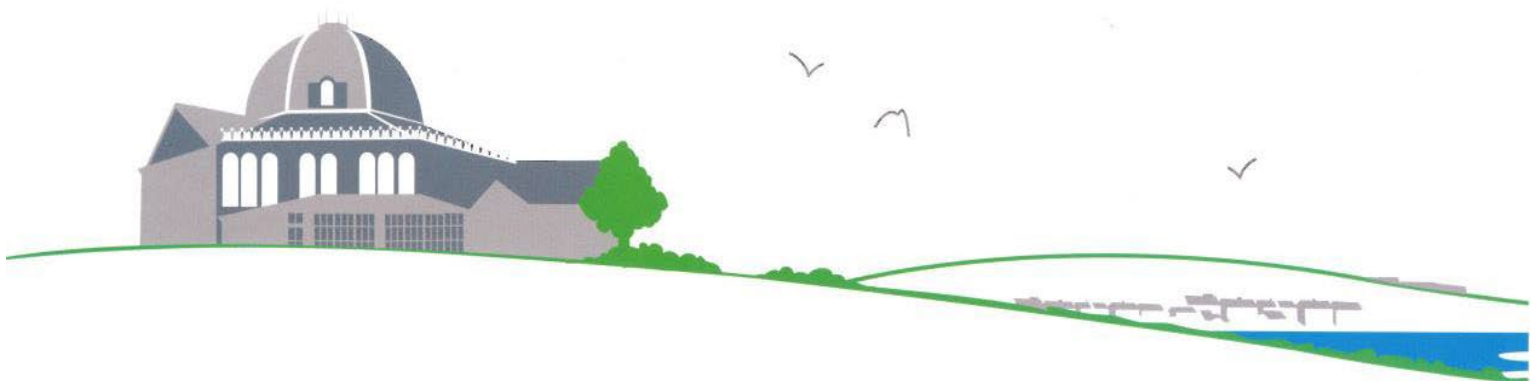




WREXHAM COUNTY BOROUGH COUNCIL

WISTERIA COURT

EXTENDED PHASE 1 HABITAT SURVEY AND
PRELIMINARY ROOST INSPECTION FOR BATS



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January 2023

This project has been undertaken in accordance with PAA policies and procedures on quality assurance.

Signed: _____



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1. INTRODUCTION

- 1.1 Penny Anderson Associates (PAA) was commissioned by Wrexham County Borough Council to undertake an extended Phase 1 habitat survey and preliminary roost inspection for bats at Wisteria Court, Wrexham (nearby postcode LL11 2AJ). The site boundary covers a recently vacated nursing home and associated grounds.
- 1.2 This report details the methods and results of the surveys as well as making any further recommendations as necessary.

Legislative Context

- 1.3 A range of international and national legislation has been established in the UK to protect important nature conservation sites and priority species. At the international level, European Union (EU) Directives require individual member states to implement their conservation provisions nationally for the benefit of Europe as a whole. These Directives have been transposed into UK law by the Conservation of Habitats and Species Regulations 2017 (amended).
- 1.4 Other international conventions include: the Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979), which requires the maintenance of populations of wild flora and fauna, giving particular protection to endangered and vulnerable species; and the Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979), which requires the protection of migratory species throughout their entire range. The above conventions are implemented in England and Wales via the Wildlife and Countryside Act (WCA), 1981 (as amended) and Countryside and Rights of Way (CROW) Act 2000. This legislation also protects important habitats and sites such as Sites of Special Scientific Interest (SSSI).
- 1.5 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 in so doing promote the resilience of ecosystems.
- 1.6 Section 7 goes on to deal with biodiversity lists and duty to take steps to maintain and enhance biodiversity. This section replaces the duty in Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006 in Wales. The Welsh Ministers publish, review and revise lists of living organisms and types of habitat in Wales that they consider are of key significance to sustain and improve biodiversity in relation to Wales. These are known as Priority Species and Priority Habitats¹.
- 1.7 Finally, Planning Policy Wales (PPW 2021²) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes³ (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales.
- 1.8 The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and

¹ <https://www.biodiversitywales.org.uk/environment-wales-act>

² https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf

³ <https://gov.wales/technical-advice-note-tan-5-nature-conservation-and-planning>

cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation.

1.9 The Environment (Wales) Act 2016 also introduces the Sustainable Management of Natural Resources (SMNR) and sets out a framework to achieve this as part of decision-making. The relevant key features of the SMNR approach to which the planning system can contribute are:

- Improving the resilience of ecosystems and ecological networks;
- Halting and reversing the loss of biodiversity;
- Maintaining and enhancing green infrastructure based on seeking multiple ecosystem benefits and solutions; and
- Ensuring resilient locational choices for infrastructure and built development, taking into account water supplies, water quality and reducing, wherever possible, air and noise pollution and environmental risks, such as those posed by flood risk, coastal change, land contamination and instability.

Invasive Species

1.10 Certain non-native species that have been introduced into the UK are regarded as being a threat to native biodiversity. Legislative measures have, therefore, been put in place to prevent the spread of these invasive species in the wild.

1.11 Under section 14 of the WCA, 1981 (as amended), it is illegal to introduce plants listed under Part II of Schedule 9 of the WCA into the wild or sell these species. Offences include causing the spread of viable plant material or neglecting to contain or appropriately manage non-native species.

1.12 Commonly introduced Schedule 9 species include non-native cotoneaster species, specifically, small-leaved cotoneaster⁴ (*Cotoneaster microphylla*) and wall cotoneaster (*C. horizontalis*), Himalayan balsam (*Impatiens glandulifera*) and Japanese knotweed (*Reynoutria japonica*).

⁴ Plant species names follow Stace 2019

2. METHODS

Desk Study

- 2.1 A request for details of protected and notable species and locally designated sites within 2km of the centre of the site was made to Cofnod with data returned in January 2023. Additionally, the Multi-Agency Geographic Information for the Countryside (MAGIC⁵) website was consulted for details of statutory designated sites and Priority Habitats within a 2km search area from the centre of the site. The desk study was compiled by Assistant Ecologist Ross Quick⁶.
- 2.2 It is important to note that the desk study results provide an indication of the species present in and around the site, and do not confirm current presence or absence of any species. Protected species are often under-recorded in county wildlife databases.

Extended Phase 1 Habitat Survey

- 2.3 An extended Phase 1 habitat survey was undertaken by Senior Ecologist Rob Lamb⁷ on 4th January 2023.
- 2.4 The survey was carried out in accordance with the methodology in the *Handbook for Phase 1 Habitat Survey* (JNCC 2010). This entailed mapping, describing and collating plant species lists for habitats within the site boundary. The broad habitat types were mapped, with each habitat type coded according to the standard JNCC Phase 1 habitat survey procedure.
- 2.5 Each plant species was assigned abundance codes within each habitat. This was done using the 'DAFOR' scale (where: d = dominant; a = abundant; f = frequent; o = occasional; r = rare), which provides an indication of the relative abundance of each plant species present within a particular habitat. Common names and scientific names according to Stace (2019) are provided in the species list (Appendix 1) but common names only are referred to in the text.
- 2.6 The survey was 'extended' (Institute of Environmental Assessment 1995) to include notes on fauna and habitats which could potentially support protected or notable species. The presence of, or potential for, protected or notable species was noted on the field map and in the written target notes (TN) during the survey.

Preliminary Bat Roost Inspection

- 2.7 The built structure on site was subject to a detailed inspection to assess potential to support roosting bats. This was completed by Senior Ecologist Rob Lamb (Accredited Agent of Dr Sarah Ross' Natural Resources Wales Bat Survey Class Licence S088922/1) on 4th January 2023 following standard methodologies. This included using a high-powered torch and binoculars, making detailed notes and taking photographs (Appendix 2) in accordance with survey guidance (Collins 2016).
- 2.8 Structures were inspected using close-focussing binoculars and a high-powered torch to search for potential roost features (PRF) that could be used by bats, such as small holes and crevices in soffits or beneath roof coverings, and also potential access points for bats to enter/exit internal

⁵ <https://magic.defra.gov.uk/MagicMap.aspx> (last accessed [28th February 2022])

⁶ Qualifying member of Chartered Institute of Ecology and Environmental Management (CIEEM)

⁷ Associate member of CIEEM

areas such as cavity walls. A search was also made for any evidence of bat presence, such as accumulations of droppings and feeding remains or sightings of the animals themselves.

- 2.9 Each PRF was categorised either as Low, Moderate or High potential for roosting bats and, using this data, the structure as a whole was assigned to one of the same categories based on its most suitable feature, or Negligible where no suitable features were present.
- 2.10 The habitats within the site and immediately adjacent areas were also considered for their general suitability for commuting and foraging bats in order to place the site in the context of its surroundings, as this can have a bearing on the likelihood of a roost being present.
- 2.11 The assessment of suitability was based on the broad criteria outlined in Tables 1 and 2 (Collins 2016), combined with the professional judgement and experience of the surveyor in recognising suitable habitat features and field signs of bats.

Table 1 Building Assessment Criteria

Suitability	Description of Roosting Habitats
Negligible	No features likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically, but does 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. A tree of sufficient size to contain potential roost features but none seen from the ground or only those with very limited suitability.
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 type of high conservation significance (i.e. suitable for day roosting but unsuitable for maternity or hibernation roost.)
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. (i.e. suitable for maternity and/or hibernation roost.)
Confirmed Roost	A structure or tree with evidence of bat presence, i.e. droppings, feeding remains, audible bat calls heard during daytime survey or sightings of the animals themselves, existing (reliable) record of bats roosting at the location.

Table 2 Bat Habitat Suitability Assessment Criteria

Suitability	Description of Commuting/Foraging Habitats
Negligible	No habitat features likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.

Limitations

- 2.12 The site was fully accessible and the structure sufficiently accessible to complete both elements of survey.
- 2.13 The seasonal timing of the survey means that some plant species may have been under-recorded or unrecorded. However, the habitats were surveyed sufficiently to map the broad habitat types present within the site.

3. RESULTS

Desk Study

- 3.1 The desk study utilised data obtained from Cofnod in January 2023, searching within a 2km radius of the site centre. The MAGIC search engine was also used to obtain additional data on European Protected Species (EPS) licences and Priority Habitats, as well as designated and non-designated sites within 2km of the site centre.

Statutory Protected Sites

European Sites

- 3.2 European protected sites include Special Areas of Conservation (SAC), Special Protection Areas (SPA), RAMSAR wetland sites, possible SAC, potential SPA and proposed RAMSAR sites.
- 3.3 No European sites were returned from within the 2km search area.

Sites of Special Scientific Interest

- 3.4 SSSI represent a selection of this country's best wildlife and geological sites, and cover approximately 7% of the terrestrial area of the country (with over 4,000 separate sites in England).
- 3.5 Gatewen Marsh SSSI lies just 656m to the north-west of the site boundary. This SSSI is designated for its 'southern mesotrophic mires' wetland type. The marsh is unusual in containing substantial stands of great reedmace (*Typha latifolia*) in shallow water with brooklime (*Veronica beccabunga*), water plantain (*Alisma plantago-aguatica*) and bottle sedge (*Carex strata*). The fringes of these areas support stands of common spike-rush (*Eleocharis palustris*) with water mint (*Mentha aguatica*), Gipsy-wort (*Lycopus europaeus*), narrow-leaved water-parsnip (*Berula erecta*) and lesser spearwort (*Ranunculus flammula*).

National and Local Nature Reserves

- 3.6 No national or local nature reserves were returned from within the 2km search area.

Non-Statutory Protected Sites

- 3.7 Four Local Wildlife Sites (LWS) were returned from the 2km search area:
- Moss Valley LWS, 1.54km north-west of the site boundary. A well wooded valley with adjoining grassland. This site is designated for its semi-natural broad-leaved woodland, semi-improved neutral grassland, standing water and unimproved calcareous grassland habitats.
 - Erddig Estate LWS, 1.29km south of the site boundary. A National Trust estate designated for its semi-natural broad-leaved woodlands, semi-improved neutral grasslands, standing water and marshes.
 - New Broughton Meadow LWS, 1.79km west of the site boundary. Designated for its mosaic of semi-natural habitats. At the centre is a pond with some marginal vegetation, surrounded by a wet alder (*Alnus glutinosa*)/willow (*Salix* sp.) carr. This extends into a marshy area with much hairy sedge (*Carex hirta*) and lesser water-parsnip (*Berula erecta*), which in turn is surrounded by mostly sandy grassland, with a ranker sward to the north-east. The grassland is diverse with such species as goat's-beard (*Tragopogon pratense*), oxeye daisy (*Leucanthemum vulgare*), common toadflax (*Linaria vulgaris*) and bird's-foot trefoil (*Lotus corniculatus*). There is also scrub habitat along the line of the old railway

- Berse Dreilincourt LWS, 933m west of the site boundary. A small area with a mosaic of semi-natural habitats. Designated for its dense/continuous scrub, running and standing water, semi-improved neutral grassland and semi-natural broad-leaved woodland habitats.

Priority Habitats

- 3.8 No UK Biodiversity Action Plan (BAP) Priority Habitats were returned from within the 2km search area

Protected and Notable Species

Granted European Protected Species Licence Applications

- 3.9 No granted EPS licence applications were returned from within the 2km search area.

Badger

- 3.10 Forty-two records of badger (*Meles meles*) were returned from the 2km search area, dating from 1993 to 2022. The closest of these records is 560m south-west of the site boundary and is dated 1997.

Otter

- 3.11 Eleven records of otter (*Lutra lutra*) were returned from the 2km data search, dating from 2007 to 2021. The closest record is found 280m west and is dated 2019. All of the otter records are located to the south-west of the site.

Water Vole

- 3.12 No records for water vole were returned from the 2km data search.

Bats

- 3.13 Six-hundred-and-fourteen records and thirteen identified bat species were returned from within the 2km data search, dating from 1982 to 2021. The returned data from the desk study did not differentiate between sightings and roosts. The closest record is of an unknown bat species (*Chiroptera sp.*) located 389m south of the site boundary and is dated 2002. No records fall within the site boundary. The records are summarised in Table 3.

Table 3 Bat Records

Common Name	Scientific Name	No. of Records	Closest Record (approximate distance and direction from site boundary)
Bat	<i>Chiropter sp.</i>	24	389m south-west
Brandt's bat	<i>Myotis brandtii</i>	1	1635m south-west
Brown long-eared bat	<i>Plecotus auritus</i>	8	1528m south-west
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	109	514m north
Daubenton's bat	<i>Myotis daubentonii</i>	18	1516m south-west
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	7	1264m south-west
Long-eared bat species	<i>Plecotus sp.</i>	12	1492m south-west
Myotis bat species	<i>Myotis sp.</i>	25	1234m south

Common Name	Scientific Name	No. of Records	Closest Record (approximate distance and direction from site boundary)
Natterer's bat	<i>Myotis nattereri</i>	8	1528m south-west
Noctule bat	<i>Nyctalus noctula</i>	50	967m east
Pipistrelle	<i>Pipistrellus pipistrellus</i>	20	1264m south-west
Pipistrelle bat species	<i>Pipistrellus sp.</i>	12	1107m south
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	127	1234m south
Whiskered bat	<i>Myotis mystacinus</i>	30	1516m south-west
Whiskered/Brandt's bat	<i>Myotis mystacinus/brandtii</i>	13	1264m south-west

Other Mammals

- 3.14 Ninety records of hedgehog (*Erinaceus europaeus*) were returned from the 2km data search, dating from 2002 to 2022. The closest record lies 277m to the north-east of the site and is dated 2018.
- 3.15 Six records of polecat (*Mustela putorius*) were returned from the 2km data search, dating from 2005 to 2014. The closest record is situated 1709m south-west and is dated 2011.
- 3.16 One record of stoat (*Mustela erminea*) was returned from the 2km data search, 988m north-west of the site boundary. This record is dated 2006.
- 3.17 One record of weasel (*Mustela nivalis*) was returned from the 2km data search, 1456m south-west of the site boundary and is dated 2012.
- 3.18 One record of American mink (*Neovison vison*) was returned from the 2km data search and is located on the south-western perimeter of the 2km search area. This record is dated 2011.

Birds

- 3.19 All nesting birds, their nests and eggs are protected from harm under the WCA, 1981 (as amended). In addition, species listed under Schedule 1 of the WCA are further protected against disturbance when breeding.
- 3.20 A number of bird species are listed under Section 41 in the NERC Act (2006, amended) as species 'of principal importance for the purpose of conserving biodiversity'. These species are often known as the 'S41 species'. There is a legal requirement for a public body to 'have regard to' these species in relation to maintaining biodiversity. The S41 list overlaps somewhat with the UK BAP species, with national or local targets to maintain and enhance populations.
- 3.21 Furthermore, the Birds of Conservation Concern (BoCC) report lists those bird species that are classed as being of High (Red listed) and Medium (Amber Listed) conservation concern based on population monitoring (Stanbury *et al.* 2021). This Red and Amber classification helps guide the assessment of bird species of conservation interest on or near to a site, alongside legislative and policy requirements.
- 3.22 Seventeen Schedule 1 species, including barn owl (*Tyto alba*), kingfisher (*Alcedo atthis*), peregrine (*Falco peregrinus*), brambling (*Fringilla montifringilla*), fieldfare (*Turdus pilaris*), firecrest (*Regulus ignicapilla*), goshawk (*Accipiter gentilis*), hen harrier (*Circus cyaneus*), hobby (*Falco subbuteo*), marsh harrier (*Circus aeruginosus*), Mediterranean gull (*Ichthyophaga melanocephalus*), osprey (*Pandion haliaetus*), quail (*Coturnix coturnix*), red kite (*Milvus milvus*), redwing (*Turdus iliacus*), scaup (*Aythya marila*) and whimbrel (*Numenius phaeopus*) were recorded within the 2km search area; these records are classed as confidential. All other

protected and notable bird species records within the 2km search area are listed in Table 3 along with their conservation status.

- 3.23 A total of 19,817 bird records were returned from within the 2km data search, dating from 1995 to 2021. These records are evenly distributed throughout the 2km search area and do not appear to be focused on a certain location. These include twenty-three Section 42 Priority Species, twenty-five BoCC5 red-listed species and thirty-six BoCC5 amber-listed species. The data returned from the desk study is summarised in Table 4.
- 3.24 Please note that many of the bird records are given with a four-digit grid reference and so are precise only to 1km. Thus, it is possible that many of these records lie outside of the 2km search area. It is also possible that the 'true' location of some of these records may lie within the site boundary. However, no records given with precision (six-to-eight-digit grid references – 100m² or 10m² respectively) fall within the site boundary.

Table 4 Bird Species of Principal Importance

Common Name	Scientific Name	Amber ⁸ Listed	Red Listed	Section 42 Priority Species ⁹
Black-headed gull	<i>Chroicocephalus ridibundus</i>	x		x
Common gull	<i>Larus canus</i>	x		
Common sandpiper	<i>Actitis hypoleucos</i>	x		
Cuckoo	<i>Cuculus canorus</i>		x	x
Curlew	<i>Numenius arquata</i>		x	x
Dipper	<i>Cinclus cinclus</i>	x		
Dunlin	<i>Calidris alpina</i>		x	
Dunnock	<i>Prunella modularis</i>	x		x
Gadwall	<i>Mareca strepera</i>	x		
Grasshopper warbler	<i>Locustella naevia</i>		x	x
Greenfinch	<i>Chloris chloris</i>		x	
Grey wagtail	<i>Motacilla cinerea</i>	x		
Greylag goose	<i>Anser anser</i>	x		
Herring gull	<i>Larus argentatus</i>		x	x
Hobby	<i>Falco subbuteo</i>			
House martin	<i>Delichon urbicum</i>		x	
House sparrow	<i>Passer domesticus</i>		x	x
Iceland gull	<i>Larus glaucoideus</i>	x		
Kestrel	<i>Falco tinnunculus</i>	x		x

⁸ The UK's birds can be split in to three categories of conservation importance - red, amber and green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green.

⁹ Species of Principal Importance under Section 41 of the NERC Act 2006.

Common Name	Scientific Name	Amber ⁸ Listed	Red Listed	Section 42 Priority Species ⁹
Lapwing	<i>Vanellus vanellus</i>		x	x
Lesser black-backed gull	<i>Larus fuscus</i>	x		
Lesser redpoll	<i>Acanthis cabaret</i>			x
Lesser spotted woodpecker	<i>Dryobates minor</i>		x	x
Lesser whitethroat	<i>Curruca curruca</i>			
Linnet	<i>Linaria cannabina</i>		x	x
Mallard	<i>Anas platyrhynchos</i>	x		
Marsh tit	<i>Poecile palustris</i>		x	x
Meadow pipit	<i>Anthus pratensis</i>	x		
Mistle thrush	<i>Turdus viscivorus</i>		x	
Moorhen	<i>Gallinula chloropus</i>	x		
Oystercatcher	<i>Haematopus ostralegus</i>	x		
Pied flycatcher	<i>Ficedula hypoleuca</i>	x		x
Pink-footed goose	<i>Anser brachyrhynchus</i>	x		
Pintail	<i>Anas acuta</i>	x		
Pochard	<i>Aythya ferina</i>		x	
Redstart	<i>Phoenicurus phoenicurus</i>	x		
Reed bunting	<i>Emberiza schoeniclus</i>	x		x
Rook	<i>Corvus frugilegus</i>	x		
Sedge warbler	<i>Acrocephalus schoenobaenus</i>	x		
Shag	<i>Gulosus aristotelis</i>		x	
Shelduck	<i>Tadorna tadorna</i>	x		
Shoveler	<i>Spatula clypeata</i>	x		
Skylark	<i>Alauda arvensis</i>		x	x
Snipe	<i>Gallinago gallinago</i>	x		
Song thrush	<i>Turdus philomelos</i>	x		x
Sparrowhawk	<i>Accipiter nisus</i>	x		
Spotted flycatcher	<i>Muscicapa striata</i>		x	x
Starling	<i>Sturnus vulgaris</i>		x	x
Stock dove	<i>Columba oenas</i>	x		
Swift	<i>Apus apus</i>		x	
Tawny owl	<i>Strix aluco</i>	x		
Teal	<i>Anas crecca</i>	x		
Tree Sparrow	<i>Passer montanus</i>		x	x
Wheatear	<i>Oenanthe oenanthe</i>	x		
Whitethroat	<i>Curruca communis</i>	x		

Common Name	Scientific Name	Amber ⁸ Listed	Red Listed	Section 42 Priority Species ⁹
Wigeon	<i>Mareca penelope</i>	x		
Willow tit	<i>Poecile montanus</i>		x	x
Willow warbler	<i>Phylloscopus trochilus</i>	x		
Wood warbler	<i>Phylloscopus sibilatrix</i>		x	x
Woodcock	<i>Scolopax rusticola</i>		x	
Woodpigeon	<i>Columba palumbus</i>	x		
Wren	<i>Troglodytes troglodytes</i>	x		
Yellowhammer	<i>Emberiza citrinella</i>		x	x

Amphibians

- 3.25 Records of five amphibian species were returned from the desk study. The majority of these records come from 1.7km to 2km north of the site boundary immediately to the west of Rhosddu industrial estate.
- 3.26 One-hundred-and-eighteen records of UK BAP species great crested newt (GCN, *Triturus cristatus*) were returned from the 2km data search, dating from 1988 to 2021. The closest record is from a pond 787m south-west of the site boundary and is dated 2019.
- 3.27 Twenty-nine records of palmate newt (*Lissotriton helveticus*) were returned from the 2km data search, dating from 2007 to 2021. The closest record is 1805m to the north-west of the site boundary and is dated 2019.
- 3.28 Seventy records of smooth newt (*Lissotriton vulgaris*) were returned from the 2km search area, dating from 1988 to 2021. The closest record is 1419m south of the site boundary and is dated 1988. The next closest record is much more recent, dating from 2014, and is found 1786m north of the site boundary.
- 3.29 Sixteen records of unidentified newt species. were also returned from the 2km data search, dating from 2014 to 2021. The closest record is dated 2014 and is located 1786m north of the site boundary.
- 3.30 Six records of common frog (*Rana temporaria*) were returned from the 2km data search, dating from 1966 to 2019. The closest record is situated 1805m north-west of the site boundary and is dated 2019.
- 3.31 Three records of UK BAP species common toad (*Bufo bufo*) were returned from the 2km data search, dating from 1988 to 2019. The closest record is 1805m to the north-west of the site boundary and is dated 2019.
- 3.32 An Ordnance Survey map search revealed two ponds within 500m of the site boundary; one 200m to the south-west and one 355m east of the site boundary.

Reptiles

- 3.33 Two records of adder (*Vipera berus*) were returned from the 2km search area, dated 1992 and 2011. Both of these records are situated 1540m south of the site boundary close to the River Clywedog in Felin Puleston.
- 3.34 Seven records of grass snake (*Natrix helvetica*) were returned from the 2km search area, dating from 1990 to 2018. These records are distributed to the south of the site boundary around

Wrexham Cemetery and the River Clywedog. The closest record is found close to the railway 1147m south of the site and is dated 1990.

- 3.35 Four records of common lizard (*Zootoca vivipara*) were returned from the 2km search area, dated from 1903 to 2018. The closest of these records, of which there are three, are located just 209m south-east of the site boundary and are dated 2018.
- 3.36 Three records of slow-worm (*Anguis fragilis*) were returned from the 2km search area, dating from 1903 to 1990. The closest record is found close to the railway 1147m south of the site and is dated 1990, with another record close by in Wrexham Cemetery also dated 1990.

Invertebrates

- 3.37 Eight UK BAP invertebrate species were returned from the desk study, dating from 1978 to 2018. This includes the white-letter hairstreak butterfly (*Satyrus w-album*), green-brindled crescent moth (*Allophyes oxyacanthae*), cinnabar moth (*Tyria jacobaeae*), shaded broad-bar moth (*Scotopteryx chenopodiata*), wall butterfly (*Lasiommata megera*), centre-barred sawfly moth (*Atethmia centrugo*), September thorn moth (*Ennomos erosaria*) and the southern iron blue mayfly (*Baetis niger*). The closest of these records is of white-letter hairstreak, 622m to the north of the site boundary, which is dated 2018. None of these records are situated within the site boundary.

White-clawed Crayfish and Notable Fish

- 3.38 No records were returned for white-clawed crayfish (*Austropotamobius pallipes*).
- 3.39 Two records of UK BAP fish species were returned from the 2km data search, both dated 2007. Records of brown/sea trout (*Salmo trutta*) and European eel (*Anguilla anguilla*) are located along the River Clywedog, 1920m south of the site boundary.

Notable Plant and Fungus Species

- 3.40 One UK BAP plant species was returned from the 2km data search. This is common mouse-ear, of which there are eight records dating from 2011 to 2016, with the closest record being 948m north-west of the site boundary and dated 2015.
- 3.41 One UK BAP fungus species was returned from the 2km data search. This is bearded tooth fungus (*Hericium erinaceus*), of which there is a single record dating from 2003. This record is given with a four-digit grid reference (precision of 1km²) which is centred 2.3km to the south of the site boundary, so the 'true' location may fall outside of the search area.

Phase 1 Habitat Survey

- 3.42 A detailed map of the site is provided in Figure 1. A species list is provided as Appendix 1, along with photographs in Appendix 2.
- 3.43 The majority of the site comprised the built structure of the recently vacated nursing home (Photograph 1). The rest of the site comprised the following habitat types:
- hardstanding footpaths and adjacent roads (Photograph 2);
 - compartments of mown amenity grassland (Photograph 3). The grassland was dominated by perennial ryegrass, with a variety of forbs typical of amenity mown grassland including ribwort plantain, dandelion and common mouse-ear. Yarrow and common chickweed were also present and locally frequent in some areas;
 - Introduced shrub compartments in the south-west of the site with frequent barberry and cotoneaster species (Photograph 3);

- Ephemeral/short perennial vegetation present in paving cracks and at the foot of the building; and
- A small number of scattered trees in the south and east of the site.

Invasive Non-Native Species

- 3.44 No species listed as an invasive non-native species on Schedule 9 of the WCA, 1981 (as amended) were recorded within the site boundary.

Preliminary Roost Inspection and Bat Habitat Assessment

- 3.45 The single built structure within the site is a 1970's-built, two-storey, recently vacated nursing home.
- 3.46 The structure is red brick-built. Decorative vertical tiling is also present underneath uPVC windows (Photograph 4). Lead flashing was present on the underside of most window frames, however, this was generally closely sealed and poorly suitable to be used as a crevice feature by bats.
- 3.47 A soffit overhang is present on the underside of the roof of the structure (Photograph 5). The soffit was closely fixed to the bricks, with no obvious signs of access points. Overall, bat PRF were assessed to be absent on the vertical aspects of the structure, with brickwork, mortar and tiling overall in good, sealed condition.
- 3.48 Atop the structure, the vast majority featured a pitched roof with a large loft space (Photograph 6). Externally, roof and ridge tiles on the roof appeared in good condition and closely fixed without any PRF present. The loft space internally was supported by thin wooden beams which were in good condition. The internal roof lining was double layered and well fixed. A thick layer of insulation was present at the base of the loft. No gaps of daylight were visible from within the loft space and no evidence of bats, such as droppings or feeding remains, were found after a thorough search.
- 3.49 A small extension on the north side of the structure was flat-roofed, with closely fixed roof lining (Photograph 2). There was also a balcony area on the first floor in the south-west (Photograph 5).
- 3.50 A review of desk study data obtained revealed records for at least nine species of bat between 389m and 2km of the site. The immediate surrounding area was assessed to have moderate foraging habitat suitability for bats.
- 3.51 Overall, the structure was assessed to have Negligible potential to support roosting bats. No trees within the site boundary were of sufficient age or size to support roosting bats.

Other Protected Species

- 3.52 Some of the trees and shrubs within the site held potential to support nesting birds during the breeding season (March to August inclusive).
- 3.53 The habitats present were limited and it was considered that the site held negligible potential to support other protected species.

4. DISCUSSION AND RECOMMENDATIONS

- 4.1 The vegetated habitats within the site were of limited value. Although the desk study search returned a large number of protected species records, indicating that the wider area is capable of supporting a diversity of species, the site itself was assessed to be of low ecological value overall.

Bats

- 4.2 The building within the site was assessed to have Negligible potential to support roosting bats. Therefore, there are no further recommendations in respect of bats at this time.

Breeding Birds

- 4.3 Some of the trees and shrubs within the site have potential to support nesting birds during the breeding season (March to August inclusive).
- 4.4 Vegetation clearance of trees and shrubs should be avoided during the breeding season. If this cannot be achieved, then an ecologist should perform a check on the vegetation to confirm absence of nesting birds within 48 hours prior to its removal.

Enhancements

- 4.5 The site is currently of low ecological value. The development of the site presents an opportunity to enhance outcomes for biodiversity. Recommendations are detailed further in a separate Biodiversity Enhancement Plan document.

Survey Validity

- 4.6 The findings of the surveys should be considered valid for a period of 48 months from the date of survey (January 2023). If works have not commenced by January 2025 then the survey should be updated to ensure the ecological advice given is based on up-to-date information.

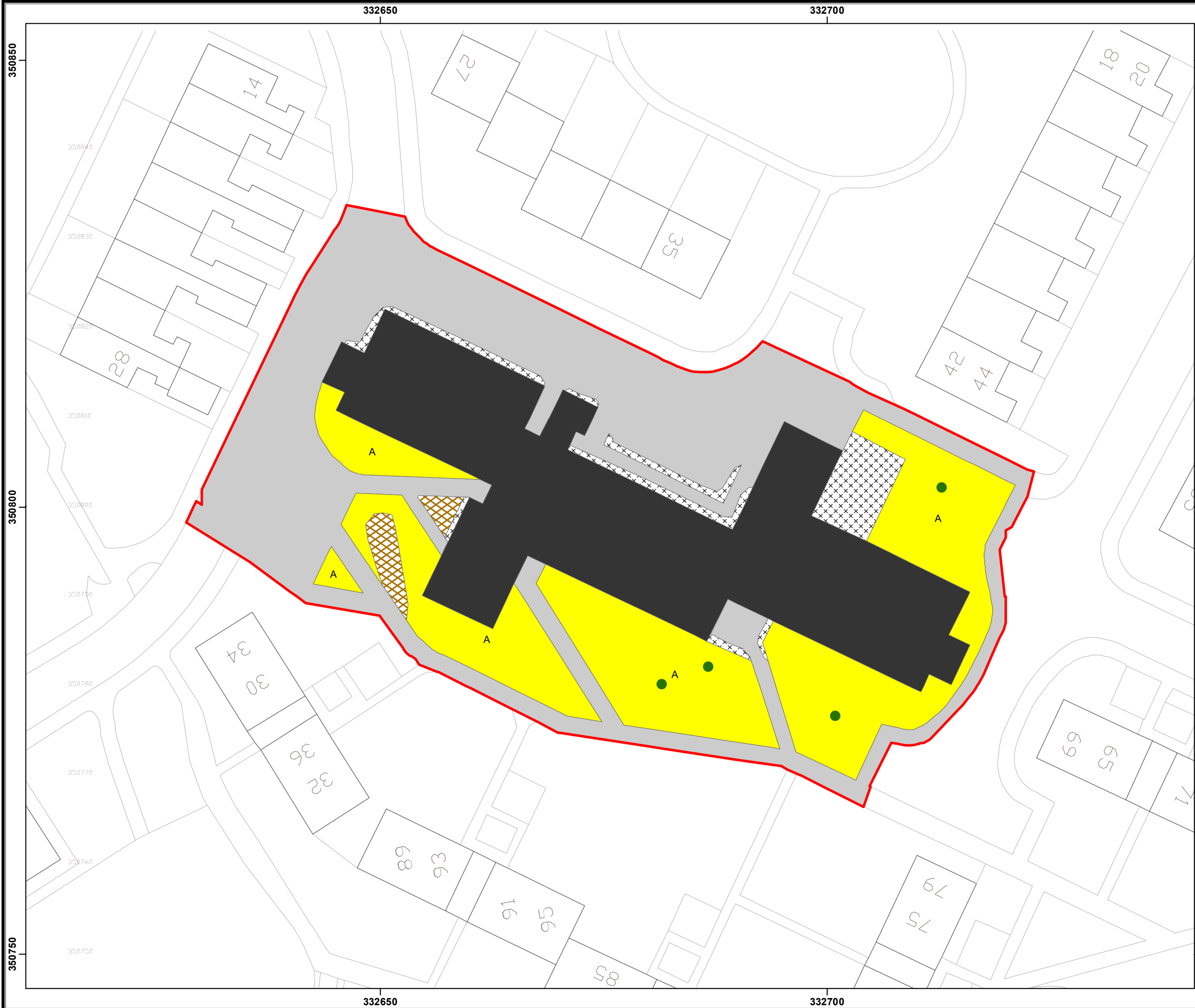
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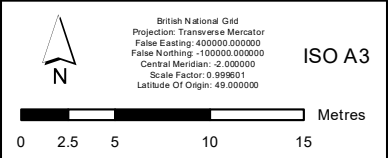
6. ABBREVIATIONS

BAP	Biodiversity Action Plan(s)
BoCC	Birds of Conservation Concern
CIEEM	Chartered Institute of Ecology and Environmental Management
CRoW	Countryside and Rights of Way
EPS	European Protected Species
EU	European Union
GCN	Great Crested Newt(s)
JNCC	Joint Nature Conservation Committee
LWS	Local Wildlife Site(s)
MAGIC	Multi Agency Geographic Information for the Countryside
NERC	National Environment and Rural Communities
PAA	Penny Anderson Associates Ltd
PPW	Planning Policy Wales
PRF	Potential Roost Feature(s)
SAC	Special Area(s) of Conservation
SMNR	Sustainable Management of Natural Resources
SPA	Special Protection Area(s)
SSSI	Site(s) of Special Scientific Interest
TANs	Technical Advice Notes
TN	Target Note(s)
WCA	Wildlife and Countryside Act

FIGURE



- Legend**
- Survey area
 - Phase 1 Habitats**
 - J1.2, Amenity grassland
 - J1.3, Ephemeral/short perennial (over hardstanding)
 - J1.4, Introduced shrub
 - J3.6, Building
 - J5, Hardstanding
 - Scattered trees





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Project Name
Wisteria Court

Discipline
Ecology

Title:
**PRELIMINARY
ECOLOGICAL
ASSESSMENT MAP**

Scale 1:400	Drawing No. Figure 1
Drawn By CC	Originator RL
Grid Ref. 332,676 350,800	Date 16/01/2023
	Revision 1.0

APPENDICES

APPENDIX 1

Botanical Species List

Appendix 1 Botanical Species List

Common Name	Scientific Name	Scattered Trees	Introduced Shrub	Amenity Grassland	Ephemeral/ Short Perennial
Woody Species					
Barberry species	<i>Berberis</i> sp.		F		
Bramble	<i>Rubus fruticosus</i> agg.		O		
Cherry species	<i>Prunus</i> sp.	R			
Evergreen spindle	<i>Euonymus japonicus</i>		O-LF		
Franchet's cotoneaster	<i>Cotoneaster franchetii</i>		F		
Japanese barberry	<i>Berberis japonica</i>		F		
Maple species	<i>Acer</i> sp.	R			
Silver birch	<i>Betula pendula</i>	O			
Willow-leaved cotoneaster	<i>Cotoneaster salicifolius</i>		O-LF		
Winter creeper	<i>Euonymus fortunei</i>		O		
Herbs, Grasses, Ferns and Mosses					
Cat's ear	<i>Hypochaeris radicata</i>			R	
Cock's-foot	<i>Dactylis glomerata</i>			F	R
Common chickweed	<i>Stellaria media</i>			O-LF	
Common mouse-ear	<i>Cerastium fontanum</i>			R	O-LF
Common ragwort	<i>Jacobaea vulgaris</i>			R-LF	
Crane's-bill species	<i>Geranium</i> sp.		R	R	
Creeping buttercup	<i>Ranunculus repens</i>			R	
Daisy	<i>Bellis perennis</i>			O-LF	R
Dandelion	<i>Taraxacum officinale</i> agg.			R	
Dove's-foot crane's-bill	<i>Geranium molle</i>			R	R
Hairy bitter-cress	<i>Cardamine hirsuta</i>				R
Herb-Robert	<i>Geranium robertianum</i>		R		O-LA
Ivy	<i>Hedera helix</i>		O		R
Perennial ryegrass	<i>Lolium perenne</i>			D	O
Ribwort plantain	<i>Plantago lanceolata</i>			O	R
Rosebay willowherb	<i>Chamaenerion angustifolium</i>				O
Spear thistle	<i>Cirsium vulgare</i>				
Springy turf-moss	<i>Rhytidiadelphus squarrosus</i>				F
Thread-moss species	<i>Bryum</i> sp.				F
Willowherb species	<i>Epilobium</i> sp.			R-LF	O
Yarrow	<i>Achillea millefolium</i>			O-LF	

KEY

D - Dominant
 A - Abundant
 F - Frequent
 O - Occasional
 R - Rare
 L - Locally

APPENDIX 2

Photographs



**Photo 1 Wisteria Court
from the north**



**Photo 2 Wisteria Court
from the south-
west**



**Photo 3 Introduced
shrubs and
grassland to the
south-west of the
site**



Photo 4 Example of the brickwork and decorative tiling



Photo 5 Soffit overhang and small flat-roofed extension in north



Photo 6 Example of the internal loft space

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