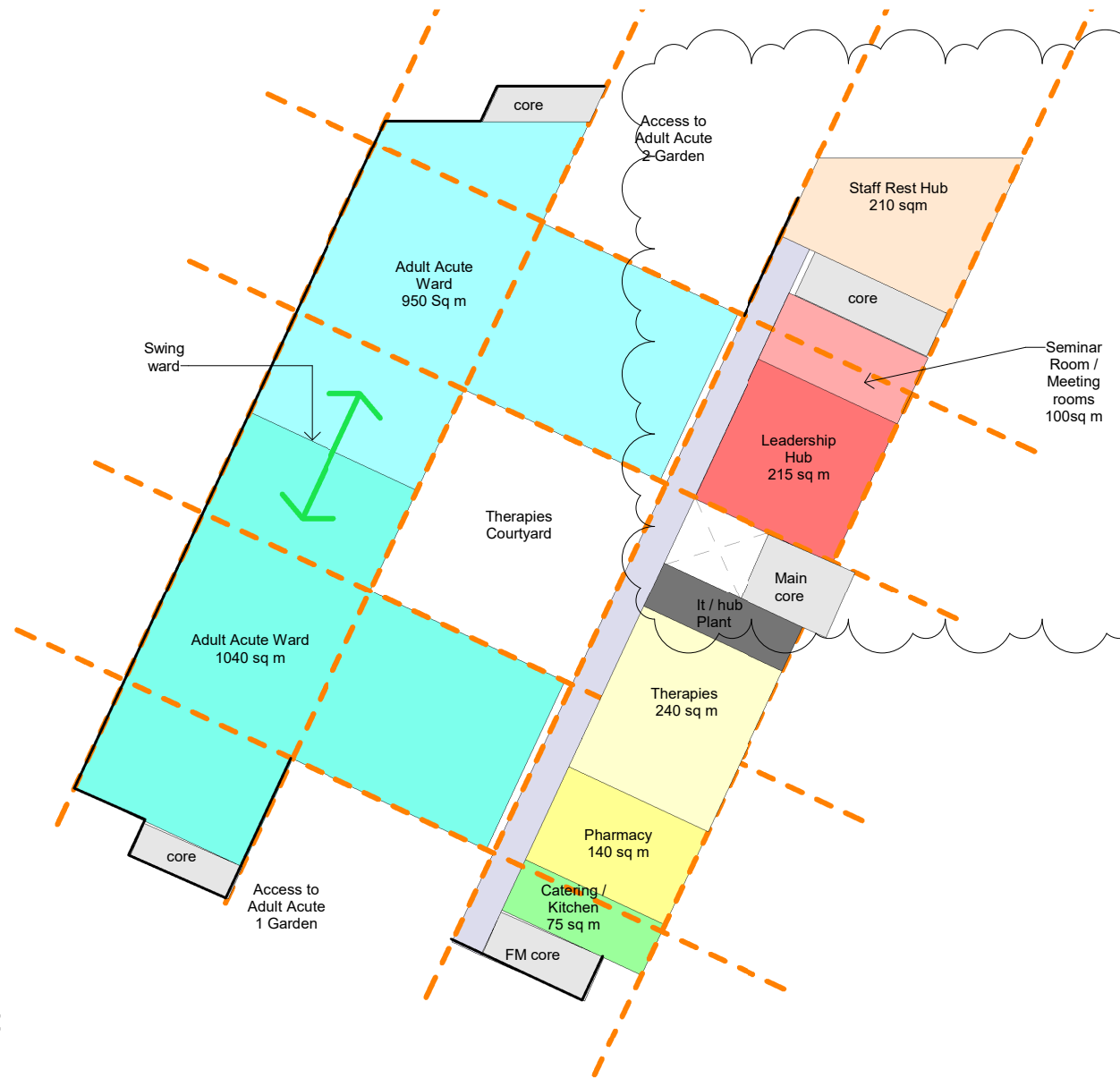
### 1.1 Ground Floor Plan



Ground Floor



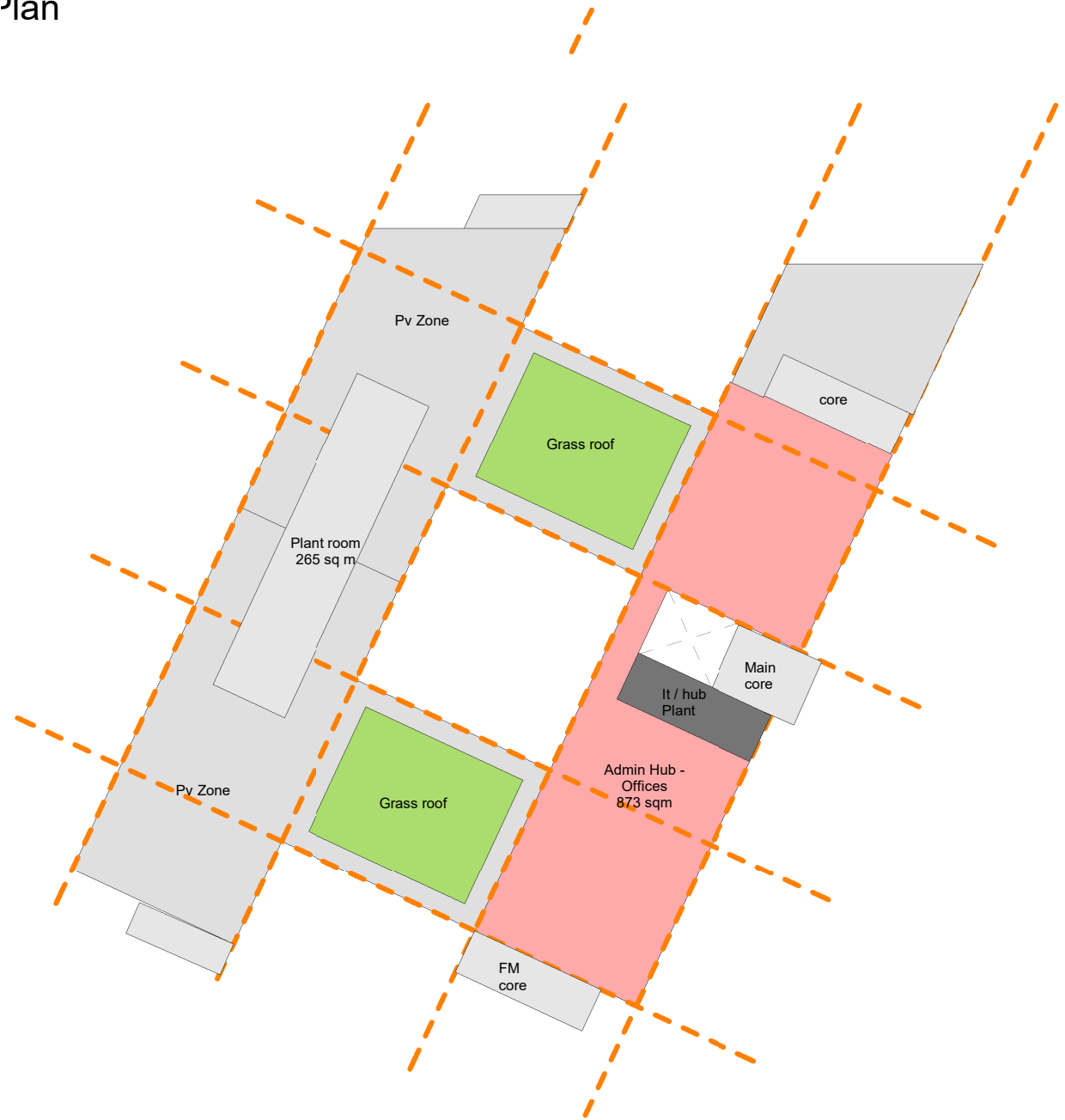
1.2 First Floor Plan



First Floor

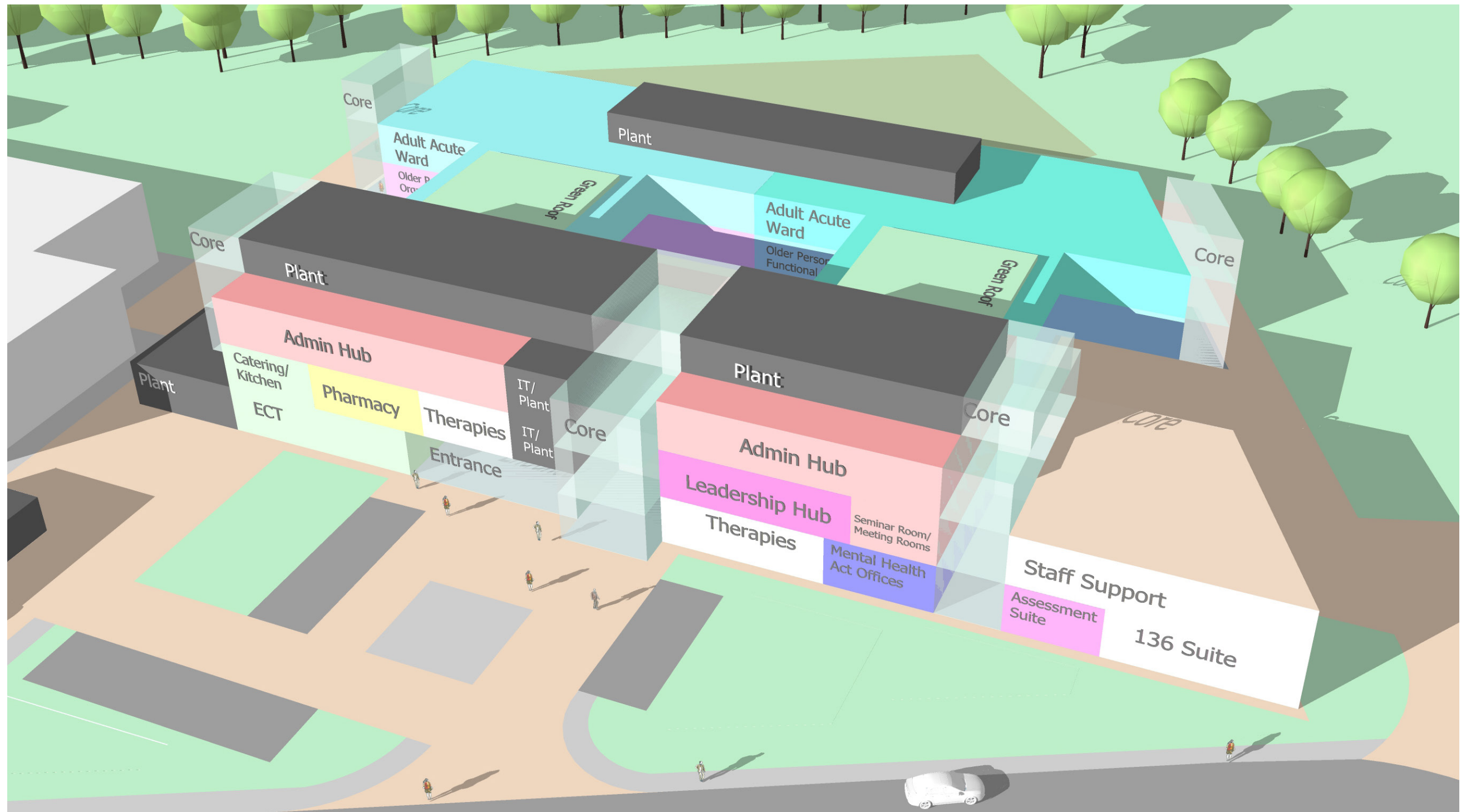
1.3 Second Floor Plan

Plan



Second Floor

## 1.4 Massing





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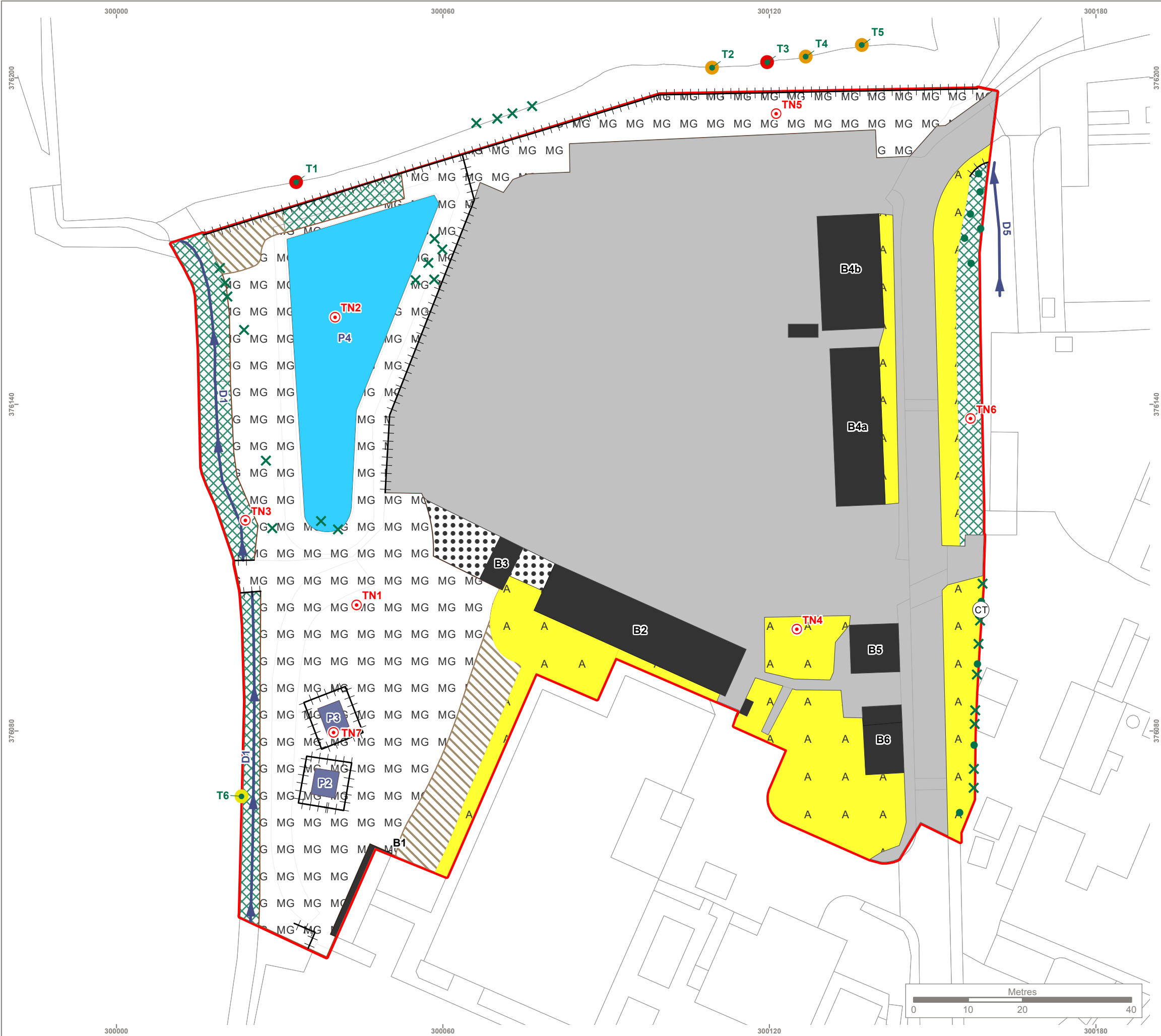
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## **DRAWINGS**

**Drawing 1 - G8166.030 - Phase 1 Habitat Survey (Site 1)**

**Drawing 2 - G8166.005C - Pond and Ditch Location Plan**

**Drawing 3 - Powell Dobson Architects Drawing AOPMHU-PDA-ZX-00-DR-A-  
20100 Rev P017 - Ground Floor Combined GA**



**KEY**

Site boundary

Target note

CT

Cotoneaster

X

Scattered scrub

Scattered broad-leaved tree

Broad-leaved tree with low bat suitability

Broad-leaved tree with moderate bat suitability

Broad-leaved tree with high bat suitability

Running water

+

Fence

Dense/continuous scrub

MG MG

Species-poor modified neutral grassland

Tall ruderal

Swamp

Standing water

A A


Amenity grassland

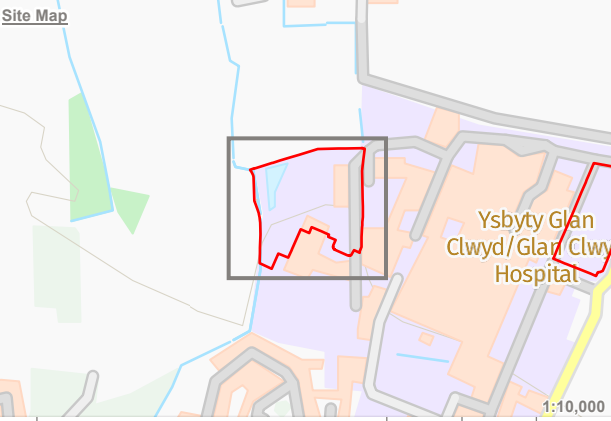
Building

Bare ground

Hardstanding

**Note:**  
The locations of habitats and habitat features are indicative.

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Rev	Description	Drawn	Approved	Date



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Project  
Glan Clwyd Hospital, Bodelwyddan

Title  
**Phase 1 Habitat Survey  
Site 1**

Drawing Number  
**G8166.030**

Drawn	Checked	Approved	Scale	Date
SP	CB	CC	1:700 @ A3	01/02/2023





**KEY**

- Approximate site location
- Approximate site locations - 500m buffer
- Approximate ditch location
- Approximate dry ditch location
- Approximate pond location

**Note:**  
The locations of ponds and ditches are indicative.

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**Site Map**

1:40,000

Rev	Description	Drawn	Approved	Date
C	Inclusion of ditch 2.	CW	CC	07.09.21
B	Amendments to the RLB and 500m buffer	JK	CC	15.03.21

**TWP** | **THE ENVIRONMENT PARTNERSHIP**

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Tel 01925 844004 e-mail [tep@tep.uk.com](mailto:tep@tep.uk.com) www.[tep.uk.com](http://tep.uk.com)

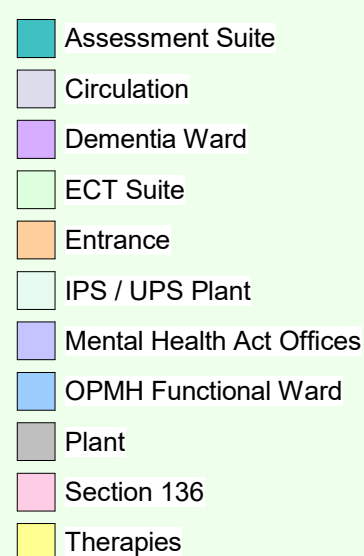
Project  
Glan Clwyd Hospital, Bodelwyddda

Title  
Pond and Ditch Location Plan - Aerial

Drawing Number  
G8166.005C

Drawn	Checked	Approved	Scale	Date
CW	MK	CC	1:5,500 @ A3	07/09/2021



[illegible]

I confirm that these layout plans provide the appropriate adjacencies for our requirements with due cognisance given to the constraints of the project.

I recognise that further adjustments may be made to the layout of certain areas without changing the functional content of the room, following detailed design development and input from security, fire, staff call and M&E engineers design.



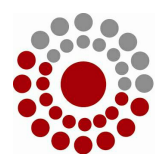
This drawing must not be scaled.  
Figured dimensions and levels to be used.  
Any inaccuracies must be notified to the architect.  
Detail drawings and large scale drawings take  
precedence over smaller drawings.

A1

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Rev:		
P08	Scale Bar added to drawing	07.07.21
P09	Bin store added	09.07.21
P10	Red line amended along north boundary	13.07.21
P11	Room tags tidied up	19.07.21
P012	OBC issue	21.07.21
P13	Drawing updated in line with user comments	24.11.22
P014	Therapies amended following client comments	29.11.22
P15	Drawing updated following user group comments	23.12.22
P016	Bedroom corridor amended following structural engineer comments	05.01.23
P017	Therapies amended following user comments	09.01.23

Chk'd:



Designed for **Life** : Building for **Wales**  
Cynllun **Oes** : Adeiladu Ar Gyfer **Cymru**

## STATUS

**S2 - Issued for Information**

**powelldobson**  
ARCHITECTS

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Contract:	Betsi Cadwaladr University Health Board Adult and Older Persons Mental Health Unit – Ysbyty Glan Clwyd
Title:	Ground Floor Combined GA

PDA Job No: 19095N		
AOPMHU- PDA - ZX - 00- DR - A - - 20100		REV P01
UPOW	ORIGINATOR	VOLUME
LEVEL	TYPE	ROLE
CLASS	NUMBER	

Scale: As indicated  
Date: 08/04/20  
Drawn: RD  
Checked: RD



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