



Lady Margaret's Park, Chirk,  
Wrexham

## **Preliminary Ecological Appraisal**

Prepared by  
CSA Environmental

on behalf of  
Caravan and Motorhome Club

Report Ref: CSA/1992/05

August 2021

This report may contain sensitive ecological information. It is the responsibility of the Local Authority to determine if this should be made publicly available.

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## **EXECUTIVE SUMMARY**

Redevelopment of the existing Caravan and Motorhome Club site is proposed at Lady Margaret's Park, Chirk, Wrexham for which detailed planning permission is being sought.

CSA Environmental was instructed by the Caravan and Motorhome Club to undertake a Preliminary Ecological Appraisal (PEA) of the Site to identify ecological constraints to development, inform recommendations for design changes, highlight opportunities for ecological enhancement and determine any additional investigation/survey work necessary.

As part of this PEA, a desk study and extended Phase 1 Habitat survey of the Site were undertaken in July 2021. The Site comprises mown amenity grassland managed for existing caravan pitches, set within a block of existing mature and ancient woodland, with associated access routes, toilet block, reception, and warden's facilities.

The Site lies 0.21km from the River Dee and Bala Lake SAC and River Dee/Afon Dyfrdwy SSSI. Consultation with the LPA authority has been undertaken by the appointed drainage consultants to address Habitat Regulation Assessment requirements.

Grassland habitat currently present within the Site is generally common and widespread, with the greatest ecological interest associated with the mature woodland and trees surrounding the Site. These will be retained and protected alongside proposals, with a small number of central trees to be removed to facilitate the construction of a new toilet block.

Protected species which are present include foraging/dispersing bats and nesting birds in woodland and trees. Bat roost surveys confirmed the presence of a minor soprano pipistrelle day roost within the toilet block. A bat tube will be incorporated into each gable end of the new toilet block to replace the roost location lost to demolition, with further bat boxes to be installed on retained trees for additional enhancement. A sensitive lighting scheme has been designed to minimise impacts to bats and notable invertebrate assemblages. A population of great crested newts is present within 110m, however they are considered unlikely to be present within short mown amenity areas, with a non-licensed working methods approach considered proportionate to the scale and type of habitat impacted.

No overriding constraints to development of the Site have been identified. Recommendations have been provided for sensitive design and ecological enhancement measures that could be delivered as part of the proposed development to deliver biodiversity net benefits.

## 1.0 INTRODUCTION

- 1.1 This report has been prepared by CSA Environmental on behalf of the Caravan and Motorhome Club. It sets out the findings of a Preliminary Ecological Appraisal (PEA) of existing caravan site at Lady Margaret's Park, Chirk, Wrexham (hereafter referred to as 'the Site'). Redevelopment of the existing site through conversion of grass pitches to five new all-weather pitches and nine serviced pitches, with a further 17 existing hardstanding pitches converted to serviced and premium pitches and one all-weather pitch, for which detailed planning permission is being sought. The existing toilet block will be demolished and rebuilt to be fit for purpose for current demands, with additions made to site warden's facilities.
- 1.2 The scope of this appraisal has been determined with due consideration for best-practice guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017), and to the *Biodiversity: Code of practice for planning and development* (BS 42020:2013) published by the British Standards Institution (2013).
- 1.3 The Site occupies an area of c. 5.7ha and is located around central grid reference SJ 28296 37474, to the west of Chirk. It consists primarily of hardstanding and amenity grassland with occasional stands of ornamental planting, surrounded by mature and ancient woodland (see Habitats Plan in Appendix A).
- 1.4 A desk study and extended Phase 1 Habitat survey were undertaken of the Site, the findings of which are presented herein.
- 1.5 This PEA aims to:
  - Identify any ecological constraints to development of the Site
  - Inform design decisions
  - Identify further ecological surveys and investigation necessary to inform a full Ecological Impact Assessment (EclA) of the Site
  - Highlight opportunities for ecological enhancement
- 1.1. As set out in best practice guidelines (CIEEM, 2017) a PEA is typically only suitable for planning submission where there are no ecological constraints relating to the project. Where ecological constraints are identified, such as the presence of important ecological features, the effects of development on these features should be assessed within a separate EclA report or species-specific reports.

## **2.0 LEGISLATION, PLANNING POLICY & STANDING ADVICE**

### **Legislation**

- 2.1 Legislation relating to wildlife and biodiversity of particular relevance to this PEA includes:
- The Conservation of Habitats and Species Regulations 2017
  - The Wildlife and Countryside Act 1981 (as amended)
  - The Natural Environment and Rural Communities (NERC) Act 2006
  - The Protection of Badgers Act 1992
- 2.2 This above legislation has been addressed, as appropriate, in the production of this report. Further information on the above legislation is provided in Appendix B.

### **Planning Policy Wales**

- 2.3 The Planning Policy Wales (PPW) 11 (Welsh Government, 2021) sets out the government planning policies for Wales and how they should be applied. Chapter 6: Distinctive and Natural Places, is of particular relevance to this report as it relates to ecology and biodiversity. Further details are provided in Appendix B.
- 2.4 Technical Advice Note 5: Nature Conservation and Planning (Welsh Assembly Government, 2009), which is referred to by the PPW, provides further guidance in respect of statutory obligations for protecting and enhancing biodiversity and geological conservation and their effects within the planning system.

### **Local Planning Policy**

- 2.5 A number of local planning policies relate to ecology, biodiversity and/or nature conservation. These are summarised in Table B.1 of Appendix B. These policies have been addressed, as appropriate, in the production of this report.

### **Standing Advice**

- 2.6 Natural Resources Wales Standing Advice (Natural Resources Wales, 2015) regarding bats and planning, aims to support local authorities and forms a material consideration in determining applications. Standing Advice has therefore been given due consideration, alongside other detailed guidance documents, in the production of this report.

## 3.0 METHODS

### Desk Study

- 3.1 The Multi-Agency Geographic Information for the Countryside (MAGIC) online database was reviewed in July 2021 to identify nature conservation designations within the following search radii:
  - Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites within 10km of the Site (including possible/proposed sites)
  - Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Local Nature Reserves (LNR) within 3km of the Site
  - Other relevant data e.g. Ancient Woodland Inventory within 1km of the Site
- 3.2 A review was undertaken of the location of any such designations, their distance from and connectivity with the Site, and the reasons for their designation. This information was used to determine whether they may be within the Site's zone of influence.
- 3.3 As the Site lies close to the Wales-England border, both the North Wales Environmental Information Service (Cofnod) and Shropshire Ecological Data Network (SEDN) were contacted for details of any non-statutory nature conservation designations and records of protected/notable habitats and species. This information was requested for an area encompassing the Site and adjacent land within c. 2km of its central grid reference. This search area was selected to include the likely zone of influence upon non-statutory designations and protected or notable habitats and species.
- 3.4 Further online resources were reviewed for information which may aid the identification of important ecological features. The Woodland Trust's online Ancient Tree Inventory was reviewed for known ancient or veteran trees within the Site and adjacent land. Interactive online mapping provided by the charity 'Buglife' was used to determine whether the Site falls within an Important Invertebrate Area.
- 3.5 In accordance with Natural England's Great Crested Newt Mitigation Guidelines (2001), a desktop search was undertaken to identify ponds within 500m of the Site which may have potential to support breeding great crested newts *Triturus cristatus*, using Ordnance Survey (OS) mapping, the MAGIC database and aerial photography. Whilst it is recognised this is Natural England guidance, no equivalent is available in Wales and is taken to be the most relevant guidance available.
- 3.6 Where possible under the terms of the data provider, relevant desk study data are presented in Appendix C.

## **Field Survey**

### Extended Phase 1 Habitat Survey

- 3.7 An extended Phase 1 Habitat survey was carried out in fine and dry weather conditions on 19 July 2021 by Cerian MCIEEM, encompassing the Site and immediately adjacent habitats that could be viewed.
- 3.8 Phase 1 Habitat survey is a method of classification and mapping wildlife habitats in Great Britain. It was originally intended to provide “...*relatively rapidly, a record of the semi-natural vegetation and wildlife habitat over large areas of countryside.*” The Phase 1 Habitat survey method has been widely ‘extended’ beyond its original purpose to allow the capture of information at an intermediate level between Phase 1 and Phase 2 Habitat surveys, and here includes the following:
- More detailed floral species lists for each identified habitat
  - Descriptions of habitat structure, the evidence of management and a broad assessment of habitat condition
  - Mapping of additional habitat types (e.g. hardstanding)
  - Identification of Priority Habitats under Section 41 of the NERC Act
  - Identification of Habitats Directive Annex I habitat types
  - Evidence of, or potential for, European Protected Species (EPS) (including bats, great crested newt, dormouse and otter)
  - Evidence of, or potential for, other protected species (including birds, reptiles, water vole, badger and certain invertebrates)
  - Evidence of, or potential for, other notable species (including S41 Species of Principal Importance as well as notable, rare, protected or controlled plants and invertebrates)
- 3.9 Results of the extended Phase 1 Habitat survey are presented on the Habitats Plan in Appendix A. Appendix D provides a list of floral species recorded in each habitat.

### **Limitations**

- 3.10 There were no specific limitations to the desktop study, or the Phase 1 habitat survey, which was conducted at the optimum time of year for botanical survey.

### **Evaluation and Assessment**

- 3.11 The evaluation and assessment of ecological features is typically beyond the scope of a PEA and has therefore not been undertaken here. Formal evaluation and assessment of any identified important ecological features should be undertaken as part of either a full EcIA, or receptor-specific survey and assessment in accordance with the published CIEEM method (CIEEM, 2018).

## 4.0 BASELINE ECOLOGICAL CONDITIONS

### Nature Conservation Designations

#### Statutory

- 4.1 There are no statutory designations covering any part of the Site.
- 4.2 Four international statutory designations were identified within 10km of the Site. These were the River Dee and Bala Lake (England and Wales) SAC (c. 0.21km south of the Site), Berwyn and South Clwyd Mountains (Wales) SAC (c. 6.13km north-west), Johnstown Newt Sites (Wales) SAC (c.7.66km north-east) and Berwyn (Wales) SPA (c.8.61km west of the Site)
- 4.3 Three national statutory designations were identified within 3km of the Site. These were Chirk Castle and Parkland (Wales) SSSI (c. 0.03km west of the Site), River Dee (England) SSSI (c.0.21km south of the Site) and Afon Dyfrdwy (River Dee Wales) SSSI (c. 0.21km south of the Site).
- 4.4 One local statutory designation was identified within 3km of the Site. This was the Ifton Meadows LNR (c.2.9km east of the Site). Given the distance from the Site, along walking routes over 3.5km in length, and the network of walking routes in the local area, it is considered unlikely to experience a significant increase in recreational use from occupiers of the Caravan and Motorhome Club following refurbishment of existing pitches.
- 4.5 These statutory designations are described in Table 1 below. Based on the distance, nature of the proposals and poor habitat connectivity between the Site and Berwyn and South Clwyd Mountains SAC, Johnstown Newt Sites SAC and Berwyn SPA, and with consideration of its special interest features and their vulnerabilities, it is considered that proposals for redevelopment of existing pitches at the existing Caravan and Motorhome Club site and demolition and construction of a larger toilet block is unlikely to cause significant effects on these designations, which is therefore not taken to represent a constraint to development. However, the Site falls within 210m of the River Dee and Bala Lake SAC, and River Dee SSSI to the south and Chirk Castle and Parkland SSSI to the west. Further consideration of potential impacts on these designations is given in Section 5.0.

#### Non-Statutory

- 4.6 One non-statutory designation was identified by Cofnod within 2km of the Site, comprising Coed y Camlas/Canal Wood Wildlife Site (c. 110m north-east of the Site). Canal Wood is accessible via a well-managed tow path, within c.800m walk of the proposed redevelopment. However given proposals are for the upgrading of existing pitches, there is considered to be a negligible increase in recreational visitors, and is not considered to result in any significant impacts on the qualifying features of the Wildlife Site.

- 4.7 The SEDN provided a further two non-statutory designations within 2km of the Site, comprising Pentre Wood LWS (c. 750m south-west) and Nanteris Wood (c. 1.6km south-west). Pentre Wood has some formal access and is within a walkable distance of the existing site. However again given the scale of the proposals and the network of public walking routes in the local area within Chirk and Chirk Castle, this is not considered to give rise to any significant impacts on the LWS. These non-statutory designations are described in Table 1 below.

**Table 1.** Statutory and Non-Statutory Designations within search radii

| Site Name & Designation                                            | Distance & Direction from Survey Area | Special Interests or Qualifying Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| International Designations within 10km                             |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| River Dee and Bala Lake/ Afon Dyfrdwy a Llyn Tegid SAC             | c. 0.21km south                       | Watercourse designated for plain to montane levels with water-crowfoot <i>Ranunculus spp</i> vegetation. Also designated for presence of Atlantic salmon <i>Salmo salar</i> and floating water-plantain <i>Luronium natans</i> . Other important species supported include otter <i>Lutra lutra</i> , sea lamprey <i>Petromyzon marinus</i> , river lamprey <i>Lampetra fluviatilis</i> , brook lamprey <i>Lampetra planeri</i> , Atlantic salmon <i>Salmo salar</i> and bullhead <i>Cottus gobio</i> . |
| Berwyn a Mynyddoedd de Clwyd/ Berwyn and South Clwyd Mountains SAC | c. 6.13km north-west                  | Contains the largest stands of upland European dry heath and supports the most extensive tract of near-natural blanket bog in Wales.                                                                                                                                                                                                                                                                                                                                                                    |
| Johnstown Newt Sites SAC                                           | c. 7.66km north-east                  | Designated for large population of great crested newts <i>Triturus cristatus</i> . Habitats of importance include water bodies, bogs, marshes, fens, heath, scrub, grassland and broad-leaved deciduous woodland.                                                                                                                                                                                                                                                                                       |
| Berwyn SPA                                                         | c. 8.61km west                        | Diverse habitat mosaic which supports hen harrier <i>Circus cyaneus</i> , merlin <i>Falco columbarius</i> , peregrine falcon <i>Falco peregrinus</i> and red kite <i>Milvus milvus</i> .                                                                                                                                                                                                                                                                                                                |
| National Designations within 3km                                   |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| River Dee (England) SSSI                                           | c. 0.21km south                       | River with floating vegetation. Supports otter, sea lamprey, river lamprey, brook lamprey, Atlantic salmon, bullhead, grayling* <i>Thymallus thymallus</i> and freshwater pearl mussel* <i>Margaritifera margaritifera</i> .                                                                                                                                                                                                                                                                            |
| Afon Dyfrdwy (River Dee) SSSI (Wales)                              | c. 0.21km south                       | River with floating vegetation often dominated by water crowfoot <i>Ranunculus aquatilis</i> within Wales. Supports otter, sea lamprey, river lamprey, brook lamprey, Atlantic salmon, bullhead, grayling and freshwater pearl mussel                                                                                                                                                                                                                                                                   |

|                                               |                     |                                                                                                                                                                                                                                                                       |
|-----------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chirk Castle and Parkland (Wales) SSSI        | c. 0.08km west      | Ancient wood pasture and parkland containing a large and diverse range of veteran and ancient trees. Also important for invertebrate species, including saproxylic invertebrates.                                                                                     |
| Local Designations within 3km                 |                     |                                                                                                                                                                                                                                                                       |
| Ifton Meadows LNR                             | c.2.9km east        | Habitat mosaic comprised of acid, neutral and marshy grassland, ancient semi-natural woodland, scrub and open water. Supports a diverse range of bird, reptile, invertebrate and flora species.                                                                       |
| Non-statutory Designations within 3km         |                     |                                                                                                                                                                                                                                                                       |
| Coed y Camlas/Canal Wood Wildlife Site (W232) | c. 107m north       | Semi-natural broad-leaved woodland either side of the canal. The canopy is dominated by sycamore, with ash, sessile oak and birch. The understorey includes hawthorn, hazel, elder and elm, with dog's mercury, tufted hair-grass, wood melick, bluebell and primrose |
| Pentre Wood Local Wildlife Site               | c.752m south-west   | Ancient woodland, continuation of Nanteris Wood                                                                                                                                                                                                                       |
| Nanteris Wood Local Wildlife Site             | c. 1.6km south-west | Ancient woodland in valley                                                                                                                                                                                                                                            |

### Ancient Woodland

- 4.8 The northern half of the existing Lady Margaret's site is covered by an ancient woodland designation. Other extensive areas of ancient woodland are present in close proximity to the Site, including c.5m south, c. 30m west, and c.50m north. Additionally, five oaks within the eastern woodland are listed as Veteran on the Ancient Tree Inventory and one oak tree on-site is listed as Notable within the adjacent field to the east. This is fairly typical for the context of the Site, which lies on the edge of Chirk Castle and Parkland SSSI. Retention of on-site and adjacent features with appropriate buffers and protection measures to respect the root protection areas of the trees has been considered within the design.

### **Habitats and Flora**

- 4.9 Habitats recorded on-site were classified in line with current Phase 1 Habitat survey guidance (JNCC, 1990), as illustrated in Appendix A. Detailed species lists for each habitat are provided in Appendix D.

### Notable Flora Records

- 4.10 Cofnod provided 67 records of 33 notable plant species from within the search area, including records of invasive species. Those of potential relevance to habitats on-site include bluebell *Hyacinthoides non-scripta* (located within on-site ancient woodland and other areas around Chirk Castle) and thin-spiked wood sedge *Carex strigosa* (located c. 270m north in woodland near the canal). Japanese knotweed *Fallopia japonica* and Himalayan balsam *Impatiens glandulifera* have been

recorded nearby along the River corridor and at Chirk Castle but have not been identified on-site.

- 4.11 The SEDN provided only three records of plant species, including bluebell, floating water-plantain *Luronium natans* and butcher's-broom *Ruscus aculeatus*, the latter two of which are historic records from pre-1960. Only bluebell is of relevance to Site, which is likely present in on-site woodlands.

#### Semi-improved grassland

- 4.12 The Site is comprised pre-dominantly of amenity grassland, which appears to be managed on a very regular basis as close mown sward for use as open space by visitors of the Site. Species recorded include selfheal *Prunella vulgaris*, common mouse-ear *Cerastium fontanum*, daisy *Bellis perennis*, creeping cinquefoil *Potentilla reptans*, creeping buttercup *Ranunculus repens*, white clover *Trifolium repens*, ribwort plantain *Plantago lanceolata*, ground ivy *Glechoma hederaceae* and thyme leaved speedwell *Veronica serpyllifolia*.

#### Woodlands and trees

- 4.13 Mature woodland surrounds the entire Lady Margaret's Site, with the northern section designated as ancient woodland. The woodland comprises largely of oak *Quercus robur*, ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus* and beech *Fagus sylvatica*, with larch *Larix decidua*, elder *Sambucus nigra*, hornbeam *Carpinus betulus* and small area of Douglas fir *Pseudotsuga menziesii* in the east. Ground flora included lords and ladies *Arum maculatum*, and stands of common nettle *Urtica dioica*, with bluebell recorded in adjacent woodland ground flora in March 2021.
- 4.14 Groups of mature and semi-mature trees are present within the centre of the Site in open space areas with species including birch *Betula* sp., rowan *Sorbus aucuparia*, beech, *Sorbus* sp., cherry *Prunus* sp. whitebeam *Sorbus aria* and Cypress.

#### Scrub and tall ruderal

- 4.15 Scattered tall ruderal is present in the grassland sward under canopy of trees in the centre of the Site, with dense stands on the edge of the woodland perimeter, comprising mostly of nettle *Urtica dioica*.
- 4.16 Scattered bramble scrub *Rubus fruticosus* agg is present within woodland areas. A small area of native scrub species, including hazel *Corylus avellana*, dogwood *Cornus sanguinea*, elder *Sambucus nigra*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*, is present east of the wardens block.

### Other habitats

- 4.17 Discrete areas of ornamental species are present, comprising buddleia within amenity areas and a short c.10m section of privet *Ligustrum sp.* and dogwood *Cornus sanguinea* hedge east of the toilet block screening the bin store.
- 4.18 Hardstanding vehicle access routes are present through the site, with all-weather gravel caravan pitches also frequent. Two single storey buildings are present, at the toilet block and the reception building.

### **Fauna**

#### Bats

- 4.19 A total of 362 bat records were identified within the search area, dating from 1985 to 2020, including a number of roosts. These include the following species: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, brown long-eared *Plecotus auritus*, Natterer's *Myotis nattereri*, Whiskered *Myotis mystacinus*, Brandts *Myotis brandtii*, Daubenton's *Myotis daubentonii*, lesser horseshoe *Rhinolophus hipposideros* and greater horseshoe *Rhinolophus ferrumequinum*.
- 4.20 The closest records are of soprano pipistrelle and common pipistrelle recorded along the access driveway and woodland to the immediate west of the existing Caravan and Motorhome Park (adjacent west of the Site). Additional records of these common species are recorded further south in the woodland and other woodlands associated with Chirk Castle. At least 48 of the records are associated with Mynattyn Wood (c. 480m north-west) in 2009, with four species recorded, including lesser horseshoe bat. The majority of other records are associated with woodlands surveyed at Chirk Castle in 2009, including records of lesser horseshoe commuting and foraging in the woodland, as well as one probable night roost in a nearby cottage. Lesser horseshoe bats have been monitored within Chirk Castle regularly (hibernation, maternity and temporary roosts) between 1988 and 2020. There are other good hibernation opportunities in close proximity, with records of greater horseshoe bats, alongside lesser horseshoe and four other bat species, hibernating in nearby Ceiriog River Caves and Kilns. Other records of large roosts supporting 500+ pipistrelle bats and 100+ pipistrelle bats were given for other locations in the local search area, and a probable brown long-eared roost (identified through droppings).
- 4.21 The SEDN provided only two records of bat species, comprising one common pipistrelle and one soprano pipistrelle recorded at Moreton Hall in 2012, c. 1.8km south-east. No further data or information has been provided.

- 4.22 The proposed redevelopment of the existing Site is small scale but given its woodland setting, and connectivity with ancient woodland corridors to the west and north, and presence of roosts nearby, it likely forms part of a wider foraging area for a number of local bat species, including rare lesser horseshoe bats, known to be present at Chirk Castle.
- 4.23 A bat transect survey was requested following consultation with the Local Authority ecologist to give further information on general bat activity in the caravan park and to identify whether horseshoe bats use habitats on-site for foraging or commuting. Further preliminary roost assessment of trees to be removed was also recommended and for the toilet block to be demolished, with subsequent roost surveys as outlined below. Full methods and results are given in the Bat Survey Report (Appendix E). These surveys confirmed common and widespread species to be present on-site, foraging along woodland edges and tree canopies. A minor soprano pipistrelle roost (one bat on two surveys, with a third to be completed), was confirmed within the toilet block. No trees to be removed to facilitate proposals were found to have bat roosting potential.
- 4.24 Given its sensitive location, the lighting strategy has been discussed with the project team to minimise lighting impacts on the local bat population. The lighting strategy is discussed further in Section 5.0.

#### Badger

- 4.25 Cofnod have provided seven records of badger *Meles meles* from within the search area, dating from 2003 to 2015, including active setts and latrines. The closest record is c. 500m from the Site. The SEDN have provided a further six records of badger *Meles meles* from within the search area, dating from 2004 to 2014. All are located over 1km south across the River Dee.
- 4.26 The Site lies on the edge of a large area of woodland, with substantial suitable habitat for badgers in the local landscape across the network of woodlands and parkland. No evidence to indicate presence of badgers was identified on-site, such as setts or latrines, and the constant presence of human disturbance during the peak tourism season (April – September) is likely to deter their use of the grassland habitats on-site for foraging. The conversion of grass pitches to all-weather pitches will result in a minor loss of amenity grassland habitat, but is unlikely to be a key resource for badgers in the local landscape and are not considered to pose a constraint.

#### Dormouse

- 4.27 No records of dormouse *Muscardinus avellanarius* were provided by Cofnod or SEDN.

- 4.28 Current knowledge of dormice in North Wales finds them to be fairly restricted, with key sites at Ruthin and the Wych Valley. The proposed Site lies within a large area of ancient woodland, which superficially has potential for dormice. The boundary woodland habitats will be retained as part of proposals, with the scheme focused on the central grassland habitats and a small number of standalone trees located centrally within the Site. As such potentially suitable habitats will be retained and protected. Dormice are therefore not considered to pose a constraint.

#### Water Vole

- 4.29 Records of water vole *Arvicola amphibius* are known from Llangollen Canal, dating from 1997 to 2004, located c.100m north east of the Site. The SEDN provided two further records of water vole, from 1998 and 2011, associated with locations along the River Dee to the south of the Site.
- 4.30 There is no aquatic habitat for water voles on-site or immediately adjacent. The closest possible habitat is located over 200m south at the River Dee, across a road and open field habitat, or c.190m east at the aqueduct, across a road and housing, and so whilst known to be present locally, they are considered absent from Site and scoped out of further assessment.

#### Otter

- 4.31 A total of 21 records of otter *Lutra lutra* were identified within the search area, dating from 2000 to 2014. The closest records are located from along the canal at Chirk Tunnel from 2014, within 150m of the Site, with the majority of records associated with the River Dee to the south of the Site. The SEDN provided a further six records of otter, dating from 2006 to 2013, associated with the River Dee, with the closest located c.250m south.
- 4.32 Whilst records of otter are associated with the river nearby, the Site is located uphill from the river and the aqueduct entrance to the tunnel, across an open field, gardens and a road. Given the high quality of habitat associated with the River Dee and along the canal, it is considered highly unlikely otters would use terrestrial features on-site and are not considered further.

#### Other Mammals

##### *Brown Hare*

- 4.33 Four records of brown hare *Lepus europaeus* were returned by Cofnod from within the search area, the closest located over c. 1km from the Site within Chirk Castle parkland and a nearby golf course.
- 4.34 The local landscape supports high quality habitat for brown hare, with a mosaic of woodland and grassland habitats. Whilst the existing Site is located within mature woodland habitat, the grassland is maintained as

short amenity of limited value to brown hare, with constant disturbance between April – September from visitors, which significantly reduces the suitability for brown hare, as well as being very level ground whereas hare prefer some more undulating topography and open views to enable better visibility of predators. As such, brown hare are considered to be likely absent and are not considered further.

#### *Hedgehog*

- 4.35 Thirteen records of hedgehog *Erinaceus europaeus* were identified by Cofnod within the search area, as recently as October 2020. The majority of records are located in residential areas of Chirk and Chirk Bank, with the closest located c.660m east. The SEDN provides three additional records of hedgehog, from a 1km grid square that contains the Site.
- 4.36 Perimeter habitats of scrub and woodland are suitable for sheltering and foraging hedgehogs if present nearby. The proposals will retain boundary features and maintain open areas, which will allow hedgehogs to continue to move through the landscape. Some habitat piles will be created in the adjacent wildlife enhancement field to the north-west, which will create new overwintering opportunities for hedgehog.

#### *Polecat*

- 4.37 Three records of polecat *Micromys minutus* were identified by Cofnod within the search area, dating from 1960, 2009 and 2015. The closest record is a brief, unverified, sighting of a large animal with polecat markings crossing the road at the southern edge of the Site. Another was reported dead on the bridge crossing the River Dee, c.1.6km east in 2009. The SEDN returned one record of polecat from 2011, located over 1.6km south-east.
- 4.38 Mature woodland and scrub habitats around the boundaries of the Site may offer some suitable habitat as part of a wider home range for polecat if present nearby, particularly given the extensive areas of suitable parkland and woodland habitat in the local area. A large number of rabbits were noted during evening visits grazing on amenity grassland, and so key prey resources are present, however given its small size (c.5ha) in the context of the wider parkland landscape and regular human disturbance, it is not considered to form a significant resource for polecat, which typically have large home ranges, varying in size from 42 to 428ha.

#### Birds

- 4.39 A total of 175 records of 43 notable bird species were identified by Cofnod within the search area (some of which comprise larger clusters of records from the same location over wider time periods), dating from 2007 to 2021. Those of potential relevance to woodland, scrub and grassland habitats on and adjacent to Site include: song thrush *Turdus*

*philomelos*, redwing *Turdus iliacus*, fieldfare *Turdus pilaris*, bullfinch *Pyrrhula pyrrhula*, marsh tit *Poecile palustris*, dunnoek *Prunella modularis*, starling *Sturnus vulgaris* and red kite *Milvus milvus*. Given the enclosed nature and managed structure, on-site grassland habitat is unlikely to provide foraging habitat for barn owl *Tito alba*.

- 4.40 The SEDN provided 27 further records of notable bird species, with those of potential relevance including stock dove *Columba oenas*, fieldfare, redwing, song thrush and mistle thrush *Turdus viscivorus*. Fieldfare and redwing are Red List species for their rare breeding status, but are a common winter migrant and are likely to be found in peripheral woodland and tree habitats.
- 4.41 The woodlands, trees and scrub are likely to support a variety of hole and scrub nesting species. The majority of boundary habitats of higher value will be retained and protected alongside the scheme to retain this resource. Some of the notable records are for rarer woodland birds (such as pied flycatcher *Ficedula hypoleuca*, goshawk *Accipier gentilis* and woodcock *Scolopax rusticola*), however the presence of the existing Caravan and Motorhome Park is likely to deter certain species from nesting nearby due to human disturbance. The Chirk Castle parklands and woodlands and woodland along the River Dee in the local landscape likely offer the most optimal habitat for these species. Amber-List tawny owl was incidentally recorded calling in woodland habitats during evening bat surveys. On-site habitats are unsuitable to support ground nesting species.

#### Reptiles

- 4.42 Two records of grass snake *Natrix natrix* (syn. *N. helvetica*) were returned by Cofnod within the search area, located over 1km west within Chirk Castle grounds and parkland. No other records were returned from the SEDN.
- 4.43 The grassland habitats are managed as short mown amenity, and are heavily shaded by the surrounding woodland habitats and is considered highly unlikely to support reptile species. Longer, tussocky grassland is present in a nearby field to the north-east, which provides a larger area of more suitable habitat.

#### Amphibians

- 4.44 A total of 23 records of five amphibian species were identified within the search area, including common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Lissotriton vulgaris*, palmate newt *Lissotriton helvetica* and great crested newt. The closest records are of palmate newt, smooth newt, common frog and great crested newt at a woodland pond associated with Chirk Castle, located c.115m west of the Site, across an area of woodland continuous with the existing Caravan and Motorhome Park. This pond has been surveyed on a

number of occasions between 2008 and 2019, with a peak of 12 adult great crested newt recorded. Further ponds at Chirk Castle have also been surveyed and confirmed presence, with a peak of 92 adult male and 15 female great crested newt located c.1.2km north-west of the Site, and confirmed presence c. 1.4km north-west. Further older records of presence has been confirmed in ponds east of Chirk.

- 4.45 No ponds are present on-site or immediately adjacent, but scrub and woodlands provide suitable sheltering and foraging habitat for amphibians in their terrestrial phase. A more detailed appraisal of the Site in respect of great crested newt is provided below.

#### *Great Crested Newt*

- 4.46 Despite spending much of their annual lifecycle within the terrestrial environment, great crested newts are dependent upon the presence of suitable aquatic breeding habitat in order for a population to persist. No potential breeding ponds were identified on-site during the site survey, while a further three appear to be present within a dispersible range of the Site, based on OS mapping. Two are located east of the aqueduct (c.420m and 550m respectively), across roads and gardens, and are not considered of relevance and scoped out of further assessment. The remaining feature is the pond known to support a population of great crested newts, located c.115m west.
- 4.47 The majority of on-site habitat is considered unsuitable to support great crested newts in their terrestrial phase, managed as short mown amenity right up to woodland edges to accommodate visitors, with pockets of ruderal under tree canopies. Boundary woodland habitats, with connectivity to the nearby pond habitat, provide optimal foraging and sheltering habitats for amphibians, which will be retained alongside proposals. However, given the proximity to a known population, a precautionary non-licensed working method statement is considered proportionate and appropriate to ensure there are no impacts on the favourable conservation status of the local population.

#### Invertebrates

- 4.48 A total of 191 records of invertebrate species were identified within the search area. Given the invertebrate interest of the adjacent parkland and woodlands, as expected the vast majority are associated with Chirk Castle woodlands and parklands SSSI. These are for a wide range of beetle, moth, butterfly and fly species, recorded as part of surveys conducted over a number of years. A small number have been recorded at Pentre Wood LWS, south of the River Dee, and at residential locations. The SEDN provided only two further records, of brown-spot pinion *Agrochola litura*, which frequents woodland and bushy suburban habitats, and dusky thorn *Ennomos fuscantaria*, associated with deciduous woods and their margins and suburban habitats where larval foodplant ash grows. Both of these species could be associated with

peripheral habitats on-site, and are Biodiversity Action Plan (BAP) and Section 41(England)/Section 7(Wales) species.

- 4.49 Given mature woodland adjacent to Site is continuous with the Chirk Castle grounds, it is possible some of the above notable species may be recorded in peripheral habitats which will be retained alongside proposals. Any new external lighting is being upgraded to modern LED lighting, with shields and cowls, and kept to a minimum for health and safety. LED lighting is considered to have less impact on invertebrate attraction to light sources.

#### Fish

- 4.50 Cofnod provided five records of three fish species from within the search area, comprising Atlantic salmon *Salmo salar*, brown/sea trout *Salmo trutta* and eel *Anguilla Anguilla*. The latter is a record from the Llangollen canal from 2019, whilst the others are associated with the River Dee.
- 4.51 There is no direct hydrological connection to the River Dee or Llangollen canal to support fish species. However, any effects arising from increased surface run off or pollution could result in indirect impacts to fish species through changes in water quality.

## 5.0 DISCUSSION AND RECOMMENDATIONS

### Nature Conservation Designations

#### Statutory

##### *River Dee and Bala Lake SAC & River Dee/Afon Dyfrdwy-River Dee SSSI*

- 5.1 The Site lies c. 0.21km from the SAC/SSSI. Given the nature of the proposals for conversion of existing grass pitches to all-weather pitches and widening of some other pitches within an existing Caravan and Motorhome Club, there is anticipated to be a negligible increase in recreational use and is not anticipated to result in a significant effect on the qualifying features. The SAC and SSSI are however sensitive to changes in water quality and discharge of waste water, which could result in an impact pathway on the qualifying features, particularly notable fish species and aquatic habitats. The existing toilet block is being demolished and rebuilt to upgrade and improve the existing facilities. Where there is potential for an increase in phosphate arising from proposed development being discharged into the River Dee catchment, further screening through a Habitats Regulation Assessment (HRA) is required. The drainage consultants for the proposed redevelopment have been in direct consultation with the Local Planning Authority to discuss and agree a drainage scheme which addresses phosphate concerns, which has been approved (ref: SAB\_FUL\_2021\_0602). As such no further Habitat Regulations Assessment is considered necessary.

##### *Chirk Castle and Parkland SSSI*

- 5.2 Chirk Castle and Parkland lies within 10m west of the Site, designated for being one of the best examples of ancient wood pasture and parkland in Wales, containing a large number of veteran and ancient trees and of special interest for invertebrate species. The castle buildings also support a breeding roost of National importance for rare lesser horseshoe bats.
- 5.3 Given the nature of the scheme for redevelopment of an existing camping and caravanning park, there will be no direct impacts on the qualifying features of the SSSI, with adjoining woodland retained and protected alongside proposals, with limited increase in recreational visitors to the park. Potential for lighting impacts on the lesser horseshoe bats associated with the SSSI that utilise the surrounding landscape for dispersal and foraging are discussed further in Section 5.4 below, with avoidance or minimising of external lighting advised. Subject to measures on lighting, there is not anticipated to be any adverse effects on the SSSI.

## **Habitats and Flora**

### Woodland, Hedgerow and Trees

- 5.4 The Site is enclosed by ancient and semi-natural woodland, with further notable trees in the nearby landscape. Woodland and veteran trees are priority habitats in Wrexham, and represent important foraging, refuge and dispersal habitat for a range of fauna, and will be retained and protected alongside proposals.
- 5.5 A short c.10m isolated section of hedgerow will be removed to facilitate construction of the new toilet block. Similarly seven trees within a small group of beech, birch and whitebeam located at the rear of the existing block will be removed to accommodate the footprint of the new toilet block. These will be replaced with three rowan, two field maple and two beech as part of the proposals. Six sections of new hornbeam hedge will be planted in the south of the Site between new premium pitches, to provide year round screening and cover. Further tree planting of six native standards will be completed within the off-site wildlife enhancement field to the north-east under the control of the Caravan and Motorhome Club as part of an enhancement strategy for the proposals. This is illustrated on the Ecological Enhancement Plan in Appendix F.

## **Fauna**

### Bats

- 5.6 Given its mature woodland setting, with connectivity with ancient woodland corridors to the west and north, and presence of roosts nearby, the existing Site was considered likely to form part of a wider foraging area for a number of local bat species, including rare lesser horseshoe bats.
- 5.7 Following consultation with the LPA ecologist, further transect survey was undertaken on 29<sup>th</sup> July 2021 and static monitoring survey was undertaken in early August 2021 to provide additional information on the usage of the Site by local bat populations, particularly horseshoe bats. This confirmed at least three species utilising habitats on-site, dominated by common and widespread species common and soprano pipistrelle, followed by noctule. Static monitoring of two locations confirmed at least five species to be present during 7 nights of data, with the addition of *Myotis* species and brown long-eared bat. Again activity was dominated by common and soprano pipistrelle species, which are typically more light tolerant. No horseshoe bats were recorded during any surveys conducted in July and August or incidentally during subsequent roost surveys.
- 5.8 Despite the absence of horseshoe bats during surveys, these were conducted in only one month and are a snapshot in time. Therefore the

lighting strategy has been designed in discussion with the project team in order to avoid additional light intrusion to allow bat species to continue to move through the landscape, maintaining dark corridors, and provide a betterment where possible. Where service point and motor van waste points will be removed, any 3m lighting columns will also be removed and replaced with lower level bollard lighting, with only one existing column to be retained. Bollard lighting will be 1.1m tall fitted with a shield to reduce upward light spill and modern 3w LED luminaire. A minimum number of new exterior lights are proposed for health and safety purposes for the exterior of the new toilet block, comprising LED 'Eyelid' wall mounted lights, which should reduce upward light spill and be less intrusive to light attracted invertebrate species compared with existing yellow/orange lighting.

- 5.9 To determine if roosting bats are currently present within the toilet block to be demolished, a preliminary roost assessment (which confirmed 'moderate' potential) was conducted on 17 July 2021 and subsequent roost presence/absence surveys were conducted 29 July and 17 August 2021 (with a third survey to be completed). This confirmed a minor day roost of soprano pipistrelle within the toilet block. As such an EPS derogation licence from Natural Resource Wales will be required prior to the demolition of the toilet block. Given the low conservation status of the roost, mitigation will comprise the installation of a bat tube (or suitable alternative) within the southern and northern gable ends of the new building. A bat box will be erected on a suitable tree nearby prior to demolition to provide an alternative roost location should any bats be found during the demolition and will be safely relocated by a bat licenced ecologist. Sensitive stages of the demolition will be supervised by an experienced bat licenced ecologist. Any mitigation strategy will be agreed with Natural Resources Wales and implemented in accordance with the approved licence. Lighting will be kept to a minimum near new roost locations, or dimmed where necessary to avoid direct light spill onto roost entrances.

- 5.10 Further ground based roosting potential assessments of trees to be removed to accommodate the toilet block and reconfigured site layout were also conducted, which found no trees to support features with bat roosting potential. No further investigation is required prior to their removal.

#### Nesting Birds

- 5.11 The woodlands and trees are likely to support a variety of hole and scrub nesting species. Boundary habitats of higher value will be retained and protected alongside the scheme to retain this resource. However some trees located centrally to Site will be cleared to facilitate the construction of the new toilet block. All nests and their young are protected by the Wildlife and Countryside Act 1981. Any clearance of nesting habitat will be undertaken outside the nesting season (March –

August inclusive) or immediately following a nesting check by a suitably qualified ecologist to confirm no active nests are present.

#### Great Crested Newts

5.12 A population of great crested newts is known to be present with 110m of the Site. Whilst habitats around the periphery of the Site (woodland and scrub) are suitable to support great crested newts in their terrestrial phase, the impact area where upgrades to pitches, toilet block and wardens facilities are proposed are located within hardstanding and amenity grassland areas associated with the existing Caravan and Motorhome Club site. Such habitats offer limited opportunities for sheltering or dispersing great crested newts in their terrestrial phase, and therefore works in these areas pose low risk to individual newts. However given the proximity of the pond known to support a population, a non-licensed working method statement is considered proportionate and appropriate to ensure there are no impacts on the favourable conservation status of the local population. This will involve the following:

- Timing of works to appropriate time of year
- Toolbox talk to contractors
- Clearance of any vegetation under ecological watching brief
- Checking by hand any logs, stones or raised features such as pallets and pots that need to be moved
- Protection of retained areas from mechanical damage through use of Heras fencing if considered necessary
- Suitable storage of materials during construction to avoid risk of great crested newts sheltering under them
- Treatment and movement of topsoil to avoid reworking areas that may form refuges for amphibians
- Leaving no trenches open overnight that could trap amphibians

5.13 The non-licensed method statement will be submitted and approved by the LPA authority prior to any works commencing to ensure the favourable conservation status of the great crested newt population is maintained.

#### Invertebrates

5.14 The proposed Site is located within 10m of Chirk Castle and Parkland SSSI, designated for its invertebrate interest, and lies within the North East Wales Important Invertebrate Area (IIA), Mature woodland and tree habitats with potential to support notable species are being retained and protected alongside proposals, with provision of new lighting kept to a minimum for health and safety to minimise light disturbance for light attracted species. Retaining and enhancing important invertebrate habitats alongside proposals will help to support the objectives of IIAs.

## **Opportunities for Ecological Enhancement**

- 5.15 Planning Policy Wales 11 and other supporting National policy and legislation seeks to leave biodiversity in a better state than prior to development, achieving net benefits for biodiversity.
- 5.16 The redevelopment area is dominated by managed grassland habitats of very limited ecological interest, with areas of greater biodiversity value around the perimeter of the Site. Due to constraints on availability of space for delivering net benefits within the existing Site, other land to the north-east under the control of the Caravan and Motorhome Club will be made available for ecological enhancement and designated a 'wildlife enhancement area', to ensure the development proposals are capable of delivering net benefits for biodiversity. An illustrative strategy for this area is provided within an Ecological Enhancements Plan in Appendix G.
- 5.17 To promote adherence to the PPW 11 and Policy EC4 Hedgerows, Trees and Woodland and Policy EC6 Biodiversity Conservation of the Wrexham Unitary Development Plan, the following opportunities for ecological enhancement have therefore been identified:
- Incorporation of native plants and/or those of wildlife importance in to landscaping scheme for both existing Site and wildlife enhancement area to the north-east to provide foraging opportunities for birds, invertebrates and bats
  - Wildlife enhancement area to include six new standard trees, comprising two oak, two Scots pine and two beech to compliment parkland setting, protected with appropriate deer proof fencing
  - Enhancement of existing grassland habitat in wildlife enhancement area through bringing into more favourable management, with annual summer cut and raking off arisings to reduce soil nutrient levels and encourage greater diversity. A margin of scrub and longer grassland will be left around the perimeter for reptiles, small mammals and sheltering invertebrates
  - Creation of five habitat/log piles within wildlife enhancement area, using wood from on-site tree management works and felling activities. Larger stumps and logs will be used to create natural play and seating features along an informal mown walking route to encourage engagement with the natural environment
  - Provision of two invertebrate hotels within wildlife enhancement area
  - Provision of five new bat roosting opportunities on retained mature trees within the existing site (indicative locations shown on the Ecological Enhancements Plan)
  - Provision of five bird nesting opportunities on retained mature trees within the existing site (indicative locations shown on the Ecological Enhancements Plan)

## **6.0 CONCLUSIONS**

- 6.1 Confirmed ecological constraints to development at the Site have been identified as the presence of:
- Bats - rare bat species are known locally and occasional day roost of soprano pipistrelle confirmed within existing toilet block
  - Nesting birds – on-site habitat offers suitable nesting habitat
  - Great crested newts – population known to be present nearby, although on-site habitats within impact areas largely unsuitable, non-licensed working method statement proportionate and appropriate
- 6.2 Additional consultation has been conducted by the drainage consultants with Wrexham Borough Council with regards to phosphates and Habitat Regulations Assessments for the River Dee and Bala Lake SAC, and a drainage strategy has been approved. No further assessment is required.
- 6.3 Recommendations for sensitive design and ecological enhancement measures that could be delivered as part of the redevelopment at the existing Lady Margaret's Caravan and Motorhome Club Site have been provided here-in, which will aid accordance with Policy EC4 Hedgerows, Trees and Woodland and Policy EC6 Biodiversity Conservation of the Wrexham Unitary Development Plan.
- 6.4 No overriding constraints to development have been identified subject to the implementation of appropriate mitigation measures in respect of confirmed ecological constraints, and further recommended consultation.

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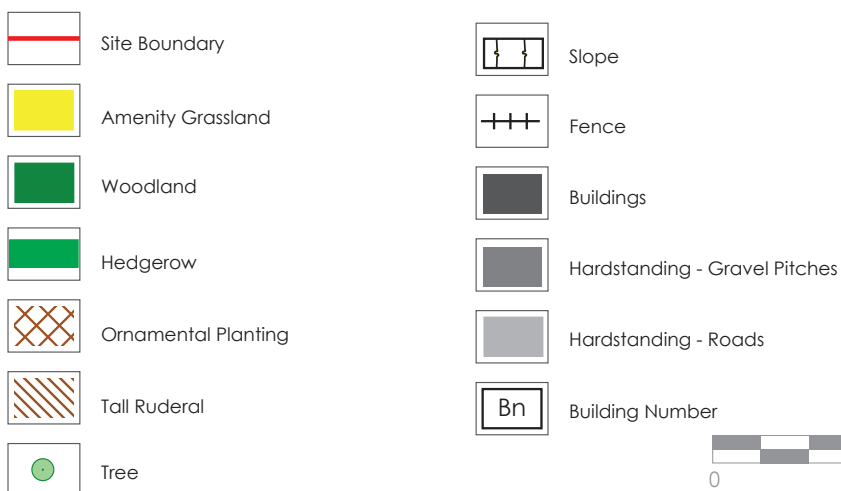
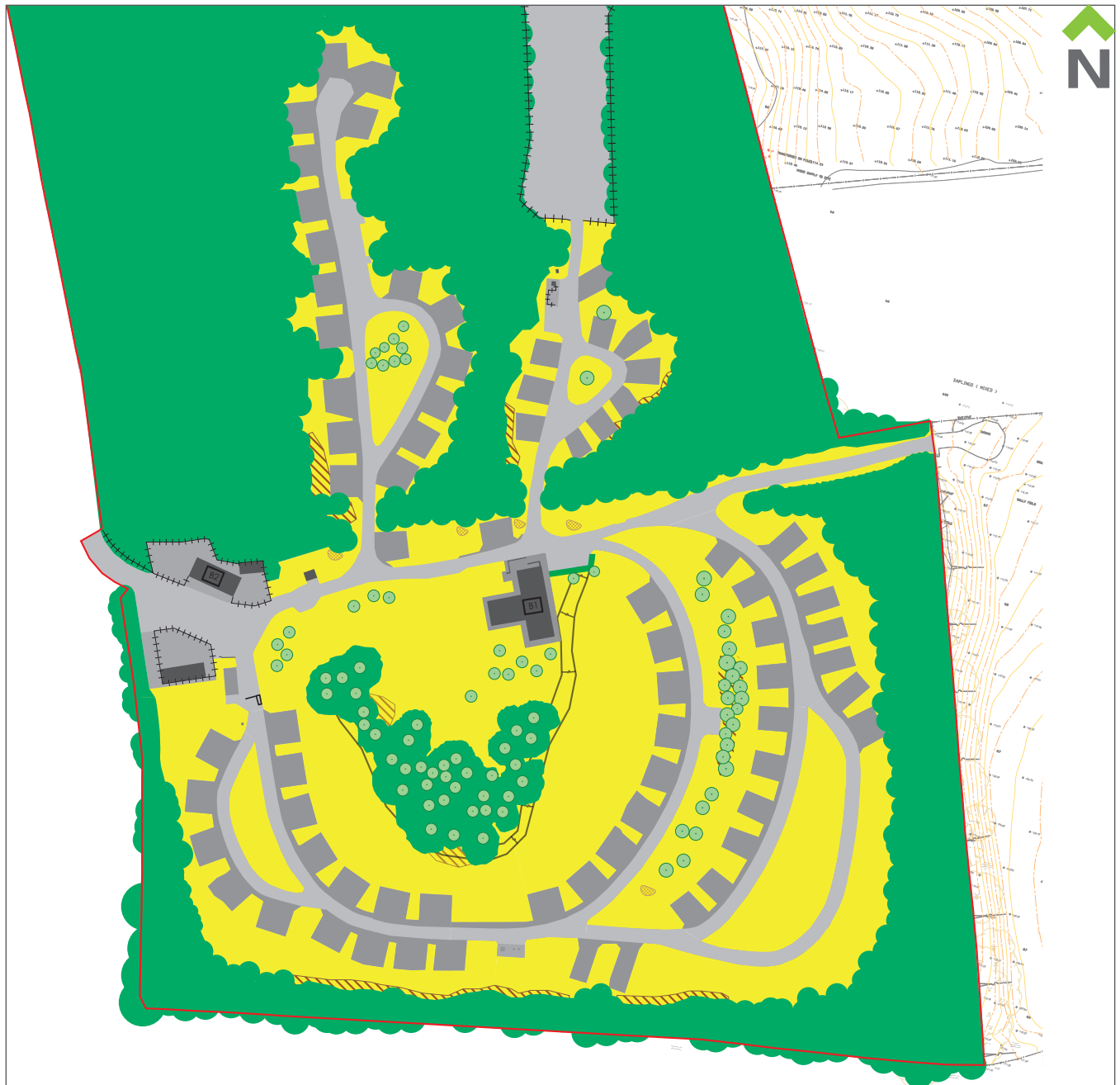
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## **Appendix A**

Habitats Plan &

Photographs (26/07/21)



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**Project** 1992 Lady Margerats Park

**Drawing Title** Habitats Plan

**Client** Caravan and Motorhome Club

**Drawing No.**  
CSA/1992/110

**Scale**  
Refer to scale

**Date**  
August 2021

**Rev**  
-

**Drawn**  
CM

**Checked**  
CT



Photograph 1. Rear aspect of the existing toilet block.



Photograph 2. Looking east along main access road across centre of the Site.



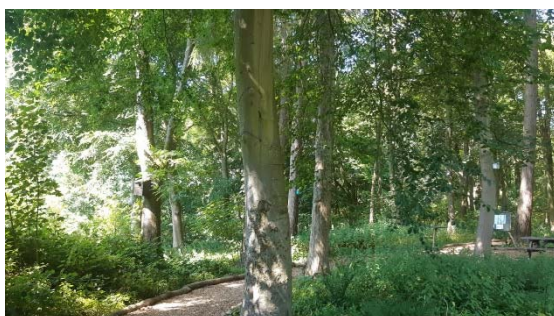
Photograph 3. North part of the Site within woodland setting.



Photograph 4. View south along eastern boundary, shown mown grassland and existing pitches.



Photograph 5. Looking west from the rear of toilet block, at trees to be removed



Photograph 6. Looking north through woodland to rear of reception building.



Photograph 5. Looking north from the field access point into north-east enhancement area, with rough grass, ruderals and scrub.



Photograph 6. View north across the north-east enhancement field, with rough unmanaged grassland, ruderals and woodland edge.

## **Appendix B**

### Legislation and Planning Policy

- 7.1 The **Conservation of Habitats and Species Regulations 2017** transposes Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, and aspects of Council Directive 79/409/EEC on the Conservation of Wild Birds, into UK domestic law. The Regulations make prescriptions for the designation and protection of Sites of Community Importance ('European sites', e.g. Special Areas of Conservation and Special Protection Areas) and European Protected Species (EPS).
- 7.2 The **Wildlife and Countryside Act 1981 (as amended)**, principally by the Countryside and Rights of Way Act 2000) forms the basis for protection of statutory designated sites of national importance (e.g. Sites of Special Scientific Interest; SSSIs) and native species that are rare and vulnerable in a national context. Additionally, badgers are protected under the Protection of Badgers Act 1992.
- 7.3 **Section 40(1) of the Natural Environment and Rural Communities (NERC) Act 2006** states that each public authority, "must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity." This legislation makes it clear that planning authorities should consider impacts to biodiversity when determining planning applications, with particular regard to the Section 42 (S42) lists of 55 habitats and 558 species of principal importance.
- 7.4 The **Environment (Wales) Act 2016** sets out the required for the 'sustainable management of natural resources' together with new ways of working to achieve this. Section 6 under Part 1 of the Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty (the S6 duty) for public authorities in the exercise of functions in relation to Wales. The S6 duty requires that public authorities must seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and promote the resilience of ecosystems. Section 7 of Part 1 replaces the duty in section 42 of the NERC Act 2006, to publish and revise lists of living organisms and types of habitat in Wales of key significance, to sustain and improve biodiversity.
- 7.5 The **UK Post-2010 Biodiversity Framework (2011-2020)** lists the UK's most threatened species and habitats and sets out targets and objectives for their management and recovery. The UK Biodiversity Action Plan (BAP) process is delivered nationally, regionally and locally and should be used as a guide for decision-makers to have regards for the targets set by the framework and the goals they aim to achieve. The UK BAP has now been replaced by the UK Post-210 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant.
- 7.6 The **Nature Recovery Action Plan (NRAP) 2020** for Wales was originally published in December 2015 at the Nature Recovery Plan. It is the

National Biodiversity Strategy and Action Plan for Wales under Aichi target 17 of the United Nations Convention on Biological Diversity's (CBD) strategic Plan for Biodiversity. It sets out the commitment to reversing the loss of biodiversity in Wales and objectives for action.

7.7 The **Planning Policy Wales 11 (Welsh Government, 2021)** sets out the government planning policies for Wales and how they should be applied. With regards to ecology and biodiversity, Chapter 6: Distinctive and Natural Places, states that development plan strategies, policies and development proposals should be formulated to look at the long term protection and enhancement of special characteristics and intrinsic qualities of places, be these of natural, historic and built environments, ensuring their longevity in the face of change. This means both protecting and enhancing landscapes, habitats, biodiversity, geodiversity and the historic environment in their own right, as well as other components of the natural world, such as water resources or air quality. Biodiversity loss should be reversed, pollution reduced, environmental risks addressed and overall resilience of ecosystems improved.

7.8 The PPW recognises the planning system has a key role to play in helping to reverse the decline in biodiversity and increase the resilience of ecosystems. Paragraph 6.4.3 sets out the principles that local planning authorities should apply when determining planning applications:

- Support the conservation of biodiversity, in particular the conservation of wildlife and habitats; and must provide a net gain in biodiversity
- Ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- 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 ensuring any adverse environmental effects are firstly avoided, then minimised, mitigated and as a last resort compensated for, and by improving diversity, condition, extent and connectivity of ecological networks.

7.9 **Technical Advice Note 5: Nature Conservation and Planning** (Welsh Assembly Government, 2009), which is referred to by the PPW, provides further guidance in respect of statutory obligations for protecting and

enhancing biodiversity and geological conservation and their effects within the planning system and is a material planning consideration.

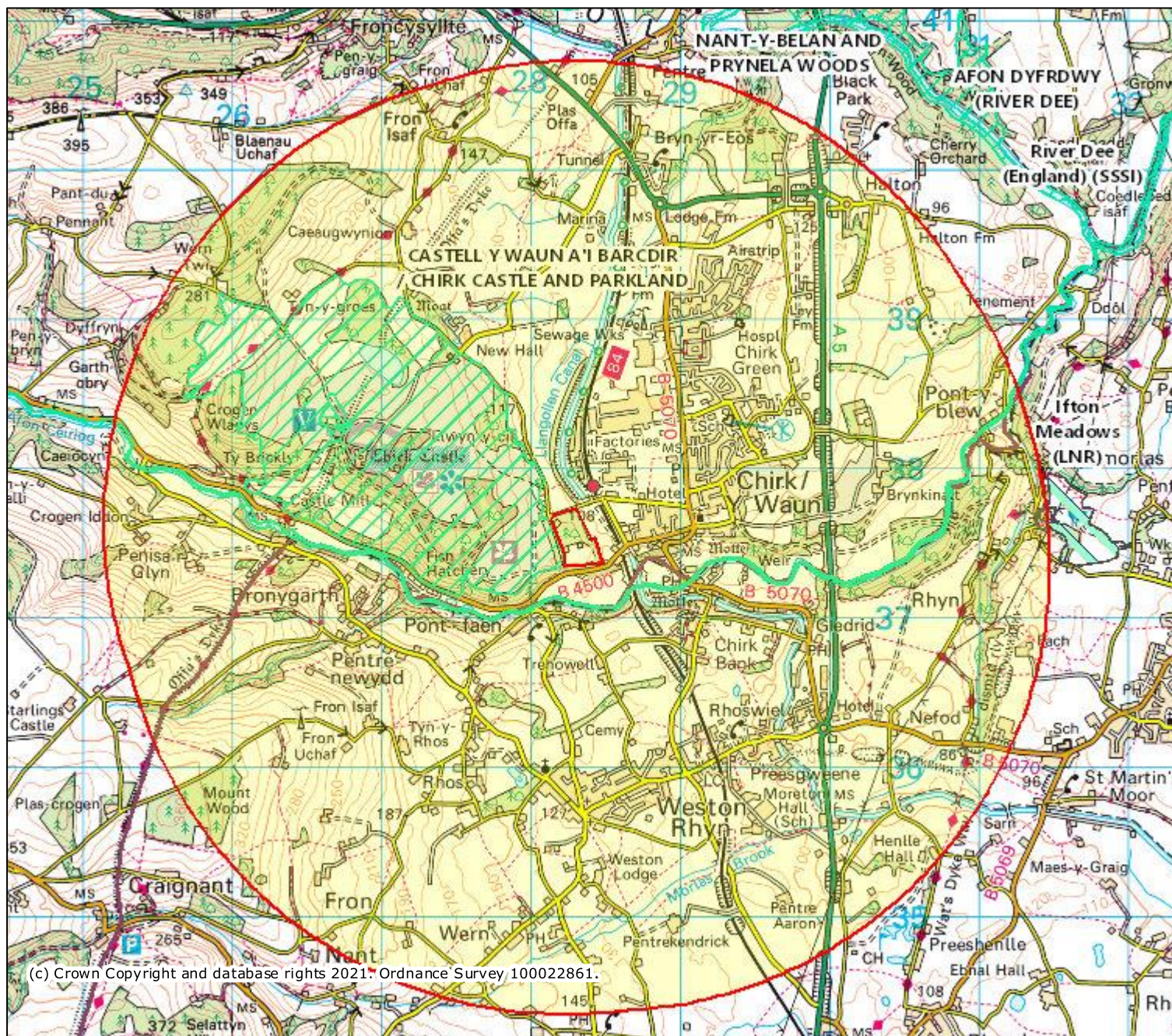
- 7.10 Local planning policies of relevance to ecology, biodiversity and/or nature conservation have been set out in Table B.1 below. The Wrexham Local Development Plan 2013 – 2028 is currently going through consultation and once adopted will replace the Unitary Development Plan 1996-2011.

**Table 1.** Summary of regional and local planning policy relating to ecology

| Policy                                            | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Wrexham Unitary Development Plan 1996-2011</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Policy EC4<br>Hedgerows, Trees<br>and Woodland    | Development proposals should provide for the conservation and management of hedgerows, trees, orchards, woodland, wildlife and natural landscape and water features, and include new planting in order to enhance the character of the landscape and townscape. Development which results in the loss or significant damage to valuable trees, important hedgerows or ancient woodland sites will not be permitted.                                                                                                                                                               |
| Policy EC6<br>Biodiversity<br>Conservation        | Development either within or close to sites of biodiversity interest will only be permitted where it can be clearly demonstrated that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum, and compensatory measures should be provided. Measures to improve the biodiversity value of sites and enhance their natural conservation interest and landscape quality including the establishment of local nature reserves, will be supported. |

## **Appendix C**

### Desk Study Information



### Legend

-  Local Nature Reserves (England)
-  National Nature Reserves (England)
-  National Nature Reserves (Wales)
-  Sites of Special Scientific Interest (England)
-  Sites of Special Scientific Interest (Wales)

Projection = OSGB36

xmin = 320900

ymin = 333500

xmax = 335900

ymax = 341700

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Local Nature Reserves (England)

|           |                                                                                                                                                                                     |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reference | 1082930                                                                                                                                                                             |
| Name      | IFTON MEADOWS                                                                                                                                                                       |
| Hectares  | 16.43                                                                                                                                                                               |
| Hyperlink | <a href="https://designatedsites.naturalengland.org.uk/SiteLNRDetail.aspx?SiteCode=L1082930">https://designatedsites.naturalengland.org.uk/SiteLNRDetail.aspx?SiteCode=L1082930</a> |

Sites of Special Scientific Interest (England)

|                              |                                                                                                                                                                             |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name                         | River Dee (England) SSSI                                                                                                                                                    |
| Reference                    | 1008731                                                                                                                                                                     |
| Natural England Contact      | C2L Innovation & Support Team                                                                                                                                               |
| Natural England Phone Number | 0845 600 3078                                                                                                                                                               |
| Hectares                     | 362                                                                                                                                                                         |
| Citation                     | 2000452                                                                                                                                                                     |
| Hyperlink                    | <a href="http://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s2000452">http://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s2000452</a> |

Sites of Special Scientific Interest (Wales) - points

|                     |                                                        |
|---------------------|--------------------------------------------------------|
| Name                | CASTELL Y WAUN A'I BARCDIR / CHIRK CASTLE AND PARKLAND |
| SSSI Code           | 31WRK                                                  |
| Eastings            | 326948                                                 |
| Northings           | 338219                                                 |
| First Notified      | 28/07/2011                                             |
| Last Notified       | Null                                                   |
| Confirmation Date   | 01/03/2012                                             |
| Cartesian Area (Ha) | 308.402295                                             |

Sites of Special Scientific Interest (Wales)

|                     |                                                        |
|---------------------|--------------------------------------------------------|
| Name                | CASTELL Y WAUN A'I BARCDIR / CHIRK CASTLE AND PARKLAND |
| Eastings            | 326948                                                 |
| Northings           | 338219                                                 |
| First Notified      | 28/07/2011                                             |
| Last Notified       | Null                                                   |
| Confirmation Date   | 01/03/2012                                             |
| Cartesian Area (Ha) | 308.402295                                             |

|                     |                          |
|---------------------|--------------------------|
| Name                | AFON DYFRDWY (RIVER DEE) |
| Eastings            | 306401                   |
| Northings           | 342641                   |
| First Notified      | 30/11/1995               |
| Last Notified       | 02/05/2002               |
| Confirmation Date   | 24/01/2003               |
| Cartesian Area (Ha) | 1491.421792              |

Local Nature Reserves (England) - points

No Features found

National Nature Reserves (England) - points

No Features found

National Nature Reserves (England)

No Features found

National Nature Reserves (Wales) - points

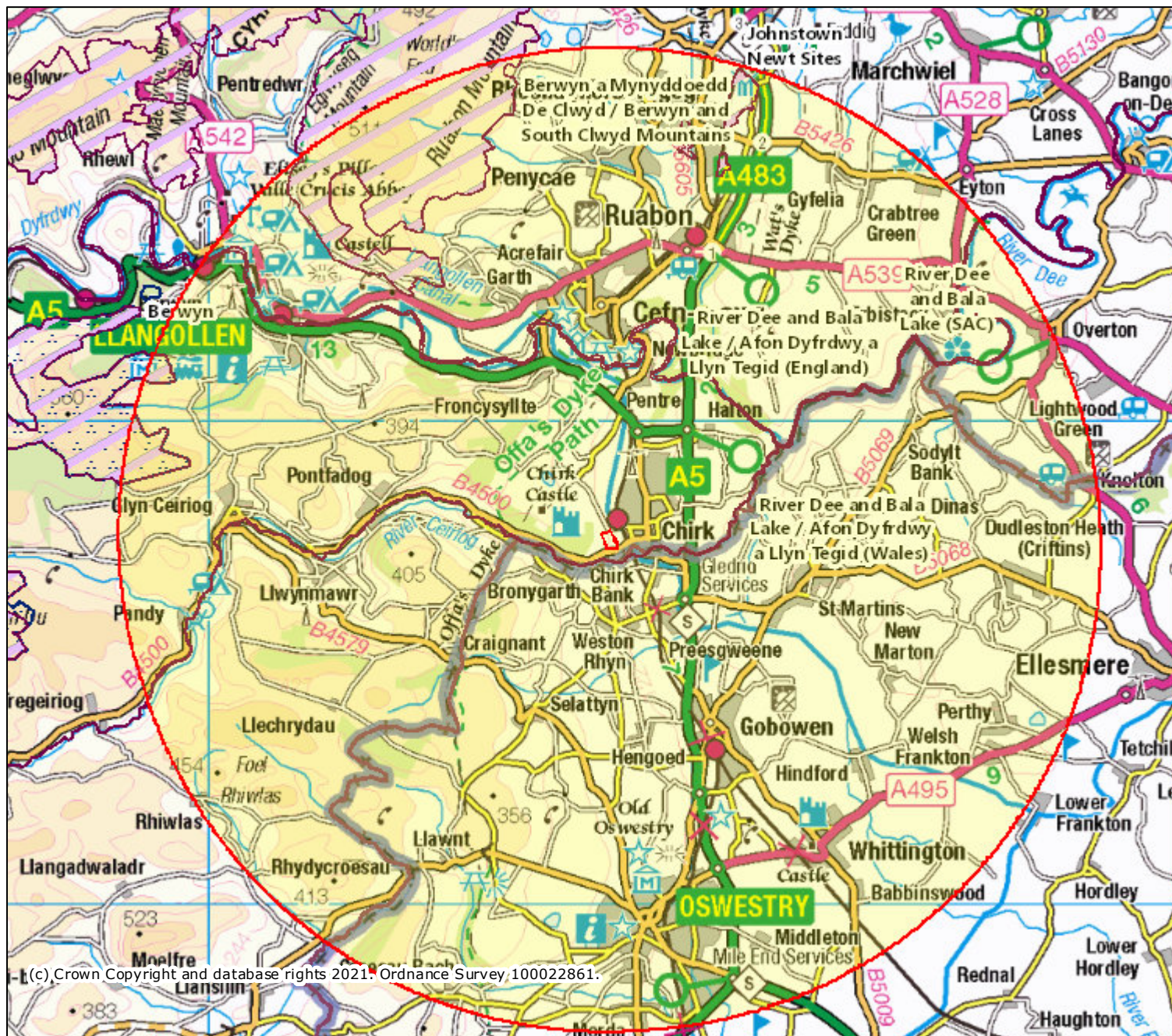
No Features found

National Nature Reserves (Wales)

No Features found

Sites of Special Scientific Interest (England) - points

No Features found



### Legend

-  Ramsar Sites (England)
-  Proposed Ramsar Sites (England)
-  Special Areas of Conservation (England)
-  Possible Special Areas of Conservation (England)
-  Special Areas of Conservation (Wales)
-  Special Protection Areas (England)
-  Potential Special Protection Areas (England)
-  Special Protection Areas (Wales)

Projection = OSGB36

xmin = 304700

ymin = 325100

xmax = 351200

ymax = 350600

Map produced by MAGIC on 30 July, 2021.

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Site Check Report Report generated on Fri Jul 30 2021  
**You selected the location:** Centroid Grid Ref: SJ28293754  
The following features have been found in your search area:

**Special Areas of Conservation (England)**

|                  |                                                                                                                                                                           |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name</b>      | RIVER DEE AND BALA LAKE                                                                                                                                                   |
| <b>Reference</b> | UK0030252                                                                                                                                                                 |
| <b>Hectares</b>  | 146.07                                                                                                                                                                    |
| <b>Hyperlink</b> | <a href="http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0030252">http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0030252</a> |

**Special Areas of Conservation (Wales) - points**

|                            |                      |
|----------------------------|----------------------|
| <b>Name</b>                | Johnstown Newt Sites |
| <b>Reference</b>           | UK0030173            |
| <b>Marine</b>              | n                    |
| <b>Date Notified</b>       | 13/12/2004           |
| <b>Cartesian Area (Ha)</b> | 69.717717            |

**Special Areas of Conservation (Wales)**

|                            |                      |
|----------------------------|----------------------|
| <b>Name</b>                | Johnstown Newt Sites |
| <b>Reference</b>           | UK0030173            |
| <b>Marine</b>              | n                    |
| <b>Date Notified</b>       | 13/12/2004           |
| <b>Cartesian Area (Ha)</b> | 69.717717            |

|                            |                                                             |
|----------------------------|-------------------------------------------------------------|
| <b>Name</b>                | River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (Wales) |
| <b>Reference</b>           | UK0030252                                                   |
| <b>Marine</b>              | n                                                           |
| <b>Date Notified</b>       | 01/04/2005                                                  |
| <b>Cartesian Area (Ha)</b> | 1149.884964                                                 |

|                            |                                                               |
|----------------------------|---------------------------------------------------------------|
| <b>Name</b>                | River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (England) |
| <b>Reference</b>           | UK0030252                                                     |
| <b>Marine</b>              | n                                                             |
| <b>Date Notified</b>       | 13/12/2004                                                    |
| <b>Cartesian Area (Ha)</b> | 156.076685                                                    |

|                            |                                                                 |
|----------------------------|-----------------------------------------------------------------|
| <b>Name</b>                | Berwyn a Mynyddoedd De Clwyd / Berwyn and South Clwyd Mountains |
| <b>Reference</b>           | UK0012926                                                       |
| <b>Marine</b>              | n                                                               |
| <b>Date Notified</b>       | 13/12/2004                                                      |
| <b>Cartesian Area (Ha)</b> | 27216.908451                                                    |

**Special Protection Areas (Wales)**

|                  |           |
|------------------|-----------|
| <b>Name</b>      | Berwyn    |
| <b>Reference</b> | UK9013111 |

**Ramsar Sites (England) - points**  
No Features found

**Ramsar Sites (England)**  
No Features found

**Proposed Ramsar Sites (England) - points**  
No Features found

**Proposed Ramsar Sites (England)**  
No Features found

**Special Areas of Conservation (England) - points**  
No Features found

**Possible Special Areas of Conservation (England) - points**  
No Features found

**Possible Special Areas of Conservation (England)**  
No Features found

**Special Protection Areas (England) - points**  
No Features found

**Special Protection Areas (England)**  
No Features found

## **Appendix E**

### Bat Survey Report



Lady Margaret's Park,  
Wrexham

## **Bat Survey Report**

Prepared by  
CSA Environmental

on behalf of  
The Caravan and Motorhome  
Club

Report No: CSA/1992/06

August 2021

| Report Reference | Date       | Revision | Prepared by | Approved by | Comments    |
|------------------|------------|----------|-------------|-------------|-------------|
| CSA/1992/06      | 27/08/2021 | -        | CM/CT       | KC          | First issue |
|                  |            |          |             |             |             |
|                  |            |          |             |             |             |



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| <b>2.0</b>      | <b>Legislation</b>  | <b>1</b>    |
| <b>3.0</b>      | <b>Methods</b>      | <b>2</b>    |
| <b>4.0</b>      | <b>Results</b>      | <b>8</b>    |
| <b>5.0</b>      | <b>Summary</b>      | <b>16</b>   |
| <b>6.0</b>      | <b>References</b>   | <b>17</b>   |

## **1.0 INTRODUCTION**

- 1.1 This report has been prepared by CSA Environmental on behalf of The Caravan and Motorhome Club. It sets out the findings of bat survey work undertaken at Lady Margaret's Park, Wrexham (hereafter referred to as 'the Site') as part of redevelopment proposals for the existing site.
- 1.2 The Site is located around central grid reference SJ 28296 37474, to the West of Chirk.

## **2.0 LEGISLATION**

- 2.1 All British bat species are legally protected under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 (as amended). These Regulations make it an offence to:
- Deliberately capture, injure, or kill a bat
  - Deliberately disturb bats, impairing their ability to survive, breed, reproduce or rear/nurture their young, or which significantly affects the local distribution or abundance of the species
  - Damage or destroy a breeding site or resting place used by bats
- 2.2 All bats and their roosts in the UK were previously fully protected under the Wildlife & Countryside Act 1981 (as amended). Amendments to the Act have removed most provisions as they relate to bats, however it remains an offence to:
- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection
  - Intentionally or recklessly obstruct access to any structure or place used for shelter or protection
- 2.3 It is important to note that bat roosts are protected throughout the year, regardless of whether or not bats are present at the time. Under the Regulations, the offence of damaging or destroying a breeding site or resting place is subject to 'strict liability', i.e. an offence is committed irrespective of whether the causal act was deliberate or otherwise.
- 2.4 Where development is proposed that would result in an offence under the Regulations, a European Protected Species (EPS) statutory derogation licence (often termed 'EPS Mitigation Licence') will need to be secured from Natural Resources Wales to permit an act that would otherwise be unlawful. Such a licence can only be granted following receipt of planning permission with all relevant conditions discharged, and where it has been demonstrated that specific statutory derogation tests have been met.

## 3.0 METHODS

- 3.1 The following survey methods, design, data analysis and interpretation have been undertaken with due consideration of the Bat Conservation Trust (BCT) guidelines 3rd Edition (Collins, 2016).

### Preliminary Roost Assessment (PRA)

#### *Structures*

- 3.2 A detailed internal and external inspection of the building was completed where possible, using high-powered torches and a ladder as appropriate, with the aim of identifying the potential for this structure to support roosting bats.
- 3.3 External inspection focused on identifying potential bat access points to the interior of each structure and any external features that could potentially be used by crevice-dwelling species. Particular attention was given to window sills, window panes, weatherboarding, and pitch/ridge tiles; as evidence is typically found in these locations.
- 3.4 The internal inspection involved a systematic search for bats or any evidence of their activity, in particular droppings and/or feeding remains within the building and associated roof spaces. Access within the internal roof structure was limited by water tanks, which restricted access to only the southern end of the main part of the block. No accessible roof space was present within the adjoining annexe.
- 3.5 A description of the structure was made, including construction, condition and age (where known).
- 3.6 The aim of this inspection is to record direct (i.e. actual roosting bats) or indirect evidence of roosting bats (e.g. droppings), as well as the nature and number of features with 'potential' to support roosting bats. This includes consideration of structures to support bats whilst in hibernation.

#### *Trees*

- 3.7 All trees to be removed to facilitate the proposals were inspected from ground level, using high-powered torches, ladder and endoscope as appropriate. Particular attention was given to woodpecker holes, limb splits, knot holes, lifting bark and mature ivy stems.
- 3.8 A description of each tree was made, including the species, height, diameter at breast height and condition.
- 3.9 The aim of this inspection was to record direct (i.e. actual roosting bats) or indirect evidence of roosting bats (e.g. droppings), as well as the nature and number of features with 'potential' to support roosting bats. This includes consideration of trees to support bats whilst in hibernation.

### *Assessing 'Potential'*

- 3.10 All structures and trees were assigned to one of four categories in respect of their 'potential' to support roosting bats, or the confirmation of any bat roosts identified. 'Potential' in this context is taken to be the broad suitability of features to support roosting bats, based upon the nature, condition or structure of such features, in the absence of confirmed evidence of roosting.
- 3.11 Assigning the following categories is intended to determine the effort of any further targeted survey or inspections which are necessary to prove presence or likely absence of roosting bats, rather than to assign importance to such features.
- 3.12 The following categories are assigned to structures and/or trees herein, Either:
- **Confirmed roost** – where one or more bat roosts are identified during PRA inspections, either through direct sightings of bats, and/or indirect evidence such as bat droppings, Or;
  - **High** – A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
  - **Moderate** – A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, assessments at this stage are made irrespective of species conservation status).
  - **Low** – A structure or tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
  - **Negligible** – Negligible habitat features on site likely to be used by roosting bats.
- 3.13 The potential of a tree or structure to support roosting bats is often influenced by its age and construction, thermal stability, lighting and levels of human activity. Furthermore, the proximity to foraging habitat - particularly woodland, parkland and wetland- as well as the presence of navigational routes (e.g. hedgerows, treelines and watercourses) influence both the potential for bats to roost, as well as the species which may roost. Professional judgement is therefore applied, based upon known factors which effect the potential of features to support roosting bats, insofar as determining the need or scope of further surveys or inspections.

### *Limitations*

- 3.14 As detailed above, access to loft spaces was restricted by water tanks or absence of loft access points, and so the assessment was largely informed by the external inspection.

### Roost Surveys

- 3.15 One dusk emergence and one pre-dawn re-entry survey were undertaken in July and August, with a third survey to be completed in early September, to confirm the presence/likely absence of roosting bats in association with the on-site building. In addition, the surveys aim to determine the character of any identified roosts, namely species present, number of roosting bats and roost type (i.e. day, night feeding, maternity and transitory).
- 3.16 The dusk emergence/pre-dawn re-entry surveys were undertaken for approximately 1.5 hours following British Summer Time (BST) sunset and 1.5 hours prior to BST sunrise respectively, with due consideration for the BCT good practice guidelines. The surveys were carried out by experienced bat workers Katie Critchley CEcol MCIEEM, Cerian Thomas MCIEEM, Alex Perry ACIEEM (licence ref: S089599/1), supported by Tom Preece ACIEEM and Lorna Gwilliam in suitable conditions (see Table 2).
- 3.17 During the survey, the surveyors watched for any bats entering parts of the building or using key flight lines, equipped with Batlogger M detectors to assist in determining species of bat and any associated behaviour. A note was made of all bat passes, along with the time, species and any information regarding behaviour, including direction of flight, and activity e.g. foraging/commuting.
- 3.18 An infrared video camera rig (Sony Handycam HDR SR5E) was used to film the eastern aspect and give greater coverage to this angle.
- 3.19 The positions of the surveyors and the infrared camera rig around the building during the survey are illustrated Figure 1 below.



**Figure 1.** Surveyor locations A, B & C and IR Camera for roost surveys conducted in July / August 2021

- 3.20 Following the survey all bat calls were downloaded from the Batlogger M detectors and analysed BatExplorer to enable species identification, where possible, and quantitative analysis of the data.

#### *Limitations*

- 3.21 No specific limitations to roost surveys were encountered, other than visiting members of the public approaching surveyors during the dusk survey to ask questions.

#### Activity Surveys

##### *Transect Surveys*

- 3.22 One transect survey was undertaken on 29 July 2021. The transect route was aimed to cover all accessible areas, features and habitats at the Site, including an adjoining field to the east of the Site, with the aim of providing some information on which species use habitats on-site for foraging and commuting, including rare lesser horseshoe bats known to be present at Chirk Castle. The route was repeated more than once during the survey to minimise temporal bias.
- 3.23 The transect was walked at a moderate and consistent speed with qualitative observations of bat behaviour made by the surveyor. Each survey commenced at sunset (British Summer Time), continuing for the following two hours.
- 3.24 Bat calls were recorded using an Elekon Batlogger M detector. This detector automatically records ultrasonic signals with a one second delay between recordings. Recordings of bat contacts were subsequently analysed using BatExplorer software, with sonograms reviewed to confirm bat identification to genera, or where possible, species level.
- 3.25 Each of the recorded files, which contain a variable number of call 'pulses', was designated a 'bat contact'. At the point of contact, each sound file is assigned a GPS location.
- 3.26 Transect surveys are intended to gather data on the spatial distribution of bat activity across the Site, identifying areas of relative importance for bats, including key flight lines. In addition, direct observation of bats allows for qualitative assessments of how bats use the Site to be made, complementing quantitative data collected through remote monitoring.

##### *Remote Monitoring*

- 3.27 Two Wildlife Acoustics Songmeter (SM4) detectors were deployed during August 2021 to provide two data-sets. The location of this Monitoring Location (ML) is shown on Figure 2 below.



ML  ML1  ML2

**Figure 2.** The locations of each Monitoring Location (ML) surveyed during remote monitoring survey in August 2021.

- 3.28 The detectors were setup to automatically record ultrasonic signals for the period from half an hour before sunset to half an hour after sunrise each night, with the monitoring period spanning eighteen nights.
- 3.29 Weather conditions were obtained for each night surveyed using historic weather data from the World Weather Online website, with weather observations taken from the nearest weather station in Shawbury. The five nights showing the most optimal weather conditions (in terms of temperature, precipitation and wind speed, see Table 5) were taken forward for analysis.
- 3.30 Recordings are triggered when a bat echolocation call is detected and will contain a variable number of call 'pulses'. Each file containing call pulses by a bat/s is designated as a 'bat contact' for each species present. The maximum recording duration is 15 seconds after which time a new recording file, and thus a new bat contact, is generated if echolocation calls are still being detected. This means that periods of prolonged bat activity near a detector is represented as multiple bat contacts, rather than a single one.

- 3.31 Recorded bat calls were analysed using the specialist software AnalookW to identify the species present. Quantitative analysis of bat activity was then undertaken by calculating the average bat contacts per hour on each night monitored, for each species.
- 3.32 Bat activity can show considerable inter-night variability and is dependent on a number of variables, including temperature, wind, and seasonality, amongst others. To account for this variability the median values for the average hourly bat contacts per night are reported, rather than a mean value which would misrepresent the average activity.

#### *Limitations*

- 3.33 It should be noted that the findings described herein for remote monitoring surveys are based on the bat activity recorded at the location immediate to each detector, and therefore only describe localised activity at the Site.
- 3.34 In addition, comparisons drawn on the number of detector activations by different species/genera can only give an indication of relative species abundance at the Site, as detectability varies between species.
- 3.35 It is acknowledged that the quantum of bat contacts recorded during a survey may not give a true reflection of the abundance of bats using the Site. For example, a single bat foraging close to a detector may trigger several hundred activations in the course of one night. However, this activity level does provide a proxy for the level of use by bats, and therefore its relative importance.
- 3.36 Activity surveys should typically be spread out to cover spring (April/May), summer (June/July/August) and autumn (September/October) seasons. Due to the time of year ecological survey work commenced, it was not possible to complete a spring transect survey and remote monitoring period. However, following consultation with the LPA ecologist it was considered appropriate to provide some information of bat activity during the bat maternity season to determine if the Site has importance for the local horseshoe population.

## 4.0 RESULTS

### Preliminary Roost Assessment

#### *Structures*

##### *External*

- 4.1 The toilet block is a single-story brick building with a hipped roof with tightly inter-locking concrete tiles. The structure is 'T' shaped with a small annex off the western aspect. Small wooden framed bathroom windows are present on a number of the aspects and wooden access doors. The eaves are open with exposed wooden rafters, with wooden timber behind attached to the top of the wall plate.
- 4.2 There were several potential access points at eaves level where the wooden timber has lifted above the top of the wall plate, creating narrow gaps. In one location on the western aspect of the adjoining annexe, bird droppings and a single bat dropping were on the wall below a larger horizontal opening, suggesting bird nesting activity. Protective mesh installed to inhibit bird access above wooden window frames has also been lost in some locations, creating larger openings into the roof, but no evidence of droppings was noted underneath. A single dropping was found on the wall at the north-east corner, although no obvious access point was present above, with timber tight to the wall plate. There were seven large wall mounted lights on the exterior of the building and a strip light in a small porch area of the washing station



Photograph 1. Southern aspect of adjoining annexe, with connecting corridor.



Photograph 2. North-west aspect of toilet block, with bathroom windows and doors.



Photograph 3. Gap above the wall plate on western aspect of annexe with bird droppings and single bat dropping.



Photograph 4. Narrow gap at the top of the wall plate under the eaves.



Photograph 5. North-east corner where bat dropping was noted on exterior wall, with small gap above the door.



Photograph 6. Large gap where mesh is missing on eastern aspect.

### *Internal*

- 4.3 Water tanks filled much of the central part of the internal roof void of the main block, with no accessible loft hatch in the annexe block. Where the southern end could be searched, this was found to be dusty but clear of any mammal droppings, or flies. There was some cobwebbing at the beams but not extensive. The roof structure is formed of wooden rafters and central ridge beam with supporting purlins, with bitumen felt lining. The felt was in good condition and tight to the ridge beam, with some gaps where it has been cut for ducts and vents. Internal mesh is present to prevent ingress by birds. Some points of light were visible at the eaves, suggesting possible access points.
- 4.4 Multiple potential access features were found on the external search of the building, as well as two individual bat droppings on the exterior wall. However, no evidence was identified in the accessible roof space and given the number of exterior wall mounted lights present, and nearby lighting columns, which are considered to reduce its suitability for larger numbers of bats, the buildings was considered to have at most 'Moderate', potential for roosting bats.



Photograph 7. Water tanks within centre of roof space, impeding access for thorough search.



Photograph 8. Southern end of main roof space, with bitumen felt lining and insulated floor.

## Trees

- 4.5 A total of three tree groups were included in the assessment, labelled G8, G9 and G20 on the Tree Survey Plan (prepared by Treecare Consulting). These tree groups are to be impacted or removed to facilitate the reconfigured layout through the centre of the Site and demolition and rebuild of the new toilet block. Results of the assessments is given in Table 1 below.

**Table 1:** Summary of trees subject to ground-based assessment

| Tree Reference | Species                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Bat roost potential |
|----------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| G8             | Rowan                            | Mature rowan group, one of which to be removed. All generally good condition with fairly small stems, no potential roosting features                                                                                                                                                                                                                                                                                                                              | Neg                 |
| G9             | Mixed (beech, white beam, birch) | Mature moderate sized trees to rear of toilet block, all to be removed. Loosely spaced group, with two more mature forms. Minor cracks/splits starting in stems, but too early to form a feature. Large nest in most eastern tree. Otherwise generally good condition with existing pruning wounds well healed and smooth bark.<br>Two whitebeam have pruning scars, which appear to be fully occluded, very shallow minor features if do go in, on narrow stems. | Neg                 |
| G20            | Birch                            | Two semi-mature trees in a short section of hedgerow, to be removed. Both are in good condition, with smooth bark, and no potential roosting features                                                                                                                                                                                                                                                                                                             | Neg                 |

## Roost Surveys

- 4.6 The weather conditions and timings for the roost surveys are given in Table 2 below.

**Table 2.** Bat roost presence/absence survey timings and weather conditions

| Survey Date | Sunset/<br>Sunrise Time | Start Time | End Time | Temp. (°C) |     | Cloud Cover (oktas) |     | Wind (Beaufort Scale) |     | Precipitation |
|-------------|-------------------------|------------|----------|------------|-----|---------------------|-----|-----------------------|-----|---------------|
|             |                         |            |          | Start      | End | Start               | End | Start                 | End |               |
| 29/07/21    | 21:09                   | 20:56      | 22:39    | 18         | 15  | 8                   | 8   | 1                     | 0   | None          |
| 17/08/21    | 05:55                   | 04.25      | 06.10    | 14         | 14  | 7                   | 8   | 0                     | 0   | None          |
| TBC         |                         |            |          |            |     |                     |     |                       |     |               |

## Dusk Emergence 29 July 2021

- 4.7 One possible emergence of a soprano pipistrelle was noted at 21:19 hrs at the north-eastern corner by surveyor B, 23 minutes after sunset. It was noted flying north alongside the eastern aspect of the building. As no other surveyor saw / heard the bat and given the timing of the appearance and its location and height, it was considered likely to have emerged from an eaves location on the eastern aspect of the building.

- 4.8 Limited other bat activity was recorded, with occasional foraging or noted from calls heard and rather than observed activity of common and soprano pipistrelle bats and *Myotis* bats recorded by the surveyors, and brief noctule passes at 21.31 hrs, 21.44 hrs and 22.30 hrs. No other roosting behaviour was observed.

Dawn re-entry 17 August 2021

- 4.9 One confirmed re-entry of a soprano pipistrelle was noted at 05.57 hrs at the north-eastern corner by surveyor B, 2 minutes after sunrise. A soprano pipistrelle was noted at 05.01 hrs to loop around the north-east corner near the roof before flying away. No further activity was noted at this position until 05.45 hrs when a soprano pipistrelle quickly flew south-west over the roof, before a soprano pipistrelle returned again at 05.54 hrs and was observed flying up and away to the guttering at the north-east corner for a few minutes. At 05.57 hrs it flew up and into the guttering and crawled under the lowest row of roof tiles closest to the hipped ridge. This is consistent with the first survey, where a soprano was considered likely to have emerged along the eastern aspect.
- 4.10 Very limited other activity was observed during the survey, with brown long-eared bats recorded at 04.35 hrs by all three surveyors, and at 04.45 hrs by surveyors A and B, and again at 04.47-04.48 hrs by surveyor A. No other roosting behaviour was observed.

#### Activity Surveys

##### *Transect Surveys*

- 4.11 The weather conditions experienced during the transect survey is provided in Table 3 below.

**Table 3.** Bat transect survey timings and weather conditions

| Survey Date | Sunset/<br>Sunrise Time | Start Time | End Time | Temp. (°C) |     | Cloud Cover (oktas) |     | Wind (Beaufort Scale) |     | Precipitation |
|-------------|-------------------------|------------|----------|------------|-----|---------------------|-----|-----------------------|-----|---------------|
|             |                         |            |          | Start      | End | Start               | End | Start                 | End |               |
| 29/07/21    | 21:09                   | 21:09      | 23:09    | 18         | 15  | 8                   | 8   | 1                     | 0   | None          |

- 4.12 At least three species of bat were recorded at the Site during the transect survey, comprising common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus* and noctule *Nyctalus noctula*. Activity was dominated by soprano pipistrelle but was widespread for both species across the Site along woodland edges and tree canopies, including lit areas at the Site entrance and pitches, although was less frequent along the southern edge. Noctule was recorded on one occasion near the Site entrance at 22.32 hrs.

- 4.13 The number of bat contacts recorded for each species are summarised in Table 4 below. The locations of each bat contact and the overall distribution of activity across the Site are illustrated in Figures 3 and 4.

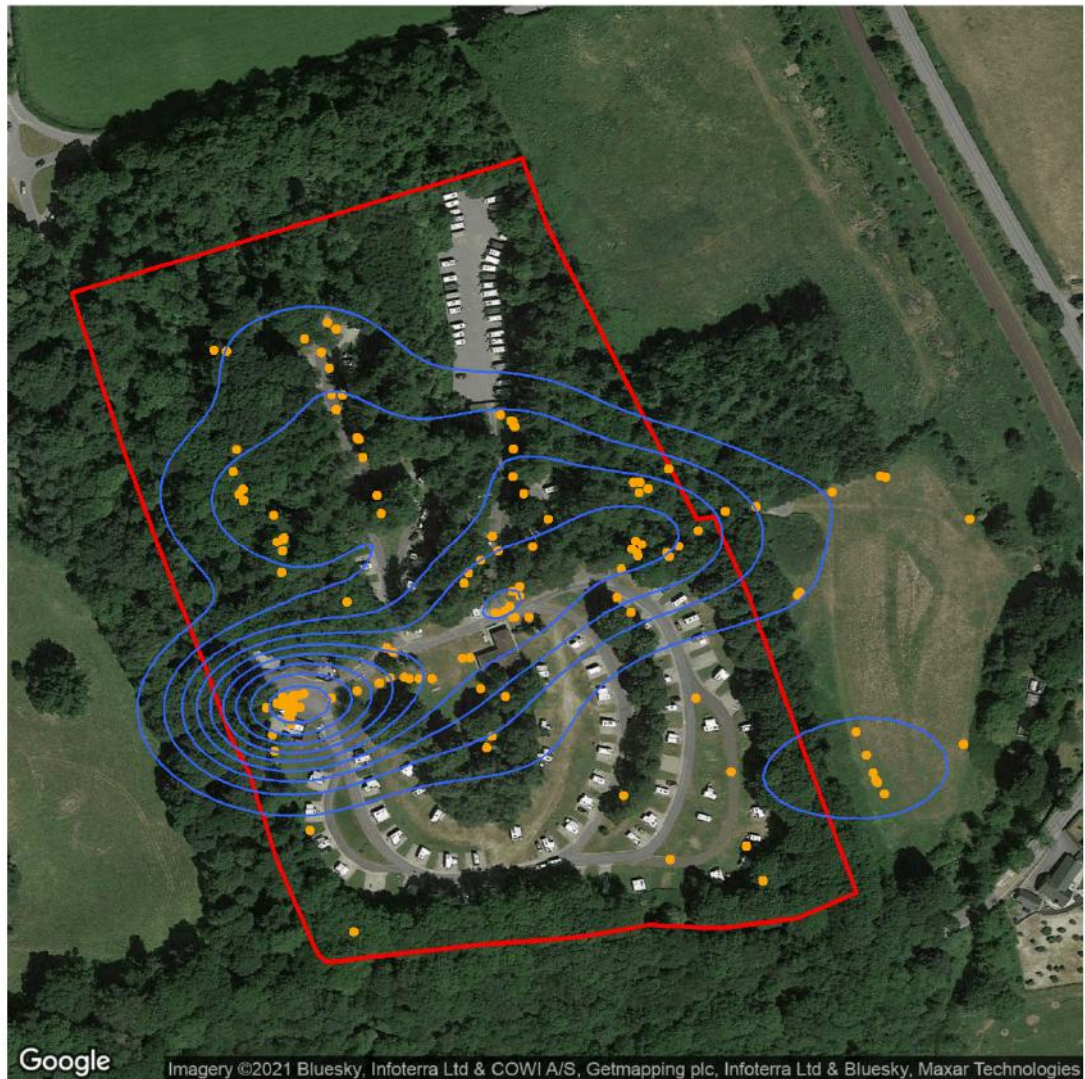
**Table 4.** Summary of bat contacts recorded during transect surveys

| Month                   | Common pipistrelle | Soprano pipistrelle | Pipistrellus species | Noctule |
|-------------------------|--------------------|---------------------|----------------------|---------|
| Jul                     | 49                 | 107                 | 22                   | 1       |
| Percentage of Total (%) | 27.4               | 59.8                | 12.3                 | 0.56    |



**Figure 3.** Locations of bat contacts recorded during the transect survey

- 4.14 Figure 4 below provides an indicative illustration of 'hotspots' in bat activity recorded during the transect survey undertaken at the Site. This demonstrates the activity is widespread, with a hotspot near the Site entrance and lower activity at the south edge of the Site.



**Figure 4.** Indicative ‘Utilisation Distribution’ (UD) of all bat species/genera at the Site estimated from the transect data. The UD illustrates the relative probability of a bat in flight being present at a given point at the Site, with higher/central contours having a greater probability, and lower/peripheral contours having less probability.

#### *Remote monitoring*

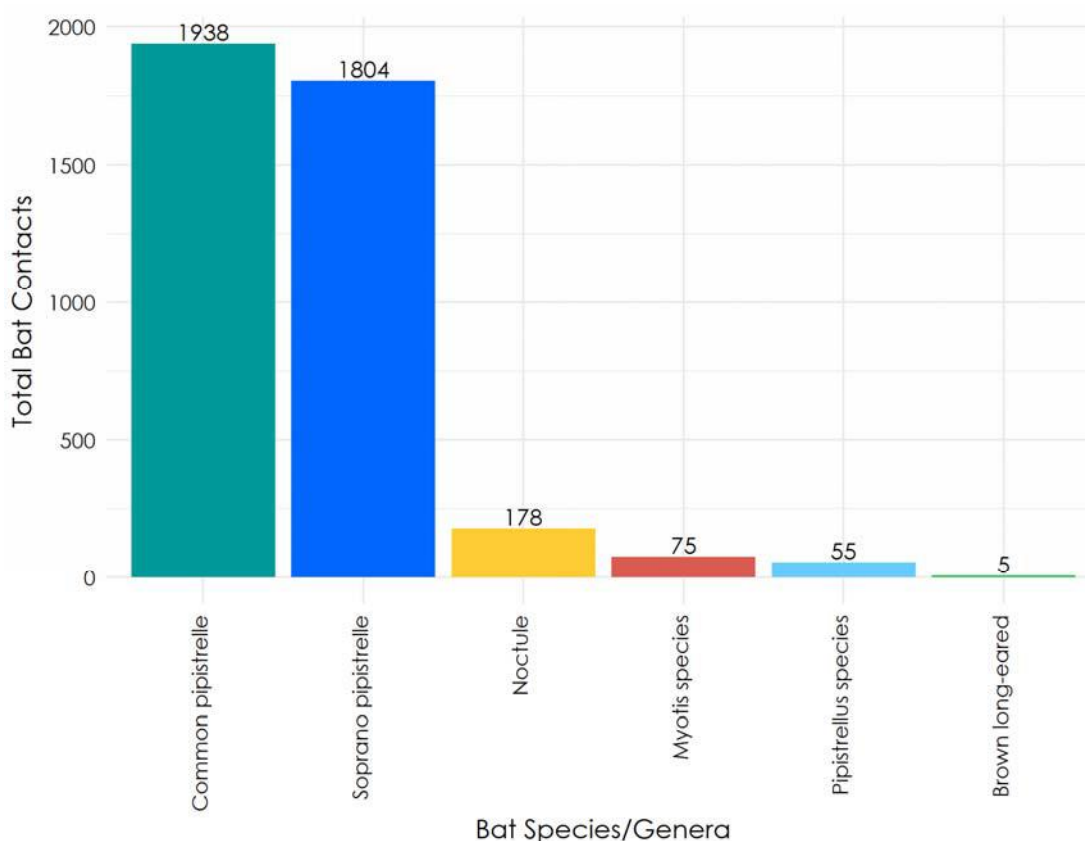
- 4.15 The weather conditions experienced during the seven nights where data was analysed are provided in Table 5 below.

**Table 5.** Overnight weather conditions during remote monitoring

| Survey Month | Dates Sampled (2021) | Temp. (°C) |     | Cloud Cover (%) |     | Wind (km/h) |     | Precipitation                      |
|--------------|----------------------|------------|-----|-----------------|-----|-------------|-----|------------------------------------|
|              |                      | Min        | Max | Min             | Max | Min         | Max |                                    |
| Aug          | 09/08/21             | 10         | 13  | 39              | 98  | 8           | 14  | Light rain at 21:00                |
| Aug          | 10/08/21             | 11         | 16  | 1               | 69  | 6           | 9   | Dry                                |
| Aug          | 11/08/21             | 15         | 16  | 54              | 99  | 10          | 16  | Very light rain at 00:00 and 06:00 |
| Aug          | 12/08/21             | 14         | 14  | 8               | 79  | 18          | 21  | Dry                                |
| Aug          | 13/08/21             | 13         | 15  | 29              | 80  | 10          | 22  | Dry                                |
| Aug          | 14/08/20<br>21       | 13         | 15  | 53              | 86  | 6           | 8   | Very light rain at through evening |

|     |                |    |    |    |     |   |    |     |
|-----|----------------|----|----|----|-----|---|----|-----|
| Aug | 15/08/20<br>21 | 10 | 15 | 28 | 100 | 5 | 13 | Dry |
|-----|----------------|----|----|----|-----|---|----|-----|

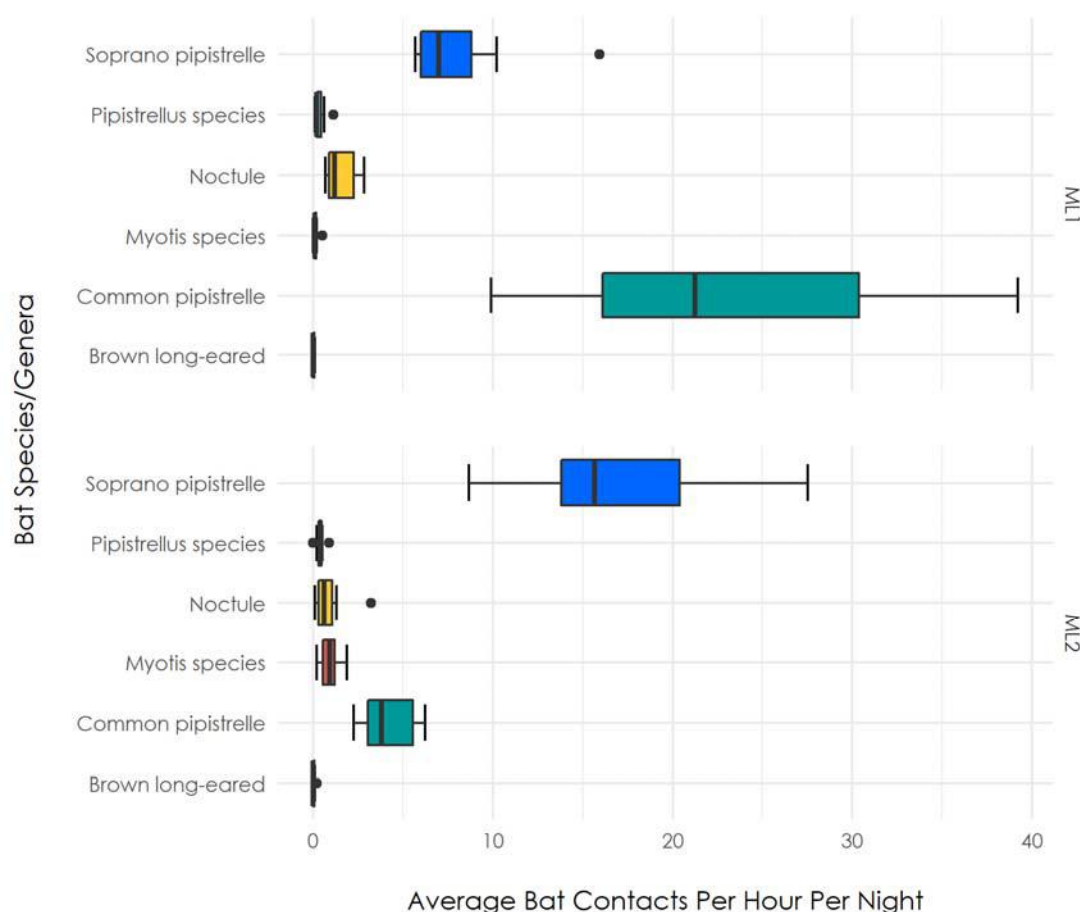
- 4.16 At least five species of bat were recorded at the site during the static monitoring survey, comprising common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, with the addition of *Myotis* species and brown long-eared *Plecotus auritus*.
- 4.17 The total number of bat contacts recorded across both monitoring locations in the August monitoring monitoring periods for each bat species/genera are provided in Figure 5 below.



**Figure 5.** Total bat contacts by species/genera recorded across all remote monitoring periods and monitoring locations

- 4.18 Whilst similar numbers of common and soprano pipistrelle bat passes were recorded, common pipistrelle were recorded in higher numbers at ML1 in the centre of the Site, and soprano pipistrelle were recorded in higher numbers at ML2 at the south-east woodland edge of the Site. Noctule were recorded in small numbers on all nights at both locations, but more frequently over the centre of the Site at ML1. *Myotis* species conversely were recorded most frequently at the south-east woodland edge location, and as a more light sensitive group of species, it's possible they are deterred by the light levels in the centre of the Site.

- 4.19 Figure 6 below shows the variance in nightly activity levels for each of these bat species recorded on-site. More detailed data describing Figure 6 are provided in Table 6. The activity data in Figure X is presented as boxplots for each bat species, which show the inter-night variability in bat activity across the 7 nights monitored. The median value (middle line of the boxplot) is taken as the typical level of activity for that species on-site at the point monitored. The length of each coloured boxplot is the interquartile range which shows the variance in nightly activity around the median value. The ends of each whisker line define the minimum and maximum nightly activity values recorded at the monitoring location. Outlying values are nightly activity levels that are greatly different when compared to the distribution of the remaining nightly activity levels. Outliers are illustrated as black points away from the boxplot. While important to note, these outliers do not represent the bat activity more commonly found at the Site for the species in question.



**Figure 6.** Average bat contacts per hour per night for each bat species/genera recorded across all remote monitoring

- 4.20 Figure 6 and Table 6 demonstrate the higher prevalence of pipistrelle bats and the higher rate of common pipistrelle at ML1 and soprano pipistrelle at ML2. No lesser horseshoe were recorded during the 7 nights of data analysed, and a review of the additional 11 nights of data not subject to detailed analysis did also not record any horseshoe activity. Pipistrelle and noctule species were recorded arriving on-site within 5-20mins of sunset, indicating there are likely roosts nearby in the local

landscape, and given the parkland setting to the west with a large number of veteran and notable trees and residential properties nearby, this is not unexpected for these species, with a range of roosting opportunities.

**Table 6.** Average bat contacts per hour per night recorded during remote monitoring surveys

| ML  | Species              | Average bat contacts per hour per night |         |        |          | Total bat contacts | Number of nights monitored |
|-----|----------------------|-----------------------------------------|---------|--------|----------|--------------------|----------------------------|
|     |                      | Minimum                                 | Maximum | Median | IQ range |                    |                            |
| ML1 | Brown long-eared     | 0.000                                   | 0.100   | 0.000  | 0.049    | 2                  | 7                          |
| ML1 | Common pipistrelle   | 9.883                                   | 39.214  | 21.236 | 14.285   | 1642               | 7                          |
| ML1 | Myotis species       | 0.000                                   | 0.489   | 0.099  | 0.102    | 10                 | 7                          |
| ML1 | Noctule              | 0.681                                   | 2.838   | 1.180  | 1.369    | 111                | 7                          |
| ML1 | Pipistrellus species | 0.098                                   | 1.109   | 0.199  | 0.252    | 27                 | 7                          |
| ML1 | Soprano pipistrelle  | 5.675                                   | 15.927  | 6.981  | 2.795    | 586                | 7                          |
| ML2 | Brown long-eared     | 0.000                                   | 0.195   | 0.000  | 0.050    | 3                  | 7                          |
| ML2 | Common pipistrelle   | 2.237                                   | 6.219   | 3.789  | 2.498    | 296                | 7                          |
| ML2 | Myotis species       | 0.195                                   | 1.859   | 0.903  | 0.646    | 65                 | 7                          |
| ML2 | Noctule              | 0.097                                   | 3.229   | 0.602  | 0.745    | 67                 | 7                          |
| ML2 | Pipistrellus species | 0.000                                   | 0.891   | 0.393  | 0.155    | 28                 | 7                          |
| ML2 | Soprano pipistrelle  | 8.674                                   | 27.529  | 15.656 | 6.568    | 1218               | 7                          |

## 5.0 SUMMARY

- 5.1 No trees with significant bat potential are to be impacted by the proposals and no further investigation is considered necessary prior to removal.
- 5.2 A single soprano pipistrelle bat was confirmed to be roosting within the toilet block on both surveys completed to date and is considered likely to be an opportunistic day roost. A third survey is to be completed.
- 5.3 Activity surveys identified at least five species to be present on-site, dominated by common and widespread species, particularly common and soprano pipistrelle bats. Activity was recorded across much of the Site along woodland edges and tree canopies, which is not unexpected given its woodland setting. No lesser horseshoe bat activity was recorded during the monitoring period.

## 6.0 REFERENCES

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## **Appendix F**

### Ecological Enhancements Plan



Range of bird, bat and invertebrate boxes installed and habitat piles created to provide new opportunities for wildlife and encourage public engagement with natural environment

Existing grassland in 'wildlife enhancement area' brought into more favourable condition with appropriate management to reduce nutrient input and encourage greater botanical diversity.

Planting of standard trees to compliment parkland setting with an informal walking route and natural play and seating features

- Existing shrub retained
- Margin of longer grassland retained
- Indicative walking route
- Habitat piles x 5 (using logs from tree management/felling works)
- New standard trees (2x beach, 2x Oak, 2x Scots Pine - indicative locations, with protective fence)
- Insect Hotels x2
- Gate
- Bird Boxes x5 (indicative locations)
- Bat boxes x5 (indicative locations)
- Bat tubes x2 (gable ends of new toilet block)

Native hornbeam hedge planted between new premium pitches



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|               |                                  |       |                |             |              |
|---------------|----------------------------------|-------|----------------|-------------|--------------|
| Project       | 1992 Lady Margarets Caravan Park | Date  | August 2021    | Drawing No. | CSA/1992/111 |
| Drawing Title | Ecological Enhancement Plan      | Scale | Refer to scale | Rev         | -            |
| Client        | Caravan and Motorhome Club       | Drawn | CM             | Checked     | CT           |



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