

Cheshire Ecology Ltd.

**LAND AT RHOSROBIN, WREXHAM
PHASE 1 HABITAT SURVEY REPORT**

Milton Green Farm Cottage
Chapel Lane
Handley
Chester
CH3 9EE

www.cheshireecology.com

EXECUTIVE SUMMARY

Cheshire Ecology Ltd. was commissioned by the Castlemead Group Ltd. to undertake an Extended Phase 1 Habitat Survey of land near Rhosrobin, in Wrexham County Borough, Wales, henceforth referred to as 'the site'.

The site consists of five agricultural fields, divided by hedgerows. The site is currently unmanaged and covered by tussocky, semi-improved grassland.

Cheshire Ecology Ltd. carried out an Extended Phase 1 Habitat Survey of the site on Monday 17th March. The weather was overcast, dry and with an average temperature of 6°C.

The presence of seven woody species in the northern section of Hedgerow 1 indicates that it may be an 'Important Hedgerow', as defined by the Hedgerow Regulations 1997. However the age of the hedgerow is uncertain and it was probably planted in the 1960s.

There are eleven water-bodies within a 500m radius of the site boundary, including the River Alyn. Nine of these were assessed as having potential for great crested newts. The species has been recorded in the past from a nearby pond and there are a large number of records from the area to the west of Rhosddu Industrial Estate. We therefore recommend conducting a GCN survey of all suitable water-bodies within a 500m radius of the site boundary.

No evidence of invasive plants, such as Japanese knotweed *Fallopia japonica*, was found at the site.

The site has moderate potential for reptiles. Grass snake has been recorded within 200m of the site and we therefore recommend that a reptile survey should be conducted.

There are three large pedunculate oak trees on the site. One of these was assessed as being Category 1 and the other Category 2, as defined in the Second Edition of the Bat Conservation Trust's publication *Bat Surveys: Good Practice Guidelines* (Hundt, 2012). Both of these trees have broken branches and large cavities that bats could use for roosting. Tree 1 has two large cavities and Tree 2 large cavity and a smaller hole. Both trees may be suitable as roosts and should be the subject of dusk/dawn activity surveys.

If bats are found using either of the trees it will also be necessary to conduct an activity site of the hedgerows within the site boundary.

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1 INTRODUCTION

1.1.1 Cheshire Ecology Ltd. was commissioned by the Castlemead Group Ltd. to undertake an Extended Phase 1 Habitat Survey of land near Rhosrobin, in Wrexham County Borough, Wales, henceforth referred to as 'the site'. The centre of the site is located at OS Grid Reference SJ330529. The site is roughly L-shaped and located at a height of approximately 90m AOD.



Figure 1: Location of site

1.1.2 The purpose of the Extended Phase 1 Habitat Survey was to determine:

- The habitats present;
- Potential constraints to development;
- The potential for legally protected species to be present;
- The presence of invasive plant and animals; and
- Any requirement for additional ecological surveys.

1.1.3 The Extended Phase 1 Habitat Survey included a desktop study of any existing information regarding the site, consultation and a site visit.

1.2 Site context

- 1.2.1 The site is bounded to the north by Plas Acton Road (Ffordd Plas Acton) and to the west by Main Road (Ffordd Fawr). To the east lies a new cemetery and to the southeast a railway line. The southern boundary is formed by a recent housing development, known as 'Churchlea'. The site boundary is shown on Drawing CE116-1.
- 1.2.2 The site consists of five agricultural fields, divided by hedgerows. Most of the fields are shown as arable land in an undated Phase 1 Habitat Survey plan provided by Cofnod (2014). The site is currently unmanaged and covered by tussocky, semi-improved grassland.
- 1.2.3 Study of old Ordnance Survey maps shows the site has probably always been agricultural land and there is no evidence for any buildings on the site. The site is traversed from west to east by a public footpath. The site presumably used to belong to the owners of Pandy Farm, which lies immediately to the east of the site. The farm has now been converted into residential housing.
- 1.2.4 The site is located approximately 300m to the south of the River Alyn and Wilderness Wood. The majority of the land to the west is used for agriculture, but there is a small business park to the north and residential housing to the west, south and east. The area to the south and east is predominantly residential housing.
- 1.2.5 The most important habitats within the site boundary are, in order of importance:
- Neutral grassland
 - Hedgerows
 - Scrub
 - Marshy grassland
 - Amenity grassland

2 METHODS

2.1 Data trawl

- 2.1.1 The desktop survey involved data searches for statutory and non-statutory sites, legally protected species and other features of interest within a 2km radius of the site. The central grid reference of the site was used for the data searches.
- 2.1.2 The baseline information was obtained from:
- Cofnod – North Wales Environmental Information Service;
 - Study of Ordnance Survey maps;
 - Aerial photography;
 - The NBN Gateway (National Biodiversity Network) website;
 - The MAGIC website;
 - Natural Resources Wales;
 - The UK Biodiversity Action Plan (UKBAP); and
 - The Wrexham County Borough Biodiversity Action Plan.
 - Wrexham County Borough Council.

2.2 Statutory and non statutory sites

Statutory sites

- 2.2.1 Gatewen Marsh SSSI is located approximately 1.9km to the southwest of the site. The SSSI is one of only three mesotrophic mires in the former county of Clwyd. The northern end of the marsh is bounded by the disused spoil heaps of the old Gatewen Colliery (NRW, 2014). The marsh supports large stands of great reedmace *Typha latifolia*.

Non-statutory sites

- 2.2.2 There are five Wildlife Sites within a 2km radius of the site. These are Pant Yr Ochain (W312), Moss Valley (W311), Woodlands and Fishpond Wood (W310), Bryn Alyn and Wormswood (W309) and Alyn Waters (W306).

Pant Yr Ochain (SJ347530)

- 2.2.3 The Pant Yr Ochain site is comprised of a series of ponds and lakes between Gresford and Wrexham. The main lake is surrounded by mixed woodland and the site is mainly of interest for its birds.

Moss Valley (SJ310525)

- 2.2.4 This site consists of wooded valley slopes and adjoining grassland. The habitats include semi-natural woodland, semi-improved grassland and a disused railway line. The woodland includes areas dominated by pedunculate

oak *Quercus robur*, sycamore *Acer pseudoplatanus* and ash *Fraxinus excelsior*. The ground flora includes hart's-tongue fern *Phyllitis scolopendrium*, bluebells and wood sorrel *Oxalis acetosella*.

Woodlands and Fishpond Wood (SJ323546)

- 2.2.5 Woodlands and Fishpond Wood Wildlife Site (WS) is located a few hundred metres to the north west of the site. It consists of two areas of wetlands, including the site of an old lake. The bed of the lake is now covered by a marsh and alder woodland. The WS includes marsh marigold *Caltha palustris*, hairy sedge *Carex hirta*, water figwort *Scrophularia auriculata*, great horsetail *Equisetum telmateia* and meadowsweet *Filipendula ulmaria*. There are also areas of broad-leaved woodland with bluebells and species-rich grassland.

Bryn Alyn and Wormswood

- 2.2.6 This is a series of semi-natural woods and semi-improved grasslands beside the River Alyn. The site is 42ha in extent and includes Wilderness Wood (300m north of the site), neutral to calcareous grassland beside the railway line and a reclaimed tip. Plant species include rest-harrow *Ononis repens*, pendulous sedge *Carex pendula*, sanicle *Sanicula europaea*, bluebell *Hyacinthoides non-scripta* and bee orchids *Ophrys apifera*.

Alyn Waters (SJ331536)

- 2.2.7 This is a series of woods beside the River Alyn and regenerating woodland in Alyn Water Country Park. The deciduous woodland are dominated by ash and oak, with large amounts of sycamore or wet and dominated by alder. The abandoned sand and gravel quarry has species-rich grassland, with yellow rattle *Rhinanthus minor*, common centaury *Centaureum erythraea*, bee orchid and yellow wort *Blackstonia perfoliata*.

2.3 Planning context

- 2.3.1 The following habitats are the subject of Habitat Action Plans (HAPs) in the Wrexham County Borough Council Local Biodiversity Action Plan (LBAP).

- Derelict and Industrial Land
- Gardens
- Lowland bogs
- Ponds
- River, stream and canals
- Upland moorland
- Veteran trees and wood-pasture
- Woodland

- 2.3.2 The following species are the subject of Species Action Plans (SAPs) in the Wrexham County Borough Council LBAP.

- Badger

- Barn owl
- Black poplar
- Great crested newt
- Lesser horseshoe bat
- Otter
- Song thrush

2.4 Survey

- 2.4.1 Cheshire Ecology Ltd. carried out an Extended Phase 1 Habitat Survey of the site on Monday 17th March 2014. The weather was overcast, dry and with an average temperature of 6°C.
- 2.4.2 The survey was carried out in accordance with the Extended Phase 1 Habitat Survey methodology as described in *Guidelines for Ecological Assessment* (Institute of Environmental Assessment, 1995). This is a development of the original methodology outlined in the *Handbook for Phase 1 habitat survey – A technique for environmental audit* (JNCC, 2010). The main habitats were mapped and are shown on drawing CE116-2 ‘Extended Phase 1 Habitat Plan’.
- 2.4.3 Plant names follow the Second Edition of the *New Flora of the British Isles* (Stace, 1997). The common name of the plant is stated first and is followed by the Latin name, on the first occasion that it is used. Only the common name is used subsequently.
- 2.4.4 The surveyor is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and adheres to that organisation’s Code of Professional Conduct.

2.5 Limitations

- 2.5.1 The survey was carried out in the middle of March. Vernal species such as lesser celandine *Ranunculus ficaria* and bluebell *Hyacinthoides non-scripta* were visible and the great majority of species could be identified. The surveyor is an experienced botanist and it is unlikely that any significant species have been missed. The survey was carried out at a time of the time year when badger activity is most apparent and it is considered unlikely that evidence of this species was overlooked.
- 2.5.2 The upper parts of the railway embankment were checked for evidence of badger. The lower parts could not be checked without permission from Network Rail.
- 2.5.3 For reasons of confidentiality the precise locations of certain protected species are withheld.
- 2.5.4 A Habitat Suitability Index (HSI) was calculated for each of the water-bodies Oldham *et al*, 2000). However, all of the water-bodies were on private property and had to be assessed from public rights of way. The HSI calculations must therefore be treated as provisional and the majority have not been included in this report.

3 RESULTS

3.1 Habitats and Vegetation

Neutral grassland

- 3.1.1 The great majority of the site currently consists of unmanaged semi-improved grassland. Aerial photography shows that Field 3 was mown in 2006, but there was no evidence of sheep or cattle. Anecdotal evidence suggests that Field 3 was used for producing turf. The location of the fields is shown on Drawing CE116-2.

Field 1

- 3.1.2 This square field is dominated by a mixture of Yorkshire fog *Holcus lanatus*, red fescue *Festuca rubra* and common bent *Agrostis capillaris*. Broad-leaved species occur at low cover. These include creeping buttercup *Ranunculus repens*, ragwort *Senecio jacobaea*, field buttercup *Ranunculus acris*, dandelion *Taraxacum officinale* and ribwort plantain *Plantago lanceolata*.
- 3.1.3 Red fescue *Festuca rubra* is more abundant in the drier areas, particularly at the southern end where there is a lot of rabbit grazing. Pointed spear moss *Calliergonella cuspidatum* and rough-stalked feather-moss *Brachythecium rutabulum* were frequent in these areas when the survey was conducted. Common vetch *Vicia sativa* and cat's-ear *Hypochoeris radicata* also occur occasionally. Sweet-scented vernal grass *Anthoxanthum odoratum* is common at the northern end of the field.
- 3.1.4 The vegetation along the western side of the field is taller, with tussocks of false-oat grass *Arrhenatherum elatius* and cock's-foot *Dactylis glomerata*. Hogweed *Heracleum sphondylium* is common along the western margins of the field and is abundant in the southwest corner. Other species in this area include couch *Eltrygia repens*, cleavers *Galium aparine* and bramble *Rubus fruticosus*. There is evidence of scrub invasion in this area, with several young saplings of hawthorn.

Field 2

- 3.1.5 This narrow rectangular field is separated from Field 3 by a public footpath. Yorkshire fog and common bent are co-dominant with patches of red fescue in places. Broad-leaved species are relatively uncommon and are most abundant near the barbed wire fence. They include common celandine, creeping buttercup, common mouse-ear *Cerastium fontanum* subsp. *holosteoides*, field buttercup, cow parsley *Anthriscus sylvestris*, ragwort and field thistle.
- 3.1.6 The public footpath is bounded on either side by a barbed-wire fence. The footpath appears to be heavily used and has been re-sown with perennial ryegrass *Lolium perenne*.

Field 3

- 3.1.7 The large square field at the southern end of the site is covered by ungrazed semi-improved grassland. The field is dominated by common bent, Yorkshire fog and red fescue, with smaller amounts of perennial ryegrass and crested dog's-tail *Cynosurus cristatus*. Herbs are more frequent than in the previous fields with creeping buttercup and field buttercup. The eastern part of the field has an area of marshy grassland, with a few tussocks of common rush *Juncus effusus* and tufted hair-grass *Deschampsia cespitosa*. The latter also occurs sporadically around the field.

Field 4

- 3.1.8 The small rectangular field to the south of the cemetery is similar to the others. It is currently ungrazed and dominated by common bent, Yorkshire fog and red fescue. Herbs include creeping buttercup and field buttercup. There is a small area of marshy grassland in the southwest corner of the field.

Field 5

- 3.1.9 This rectangular field was probably permanent pasture in the past. Yorkshire fog and common bent are still abundant, but there are also large quantities of meadow grass *Poa pratensis*, sweet-scented vernal grass, cock's-foot and crested dog's-tail. Field woodrush *Luzula campestris* occurs occasionally and creeping buttercup was common. Rough-stalked feather-moss was common in places. There is an area of marshy grassland in the middle of the field, with tussocks of soft rush and hard rush *J. inflexus*. A single plant of bird's-foot trefoil *Lotus corniculatus* was found in this field.

Hedgerows

- 3.1.10 There are number of hedgerows within the site boundary.

Hedgerow 1

- 3.1.11 The stretch of hedgerow along the Plas Acton Road includes seven woody species in a 30m stretch (see Photograph 1 and Target Note (TN) 1). These are hawthorn *Crataegus monogyna*, ash, sycamore, holly *Ilex aquifolium*, hazel *Corylus avellana* and elder *Sambucus nigra*. Other species include bramble *Rubus fruticosus* and ivy *Hedera helix*. Lords' and ladies' *Arum maculatum* was present beneath the hedgerow. The presence of seven woody species means that this section is an 'Important Hedgerow', as defined by the Hedgerow Regulations 1997.
- 3.1.12 The hedgerow continues along the Llay New Road and then the 'Main Road'. This section consists almost entirely of hawthorn, with occasional specimens of semi-mature sycamore and ash. The age of the hedgerow is uncertain, but it appears to have grown from a long line of whips and there is no evidence of traditional hedge management (e. g. hedge laying). This suggests that the hedgerow is of recent origin and was probably planted when the Llay New Road was constructed. None of the semi-mature trees appear to have any bat potential.

Hedgerow 2

- 3.1.13 This hedgerow appears to be of long standing and is located along the bottom of a bank between Fields 1 and 2. It consists of a line of mature hawthorn trees, with a large number of elder and an occasional holly bush. A large pedunculate oak tree (Tree 1, see TN 2) is located at the east end of the hedge, near the cemetery. The southern side of the hedgerow has been colonised by brambles. There are a large number of rabbit holes along the hedgerow.
- 3.1.14 The ground flora of the hedgerow consist of nettles *Urtica dioica*, cleavers *Galium aparine*, bluebells and lords-and-ladies. A shallow depression runs along the southern side of the hedgerow. This is probably the line of a disused ditch.
- 3.1.15 Tree 1 is a large pedunculate oak (see photographs 3 and 9). The tree has lost one of its upper limbs; it has two large holes and one smaller one, measuring approximately 4cm across. The tree was assessed as being Category 1, as defined in the Second Edition of the Bat Conservation Trust *Bat Surveys: Good Practice Guidelines* (Hundt, 2012).

Hedgerow 3

- 3.1.16 The age of the trees and the frequent evidence of traditional hedge management suggest that this hedgerow is of reasonable antiquity (see Photograph 2). The hedge is dominated by hawthorn, but there are also two mature pedunculate oak trees at the northern end, together with occasional elder, ash and ivy. Dog rose is relatively common in the hedgerow.
- 3.1.17 Tree 2 (see TN3) is a large, mature pedunculate oak tree (see photographs 4 and 10). It has several broken limbs, with large cracks and a large hole at approximately 4m above the ground. There is evidence of black staining beneath the hole, but this is probably the result of fungal decay, rather than animal activity. The tree was assessed as being Category 2, as defined in the Second Edition of the Bat Conservation Trust *Bat Surveys: Good Practice Guidelines* (Hundt, 2012).
- 3.1.18 Tree 3 (see TN4) is also a mature pedunculate oak (see photographs 4). It is healthier than Trees 1 and 2 and shows no obvious evidence of damage. A crow's nest was located in one of the branches. It was assessed as being a Category 3 tree, as defined in the Second Edition of the Bat Conservation Trust *Bat Surveys: Good Practice Guidelines* (Hundt, 2012).

Hedgerow 4

- 3.1.19 This hedgerow mainly consists of hawthorn and sits on the top of a slight bank. The hedgerow also includes elder and ivy and shows evidence of traditional management. The hedgerow has a large gap in the middle to provide access between fields 4 and 5.

Hedgerow 5

- 3.1.20 This is a short, L-shaped stretch of hawthorn hedge beside the former Pandy Farm. The hedgerow also includes an elder and holly bush and shows signs of traditional management.

Hedgerow 6

- 3.1.21 This is a short stretch Leyland cypress X *Cupressocyparis leylandii*. It has no ecological value, other than to provide cover for nesting birds.

Hedgerow 7

- 3.1.22 A steel fence marks the boundary between the site and the adjacent cemetery. A beech hedge *Fagus sylvatica* has been planted immediately beyond the fence, on the cemetery side. This hedgerow has just been planted and, as a result, has not been included in the Extended Phase 1 Habitat Survey Plan.

Scrub

- 3.1.23 The majority of the site currently consists of semi-improved agricultural grassland. There is some encroachment by hawthorn scrub along the western side of the site and there are a few patches of bramble, including a large area near the new houses in 'Churchlea'. The latter area of scrub has developed where a number of ornamental trees have been planted. These include a couple of ornamental cherries *Prunus* sp., a few small oak saplings *Quercus* sp. and a single apple *Malus domestica*. A small number of butterfly bush trees *Buddleja davidii* are present in the extreme southwest corner of the site.
- 3.1.24 A large area of scrub has developed along the railway embankment. This is outside the site boundary and will not be affected by the proposed development. Hawthorn trees are common and there is considerable evidence of rabbit activity. The lower part of the embankment could not be inspected because of its close proximity to the railway line. Other species include goat willow *Salix caprea*, pedunculate oak and elder. The ground flora consists of brambles, lords-and-ladies and dog's-mercury *Mercurialis perennis*.
- 3.1.25 A small clump of snowberry *Symphoricarpos albus* was present in the south-east corner of this field.

Marshy grassland

- 3.1.26 The eastern part of Field 3 is waterlogged during the winter months (see TN6). The most distinctive plants in this area were tussocks of soft rush and occasional clumps of compact rush *Juncus conglomeratus*. Creeping fescue *Agrostis stolonifera* was the dominant grass in these wet areas with occasional tussocks of tufted hair grass *Deschampsia cespitosa*. Creeping buttercup was also abundant in this area.
- 3.1.27 There is also a small area of marshy grassland in the southwest corner of Field 4 (see Photograph 5 and TN5). This mainly consists of a series of soft rush

tussocks, with Yorkshire Fog and creeping bent.

- 3.1.28 Another area of marshy grassland occurs in the middle of Field 5 (see TN7). The ground is probably saturated with water in the winter, but dries out in the spring. Soft and hard rush tussocks are common in this area, but there is no aquatic vegetation.

Amenity grassland

- 3.1.29 A narrow strip of amenity grassland is located between the northern boundary of the site and the Plas Acton Road. The grassland consists of the roadside verge and a grass-covered bank. The majority of the vegetation consists of Yorkshire fog, perennial ryegrass and abundant ribwort plantain. Occasional specimens of knapweed *Centaurea nigra* occur.
- 3.1.30 The public footpath, which crosses the site from west to east, has been resown with perennial ryegrass.

Water-bodies

- 3.1.31 There eleven water-bodies within a 500m radius of the site boundary, including the River Alyn. The location of the water-bodies is shown on Figure 2.



Figure 2: Location of water bodies

Water-body 1

- 3.1.32 Water-body 1 (WB1) can be seen from the Llay New Road (Photograph 11) and is located approximately 150m from the site. The pond is located in permanent pasture and is oval in shape, measuring approximately 10x15m in extent. There was no obvious emergent aquatic vegetation, but creeping bent could be seen growing in places. This suggests that the pond is quite shallow. The field was grazed by sheep in the early spring, but these were replaced by cattle in April 2014.

Water-body 2

- 3.1.33 WB2 is roughly oval in shape and is located near Gwersyllt Hall Farm (Photograph 12). The water-body is fed by a fast-flowing stream, which passes over a roughly made concrete cascade and then exits at the eastern end. The pond had an unpleasant odour and is occasionally flooded by sewage. The majority of the pond is scoured by the stream and was considered unsuitable for great crested newts.
- 3.1.34 The water-body has a clump of alder trees growing in the middle of it and there are several clumps of marsh marigold and yellow flag *Iris pseudacorus*. It is located 335m to the north of the site.

Water-body 3

- 3.1.35 Water-body 3 is a disused millpond and is located next to the River Alyn (see Photograph 13). The pond western bank is fringed by yellow flag and has crystal-clear water. A small stream maintains the water level, with the excess flowing into the River Alyn.

Water-body 4

- 3.1.36 The River Alyn is located approximately 200m to the north of the site. The river is fast flowing and was considered to be unsuitable for GCN (see Photograph 14).

Water-body 5

- 3.1.37 The Extended Phase 1 Habitat Survey was carried out shortly after a long period of very wet weather and the field behind Rhosddu Industrial Estate was badly flooded (Photograph 15). This temporary pond is roughly triangular in shape and measures approximately 10m x 20m in extent. There is no aquatic vegetation and the water-body will probably disappear in a few weeks time.

Water-body 6

- 3.1.38 This is a deep pool, measuring approximately 20m x 30m in extent (Photograph 16). The water body has steep sides and is located next to the Rhosddu Industrial Estate. Great crested newts have been recorded from a number of locations within 300m of this water-body and it was therefore

assessed as having potential for this species. It is located approximately 360m from the site.

Water-body 7

- 3.1.39 Recent flooding had created an irregular lake next to a field ditch. The lake is assumed to be seasonal and will probably dry out in the spring. The lake is located approximately 300m from the site.

Water-body 8

- 3.1.40 A further water-body is located on the opposite side of the railway line. This was probably a raised pond, surrounded by an earth bank. The presence of green algae on the surface of the soil indicates that it must hold a small amount of water in the winter. It appears unsuitable for GCN.

Water body 9

- 3.1.41 Anecdotal evidence suggests that this water-body was intended for ornamental use. It is crossed by a wooden bridge and has crystal-clear water, with plenty of submerge vegetation. The pond is fed by two small streams and drains away at the eastern end. It appears to have potential for GCN.

Water-body 10

- 3.1.42 This is a partially flooded ditch between two horse-grazed fields. The ditch was covered by filamentous green algae and was very turbid. The margins are badly poached. The water-body has low potential for GCN.

Water-body 11

- 3.1.43 A flooded ditch, located near the A483. The ditch may be part of Watt's Dyke, which forms the eastern bank of the water-body. The water is very shallow and the margins badly poached by horses. There is no aquatic vegetation, other than a small patch of common water-starwort *Callitriche stagnalis*. This water-body has low potential for GCN.

3.2 Fauna

Amphibians

- 3.2.1 The four widespread species of amphibian, the smooth newt *Lissotriton vulgaris* and palmate newt *L. helveticus*, the common frog *Rana temporaria* and common toad *Bufo bufo*, are protected under Section 9(5) of the Wildlife and Countryside Act 1981. This prohibits sale, barter, exchange, transporting for sale and advertising to sell or to buy. Collection and keeping of these species is not an offence.
- 3.2.2 The great crested newt *Triturus cristatus* and natterjack toad *Epidalea calamita* are, by contrast, protected under the whole of Schedule 9 of the Act. Since 2007 they have also been protected under Schedule 2 of the

Conservation (Natural Habitats &c) Regulations 1994 and are known as a 'European Protected Species' (EPS). Great crested newts and natterjack toads are 'Priority Species' in the UK Biodiversity Action Plan (UKBAP). The great crested newt is the subject of a Species Action Plan in the Wrexham County Council Local Biodiversity Action Plan.

- 3.2.3 Great crested newts (GCN) have been recorded within two hundred metres of the site (Cofnod, 2014). The records date from 1992 and could be considered historical; however the pond (Water-body 1) appears suitable for the species and there is no reason to believe that they are absent.
- 3.2.4 There is a single record for GCN from a water-body beside the River Alyn, approximately 550m to the northeast of the site. There are also a large number of records from the site of the Wrexham Metal Box Company, which is located approximately 800m to the west of the site. Closer to home are records from the eastern side of the Wrexham to Connah's Quay railway line. These are approximately 600m from the site and close to ponds 5, 6 and 7.

Badgers

- 3.2.5 Badgers *Meles meles* are protected in the United Kingdom by The Protection of the Badgers Act 1992. The protection applies to both the animals and their burrows (setts). The Badger is the subject of a Species Action Plan in the Wrexham County Council Local Biodiversity Action Plan.
- 3.2.6 The closest record of a badger is from approximately 1km north of the site (Cofnod, 2014). Dating from 2007, the animal had been run over by a car. Another dead animal was recorded in 2009, approximately 1.2km to the west.
- 3.2.7 All of the hedgerows were checked for evidence of badgers, such as latrines, badger setts, push-throughs, badger-hairs and tracks. The upper parts of the railway embankment were also checked for field signs and setts and while there was plenty of evidence of rabbits, there was none to suggest that badgers could be present. The species is very mobile and we would therefore recommend having the site checked again immediately before construction work commences.
- 3.2.8 A dead badger was found on the site, a short distance from New Llay Road, in May 2014. This is presumed to be a traffic casualty. There is no evidence of a badger sett within the site boundary, or within 30m of it.

Bats

- 3.2.9 All bat species are protected in the UK under Schedule 5 of the Wildlife and Countryside Act 1981. Since 2007 they have also been protected under Schedule 2 of the Conservation (Natural Habitats &c) Regulations 1994 and are known as a 'European Protected Species' (EPS). All bats are 'Priority Species' in the UK Biodiversity Action Plan (UKBAP). The lesser horseshoe bat *Rhinolophus hipposideros* is the subject of a Species Action Plan in the Wrexham County Borough Local Biodiversity Action Plan.

- 3.2.10 It is an offence to deliberately capture, injure or kill a bat; deliberately disturb in a way that would affect their local distribution or abundance, or affect their ability to survive, or breed young. It is also an offence to damage or destroy a bat roost and to possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.
- 3.2.11 There are only four records of named bats within 2km of the site and they are all pipistrelle *Pipistrellus* species (Cofnod, 2014). The closest record is from 700m to the west and is anonymous. There are also two records for unidentified bats from within 1.3km of the site. The paucity of bat records is probably due to a lack of recording effort, rather than an absence of bats. The presence of a river, ponds and extensive areas of woodland to the north of the site would provide ideal foraging opportunities for bat species.
- 3.2.12 Two of the mature pedunculate oak trees (trees 1 and 2) within the site boundary were assessed as having potential for bats. The trees were rated according to the Second Edition of the Bat Conservation Trust's *Bat Surveys: Good Practice Guidelines* (Hundt, 2012). Tree 1 had two large holes, split branches and a single small hole (see Photograph 7). It was assessed as being a Category 1 tree, with high potential for use as a bat roost. Tree 2 was also assessed as having bat potential, although it was rated as a Category 2 tree (see Photograph 8). It has a single large hole and a number of split branches.
- 3.2.13 There is a single mature oak near the railway line. This has a split in one of the branches, but was assessed as being a Category 3 tree according to the Second Edition of the Bat Conservation Trust's *Bat Surveys: Good Practice Guidelines* (Hundt, 2012).
- 3.2.14 It has been difficult to assess the age of Pandy Farm, because of the modern alterations (see Photograph 8 and TN9). The eastern part appears to be modern, but the western is probably older, with a pitched, slate-tiled roof. The farm is located on private land and it was not possible to assess its potential as a bat roost. The Bat Conservation Trust publication *Bat Surveys Good Practice Guidelines* (Hundt, 2012) recommends that all pre-1914 buildings with gable ends or slate roofs should be surveyed for their bat potential.
- 3.2.15 We have not, as this stage, recommended dusk/dawn activity surveys of the hedgerows. The data trawl returned very few records for bats within 2km of the site and the hedgerows have been broken up by modern development. A survey may be necessary if the dusk/dawn surveys of Trees 1 and 2 reveal bat activity on the site.

Birds

- 3.2.16 With certain exceptions, such as game birds, all wild birds, their nests and eggs are protected by the Wildlife and Countryside Act 1981 (as amended). It is an offence under the Act to:
- Intentionally take, damage, or destroy the nest of any wild birds while it is in use or being built; or
 - Take or destroy the egg of any wild bird.

3.2.17 Bird species listed on Schedule One of the Act receive further protection, thus for these species is also an offence to:

- Disturb any bird while is building a nest, or is at a nest containing eggs and young; or
- Disturb the dependent young of any such bird.

3.2.18 The only Schedule One species that have been recorded within 2km of the site boundary are the barn owl *Tyto alba* and hobby *Falco subbuteo*. The barn owl was recorded flying along the side of the dual carriageway near the Gresford Roundabout in 2012. This is 1km to the northeast of the site and a particularly precarious location for a barn owl to be flying. The hobby was seen at Acton in 1996 and can probably be considered as an historical record. The barn owl is a 'Priority Species' in the UKBAP and the subject of a Species Action in the Wrexham County Borough Biodiversity Action Plan.

3.2.19 The site has a lot of tussocky grassland and there was considerable evidence that small rodents, such as field vole, were present. The site could provide a foraging habitat for barn owl, but no evidence for this species was seen during the survey.

3.2.20 No Schedule One species were recorded during the survey. The species seen or heard during the survey are shown in Table 1.

Table 1: Bird species recorded	
Blackbird	<i>Turdus merula</i>
Blue tit	<i>Cyanistes caeruleus</i>
Buzzard	<i>Buteo buteo</i>
Carrion crow	<i>Corvus corone</i>
Dunnock	<i>Prunella modularis</i>
Feral pigeon	<i>Columba livia</i>
Magpie	<i>Pica pica</i>
Robin	<i>Erithacus rubecula</i>
Wood pigeon	<i>Columba palumbus</i>

Hazel Dormouse

3.2.21 The hazel dormouse *Muscardinus avellanarius* is protected in the UK under Schedule 5 of the Wildlife and Countryside Act 1981. It is a 'European Protected Species' and protected under Schedule 2 of the Conservation (Natural Habitats &c) Regulations 1994. The dormouse is a 'Priority Species' in the UKBAP.

3.2.22 There are no records of dormouse within 2km of the site, but there is plenty of

deciduous woodland in the Alyn Valley (Cofnod, 2014). The closest record for a dormouse is from Doley Wood, near Malpas, which is 17km to the southeast of the site.

- 3.2.23 The hedgerows within the site boundary are predominantly formed from hawthorn trees. A single hazel sapling was found during the survey and there would be insufficient food available to support dormouse. Dormouse is unlikely to be a constraint to development.

Invertebrates

- 3.2.24 Approximately 30,000 species of invertebrates have been recorded in the British Isles. They occur in every habitat, both terrestrial and aquatic. Forty-five species of invertebrate are fully protected under the Wildlife and Countryside Act 1981.
- 3.2.25 A number of UK BAP species have been recorded within 1km of the site. These are the shoulder-striped wainscot *Mythimna comma*, the small square-spot *Diarsia rubi*, the white ermine *Spilosoma lubricipeda* and the buff ermine *S. luteum*.
- 3.2.26 No rare invertebrates were recorded on the site, but the survey was undertaken outside the normal field season for these species. The site would be expected to have a number of species that are common in this type of habitat.

Otter

- 3.2.27 The otter *Lutra lutra* is protected in the UK under Schedule 5 of the Wildlife and Countryside Act 1981. It is a 'European Protected Species' and protected under Schedule 2 of the Conservation (Natural Habitats &c) Regulations 1994. The otter is a 'Priority Species' in the UKBAP and the subject of a Species Action in the Wrexham County Borough Biodiversity Action Plan.
- 3.2.28 There are several records for otter from beside the River Alyn, including one of an otter spraint near the footbridge at Gwersyllt Hall Farm (Cofnod, 2014) and another from Pont-y-Capel. The site is located approximately 250m from the river at its closest point and there are no watercourses within its boundary. Otter are unlikely to be a constraint to development.

Polecat

- 3.2.29 The polecat *Mustella putorius* is protected under the Wildlife and Countryside Act 1981. Certain methods of killing or taking polecats are prohibited under the act, and it is an offence to set a trap for a polecat without obtaining a licence. The species was considered to be a pest and was almost hunted to extinction in the past. It is now recovering and is found in lowland woodland, in marshland and beside rivers.
- 3.2.30 There are no records for polecat within 2km of the site and it is unlikely to be

a constraint to development (Cofnod, 2014).

Reptiles

- 3.2.31 Five species of reptile occur in Wales, but only one of them, the sand lizard *Lacerta agilis*, is fully protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended). The smooth snake *Coronella austriaca* does not occur in Wales. The sand lizard was recently re-introduced and is protected from intentional killing, injuring or taking; possession; intentional disturbance while occupying 'a place used for shelter or protection' and destruction of these places, sale, barter, exchange, transporting for sale and advertising to sell or buy.
- 3.2.32 The adder *Vipera berus*, grass snake *Natrix natrix*, slowworm *Anguis fragilis* and common lizard *Zootoca vivipara* are only protected under sub-section 9(1) and all of sub-section 9(5) of the Wildlife and Countryside Act, from deliberate killing, injury or trade. The habitats of these species are not protected. All native reptiles are 'Priority Species' in the UKBAP.
- 3.2.33 A grass snake was found in Wilderness Wood, near the Pandy Industrial Estate, in 2011. This record was only 200m from the northern boundary of the site. There are also records from 1993 of adder, grass snake and common lizard from Fishpond Wood (Cofnod, 2014). This is approximately 500m to the northwest of the site. There are also a number of records for grass snake from Alyn Waters Country Park, which is approximately 1.8km north of the site.
- 3.2.34 No evidence of reptiles was found during the survey. The site mainly consists of tussocky semi-improved grassland and there is limited cover for reptiles, if they are present. On the other hand there are quite a lot of small mammals, such as field vole present, which could provide a food source and amphibians could be present in the marshy areas. There was no rubble or discarded sheets of plywood or rotting timber within the site boundary, which could provide opportunities for slow worms. We assess the site as having moderate potential for reptiles.

Water vole

- 3.2.35 The water vole *Arvicola amphibius* received limited legal protection in 1998 through its inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) for certain offences. The protection was extended in 2008, so that the species is now fully protected under Section 9 of the Act.
- 3.2.36 This makes it an offence to:
- Intentionally kill, injure or take a water vole;
 - Possess or control a live or dead water vole, or any part of a water vole;
 - Intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place;

- Sell, offer for sale or advertise for live or dead water voles.

3.2.37 There are no records of water vole within 2km and there are no suitable watercourses within the site boundary (Cofnod, 2014). Water vole is unlikely to be a constraint to development.

3.3 Invasive plants

3.3.1 No evidence of invasive plants, such as Japanese knotweed *Fallopia japonica*, was found at the site.

4 CONCLUSIONS

4.1 Potential impact on Statutory and non-statutory sites

Statutory sites

Gatewen Marsh SSSI

- 4.1.1 The SSSI is located a considerable distance from the site and would not be affected by the proposed development.

Non-statutory sites

- 4.1.2 The site is located approximately 100m to the south of Wilderness Wood, which is part of the Bryn Alyn and Wormswood WS. The proposed development is unlikely to have any effect on the flora of the woodland, but increased noise and bright lighting could have an impact upon wildlife. Domestic cats could also increase predation on wild birds.
- 4.1.3 The proposed development could also have a slight impact upon Woodlands and Fishpond Wood, by causing a slight increase in the number of people using the public footpath.
- 4.1.4 The development would not have any impact upon the other non-statutory sites.

4.2 Habitats

- 4.2.1 None of the habitats within the site boundary are particularly species rich. The fields are covered by species-poor semi-improved grassland and the hedgerows probably date from the 19th century.
- 4.2.2 The only features that do have obvious wildlife value are the mature oak trees, which could potentially be used as a bat roost. The hedgerows also provide a food source for birds and cover from predators.

Marshy grassland

- 4.2.3 There are two small areas of marshy grassland on site. These are limited in extent and have no species that are characteristic of fen meadow, such as meadowsweet *Filipendula ulmaria* or water mint *Mentha aquatica*. The marshy grassland probably dries out in the summer and appears to have limited ecological value. It may provide a habitat for common amphibians, such as common frog or common toad, but none were seen during the survey.

Hedgerows

- 4.2.4 Inspection of the 1937-1939 1:2,500 Ordnance Survey (OS) map shows that the Plas Acton Road originally joined the Llay New Road slightly further north than it does now. A modern softwood fence was erected and a new hedgerow appears to have been planted to follow the new alignment.
- 4.2.5 The presence of seven woody species in Hedgerow 1 means that this section is an 'Important Hedgerow', as defined by the Hedgerow Regulations 1997. The realignment of Plas Acton Road appears to have been carried out at some time before 1962, because the new road is shown on the 1962 1:2,500 OS map. This suggests that the hedgerow is of relatively recent origin, but it is still older than the 30 years specified in the Act.
- 4.2.6 The site's hedgerows were assessed as having low bat potential. They may originally have formed part of a more extensive hedgerow system, but have become fragmented as a result of modern house building, road construction and the creation of the cemetery. The hedgerows could be important in providing connectivity to the Alyn Valley if bats were found roosting in trees 1 and 2.

4.3 Bats

- 4.3.1 The data trawl produced very few records of bats (Cofnod, 2014). This is probably the result of inadequate recording, rather than indicating that bats are absent from the area. The site is located a short distance from the River Alyn and its wooded valley, which would appear to offer a perfect foraging habitat for bats. There are also a number of old buildings in the valley that could be used for roosting.
- 4.3.2 There are three pedunculate oak trees on the site. One of these was assessed as being Category 1 and the other Category 2 as defined in *Bat Surveys: Good Practice Guidelines* (Hundt, 2012). Both of these trees have broken branches and large cavities that bats could use for roosting. Tree 1 has two large cavities and Tree 2 a single large cavity and a smaller hole. Both trees may be suitable as roosts and should be the subject of dusk/dawn activity surveys.
- 4.3.3 If bats are found using either of the trees it will also be necessary to conduct an activity site of the hedgerows within the site boundary.
- 4.3.4 It was not possible to determine the age of Pandy Farm during the survey, because of the large amount of renovation work that had taken place. However the main building may have been built before 1914 and has a gable end, as defined in the 2012 Edition of the BCT *Bat Surveys Good Practice Guidelines*. Depending upon the age and condition of the farm it may be necessary to carry out dusk/dawn activity surveys of the property.

4.4 Birds

- 4.4.1 The hedgerows are currently used by a number of passerine bird species. The loss of the hedgerows would reduce the number of birds in the area and this should be compensated for by the planting of a similar length of species-rich hedgerow around the margins of the site. These should include berry-bearing species, such as sloe *Prunus spinosa* and nut-bearing shrubs, such as hazel.
- 4.4.2 The ungrazed, tussocky, grassland supports a number of small rodents, such as field vole. Barn owl could potentially forage over the area, but there are very few records for this species in the immediate area. Barn owl does occur to the east of Wrexham, but there appears to be little likelihood that they would venture as far as Rhosrobin. There were no field signs apparent for barn owl when the survey was conducted and no obvious buildings that could provide nesting opportunities.

4.5 Great crested newt

- 4.5.1 No evidence of great crested newt was found during the survey. The site would be suitable for foraging, but there are no ponds on site, which could be used for breeding. The site has a litter problem, but there are no obvious piles of rubble that could act as refugia.

4.6 Reptiles

- 4.6.1 There is a single record of a grass snake from the far side of Pandy Industrial Estate, approximately 200m to the north and historical records for adder, common lizard and grass snake from Fishpond Wood, 500m to the northwest.
- 4.6.2 The great majority of the site consists of tussocky semi-improved grassland with moderate potential for reptiles. There are several patches of marshy grassland with tussocks of soft and hard rush.

5 RECOMMENDATIONS

5.1 Great crested newts

- 5.1.1 There are eleven water bodies within 500m of the site boundary. A number of these have potential for great crested newt. GCN have been recorded from several locations to the west of Rhosddu Industrial Estate and there is a record from WB1, which is located a short distance from the site boundary. WB2 and WB4 (the River Alyn) are unsuitable for GCN due to the fast-flowing water.
- 5.1.2 We therefore recommend conducting a GCN survey of WB1, WB3 and water-bodies WB5-WB11. To comply with the *Great Crested Newt Mitigation Guidelines* (English Nature, 2001), any other suitable water-bodies within a 500m radius of the site boundary should also be surveyed.
- 5.1.3 Depending upon the findings of the GCN survey it may be necessary to mitigate for the loss of terrestrial habitat.

5.2 Trees

- 5.2.1 The old oak trees are an attractive feature and have considerable wildlife value. Trees 1 and 2 have been assessed as having high bat potential and no tree surgery should be conducted until the dusk/dawn bat activity surveys have been carried out. All of the oak trees should be included in the landscaping scheme for the proposed development.
- 5.2.2 Depending upon the findings of the dusk/dawn surveys it may be necessary to modify the layout of the proposed development to take into account the hedgerows and the possible presence of a bat roost. If bats are present it will be necessary to modify the lighting on the site.

5.3 Grassland

- 5.3.1 Where possible, areas of species-rich grassland should be planted to compensate for the loss of semi-natural habitat. The soil appears to be relatively infertile and it should be possible to establish species-rich grassland using a commercial seed mixture such as Germinal Seeds (formerly British Seedhouses) WFG6 seed mixture for heavy clay soils.

5.4 Marshy grassland

- 5.4.1 There are three small areas of marshy grassland within the site boundary. None of them are species-rich and there are no aquatic plants present. No amphibians were seen and all three are presumed to dry out in the summer. The marshy ground would be considered to have ecological value if the site is considered for a Code for Sustainable Homes Assessment.

5.5 Bats

- 5.5.1 Trees 1 and 2 both have features that make them attractive to bats. There are very few records for bats from the immediate vicinity, but this may be due to a lack of recording effort, rather than an absence of bats. Two dusk and one dawn activity survey should be undertaken on both of these trees.
- 5.5.2 Depending upon the results of the activity surveys it may be necessary to conduct a similar transect of the hedgerows. The site is currently assessed as having low habitat quality for bats and most of the hedgerows have poor connectivity. An activity transect would have to be conducted three times; once in the spring, summer and autumn.
- 5.5.3 At the time of writing we have not recommended a bat survey of Pandy Farm. There are, as previously mentioned, very few records of bats in the area and Pandy Farm appears to have recently undergone considerable renovation. Activity transects would probably indicate whether a roost was present.

5.6 Reptiles

- 5.6.1 The small areas of marshland may provide a habitat for grass snake, which preys upon common toad and frogs. Grass snake has been recorded on a number of occasions from Wilderness Wood and along the Alyn Valley. There is limited cover from predators, but we cannot discount the presence of grass snake within the site boundary.
- 5.6.2 Slowworm normally occurs where there are heaps of debris or sheets of rotting plywood or timber. Very little of this is present within the site, but there are a lot of rabbit holes and small amounts of stone at the bottom of the hedgerows. The majority of the site is covered by tussocky grassland and was assessed as having moderate potential for reptiles. We therefore recommend that a reptile survey should be carried out to determine the sites potential for these species.

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APPENDIX A: TARGET NOTES

Target Note	Description
TN1	A species-rich hedgerow near Plas Acton Road. It has seven woody species in a random 30m section and is therefore an 'Important Hedgerow' as defined by the 1997 Hedgerow Regulations.
TN2	Tree 1. A mature pedunculate oak with broken limbs and two large holes. There is also a small hole approximately 4m above the ground. Category 1 tree.
TN3	Tree 2. A mature pedunculate oak, with broken branches and a single large hole. Assessed as a Category 2 tree.
TN4	Tree 3. A mature pedunculate oak. Generally in good condition. No obvious holes. Category 3.
TN5	A small area of marshy grassland in Field 4. Tussocks of soft rush.
TN6	An area of marshy grassland with creeping bent, tussocks of soft rush, compact rush and occasional tufted hair grass.
TN7	Marshy grassland with soft rush and hard rush tussocks.
TN8	Tree 4. Mature pedunculate oak on railway embankment. One broken and split branch. Category 3.
TN9	Pandy Farm. Building of indeterminate age, due to the extensive amount of renovation that has taken place. May have bat potential.

APPENDIX B: PLANT SPECIES

Latin name	Common name	DAFOR rating
<i>Acer pseudoplatanus</i>	Sycamore	O
<i>Agrostis capillaris</i>	Common bent	D
<i>Agrostis stolonifera</i>	Creeping bent	F
<i>Alliaria petiolata</i>	Garlic mustard	O
<i>Anthriscus sylvestris</i>	Cow parsley	O
<i>Arrhenatherum elatius</i>	False oat-grass	O
<i>Arum maculatum</i>	Lords-and-ladies	F
<i>Centaurea nigra</i>	Hardheads or knapweed	R
<i>Cerastium fontanum</i> subsp. <i>holsteoides</i>	Common mouse-ear	R
<i>Chamerion angustifolium</i>	Rosebay willowherb	O
<i>Cirsium arvense</i>	Creeping thistle	F
<i>Corylus avellana</i>	Hazel	R
<i>Crataegus monogyna</i>	Hawthorn	D
<i>Cynosurus cristatus</i>	Crested dog's-tail	O
<i>Dactylis glomerata</i>	Cock's-foot	O
<i>Deschampsia cespitosa</i>	Tufted hair-grass	R
<i>Digitalis purpurea</i>	Foxglove	R
<i>Eltrygia repens</i>	Couch	O
<i>Festuca rubra</i>	Red fescue	D
<i>Fraxinus excelsior</i>	Ash	O
<i>Galium aparine</i>	Cleavers	F
<i>Glyceria fluitans</i>	Floating sweet-grass	R
<i>Hedera helix</i>	Ivy	F
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Holcus lanatus</i>	Yorkshire fog	D
<i>Hyacinthoides non-scripta</i>	Bluebell	F
<i>Hypochoeris radicata</i>	Cat's-ear	O
<i>Ilex aquifolium</i>	Holly	O
<i>Juncus conglomeratus</i>	Compact rush	R
<i>Juncus effusus</i>	Soft rush	F
<i>Juncus inflexus</i>	Hard rush	O
<i>Lolium perenne</i>	Perennial ryegrass	O
<i>Lotus corniculatus</i>	Bird's-foot trefoil	R
<i>Luzula campestris</i>	Field woodrush	R
<i>Malus domestica</i>	Apple	R
<i>Mercurialis perennis</i>	Dog's-mercury	R
<i>Plantago lanceolata</i>	Ribwort plantain	F
<i>Prunella vulgaris</i>	Self-heal	R
<i>Prunus avium</i>	Wild cherry	R
<i>Prunus</i> sp.	Ornamental cherry	R
<i>Prunus spinosa</i>	Sloe	R
<i>Quercus robur</i>	Pedunculate oak	O
<i>Ranunculus acris</i>	Meadow buttercup	F
<i>Ranunculus repens</i>	Creeping buttercup	A

<i>Rosa canina</i>	Dog-rose	F
<i>Rubus fruticosus</i>	Bramble	F
<i>Rumex crispus</i>	Curled dock	R
<i>Rumex obtusifolius</i>	Broad-leaved dock	R
<i>Salix caprea</i>	Goat willow	O
<i>Sambucus nigra</i>	Elder	F
<i>Senecio jacobaea</i>	Common ragwort	F
<i>Senecio vulgaris</i>	Groundsel	R
<i>Symphoricarpos albus</i>	Cloudberry	O
<i>Taraxacum officinale</i>	Dandelion	F
<i>Trifolium repens</i>	White clover	R
<i>Urtica dioica</i>	Nettle	F
<i>Vicia sativa</i>	Common vetch	O
Lower plants		
<i>Brachythecium rutabulum</i>	Rough-stalked feather-moss	A
<i>Calliergonella cuspidata</i>	Pointed spear moss	O
<i>Kindbergia praelonga</i>	Common feather moss	O
<i>Xanthoria parietina</i>	Golden shield lichen	F

APPENDIX C: PHOTOGRAPHS



Photograph 1: Hedgerow 1 is an 'Important Hedgerow'.



Photograph 2: Hedgerow 3 shows evidence of traditional management.



Photograph 3: Tree 1 was assessed as being Category 1 for bat potential.



Photograph 4: Trees 2 (on the left) and 3 were assessed as Category 2 and 3 respectively.



Photograph 5: There is a small marshy area in Field 4.



Photograph 6: Most of the fields are covered by tussocky, semi-improved grassland.



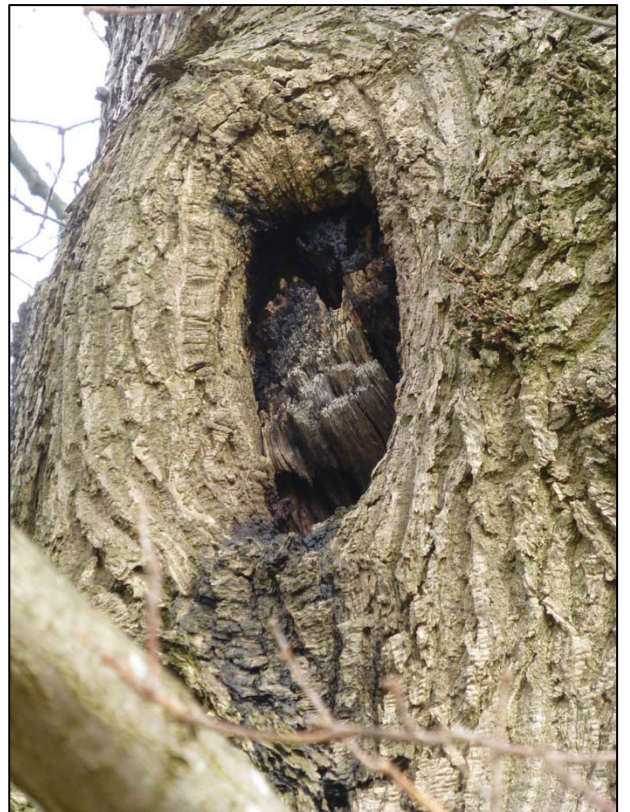
Photograph 7: Tussocks of soft and hard rush in Field 5.



Photograph 8: Pandy Farm may have bat potential, but has been extensively renovated.



Photograph 9: Tree 1 has two large cavities in the trunk and one small one.



Photograph 10: Tree 2 has a single large cavity.



Photograph 11: Water-body 1 is located 150m to the north west of the site.



Photograph 12: Water-body 2 is located below Fishpond Wood and is fed by a fast-flowing stream. It is probably unsuitable for great crested newts.



Photograph 13: Water-body 3 is located beside an old mill in the Alyn Valley.



Photograph 14: The River Alyn (Water-body 4) is too fast flowing for great crested newts.



Photograph 15: Water-body 5 is located approximately 500m to the west and is probably seasonal.



Photograph 16: Water-body 6 is deeper. There are several records for GCN from nearby ponds.

Key to habitats



Site boundary

Do not scale from this drawing

Client

Castlemead Group Ltd.

Project name

Rhosrobin, Wrexham

Drawing

Site boundary

Drawing No

CE116-1

Date

7.3.2014

Version

1.0

Scale

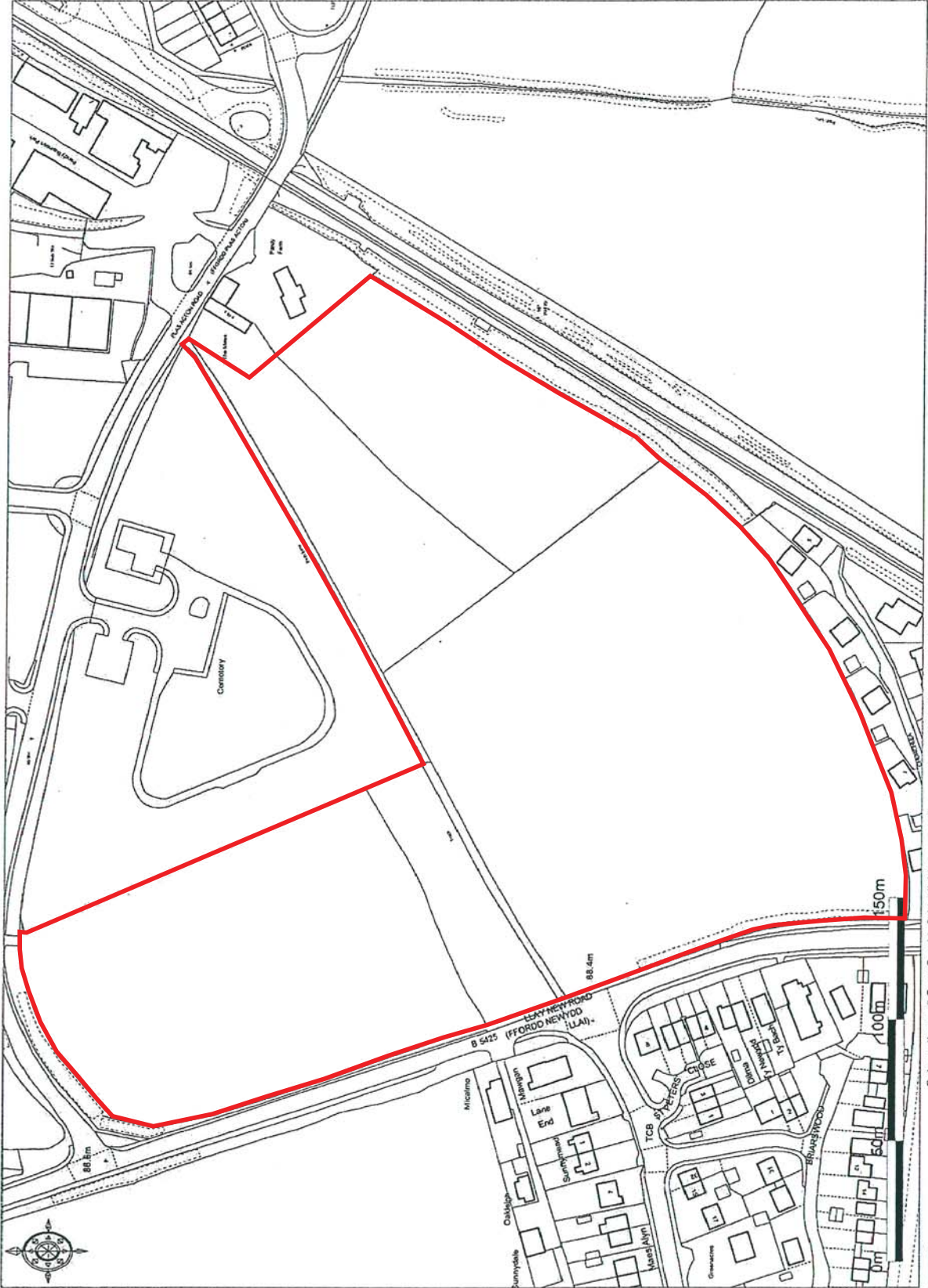
1: 1,250

Drawn by

MP

Cheshire Ecology Ltd.

Milton Green Farm Cottage, Chapel Lane,
Handley, Chester CH3 9EE Tel: 01244940220



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Key to habitats

	Semi-improved grassland
	Amenity grassland
	Marshy grassland
	Species-poor hedge
	Species-rich hedge
	Fence
	Double fence
	Scattered scrub
	Disused ditch
	T1 Mature tree
H1	Hedgerow number
	Target note number

Do not scale from this drawing

Client

Castlemead Group Ltd.

Project name

Rhosrobin, Wrexham

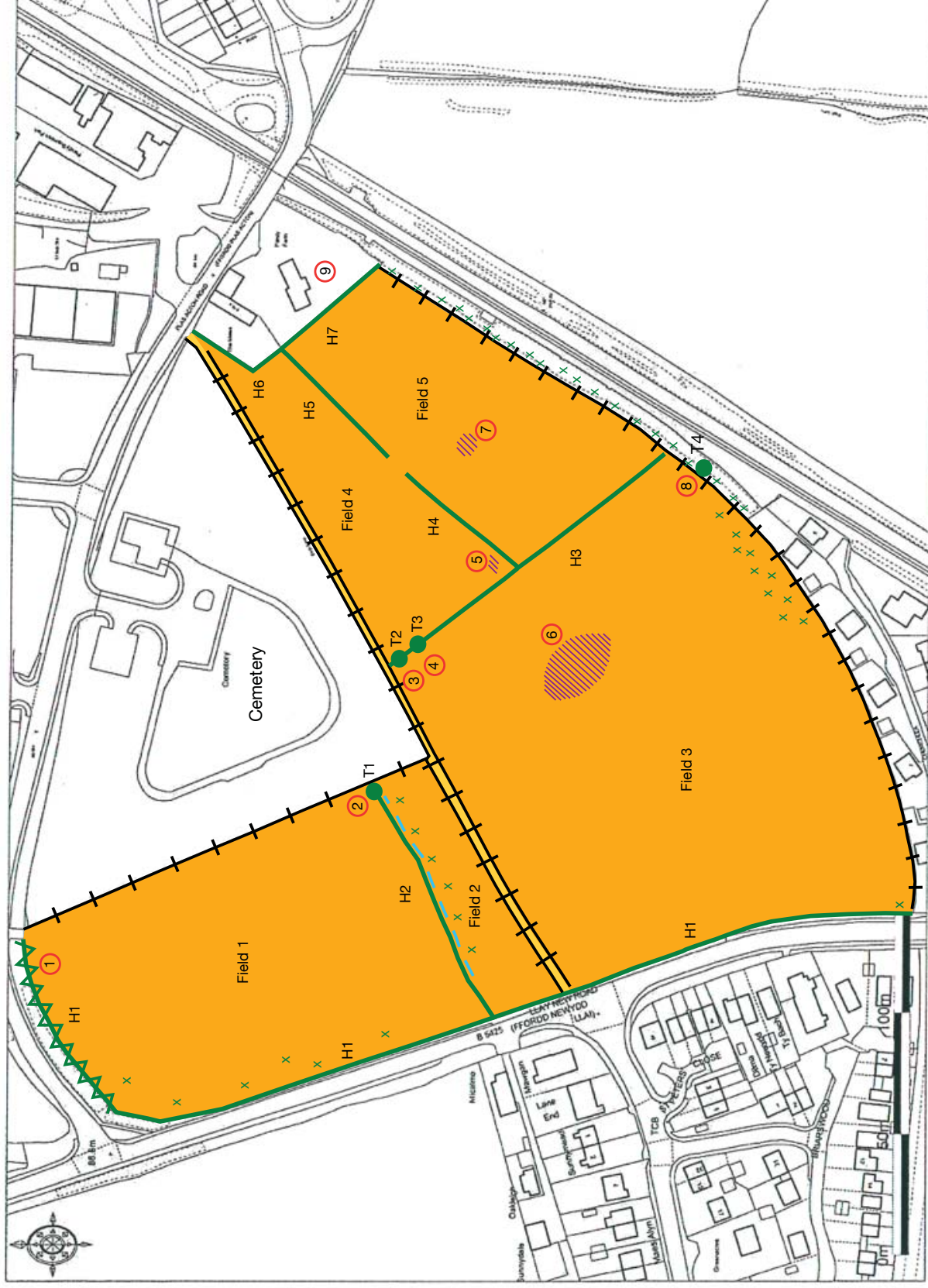
Drawing

Extended Phase 1 Habitat Survey Plan

Drawing No CE116-2	Version 1.1	Date 21.3.2014
Drawn by MP	Scale NTS	Revised 6.06.2014

Cheshire Ecology Ltd.

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