

**RYDAL PENRHOS, COLWYN BAY,
CONWY**

PRELIMINARY ECOLOGICAL APPRAISAL

SEPTEMBER 2020



ces ecology
consultant ecologists

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EXECUTIVE SUMMARY

- Cheshire Ecological Services Ltd. (CES Ecology) was commissioned to conduct a Preliminary Ecological Appraisal of land at Rydal Penrhos, Colwyn Bay, Conwy where a 105-unit residential development is proposed.
- The survey was conducted on 29th September 2020 by CES Senior Ecologist Suzie Whitnall BSc (Hons) MSc AICEEM. The purpose was to gain baseline ecological information of the site in order to assess its current status, to identify any ecological constraints to development, and to recommend further survey if necessary.
- The area of land requested to be surveyed totals approximately 3 hectares and is located at Rydal Penrhos Prep School, on the south-westerly edge of Colwyn Bay.
- At the time of survey, the site comprised a large Grade II listed prep school building and several other associated school buildings surrounded by an asphalt play area, several playing fields and a broadleaved woodland. The boundaries are demarcated by a mix of fences, stone walls and amenity hedgerows. The site's gradient slopes downwards from east to west towards Colwyn Bay.
- As part of the desk-based study, the Local Biodiversity Recording Centre provided records of protected and BAP Priority Species occurring within 1km of the proposed development site, within the past twenty years.
- Features of ecological interest identified during the survey included semi-natural broad-leaved woodland, mature trees and herb-rich grassland. Although not necessarily afforded legal protection, it was recommended that where practicable, these features be retained and sufficiently protected during development works.
- The habitat composition of the site was considered to have potential to support legally protected/BAP wildlife species, including badger, bats, birds, bluebell, hedgehog, invertebrates and reptiles. Invasive plant species were also recorded on and immediately adjacent the site.
- It is considered appropriate and proportionate to recommend further survey effort in respect of badger, bats, and reptiles before any potentially disturbing works take place. The results of these surveys should enable the Local Planning Authority to make an informed decision as to whether or not it is possible to discharge their responsibilities under current planning when determining the planning application submitted in respect of the proposed development.
- A number of recommendations are made in respect of the protection of bluebell and hedgehog, and the control of invasive species that are present with the site
- The local planning authority may require the development to proceed in accord with an approved Biosecurity Risk Assessment and Method Statement.

1.0 INTRODUCTION

- 1.1 Cheshire Ecological Services Ltd. (CES Ecology) was commissioned to conduct a Preliminary Ecological Appraisal of land at Rydal Penrhos, Colwyn Bay, Conwy where a 105-unit residential development is proposed (See Appendix G: Site Layout (Rev I).
- 1.2 The purpose of this survey was to gain up to date baseline ecological information of the site in order to assess its current status, to identify any ecological constraints to development that may currently be associated with the development area and/or the surrounding land, and to recommend further survey if necessary.
- 1.3 The survey was conducted by Senior Ecologist Suzie Whitnall BSc (Hons) MSc ACIEEM on Tuesday 29th September 2020. Suzie is licensed by Natural Resources Wales to disturb, take and handle all species of bat in Wales under licence number S088253/1.
- 1.4 Weather conditions at the time of survey were dry with a light breeze and a temperature of 16°C.

2.0 SITE DESCRIPTION

- 2.1 The survey was centred on the following OS grid reference SH 84236 78873.
- 2.2 The area of land requested to be surveyed totals approximately 3 hectares, and is hereafter referred to as the 'site'. The site is located at Rydal Penrhos Prep School on the south-westerly edge of Colwyn Bay, Conway, North Wales.
- 2.3 At the time of survey, the site comprised a large Grade II listed prep school building and several other associated school buildings surrounded by an asphalt play area, several playing fields to the north-east and north-west and a broad-leaved woodland to the south-west. The boundaries are demarcated by a mix of fences, stone walls and amenity hedgerows. The site's gradient slopes downwards from east to west towards Colwyn Bay.
- 2.4 Land-use in the wider area comprised the built environs of Colwyn Bay and associated highway (A55), coastal habitats, broadleaved woodland, and mixed-use farmland, and the Welsh Mountain Zoo (refer to Appendix A - Site Location Plan).
- 2.5 The site was bounded to the north by residential housing and Oak Drive, to the east by residential housing along Pwllcrochan Avenue, to the west by the B5113 and to the south by the Old highway and broadleaved woodland in Pwllcrochan Woods.

3.0 SURVEY METHODS

Desk-based study

- 3.1 The desk-based study comprised consultation with the following consultees:

- Lle Portal - A Geo-Portal for Wales
 - Defra's online mapping facility 'MAGIC'
 - Cofnod - the local biological records centre for North Wales
 - Ordnance Survey - OS mapping of the local and wider area
- 3.2 The desk-based study comprised consultation with the Lle Portal and Defra's online mapping facility 'MAGIC' to search for statutorily designated nature conservation sites within the local and wider area (within 5km).
- 3.3 Cofnod was asked to provide information on statutory and non-statutory nature conservation sites within 1km of the site, and to provide records of protected and Priority species within a 1km radius from the site boundary, within the past 20 years.
- 3.4 Ordnance Survey mapping of the local area was reviewed to search for the presence of habitats and features of potential ecological relevance to this survey, such as ponds.

Preliminary Ecological Appraisal

- 3.5 This survey involved the mapping of various habitat types on the site in addition to any habitat features and botanical species of conservation importance. A thorough walk-over survey was undertaken of the site. The methodology for this survey followed that described by the Joint Nature Conservation Committee (JNCC, 2010).
- 3.6 Priority habitats and species, for which there is a national or local Biodiversity Action Plan (BAP) and those listed under Section 42 of the Natural Environment and Rural Communities Act, 2006 (for Wales), were recorded as such where present. The Section 42 list of Priority habitats and species has now been superseded by the Section 7 list of the Environment (Wales) Act 2016, however, the lists are currently exactly the same and the two should therefore be considered interchangeable.
- 3.7 Preliminary searches were also carried out for protected/BAP species such as badgers, bats, reptiles and great crested newts (GCN) that may potentially use the site. Scientific names and the national status of vegetative species recorded follow Stace (2019). Scientific and common names stated in the text are also presented in Appendix C.

Survey Limitations

- 3.8 The observations made during this survey have been used to assess the presence, or potential presence, of protected and/or Priority species within the proposed area of works and to recommend further actions where required. It should however, be noted that this survey serves as a single visit representing a 'snap-shot in time' whereby only the species present at the time of survey were recorded.
- 3.9 Positive evidence of species that use this site periodically or are in growth at different times of the year may not have been recorded. It is important to consider that the absence of a species from a particular survey does not necessarily indicate the absence (or continued absence) of that species from the area.

- 3.10 The survey was conducted just outside of the optimal survey season for undertaking botanical assessment. However, it was considered that it was possible to make an appropriate assessment of habitat type/categorisation.

4.0 RESULTS

Desk-based Study

- 4.1 Defra's and Lle Portal's online mapping facilities indicate that there are four statutorily designated nature conservation sites present within 5km of the site:
- Pwllcrochan Woods Local Nature Reserve (LNR) located immediately south of the site.
 - Liverpool Bay/Bae Lerpwl Special Protection Area (SPA), located approximately 890m to the north-east of the site, as its closest point.
 - Bryn Eurn Site of Special Scientific Interest (SSSI) and LNR, located approximately 1.1km to the north-west of the site, at its closest point.
 - Creuddy Penninsula Woods/Coedwigoedd Penrhyn Creuddyn Special Area of Conservation (SAC) and SSSI located approximately 1.4km to the north-west of the site, at its closest point.
- 4.2 Cofnod indicates that there are five non-statutorily designated nature conservation sites present within 1km of the site, all of which are Candidate Wildlife Sites (cWS):
- Pwllcrochan Woods cWS located immediately south of the site.
 - Coed Sempyr cWS located approximately 670m to the north-west of the site, at its closest point.
 - Bryn Eurn Woods cWS located approximately 780m to the north-west of the site, at its closest point.
 - Bryn y Glyn cWS located approximately 900m to the south-east of the site, at its closest point.
 - The View, Mochdre cWS located approximately 1km to the south-west of the site, at its closest point.
- 4.3 Cofnod highlighted the presence of the following protected species occurring within approximately 1km of the proposed development site since 2000:

| Scientific name | Common name | Designations |
|----------------------------|---------------------------------|----------------------|
| <i>Accipiter nisus</i> | Sparrowhawk | CITES, LBAP |
| <i>Aegithalos caudatus</i> | Long-tailed Tit | WBA |
| <i>Agrochola litura</i> | Brown-spot Pinion | S7 |
| <i>Agrochola lychnidis</i> | Beaded Chestnut | S7 |
| <i>Anguis fragilis</i> | Slow worm | Bern, S7, WCA5, LBAP |
| <i>Anthus pratensis</i> | Meadow Pipit | Bern, UKBA, WBA |
| <i>Apus apus</i> | Swift | UKBA, WBA |
| <i>Atethmia centrigo</i> | Centre-barred Sallow | S7 |
| <i>Boloria selene</i> | Small Pearl-bordered Fritillary | RD1(UK)NT, S7, LBAP |
| <i>Bufo bufo</i> | Common Toad | Bern, S7, WCA5, LBAP |

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|-----------------------------------|----------------------------|--------------------------------------|
| <i>Buteo buteo</i> | Buzzard | CITES, LBA |
| <i>Buxus sempervirens</i> | Box | RD1(UK)DD, RD2(UK)R, LBAP |
| <i>Calidris alpina</i> | Dulin | Bern, UKBA, WBR, LBAP |
| <i>Caradrina morpheus</i> | Mottled Rustic | S7 |
| <i>Celastrina argiolus</i> | Holly Blue | LBAP |
| <i>Certhia familiaris</i> | Treecreeper | Bern, LBAP |
| <i>Chloris chloris</i> | Greenfinch | Bern, LBAP |
| <i>Chroicocephalus ridibundus</i> | Black Headed Gull | BDIr2.2, S7, UKBA, WBR, |
| <i>Cirrhia icteritia</i> | Sallow | S7 |
| <i>Cotoneaster horizontalis</i> | Wall Cotoneaster | INNS, WCA9 |
| <i>Dactylorhiza purpurella</i> | Northern March-orchid | LI[VC50, VC51] |
| <i>Delichon urbicum</i> | House Martin | Bern, UKBA, WBA |
| <i>Dendrocopos major</i> | Greater Spotted Woodpecker | Bern, LBAP |
| <i>Diarsia rubi</i> | Small Square-spot | S7 |
| <i>Ecliptopera silaceata</i> | Small Phoenix | S7 |
| <i>Emberiza citrinella</i> | Yellowhammer | Bern, S7, UKBR, WBR, LBAP |
| <i>Erinaceus europaeus</i> | Hedgehog | Bern, S7 |
| <i>Euxoa tritici</i> | White-line Dart | S7 |
| <i>Falco peregrinus</i> | Peregrine | BDIr1, Bern, CITES, WCA1.1 |
| <i>Falco tinnunculus</i> | Kestrel | Bern, CITES, S7, UKBA, WBR, LBAP |
| <i>Fallopia japonica</i> | Japanese Knotweed | INNS, WCA9 |
| <i>Haematopus ostralegus</i> | Oystercatcher | BDIr2.2, UKBA, WBA, LBAP |
| <i>Hepialus humuli</i> | Ghost Moth | S7 |
| <i>Hirundo rustica</i> | Swallow | Bern, WBA |
| <i>Hoplodrina blanda</i> | Rustic | S7 |
| <i>Hyacinthoides hispanica</i> | Spanish Bluebell | INNS |
| <i>Hyacinthoides non-scripta</i> | Bluebell | WCA8, LBA |
| <i>Hydraecia micacea</i> | Rosy Rustic | S7, LBA |
| <i>Larus argentatus</i> | Herring Gull | BDIr2.2, S7, UKBR, WBR, LBAP |
| <i>Larus fuscus</i> | Lesser Black-backed Gull | BDIr2.2, UKBA, WBA |
| <i>Larus melanocephalus</i> | Mediterranean Gull | BDIr1, Bern, UKBA, WBA, WCA1.1, LBAP |
| <i>Lasiommata megera</i> | Wall | RD1(UK)NT, S7 |
| <i>Leycesteria formosa</i> | Himalayan Honeysuckle | INNS |
| <i>Linaria cannabina</i> | Linnet | Bern, S7, UKBR, WBR, LBAP |
| <i>Lissotriton helveticus</i> | Palmate Newt | Bern, WCA5, LBAP |
| <i>Meconopsis cambrica</i> | Welsh Poppy | RD2(UK)S |
| <i>Meles meles</i> | Badger | Bern, PBA, LBAP |
| <i>Motacilla cinerea</i> | Grey Wagtail | Bern, LBAP |
| <i>Muscicapa striata</i> | Spotted flycatcher | Bern, S7, UKBR, WBR, LBAP |
| <i>Mustela erminea</i> | Stoat | Bern, NRW, LBAP |
| <i>Mustela putorius</i> | Polecat | Bern, HDir, RD2(UK), S7, LBAP |
| <i>Natrix helvetica</i> | Grass Snake | Bern, S7, WCA5, LBAP |
| <i>Numenius arquata</i> | Curlew | BDIr2.2, S7, UKBR, WBR, LBAP |

| | | |
|---|------------------------------|--|
| <i>Oenanthe oenanthe</i> | Wheatear | Bern, WBA |
| <i>Passer domesticus</i> | House Sparrow | S7, UKBR, WBA, LBAP |
| <i>Periparus ater</i> | Coal Tit | Bern, WBA |
| <i>Phoenicurus phoenicurus</i> | Redstart | Bern, UKBA, WBA, LBAP |
| <i>Phylloscopus trochilus</i> | Willow Warbler | UKBA, WBR |
| <i>Pipistrellus pipistrellus</i> | Common Pipistrelle | Bern, EPS, HDir, RD2(UK), S7, WCA5, LBAP |
| <i>Pipistrellus pygmaeus</i> | Soprano Pipistrelle | Bern, EPS, HDir, RD2(UK), S7, WCA5, |
| <i>Populus nigra subsp. betulifolia</i> | Black Poplar | LBAP |
| <i>Prunella modularis</i> | Dunnock | Bern, S7, UKBA |
| <i>Prunus laurocerasus</i> | Cherry Laurel | INNS |
| <i>Pyrrhula pyrrhula</i> | Bullfinch | S7, UKBA, WBR, LBAP |
| <i>Rana temporaria</i> | Common Frog | Bern, HDir, WCA5, LBAP |
| <i>Regulus ignicapilla</i> | Firecrest | Bern, WBA, WCA1.1, LBAP |
| <i>Regulus regulus</i> | Goldcrest | Bern, WBA |
| <i>Rhinolophus hipposideros</i> | Lesser Horseshoe Bat | Bern, EPS, HDir, RD2(UK), S7, WCA5, LBAP |
| <i>Saxicola rubicola</i> | Stonechat | Bern, LBAP |
| <i>Sitta europaea</i> | Nuthatch | Bern, LBAP |
| <i>Spilosoma lubricipeda</i> | White Ermine | S7 |
| <i>Spilosoma lutea</i> | Buff Ermine | S7 |
| <i>Sturnus vulgaris</i> | Starling | BDir2.2, Bern, S7, UKBR, WBR, LBAP |
| <i>Sylvia atricapilla</i> | Blackcap | LBAP |
| <i>Sylvia borin</i> | Garden Warbler | WBA |
| <i>Sylvia communis</i> | Whitethroat | WBA |
| <i>Sylvia curruca</i> | Lesser Whitethroat | LBAP |
| <i>Tringa totanus</i> | Redshank | BDir2.2, UKBA, WBA |
| <i>Turdus iliacus</i> | Redwing | BDir2.2, UKBR, WBA, WCA1.1 |
| <i>Turdus philomelos</i> | Song Thrush | BDir2.2, Bern, S7, UKBR, WBA, LBAP |
| <i>Turdus pilaris</i> | Fieldfare | BDir2.2, UKBR, WBA, WCA1.1, LBAP |
| <i>Xanthorhoe ferrugata</i> | Dark-barred Twin-spot Carpet | S7, LBAP |
| <i>Zootoca vivipara</i> | Common Lizard | Bern, S7, WCA5, LBAP |

Note: All species names and designations provided by Cofnod.

Designations key:

UKBR - RSPB UK Birds Red List (not based on IUCN criteria)
WBR - RSPB Welsh Birds Red List (not based on IUCN criteria)
LBAP - Local Biodiversity Action Plan species for Flintshire
WBA - RSPB Welsh Birds Amber List (not based on IUCN criteria)
RD2(UK) - Red Data Book listing for the UK not based on IUCN guidelines
INNS - Invasive Non-native Species
WCA1.1 - Wildlife & Countryside Act 1981 Schedule 1.1 (Birds which are protected at all times)
WCA5 - Wildlife & Countryside Act 1981 Schedule 5
WCA8 - Wildlife & Countryside Act 1981 Schedule 8
WCA9 - Wildlife & Countryside Act 1981 Schedule 9

Bern – Bern Convention on the Conservation of European Wildlife and Natural Habitats
UKBA - RSPB UK Birds Amber List (not based on IUCN criteria)
CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora
Bern – Bern Convention on the Conservation of European Wildlife and Natural Habitats
PBA - Protection of Badgers Act 1992

- 4.4 A number of other species records were provided but have not been included in this report as it is considered highly unlikely that they would be associated with the proposed development site. For example, numerous records of wading birds were provided. Given the habitat composition of the site and the nature of the proposed works, it is considered highly unlikely that the proposed development would impact upon such species.
- 4.5 Cofnod highlighted the presence of the following BAP Priority habitats; Restored Ancient Woodland located on site and immediately south within the Pwlycrochan Woods; and Traditional Orchards and Ancient Semi-Natural Woodland within 1km of the site.

Fieldwork

- 4.6 Features of interest recorded on the site during this survey are described in the Target Notes (TN) below. All numbered Target Notes correspond with the Phase 1 Habitat Maps (Appendix B). Species lists for each area and photographic plates are presented within Appendices C and D respectively.

Target Notes

TN1 – Lesser horseshoe bat roost within the main prep school building (B1) (Plate 8)

TN2 – Japanese knotweed (Invasive species, WCA9) (Plates 5 and 12)

TN3 – Tree with bat and badger potential (Plate 6)

TN4 – Area indicative of species-rich grassland containing orchids (Plate 3)

TN5 – Culvert stream (Plate 11)

TN6 – Refugia/ compost heap (Plate 13)

TN7 – Himalayan honeysuckle and cherry laurel (INNS)

5.0 DISCUSSION

Designated Sites

- 5.1 Defra's and Lle Portal online mapping facilities indicated that the closest statutorily designated nature conservation site is Pwlycrochan Woods LNR, located immediately to the south of the site (refer to Appendix A). The LNR totals 23.37h and comprises broadleaved woodland with some areas classified as Restored Ancient Woodland. It is located on a steep decline towards the site and contains several designated circular walking paths through the woods.

The proposed development will have an indirect impact on the LNR with an increase in visitor footfall. However, the reserve is set up for visitors with designated paths and signs, and therefore the increase in visitors should not have a significant impact. Given that the LNR woodland is situated above the proposed site beyond a steep incline and the woodland on site, directly opposite the LNR, will be retained there should be no direct impacts.

- 5.2 It is considered that the proposed development would not have any direct impact on the remaining statutorily designated conservation sites within 5km given the apparent lack of habitat connectivity between these designated sites and the proposed development site. However, indirect impacts including an increase in visitors to natural open spaces within these sites may result as a consequence of the occupation of the development.
- 5.3 Cofnod indicated that the closest non-statutorily designated site is Pwllcrochan Wood Candidate Wildlife Site. This site covers the same area of the Pwllcrochan Wood LNR, and therefore the impacts are considered in para 5.1 above.
- 5.4 It is also considered unlikely that the proposed development would adversely affect the status of the other cWS due the apparent lack of habitat connectivity between these sites and the proposed development site. However, it should be noted that the development could increase the footfall of visitors into these sites.
- 5.5 Cofnod highlighted the presence of restored Ancient Woodland Priority habitat occurring on site. The current proposals indicate the retention of this habitat and should be appropriately protected during the construction phase and post construction.

Habitats

5.6 Amenity grassland (Plate 1)

A large proportion of the north-east area of the site consisted of two large playing fields and a small golf putting green. The land is on a sloping gradient, grading downwards towards the coast (to the north-west). The playing fields have been levelled out and are subject to intensive management and regular mowing regime.

The sward was no higher than 2cm in height and consisted primarily of grass species including perennial rye-grass, bent sp, cock's foot and meadow-grass sp. The occasional herb species was present including clover sp, dandelion, ribwort plantain and greater plantain.

The habitat is widespread and common in the UK, and is considered to be of limited ecological interest and easily replicated.

5.7 Semi-improved neutral grassland (Plates 2 and 3)

The embankments between the amenity grassland playing fields to the north-east of the site were not regularly mown and therefore had a longer sward high and were slightly more diverse in grass and herb species.

The grassland comprised primarily of grass species with abundant creeping bent, frequent cock's foot, and the occasional false oat grass, perennial rye grass, and

meadow grass. Herb species included ribwort plantain, meadow buttercup, common hogweed, broad-leaved dock, red clover, common ragwort, common bird's foot trefoil, common sorrel, yarrow, germander speedwell, winter heliotrope and bindweed.

The composition of grasses and herb species within these areas of semi-improved grassland were considered to be relatively common and widespread species.

The north-west of the site comprised a large area of semi-improved neutral grassland, which sloped downwards from west to east. This area was less managed than the north-eastern fields with the occasional mown pathway.

The species composition was similar to the semi-improved areas described above, however it contained a number of additional species including (but not limited to) common knapweed, orchid sp, greater bird's foot trefoil, sweet vernal grass, meadow foxtail. These species are indicators of Priority grassland habitat. As such, this area was considered to be more diverse and richer in species.

5.8 Semi-natural, broadleaved woodland (Plates 4 and 5)

An area of mature broadleaved woodland was present in the southern section of the site, immediately behind the large Grade II listed school building (B1). It was separated from the Pwlycrochan Wood LNR by the Old Highway Road. A small area within the centre of the woodland was identified by Cofnod as being a Restored Ancient Woodland site. The woodland was used by the school for Forest School activities with a cleared area containing a log shelter and worm paths through the woodland.

The canopy comprised ash, oak, sycamore, silver birch, Scot's pine and beech, with an understorey of cherry laurel, holly, hazel, and Himalayan honeysuckle. Ground flora included wood avens, bluebell sp, wood fescue, common figwort, male fern, tutsan and herb Robert.

The broadleaved woodland is considered to be of ecological importance with a medium habitat distinctiveness, however non-native invasive species including cherry laurel and Himalayan honeysuckle are present.

Groups of trees were also present within the north-west section of the site, these have been mapped as broadleaved woodland in Appendix B and labelled G1 and G2.

Group 1 (G1) is a small band of trees located between the main school building and field to the north-west. Species included semi-mature / mature ash, silver birch, willow sp, sycamore, cherry sp and common whitebeam.

Group 2 (G2) is a small copse of trees on the north-west boundary. Species include primarily sycamore with an understorey of holly, hazel and cherry laurel. Small growths (approximately 4-5) of Japanese knotweed were recorded within the ground flora (Target Note 2). Japanese knotweed is a non-native invasive species that can be damaging to property.

5.9 Introduced shrub

A band of primarily non-native shrub planting is present on the embankment between the asphalt playground and playing field to the south-east of the site.

Species include buddleia, cherry laurel, Himalayan honeysuckle, fuchsia, hogweed, rosebay willowherb, bracken, male fern, tutsan, bramble, hazel, horse chestnut, sycamore, ivy, prickly sow-thistle, creeping thistle, common figwort, ash sapling, spear thistle and willow sp. This area is of low ecological value.

5.10 Scrub

Small areas of scrub were present along the tennis court edges and around the northern playing field. Species present included bramble, tutsan, broad-leaved dock, common ragwort, valerian, iris sp, and bindweed.

These areas were too small to map and therefore have not been included the Appendix B – Phase 1 habitat map. They are of low ecological value.

5.11 Scattered Trees (Plate 6)

There are a number of scattered trees within the site, ranging in ages. Species include silver birch, sweet chestnut, sycamore, oak, cherry sp, Scot's pine, lombardy poplar, whitebeam and oak.

Notable stands included a line of Scot's pine along the northern boundary, a band of trees along the north-west boundary and two large oak trees in the north-west field. Target Note 3 indicates the two large oak trees which include a large hollow in the main trunk of one.

5.12 Hedgerows (Plate 7)

There were four hedgerows present within the site boundary.

Hedgerow 1 – An amenity hedgerow along the south-east boundary running parallel to Pwllcrochan Avenue. The cypress hedge was well maintained and regularly cut. It was approximately 2m in height and 1.5m wide.

Hedgerows 2 and 3 - Amenity hedgerows along the south-east boundary separating the site from private properties. Hedgerow 2 (H2) was a beech hedge with a height of 4m and a width of 2m. Hedgerow 3 (H3) was a leylandi cypress hedge with a height of 4m and width of 2m. Both were well maintained and regularly cut.

Hedgerow 4 – An amenity hedge located between the classroom building and north-west field. Species included garden privet, Himalayan honeysuckle and fuchsia. The hedge was well maintained and regularly cut.

None of the hedgerow are likely to qualify as 'Important' under the wildlife criteria of the *Hedgerow Regulations, 1997* because of its lack of woody species. Furthermore, the Regulations do not cover garden/amenity hedges. It should however be noted that hedgerows over thirty years old can be protected by the Regulations for a number of other factors such as historical and landscape interest. It is not the place of this ecological report to assess such other factors.

It is recommended that any new hedgerow planting associated with the proposed development should contain a minimum of five of the following species: Common hawthorn (*Crataegus monogyna*), field maple (*Acer campestre*), alder (*Alnus glutinosa*), hazel (*Corylus avellana*), crab apple (*Malus sylvestris*), field rose (*Rosa arvensis*) wild cherry (*Prunus avium*), holly (*Ilex aquifolium*) and guelder rose (*Viburnum opulus*).

5.13 Buildings (Plates 8 to10)

There were six buildings within the proposed site boundary. Refer to Appendix B – Phase 1 Habitat Map for building numbers and locations.

Building 1 – The large Rydal Preparatory School building was located to the south of the proposed development site. The Grade II listed building had a roughcast render with stone dressing and slate roofs. A lesser horseshoe roost had been recorded in the building's boiler room (Target Note 1). During the survey the roost was confirmed to still be present (by a licensed surveyor).

Building 2 – A detached dwelling located to the south-east of the site. The two-storey property had rendered walls with hipped tiles clad with clay tiles.

Building 3 – A small shed located next to the tennis courts to the east of the site. It had timber panel walls with hipped roof clad with clay tiles.

Building 4 – A small outbuilding/shed located near to the tennis court to the east of the site. It had brick/pebble dash render walls with a pitched roof, clad with clay tiles.

Building 5 – Two modular classroom building located to the west of the site on the edge of the woodland.

Building 6 – Two single-storey classroom buildings located to the west of the site on the edge of the woodland. They had brick/rendered walls with pitched roofs.

5.14 Boundaries

Much of the site boundaries are demarcated by either stone walls or fences. A stone wall is also present dividing the northern playing field from tennis court/golf putting green area.

A stand of Japanese knotweed was present just off-site within an area of public open space on the north-west boundary (Target note 2). The site is only separated from the open space here by a wooden post and wire fence. As such, the plant can easily spread onto the site.

Features of Ecological Interest

5.15 The following features of 'ecological interest' were identified during the survey:

- Deciduous woodland Priority habitat
- Mature trees
- Semi-improved neutral grassland

- 5.16 Although not necessarily afforded legal protection, it is recommended that where practicable, the above features of ecological interest should be retained and sufficiently protected during development works.
- 5.17 The proposals indicate that a large proportion of the mature trees and the woodland on site will be retained. The trees/woodland to be retained should be adequately protected during the works. Appropriate protection would include a barrier to prohibit construction works in the area between itself and the tree trunk (i.e. create a root protection zone). The minimum distance between the outermost tree stems and barriers must be either the distance of branch spread or half-tree height, whichever is the greater. This should be sufficient to protect from direct impact and from severance or asphyxiation of the roots.
- 5.18 The habitat composition of the site has potential to support legally protected/BAP wildlife species. It was not within the scope of this survey to carry out detailed searches for protected species, although the potential for the study site to support the following species is discussed below:

- Badger
- Bats
- Bluebells
- Birds
- Great Crested Newt and other amphibians
- Hedgehog
- Invasive Species
- Invertebrates
- Reptiles

Legislation relating to each species discussed in this report is presented in Appendix E – Legislation. No other legally protected species are considered likely to be associated with the proposed development site due to a lack of suitable habitat on, and surrounding the site.

5.19 Badgers

Badgers and their setts are protected under British law. Statutory guidance indicates that a licence may be required if potentially disturbing works are to take place within 30m of a badger sett.

Cofnod provided details of badgers occurring within around 1km of the proposed development site since 2000.

At the time of the survey no setts or field signs of badgers were recorded within or immediately adjacent to the site. A large hollow was present in a mature oak tree to the north-west of the site (Target Note 3). This has potential to be used as a day nest for badger or other mammals, however there was no evidence at the time of the survey to suggest it was being used or has been used regularly. The site comprised habitats such as the woodland suitable for sett building, and habitats such as the areas of amenity grassland suitable for foraging.

Given the suitable habitats on site for badger and records within the area, it is likely that badger could potentially use the site to commute or forage. However, there was no current evidence of this or evidence of any setts on site.

A badger walkover survey should be undertaken prior to any ground works on site, to re-assess the site and establish that badger remain likely absence from the site prior to work. If badgers have moved onto the site during this time further badger survey and mitigation may be required.

5.20 Bats

All British species of bat are protected under both European and British law. Therefore, surveys are required to check for their presence in areas where bats or their roosts are likely to be disturbed for any reason.

Bats are known to roost in buildings and mature trees, where they rest, give birth, raise young and hibernate. Buildings provide a choice of safe, dry places and can present a whole range of potential roost sites such as within wall cavities, eaves or roofs.

Some bat species rely exclusively on trees for roost sites; others use them for only part of the year. The importance of trees to bats depends on species, season and foraging behaviour. Even in winter, deep cavities can provide protection against bad weather and fluctuations in temperature. Furthermore, trees and hedgerows, especially native ones, can host many species of insects, which are food for bats, and can also aid bat navigation.

Cofnod provided details of lesser horseshoe and common and soprano pipistrelle bats occurring within around 1km of site since 2000. There are records of a lesser horseshoe roost within the main school building (B1).

There are a number of buildings within the site which offer suitable habitat for roosting bats, including Buildings 1,2,3 and 4. The boiler room was inspected during the survey by a NRW licensed surveyors and found the lesser horseshoe roost still to be present.

There are a number of semi-mature and mature trees on site. It is not known whether any trees are due to be lost/affected by the proposed development. A bat roost potential (BRP) assessment of all the trees was not made during this Preliminary Ecological Appraisal's walkover survey, however, several trees were observed to contain potential roosting features, notably within the two oak trees (Target Note 3) in the west of the site and within the areas of woodland.

Further daytime bat survey of the buildings and a bat roost potential assessment of trees to be affected by the proposals will be required. Further dusk emergence/dawn re-entry surveys may be required as a result of the daytime surveys.

Bats use linear features such as tree lines, hedgerows, woodland edge and watercourses to navigate at night. Loss or damage to, and lighting of such features can negatively impact bats by fragmenting roost and feeding sites. Removal or lighting of

areas as little as 5m across can create barriers that some species of bat will no longer cross. The woodland and boundary trees on site are deemed likely to provide bats with suitable commuting and foraging opportunities.

The proposals include the retention of the woodland and tree-lines which will maintain foraging and commuting routes for bats and maintain habitat connectivity with the wider landscape. It is recommended that any lighting of the proposed development site should be kept to a minimum and every effort should be made to reduce light spillage onto boundary hedgerows. Consideration should be given to using bollard type lighting and/or using low pressure sodium lamps rather than high pressure sodium or mercury lamps; if mercury lamps are to be used they should first be fitted with a filter. Guidance on lighting issued by the Bat Conservation Trust can be found here: <https://www.bats.org.uk/news/2018/09/new-guidance-on-bats-and-lighting>.

If an appropriate lighting scheme cannot be implemented or proposals are changed to remove suitable bat commuting lines such as woodland and tree-lines, then a bat activity survey will be required at the site to assess the likely effects bats.

5.21 Bluebells

The native bluebell is listed on the local BAP and is protected from uprooting by the Wildlife and Countryside Act, 1981 (as amended) (refer to Appendix E). Cofnod provided details of native bluebell occurring within approximately 1km of the proposed development site since 2000. Records occur within the Pwllcrochan Woods LNR immediately to the south of the site.

Although the survey was not carried out within the bluebell flowering season, bluebells were thought to be present within the woodland to the south-west of the site. There are also records of the non-native Spanish bluebells within 200m of the site, therefore these could also be present.

Non-native bluebell species can cross-breed with the native British bluebell which causes the dilution of the native bluebell's unique characteristics. As such, it is recommended that where possible, and if present, non-native or hybrid varieties be removed and replaced with native British bluebells. These areas should be retained and suitably protected during the development activities if at all practicable. No further survey effort in respect of this species is considered necessary

5.22 Birds

All species of wild bird, their nest and eggs are protected under Section 1 of the *Wildlife and Countryside Act*, 1981 (as amended). Therefore, surveys are required to check for their presence where they are likely to be disturbed for any reason. In addition to the protection afforded to all wild birds under Section 1 of the Act, species listed on Schedule 1 receive special legal protection when breeding; making it an offence to intentionally or recklessly disturb any wild bird listed on Schedule 1 whilst it is at or near a nest containing eggs or young, or disturb the dependent young of such a bird. Legislation does not permit disturbance licences to be issued for nesting birds in relation to development of land.

Cofnod provided numerous records of priority and protected bird species occurring within the search area since 2000.

Liverpool Bay Special Protection Area is a European designated site for birds, primarily regularly occurring and migratory wader and water bird species. Many of these SPA species will utilise sites away from the SPA for purpose such as daytime feeding, loafing and roosting. The site does not support any habitats suitable to support any SPA qualifying species while away from Liverpool Bay SPA.

All woody vegetation on site has potential to support common/widespread birds for nesting. Areas of onsite woody vegetation may be lost as part of the development. Retention of the woodland, mature boundary trees and hedgerows within the site would help to reduce the potential development impacts on breeding birds.

It is recommended that all site preparation works, including vegetation removal, be conducted between October and February (i.e. outside of the nesting bird season, which generally encompasses March to September). If this is not possible and works are required to be conducted during the bird nesting season, CES Ecology should be contacted and a nesting bird survey be conducted prior to any potentially disturbing works taking place. In the event that nesting birds are found to be present, an appropriate mitigation strategy should be formulated and implemented.

5.23 Great crested newt and other amphibians

GCN are protected under both European and British law. Adult GCN predominantly live terrestrially, but utilise ponds for breeding purposes during the spring and summer months. Statutory guidance indicates that a survey may be necessary to check for the presence of GCN if background information on distribution suggests that they may be present. Detailed indicators include:

- Any historical records for GCN on the site, or in the general area
- A pond on or near the site (within around 500m), even if it holds water only seasonally. Note that muddy, cattle-poached, heavily vegetated or shady ponds, ditches and temporary flooded hollows can be used by GCN
- Sites with refuges (such as piles of logs or rubble), grassland, scrub, woodland, or hedgerows within 500m of a pond

Cofnod provided details of palmate newt, common toad and common frog occurring within 1km of the proposed development site, primarily within the grounds of the Welsh Mountain Zoo. Cofnod has a GCN model to indicate the likelihood of occurrence of GCN within an area. The model did not stipulate that the surveyed site was within a zone that GCN were likely to occur.

There are no ponds or waterbodies present on site. OS mapping highlighted indicative locations of two ponds within 250m and a further five ponds within 500m, refer to Appendix A: Site Location Plan. The two ponds within 250m include a large pond within a private residential property surrounded by stone walls, and the other is located in the Pwllcrochan Woods to the south. Each of these ponds are estimated to be in excess of 200m from the site boundary. The ponds between 250m and 500m are all located

within the Welsh Mountain Zoo and aerial imagery indicate many of the 'ponds' may possibly be water exhibits within the Zoo.

The site offers some suitable terrestrial habitat for GCN in the form of tussocky grassland, areas of scrub, boundary hedgerows and refugia (TN6) in the form of a compost pile, present on site. However, given the lack of suitable aquatic habitats on site combined with distance and barriers to newt dispersal around the site i.e. busy main roads and built environs, it is considered unlikely GCN in particular are associated with the site. As such, no further survey effort in respect of this species is considered necessary. In the unlikely event that GCN or any amphibians are subsequently recorded on site, works should stop and CES Ecology be contacted for advice.

5.24 Hedgehogs

Hedgehog is a UK BAP Priority species and is listed on Section 42 of the Natural Environment & Rural Communities (NERC) Act, 2006. Cofnod provided details of hedgehog occurring within approximately 1km of the proposed development site since 2000.

The site was considered to offer hedgehog with suitable foraging and shelter habitat. Development at the site does have potential to impact upon hedgehogs, therefore it is recommended that all woody and scrub vegetation (standing or fallen) and refugia (TN6) to be affected by the works be removed by hand prior to any potentially disturbing works taking place. These measures should be sufficient in discouraging and/or displacing hedgehogs from the working areas. Upon completion of the development, it is also recommended that hedgehogs be able to gain access to the gardens through a series of holes/gaps if close-panel fencing or walls are to be used; although ideally boundaries would comprise hedgerows. Gaps should be at ground level, at least 13cm x 13cm, and incorporated in to each garden.

5.25 Invasive species

Cofnod provide details of wall cotoneaster, Spanish bluebells, cherry laurel, Himalayan honeysuckle and Japanese knotweed within around 1km of the proposed development site. There is also a record of Japanese knotweed on the eastern boundary of the site. Japanese knotweed is listed under Schedule 9, Part II of the Wildlife and Countryside Act 1981. As such, it is an offence under section 14(2) of the Act to plant this species or to cause it to grow in the wild.

The non-native invasive species cherry laurel and Himalayan honeysuckle were both recorded on site (Target Note 7). They were mainly found within the woodland areas and groups of trees. Development works are likely to affect the areas colonised by this species and as such appropriate measures to prevent the spread (such as digging up and allowing the roots to become dried out, thus killing the plant before disposal), will be required prior to the commencement of works. The local planning authority may require the development to proceed in accord with an approved biosecurity Risk Assessment and Method Statement.

Japanese knotweed was also recorded on site and just offsite (Target Note 2), notably in the group of trees (G2) to the west of the site and just off site on the northern boundary. Japanese knotweed is an invasive non-native plant which has an adverse effect upon

native plant communities. This is due to the fact that this vigorous plant readily out-competes and excludes any native flora present. Left unchecked, this species can become a major problem and can lead to the eventual domination and degradation of habitats present.

All waste containing this species also comes under the control of Part II of the Environmental Protection Act, 1990 (this can include moving contaminated soil from one place to another, or incorrectly handling and transporting contaminated material and plant cuttings). Therefore, should development works be likely to affect areas colonised by this species care must be taken to avoid causing its spread.

Further information on issues associated with Japanese knotweed and development projects can be found on the Environment Agency website (www.environment-agency.gov.uk). **If works are to affect any areas colonised by this species, a biosecurity Risk Assessment and Method Statement may be required.**

5.26 Invertebrates

Cofnod provided details of various moths and butterflies occurring within 1km of the site since 2000. Wall and small pearl-bordered fritillary is a UK BAP Priority species and listed on Section 42 of the Natural Environment & Rural Communities (NERC) Act, 2006. The wall butterfly's caterpillar feeds on grasses such as false-brome, cock's-foot, bent sp. and Yorkshire-fog. This species likes to bask on rock, walls and stony places. Numbers of this species have declined by 38% since the 1970's. Small pearl-bordered fritillary are found in open areas within deciduous woodland, and damper, grassland habitats. The primary larval foodplants are common dog-violet and marsh violet.

The site is considered to offer some suitable habitat for both of these species, and other LBAP species primarily within the semi-improved grassland and woodland habitats to the west of the site. The proposed development will result in the loss of some suitable grassland habitats; however the woodland habitat will be retained. It is recommended that any new planting should incorporate native and/or wildlife friendly species, and preferably include a diverse range of grasses, flowering plants and trees (refer to Appendix F: Wildlife Friendly Plants List). which should limit potential negative impacts upon the local populations of these species.

5.27 Reptiles

All six species of British reptile are protected against intentional killing, injury or sale under Schedule 5 of the *Wildlife and Countryside Act*, 1981. The sand lizard and smooth snake are afforded a higher degree of protection under European law, which, amongst other things, makes it an offence to damage, destroy or obstruct their places of shelter or disturb these species in such a place. However, the distribution of these species is limited, and is largely restricted to a few southern counties in England, with the exception of some coastal sites in Merseyside and North Wales which support populations of sand lizard. The distribution of the remaining 'common' species (i.e. adder, grass snake, slow worm and common lizard) are widespread. With some variation between species, reptiles prefer undisturbed habitats with open areas for basking and warmth, and more vegetated areas for shelter and feeding. They shelter and hibernate in crevices

underground, such as within old mammal burrows, cracks within concrete bases and within spoil/rubble mounds.

Cofnod provided details of grass snake, slow worm and common lizards occurring within 1km of the site since 2000. The records primarily occur within the grounds of the Welsh Mountain Zoo.

The grass snake is the UK's only widespread egg-laying reptile; typically they lay their eggs within mounds of decaying vegetation which provides both protection and warmth for the developing eggs. They also differ from the other species of native reptile as they are semi-aquatic. No ponds or flowing water courses were present on or immediately adjacent to the site at the time of the survey. Given the lack of suitable habitat on site or nearby, it is considered that grass snakes are likely absent from this site.

Common lizards and slow worms are found in a variety of habitats including woodland edges, tussocky grassland, heathland, mature gardens, allotments including compost heaps. The habitats on site are considered to be suitable for both species particularly to the west of the site around the woodland areas and unmanaged tussocky grassland. The well-managed amenity fields are less likely to support these species.

Further, presence / absence reptile surveys are recommended to determine the presence or likely absence of reptiles. The surveys consisting of 7 visits can be undertaken between March to June and late August to October.

6.0 SUMMARY RECOMMENDATIONS TABLE

| | Species potentially associated with the site/s? | Further survey effort required? | Survey timing | Recommendations |
|----------|---|--|--|---|
| Badger | Potentially | Yes A pre-commencement badger walkover survey has been recommended | Any time of year Ideally November-April | No potentially disturbing work should take place until the results of the survey are known. |
| Bats | Yes | Yes: A daytime internal bat survey of the buildings should be conducted prior to the commencement of potentially disturbing works. Potentially: If any trees on site are to be affected/lost as part of the development, they first should be subject to a bat roost potential assessment . | Any time of the year Any time of year. Ideally when the trees are not in leaf | No potentially disturbing work should take place until the results of these surveys are known. |
| Bluebell | Potentially on-site | No | - | Where possible, non-native and hybrid varieties should be replaced with native British bluebells. Woodland and other areas supporting native bluebells should be retained and protected during the works. |
| Birds | Yes | Potentially: Nesting bird surveys will be required <u>if</u> vegetation removal | March - September | Vegetation removal works should take place outside of the bird breeding season (i.e. October – February). |

| | | | | |
|------------------|---------|---|--|--|
| | | works are to take place between March & September. | | A survey will not be required if potentially disturbing works are undertaken during this period. |
| Hedgehog | Yes | No | - | Where possible, all woody/scrub vegetation to be affected should be removed by hand prior to potentially disturbing works taking place. |
| Invasive Species | On site | No | - | A biosecurity Risk Assessment and Method Statement detailing appropriate measures to prevent the spread in particular for Japanese knotweed, will be required prior to the commencement of works. |
| Invertebrates | Yes | No | - | Any new planting should incorporate native and/or wildlife friendly species, and preferably include a diverse range of grasses, flowering plants and trees (refer to Appendix F: Wildlife Friendly Plants List). |
| Reptiles | Yes | Yes: Reptile presence/likely absence survey is required | Optimum period: April - May or September | No potentially damaging/disturbing works should take place until the results of the survey are known. |
| Woodland | On-site | No | - | The woodland should be suitably protected during the construction and post development. |

7.0 REFERENCES

Collins, J. (ed.) (2016) BCT Bat Surveys for Professional Ecologists Good Practice Guidelines (3rd edn). The BCT, London.

JNCC (2010). Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit. Joint Nature Conservation Council.

Shawyer, C. R. (2011). Barn Owl (*Tyto alba*) Survey Methodology and Techniques for use in Ecological Assessment: Developing Best Practice in Survey and Reporting. IEEM, Winchester.

Stace, C. (2019). New Flora of the British Isles. Fourth Edition. Cambridge.

Appendices

Appendix A: Site Location Plan



- Legend**
- Proposed site boundary
 - - - 250m buffer
 - - - 500m buffer
 - Indicative location of ponds

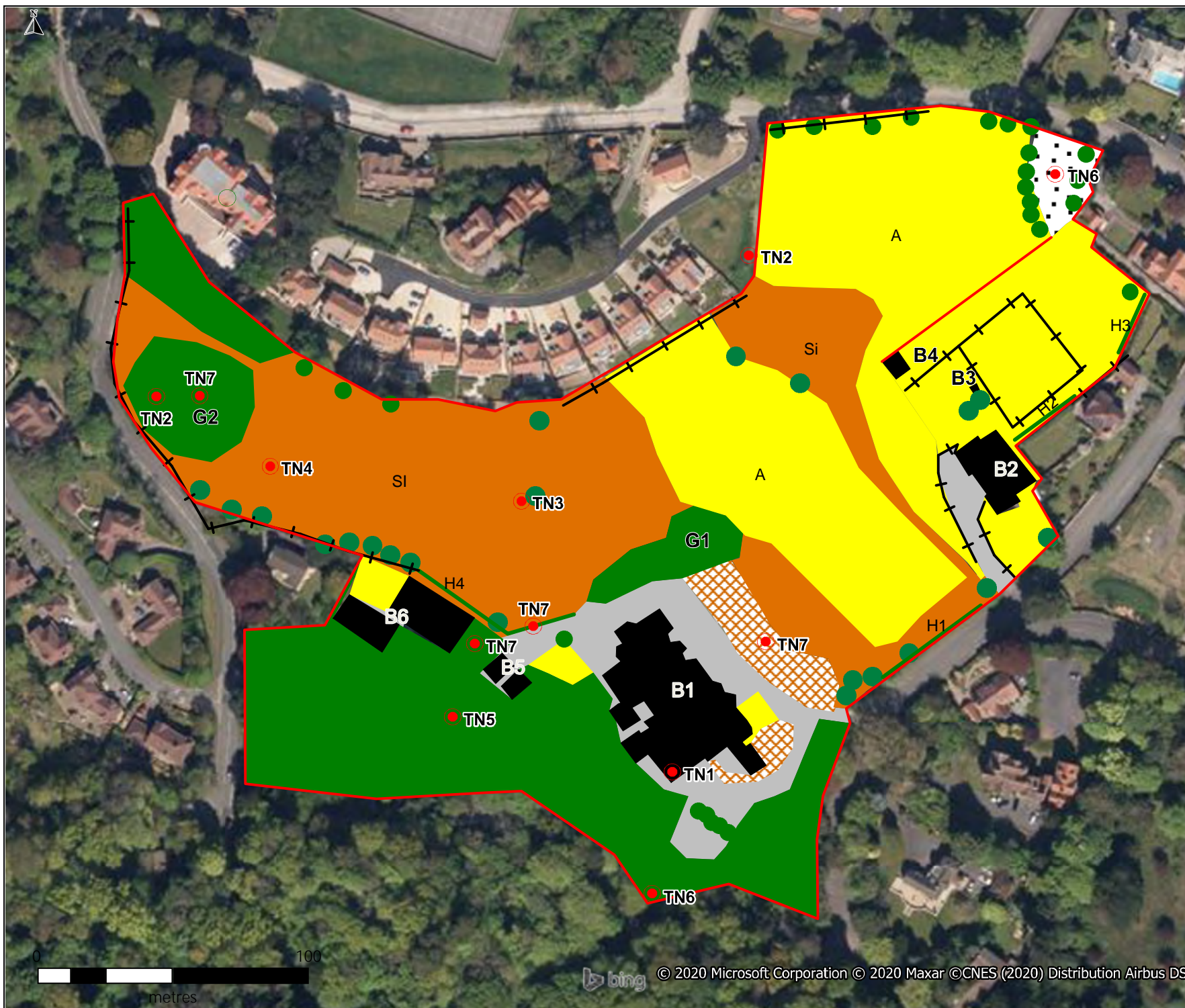
- Protected Sites**
- LNR - Local Nature Reserve
 - WS - Wildlife Sites
- Priority Habitats**
- Restored Ancient Woodland

| | |
|----------|---------------------------|
| Project: | Rydal Penrhos, Colwyn Bay |
| Map: | Site Location Map |
| CES Ref: | CES/1522/09-20/SW |
| Scale: | Not to scale / indicative |
| Date | September 2020 |

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Appendix B: Extended Phase 1 Habitat Survey Map & Key




Legend

- Proposed site boundary
- A1.1.1 Semi-natural, broad-leaved woodland
- B3.3 Mixed scattered trees
- SI B2.2 Neutral semi-improved grassland
- A J1.2 Amenity grassland
- J1.4 Introduced shrub
- J3.6 Buildings
- J4 Bare ground
- J5 Hard standing
- J2.1 Intact hedge, species poor
- J4 Fence
- J5 Wall
- Target note

| | |
|----------|---------------------------|
| Project: | Rydal Penrhos, Colwyn Bay |
| Map: | Phase 1 Habitat Map |
| CES Ref: | CES/1522/09-20/SW |
| Scale: | Not to scale / indicative |
| Date | September 2020 |

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Appendix C: Species Lists

Species present in the semi-improved neutral grassland

| Scientific name | Common name |
|------------------------------|-----------------------------|
| <i>Achillea millefolium</i> | Yarrow |
| <i>Agrostis capillaris</i> | Common bent |
| <i>Alopecurus pratensis</i> | Meadow foxtail |
| <i>Anthoxanthum odoratum</i> | Sweet vernal-grass |
| <i>Arrhenatherum elatius</i> | False oat-grass |
| <i>Centaurea nigra</i> | Common knapweed |
| <i>Cerastium fontanum</i> | Common mouse-ear |
| <i>Cirsium arvense</i> | Creeping thistle |
| <i>Dactylis glomerata</i> | Cock's-foot |
| <i>Dactylorhiza</i> sp | Orchid sp |
| <i>Epilobium hirsutum</i> | Great willowherb |
| <i>Heracleum sphondylium</i> | Hogweed |
| <i>Holcus lanatus</i> | Yorkshire-fog |
| <i>Lotus corniculatus</i> | Common bird's-foot-trefoil |
| <i>Lotus pedunculatus</i> | Greater bird's-foot-trefoil |
| <i>Lolium perenne</i> | Perennial rye-grass |
| <i>Petasites pyrenaicus</i> | Winter heliotrope |
| <i>Plantago lanceolata</i> | Ribwort plantain |
| <i>Ranunculus acris</i> | Meadow buttercup |
| <i>Ranunculus repens</i> | Creeping buttercup |
| <i>Rubus fruticosus</i> | Bramble |
| <i>Rumex acetosa</i> | Common sorrel |
| <i>Rumex obtusifolius</i> | Broad-leaved dock |
| <i>Senecio jacobaea</i> | Common ragwort |
| <i>Trifolium pratense</i> | Red clover |
| <i>Trifolium repens</i> | White clover |
| <i>Veronica chamaedrys</i> | Germander Speedwell |

Species present in the amenity grassland

| Scientific name | Common name |
|------------------------------|---------------------|
| <i>Agrostis capillaris</i> | Common bent |
| <i>Arrhenatherum elatius</i> | False oat-grass |
| <i>Dactylis glomerata</i> | Cock's-foot |
| <i>Lolium perenne</i> | Perennial rye-grass |
| <i>Plantago lanceolata</i> | Ribwort plantain |
| <i>Plantago major</i> | Greater plantain |
| <i>Trifolium</i> sp | Clover sp |

Species present in the areas scrub

| Scientific name | Common name |
|------------------------------|------------------|
| <i>Calystegia sepium</i> | Hedge bindweed |
| <i>Centranthus ruber</i> | Red Valerian |
| <i>Cirsium arvense</i> | Creeping thistle |
| <i>Rubus fruticosus</i> | Bramble |
| <i>Hypericum androsaemum</i> | Tutsan |
| <i>Iris</i> sp | Iris sp |

| | |
|--------------------------|----------------|
| <i>Jacobaea vulgaris</i> | Common ragwort |
| <i>Salix sp.</i> | Willow sp. |
| <i>Urtica dioica</i> | Common nettle |

Species present in Hedgerow 1

| Scientific name | Common name |
|---------------------|-------------|
| <i>Cupressus sp</i> | Cypress |

Species present in Hedgerow 2

| Scientific name | Common name |
|------------------------------|-----------------|
| <i>Cupressus x leylandii</i> | Leyland cypress |

Species present in Hedgerow 3

| Scientific name | Common name |
|------------------------|-------------|
| <i>Fagus sylvatica</i> | Beech |

Species present in Hedgerow 4

| Scientific name | Common name |
|------------------------------|-----------------------|
| <i>Fuchsia</i> | Fuchsia |
| <i>Leycesteria formosa</i> | Himalayan honeysuckle |
| <i>Ligustrum ovalifolium</i> | Garden privet |
| <i>Prunus laurocerasus</i> | Cherry laurel |

Tree species

| Scientific name | Common name |
|----------------------------|----------------------|
| <i>Acer pseudoplatanus</i> | Sycamore |
| <i>Betula pendula</i> | Silver birch |
| <i>Castanea sativa</i> | Sweet chestnut |
| <i>Fraxinus excelsior</i> | Ash |
| <i>Ilex aquifolium</i> | Holly |
| <i>Pinus sylvestris</i> | Scots pine |
| <i>Populus nigra</i> | Lombardy poplar |
| <i>Prunus sp.</i> | Cherry sp. |
| <i>Quercus sp.</i> | Oak sp. |
| <i>Sorbus aria agg</i> | Common whitebeam (v) |

Species present in Woodland

| Scientific name | Common name |
|-----------------------------|--------------|
| <i>Acer pseudoplatanus</i> | Sycamore |
| <i>Betula pendula</i> | Silver birch |
| <i>Corylus avellana</i> | Common hazel |
| <i>Dryopteris filix-mas</i> | Male fern |

| | |
|------------------------------|-----------------------|
| <i>Fagus sylvatica</i> | Beech |
| <i>Fraxinus excelsior</i> | Ash |
| <i>Geranium robertianum</i> | Herb-robert |
| <i>Geum urbanum</i> | Wood avens |
| <i>Hedera helix</i> | Ivy |
| <i>Hyacinthoides sp.</i> | Bluebell sp. |
| <i>Hypericum androsaemum</i> | Tutsan |
| <i>Ilex aquifolium</i> | Holly |
| <i>Leycesteria formosa</i> | Himalayan honeysuckle |
| <i>Pinus sylvestris</i> | Scots pine |
| <i>Prunus laurocerasus</i> | Cherry laurel |
| <i>Rubus fruticosus</i> | Bramble |
| <i>Scrophularia nodosa</i> | Common figwort |

N.B. These species lists represent those species identified during the survey. Those species which were not in growth or could not be identified due to the growth stage are not included. Exotic species (such as garden escapes) may also have been omitted from the above lists. However, it is considered that the information gathered during the survey was sufficient to provide an accurate assessment of the site.

Appendix D: Photographic Plates



Plate 1a-d. Amenity grassland playing field to the north-east of the site.



Plate 2. Semi-improved neutral grassland between the playing fields.



Plate 3a&b. Semi-improved neutral grassland to the north-west of the site.



Plate 4a-c. Broad-leaved woodland within the south-west of the site.



Plate 5a&b. Group of trees (G2) at the western boundary of the site (left); Japanese knotweed recorded in the ground flora (right).



Plate 6a&b. Mature oaks to the west of the site (left). Hollow in the base of the tree with badger and bat potential (right).





Plates 7a-d. On-site hedgerows; H1 (top left), H2 (top right), H3 (bottom left) and H4 (bottom right).



Plate 8. Building 1 – main school building (left) containing lesser horseshoe roost in the boiler room (right).





Plate 9a-c. Building 2 (top left), building 3 (top right) and building 4 (bottom).



Plate 10a&b. Buildings 5 (left) and buildings 6 (right).



Plate 11. Culvert stream within the woodland to the south of the site.



Plate 12. Stand of Japanese knotweed on the northern boundary.



Plate 13. Compost heap/refugia

Appendix E: Legislation

| Species/Habitat | Protected by: | UK BAP | Local BAP |
|-----------------------|---|----------------------|----------------------|
| Badger | <i>Protection of Badgers Act, 1992</i> | No | Yes |
| Bats | Regulation 42 of <i>The Conservation of Habitats and Species Regulations, 2017</i> Section 9 of the <i>Wildlife and Countryside Act, 1981</i> (as amended) Section 7 of the <i>Environment (Wales) Act 2016</i> | Dependent on species | Dependent on species |
| Common frog | Provision 5 of Section 9 of the <i>Wildlife and Countryside Act, 1981</i> (as amended) | No | |
| Common toad | Provision 5 of Section 9 of the <i>Wildlife and Countryside Act, 1981</i> (as amended) Section 7 of the <i>Environment (Wales) Act 2016</i> | Yes | |
| Great crested newt | Regulation 42 of <i>The Conservation of Habitats and Species (Amendment) Regulations, 2017</i> Section 9 of the <i>Wildlife and Countryside Act, 1981</i> (as amended) Section 7 of the <i>Environment (Wales) Act 2016</i> | Yes | Yes |
| Hedgehogs | Section 7 of the <i>Environment (Wales) Act 2016</i> | Yes | No |
| Hedgerows | <i>The Hedgerows Regulations, 1997</i> | Yes | Yes |
| Invasive species | Section 9 of the <i>Wildlife and Countryside Act, 1981</i> (as amended) | | |
| Invertebrates | Section 7 of the <i>Environment (Wales) Act 2016</i> | Dependent on species | Dependent on species |
| 'Widespread' reptiles | Provisions 1 and 5 of Section 9 of the <i>Wildlife and Countryside Act, 1981</i> (as amended) Section 7 of the <i>Environment (Wales) Act 2016</i> | Yes | Dependent on species |

The Conservation of Habitats and Species Regulations, 2017

European protected species are listed on Schedule 2 of the *Conservation of Habitats and Species Regulations 2010*. Those species listed on Schedule 2 are protected under Regulation 41, which refers to the protection of wild animals of a European Protected Species. The following is a summary of the offences listed under Regulation 41, however, the *Conservation Regulations* should always be referred to for the exact and current wording:

Under Regulation 41 of the *Conservation of Habitats and Species Regulations, 2010* it is an offence to –

- deliberately capture or kill a wild animal of a European protected species;
- deliberately disturb wild animals, in particular any disturbance which is likely:
 - to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or
 - to impair their ability, in the case of animals of a hibernating or migratory species, to hibernate or migrate;
 - to affect significantly the local distribution or abundance of the species to which they belong

- deliberately take or destroy the eggs of such an animal; or
- damage or destroy a breeding site or resting place of such an animal.
- keep, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a European protected species, or any part of, or anything derived from, such an animal.

Wildlife and Countryside Act, 1981 (as amended)

British protected species of animal are listed on Schedule 5 of the *Wildlife and Countryside Act, 1981* (as amended). Those species listed on Schedule 5 are protected under Part 1, Section 9, which refers to the protection of certain wild animals. The following is a summary of the offences listed under Section 9; however the Act should always be referred to for the exact and current wording:

Under Section 9 of the *Wildlife and Countryside Act, 1981* (as amended) if any person –

- intentionally kills, injures or takes any wild animal included in Schedule 5;
- has in his possession or control any live or dead wild animal included in Schedule 5 or any part of, or anything derived from such an animal;
- intentionally or recklessly damages or destroys, or obstructs access to, any structure or place which any wild animal included in Schedule 5 uses for shelter or protection;
- disturbs any such animal included in Schedule 5 while it is occupying a structure or place which it uses for that purpose;
- sells, offers or exposes for sale, or has in his possession or transports for the purpose of sale, any live or dead wild animal included in Schedule 5, or any part of, or anything derived from, such an animal; or,
- publishes or causes to be published any advertisement likely to be understood as conveying that he buys or sells, or intends to buy or sell, any of those things, he shall be guilty of an offence.

Wildlife and Countryside Act, 1981 (as amended) - Birds

All species of wild bird, their nests and eggs are protected under Section 1 of the *Wildlife and Countryside Act, 1981* (as amended); therefore surveys are required to check for their presence where they are likely to be disturbed for any reason.

The following is a summary of the offences listed under Section 1; however the Act should always be referred to for the exact and current wording:

Under Section 1 of the *Wildlife and Countryside Act, 1981* (as amended), if any person:

- Intentionally kills, injures or takes any wild bird;
- Intentionally takes, damages or destroys the nest of any wild bird while that nest is in use or being built;
- Intentionally takes or destroys an egg or any wild bird, he shall be guilty of an offence;
- Has in his possession or control any live or dead wild bird or any part of, or anything derived from, such a bird; or
- Has in his possession or control an egg of any wild bird or any part of such an egg, he shall be guilty of an offence.

Schedule 1 (Part 1 and Part 2) of the *Wildlife and Countryside Act, 1981* (as amended) lists bird species that receive special attention under Section 1. Any person convicted of an offence listed above, in respect of a bird included in Schedule 1 or any part of, or anything derived from, such a bird; the nest of such a bird; or an egg of such a bird or any part of such an egg, shall be liable to a special penalty.

Also, if any person intentionally or recklessly disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or disturbs dependent young of such a bird, he shall be guilty of an offence and liable to a special penalty.

Schedules 1, 2, 3 and 4 of the *Wildlife and Countryside Act, 1981* (as amended) list different species of bird and different Parts of Section 1 of the Act refer to different offences which may be committed in relation to the varying Schedules. The following is a summary of the type of protection offered to species of wild bird listed on each of the Schedules, however the Act itself should always be referred to for the exact and current wording and full species lists:

Schedule 1: Birds which are protected by special penalties:

Part 1: At all times.

Part 2: During the close season.

Schedule 2: Birds which may be killed or taken:

Part 1: Outside the close season.

Part 2: By authorised persons at all times.

Schedule 3: Birds which may be sold:

Part 1: Alive at all times if ringed and bred in captivity.

Part 2: Dead at all times.

Part 3: Dead from 1st September to 28th February.

Schedule 4: Birds which must be registered and ringed if kept in captivity.

The Environment (Wales) Act, 2016

Section 7 of the *Environment (Wales) Act, 2016* replaces the duty in Section 42 of the *Natural Environment and Rural Communities (NERC) Act, 2006* (as amended). Section 7 comprises a list of species and habitats of principle importance which is the same as the list under the superseded Section 42 of the *NERC Act, 2006*. The *Environment (Wales) Act* itself should be referred to for the exact and current wording however a summary is detailed below:

- The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales;
- They must therefore consider any appropriate evidence, for example as provided in the State of Natural Resources Report, and also engage with any relevant stakeholders;
- The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.

The Hedgerow Regulations, 1997

Hedgerows are distinctive features in the countryside and are the traditional type of field boundary in many areas of England and Wales. Many of these date back to the original enclosure of the land and so are of historic interest and importance.

Hedgerows (particularly older hedgerows) can contain a diverse mix of species and provide important links between other areas of habitat thus allowing wildlife to disperse. This role that hedgerows play in conserving and enhancing biodiversity is recognised by the UK BAP for this habitat type.

Hedgerows which meet certain criteria are protected by *The Hedgerows Regulations, 1997*. The aim of the Regulations is to protect important hedgerows in the countryside by controlling their removal through a system of notification. Under the Regulations it is against the law to remove or destroy certain hedgerows without permission from the Local Planning Authority (LPA). The criteria used to assess hedgerows relate to the value of a hedgerow from an archaeological, historical, landscape or wildlife perspective. They exclude hedgerows that are less than 30 years old. If a hedgerow is at least 30 years old and qualifies under any one of the criteria, then it is important and LPA approval is required before it can be lawfully removed or destroyed.

Removal of a hedgerow in contravention of the Regulations is a criminal offence, punishable in some cases in the Magistrates Court, by a fine of up to £5,000. For anyone convicted on indictment in the Crown Court, the fine is unlimited.

If a hedgerow is over 30 years old and meets the criteria in the Regulations it is classified as 'important'. A summary of the criteria is set out below, however, *The Hedgerow Regulations, 1997* should be referred to for the exact and current wording:

- Marks a pre-1850 parish or township boundary; or
- Incorporates an archaeological; or
- Is part of, or associated with, an archaeological site; or
- Marks the boundary of, or is associated with, a pre-1600 estate or manor; or
- Forms an integral part of a pre-Parliamentary enclosure field system; or
- Contains certain categories of species of birds, animals or plants listed in the Wildlife and Countryside Act or Joint Nature Conservation Committee (JNCC) publications.
- Includes:
 - At least 7 woody species, on average, in a 30 metre length; or
 - At least 6 woody species, on average, in a 30 metre length and has at least 3 associated features; or
 - At least 6 woody species, on average, in a 30 metre length, including a black-poplar tree, or large-leaved lime, or a small-leaved lime, or wild service-tree; or
 - At least 5 woody species, on average, in a 30 metre length and has at least 4 associated features.
- Runs alongside a bridleway, footpath, road used as a public path, or byway open to all traffic and includes at least 4 woody species, on average, in a 30 metre length and has at least 2 of the associated features listed at (i) to (v) below.

(Note: The number of woody species is reduced by one in the North of England (which does not include Cheshire). The list of 56 woody species comprises mainly shrubs and trees. It generally excludes climbers (such as clematis, honeysuckle and bramble) but includes wild roses)

Associated features:

- (i) A bank or wall supporting the hedgerow;
- (ii) Less than 10% gaps;
- (iii) On average, at least one tree per 50 metres;
- (iv) At least 3 species from a list of 57 woodland plants;
- (v) A ditch;

- (vi) A number of connections with other hedgerows, ponds or woodland; and
- (vii) A parallel hedge within 15 metres.

The Protection of Badgers Act, 1992

The following is a summary of the offences contained in the Act; however the *Protection of Badgers Act, 1992* itself should always be referred to for the exact and current wording.

Under the *Protection of Badgers Act, 1992* a person is guilty of an offence if, except as permitted by or under this Act he:

- wilfully kills, injures or takes, or attempts to kill, injure or take, a badger;
- has in his possession or under his control any dead badger or any part of, or anything derived from, a dead badger;
- cruelly ill-treats a badger;
- uses badger tongs in the course of killing or taking, or attempting to kill or take, a badger;
- digs for a badger; or,
- sells a live badger or offers one for sale or has a live badger in his possession or control.

A person is also guilty of committing an offence under the *Protection of Badgers Act, 1992* if he intentionally or recklessly interferes with a badger sett by doing any of the following things:

- damaging a badger sett or any part of it;
- destroying a badger sett;
- obstructing access to, or any entrance of, a badger sett;
- causing a dog to enter a badger sett; or,
- disturbing a badger when it is occupying a badger sett,

The definition of a badger sett within the meaning of the 1992 Act is given as “any structure or place, which displays signs indicating current use by a badger”. ‘Current’ is not defined in the Act, and may be open to interpretation. Natural England indicates that a sett is in ‘current’ use if it has been occupied at all over the previous 12 months. Whatever the interpretation of ‘current use’ however, it is important to note that a sett is protected whether or not there is a badger actually in residence at the time of inspection.

Natural England Guidelines (which is also referred to in Wales) state that work that disturbs badgers or their setts is illegal if not carried out under licence. Badgers could be disturbed by work near their sett even if there is no direct interference or damage to the sett itself, for example, using very heavy machinery within 30 metres of an active sett. Lighter machinery (particularly for any digging operation) within 20 metres, or light work such as hand digging or scrub clearance within 10 metres of an active sett, all require a licence. There are some activities which can cause disturbance at a far greater distance (such as using explosives or pile driving) and should therefore be given individual consideration. Certain criteria must be met before a licence can be issued to enable otherwise prohibited works to proceed. Such criteria may be subject to change without notice.

Timing of operations should also be considered. If required, site-specific badger disturbance licences are normally only issued between the months of July and October so as to avoid the badger’s breeding season. This aspect should be borne in mind when assessing any possible constraints upon the development timetable.

Appendix F: List of Wildlife Friendly Plants

LIST OF NATIVE WILDLIFE FRIENDLY PLANTS

Important note: It is entirely the responsibility of the client to ensure that any species chosen from the list provided is suitable for the specific attributes of the location.

| Species | Height/Spread | Colours | Flowers/Berries | Wildlife benefits | Plant conditions and notes | Deciduous or Evergreen |
|---|---------------|---|---|--|---|------------------------|
| Native Trees | | | | | | |
| Field Maple <i>Acer campestre</i> | to 25m | Leaves: Green then amber in Autumn. Flowers: Yellow/green. Seeds: Green then brown with wings | Flowers May to June | 51 species of insects/mites and 24 species of lepidoptera. Fruits eaten by small mammals | Calcareous or clay soils preferably in full sun | Deciduous |
| Alder <i>Alnus glutinosa</i> | 6 - 15m | Leaves: Green, Catkins: Yellow/brown, Fruits: Cone-like, small and brown | Catkins in March to April | 141 species of insects/mites and 71 species of lepidoptera. Seeds are good for birds such as siskins | Damp soil. Plant hardwood cuttings in the open in late autumn | Deciduous |
| Silver Birch <i>Betula pendula</i> | to 18m | Leaves: Green turning yellow in Autumn, Catkins: Yellow/brown then seeding, Bark: White | Catkins open in April and break up in winter releasing it's seeds | Excellent for insects and to attract inset eating birds. Best tree for moth larvae. Catkins good food source for birds such as redpolls and tits | Dry acid best. | Deciduous |
| Downy Birch <i>Betula pubescens</i> | to 24m | Leaves: Green turning yellow in Autumn, Catkins: Yellow/brown then seeding, Bark: White | Catkins open in April and break up in winter releasing it's seeds | Excellent for insects and to attract inset eating birds. Catkins good food source for birds | Favours wetter more peaty soil | Deciduous |

| | | | | | | |
|--|------------------------|--|--|---|---|---|
| Hornbeam <i>Carpinus betulus</i> | to 24m | Leaves: Green, Catkins: Green/crimson then seeding | Flowers in May | 51 species of insects/mites and 32 species of lepidoptera. Seeds for birds. Can provide dense nesting cover | Woods and copses on clay soils, will tolerate shade. Sow seeds or fruits in spring | Deciduous |
| Hazel <i>Corylus avellana</i> | to 10m | Leaves: Green, Flowers: Long Yellow/Crimson tassels. Seeds: Brown nuts | Flowers in February | 106 species of insects/mites and 68 species of lepidoptera. Nuts eaten by birds and mammals i.e. squirrels, mice and jays | Hedgerows, scrub and woodland in well-drained soil. Full sun or light shade preferable. Remove and plant rooted suckers or offsets in autumn | Deciduous |
| Beech <i>Fagus sylvatica</i> | to 46m | Leaves: Green then orange to red/brown in Autumn, Flowers: Green/white. Seeds: Brown nuts encased in a brown husk | Flowers March to April | 98 species of insects/mites and 51 species of lepidoptera. The masts are eaten by birds and mammals including wood mice and jays | Well-drained soils. Can survive in shallow soil. Sow seeds or fruits in autumn | Deciduous. Can hold dead leaves through the winter |
| Juniper <i>Juniperus communis</i> | Shrub or tree to 7m | Leaves: Spiky Green needles, Flowers: Small green to yellow flowers, Berries: Green ripening to purple in the second year | Flowers May to June. Berries take two years to ripen | 32 species of insects/mites and 14 species of lepidoptera | Well-drained limestone and acid sandstone | Evergreen |
| Crab Apple <i>Malus sylvestris</i> | to 10m | Leaves: Green, Flowers: White and pink. Fruits: Green/yellow/red apples | Flowers: April to May. Fruits ripen in Autumn | 118 species of insects/mites and 76 species of lepidoptera. Fruits are eagerly consumed by birds and mammals despite its bitter taste | Well-drained soil in full sun | Deciduous |

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|--|----------------------|--|---|---|--|-----------|
| Scots Pine <i>Pinus sylvestris</i> | to 36m | Leaves: Green needles, Flowers: Yellow and crimson, Cones: Short and brown | | 172 species of insects/mites and 36 species of lepidoptera. Cones are a valuable food source for birds and other mammals | Prefers sandy well-drained soil in full sun | Evergreen |
| Black Poplar <i>Populus nigra</i> | 33m | Leaves: Green turning yellow in Autumn, Flowers: Green and crimson catkins, turning fluffy when fruiting | Catkins produced in March | 153 species of insects/mites and 69 species of lepidoptera found within all the poplar species. Good for larger moth species i.e. Hawk moths | Fertile soil near water. Remove and plant rooted suckers or offsets in autumn. Reduced in numbers due to easy hybridisation with other poplars | Deciduous |
| Aspen <i>Populus tremula</i> | to 24m | Leaves: Green turning yellow in Autumn, Flowers: Green and brown catkins, turning fluffy when fruiting | Catkins arrive in March and set seed in May | Good for invertebrates and birds. Food plant of the hairstreak butterfly | Will survive on most soils with full sun or partial shade | Deciduous |
| Wild Cherry <i>Prunus avium</i> | 9 - 12m | Leaves: Green turning crimson in Autumn, Flowers: White, Berries: Bright red | Flowers: April, Berries: July | Birds feed on the cherries | Prefers fertile soil, will tolerate some shade | Deciduous |
| Bird Cherry <i>Prunus padus</i> | Shrub or tree to 19m | Leaves: Green, Flowers: White, Berries: Black cherries | Flowers in May | 9 species of lepidoptera. Berries eaten by birds | Woods and scrub. Well-drained soil with full sun or light shading | Deciduous |
| Oaks (native) <i>Quercus spp.</i> | to 42m | Leaves: Green, Flowers: Slim yellow catkins, Seeds: Green acorns turning brown when ready to fall | Flowers in May. Acorns produced in Autumn. | 423 species of insects/mites and 193 species of lepidoptera. Acorns eaten by a variety of birds and mammals. Very important for insect eating birds | Variety of soils with reasonable depth and preferably in full sun, below 300m altitude. Sow seeds or fruits in autumn | Deciduous |

| | | | | | | |
|---|----------------------------|--|---|---|--|-----------|
| Willows <i>Salix spp.</i> | to 25m (species dependent) | | Flowers February to March | 450 species of insects/mites and 166 species of lepidoptera | Damp areas. Plant hardwood cuttings in the open in late autumn | Deciduous |
| Goat Willow aka 'pussy willow' <i>Salix caprea</i> | Shrubby tree to 10m | Leaves: Oval, dark grey/green on top with a hairy underside, Flowers; Green and yellow short catkins turning fluffy when seeding | Flowers March to April | Early provider of pollen and nectar for insects | Most soils as long as they are at least slightly damp | Deciduous |
| Grey Willow <i>Salix cinerea</i> | Shrubby tree to 6m | Leaves: Grey/green on top with a lighter hairy underside, Flowers; Yellow catkins turning fluffy when seeding | Flowers March to April | Good for insects and birds | Most soils as long as they are at least slightly damp | Deciduous |
| Crack Willow <i>Salix fragilis</i> | Can reach 25m | Leaves: Long, shiny green on top with a grey/green underside, Flowers; Green and yellow catkins turning fluffy when seeding | Flowers in April with the catkins appearing in May and ripening in the summer | Good for insects and birds | Most soils as long as they are at least slightly damp | Deciduous |
| Bay Willow <i>Salix pentandra</i> | to 10m | Leaves: Long, shiny green on top with a grey/green underside, Flowers: Yellowish catkins turning fluffy when seeding | Flowers May to June | Good for insects and birds | Wet ground by water | Deciduous |
| Elderberry <i>Sambucus nigra</i> | to 10m | Leaves: Green, Flowers: Small creamy white flowers in large numbers. Berries: Dark purple/black in bunches | Flowers May to June | Berries for birds and nectar for insects | Sun or partial shade | Deciduous |

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|--|-----------|--|--|---|--|-----------|
| Whitebeam <i>Sorbus aria</i> | 10 to 24m | Leaves: Green with white hairy underside turning yellow/crimson in Autumn, Flowers: White, Berries: Green ripening to bright red | Flowers: May | Flowers attract insects and the fruits are eaten by birds | Prefers calcareous soil | Deciduous |
| Rowan <i>Sorbus aucuparia</i> | 18m | Leaves: Pinnate green leaves turning crimson in Autumn, Flowers: Small white flowers in clusters, Berries: Bright red | Flowers in May. Produces berries in autumn | 58 species of insects/mites and 28 species of lepidoptera. The ripe berries attract birds such as redwings and fieldfares | Will tolerate most soils apart from very heavy soils | Deciduous |
| Wild Service Tree <i>Sorbus torminalis</i> | to 20m | Leaves: Shiny green leaves with a lighter coloured underside, turning purple/red in Autumn, Flowers: Creamy white in clusters, Seeds: Brown speckled seeds in clusters | Flowers: May or June Fruit: September | Good for insects. Fruits eaten by birds | Withstands shade. Prefers clay and limestone soil | Deciduous |
| Lime <i>Tilia europaea</i> | to 46m | Leaves: Green heart-shaped leaves with slightly hairy underside, Flowers: Greenish/yellow flowers, Seeds: Small round and hairy with a grey-brown colour | Flowers June to July | 57 species of insects/mites and 31 species of lepidoptera. The nectar is highly sought by bees | Needs well-drained soil with full or partial sun | Deciduous |

| Wych Elm <i>Ulmus glabra</i> | to 37m | Leaves: Green turning yellow in autumn , Flowers: very small purplish flowers, Seeds: Circular winged fruits with the seed in the centre | Flowers produced in spring prior to the leaves, with winged fruits produced in July | Good tree for insects and birds | Full sun or light shade on most soils especially limestone. This species is less susceptible to Dutch elm disease | Deciduous |
|---|---------------|--|---|--|--|------------------------|
| Dutch Elm <i>Ulmus hollandica</i> | to 32m | Leaves: Green, Seeds: Circular winged fruits with the seed in the centre | Winged fruits produced in July | Good tree for insects and birds | A native tree which has occurred naturally as a hybridisation between two other elms. Full sun or light shade. This species is less susceptible to Dutch elm disease | Deciduous |
| English Elm <i>Ulmus procera</i> | to 33m | Leaves: Green, Flowers: Small crimson flowers, Seeds: Circular winged fruits with the seed in the centre | Crimson flowers produced in spring with winged fruits produced in July | 124 species of insects/mites and 24 species of lepidoptera are associated with elm trees | Full sun or light shade. 1 in 5 trees have caught Dutch elm disease to which English elms are susceptible | Deciduous |
| Species | Height/Spread | Colours | Flowers/Berries | Wildlife benefits | Plant conditions and notes | Deciduous or Evergreen |
| Native Shrubs | | | | | | |
| Box <i>Buxus sempervirens</i> | to 3m | Leaves: Small, dark green and glossy, Flowers: Small green/yellow, Seeds: Black encased in blue green capsules turning brown in September | Flowers April to May | Provides good nesting cover and winter roosting cover for birds | Calcareous soils in full sun or partial shade | Evergreen |

| | | | | | | |
|--|----------|--|--|--|--|----------------|
| Heather <i>Calluna vulgaris</i> | 50-100cm | Leaves: Green and minute, Flowers: Pink/purple, Seeds: Very small replacing flowers | Flowers in July to November | Good for invertebrates with a late supply of nectar | Well-drained acid soil in full sun | Evergreen |
| Dogwood <i>Cornus sanguinea</i> | to 4m | Leaves: Green and hairy turning crimson in Autumn, Flowers: Greenish white in groups, Berries: Black in clusters | Flowers in June. Produces bitter black berries in August-September | 17 species of lepidoptera. Larval food plant of the green hairstreak butterfly. Flowers produce an unpleasant smell which is attractive to insects. Some birds manage to eat the berries | Woods and scrub on limestone or base rich clays | Deciduous |
| Hawthorn <i>Crataegus monogyna</i> | 6m | Leaves: Small and green, Flowers: Bright yellow, Seeds: In green pods | Flowers: White – mid May. Berries: Red/orange in Autumn | Nectar. Berries good food source for thrushes, redwings and fieldfares. Good nesting if dense. Excellent for moth larvae | Any soil | Deciduous |
| Broom <i>Cytisus scoparius</i> | 2.5m | Leaves: Small green and deeply lobed, Flowers: White, Berries: Red | Yellow flowers April-June | Good for 39 species of lepidoptera. Food plant of the hairstreak butterfly | Calcifuge, heathland, sandy banks, open woodland and rough ground. Well drained soil in full sun. Plant semi-ripe cuttings in a cold frame in summer | Semi-evergreen |
| Mezereon <i>Daphne mezereum</i> | 1m | Leaves: Light green with cream tinged edges, Flowers: Bright pink, Berries: Red | Flowers in February to April | Early source of nectar for insects | Well-drained humus-rich soil in full sun or light shade | Deciduous |
| Heath 'Bell' <i>Erica cinerea</i> | to 50cm | Leaves: Green and minute, Flowers: Pink/purple, Seeds: Very small replacing flowers | Flowers July to August | Provides nectar for invertebrates | Well-drained acid soil in full sun | Evergreen |

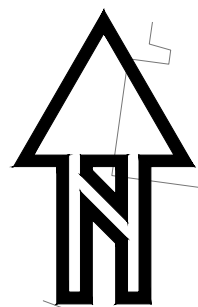
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|--|---------------|---|---|--|---|---|
| Heath 'Cross-leaved' <i>Erica tetralix</i> | to 50cm | Leaves: Green and minute, Flowers: Pink/purple, Seeds: Very small replacing flowers | Flowers July to August | Provides nectar for invertebrates | Damp acid soil in full sun | Evergreen |
| Spindle <i>Euonymus europaeus</i> | 5m (8m max) | Leaves: Light green turning to crimson in Autumn, Flowers: Greenish yellow, Seeds: encased in a four lobed pink capsule | Fruit October to December | 10 species of lepidoptera. Nectar is good for insects. Berries are good for birds but induce vomiting in people | Woods, hedgerows and scrub on calcareous or base rich clays. Plant semi-ripe cuttings in a cold frame in summer | Deciduous |
| Alder Buckthorn <i>Frangula alnus</i> | 2.5m | Leaves: Shiny green, Flowers: very small greenish flowers, Berries: Green berries turning red then purple | Flowers: Early summer. Berries: Autumn | Berries for birds. Important food plant for brimstone butterfly larvae | Damp acidic soil/peat | Deciduous |
| Tutsan <i>Hypericum androsaemum</i> | 80cm | Leaves: Green turning red in autumn, Flowers: Yellow, Berries: Black | Flowers June to October followed by berries | Flowers attract insects especially bees. Berries are eaten by birds and small mammals | Full sun or light shade in damp soil. Plant semi-ripe cuttings in a cold frame in summer | Deciduous |
| Holly <i>Ilex aquifolium</i> | 300 x 150+ cm | Leaves: spiky glossy green, Flowers: Small pink/white, Berries: Bright red | Flowers: May. Berries: (only on female trees) October to December | Berries good for birds and small mammals. Caterpillars of the holly blue butterfly feed on the leaves. Holly leaf miner provides winter food for birds | Not wet. Layer stems in spring. Need male and female plants near each other to produce berries | Evergreen |
| Privet <i>Ligustrum vulgare</i> | 3m | Leaves: Green, Flowers: White, Berries: Small black berries | Flowers: July | 24 species of insects/mites, nectar for the butterflies. Berries eaten by birds | Hedgerows and scrub, especially on base rich soil. Plant hardwood cuttings in the open in late autumn | Deciduous or semi-evergreen in mild areas |

| | | | | | | |
|--|-------------|--|--|---|---|-----------------|
| Shrubby Cinquefoil <i>Potentilla fruticosa</i> | 1m | Leaves: Green, Flowers: Yellow | Flowers May to September | Nectar source for bees and butterflies | Well-drained soil in full sun or light shade. Semi-ripe cuttings in a cold frame in summer | Deciduous |
| Blackthorn <i>Prunus spinosa</i> | 4m | Leaves: Green, Flowers: White, Berries: Blue/black | Flowers: spring | Good for nesting birds if grown as thicket or in hedge. Rich in insects. Fruit for birds. Black hairstreak butterfly lays its eggs mainly on blackthorn | Well-drained soil preferably in a sunny location | Deciduous |
| Buckthorn <i>Rhamnus catharticus</i> | 5m | Leaves: Yellow green, Flowers: Yellow/green, Berries: Black. Stems with spines | Flowers: May to June | Larval food plant for brimstone butterfly | Damp, peat or base-rich soils | Deciduous |
| Dog Rose <i>Rosa canina</i> | 3 - 4m | Leaves: Green , Flowers: Pink/white, Hips: Red | Flowers: June to July. Hips: autumn | Provides nectar for bees and butterflies. Hips good for small birds and mammals | Dislikes wet or exposed sites Can tolerate poor fertility | Deciduous |
| Sweet Briar <i>Rosa rubiginosa</i> | 240 x 240cm | Leaves: Green , Flowers: Pink, Hips: Red/orange | Flowers: mid summer. Berries: autumn | Hips food source for small mammals and birds. Good nesting cover | Prefers sun and well drained soil | Deciduous |
| Raspberry <i>Rubus idaeus</i> | 1.5 - 2.5m | Leaves: Green with thorns on underside, Flowers White, Berries: Red, Stems also have thorns | Flowers May to August with berries following | Nectar source for bees and butterflies. Berries for birds and mammals | Any reasonable soil in full sun or partial shade | Deciduous shrub |
| Gorse <i>Ulex europaeus</i> | 2 - 2.5m | Leaves: Thin and spiky, green in colour, Flowers: Yellow | Autumn flowers, can flower throughout the year | 29 species of insect. Provides good protection for birds nests frequently used by linnets, whinchats and stonechats. | Sandy or peaty well-drained soil in full sun. Grassland, heathland and open woods. Plant semi-ripe cuttings in a cold frame in summer | Evergreen |

| | | | | | | |
|---|-------------|---|---|--|---|---------------------|
| Wayfaring Tree <i>Viburnum lantana</i> | 3m | Leaves: Green, Flowers: Whitish yellow, Berries: Red then becoming black | Flowers in June to July | Berries for birds and nectar for insects | Most soils especially base rich | Deciduous |
| Guelder Rose <i>Viburnum opulus</i> | 300 x 250cm | Leaves: Green, Flowers: White, Berries: Bright red | Flowers: May to June. Berries: autumn | Nectar for insects, particularly hoverflies. Fruits for birds and small mammals, especially liked by woodmouse. Note: leaves, bark and berries are all poisonous | Plant semi-ripe cuttings in a cold frame in summer | Deciduous |
| Native Herbaceous | | | | | | |
| Teasel <i>Dipsacus fullonum</i> | 2m | Leaves: Green, Flowers: Light purple | Flowers: July to August | A food source of the Brimstone butterfly. Attracts other insects for its nectar and birds for its seeds | Well-drained soil in full sun or light shade | Biennial |
| Purple Loosestrife <i>Lythrum salicaria</i> | to 1.8m | Leaves: Green, Flowers: Purple | Flowers in June to September | Provides nectar for bees and butterflies | Humus-rich soil in full sun or light shade with plenty of water, preferably boggy | Border perennial |
| Musk Mallow <i>Malva moschata</i> | 60cm | Leaves: Green Flowers: Pink | Flowers between July and August | Provides nectar for bees and butterflies | Well-drained soil in full sun | Border perennial |
| Cat-mint <i>Nepeta cataria</i> | 60 - 90cm | Leaves: Green above, white below. Flowers: White | Flowers July to September | Berries for birds and nectar for insects | Well-drained soil in full sun | Perennial |
| Wild Marjoram <i>Origanum vulgare</i> | 50 - 70cm | Leaves: Green Flowers: Pale pink | Flowers July to September | Good plant for butterflies and bees | Dry soil preferably on calcareous soil | Perennial |
| Tormentil <i>Potentilla erecta</i> | 30 - 45cm | Leaves: Green, Flowers: Yellow | Flowers June to September | Good plant for butterflies and bees | Well drained soil preferably acidic | Perennial |

| | | | | | | |
|---|----------------|--|-----------------------------|---|--|------------------|
| Goldenrod <i>Solidago virgaurea</i> | 70 - 100cm | Leaves: Green. Flowers: Yellow | Flowers July to September | 27 species of lepidoptera. | Open woodland, grassland and hedgerows. Well-drained soil. Full sun or light shade | Perennial |
| Betony <i>Stachys officinalis</i> | to 60cm | Leaves: Green. Flowers: Pink/purple | Flowers June to September | Nectar source for bees and butterflies | Well-drained soil in full sun or partial shade | Border perennial |
| Common Valerian <i>Valeriana officinalis</i> | Stems to 1m | Leaves: Green. Flowers: Pink/white | Flowers June to September | Provides nectar for bees and butterflies | Dry or damp grassy or rough ground | Perennial |
| Native Climbers | | | | | | |
| Clematis 'Old Mans Beard' <i>Clematis vitalba</i> | Climber to 30m | Leaves: Green. Flowers: White/green | Flowers in July | Provides nectar for bees and butterflies | Prefers calcareous and alluvial soils | Deciduous |
| Ivy <i>Hedera helix</i> | Climber | Leaves: Dark green, shiny. Flowers: Green/yellow. Berries: Black | Flowers October to November | Provides late nectar source and cover/hibernating sites for invertebrates. Food source for the Holly Blue butterfly larva | Trees, banks, rocks and crawling over the floor. Thrives in shade. Remove and plant rooted runners in spring | Evergreen |
| Hop <i>Humulus lupulus</i> | Climber to 8m | Leaves: Yellowish-green, Flowers: Small yellowish brown | Flowers July to August | Provides nectar for bees and butterflies | Well-drained soil in full sun or light shade | Perennial |
| Honeysuckle <i>Lonicera periclymenum</i> | Climber to 6m | Leaves: Dark green on top and bluish underneath. Flowers: red outside cream within Berries: Bright red | Flowers July to August | Excellent food source for invertebrates including the Speckled Wood butterfly. Berries eaten by birds | Woods, scrub and hedges. Sun or light shade. Plant semi-ripe cuttings in a cold frame in summer or Layer stems in spring | Deciduous |

Appendix G: Site Layout (Rev I)



| Schedule of Accommodation | | | | |
|---|----------------------------------|---------------------|---------|---------------|
| Housetype | Description | SQFT | Number | Percentage |
| 1 Bed Apartment | Average floor area | 600 SQFT | 1 | 0.05 |
| 2 Bed Apartment | Average floor area | 780 SQFT | 27 | 28.71 |
| 3 Bed Apartment | Average floor area | 950 SQFT | 5 | 4.76 |
| 4 Bed (Detached) | 2 Bed 2 Storey End & Mid Terrace | 890 SQFT | 14 | 13.33 |
| 5 Bed (Detached) | 2 Bed 2 Storey End Terrace | 890 SQFT | 7 | 6.67 |
| Housetype 1 | 3 Bed 2 Storey Semi-Detached | 987 SQFT | 4 | 3.81 |
| Housetype 2 | 3 Bed 2 Storey | 1035 SQFT | 10 | 9.62 |
| Housetype 3 | 3 Bed 2 Storey | 1254 SQFT | 6 | 7.22 |
| Housetype 4 | 4 Bed 2 Storey | 1570 SQFT | 5 | 4.76 |
| Housetype 5 | 4 Bed 2 Storey | 1570 SQFT | 1 | 0.95 |
| Housetype 6 | 4 Bed 2 Storey | 1711 SQFT | 4 | 3.81 |
| Housetype 7 | 4 Bed 2 Storey | 1870 SQFT | 3 | 2.86 |
| Housetype 8 | 4 Bed 2 Storey | 1870 SQFT | 3 | 2.86 |
| Housetype 9 | 4 Bed 2 Storey | 1980 SQFT | 6 | 6.71 |
| Housetype 10 | 4 Bed 2 Storey | 2121 SQFT | 3 | 2.86 |
| Housetype 11 | 5 Bed 2 Storey | 2020 SQFT | 4 | 3.81 |
| TOTAL | | New Build SQFT only | 9554 | SQFT |
| Gross Site Area | | 14.78 Acres | 5.38 | Hectares |
| Paved | | 3.5 Acres | 1.42 | Hectares |
| Existing Retained buildings, landscaping & gardens | | 2.91 Acres | 1.18 | Hectares |
| Single Street Road | | 0.28 Acres | 0.14 | Hectares |
| Waste Transfer Station | | 0.37 Acres | 0.15 | Hectares |
| Landscaping: Driveway, Entry Landscaping, Bus Station | | 1.1 Acres | 0.45 | Hectares |
| NET SITE AREA | | 6.33 ACRES | 2.65 | HECTARES |
| Gross Density | | 7.10 Units/Acre | 17.55 | Units/Hectare |
| NET DENSITY | | 18.03 UNITS/ACRE | 38.81 | UNITS/HECTARE |
| Gross Footage | | 6721.05 SQFT/Acre | 1542.05 | SQ/METRE |
| NET FOOTAGE | | 18197.33 SQFT/ACRE | 3481.81 | SQ/METRE |

Key:

- Site Boundary
- 1.8m high boundary fence
- 1.8m high screen wall / fence
- Private Drive
- Indicative Landscaping
- Number of parking spaces proposed to Semi-Detached and Detached Dwellings in accordance with Convey's Parking Standards
- Parking space allocation to Frontage Parking Dwellings
- Knee rails to parking bays to terraced Housetypes
- Affordable Housing
- Existing retained hedges/landscaping
- Existing culvert & easement
- Existing S.W drain & easement

| Rev: | Description: | Date: |
|------|---|----------|
| A - | Culvert indicated & Layout revised accordingly. Split level units added. | 25/03/20 |
| B - | General amendments following technical review | 02/07/20 |
| C - | General amendments following technical review | 17/09/20 |
| D - | Listed building refurb by others shown, road in front plots 67-75 adjusted. | 03/11/20 |
| E - | Signature blocks amended. Apartment schedule added. | 23/03/21 |
| F - | Internal Design Review | 09/07/21 |
| G - | Schedule of Accommodation corrected | 25/08/21 |
| H - | Affordables amended | 15/09/21 |
| I - | Affordables amended | 22/09/21 |

Parking requirements in accordance with CCBC LDP2 parking Standards Appendix 6.

Site Scores in Sustainability Criteria as follows -

| Local Facilities | Distance | Points |
|--------------------------------------|-----------|--------|
| School, Health Facility & Food store | 400m | 2 |
| | 800m | 4 |
| Public Transport | Distance | Points |
| Bus | 300m | 2 |
| Cycle Route | Distance | Points |
| Cycle Route | Adjacent | 0 |
| Frequency of Public Transport | Frequency | Points |
| | 20mins. | 2 |
| | Total | 10 |

A score of 10 points results in the potential reduction of 2 spaces per dwelling. This Layout has only reduced the parking to some dwellings by one space.



Castle Green,
Unit 20,
St. Asaph Business Park,
Denbighshire. LL17 0LJ.
Tel. 01745 536677

Site:
Rydal Penrhos, Colwyn Bay

Title:
Site Layout

Scale: 1:500@A0 Date: 16/01/2020

Ref: RYDCB-SP.01 Rev: I



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