



# ECOLOGICAL APPRAISAL

POLISH HOSPITAL PENLEY  
LAND OFF TUDOR DRIVE, PENLEY, LL13 0JN

MR J SADOWSKI

SEPTEMBER 2020

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Fig 1: Site and Pond Location Plan

Fig 2: Tree Plan (moderate and high potential trees)

# **1 INTRODUCTION**

## **1.1 Background Information**

- 1.1.1 Sambrook Associates Ltd was instructed by Mr James Sadowski to undertake an Ecological Appraisal in relation to the proposed development of a small section of the land known as Polish Hospital No. 11, a US military hospital given as a Polish Hospital to rehabilitate injured men and rehome refugees during and after the second World War. The Site is located in Penley, Wrexham.
- 1.1.2 As part of the Appraisal, a site walk-over and extended Phase 1 Habitat survey was conducted in addition to a desktop study, Habitat Suitability Index survey of ponds within 250m radius of the development, great crested newt (GCN) surveys and bat surveys (buildings and trees). This report provides the results of these, as well as an appraisal of the potential effects the proposed development may have on biodiversity and recommendations for further surveys as required.
- 1.1.3 The aim of the appraisal is to provide sufficient ecological information for the local planning authority (LPA) to determine the associated planning application. The objectives of the study were to:
- Provide baseline information on the current habitats and ecological features both on-site and in the immediate surrounding area;
  - Identify the presence or potential presence of any protected species or habitats and provide an appraisal of any potential effects that the proposed development may have on these;
  - Identify the proximity of any sites designated for nature conservation interest and provide an appraisal of any potential effects that the proposed development may have on these; and
  - Provide recommendations for further pre-construction survey work and / or mitigation measures if required and present opportunities for habitat enhancement.

- 1.1.4 Given the nature of the proposed development, it is considered that the key potential constraints could be bats, great crested newts, nesting birds and badgers.

## **1.2 Site Description**

- 1.2.1 The Site as shown on Figure 1, delineated by red line boundary is approximately 0.7hectare in size and is part of a larger approx. 7ha site that was formerly Llaerch Panna No83 Station Hospital built by the United States and given to Polish patients in 1946, then called Polish Hospital No.11. At its peak the campus-style hospital was home to 800 patients plus staff. The hospital closed in 1949. Sections of the hospital grounds have already been developed (the approx. 4ha housing estate immediately East of the Site). The remainder of the grounds were in private ownership and then bequeathed to a charity before being put up for sale in 2019 and bought by Mr Sadowski.
- 1.2.2 For the purpose of this Report 'the Site' will mean the 0.7ha area outlined on Figure 1. However, it was considered necessary to look at surrounding habitat to provide context and understanding of how nearby habitats may influence the use of the Site by protected species.
- 1.2.3 Since the hospital closed in 1949, the site has been mostly unmanaged. Many buildings have gone and the residual concrete bases and network of paths of the numerous wards and buildings of the hospital within the Site constitute approximately 60% of its surface area. Most of these are still visible or covered with a layer of leaf mulch and humous. Trees and scrub have since grown adjacent to and on top of the concrete pads creating a woodland habitat. There is significant evidence of fly-tipping.
- 1.2.4 Remaining buildings on site include a water tower (Building B1) and a section of one of the hospital wards (Building B2). Both buildings will be demolished as they are unsafe.
- 1.2.5 The habitat within the Site is young woodland with occasional mature trees that would have been present when the hospital was in use.

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- 1.2.6 The proposal comprises the construction of c.17 new dwellings. To facilitate the development, the 0.7ha site will be cleared including felling of the trees and removal of the concrete pads and pathways. Boundary trees will, in the main, be retained.

## **2 LEGISLATION AND PLANNING POLICY**

2.1.1 Many sites, animals and plants are protected by European and/or UK legislation either because of their decline across Europe and the UK or due to the persecution they have placed upon them by negligent or illegal acts such as baiting or trade. Legislation is also in place to prevent the spread of introduced or non-native invasive species and harmful weeds. When undertaking an appraisal of a proposed development, such legislation is taken into account as follows.

- European: Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive'); and Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (codified version of Directive 79/409/EEC as amended) (the 'Birds Directive').
- UK (England & Wales): The Conservation of Habitats and Species Regulations 2010, as amended (the 'Habitat Regulations') which transposes the Habitats Directive in UK law; The Wildlife and Countryside Act 1981 (as amended); the Countryside and Rights of Way Act (CRoW) 2000; the Protection of Badgers Act 1992; the Natural Environment and Rural Communities Act (NERC) (2006) and the Environmental Protection Act (EPA) 1990.

2.1.2 Species such as bats, great crested newts, otter, water vole, reptiles and badgers are all protected to varying degrees under this legislation.

2.1.3 In addition to legislation, there are national and local planning policies pertaining to the protection of biodiversity. Planning Policy Wales Edition 10 makes provision for Biodiversity and Ecological Networks, supported by The Environment (Wales) Act 2016 which introduced an enhanced biodiversity and resilience of ecosystems duty on Local Authorities to consider the need to:

- support the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;

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- ensure statutorily and non-statutorily designated sites are properly protected and managed;
- safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and
- secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.

2.1.6 Technical Advice Note (TAN) 5: Nature Conservation and Planning (September 2009) provides the national planning framework for the consideration of protected species, including GCN's in the planning process.

2.1.7 Under the NERC Act, local authorities (and other public bodies) have a duty to conserve biodiversity the local authority must take the protection of the priority habitat into consideration when it is making a planning decision. ▪

2.1.8 The RSPB's Birds of Conservation Concern 3' (Eaton et al., 2009) is also taken into consideration when undertaking this appraisal. ▪

2.1.9 Great Crested Newts are protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended and Schedule 2 of the Conservation (Natural Habitats etc) Regulations 1994 (Regulation 38). Because of their rarity they are also protected under Annexes IIa and IVa of the Habitats and Species Directive and under the Berne Convention.

2.1.10 It is illegal to intentionally capture or kill great crested newts; intentionally injure or recklessly disturb GCN including places used for shelter or protection. It is also an offence to damage or destroy a breeding site or resting place; intentionally or recklessly damage, destroy, or obstruct access to a place used for shelter or protection and to possess, advertise control, transport, sell, exchange or offer for sale/exchange any live or dead great crested newt or any part of one.

2.1.11 All bat species are protected in the UK under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). The species is also protected under Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (the EC Habitats Directive). This has been transposed into UK law by the

Conservation of Habitats and Species Regulations 2010 (as amended) in England and Wales. Bats are referred to as European Protected Species (EPS).

2.1.12 It is an offence to deliberately capture, injure or kill a bat; intentionally or recklessly disturb in a way that would affect their local distribution or abundance, or affect their ability to survive, or breed. It is also an offence to damage or destroy a bat roost and to possess, advertise, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.

2.1.13 If work is proposed that would affect a European Protected Species then a license from Natural Resources Wales (NRW) will be required. NRW, in exercise of the powers conferred under regulation 53(1) and 56(3) (a) of the Conservation of Habitats and Species Regulations 2010, may issue licenses for the following purposes:

- Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;
- Preventing the spread of disease;
- Preventing serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber or any other form of property or to fisheries; to allow people to carry out activities which would otherwise be illegal.

2.1.14 Before issuing a license under the Habitats Regulations, the licensing authority must be satisfied that “there is no satisfactory alternative” to the work as proposed and, that the proposed actions “will not be detrimental to the maintenance of the population of the species at a favorable conservation status (FCS)”.

2.1.15 To ensure these requirements are met, the licensing authority must have enough information to complete an assessment of the application. This includes sufficient survey data so that the roost and how it is used by bats is understood and impacts upon the roost are appropriately assessed so that mitigation and/or compensation can be designed into the proposed development that will ensure the bat population can be incorporated and maintained in the long term.

2.1.16 Seven bat species are UK BAP Priority Species. These are as follows:

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- Barbastelle *Barbastella barbastellus*
- Bechstein's *Myotis bechsteinii*
- Brown long-eared *Plecotus auritus*
- Greater horseshoe *Rhinolophus ferrumequinum*
- Lesser horseshoe *Rhinolophus hipposideros*
- Common noctule *Nyctalus noctula*
- Soprano pipistrelle *Pipistrellus pygmaeus*.

### **3 METHODOLOGY**

#### **3.1 Introduction**

- 3.1.1 To inform this Ecological Appraisal, a desk-top study, an extended Phase 1 Habitat survey, habitat suitability index surveys for GCN of ponds within 250m of the site, GCN surveys and bat surveys were undertaken between February and July 2020.

#### **3.2 Desk-top Study**

- 3.2.1 The desktop study involved data searches for statutory and non-statutory sites, legally protected species and other features of interest within a 1km radius of the site. The centre of the site (Ordnance Survey Grid Reference SJ 41388 39307) was used for the data search.
- 3.2.2 The following sources were searched for information about the Site:
- Defra's 'MAGIC' website;
  - Google Earth;
  - COFNOD -Biological Records Centre

#### **3.3 Extended Phase 1 Habitat Survey**

- 3.3.1 The purpose of the Extended Phase 1 Habitat Survey was to determine:
- the habitats present;
  - any potential constraints to development;
  - the potential for legally protected species to be present;
  - the presence of invasive plant and animals; and
  - any requirement for additional ecological surveys.
- 3.3.2 The survey was carried out by Mick Smith, Director Wildbanks Conservation and Rebecca Sambrook Principal Ecologist, Sambrook Associates on 19<sup>th</sup> and 24<sup>th</sup> February 2020. Mick is a suitably qualified ecologist with 10+ years experience and holding relevant Natural Resources Wales (NRW) protected Species licences (bats and GCN). Rebecca is a suitably qualified ecologist with 18 years experience and holds NRW GCN licence.

- 3.3.3 The survey was carried out in accordance with the extended Phase 1 Habitat survey methodology as described in Guidelines for Ecological Assessment (Institute of Environmental Assessment, 1995). This is a development of the original methodology outlined in the Handbook for Phase 1 habitat survey – A technique for environmental audit (JNCC, 2010). Photographs are included within the document (Appendix 1). Plant names follow the third edition of the New Flora of the British Isles (Stace, 2010). The common name of the plant is stated first and is followed by the Latin name, on the first occasion that it is used. Only the common name is used subsequently.
- 3.3.4 The Site and immediately adjacent areas (up to 30m) were searched for evidence of protected species such as bats, great crested newts *Triturus cristatus*, badgers *Meles meles*, birds, reptiles, otters *Lutra lutra*, water vole *Arvicola amphibious* and also any invasive plants or animals.

### **3.4 Habitat Suitability Index Survey (HSI)**

- 3.5.1 No ponds exist within the land owned by Mr Sadowski. The relevant 1:25000 scale OS sheet and aerial photographs were searched to identify any waterbodies present within 250m of the site boundary. Three ponds (Ponds 1, 2 & 4) were identified. Pond 3 was identified at 275m distant, so outside the 250m survey area, but adjacent to the Polish Hospital No. 11 area and due to its uninterrupted proximity to the Polish Hospital site, it is referenced in this report. Of the four ponds identified, three (Ponds 1, 2 & 4) had a HSI survey conducted on them. Access was entirely denied to Pond 3 and Pond 4 but Pond 4 could be seen from the woodland and hence underwent a HSI.
- 3.5.2 All identified and accessible ponds were assessed utilizing the modified Great Crested Newt Habitat Suitability Index (Oldham et al, 2000). The habitat suitability index provides a means of evaluating habitat quality of any given pond for amphibians. The Habitat Suitability Index (HSI) is a numerical index between 0 and 1, where 0 indicates unsuitable habitat and 1 represents optimal habitat. The HSI score is then used to score the suitability of the pond on a categorical scale (Table 3.1). The system is not precise enough to allow the conclusion that a pond with a high score will support great crested newts whilst those with a low score will not. See Table 4.2 for the HSI calculations for each pond.

**Table 3.1: Habitat Suitability Index Scoring**

| <b>HSI Score</b> | <b>Pond Suitability</b> |
|------------------|-------------------------|
| < 0.5            | Poor                    |
| 0.5 – 0.59       | Below average           |
| 0.6 – 0.69       | Average                 |
| 0.7 – 0.79       | Good                    |
| > 0.8            | Excellent               |

### **3.6 GCN Presence/Absence and Size Class Surveys**

- 3.6.1 Due to the presence of waterbodies adjacent to the Site, it was considered, during the extended Phase 1 Habitat survey, that great crested newts, if present in the ponds, could be present on the Site and potentially impacted by the proposed works.
- 3.6.2 Ponds that scored Average and above on the HSI survey had presence and absence surveys conducted on them.
- 3.6.3 Traditional presence/absence surveys were therefore undertaken on Pond 1 and Pond 2 (with Pond 2 also undergoing an additional 2 visits for population size class). Surveys were undertaken in accordance with English Nature's (now Natural England) Great Crested Newt Mitigation Guidelines, 2001. Surveys were undertaken over the course of the GCN survey season, with at least three of the visits undertaken between the required period of mid-April to mid-May. At least three survey methods were utilised during each survey; bottle trapping, torch surveys, netting and egg searches (and once eggs were found, natural refugia searches were undertaken to limit further damage/destruction of eggs). Bottle trapping ceased at Pond 2 after visit 1 due to the presence of water shrew.
- 3.6.4 Dates of surveys and weather conditions are detailed below in Table 3.2. Weather conditions were considered appropriate for the surveys undertaken. No weather limitations were encountered.

**Table 3.2: Survey dates and conditions**

| Date       | Pond |    | Weather                 |            |            | Vegetation cover |    | Turbidity |    |
|------------|------|----|-------------------------|------------|------------|------------------|----|-----------|----|
|            | P1   | P2 | Air temperature (P1/P2) | Rain (1-8) | Wind (1-8) | P1               | P2 | P1        | P2 |
| 16/04/2020 | X    | X  | 16°/16°                 | 0          | 0          | 3                | 2  | 2         | 1  |
| 23/04/2020 | X    | X  | 16°/16°                 | 0          | 0          | 3                | 1  | 1         | 2  |
| 07/05/2020 | X    | X  | 17°/14°                 | 0          | 0          | 2                | 2  | 1         | 3  |
| 14/05/2020 | X    | X  | 7°/8°                   | 0          | 0          | 1                | 3  | 1         | 2  |
| 20/05/2020 |      | X  | 16°                     | 0          | 0          | NA               | 3  | NA        | 3  |
| 26/05/2020 |      | X  | 13°                     | 0          | 1          | NA               | 3  | NA        | 3  |

### 3.7 Bat Scoping Survey

- 3.7.1 The surveys followed the methodology set out in the Bat Conservation Trust Handbook Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016). Buildings and trees were assessed.
- 3.7.2 All the structures were inspected both externally and internally for evidence of/or the presence of bats. The survey started with an examination of the external areas of the buildings to locate potential roosting features such as lifted/missing roof material, gaps around soffits, barge boards and similar, gaps in mortar or other cracks and crevices. Evidence such as staining, droppings, urine splashes and individuals were also searched for. An internal inspection was undertaken, searching for the same evidence.
- 3.7.3 The potential of both buildings to support bats was then established based on a 'confirmed', 'high', 'moderate', 'low' or 'negligible' rating. Buildings with negligible potential were classed as not requiring further surveys in relation to bats. Buildings with a confirmed roost, high, moderate or low potential would be subject to additional nocturnal surveys in line with current national guidelines.
- 3.7.4 A preliminary ground-based assessment was undertaken on all trees within the red line boundary plus 30m to take into account potential disturbance effects. The assessment

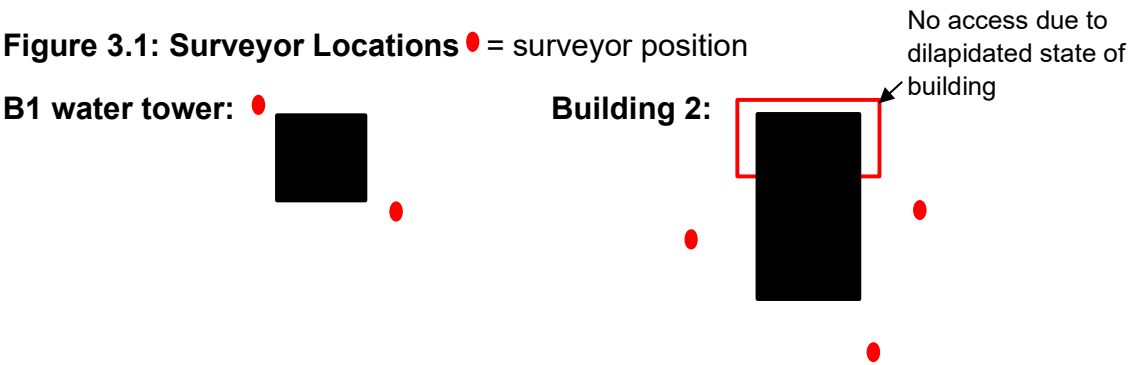
looked at the potential roosting features (PRFs) on each tree and each PRF was assigned a potential value as per the same scoring system as the buildings. All trees assigned a Moderate or High potential were subject to a further off-ground inspection whereby Mick inspected PRFs from a cherry picker. This allowed a much closer inspection than the ground-based assessment allows. The trees potential was then altered if required.

3.8 Bat Activity Surveys

- 3.8.1 Since the water tower (B1) and one remaining hospital building (B2) exhibited features that bats could use for roosting, a series of surveys were recommended. The surveys followed the methodology set out in the Bat Conservation Trust handbook.
- 3.8.2 Three activity surveys comprising two dusk surveys and one dawn survey were undertaken during appropriate weather conditions. A dusk survey and a dawn survey were undertaken on B1 and a dusk survey was undertaken on B2. The dusk surveys commenced 15 minutes before sunset until 1.5-2 hours after and the dawn survey commenced 2 hours before sunrise until 15 minutes after. The surveys were undertaken by a combination of Mick Smith, Chris Gosset, Luke Osman, Jack Halpin, Rebecca Sambrook and Mark Benson. The surveyors were positioned strategically so that good coverage of the buildings was achieved, see Figure 3.1 below.
- 3.8.3 The surveyors each used Anabat Walkabout or Wildlife Acoustics’ EM Touch detectors. The data was analyzed by the surveyors and reviewed by each surveyor.
- 3.8.4 The following Table 3.3 provides details of the surveys.

Table 3.3: Survey Data

| Building | Date       | Survey type | Sunrise/Sunset | Time started | Time completed | Temperature start/end | Weather conditions |
|----------|------------|-------------|----------------|--------------|----------------|-----------------------|--------------------|
| B1       | 28/05/2020 | Dusk        | 21:23          | 21:08        | 23:23          | 18°/16°               | Dry, warm, still   |
| B1       | 22/06/2020 | Dawn        | 04:46          | 02:46        | 05:01          | 10°/10°               | Dry, cool, still   |
| B2       | 28/05/2020 | Dusk        | 21:30          | 21:15        | 23:00          | 12°/11°               | Mild, dry, still   |



### **3.9 Bat Back Tracking Survey**

- 3.9.1 A back tracking survey was carried out of the Site. Thirty eight trees were identified as having moderate (n=35) or high (n=3) roost potential within the Site. Back tracking surveys are used to identify roosts or pinpointing areas requiring additional survey effort by making observations on commuting bats. Using the principle that bats seen closest to sunset or sunrise will be closer to their roost site.
- 3.9.2 Back tracking surveys are appropriate in  
“situations with lots of potential roost sites that are difficult to survey using alternative methods (eg in woodlands or highly urbanised areas.” *Collins, J (ed.). 2016.*
- 3.9.3 Multiple ecologists were positioned on potential commuting roots close to roost sources. Bats were followed at sunrise to observe where they went (or ecologists moved towards the where the bats came from at sunset). Times and locations/routes of traveling bats were noted. Ecologist had either Anabat Walkabout detectors or Echo Meter touch detectors.
- 3.9.4 The survey started 2hrs before sunrise and commenced until sunrise.

### **3.10 Limitations**

- 3.10.1 The eastern end of the building B2 was in such a dilapidated state that it was not possible to survey near it. Additionally, the eastern end was also so overgrown with vegetation that access was not possible, notwithstanding the health and safety constraints. The overgrown vegetation in the form of large laurel bushes, numerous ash saplings and bramble growing up above the eaves of B2 also limited roosting opportunities in this area as it has resulted in a very cluttered environment. The limited access to this part of the building has not undermined the assessment.

## 4 RESULTS

### 4.1 Introduction

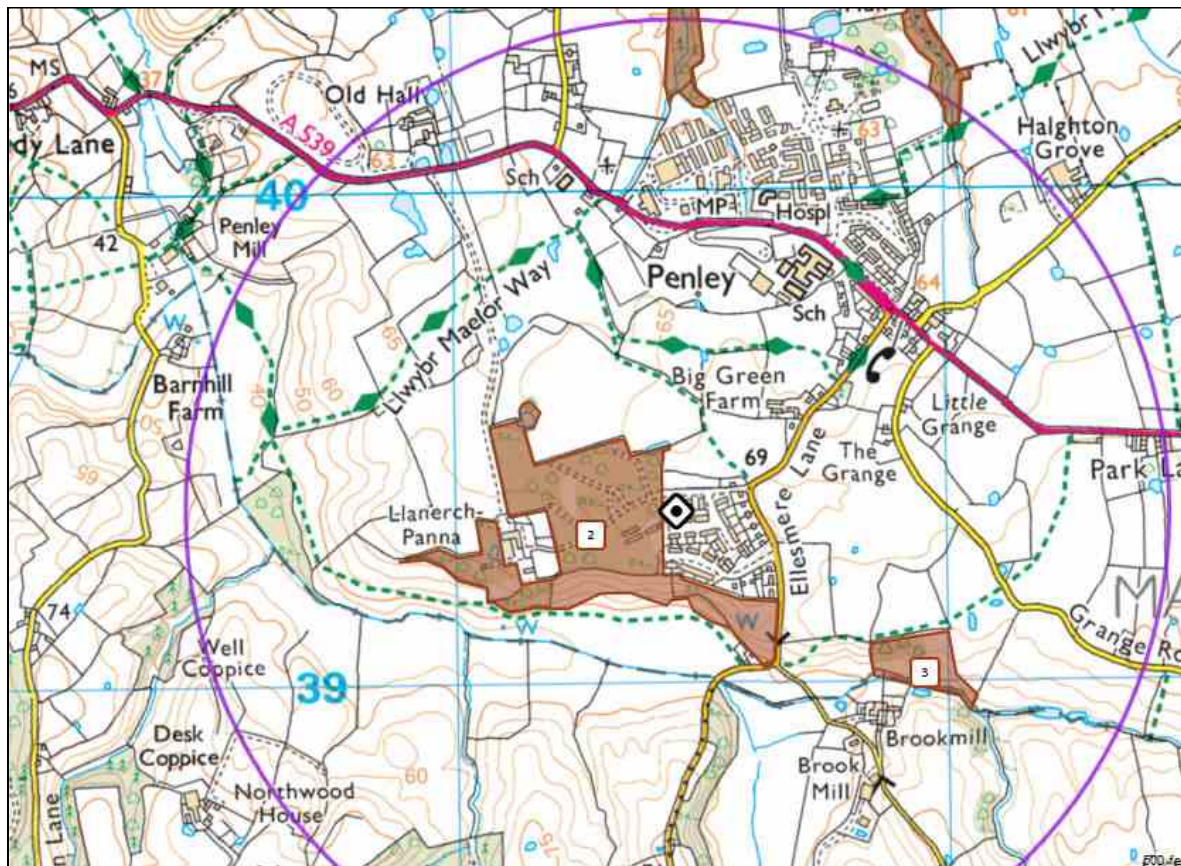
- 4.1.1 This section provides a commentary on the data collected during the surveys undertaken during the walkover survey, HSI, GCN and bat surveys in 2020. Photographs depicting the site can be found in Appendix 1.

### 4.2 Desk-top Study

- 4.2.1 As discussed above, a number of online resources were reviewed as part of the desk-top study.
- 4.2.2 No statutory designated sites were identified within 1km of the Site.
- 4.2.3 A single non-statutory site was identified within the search area. The development Site and the remaining area of hospital grounds are a part of the Local Wildlife Site- W420: Llanerch-Panna and Penley Bank. The proposed development comprises c. 5% of the designated site. Its site description reads as follows:

*“A site consisting of woodland and associated grassland areas. The majority of the site is a woodland within the grounds of an old hospital. Sycamore is the dominant canopy tree with some pedunculate oak, ash and horse chestnut throughout. The understorey and ground flora are under developed but do contain some ancient woodland indicators, such as field maple, bluebell, wood melick and dog's mercury. There are areas of rough grassland and scrub around the old building sites and paths. To the south is a semi-improved slope with a fair diversity of herbs, e.g. lesser stitchwort and field wood-rush. This grassland adjoins Penley Bank, which has a mosaic of grassland, wood, scrub and marsh habitats. The most diverse area here is a slope with such species as glaucous sedge, sweet vernal grass, meadow vetchling, cowslip, oxeye daisy, marsh marigold and fleabane present.”*

- 4.2.4 Below is screenshot taken from COFNOD emapper showing the location of Llanerh-Panna and Penley Bank LWS [2] and Brook Mill Grassland LWS [3].



4.2.5 A search of MAGIC, Google Earth and Bing Maps revealed there to be 1 pond within 250m of the Site. Two additional ponds are located some 260 and 280m from the Site. A small Brook is approximately 200m from the Site at its nearest point. The brook is a permanent watercourse and is a tributary within the upper catchment of the River Dee.

4.2.6 A data request to COFNOD revealed that protected species have been recorded within the wider area of the Site. A total of 19 records of Great Crested Newts were recorded within 1km of the Site ranging from 2018- 2004, the closest being a pond some 276m distant from the centre of the Site in 2010 where six individuals were recorded. Summarised in Table 4.1 below.

**Table 4.1: Details of ponds with records of GCN within 1km of the Site**

| Species | Distance | Date | Notes                   | Surveyor  |
|---------|----------|------|-------------------------|-----------|
| GCN     | 276      | 2010 | Max 6 indiv. Egg laying | Ecologist |
| GCN     | 282      | 2008 | Max 4 indiv. Egg laying | Ecologist |
| GCN     | 347      | 2008 | Max 5 indiv. Egg laying | Ecologist |
| GCN     | 352      | 2010 | Max 3 indiv. Egg laying | Ecologist |

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|     |      |      |                                         |           |
|-----|------|------|-----------------------------------------|-----------|
| GCN | 373  | 2010 | Max 1 indiv.                            | Ecologist |
| GCN | 375  | 2008 | Max 4 indiv. Egg laying                 | Ecologist |
| GCN | 412  | 2018 | Max 1 indiv.                            | Ecologist |
| GCN | 579  | 2018 | Max 5 indiv. Egg laying                 | Ecologist |
| GCN | 686  | 2018 | Max 5 indiv. Egg laying                 | Ecologist |
| GCN | 747  | 2008 | Egg found                               | Ecologist |
| GCN | 814  | 2018 | Max 5 indiv. Egg laying                 | Ecologist |
| GCN | 824  | 2008 | Max 22 indiv. Egg laying                | Ecologist |
| GCN | 898  | 2018 | Max 4 indiv. Egg laying                 | Ecologist |
| GCN | 900  | 2012 | 110 individuals caught in pitfall traps | Ecologist |
| GCN | 909  | 2018 | Max 2 indiv. Egg laying                 | Ecologist |
| GCN | 912  | 2008 | Max 9 indiv. Egg laying                 | Ecologist |
| GCN | 922  | 2004 | None provided                           | Unknown   |
| GCN | 966  | 2004 | 6 adults                                | Ecologist |
| GCN | 1044 | 2004 | None provided                           | Unknown   |

4.2.7 COFNOD holds no records of known bat roosts with 1km of the Site and only three anonymous records with no details of species, circumstance or recorder provided. The details of six badger setts have been provided within 1km of the Site. These are located within the woodland bank to the south of the Site. 190m, 195m, 205m, 230m, 370m and 430m distant from the site boundary.

4.2.8 COFNOD also provided records of otter from 2011 on the brook to the south of Site. Spraints and a holt were identified at that time.

## 4.3 Extended Phase 1 Habitat Survey

4.3.1 The Site is a 0.7ha section of the grounds of a Polish hospital built during WWII and given over to Polish patients in 1946. It remained a campus-style hospital until it closed in 1949 with accommodation at its peak housing 800 patients plus staff. The primary habitat present on site is woodland which has established and matured since the hospitals closure in 1949. Some of the framework of the old buildings is still visible on a number of the concrete pads.

4.3.2 Tree species are dominated by sycamore (*Acer pseudoplatanus*), with some ash (*Fraxinus excelsior*), sessile oak (*Quercus petraea*) and holly (*Ilex aquifolium*). Understorey species are dominated by hawthorn (*Crataegus monogyna*), hazel (*Coryllus avellana*) and field maple (*Acer campestre*) with occasional yew (*Taxus baccata*) in the

southern end of the Site. Ground flora is not diverse and is dominated by bramble and ivy (*Hedera helix*) with areas of dog's mercury (*Mercurialis perennis*), an ancient woodland indicator. Of note are extensive areas of wild garlic (*Allium ursinum*).

- 4.3.3 Many of the trees and scrub are growing tall and spindly due to their growing position of being on or immediately adjacent to the concrete paths and pads and struggling to find enough nutrients to grow typically. A large proportion of them have been coppiced circa 25 years ago. Approximately 60% of the ground is concrete pads or hard surfaced paths with up to 50mm of leaf litter and mulch now covering them. Some pads are clear of debris and some of the paths have been cleared to provide a clear access route through the area. It should be noted that during the recent storms, a number of trees have been lost since the Phase 1 habitat survey was undertaken.
- 4.3.4 Significant quantities of broken concrete, bricks and rubble piles are present within the south-eastern corner, anecdotally from the site owner this was pushed on to site when the adjacent housing estate was built. It is also noted that the site suffers from a significant amount of fly tipping.
- 4.3.5 The southern section of the Site is of a higher biodiversity value than the majority of the Site, retaining some trees that are older than the building of the hospital and a better ground flora assemblage present.
- 4.3.6 Two buildings/structures remain on Site. A brick and concrete water tower (Building B1) and a section of one of the hospital buildings (Building B2).
- 4.3.7 **Building B1 (plates 7-9):** the water tower is a 2-storey brick and concrete structure with a footprint of approximately 9m<sup>2</sup>. The water tank is at approximately 10m in height and is sitting on a concrete floor (second floor). A first floor exists which is an open single room with smooth walls. The remains of the pipe holes from the tank through the first floor are visible. A door opening is present on the first floor, no door is present. A door opening is also present on the ground floor, no door is present and access to first floor is open through gap in floor (plate 12). During the initial walkover of the Site on 24/02/2020, the water tower was covered in dense ivy. Since the initial walkover, this has been cleared.
- 4.3.8 **Building B2 (plates 10-12):** the remains of a single storey hospital building are present and consist of 6 reinforced concrete frames that are covered in corrugated steel sheets.

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Each gable end has been filled with a brick wall. Building B2 is approximately 10m x 12m with a height to the ridge of 5.5m.

4.3.9 The Site offers suitable habitat for protected species, in particular GCN, bats and birds. GCN and bats are dealt with in Section 4.4 and 4.5 respectively. During the walk-over survey in February, no observations were made of nesting birds; however February is at the earliest point of birds showing nesting behaviour so this would not be uncommon. Nesting birds and nesting behaviour were not noted during the bat surveys. Opportunities for nesting birds exist throughout the Site, including but not limited to holes/cavities within trees, within or behind dense ivy, within the rubble pile and broken walls as well as areas of denser bramble and within the trees and scrub themselves. A precautionary approach should be taken when clearing vegetation or trees with respect to nesting birds. This is dealt with in section 5.

4.3.10 Beyond the development site, to the north and west, the remaining 7ha of the camp forms an area of woodland with a more scattered spread of concrete pads. Beyond this is improved pasture land dominated by perennial rye grass and cocks foot (*Dactylus glomerata*) with nettle, broad leaved dock (*Rumex obtusifolius*), creeping thistle (*Cirsium arvense*) and creeping buttercup (*Ranunculus repens*) also present. A housing estate borders the Site to the East. To the south of the Site is the semi improved grassland of Local Wildlife Site- W420: Llanerch-Panna and Penley Bank.

### Invasive Non-Native Species

4.3.11 A large stand of Japanese knotweed *Fallopia japonica* is present some 130m from the boundary of the Site within the wider hospital grounds. The stand is approximately 30m x 15m. Other garden species were identified outside of the Site presumably left over from the gardens of the hospital.

## **4.4 GCN Surveys**

4.4.1 Two accessible ponds were identified within 250m of the development site (Pond 1 & 2). No records of any amphibians were provided by COFNOD for these ponds. The closest pond with records of GCN provided by COFNOD is some 270m east, directly beyond the

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housing estate. This pond was not assessed as it is beyond the land ownership of Mr Sadowski.

4.4.2 Ponds 1, 2 & 4 were assessed using the Habitat Suitability Index scoring system and the results are presented in Table 2.

**Table 4.2: HSI results for all waterbodies within 280m of the development site**

| <b>Factor</b>                               | <b>Pond 1</b>            | <b>Pond 2</b>            | <b>Pond 3</b>                | <b>Pond 4</b>            |
|---------------------------------------------|--------------------------|--------------------------|------------------------------|--------------------------|
| <b>HSI Score</b>                            | 0.8 Excellent            | 0.74 Good                | No access so not carried out | 0.525 Below Average      |
| <b>Proximity to development</b>             | 85m North                | 245m Northwest           | 275m West                    | 5m East                  |
| <b>Connectivity to proposed development</b> | No Barriers to dispersal | No barriers to dispersal | No barriers to dispersal     | No barriers to dispersal |

4.4.3 Ponds 1 and 2 scored excellent or good for GCN through the HSI calculations. This does not mean that GCN are confirmed to be present within the ponds, but it does provide guidance as to whether additional surveys are required to establish if GCN are present within the area around the development site and hence, if protective measures/mitigation or a European Protected Species licence is required to enable the development to proceed. Pond 4 scored below average on HSI calculations.

4.4.4 The development site comprises trees and scrub growing on and adjacent to old concrete foundation slabs and paths creating a habitat of high value to GCN for commuting, foraging and sheltering. Piles of rubble and large slabs of broken concrete are present providing excellent hibernation and refuge opportunities. Beyond the development site to the south, west and north the ground consists of excellent foraging and refuge habitat in the form of woodland, grassland bound by fragmented hedgerows and areas of ruderal vegetation.

4.4.5 GCN presence/absence surveys were undertaken on the two accessible ponds (P1 & P2). The results for Ponds 1 & 2 are presented below in Tables 4.3 and 4.4.

**Table 4.3: Summary GCN results for Pond 1**

| Date       | GCN | Smooth newt | Palmate newt | Frog/toad | Eggs   |
|------------|-----|-------------|--------------|-----------|--------|
| 16/04/2020 | 0   | 2           | 2            | 0         | No     |
| 23/04/2020 | 0   | 0           | 0            | 0         | No     |
| 07/05/2020 | 0   | 7           | 0            | 1         | Smooth |
| 14/05/2020 | 0   | 11          | 0            | 0         | No     |

**Table 4.4: Summary GCN results for Pond 2**

| Date       | GCN    | Smooth newt | Palmate newt | Frog/toad      | Eggs   |
|------------|--------|-------------|--------------|----------------|--------|
| 16/04/2020 | 1m, 1f | 2           | 0            | 0              | No     |
| 23/04/2020 | 1m     | 3           | 0            | 0              | Smooth |
| 07/05/2020 | 1f     | 3           | 0            | 0              | Smooth |
| 14/05/2020 | 0      | 0           | 0            | 0              | GCN    |
| 20/05/2020 | 2m     | 1           | 0            | 0              | N/A    |
| 26/05/2020 | 2m, 1f | 14          | 0            | 1 frog, 1 toad | N/A    |

- 4.5.1 GCN were not recorded in Pond 1. GCN were recorded in Pond 2 with a max peak count of 3 individuals. This equates to a small population. The woodland habitat provides excellent foraging and sheltering opportunities for GCN and the potential for GCN to be within the woodland in general, is high. GCN are known to travel distances of over 1km to reach preferred habitat, but they are also known to stay in close proximity to breeding ponds where terrestrial habitat is optimum as it is unnecessary to expend energy travelling further. Given the distance of the GCN in Pond 2 to the proposed site (and also Pond 3, if they were present in this pond also) and the availability of excellent foraging and sheltering resource within 50m of their ponds, the likelihood of GCN utilising the same habitat much further away and therefore being found within the proposed site is unlikely.

## 4.6 Bat Surveys

### Buildings

- 4.6.1 All buildings within the development site were assessed for the presence of features that could be utilised by bats. The buildings were then classified as either being confirmed roost or having high, moderate, low or negligible opportunities for bats.

- 4.6.2 Building B1 is a two-storey red brick water tower built in the 1940's to supply water to the hospital. It has a small footprint of approximately 9m<sup>2</sup> and is approximately 10m in height. The ground floor and first floor 'rooms' have open doorways providing light that would likely make these rooms by themselves unsuitable for bats. Cracks or gaps within the brick works were also minimal but in the absence of further survey, it is assumed these could support bats. In addition, the area around the water tank could not be assessed for features suitable for bats. Gaps or cracks could be present where the steel water tank joins the brickwork.
- 4.6.3 During the inspection, no evidence of use by bats was identified within Building B1. However, due to the access opportunities and being unable to view all areas of the tower it is considered that this building has the potential to be a roost for crevice dwelling species. The use of the building by void dwelling species such as brown long eared bats is unlikely due to the nature of the building. Building B1 was categorized as having moderate potential for use by bats.
- 4.6.4 Building B2 is a concrete frame covered in corrugated steel sheets with the gable ends bricked up. It has a number of missing sheets from the roof that allow light and weather to ingress. Features within the building that could be used by bats are limited to cracks within the concrete framework or the area on top of the brick walls.
- 4.6.5 During the inspection, no evidence of use by bats was identified within Building B2. However, some features exist that could be utilised by crevice dwelling species and as such Building B2 was categorized as having low opportunities for bats.
- 4.6.6 The Visual Assessment of the buildings within the site identified that building B1 had moderate potential to support bats. Therefore, two nocturnal surveys were undertaken on this building to fully assess its use by bats or confirm likely absence. Building B2 had low potential for use by bats and as such one nocturnal survey was undertaken to establish if bats are using it.
- 4.6.7 **Nocturnal surveys** were undertaken; a single survey on B2 and two surveys on B1. The results of these are discussed in detail below but in brief, activity across all three survey nights was low. Commuting and foraging behaviour was recorded and observed but no emergencies or re-entries were recorded during any of the surveys.

- 4.6.8 **Building B1: 28/05/2020 dusk survey** – no emergences. Individual pipistrelle (soprano and common) foraging around the building for the first 40 minutes after sunset; the first observation of a soprano pipistrelle being at 21:23 and common pipistrelle at 21:37. Limited activity thereafter with brief passes of brown long-eared, Myotis sp. and Noctule. At 22:01, a brown long-eared bat was recorded foraging above the tree canopy.
- 4.6.9 **Building 1: 22/06/2020 dawn survey** – no re-entries. A very low level of activity recorded throughout the survey with just two brief passes from a soprano pipistrelle at 4:11am and 4:15am. No other bat activity was recorded.
- 4.6.10 **Building 2: 03/06/2020 dusk survey** – no emergences. Two bat passes recorded by all three surveyors; an unknown bat at 21:43 and a soprano pipistrelle at 22:34. Both calls were brief and distant.
- 4.6.11 Neither of the buildings are confirmed as roosts.

### **Trees**

- 4.6.12 The Site supports a large number of trees and these were assessed following BCT (2016) guidelines. All trees within the red line boundary plus 30m buffer were assessed. Of the 215 trees assessed, the following number of trees had high or moderate potential. The remaining were either low or negligible potential.

**Table 4.5: Trees with high or moderate potential**

|                                 | <b>Confirmed</b> | <b>High</b> | <b>Moderate</b> |
|---------------------------------|------------------|-------------|-----------------|
| <b>Within red line boundary</b> | 0                | 3           | 35              |
| <b>In 30m buffer</b>            | 0                | 5           | 52              |

- 4.6.13 The high and moderate trees were assessed by an aerial inspection. Very few of them exhibit significant structural potential roosting features; their potential is assigned due to the substantial and dense ivy cover over the trees that could be hiding features suitable for bats and provide roosting features itself. No evidence of roosting bats was identified during the aerial inspections.

4.6.14 It is assumed that all trees within the red-line boundary will be felled except those on the site boundaries which will be retained to form screening. Trees within the 30m buffer will potentially undergo a degree of disturbance.

4.6.15 The Site is in a rural location and provides good commuting and foraging opportunities for bats. It is well connected to the wider area via woodland edge, hedgerows, tree lines and a brook. All of these provide good foraging and commuting resource. Despite the high-quality habitat, very little bat activity was recorded and observed within the proposed site.

#### **Back tracking survey**

4.6.16 At dawn on the 27/08/2020 a back tracking survey was carried out by 5 ecologists including two NRW and NE licensed ecologists and 3 experienced bat surveyors. Surveyors were positioned on the road on the northern boundary and along the footpath forming the western boundary and on the southern boundary by Hill Crest.

4.6.17 The survey commenced at 04:26 and finished at 06:26, sunrise was 06:26. Weather was appropriate with temperature of 11C at start of survey and 12C at end of the survey, no rain and light winds.

4.6.18 Bat activity during the survey was in line with activity recorded during the 3 surveys of Building B1 and B2. In that, overall bat activity was less than would be expected during a survey of a woodland. Occasional commuting or foraging common and soprano pipistrelle bats were recorded by all surveyors as was social calls, the maximum number of bat passes recorded by a surveyor during the entire survey was 21 passes. SL04 and SL05 also recorded occasional myotis bat passes at between 04:41 and 04:48.

4.6.19 The below table shows the last bat recorded by each surveyor

| Surveyor           | Last bat recorded | Minutes before sunrise | Details                                                         |
|--------------------|-------------------|------------------------|-----------------------------------------------------------------|
| SL01<br>Mick Smith | 05:37             | 59mins                 | Common pipistrelle seen commuting off site in eastern direction |
| SL02<br>Tim Green  | 05:23             | 73mins                 | Common pipistrelle not seen                                     |

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|                      |       |        |                                                                                                                        |
|----------------------|-------|--------|------------------------------------------------------------------------------------------------------------------------|
| SL03<br>Chris Gosset | 05:34 | 62mins | Common pipistrelle seen commuting west off site                                                                        |
| SL04<br>Joe Taylor   | 05:50 | 46min  | Soprano pipistrelle not seen                                                                                           |
| SL05<br>Jack Halpin  | 05:33 | 63min  | 3 x Soprano pipistrelles foraging along eastern border of woodland (Hill Crest road). All commuted Northward off site. |

4.6.20 The shortest time before sunrise of the last bat recorded was 46minutes before sunrise, other surveyors recorded their last bats at 59min, 73min, 62min and 63minutes before sunrise. The last bats recorded were common and soprano pipistrelles. Common and Soprano pipistrelle bats are categorized as 'earlier emerging species' and as such would also likely stay out foraging closer to sunrise than other species. i.e. they would return to their roost closer to sunrise than other species. The exact time of this is unknown however and will vary depending the protective cover around a roost, the reproductive status of the bats and the ambient weather.

4.6.21 However, it is considered likely that the times before sunrise of the last bat observed by surveyors would likely be too early for these species to enter a roost. Also, most bats were seen commuting off Site and no behaviour associated with bats returning to a roost at dawn (ie repeated flights around or to a roosting feature) were seen

4.6.22 No roosts or areas where bat activity was considered indicative of potential roost sites were identified.

## 4.7 Nesting birds

4.7.1 Opportunities for nesting birds exist throughout the entire site in the form of trees, scrub, areas of thick bramble or ivy and rubble piles. Most nesting birds build a new nest every year; identifying exact locations of nesting birds was not undertaken this year, but it is assumed that birds will nest in a range of features during the nesting bird season.

## 4.8 Other Protected species

4.7.1 No badger setts were found within the Site, however paths used by badgers were present along the Southern boundary of the Site. The data search from COFNOD identified setts

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within this area, the closest being some 190m to south and it is likely that these paths along the southern boundary of the Site are used to link main setts with annexe and outlying setts.

- 4.7.2 The Site does not offer opportunities for other protected species including barn owl, reptiles and water vole and no evidence of these species was identified during the survey. The Brook, some 190m to the south of the development site does offer opportunities for otter and records from 2011 were provided by COFNOD. The brook is some considerable distance from the site and although transient presence of otter in the woodland cannot be completely ruled out, it is highly unlikely holts, particularly natal holts would be present given the disturbance levels within the woodland. A watching brief is to be employed during pre-construction activities.

## 4.9 Appraisal of Potential Effects.

- 4.9.1 This section provides an appraisal of potential effects of the outline proposals on biodiversity.
- 4.9.2 The outline application comprises the construction of 17 dwellings within the red line boundary. This will require the removal of trees, ground flora and soil stripping. The existing remains of buildings, including foundation pads, and concrete paths and tracks will also be removed.
- 4.9.3 Overall, with the exception of the Local Wildlife Site designation and nesting birds, the Site offers limited potential for other protected or notable species.

### Local Wildlife Site

- 4.9.4 The proximity of the designated site has been considered. The proposed development will result in the loss of 0.7ha (5.69%) of the Llanerch-Panna and Penley Bank Local Wildlife Site which will directly affect the qualifying features of the designated site. Mitigation and compensation may include implementation of a woodland management plan which will aim to increase the value of the retained qualifying features in an area of the woodland outside of the proposed development site boundary.

### **Habitats**

- 4.9.5 Habitat loss has, in the main, been addressed in the Local Wildlife Site section above. As additional consideration, the boundary trees on the eastern and southern sides will be retained to maintain a green corridor between the existing development and the proposed site and connectivity to the wider area. Retained trees to the boundaries of the proposed site will be protected throughout construction.
- 4.9.6 As standard, pollution prevention measures will be implemented throughout the build to ensure impacts are avoided. Measures will include the prevention of waste materials including rubbish and liquids such as fuel and oil from polluting adjacent habitats. All rubbish will be placed in skips and all fuel/oil tanks should be bunded appropriately following best practice guidelines.

### **Nesting Birds**

- 4.9.7 Despite there being numerous nesting opportunities, in overall terms, the loss of this habitat as a whole is not significant given the size of the woodland and the numerous nesting opportunities that exist and will remain to exist, post construction. The disturbance and/or destruction of bird nests is prohibited under the Wildlife and Countryside Act 1981 as amended and if the development is to commence during the nesting bird season (March-August inclusive), a nesting bird survey will be undertaken by a qualified ecologist. If nests are identified, the nests must remain intact and undisturbed until young have fledged. Works within 5m of any nests will be avoided. Mitigation will be required to compensate for the loss of nesting habitat. Nest boxes will be installed on trees to the north of the proposed site to replace the nesting opportunities lost due to the development.

### **Bats**

- 4.9.8 The demolition of buildings and clearing of woodlands can give rise to numerous effects on bats in the absence of knowledge of the roost size, species, and locations as well as appropriate mitigation measures. Direct impacts can include killing and injury of bats, disturbance, loss or modification of roosts due to building/felling work, and fragmentation

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and isolation due to modification of habitats that bats may use to commute to areas for foraging and roosting.

4.9.9 No roosts have been identified in the buildings and therefore no impacts are envisaged in this regard.

4.9.10 Three trees with high potential and 35 trees with moderate potential for bats will be felled. Although none of these appeared to support bats during the aerial inspection, it is possible that some features with depth were not inspected fully. Multiple surveys (2 or 3 each following BTC guidelines) of these 38 trees have not been carried out. A back tracking survey using 5 surveyors positioned throughout the wood did not identify any evidence that trees or areas of the Site could potentially contain a roost.

4.9.11 The proposed development will, in theory, result in the loss of excellent foraging and commuting habitat for bat species. However, the use of this part of the woodland by bats is very limited, as shown by the very low activity levels recorded during the three nocturnal surveys of building B1 and B2. The remaining 95% of the retained woodland can absorb the numbers of individuals recorded here. Nevertheless, the soft landscaping scheme for the development should include suitable foraging resources such as nectar rich plants (encouraging invertebrate prey) to enhance the diversity of foraging opportunities across the site.

4.9.12 Lighting installed on residential properties and associated gardens could give rise to impacts on existing and replacement roosts and deter some species of bats from foraging. Lighting during the construction period should not be switched on permanently throughout the night to avoid effects on foraging and commuting areas of light sensitive species such as brown long eared. The external lighting scheme of the properties should be designed sympathetically to reduce the potential for impacts on light sensitive bat species. Current guidance is jointly issued by the Institution of Lighting Professionals and Bat Conservation Trust; Guidance Note 08/18: Bats and Artificial Lighting in the UK.

### **Great Crested Newts**

4.9.13 The closest GCN breeding pond to the site is Pond 2, at a distance of 245m at its nearest point. It is accepted that developments within 250m of a breeding pond have the potential to cause harm to individuals and disturb and destroy places GCN may use for shelter,

foraging and resting and also result in fragmentation and isolation of habitats by restricting access to feeding and sheltering resources.

4.9.14 Due to the size of the woodland, which extends up to Pond 2 from the development site, it is considered unlikely that GCN would travel so far for resources that they can find immediately within their breeding pond location. Hence, although it is acknowledged that GCN will be present in the woodland in general, they are far less likely to be found in the areas between 260-420m distance from breeding ponds.

4.9.15 During construction, it is considered that the proposed development could proceed under a series of Reasonable Avoidance Measures to include initial ground preparation works being undertaken under the supervision of an NRW GCN licensed ecologist. If GCN are encountered, work must stop immediately and a mitigation plan devised, in consultation with NRW.

4.9.16 In the long term, it is highly unlikely that the proposed development would negatively impact the breeding population in Pond 2. Boundary habitats will be retained and protected and the retained woodland will be fenced off so as to discourage residents of the new properties such as dog walkers and other woodland users from interfering with the woodland habitat. Habitat within 245m of the breeding pond will remain intact and there will therefore be no loss of foraging and sheltering habitat and no isolation or fragmentation effects.

### **Other Protected Species**

4.9.17 It may be possible that badger and otter transiently pass through the Site and surrounding hard standing. Existing known badger pathways (currently along the western boundary) will be retained and protected throughout construction and beyond. During construction, any excavations will be covered overnight or fitted with a means of escape to prevent entrapment of badgers and otter that could fall in. Boundary features must remain permeable to badgers and other mammals including hedgehogs. No effects in this respect are anticipated.

## 5 CONCLUSION AND RECOMMENDATIONS

- 5.1.1 This appraisal was commissioned and undertaken in 2020. The key consideration is that the site is part of a Local Wildlife Site and because of this, it has intrinsic value. However, the quality of the Local Wildlife Site within the proposed development area, having been generally unmanaged for a number of years, is low. The proposed development gives rise to the opportunity to implement a woodland management plan which would improve the quality of the habitat within another area of the woodland which is more conducive to the quality of habitat expected within a LWS and more likely meet the criteria for selection. Otherwise, overall, a very narrow range of protected or notable species rely on this habitat. This is evidenced by the limited data recorded during the range of surveys conducted in and around the woodland. A number of recommendations are made in respect of the species discussed in Section 4 above.

### **Great Crested Newts**

- 5.1.2 There are three ponds within 250m of the development site, one of which supports breeding GCN. A fourth at 275m is present but access was not provided for survey work.

**Recommendation:** the development can proceed only if a series of Reasonable Avoidance Measures are devised and implemented. The RAMs would include pre, during and post ground works. This is to avoid harm to GCN, a European Protected Species.

### **Bats**

- 5.1.3 No roosts were identified and foraging and commuting activity was low during all surveys. Trees with potential to support bats will be lost.

**Recommendation:** a second back tracking survey to be carried out to further assess the woodland as a whole as for the likely presence of bat roosts.

**Recommendation:** a mitigation/compensation scheme should be devised to include the installation of artificial roosts on suitable trees within the woodland and replacement roosts built within new homes.

**Recommendation:** Lighting during the construction period should not be switched on permanently throughout the night to avoid effects on foraging and commuting areas of

light sensitive species such as brown long eared. The external lighting scheme of the properties should be designed sympathetically to reduce the potential for impacts on light sensitive bat species. Current guidance is jointly issued by the Institution of Lighting Professionals and Bat Conservation Trust; Guidance Note 08/18: Bats and Artificial Lighting in the UK. This is to avoid harm to bats which are European Protected Species'.

**Recommendation:** the soft landscaping scheme should include nectar rich shrubs and plants so as to provide diversity of foraging opportunities for bats.

**Recommendation:** A native corridor of hedging/shrubs along the Eastern boundary will be maintained and/or created during the development providing a commuting route around the development.

### **Nesting Birds**

5.1.4 The development site provides numerous opportunities for nesting birds.

**Recommendation:** it is recommended that construction commences (including any vegetation clearance or tree removal) outside of the breeding season. If this is not possible, a qualified ecologist will undertake a survey of the areas to be cleared and ONLY IF no active nests or breeding behavior is observed, can development/clearance commence.

**Recommendation:** bird boxes should be installed on suitable trees within the retained woodland and provided in each building of the development. This would mitigate for the loss of nesting opportunities within the woodland. Boxes should be of various sizes to accommodate a range of species, including tits, sparrows, house martins and swifts.

### **Badgers**

5.1.5 The use of the Site by badger has been confirmed and it is advised to protect them from harm during the construction period.

**Recommendation:** That a pre-construction badger survey be carried out of the wider hospital site to establish and identify all used access routes so that appropriate mitigation can be recommended.

**Recommendation:** Existing known badger pathways (currently along the western boundary) will be retained and protected throughout construction and beyond, allowing badgers free passage across the site and thereby not restricting foraging grounds.

**Recommendation:** During construction, any excavations will be covered overnight or fitted with a means of escape to prevent entrapment of badgers and otter that could fall in.

### **Trees**

- 5.1.6 The majority of the trees and scrub within the Site will be removed to make way for the development. Veteran or significant trees of a range of species should be retained through the development where possible. The development should be constructed to retain and enhance the woodland areas of the Site where possible.

**Recommendation:** A sensitive Landscape Plan be created to retain veteran trees or trees of significance and trees along the eastern and southern boundaries.

**Recommendation:** A Tree Protection Plan be prepared outlining the protective measures to be set up to avoid disturbance to detrimental effects on the trees. This should include but not be limited to establishing a Root Protection Zone around the tree and screening the tree from dust.

### **Ecological Enhancements**

- 5.1.7 A woodland management plan should be implemented to improve the value of the qualifying features of a retained area of woodland to the north of the proposed development site. This may include the following habitat creation and enhancement measures:

- create an area of semi improved woodland ride, planted with native bluebells;
- thinning out of the woodland which would allow light to penetrate to the woodland floor and allow key ancient woodland indicator species to regrow and thrive;
- plant native species in the cleared areas;
- install bat and bird boxes on the retained mature trees;
- create hibernacula for GCN.

- 5.1.8 Provision of twenty bird and bat boxes within the new buildings of the development will provide replacement nesting and roosting opportunities lost through the development. A further 20 bird/bat boxes will be installed throughout the wider woodland to further enhance the area. Boxes suitable for a range of birds will be provided including tits, sparrows, flycatchers, tree creepers, robins, blackbird and owls.
- 5.1.9 Overall, the site has some ecological interest; surveys have revealed that this value is low in terms of species diversity of habitats and protected/notable species. Whilst, of course, the proposed development would, in ecological terms, result in harm, that harm is of minor significance, especially in the context of the size of the wider woodland. Furthermore, the medium to long term prospects of the habitat within the site are low grade in its unmanaged state and susceptibility to storm damage (due to shallow root network). Accepting some harm to low value habitats within the proposed development area, the commercial venture provides a unique opportunity to introduce an arboricultural/ecological enhancement and management strategy to a retained and protected area of the wider woodland. This ecological enhancement is considered to provide net gain in the long-term.

## 6 REFERENCES

- 1 CIEEM (2013). *Guidelines for Preliminary Ecological Appraisal*. Winchester. CIEEM.
- 2 Collins, J (ed.). 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> edn)*. The Bat Conservation Trust. London.
- 3 Mitchell-Jones, A.J. 2004. *Bat Mitigation Guidelines*. English Nature, Peterborough
- 4 Natural England (2010). *European Protected Species and the Planning Process*.
- 5 Planning Policy Wales Edition 10.

## A1 Photographs



Photo 1. Area within the Site, showing limited ground flora and remains of hospital buildings



Photo 2. Area on the Southern boundary showing concrete pad of hospital building with tree line either side of it

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Photo 3. Facing south along western boundary of Site



Photo 4. Example of areas of concrete and rubble dumping

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Photo 5. Ground flora within southern section. Southern fence line boundary can be seen



Photo 6. Showing concrete pad and concrete footpath

## Ecological Appraisal



Photo 7. Building B1 the water tower. Southern and eastern aspects. Note access to first floor



Photo 8 Building B1 the water tower. Western and northern aspects. Note access to ground floor

## Ecological Appraisal

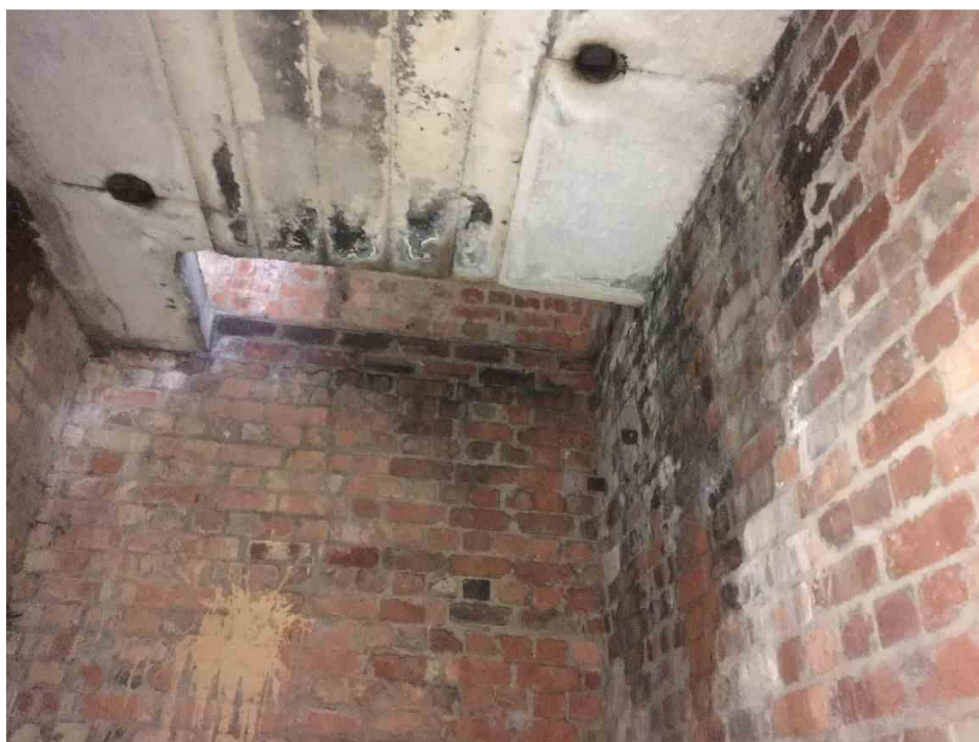


Photo 9. Internal picture of ground 'floor' of water tower. Note access to first floor through large area of ceiling



Photo 10. Building B2

## Ecological Appraisal



Photo 11. Building B2, steel sheet walls and roof



Photo12. Building B2 internal with large amount of light ingress and steel walls and roof

## Ecological Appraisal



Photo 13. Pond 1

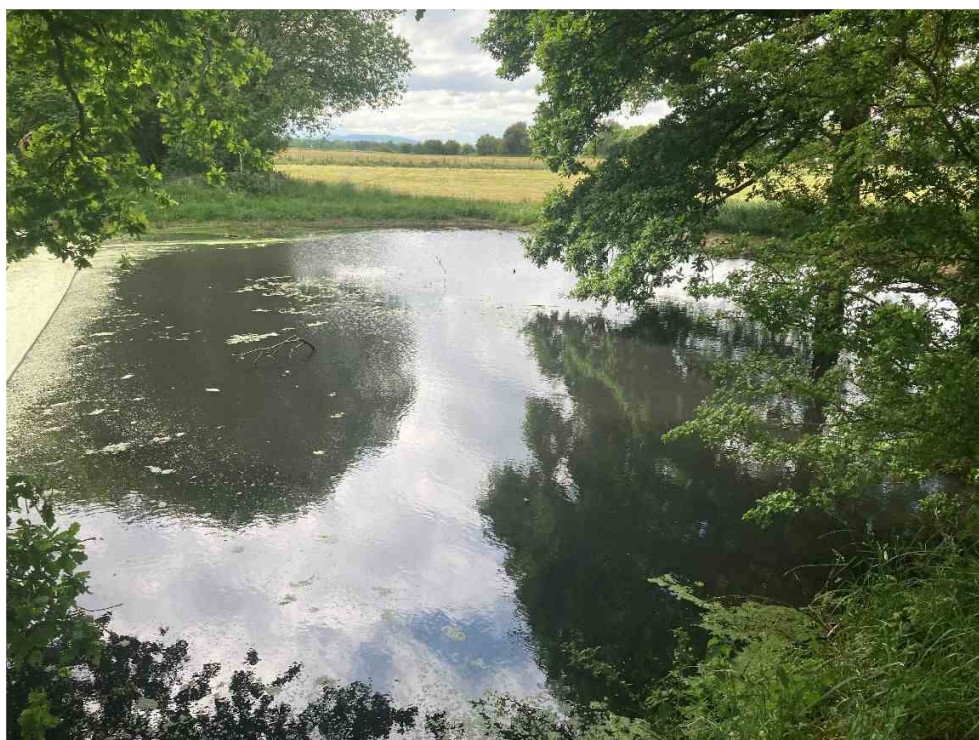


Photo 14. Pond 2

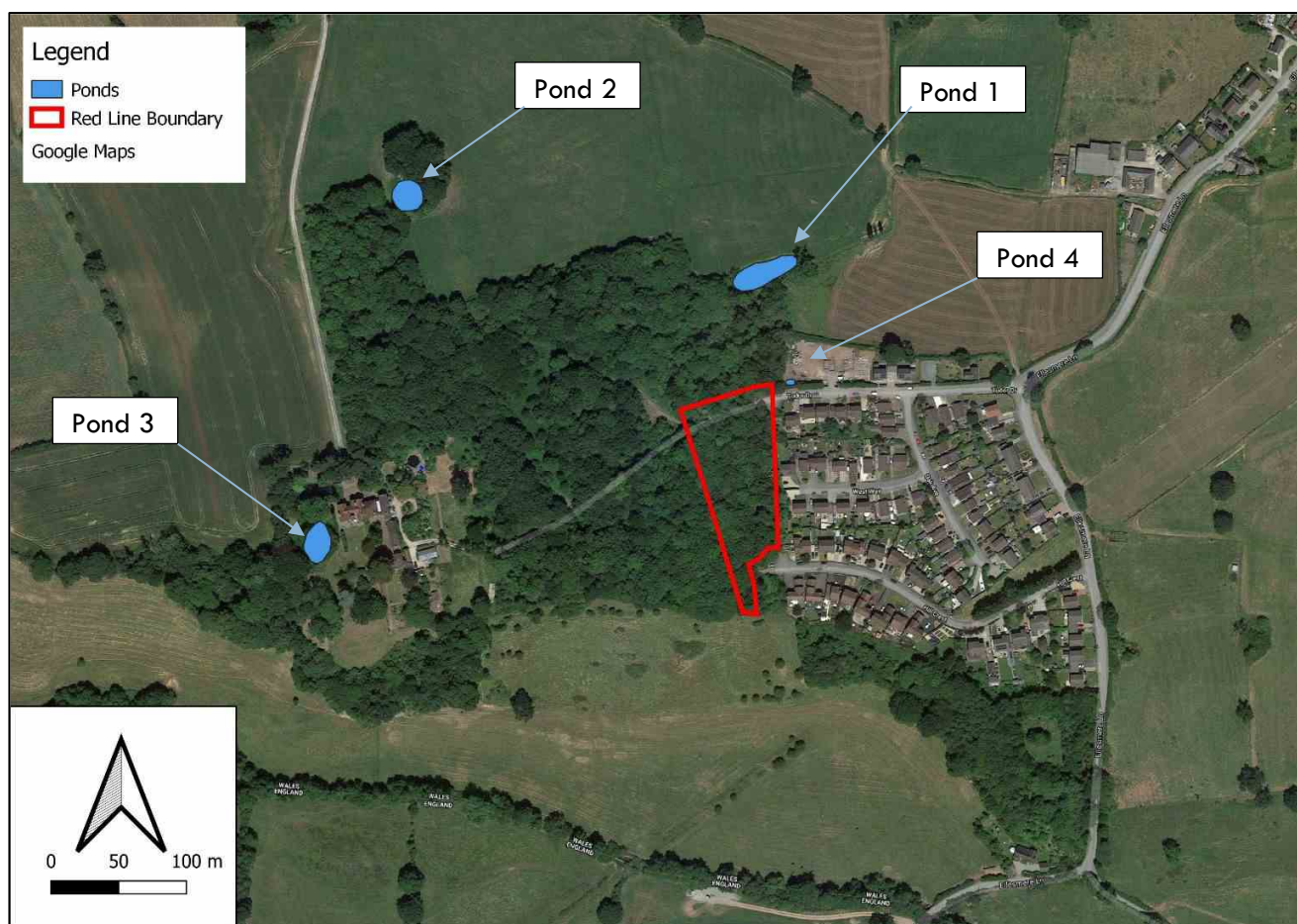
## Ecological Appraisal



Photo 15. Aerial tree inspections being carried out of all trees within Site boundary and 30m buffer

## Ecological Appraisal

Figure 1: Aerial picture of the Site including the location of ponds.



## Ecological Appraisal

Figure 2: Plan showing trees within the Site boundary and within the 30m buffer zone that had moderate or high bat roosting potential.

