



The Holt, Rainhill

Ecological Appraisal



For Cordage Estates Limited

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Executive Summary

Contents	Summary
Site Location	The site is located off Holt Lane, Rainhill, Prescot in the metropolitan borough of Knowsley and is centred at Ordnance Survey National Grid Reference SJ 48221 91847.
Proposals	Proposals include the construction of a new convenience store with an overall floor space of 343m ² on the existing carpark, re-configuration of the remainder of the carpark and demolition of the outbuilding associated with the public house. The current proposals indicate that public house and vegetation adjacent to the existing car park is to be retained as part of the development.
Existing Site Information	No existing site information was made available for this assessment.
Scope of this Survey(s)	The scope of this survey was to record broad habitat types in accordance with the <i>Handbook for Phase 1 habitat survey, a technique for environmental audit</i> (JNCC, 2010). In addition the potential for the site to support notable or protected species was recorded in accordance with <i>Guidelines for Preliminary Ecological Appraisal</i> (CIEEM, 2017). The information gathered during the survey was supported by information provided by the LERC and MAGIC, to contextualise the results.
Results	The site comprises a public house, outbuilding and associated car park. There are introduced shrubs forming some borders of the carpark and decorative planters/shrubbery near the pub itself, plus a small patch of scrub and amenity grassland. The following ecological constraints were identified on site: • Roosting bats: The public house and outbuilding offer moderate suitability for roosting bats. • Birds: The introduced shrub and scrub and buildings on site offer suitable nesting habitat for birds. • Hedgehogs: The ornamental shrub and scrub offer suitable habitat for refuging, commuting and foraging hedgehog. • Invasive species: Wall cotoneaster a schedule 9 invasive species under the W&CA was recorded on site.
Recommendations	Further surveys • Roosting bats: A dusk emergence and a dawn emergence survey is recommended for each building. These are to be undertaken May – September inclusive, with at least one visit between May and August. Survey visits must be separated by at least two weeks. Mitigation • Nesting Birds: It is recommended that vegetation clearance and building demolition/refurbishment works are avoided during the bird nesting season (March–September inclusive) or, if necessary, preceded by a search for nesting birds by a suitably experienced ecologist. If birds are found to be nesting, then work on or near the



	area will not be able to legally proceed until all the young birds have fledged. • Hedgehogs: Ideally site clearance should take place during March and October, outside the hibernation period. Any animals discovered during vegetation clearance should be placed inside a ventilated cardboard box and relocated to a suitable site. • Invasive species: Production and implantation of a method statement to prevent the spread of and eradicate invasive species. Enhancement • Beneficial planting: Planting of new areas of soft landscaping with insect-attracting, native species of local provenance, to enhance the site's ecology. • Tree Planting: Planting of at least three native trees on site. • Birds: Install 2 bird boxes on building, retained trees or within hedgerow after construction work has finished. • Bats: Install 2 bat boxes on new building after construction work has finished.
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Glossary

ACIEEM	Associate Member of Chartered Institute of Ecology & Environmental Management
BCT	Bat Conservation Trust
BoCC	Birds of Conservation Concern
BSI	British Standard Institute
BTO	British Trust for Ornithology
CIEEM	Chartered Institute of Ecology & Environmental Management
CRoW Act	Countryside and Rights of Way Act 2000
DEFRA	Department for the Environment, Food and Rural Affairs
EcIA	Ecological Impact Assessment
ECOW	Ecological Clerk of Works
EPSL	European Protected Species Licence
GCN	Great Crested Newt
Habitat Regulations	Conservation of Habitats and Species Regulations 2017 (as amended)
HAP	Habitat Action Plan
Hedgerow Regulations	Hedgerow Regulations 1997
HPI	Habitat(s) of Principal Importance
HRA	Habitats Regulations Assessment
IRZ	Impact Risk Zone of a Site of Special Scientific Interest
JNCC	Joint Nature Conservation Committee
LERC	Local Ecological Record Centre
LBAP	Local Biodiversity Action Plan
LWS	Local Wildlife Site
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
Natura 2000 site	A European site designated for its nature conservation value
NE	Natural England
NERC Act	Natural Environment and Rural Communities Act 2006
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Appraisal
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAP	Species Action Plan
SPA	Special Protection Area
SPI	Species of Principal Importance
SSSI	Site(s) of Special Scientific Interest
W&CA	Wildlife & Countryside Act 1981 (as amended)



1.0 Introduction

1.1 Background

WYG was commissioned by Cordage Group on behalf of Cordage Estate Limited on 27th January 2020 to undertake an Ecological Appraisal of the site known as The Holt, Rainhill (hereafter referred to as “the site”).

This report has been prepared by WYG Consultant Ecologist Tom McClellan-West BSc (Hons) MSc ACIEEM and the conditions pertinent to it are provided in Appendix A.

1.2 Site Location

The site is located off Holt Lane, Rainhill, Prescot in the metropolitan borough of Knowsley and is centred at Ordnance Survey National Grid Reference SJ 48221 91847.

The site comprised of an operational public house, associated outbuilding and car park, and small areas of ornamental shrub planting and amenity grassland. The site is immediately bounded by residential properties to the north and west, Holt Lane to the east, and the A57 to the south.

Within the wider landscape is a mosaic of residential and commercial properties and open green spaces attributed to local parks. Approximately 0.7km north is the Eccleston Park golf course, whilst Blundell’s Hill Golf Club and more rural landscapes lie approximately 1.2km south of site.

1.3 Development Proposals

Proposals include the construction of a new convenience store with an overall floor space of 343m² on the existing carpark. In addition re-configuration of the remainder of the carpark and demolition of the outbuilding associated with the public house is included in this proposal. The current proposals indicate that public house and vegetation adjacent to the existing car park is to be retained as part of the development. The proposed development plans are given in Appendix B.

1.4 Purpose of the Report

The purpose of this report is to complete:

- A desk study to obtain existing information on statutory and non-statutory sites of nature conservation interest and relevant records of protected/notable species within the site and its zone of influence (2km);
- An extended Phase 1 habitat survey, involving a walkover of the site to record habitat types and dominant vegetation, including any invasive species, and a reconnaissance survey for evidence of protected fauna or habitats capable of supporting such species; and
- An assessment of the potential ecological receptors present on site, identify any constraints they pose to future development and (if possible) any recommendations for any further surveys, avoidance, mitigation or enhancement measures that are needed (as appropriate).

Note that scientific names are provided at the first mention of each species and common names (where appropriate) are then used throughout the rest of the report for ease of reading.

A summary of the key legislation is also provided in Appendix C.

2.0 Methodology

2.1 Desk Study

2.1.1 Local Ecological Records Centre

Information was requested from the LERC – ‘Merseyside Biobank’ for information on any nature conservation designations and protected or notable species records within 2km of the site.

The data search covered:

- Statutory designated sites for nature conservation, namely SACs, SPAs, Ramsar sites, SSSIs, NNRs and LNRs;
- Non-statutory designated sites for nature conservation, namely LWS;
- Legally protected species, such as great crested newts *Triturus cristatus*, badger *Meles meles* and bats;
- Notable habitats and species, such as those listed as Habitats or Species of Principal Importance (HPIs or SPIs); and
- Priority habitats or species within the North Merseyside LBAP.

The data search did not cover:

- Tree Preservation Orders (TPOs); or
- Conservation Areas designated for their special architectural and historic interest.

2.1.2 Online Resources

A search for relevant information was also made on the following websites:

- MAGIC www.magic.gov.uk - DEFRA’s interactive, web-based database for statutory designations and information on any EPSL applications that have been granted in the local area.
- NBN Atlas <https://nbnatlas.org/> - for records of protected and notable species.

Note that the use of some NBN Atlas data is limited (e.g. commercial use of data provided under a CC BY-NC licence is not possible) therefore we may not be able to report full details of those records in such cases.

2.2 Field Surveys

The following methodologies have been used to identify the ecological receptors present on or near the site, which are relevant to the proposed development.

2.2.1 Habitats

An extended Phase 1 habitat survey was undertaken on the site on 28th January 2020 by WYG Consultant Ecologist Tom McClellan-West BSc (Hons) MSc ACIEEM. The weather conditions were dry, cold and overcast, with intermittent sunny spells.

The vegetation and broad habitat types within the site were noted during the survey in accordance with the categories specified by the *Handbook for Phase 1 habitat survey, a technique for environmental audit* (JNCC, 2010). Dominant plant species were recorded for each habitat present using nomenclature according to Stace (2019). The site was also appraised for its suitability to support notable flora, with regard to the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017).

2.2.2 Protected & Notable Species

The site was inspected for evidence of, and its potential to support, protected or notable species, especially those listed under the Schedule 2 of the Habitat Regulations, Schedule 5 of the W&CA, the CRow Act, those given extra protection under the NERC Act, and species included in the North Merseyside LBAP.

Great Crested Newt

The site was appraised for its suitability to support GCN. The assessment was based on Guidance outlined in the *Herpetofauna Workers' Manual* (Gent & Gibson, 2003) and the *Great Crested Newt Conservation Handbook* (Langton, Becket & Foster, 2001).

Bats

Roosting Bats – Buildings / Structures / Trees

Any suitable buildings, structures or trees on site were assessed from the ground for their suitability to support breeding, resting and hibernating bats using survey methods based on the BCT *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016) – hereafter referred to as the 'BCT Guidelines'. The categories used to classify the bat roost suitability of any features found, are explained in Table 1 below.

Table 1 Categories of Bat Roost Suitability (BCT Guidelines)

Suitability	Typical Roosting Features
Negligible	Negligible habitat feature on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis & potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Foraging/commuting Bats

The BCT Guidelines use the criteria in Table 2 below to categorise the potential value of habitats and features for use by foraging and commuting bats and these have been used to characterise the value of this site.

Table 2 Categories of Habitat Suitability (BCT Guidelines)

Suitability	Typical Foraging & Commuting Features
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Reptiles

The site was appraised for its suitability to support reptiles. The assessment was based on guidance outlined in the *Herpetofauna Workers' Manual* (Gent & Gibson, 2003).

Badgers

The site was surveyed for evidence of badger setts or other badger activity such as paths, latrines or signs of foraging. Methodologies used and any setts recorded were classified according to published criteria – *Surveying Badgers* (Harris, Cresswell & Jefferies, 1989).

Other Species

The site was also appraised for its suitability to support other protected or notable fauna including mammals, amphibians, birds and invertebrates with regard to the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017) and *BS42020:2013 Biodiversity – Code of Practice for Planning and Development* (BSI, 2013). Evidence of any current or historical presence of such species was recorded.

2.2.3 Invasive Species

The site was searched for evidence of invasive plant species, such as Japanese knotweed *Reynoutria japonica* (formerly *Fallopia japonica*), Indian (Himalayan) balsam *Impatiens glandulifera*, giant



hogweed *Heracleum mantegazzianum*, wall cotoneaster *Cotoneaster horizontalis* and rhododendron *Rhododendron ponticum* × *Rhododendron maximum*. A full list of all invasive plant species is provided in Appendix C.

2.3 Limitations

The optimal period to undertake an extended Phase 1 habitat survey is April-September. The survey was completed in January which is outside the optimal survey window. However, given the simple nature of habitats on site, this is not considered to be a limitation as accurate assessment of these habitats and the dominant species of each type of vegetation were visible and identifiable.

A bat roost assessment of the public house was completed externally only, no internal access was gained. Based on anecdotal evidence and the content of the asbestos register (Eurosafe, 2019) there are thought to be only two significant roof voids within the main portion of the public house, and another within the one story extension.

To determine presence or likely absence of protected species usually requires multiple visits at suitable times of the year. As a result, this survey focuses on assessing the potential of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to those given protection under UK or European wildlife legislation. This report cannot therefore be considered a comprehensive assessment of the ecological interest of the site. However, it does provide an assessment of the ecological interest present on the day the site was visited and highlights areas where further survey work may be recommended.

The above limitations are not considered likely to affect conclusions drawn within this report.

The details of this report will remain valid for a period of **18 months** from the date of the survey (i.e. until 28th July 2021), after which the validity of this assessment should be reviewed to determine whether further updates are necessary. Note that the recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or development proposals which this report was based on.

3.0 Baseline Conditions

3.1 Designated Sites

There are no statutory designated sites within a 2km radius of the site boundary. The following non-statutory sites of ecological importance have been identified within 2km of the site boundary.

Table 3 Local Wildlife Sites Within 2km

Designation	Site Name	Approximate Distance & Direction	Summary of features
St Helens LWS	Pendlebury Brook (SJ493920-SJ515914)	1.06km E	A stretch of Pendlebury Brook which provides habitat for water voles <i>Arvicola amphibius</i> .
St Helens LWS	Parrens Covert	1.18km SW	A relict heath with broadleaf woodland and pond and surrounded by deep ditches with water.
St Helens LWS	Blundell Hills Golf Course	1.24km S	A golf course containing a range of habitats including, woodland, scrub, wetlands and hedgerows. These habitats support a high diversity of species and include a number of nationally, regionally and locally rare species.
St Helens LWS	Reeve Court Woodland and grassland	1.30km NE	Diverse range of habitats present including woodlands, wetlands, grasslands and a rock exposure.
Knowsley LWS	Woodland, Sandfield Park	1.41km SW	A mature, predominantly broadleaf woodland with a pond, acidic grassland and scrub
Knowsley LWS	Lickers Lane Wood	1.53km SW	A long, narrow broadleaf woodland with a dense canopy and associated neutral grassland.
St Helens LWS	Prescot Reservoirs No 3 & 4	1.67km NW	This site comprises of two reservoirs and a disused dry reservoir. The disused reservoir and areas surrounding reservoirs 3 & 4 have now been colonised by a diverse and species rich grassland including species such as, Northern Marsh orchid <i>Dactylorhiza purpurella</i> and Common Spotted orchid <i>Dactylorhiza fuschii</i> .
Knowsley LWS	Stadt Moers Q4	1.80km SW	A large area of semi-improved neutral grassland with areas of scrub and developing broadleaf woodland.
Knowsley LWS	Knowsley Park	1.81km NW	Ancient parkland and estate on a mix of acidic(peat) and neutral soils with sandstone exposures along the brooks. Much coniferous planting has taken place although several of the woodlands contain plants indicative of ancient semi-natural woodland. Other habitats include dams with open water, acidic grassland, remnant heath and mire. The Park also has populations of bats and other protected species.
St Helens LWS	The Rough woodland	1.82km SE	A semi-natural woodland dominated by oak <i>Quercus robur</i> and sycamore <i>Acer</i>

Designation	Site Name	Approximate Distance & Direction	Summary of features
			<i>pseudoplatanus</i> , the woodland contains abundant stands of English bluebell <i>Hyacinthoides non-scripta</i> as well as locally rare plant species.
Knowsley LWS	Copses of A58, Prescott	1.84km NW	A lightly wooded area with neutral grassland and a small pond. Good regeneration of oak and birch <i>Betula</i> sp. is occurring.

The site is located within the IRZ for the Merseyside Estuary SSSI, located approximately 8.2km south. In addition to the above designations, the nearest Natura 2000 site is The Mersey Estuary Ramsar and SPA, approximately 8.2km south of the site boundary.

3.2 Habitats

The following Habitats of Principal Importance were identified through a MAGIC search of 2km from the site boundary (Table 4).

Table 4 Habitats of Principal Importance

Habitat of Principal Importance.	Number within 2km	Nearest record: Distance & Direction	Confidence in classification of nearest site*
Deciduous Woodland	<10	1.3km, NE	Low
Lowland Meadows	1	1.6km, NW	Medium
Good quality semi-improved grassland	1	1.9km, E	Low

*High= NVC data <5 years old, Medium= Inventory <10 years old, with NVC data or with corresponding Higher Level Stewardship option, Low = All other polygons.

The following habitats have been identified through our assessment, please refer to detailed Target Notes included in Appendix D as appropriate and shown on Figure 2:

3.2.1 Scattered Scrub

Two areas of scattered scrub were recorded. One was present along the western edge of the carpark on site, the other within amenity grassland (TN4). The larger area was comprised of three individual hawthorn *Crataegus monogyna* stands, 3-4m in height that have been colonised by ivy *Hedera helix*. The other, smaller area was also comprised of ivy clad hawthorn of a similar height.

3.2.2 Amenity Grassland

A small area of amenity grassland (TN5) surrounded a small portion of the carpark and the whole of the garden (TN6) of the public house (TN10). It was dominated by annual meadow grass *Poa annua* with interspersed herbs including common groundsel *Senecio vulgaris*, dandelion *Taraxacum officinale* agg. and chickweed *Stellaria media*.



3.2.3 Ephemeral Herbs

The most significant area of ephemeral herbs existed immediately surrounding the scattered scrub along the western edge of the carpark (TN4). This included sparse growths of annual meadow grass and herbaceous species including common groundsel, petty spurge *Euphorbia peplus* and a speedwell *Veronica* spp.

Ephemeral herbs also made up the ground layer of introduced shrub areas (see section 3.2.4) and were sparsely distributed around areas of hardstanding in quantities too small to map.

3.2.4 Introduced Shrub

Introduced shrubs were recorded in several areas on site. The first was along the northern boundary of the car park (TN1). These included ornamental species such as broad leaved sage *Salvia officinales*, eastern white-cedar *Thuja occidentalis*, Japanese camellia *Camellia japonica* and white spruce *Picea glauca*. Within the ground layer of this area was a number of herb species including common groundsel, common sowthistle *Sonchus oleraceus* and hairy bittercress *Cardamine hirsute*. Immediately adjacent to this area was a single stand of wall cotoneaster *Cotoneaster horizontalis* (TN2 – see section 3.3.10).

Another area of introduced shrub existed on the western boundary of the carpark (TN3) and consisted of wild privet *Ligustrum vulgare*, which has been encroached by ivy. The ground layer consisted of sparse growths of annual meadow grass and herbaceous species such as chickweed, common daisy *Bellis perennis*, dandelion, petty spurge, and a singular specimen of bluebell species *Hyacinthoides* spp. (considered likely to be a garden escape species).

Ornamental plant boxes (TN7) associated with the public house garden (TN6) which contained yucca *Yucca* sp. and Fortune's spindle *Euonymus fortune*. These boxes had some herbs that had begun to colonise them including common groundsel, common sorrel *Rumex acetosa* and yarrow *Achillea millefolium*.

There were also ornamental shrubs (TN8 and TN9) associated with the public house entrance. These include common myrtle *Myrtus communis*, evergreen spindle *Euonymus japonicus*, late cotoneaster *Cotoneaster lacteus*, pampas grass *Cortaderia selloana* and wild privet.

3.2.5 Boundary Features – Walls and Fences

Within the site boundary, there is a stone retaining wall to the south of site, marking the boundary of the public house grounds from the adjacent pavement. There is a wooden picket fence that runs adjacent to this wall, marking off a small area that contains ornamental plant boxes (TN7). An additional rope fence separates the public house garden (TN6) from the carpark (TN10).

3.2.6 Hardstanding

A large proportion of the site is hardstanding. This includes a carpark, pavements and courtyard of the public house (TN10).

3.2.7 Buildings

There are two buildings on site including the Victorian era Holt public house (TN10) and associated outbuilding (TN11). These buildings are described and assessed in section 3.3.3 of this report.

3.2.8 Other Habitats – Artificial Turf

An area of artificial turf associated with the garden area of the public house is located at TN6.

3.3 Protected & Notable Species

3.3.1 Great Crested Newts

The desk study found no records of GCN within a 2km radius from the site boundary. A search on MAGIC revealed that, at the time of writing, no EPSLs for GCN have been granted within 2km of the site.

OS mapping and aerial imagery for the site and surrounding area determined that there are no ponds present within 500m of the site. In addition, no suitable aquatic or terrestrial habitat for GCN was recorded on site. Given the lack of records and absence of suitable aquatic or terrestrial habitat for GCN, **this species is considered highly unlikely to form a constraint to development and are not discussed further in this report.**

3.3.2 Reptiles

The desk study found one historical record of grass snake *Natrix helvetica*, approximately 0.4km WSW from the site boundary, recorded in 1998. However, the site offers no suitability for reptiles. Furthermore, there is little suitable habitat in the surrounding area and the dense urban nature of this area restricts dispersal onto site. **Therefore reptiles are not considered to be a constraint to this development and are not discussed further in this report.**

3.3.3 Bats

The desk study found a total of 79 records of bats within a 2km radius of the site boundary. A search on MAGIC revealed that no EPSLs for bats have been granted within 2km of the site.

Bat roost records and general observation records within 2km of the site are summarised in Table 5 (note where multiple general records for a species has been provided, the nearest record to the site has been listed in the table).

Table 5 Bat Records and Roost Locations (supplied by Merseyside Biobank)

Species	Date	Distance & Direction
Roosts		
Bat Species <i>Chiroptera sp.</i>	2011	1.4km SSW
Common pipistrelle <i>Pipistrellus pipistrellus</i>	2015	1.4km NE
Pipistrelle species <i>Pipistrelle sp.</i>	1989	1.9km SSE
Bat Records (General)		
Bat Species <i>Chiroptera sp.</i>	2011	1.1km ENE
Brown long-eared <i>Plecotus auritus</i>	2006	1.8km WNW
Common pipistrelle	2008	0.3km SE
Noctule <i>Nyctalus noctula</i>	2011	1.9km W
Pipistrelle species	2015	1.0km N
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	2012	1.3km SE

Roosting bats – Buildings

Table 6 details identified potential roosting features, the location of these are shown on Figure 3. The main public house (TN10) and associated building (TN11) have numerous features suitable for roosting bats, but are unsuitable for larger numbers of bats or high conservation status roosts. Therefore both buildings are considered to have **Moderate** suitability for use by roosting bats.

Table 6 Potential Roost Features on Buildings

Building Reference	Building Description	Bat Roost Features and Figure 3 Reference Number	Bat Roost Suitability
TN10	This building comprised of a two-storey Victorian era public house building with multi-pitched tiled roof and brickwork walls. Attached to the main building is a multi-level flat roofed section, the roof comprised of roofing felt and walls of more modern brickwork relative to the main building. It is likely that the building has multiple roof voids, with two roof hatches identified by (Eurosafe, 2019) during an asbestos survey. These areas were inaccessible during the asbestos survey and therefore for safety reasons an internal bat survey was not completed. The public house is currently in use for commercial and residential purposes.	1 – Gap in soffit box 2 – Missing mortar in ridge tile 3 – Larger mortar gap in ridge tile 4 – Gap between roof tiles and soffit/fascia 5 – Gap behind alarm housing 6 – Mortar gaps in brickwork 7 – Mortar gap between upper bricks and soffit 8 – Gap adjacent to window frame 9 – Service holes 10 – Gap between window frame and brickwork 11 – Mortar gaps around rounded window 12 – Gap between fascia board and gutter hopper 13 – Decorative wall panel, with four distinct gaps 14 – Roofing tile gaps 15 – Inactive chimney blocks with open access and missing mortar 16 – Gap in lead flashing 17 – Vent panels 18 – Gap between gutter hopper and wall/fascia board gap 19 – Lifted roofing felt 25 – Gaps where brick, mortar and roofing felt meet	Moderate
TN11	A multi-height building, likely Victorian era appearing to be one-storey throughout. Roofs included both pitched tile and flat roof, with the brickwork older on the sections of the building associated with pitched roofs. Internal access was gained to a portion of this building, currently used as an external store to the public house. The roofing materials were viewable, with old support beams and roofing felt visible. Due to the presence of felt there was no light spill from the	2 – Missing mortar in ridge tile 6 – Mortar gaps in brickwork 14 – Roofing tile gaps 16 – Gap in lead flashing 19 – Lifted roofing felt 20 – Large gap between roofing panel and rendered wall 21 – Gap between fascia boarding and brickwork 22 – Gap between roofing tile and top brick of wall 23 – Missing bricks 24 – Mortar gap between roofing beam and supporting bricks	Moderate

Building Reference	Building Description	Bat Roost Features and Figure 3 Reference Number	Bat Roost Suitability
	roof. No evidence of current or historic bat presence was recorded. The taller area of the building and the flat roof section were inaccessible, but are used for storage purposes.		

Foraging and commuting bats

At least four bat species have been recorded within the wider area, with closest having been recorded approximately 300m from site.

Semi natural habitats recorded were species poor (unlikely to support a diverse invertebrate assemblage) and isolated from the wider area. However, it is possible that low numbers of bat species may use the site for foraging/commuting purposes. Therefore, in accordance with BCT guidelines the site offers **low suitability** for commuting and foraging bats..

3.3.4 Badger

The desk study found a singler record of badger within a 2km radius of the site boundary. Although badger are present within the wider landscape, no evidence to indicate presence of badger was recorded and the site does not provide suitable habitat to support badger sett creation or foraging. In addition, the well-lit heavily urbanised areas surrounding the site do not provide suitable habitat for commuting and foraging badger. **It is considered highly unlikely that the presence of badger will form a constraint to development on site, therefore this species is not discussed further in this report.**

3.3.5 Otter & Water Vole

The desk study found no records of otter within a 2km radius of the site. The desk study found three records of water vole, the latest record is 2009, approximately 1.9km east of the site boundary.

There is no suitable habitat for otter or water vole on or adjacent to site. **Therefore these species are considered highly unlikely to form a constraint to development and are not discussed further in this report.**

3.3.6 Birds

The desk study returned a total of 44 records of birds within a 2km radius of the site. This included records of barn owl *Tyto alba* a Schedule 1 species under the W&CA, and 10 notable species listed under the NERC Act or the BoCC Red list (Table 7).

Table 7 Notable Bird Records (supplied by Merseyside Biobank)

Species	Number of records	Status	Nearest record: Distance and Direction
Barn owl	1	W&CA Sch 1	1.6km N
Cuckoo <i>Cuculus canorus</i>	1	NERC Act & BOCC Red list	1.5km SSE
Grey Partridge <i>Perdix perdix</i>	4	NERC Act & BOCC Red list	1.5km SSE
House Sparrow <i>Passer domesticus</i>	5	NERC Act & BOCC Red list	0.4km SE

Lapwing <i>Vanellus vanellus</i>	3	NERC Act & BOCC Red list	1.1km NNW
Skylark <i>Alauda arvensis</i>	4	NERC Act & BOCC Red list	1.5km SSE
Tree Sparrow <i>Passer montanus</i>	1	NERC Act & BOCC Red list	1.5km SSE
Yellowhammer <i>Emberiza citrinella</i>	1	NERC Act & BOCC Red list	1.5km SSE
Linnet <i>Linaria cannabina</i>	2	BOCC Red list	1.2km SSE
Song Thrush <i>Turdus philomelos</i>	4	BOCC Red list	0.3km SSE
Starling <i>Sturnus vulgaris</i>	3	BOCC Red list	1.5km SSE

The habitats on site are unsuitable to support barn owl. However, species such as house sparrow and starling may occur on site due to the presence of typical nesting habitats. Furthermore the introduced shrubs and scrub on site likely provide limited nesting and foraging opportunities for common, disturbance tolerant species such as blackbird *Turdus merula* and pigeon species. The building on site has historically been used for nesting purposes, with a disused pigeon nest present at the time of survey (TN12).

3.3.7 Invertebrates

The desk study returned results for seven species of NERC Act butterflies and moths within a 2km radius of the site boundary (Table 8).

Table 8 NERC Act Invertebrate Records (supplied by Merseyside Biobank)

Species	Number of records	Nearest record: Distance & Direction	Preferred food plant
Small Heath <i>Coenonympha pamphilus</i>	3	1.8 km NNE	Willowherbs (<i>Epilobium</i> spp.).
Wall <i>Lasiommata megera</i>	15	1.7 km E	Tor-grass <i>Brachypodium pinnatum</i> , false brome <i>B. sylvaticum</i> , cock's-foot <i>Dactylis glomerata</i> , bents <i>Agrostis</i> spp. wavy hair-grass <i>Deschampsia flexuosa</i> and Yorkshire-fog <i>Holcus lanatus</i>
Broom Moth <i>Ceramica pisi</i>	1	1.6 km NW	Broom <i>Cytisus scoparius</i> , but also on bracken <i>Pteridium aquilinum</i> and other trees and plants.
Buff Ermine <i>Spilosoma lutea</i>	150	0.4 km NE	Range of herbaceous plants, especially common nettle <i>Urtica dioica</i> , and woody species including honeysuckle <i>Lonicera periclymenum</i> and birches <i>Betula</i> sp.
Crescent <i>Helotropha leucostigma</i>	2	1.6 km NNW	yellow flag <i>Iris pseudacorus</i>
Rosy Minor <i>Litoligia literosa</i>	4	1.6 km NNW	Several types of grass
Sallow <i>Cirrhia icteritia</i>	62	1.6 km NNW	Willow <i>Salix</i> sp.

* Food plant data from either Butterfly Conservation (2020) or UK Moth (2020)

No invertebrates were recorded on site during the survey, however the habitats recorded on site including the introduced shrub and scrub offer limited potential to support common and widespread species. Food species for small heath, buff ermine and rosy minor were recorded on site. However,

these plants were in small quantities and given the urban nature of surrounding habitats it is highly unlikely that significant populations of these species are present on site. **Therefore invertebrates are not discussed further within this report.**

3.3.8 Notable Flora

The desk study returned records for native bluebell *Hyacinthoides non-scripta*, a W&CA Schedule 8 species, the closest record was 0.2km NNW of the site boundary. Additionally there was one record of greater water-parsnip *Sium latifolium*, a NERC Act species, 1.8km WSW of the site boundary.

No notable flora were recorded on site and the habitats on site are not suitable for native bluebell or greater water-parsnip, therefore **notable flora are not discussed further within this report.**

3.3.9 Other Notable Fauna

The desk study returned a total of 4 species listed under the NERC Act (Table 9).

Table 9 Notable fauna listed under the NERC Act (supplied by Merseyside Biobank)

Species	Number of records	Nearest record: Distance and Direction
Common toad <i>Bufo bufo</i>	14	0.9km NE
European hedgehog <i>Erinaceus europaeus</i>	27	1.1km ESE
Brown hare <i>Lepus europaeus</i>	3	1.7km E
Eurasian red squirrel <i>Sciurus vulgaris</i>	1	1.7km NW

The site offers limited habitat for European hedgehog only. The understory of introduced shrubs and scrub on site offer the only suitable refuge areas and with amenity grassland included, may also offer suitable foraging and commuting opportunity. The site is connected with neighbouring residential gardens and therefore the site may contribute to a hedgehog's home range.

3.3.10 Invasive Non-Native Species

The desk returned records of six species listed under the W&CA schedule 9 (Table 10).

Table 10 Invasive Non-Native Species records (supplied by Merseyside Biobank)

Species	Number of records	Nearest record: Distance & Direction
Himalayan Cotoneaster <i>Cotoneaster simonsii</i>	1	0.8km NW
Indian Balsam <i>Impatiens glandulifera</i>	11	0.7km ENE
Japanese Knotweed <i>Fallopia japonica</i>	58	0.2km NNW
Japanese Rose <i>Rosa rugosa</i>	2	1.2km SSW
Montbretia <i>Crocasmia pottsii x aurea = C. x crocosmiiflora</i>	4	0.8km NW
Rhododendron ponticum <i>Rhododendron ponticum</i>	32	0.3km NW

A singular stand of wall cotoneaster was recorded within an area of introduced shrub on site (TN2).

3.4 Importance of Ecological Features

In line with the CIEEM PEA Guidelines, and based on the above baseline information, the importance of each ecological feature recorded within the study area is given in Table 11 below. The categories used are those which are defined in Section 4 of the CIEEM EcIA Guidelines (2018 v1.1):

Table 11 Importance of Ecological Features

Feature	Importance	Rationale
Mersey Estuary Ramsar and SPA	International	Presence of salt marsh, extensive intertidal sand- and mud-flats, with smaller areas of brackish marsh, rocky shoreline and boulder clay cliffs. Site is of major importance for wintering ducks and waders.
Mersey Estuary SSSI	National	Underpins the Mersey Estuary Ramsar and SPA. Designated due to the presence of intertidal sand and mudflats that are of major importance for wildfowl.
Pendlebury Brook (SJ493920-SJ515914) LWS	County	A stretch of Pendlebury Brook which provides habitat for water voles.
Parrens Covert LWS	County	A relict heath with broadleaf woodland and pond and surrounded by deep ditches with water.
Blundell Hills Golf Course LWS	County	A golf course containing a range of habitats including, woodland, scrub, wetlands and hedgerows. These habitats support a high diversity of species and include a number of nationally, regionally and locally rare species.
Reeve Court Woodland and grassland LWS	County	Diverse range of habitats present including woodlands, wetlands, grasslands and a rock exposure.
Woodland, Sandfield Park LWS	County	A mature, predominantly broadleaf woodland with a pond, acidic grassland and scrub
Lickers Lane Wood LWS	County	A long, narrow broadleaf woodland with a dense canopy and associated neutral grassland.
Prescot Reservoirs No 3 & 4 LWS	County	This site comprises of two reservoirs and a disused dry reservoir. The disused reservoir and areas surrounding reservoirs 3 & 4 have now been colonised by a diverse and species rich grassland including species such as, Northern Marsh orchid and Common Spotted orchid.
Stadt Moers Q4 LWS	County	A large area of semi-improved neutral grassland with areas of scrub and developing broadleaf woodland.
Knowsley Park LWS	County	Ancient parkland and estate on a mix of acidic(peat) and neutral soils with sandstone exposures along the brooks. Contain plants indicative of ancient semi-natural woodland. Other habitats include dams with open water, acidic grassland, remnant heath and mire. The Park also has populations of bats and other protected species.
The Rough woodland LWS	County	A semi-natural woodland dominated by oak and sycamore, the woodland contains abundant stands of English bluebell as well as locally rare plant species.

Feature	Importance	Rationale
Copse's of A58, Prescott LWS	County	A lightly wooded area with neutral grassland and a small pond. Good regeneration of oak and birch is occurring.
Scattered Scrub	Negligible	Five stands of hawthorn present, offering no diversity in species.
Introduced shrub	Negligible	Limited diversity and a number of introduced or non-native species present.
Amenity Grassland	Negligible	Limited diversity of plant species over a small area.
Ephemeral Herbs	Negligible	Limited diversity of plant species over a sparse area.
Boundary Features – Walls and Fences	Negligible	Artificial structures that do not support any vegetation.
Hardstanding	Negligible	Limited ecological value due to inability for plants to colonise.
Buildings	Negligible	Building itself is negligible however it offers potential for use by protected and notable species.
Other Habitats – Artificial Turf	Negligible	Artificial surface, devoid of vegetation. Unable to support protected or notable species.
GCN	Negligible	No records or suitable habitat on site or within 500m.
Bats – Roosting	Unknown	Public house and outbuilding offer moderate suitability for roosting bats. Further surveys required.
Bats - Foraging and Commuting	Negligible	Extremely limited suitable habitat on site for foraging/commuting purposes, particularly compared to the wider landscape.
Badger	Negligible	Site is within an urban setting, with limited suitable habitat for badger, particularly when compared to the wider landscape.
Otter and Water Vole	Negligible	No suitable habitat exists for either species on or adjacent to site.
Birds	Local	Site offers potential nesting sites in the introduced shrubs and scrub on site as well as the buildings.
Notable flora	Negligible	No notable flora were recorded on site.
Hedgehog	Local	Suitable habitat for refuge, commuting and foraging is present on site.
Invasive Non-Native Species	Legal	Wall cotoneaster (Schedule 9 W&CA) found on site in an area of ornamental planting.
Either: International (incl. European) / National / Regional / County / Local / Negligible Or: Unknown (i.e. further surveys/information needed)		

The potential for the proposals to have adverse or beneficial impacts on these features, along with the need for any mitigation or enhancement measures are discussed in detail below.



4.0 Relevant Planning Policy & Legislation

4.1 Revised National Planning Policy Framework

A revised NPPF was issued on 19th February 2019 (Ministry of Housing Communities and Local Government, 2019) and currently supplements government Circular 06/2005, *Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System* (Office of the Deputy Prime Minister, 2005).

Circular 06/2005 states that the presence of protected species is a material consideration in the planning process. Paragraph 170 of the NPPF also states that:

'Planning policies and decisions should contribute to and enhance the natural environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)*
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland*
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate*
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.*

The conservation and enhancement of wildlife is also specifically reference re: development within the National Parks or the Broads.

Paragraph 174 then goes on to confirmed that:

When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*



- c) *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
- d) *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.*

Regarding EcIA's and HRA's – any sites identified, or required, as compensatory measures for adverse effects on any Natura 2000/habitats site should also be given the same level as protection as the pSPA's and cSAC's themselves. In addition, when an application is being determined, Paragraph 177 clarifies that:

"The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site."

Paragraph 180 is also relevant as;

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:...

- c) *limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.*

4.2 Biodiversity 2020: A strategy for England's Wildlife & Ecosystem Services

Biodiversity 2020 (DEFRA, 2011) replaces the previous UK Biodiversity Action Plan and sets national targets to be achieved. The intent of Biodiversity 2020, however, is much broader than the protection and enhancement of less common species, and is meant to embrace the wider countryside as a whole.

The priority species and habitats considered under Biodiversity 2020 are the SPI & HPI detailed under NERC Act (see Appendix B for further details).

4.3 Local Biodiversity Action Plan

Local Biodiversity Action Plans (LBAPs) identify habitat and species conservation priorities at a local level (typically County by County) and are usually drawn up by a consortium of local Government organisations and conservation charities. Although they are no-longer managed at a national level many are still reviewed and updated at a local level.

The North Merseyside LBAP is the relevant document for this site and it contains the following Habitat & Species Action Plans:

Species Action Plans (SAP):



- Corn bunting *Emberiza calandra*
- Grey partridge *Perdix perdix*
- Lapwing *Vanellus vanellus*
- Skylark *Alauda arvensis*
- Song thrush *Turdus philomelos*
- Urban birds (including house sparrows *Passer domesticus*, house martins *Delichon urbicum* and swifts *Apus apus*)
- Bats
- Brown hare
- Red squirrel
- Water vole
- Common lizard
- Sand lizard *Lacerta agilis*
- Great crested newt
- Natterjack toad *Epidalea calamita*
- Dark green fritillary *Speyeria aglaja*
- Dragonflies
- Grayling butterfly *Hipparchia semele*
- Vernal mining-bee *Colletes cunicularius*
- Northern dune tiger beetle *Cicindela hybrida*
- Sandhill rustic moth *Luperina nickerlii*
- Native bluebell
- Dune helleborine *Epipactis dunensis*
- Purple ramping-fumitory *Fumaria purpurea*
- Isle of Man cabbage *Coincya monensis subsp. monensis*
- Petalwort *Petalophyllum ralfsii*
- Sand-grass *Mibora minima*
- 'Sefton Coast Plants'
- Stoneworts *Charales* sp.

Habitat Action Plans (HAP):

- Conifer woodland
- Lowland mixed broad-leaf woodland
- Wet woodland
- Lowland wood pasture and parkland
- Urban trees
- Lowland acid grassland
- Lowland heathland
- Urban grasslands
- Lowland raised bog
- Canals
- Ponds
- Reedbeds
- Coastal saltmarsh
- Coastal sand dunes
- Field boundaries
- Urban green infrastructure

It should be noted that the existence of a SAP or HAP does not always infer an elevated level importance for those features. These plans may be designed to encourage an increase in these habitats/species, rather than to protect a county-scarce feature (for example).

4.4 Local Plan

The Knowsley Metropolitan Borough Local Plan core strategy (adopted 2016) sets out a vision, key objectives and strategic planning policies for Knowsley up to and beyond 2028. Those policies relating to wildlife and protected sites and habitats are as follows:

Policy CS8 Green Infrastructure

Maintenance and Enhancement of Knowsley's Existing Green Infrastructure

1. *Knowsley's existing Green Infrastructure and its beneficial functions will be protected, managed and/or enhanced, primarily to:*
 - a. *Ensure more attractive and cleaner residential neighbourhoods;*
 - b. *Sustain and promote biodiversity (including designated sites, priority habitats and protected and endangered species) in accordance with importance and contribution to ecological networks;*



- c. Preserve the character and function of historic environments and valued landscapes;*
- d. Mitigate the effects of climate change and flood risk;*
- e. Mitigate air, water and noise pollution;*
- f. Provide local opportunities for sport, recreation and allotments; and*
- g. Provide sustainable transport linkages between residential neighbourhoods and easy access to employment and services.*
- 2. To achieve the above, planning powers and other interventions will be used to:*
 - a) Protect and enhance strategically important areas of greenspace;*
 - b) Ensure an appropriate quantity and improved quality of locally important open spaces, including outdoor sports provision (and ancillary facilities of appropriate scale);*
 - c) Promote effective movement of wildlife through a network of strategic green links, by protecting, maintaining and improving existing and new open spaces, water courses (including water quality) and biodiversity assets;*
 - d) Protect, enhance and/or introduce biodiversity into existing areas of Green Infrastructure, through integration into the design of new development and public realm projects;*
 - e) Improve accessibility for communities to greenspace offering leisure and recreation opportunities;*
 - f) Protect and where possible improve green paths and cycleways linking residential areas, existing strategic areas of greenspace, employment locations, local community services and leisure facilities;*
 - g) Work in partnership with other districts and relevant bodies at a landscape scale to minimise the impact of development upon Knowsley's existing biodiversity and geological assets, and sustain the protection afforded to internationally important sites, including supporting habitat, for biodiversity outside of the borough; and*
 - h) Deliver new integrated and functional Green Infrastructure that helps to mitigate and adapt to climate change, such as sustainable drainage systems, carbon capture and storage, soft landscaping and green roofs.*
- 3. Site allocations for greenspace will be identified in the Local Plan: Site Allocations and Development Policies document, with further guidance set out in the Developer Contributions Supplementary Planning Document or future Supplementary Planning Document as appropriate.*

Strategic Green Links

- 4. Knowsley's strategically important green links area*
 - a) Alt Corridor (Huyton) – stretching from Huyton Village through South Alt Park, Alt Park, Alt Meadows and into Stockbridge Village;*
 - b) Valley Corridor (Kirkby) – stretching through Valley Meadow, St. Chad's Park, Millbrook Park, Millennium Green and Mill Dam;*
 - c) Whiston to Cronton Corridor – stretching through Cronton, Stadt Moers Park and Whiston Greenway;*
 - d) Halewood Triangle – Halewood Park linkage with the Trans-Pennine Trail and to the national cycle network;*
 - e) M57 Green Belt Corridor; and*
 - f) Knowsley Hall Estate – including Knowsley Safari Park and Local Wildlife Sites.*

Green Infrastructure within the Liverpool City Region

- 5. Knowsley Council will work with partners to help deliver local and sub-regional programmes, initiatives and strategies to enhance Green Infrastructure.*



Approach to Green Infrastructure and New Development

6. *New development must be served by Green Infrastructure to meet the needs of residents and the local environment, in a manner which will:*
 - a) *Contribute to the creation of a high quality residential environment;*
 - b) *Provide access to high quality open space for leisure and recreational purposes;*
 - c) *Seek to protect, maintain and where possible enhance biodiversity within and around new developments according to their designation and significance to provide space for nature; and*
 - d) *Provide adequate mitigation and/or, as a last resort, compensation for Green Infrastructure or biodiversity loss, in circumstances where harm resulting from the development is otherwise unavoidable.*

Policy CS21 Greenspaces and Trees

Greenspace protection

1. *In supporting the wider Green Infrastructure functions of urban greenspace in accordance with Policy CS8, the Council will provide and maintain quantitative, qualitative and accessibility standards for different types of public open space.*
2. *New development which would result in the loss of urban greenspace, will not be permitted unless at least one of the following criteria are met:*
 - a) *A surplus of provision for all types of greenspace would be maintained relative to local standards;*
 - b) *The land is considered unsuitable in terms of size, location or character to prevent or address individual deficiencies of different types of greenspace relative to local standards;*
 - c) *Appropriate mitigation is provided through replacement facilities of at least an equal quantity, quality and accessibility;*
 - d) *The development is required to improve greenspace provision or for ancillary facilities to support sport or recreation; or*
 - e) *Where the proposal relates to the loss of indoor or outdoor sports provision, and there is no evidence of future or continuing need for sports use, or alternatively only land incapable of forming a playing pitch or sporting facility is affected and its release accords with either clause 2)a) or 2)b). 3)*
3. *Irrespective of whether criteria in 2) are met, unless the benefits of a proposal clearly outweigh the loss of urban greenspace, development will be resisted where it would significantly harm any existing or potential special qualities of greenspace in the area in terms of:*
 - a) *Visual amenity;*
 - b) *Residential amenity;*
 - c) *Biodiversity and environmental benefits;*
 - d) *Historical, cultural or community value;*
 - e) *Recreational benefits; or*
 - f) *Physical and/or visual linkages between adjoining urban greenspaces.*

Local Greenspace Standards

4. *The quantitative and accessibility standards for the provision of public open spaces within Substantial Residential Areas are set out in Table 9.1: Substantial Residential Area (SRA) Standards for Greenspace quantity and Accessibility for the following greenspace typologies:*
 - a) *Park and Garden;*



- b) Amenity Greenspace;*
 - c) Provision for Children and Young People; and*
 - d) Allotments.*
- 5. The Council's quantitative standards for Outdoor Sports Provision are set out in Table 9.2: Community Area Standards for Outdoor Sports Provision Quantity and Accessibility and seek to maintain an appropriate range of sites and address quantitative needs for individual sports at a Community Area level.*
- 6. The Council will keep the standards of provision referred to above under review and if necessary publish revised standards in a future Local Plan document or Supplementary Planning Document.*

Accessible and Quality Greenspaces

- 7. The Council will support improvements to existing and new areas of greenspace in accordance with best practice standards¹²⁷, to achieve the following requirements:*
 - a) Accessible, safe and secure locations for all members of the community to use;*
 - b) Clean and well maintained facilities, equipment and open spaces; and*
 - c) Conservation of natural features, wildlife, fauna, landscapes, buildings and other structural features, as appropriate.*
- 8. When considering proposals for new residential development, the Council will seek enhancements to greenspaces via on-site provision, new off site provision or enhancement of existing off site provision through developer contributions secured by legal agreement in accordance with Policy CS27: Planning and Paying for New Infrastructure, the Developer Contributions Supplementary Planning Document and/or a Community Infrastructure Levy Charging Schedule, as appropriate.*

Local Green Spaces

- 9. Any Local Green Spaces Designations which are formally designated will be identified in the Local Plan: Site Allocations and Development Policies or future Neighbourhood Plans (if applicable). This designation will only be used where the greenspace concerned is:*
 - a) Reasonably close to the community it serves;*
 - b) Demonstrably special to a local community and holds a particular local significance, for example because of its beauty, historic significance, recreational value (including as a playing field), tranquillity or richness of its wildlife; and*
 - c) Local in character and not an extensive tract of land.*

Enhancement of Natural and Semi-Natural Greenspace and Tree Protection

- 10. The Council will encourage proposals for new development to incorporate:*
 - a) Retention of existing trees, woodland, vegetation and other habitat features which offer a positive contribution to the local environment in terms of visual amenity, recreation value or biodiversity/wildlife interest;*
 - b) Appropriate planting of trees, other soft landscaping and installation of habitat features for the benefit of biodiversity; and*
 - c) Adequate replacement provision where tree loss is unavoidable, comprising two additional trees for every tree lost and taking account of species and size.*



4.5 Legislation

Full details of the UK legislation and offences which are relevant to the ecological receptors identified are included in Appendix B. However, based on the findings of our assessment, it is considered that the proposals will need to consider the following legal provisions:

- Disturbance or killing of an EPS (bats);
- Disturbance of nesting wild birds; and
- Cause of permit the spread of an invasive species (wall cotoneaster) into the wild.



5.0 Discussion

5.1 Designated Sites

Internationally Designated Sites

The Mersey Estuary Ramsar and SPA are located 8.2km south of the site boundary. The construction of a convenience store on site will not result in the direct loss or degradation of habitats which support qualifying features of the site Ramsar/SPA. In addition indirect effects are not anticipated as there are no water courses between the Mersey Estuary Ramsar/SPA which may facilitate the flow of pollutants to this designated site. Furthermore, as per IAQM guidelines the risk of dust from construction is negligible as the Mersey Estuary Ramsar/SPA is at a sufficient distance from the construction site and therefore it does not require screening (IAQM, 2014). In addition, proposed development will not result in an increase in the local population or local traffic levels. Therefore no further assessment or mitigation are required in relation to this Ramsar/SPA prior to undertaking works on site.

Sites of Special Scientific Interest

The site falls within the IRZ for the Merseyside Estuary SSSI, located approximately 8.2km south of the site boundary. However, works associated with the site are not listed on MAGIC as activities likely to result in an impact upon the designated site. For the reasons given for the Natura 2000 site above, this designated site is also considered to be located at a sufficient distance from site to avoid causing direct or indirect negative impacts upon the notifiable features of the SSSI. Therefore no further assessment or mitigation works are required in relation to the SSSI prior to undertaking works on site.

Local Wildlife Sites

The closest LWS (Pendlebury Brook SJ493920 – SJ1515914) is located approximately 1.06km east of the site boundary. However, no direct impacts from works associated with the site are likely to occur (or any other LWS recorded in section 3.1). This is due to similar reasons as those given above for the Natura 2000 and SSSI sites. Therefore, no further assessment or mitigation is considered necessary prior to undertaking works on site.

5.2 Habitats

Habitats of Principal Importance

The desk study revealed that three HPIs were present within 2km of the site, including 'Deciduous woodland' (1.3km north-east), 'Lowland Meadows' (1.6km north-west) and 'Good quality semi-improved grassland' (1.9km, east). However, none of the habitats recorded on site qualify as these HPIs. Furthermore the site is at a sufficient distance from these areas that direct or indirect effects are unlikely to occur. Therefore no further assessment or mitigation is considered necessary in relation to HPIs.

Habitats on site

No protected or notable habitats are present within or adjacent to the site. It is noted that the introduced shrub, scrub and amenity grassland along the western boundary of the carpark are at least partially retained. However, these habitats are of limited value overall and are ubiquitous in the



wider landscape. Therefore, no further assessment or mitigation is required in relation to habitats on site.

5.3 Protected & Notable Species

Bats

All bats and their roosts receive full protection both under The Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to:

- Intentionally kill, injure or take a bat;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat; or
- Disturb a bat while it is occupying a structure or place which it uses for that purpose.

Additionally the ODPM Circular for Biodiversity and Geological conservation 2005, protects foraging and commuting bats.

Roosting bats – Buildings

During external inspections, the public house and outbuilding were both assessed to have **moderate** potential for roosting bats.

The proposed plans (Appendix B) indicate that the outbuilding is to be demolished and a convenience store is to be built in close proximity to the public house. **Therefore, it is considered that the proposed works may destroy any bat roosts present within the outbuilding and indirectly impact any roosting bats present in the public house through disturbance from noise, lighting and/or vibration.**

Surveys are recommended to establish the presence/likely absence of roosting bats within both buildings. In line with the current BCT Guidelines (Collins, 2016), this should comprise two nocturnal survey visits per building between May and September inclusive, with at least one of the visits conducted before the end of August. The surveys on each building should be spaced at least two weeks apart and include at least one dusk emergence and one dawn re-entry survey in suitable weather conditions.

If roosting bats are identified within the buildings a detailed methodology/mitigation for works to avoid any risk of harm or significant disturbance to bats must be provided before development works commence. In the case of the public house outbuilding should a roost be discovered an EPSL must be acquired from NE in order to satisfy the legislation in relation to bats and destruction of a roost.

If no bat roosts are identified within the buildings demolition, refurbishment or building works should be completed within a year of survey completion. Bats are transient creatures, and if roosts are not observed during surveys it should be noted that the buildings still have potential to be colonised over time. Therefore, surveys may require updating should works not take place within a year of survey.

Foraging and commuting bats

The site was assessed as offering low suitability for use by foraging and commuting bats. The small area of vegetation on site is of poor quality compared to larger green areas (such as Eccleston Park



golf course and Blundell's Hill Golf Club) within a common pipistrelles commutable distance / core sustenance zone (2km) for foraging (Dietz *et al.* 2009; BCT Guidelines – Table 3.5). Furthermore, although the site is well connected to the wider landscape in the north-east (via a network of residential gardens and associated trees), it is likely to be the terminal end of this commuting route. Land in other directions is comprised of well-lit urban development and busy roads which likely reduce dispersal opportunities.

It is understood that the vegetation to the west of the current car park on site is to be at least partially retained. Therefore the site should employ a sensitive lighting scheme during the construction and operational phase that will reduce the impact of light pollution on bats foraging and / or commuting within and adjacent to the site boundaries. The lighting should aim to avoid illuminating retained vegetation to the west of site as this is the most likely habitat used for foraging and commuting. The use of dark buffers and appropriate luminaire specifications are recommended to minimise impact on foraging and commuting bats, as detailed in *Bats and artificial lighting in the UK: Bats and the Built Environment Series* (ILP, 2018).

Birds

All breeding wild birds, their nests and eggs are protected by the Wildlife and Countryside Act 1981 (as amended) against intentional disturbance, damage and destruction during the nesting season (generally considered to be March to September inclusive although some species are known to breed throughout the year).

The introduced shrubs and scrub on site offer nesting bird potential, however the majority of this appears to be at least partially retained. The public house has historic bird nests upon it and both buildings on site offer nesting potential. In order to avoid committing an offence under the relevant legislation it is recommended that any future works likely to disturb, damage or destroy and active nest (such as vegetation clearance or demolition/refurbishment works) be avoided during the bird nesting season. Should works be required within the bird breeding season, it is recommended that an Ecological Clerk of Works (ECoW) conducts a check for nesting birds within the site in advance of any works commencing (a minimum of 48 hours prior to works commencing).

If no nests are identified, vegetation clearance and demolition/refurbishment works should occur within 48 hours of the checks. If a nesting bird is identified, the ECoW will advise on suitable working methods and exclusion zones to restrict works on site. Measure recommended will depend on the nature of the works in that area and the species of bird identified to be nesting. Note that suitable working methods may result in delay(s) to undertaking site works within specific areas of site until the ECoW has advised that all the chicks have fledged.

Other Notable Fauna - Hedgehog

If the introduced shrub or scrub on site is to be removed or damaged, an ECoW will deliver a toolbox talk to site personnel regarding best practice with regard to ecological issues in advance of working.

Any hedgehogs found should be picked up by the contractor or ECoW in gloved hands and carefully placed (where capture is possible and humane) in a ventilated box and released into suitable habitat adjacent / nearby to the site that will be unaffected by the proposed works. If injured or sickly animals are found then the animal should be admitted to a wildlife rescue, rehabilitation and release organisation. It should be noted that by conducting site preparation works at an appropriate time of year i.e. between March and October, outside the hibernation period, would avoid disturbance of this



notable species during periods when they would be most vulnerable to harm. However if working within the hibernation is unavoidable than handsearching by an ECoW is recommended to minimise the harm to these species.

Invasive Non-Native Species

Wall cotoneaster, a schedule 9 invasive species under the W&CA, was recorded on site. It is recommended that a control and eradication method is designed and implemented by a specialist contractor in order to remove this invasive species from the site. No works should be undertaken within areas colonised by this species until treatment/removal measures have been undertaken. Until this has been completed a species appropriate buffer zone should be marked out, within which no works should be undertaken and no site operative enter.

5.4 Enhancements

Opportunities should be sought where possible for nature conservation enhancement of the site in line with current policy guidance (NPPF, 2019) and the Knowsley Local Plan Core Strategy, Policy CS8 – Green Infrastructure and CS21 – Greenspaces and Trees.

The landscaping for the new development should aim, where possible to incorporate the following:

- Planting of new areas of soft landscaping with insect-attracting, native species of local provenance, wherever possible, to enhance the site's ecology. This approach should apply to any tree/scrub species planted, as well as the ground flora/grass mixes sown and will create valuable habitats for invertebrates. Planting woody species that produce fruit and berries and nectar-producing herbaceous plants that flower at different times of the year would have the greatest benefits for local wildlife, see Appendix E for suitable planting list.
- At least three new trees should be planted on site wherever possible in line with the above.
- Install 2 bird boxes on retained trees or new builds after construction work has finished. Bird boxes should be securely installed (using aluminium nails) at least 3-4 metres above the ground in a sheltered position. Specifications should include boxes for common garden birds (Appendix F):
 - At least one 1B Schwegler Nest Box with 32mm entrance hole (or equivalent) to attract small-medium crevice dwelling species such as House sparrow *Passer domesticus*: <https://www.nhbs.com/1b-schwegler-nest-box>
 - At least one 2H Schwegler 2H Nest box (or equivalent) with open front to attract species such as robin *Erithacus rubecula*: <https://www.nhbs.com/2h-schwegler-robin-box>
- Install 2 bat boxes on retained hawthorn or on new builds after construction work has finished. Bat boxes should be sited 3-4 metres high to avoid disturbance by cats, the public or roads. The boxes should also be positioned so as to be high enough to avoid direct illumination, placed out of the way of strong winds and positioned where they can get sun for part of the day. Bats can use boxes as hibernation roosts in winter and as maternity roosts in the summer. Therefore to create a range of temperature variations the boxes should be installed facing different directions. Specifications should include (Appendix F):



- Crevice bat boxes for pipistrelle species <https://www.nhbs.com/improved-crevice-bat-box>



6.0 Summary

6.1 Protected & Notable Species

- **Bats:** Presence/likely absence surveys required for the public house and outbuilding both have moderate potential for roosting bats. These would take the form of two nocturnal survey visits per building between May and September inclusive, with at least one of the visits conducted before the end of August. The surveys on each building should be spaced at least two weeks apart and include at least one dusk emergence and one dawn re-entry survey in suitable weather conditions.
- **Birds:** Vegetation clearance and building demolition/refurbishment works should be avoided during the nesting bird season (March to September inclusive) or if necessary, preceded by a search for nesting birds by an ecologist.
- **Hedgehog:** ECoW will deliver a toolbox talk to site personnel regarding best practice with regard to ecological issues in advance of working. This will include guidance as to what to do if a hedgehog is found. It should be noted that by conducting site preparation works at an appropriate time of year i.e. between March and October, outside the hibernation period, would avoid disturbance of this notable species during periods when they would be most vulnerable to harm. However if working within the hibernation is unavoidable than handsearching is recommended to minimise the harm to these species.

6.2 Enhancements

- **Planting:** Plant new areas of soft landscaping with insect – attracting, native species of local provenance, wherever possible to enhance the site's ecology.
- **Nesting birds:** Install at least two bird boxes to retained trees and/or new builds to create nesting opportunities for birds.
- **Bats:** Install at least two bat boxes to retained trees and/or new builds to create roosting opportunities for bats.



7.0 References

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Please note that the legislation which is relevant to this report is not included in the list above, but details are included in Appendix B below.

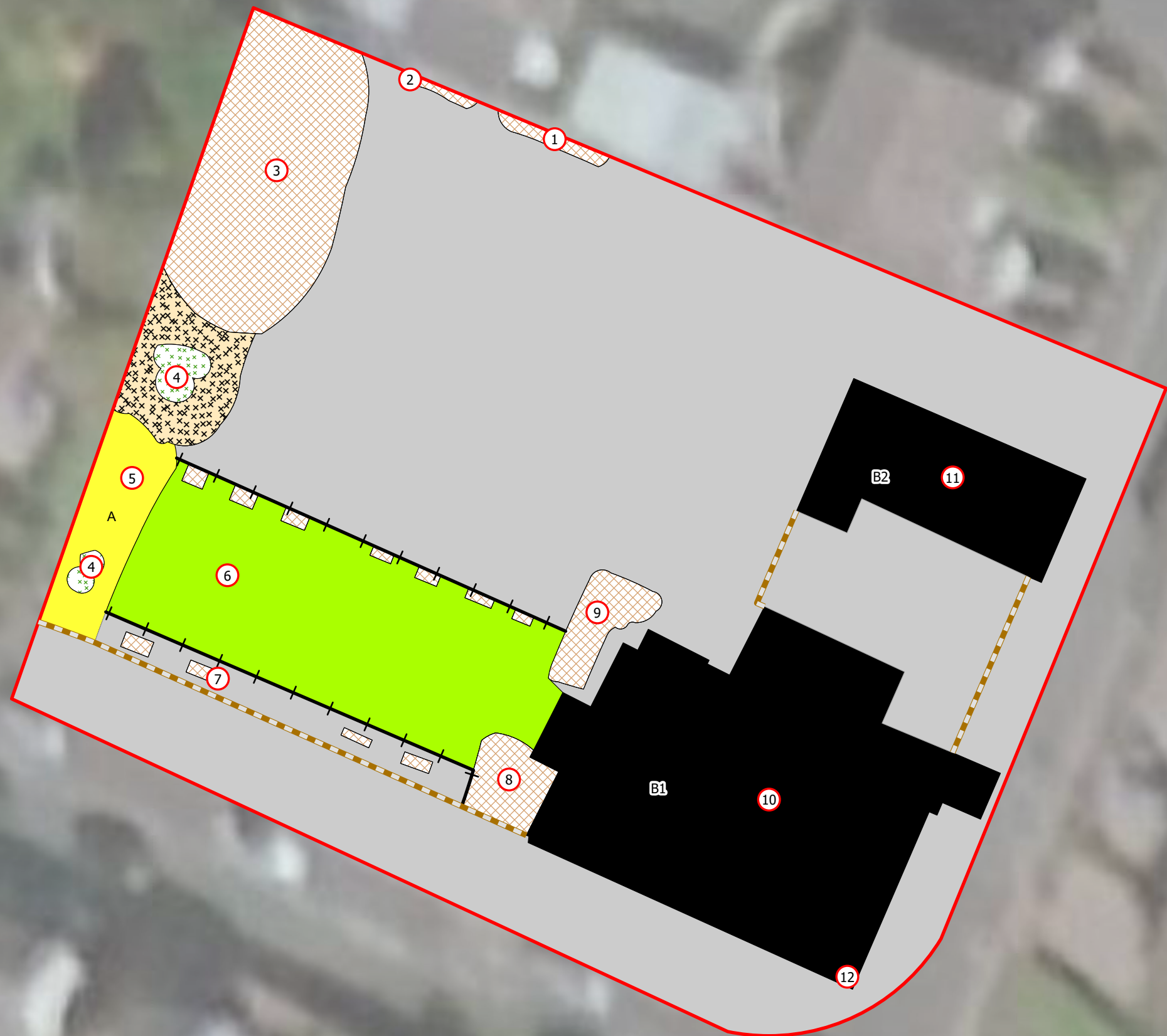


FIGURES

Figure 1 – Site Location Plan

Figure 2 – Phase 1 Habitat Plan

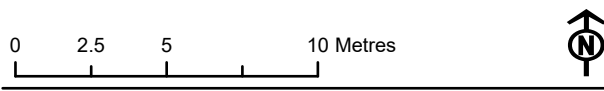
**Figure 3 – Bat Roost Potential of
Buildings**



Rev	Date	Notes
A	03/02/20	Initial map production

Legend

- Site boundary
- Scrub - scattered
- Amenity grassland
- Introduced shrub
- Buildings
- Hardstanding
- Bare earth with ephemeral herbs
- Artificial surface
- Fence
- Wall
- Target note



Phase 1 Habitat Plan

The Holt, Rainhill Cordage Estates Limited			
Scale at A3: 1:250	Project No: A116532	Drawing No: Figure 2	Revision: A
Drawn by: Martyn Stringer		Drawn date: 26/11/2021	Approved by: Danny Burrows

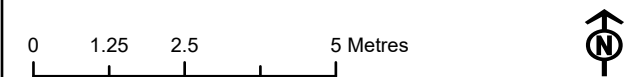
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Rev	Date	Notes
A	31/01/20	Initial map production

Legend

-  Site boundary
 Buildings
 Bat roost potential feature



Bat Roost Potential of Buildings

**The Holt, Rainhill
Cordage Estates Limited**

Scale at A3: 1:125	Project No: A116532	Drawing No: Figure 3	Revision: A
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Drawn by: Martyn Stringer	Drawn date: 26/11/2021	Approved by: Danny Burrows
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Appendix A – Report Conditions

This Report has been prepared using reasonable skill and care for the sole benefit of [Cordage Estates Limited] ("the Client") for the proposed uses stated in the report by [WYG Environment Planning Transport Limited] ("WYG"). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder's permission.

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The "shelf life" of the Report will be determined by a number of factors including; its original purpose, the Client's instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors.



Appendix B – Proposed Development Plans



Appendix C – Key Legislation

Bern Convention

The *Convention on the Conservation of European Wildlife and Natural Habitats* (the *Bern Convention*) was adopted in Bern, Switzerland in 1979, and was ratified in 1982. Its aims are to protect wild plants and animals and their habitats listed in Appendices 1 and 2 of the Convention, and regulate the exploitation of species listed in Appendix 3. The regulation imposes legal obligations on participating countries to protect over 500 plant species and more than 1000 animals.

To meet its obligations imposed by the Convention, the European Community adopted the *EC Birds Directive* (1979) and the *EC Habitats Directive* (1992 – see below). Since the Lisbon Treaty, in force since 1st December 2009, European legislation has been adopted by the European Union.

Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals or 'Bonn Convention' was adopted in Bonn, Germany in 1979 and came into force in 1985. Participating states agree to work together to preserve migratory species and their habitats by providing strict protection to species listed in Appendix I of the Convention. It also establishes agreements for the conservation and management of migratory species listed in Appendix II.

In the UK, the requirements of the convention are implemented via the Wildlife & Countryside Act 1981 (as amended), Wildlife (Northern Ireland) Order 1985 (as amended), Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 and the Countryside and Rights of Way Act 2000 (CRoW).

Habitats Directive

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, or the 'Habitats Directive', is a European Union directive adopted in 1992 in response to the Bern Convention. Its aims are to protect approximately 220 habitats and 1,000 species listed in its several Annexes.

In the UK, the Habitats Directive is transposed into national law via the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales, and via the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland.

Birds Directive

The EC Directive on the Conservation of Wild Birds (79/409/EEC) or 'Birds Directive' was introduced to achieve favourable conservation status of all wild bird species across their distribution range. In this context, the most important provision is the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex 1 of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance.

Conservation of Habitats and Species Regulations 2017 (as amended)

Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I or II of the Habitats Directive respectively) to the European Commission. These sites, if ratified by the European Commission, are then designated as Special Protection Areas (SPAs) within six years. Public bodies must also help preserve, maintain and re-establish habitats for wild birds.

The 2018 amendments mainly related to the impact of the *People Over Wind* decision and some implications arising for neighbourhood plan development and a range of other planning tools including Local Development Orders and Permission in Principle – see here for full details:

<https://www.legislation.gov.uk/uksi/2018/1307/note/made>

The Regulations make it an offence to deliberately capture, kill, disturb or trade in the animals listed in Schedule 2, or pick, uproot, destroy, or trade in the plants listed in Schedule 5 - see below:

Schedule 2 – European Protected Species of Animals	Schedule 5 – European Protected Species of Plants
Horseshoe bats <i>Rhinolophidae</i> - all species	Shore dock <i>Rumex rupestris</i>
Common bats <i>Vespertilionidae</i> - all species	Killarney fern <i>Trichomanes speciosum</i>
Large Blue Butterfly <i>Maculinea arion</i>	Early gentian <i>Gentianella anglica</i>
Wild cat <i>Felis sylvestris</i>	Lady's-slipper <i>Cypripedium calceolus</i>
Dolphins, porpoises and whales <i>Cetacea</i> – all sp.	Creeping marsh-wort <i>Apium repens</i>
Dormouse <i>Muscardinus avellanarius</i>	Slender naiad <i>Najas flexilis</i>
Pool frog <i>Rana lessonae</i>	Fen orchid <i>Liparis loeselii</i>
Sand lizard <i>Lacerta agilis</i>	Floating-leaved water plantain <i>Luronium natans</i>
Fisher's estuarine moth <i>Gortyna borelii lunata</i>	Yellow marsh saxifrage <i>Saxifraga hirculus</i>
Great crested newt <i>Triturus cristatus</i>	
Otter <i>Lutra lutra</i>	
Lesser whirlpool ram's-horn snail <i>Anisus vorticulus</i>	
Smooth snake <i>Coronella austriaca</i>	
Sturgeon <i>Acipenser sturio</i>	
Natterjack toad <i>Epidalea calamita</i>	
Marine turtles <i>Caretta caretta</i> , <i>Chelonia mydas</i> , <i>Lepidochelys kempji</i> , <i>Eretmochelys imbricata</i> , <i>Dermochelys coriacea</i>	

Wildlife & Countryside Act 1981 (as amended)

This is the principal mechanism for the legislative protection of wildlife in the UK. This legislation is the chief means by which the 'Bern Convention' and the Birds Directive are implemented in the UK. Since it was first introduced, the Act has been amended several times.

The Act makes it an offence to (with exception to species listed in Schedule 2) intentionally:

kill, injure, or take any wild bird;

take, damage or destroy the nest of any wild bird while that nest is in use; or

take or destroy an egg of any wild bird.

Or to intentionally do the following to a wild bird listed in Schedule 1:

disturbs any wild bird 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.

In addition, the Act makes it an offence (subject to exceptions) to:

intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5;
interfere with places used for shelter or protection, or intentionally disturbing animals occupying such places; and

The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Finally, the Act also makes it an offence (subject to exceptions) to:

intentionally pick, uproot or destroy any wild plant listed in Schedule 8, or any seed or spore attached to any such wild plant;

unless an authorised person, intentionally uproot any wild plant not included in Schedule 8; or sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Following all amendments to the Act, Schedule 5 'Animals which are Protected' contains a total of 154 species of animal, including several mammals, reptiles, amphibians, fish and invertebrates. Schedule 8 'Plants which are Protected' of the Act, contains 185 species, including higher plants, bryophytes and fungi and lichens. A comprehensive and up-to-date list of these species can be obtained from the JNCC website.

Part 14 of the Act makes unlawful to plant or otherwise cause to grow in the wild any plant which is listed in Part II of Schedule 9.

It is recommended that plant material of these species is disposed of as bio-hazardous waste, and these plants should not be used in planting schemes.

Schedule 1 - Birds which are protected by special penalties

Avocet	<i>Recurvirostra avosetta</i>	Osprey	<i>Pandion haliaetus</i>
Bee-eater	<i>Merops apiaster</i>	Owl, Barn	<i>Tyto alba</i>
Bittern	<i>Botaurus stellaris</i>	Owl, Snowy	<i>Nyctea scandiaca</i>
Bittern, Little	<i>Ixobrychus minutus</i>	Peregrine	<i>Falco peregrinus</i>
Bluethroat	<i>Luscinia svecica</i>	Petrel, Leach's	<i>Oceanodroma leucorhoa</i>
Brambling	<i>Fringilla montifringilla</i>	Phalarope, Red-necked	<i>Phalaropus lobatus</i>
Bunting, Cirl	<i>Emberiza cirlus</i>	Plover, Kentish	<i>Charadrius alexandrinus</i>
Bunting, Lapland	<i>Calcarius lapponicus</i>	Plover, Little Ringed	<i>Charadrius dubius</i>
Bunting, Snow	<i>Plectrophenax nivalis</i>	Quail, Common	<i>Coturnix coturnix</i>
Buzzard, Honey	<i>Pernis apivorus</i>	Redstart, Black	<i>Phoenicurus ochruros</i>
Capercaillie	<i>Tetrao urogallus</i>	Redwing	<i>Turdus iliacus</i>
Chough	<i>Pyrrhocorax pyrrhocorax</i>	Rosefinch, Scarlet	<i>Carpodacus erythrurus</i>
Corncrake	<i>Crex crex</i>	Ruff	<i>Philomachus pugnax</i>
Crake, Spotted	<i>Porzana porzana</i>	Sandpiper, Green	<i>Tringa ochropus</i>
Crossbills (all species)	<i>Loxia</i>	Sandpiper, Purple	<i>Calidris maritima</i>
Curlew, Stone	<i>Burhinus oedecnemus</i>	Sandpiper, Wood	<i>Tringa glareola</i>
Divers (all species)	<i>Gavia</i>	Scaup	<i>Aythya marila</i>
Dotterel	<i>Charadrius morinellus</i>	Scoter, Common	<i>Melanitta nigra</i>
Duck, Long-tailed	<i>Clangula hyemalis</i>	Scoter, Velvet	<i>Melanitta fusca</i>
Eagle, Golden	<i>Aquila chrysaetos</i>	Serim	<i>Serinus serinus</i>
Eagle, White-tailed	<i>Haliaetus albicilla</i>	Shorelark	<i>Eremophila alpestris</i>
Falcon, Gyr	<i>Falco rusticolus</i>	Shrike, Red-backed	<i>Lanius collurio</i>
Fieldfare	<i>Turdus pilaris</i>	Spoonbill	<i>Platalea leucorodia</i>
Firecrest	<i>Regulus ignicapillus</i>	Stilt, Black-winged	<i>Himantopus himantopus</i>
Garganey	<i>Anas querquedula</i>	Stint, Temminck's	<i>Calidris temminckii</i>
Godwit, Black-tailed	<i>Limosa limosa</i>	Swan, Bewick's	<i>Cygnus bewickii</i>



Goshawk	<i>Accipiter gentilis</i>	Swan, Whooper	<i>Cygnus cygnus</i>
Grebe, Black-necked	<i>Podiceps nigricollis</i>	Tern, Black	<i>Chlidonias niger</i>
Grebe, Slavonian	<i>Podiceps auritus</i>	Tern, Little	<i>Sterna albifrons</i>
Greenshank	<i>Tringa nebularia</i>	Tern, Roseate	<i>Sterna dougallii</i>
Gull, Little	<i>Larus minutus</i>	Tit, Bearded	<i>Panurus biarmicus</i>
Gull, Mediterranean	<i>Larus melanocephalus</i>	Tit, Crested	<i>Parus cristatus</i>
Harriers (all species)	<i>Circus</i>	Tree-creeper, Short-toed	<i>Certhia brachydactyla</i>
Heron, Purple	<i>Ardea purpurea</i>	Warbler, Cetti's	<i>Cettia cetti</i>
Hobby	<i>Falco subbuteo</i>	Warbler, Dartford	<i>Sylvia undata</i>
Hoopoe	<i>Upupa epops</i>	Warbler, Marsh	<i>Acrocephalus palustris</i>
Kingfisher	<i>Alcedo atthis</i>	Warbler, Savi's	<i>Locustella luscinioides</i>
Kite, Red	<i>Milvus milvus</i>	Whimbrel	<i>Numenius phaeopus</i>
Merlin	<i>Falco columbarius</i>	Woodlark	<i>Lullula arborea</i>
Oriole, Golden	<i>Oriolus oriolus</i>	Wryneck	<i>Jynx torquilla</i>
Animal (Vertebrate) Species Listed in Schedule 5 (full legal protection at all times)			
Horseshoe Bats (all species)	<i>Rhinolophidae</i>	Newt – Great Crested	<i>Triturus cristatus</i>
Typical Bats (all species)	<i>Vespertilionidae</i>	Snake – Smooth	<i>Coronella austriaca</i>
Dolphin – Bottle-nosed	<i>Tursiops truncatus (tursio)</i>	Toad, Natterjack	<i>Epidalea calamita</i>
Dolphin – Common	<i>Delphinus delphis</i>	Turtles – All Species	<i>Cheloniidae & Dermochelyidae</i>
Dormouse – Hazel	<i>Muscardinus avellanarius</i>	Basking Shark	<i>Cetorhinus maximus</i>
Pine Marten	<i>Martes martes</i>	Burbot	<i>Lota lota</i>
Porpoise – Harbour	<i>Phocaena phocaena</i>	Goby – Giant	<i>Gobius cobitis</i>
Otter – Eurasian	<i>Lutra lutra</i>	Goby – Couch's	<i>Gobius couchii</i>
Squirrel – Red	<i>Sciurus vulgaris</i>	Seahorse – Short-snouted ¹	<i>Hippocampus hippocampus</i>
Walrus	<i>Odobenus rosmarus</i>	Seahorse – Spiny	<i>Hippocampus guttulatus</i>
Water Vole	<i>Arvicola amphibius</i>	Sturgeon	<i>Acipenser sturio</i>
Whales – All Species	<i>Cetacea</i>	Vendace	<i>Coregonus albula</i>
Wildcat	<i>Felis sylvestris</i>	Whitefish	<i>Coregonus lavaretus</i>
Lizard – Sand	<i>Lacerta agilis</i>		
Animal (Vertebrate) Species Protected under Section 9 (1) part: Killing and Injuring & Section 9 (5) Sale			
Adder	<i>Vipera berus</i>	Slow-worm	<i>Anguis fragilis</i>
Lizard – Viviparous	<i>Zootoca vivipara</i>	Snake – Grass	<i>Natrix helvetica (natrix)</i>
Animals (Vertebrate) Species Protected under Section 9 (5) Sale only			
Frog – common	<i>Rana temporaria</i>	Newt – Smooth	<i>Lissotriton vulgaris</i>
Newt – Palmate	<i>Lissotriton helvetica</i>	Toad – Common	<i>Bufo bufo</i>
Animals (Vertebrate) Species Protected under Section 9 (1) (4)(a): Killing, Injuring & Taking and Damage / Destruction of place of shelter / protection only			
Allis Shad	<i>Alosa alosa</i>	Shark – Angel	<i>Squatina squatina</i>
Twait Shad	<i>Alosa fallax</i>		
Butterflies & Moths – Full Protection under Schedule 5² at all times			
High brown fritillary	<i>Argynnis adippe</i>	Fisher's Estuarine Moth	<i>Gortyna borelii</i>
Large Blue	<i>Maculinea arion</i>	Barberry Carpet	<i>Pareulype berberata</i>
Heath Fritillary	<i>Mellicta athalia</i>	Black-veined Moth	<i>Siona lineata</i>

¹ Both sea horse species are protected in England only.

² Viper's Bugloss Moth *Hadena irregularis* was removed from Schedule 5 in 1996 as it is believed to be extinct.



Marsh Fritillary	<i>Eurodryas aurinia</i>	Sussex Emerald	<i>Thalera fimbrialis</i>
Swallowtail	<i>Papilio machaon britannicus</i>	Essex Emerald	<i>Thetidia smaragdaria</i>
Large Copper	<i>Lycaena dispar</i>	Fiery Clearwing	<i>Bembecia chrysidiformis</i>
Reddish-buff Moth	<i>Acosmetia caliginosa</i>	New-Forest Burnet	<i>Zygaena viciae</i>
Butterflies – Protected under Section 9 (5) Sale Only			
Purple Emperor	<i>Apatura iris</i>	Adonis Blue	<i>Lysandra bellargus</i>
Northern Brown Argus	<i>Aricia artaxerxes</i>	Chalkhill Blue	<i>Lysandra coridon</i>
Pearl-bordered Fritillary	<i>Boloria euphrosyne</i>	Glanville Fritillary	<i>Melitaea cinxia</i>
Chequered Skipper	<i>Carterocephalus palaemon</i>	Large Tortoiseshell	<i>Nymphalis polychloros</i>
Large Heath	<i>Coenonympha tullia</i>	Silver-studded Blue	<i>Plebejus argus</i>
Small Blue	<i>Cupido minimus</i>	Black Hairstreak	<i>Strymonia pruni</i>
Mountain Ringlet	<i>Erebia epiphron</i>	White-letter Hairstreak	<i>Strymonia w-album</i>
Duke of Burgundy	<i>Hamearis lucina</i>	Brown Hairstreak	<i>Thecla betulae</i>
Silver-spotted Skipper	<i>Hesperia comma</i>	Lulworth Skipper	<i>Thymelicus acteon</i>
Wood White	<i>Leptidea sinapis</i>		
Other Invertebrates – Full Protection under Schedule 5 at all times			
Rainbow Leaf-beetle	<i>Chrysolina cerealis</i>	Tadpole Shrimp	<i>Triops cancriformis</i>
Spangled Diving-beetle	<i>Graphopterus zonatus</i>	Trembling Sea-mat	<i>Victorella pavidia</i>
Lesser Silver Water-beetle	<i>Hydrochara caraboides</i>	De Folin's Lagoon Snail	<i>Caecum armoricum</i>
Moccas Beetle	<i>Hypebaeus flavipes</i>	Sandbowl Snail	<i>Catinella arenaria</i>
Violet Click-beetle	<i>Limoniscus violaceus</i>	Freshwater Pearl Mussel	<i>Margaritifera margaritifera</i>
Bembridge Beetle	<i>Parcymus aeneus</i>	Glutinous Snail	<i>Myxas glutinosa</i>
New Forest Cicada	<i>Cicadetta montana</i>	Lagoon Snail	<i>Paludinella littorina</i>
Wart-Biter	<i>Decticus verrucivorus</i>	Lagoon Sea Slug	<i>Tenellia adspersa</i>
Mole-Cricket	<i>Gryllotalpa gryllotalpa</i>	Northern Hatchet-shell	<i>Thyasira gouldi</i>
Field-Cricket	<i>Gryllus campestris</i>	Tentacled Lagoon-worm	<i>Alkmaria romijni</i>
Norfolk Hawker Dragonfly	<i>Aeshna isosceles</i>	Lagoon Sand-worm	<i>Armandia cirrhosa</i>
Southern Damselfly	<i>Coenagrion mercuriale</i>	Medicinal Leech	<i>Hirudo medicinalis</i>
Fen Raft Spider	<i>Dolomedes fimbriatus</i>	Marine Hydroid	<i>Clavopsella navis</i>
Ladybird Spider	<i>Eresus niger (cinaberinus)</i>	Ivell's Sea Anemone	<i>Edwardsia ivelli</i>
Fairy Shrimp	<i>Chirocephalus diaphanus</i>	Starlet Sea Anemone	<i>Nematosella vectensis</i>
Lagoon Sand Shrimp	<i>Gammarus insensibilis</i>	Atlantic Stream (White-clawed) Crayfish	<i>Austropotamobius pallipes</i>
Other Invertebrates Protected under Section 9 (1) Possession & 9 (2) (5) Sale only			
Stag Beetle	<i>Lucanus cervus</i>	Roman Snail ³	<i>Helix pomatia</i>
Fan Mussel	<i>Atrina fragilis</i>	Pink Sea-fan	<i>Eunicella verrucosa</i>
Other Invertebrates Protected under Section 9 (4) (a) Damage / Destruction of Place of Shelter / Protection only			
Mire Pill Beetle	<i>Curimopsis nigrita</i>		
Vascular Plant Species - Full Protection under Schedule 8 at all times (previous Scientific name in brackets)			
Adder's-tongue Least	<i>Ophioglossum lusitanicum</i>	Lily – Snowdon	<i>Gagea serotina (Lloydia serotina)</i>
Alison- Small	<i>Alyssum alyssoides</i>	Marsh-mallow – Rough	<i>Malva setigera (Althaea hirsuta)</i>
Broomrape – Bedstraw	<i>Orobancha caryophyllacea</i>	Milk-parsley – Cambridge	<i>Selinum carvifolia</i>

³ England only

Broomrape – Oxtongue	<i>Orobanche picridis</i>	Mudwort – Welsh	<i>Limosella aquatica</i>
Broomrape – Thistle	<i>Orobanche reticulata</i> ⁴	Naiad – Holly-leaved	<i>Najas marina</i>
Cabbage – Lundy	<i>Coincya wrightii</i> (<i>Rhynchosinapis wrightii</i>)	Orache – Stalked	<i>Atriplex pedunculata</i> (<i>Halimione pedunculata</i>)
Calamint – Wood	<i>Clinopodium menthifolium</i> (<i>Calamintha sylvatica</i>)	Orchid – Early Spider	<i>Ophrys sphegodes</i>
Catchfly – Alpine	<i>Silene suecica</i> (<i>Lychnis alpina</i>)	Orchid – Ghost	<i>Epipogium aphyllum</i>
Centaury – Slender	<i>Centaureum tenuiflorum</i>	Orchid – Lapland Marsh	<i>Dactylorhiza lapponica</i>
Cinquefoil – Rock	<i>Potentilla rupestris</i>	Orchid – Late Spider	<i>Ophrys fuciflora</i>
Clary – Meadow	<i>Salvia pratensis</i>	Orchid – Lizard	<i>Himantoglossum hircinum</i>
Club-rush – Triangular	<i>Schoenoplectus triquetus</i> (<i>Scirpus triquetus</i>)	Orchid – Military	<i>Orchis militaris</i>
Colt's-foot – Purple	<i>Homogyne alpina</i>	Orchid – Monkey	<i>Orchis simia</i>
Cotoneaster – Wild	<i>Cotoneaster cambricus</i> (<i>C. integerrimus</i>)	Pear – Plymouth	<i>Pyrus cordata</i>
Cotton-grass – Slender	<i>Eriophorum gracile</i>	Pennycress – Perfoliate	<i>Microthlaspi perfoliatum</i> (<i>Thlaspi perfoliatum</i>)
Cow-wheat – Field	<i>Melampyrum arvense</i>	Pennyroyal	<i>Mentha pulegium</i>
Crocus – Sand	<i>Romulus columnae</i>	Pigmyweed	<i>Crassula aquatica</i>
Cudweed – Broad-leaved	<i>Filago pyramidata</i>	Pine - Ground	<i>Ajuga chamaepitys</i>
Cudweed – Jersey	<i>Gnaphalium luteoalbum</i>	Pink – Cheddar	<i>Dianthus gratianopolitanus</i>
Cudweed – Red-tipped	<i>Filago lutescens</i>	Pink – Childing	<i>Petrorhagia nanteuillii</i>
Cut-grass	<i>Leersia oryzoides</i>	Ragwort – Fen	<i>Jacobaea paludosa</i> (<i>Senecio paludosa</i>)
Deptford Pink	<i>Dianthus armeria</i>	Ramping-fumitory – Martin's	<i>Fumaria reuteri</i> (<i>F. martinii</i>)
Diapensia	<i>Diapensia lapponica</i>	Rampion – Spiked	<i>Phyteuma spicata</i>
Eryngo – Field	<i>Eryngium campestre</i>	Restharrow – Small	<i>Ononis reclinata</i>
Fern – Dickie's-bladder	<i>Cystopteris dickieana</i>	Rock-cress – Alpine	<i>Arabis alpina</i>
Fleabane – Alpine	<i>Erigeron borealis</i>	Rock-cress – Bristol	<i>Arabis scabra</i>
Fleabane – Small	<i>Pulicaria vulgaris</i>	Sandwort – Norwegian	<i>Arenaria norvegica</i> ⁵
Galingale – Brown	<i>Cyperus fuscus</i>	Sandwort – Teesdale	<i>Minuartia stricta</i>
Gentian – Alpine	<i>Gentiana nivalis</i>	Saxifrage – Drooping	<i>Saxifraga cernua</i>
Gentian - Dune	<i>Gentianella amarella</i> subsp. <i>occidentalis</i> (<i>Gentianella uliginosa</i>)	Saxifrage – Tufted	<i>Saxifraga cespitosa</i>
Gentian – Fringed	<i>Gentianopsis ciliata</i> (<i>Gentianella ciliata</i>)	Solomon's-seal – Whorled	<i>Polygonatum verticillatum</i>
Gentian - Spring	<i>Gentiana verna</i>	Sow-thistle – Alpine	<i>Cicerbita alpina</i>
Germander – Cut-leaved	<i>Teucrium botrys</i>	Spearwort – Adder's-tongue	<i>Ranunculus ophioglossifolius</i>
Germander – Water	<i>Teucrium scordium</i>	Speedwell – Fingered	<i>Veronica triphyllos</i>
Gladiolus – Wild	<i>Gladiolus illyricus</i>	Speedwell – Spiked	<i>Veronica spicata</i> ⁶
Goosefoot – Stinking	<i>Chenopodium vulvaria</i>	Spike-rush – Dwarf	<i>Eleocharis parvula</i>
Grass-poly	<i>Lythrum hyssopifolia</i>	South-stack Fleawort	<i>Tephrosieris integrifolia</i> ssp. <i>maritima</i>

⁴ The Weeds Act 1959 does not apply to thistles *Cirsium* & *Carduus* species supporting this broomrape.

⁵ All subspecies occurring in the UK

⁶ Both subspecies: *spicata* & *hybrida*

Hare's-ear – Sick-leaved	<i>Bupleurum falcatum</i>	Star-of-Bethlehem – Early	<i>Gagea bohemica</i>
Hare's-ear – Small	<i>Bupleurum baldense</i>	Starfruit	<i>Damasonium alisma</i>
Hawk's-beard – Stinking	<i>Crepis foetida</i>	Strapwort	<i>Corrigiola littoralis</i>
Hawkweed – Northroe	<i>Hieracium northroense</i>	Violet – Fen	<i>Viola persicifolia</i>
Hawkweed – Shetland	<i>Hieracium zetlandicum</i>	Viper's-grass	<i>Scorzonera humilis</i>
Hawkweed – Weak-leaved	<i>Hieracium attenuatifolium</i>	Water-plantain – Ribbon-leaved	<i>Alisma gramineum</i>
Heath – Blue	<i>Phyllodoce caerulea</i>	Wood-sedge – Starved	<i>Carex depauperata</i>
Helleborine – Red	<i>Cephalanthera rubra</i>	Woodsia – Alpine	<i>Woodsia alpina</i>
Horsetail – Branched	<i>Equisetum ramosissimum</i>	Woodsia – Oblong	<i>Woodsia ilvensis</i>
Hound's-tongue – Green	<i>Cynoglossum germanicum</i>	Wormwood – Field	<i>Artemisia campestris</i>
Knawel – Perennial	<i>Scleranthus perennis</i> ⁷	Woundwort - Downy	<i>Stachys germanica</i>
Knot-grass – Sea	<i>Polygonum maritimum</i>	Woundwort – Limestone	<i>Stachys alpina</i>
Leek – Round-headed	<i>Allium sphaerocephalon</i>	Yellow-rattle – Greater	<i>Rhinanthus angustifolius</i>
Lettuce – Least	<i>Lactuca saligna</i>		
Vascular Plant Species – Partial Protection under Section 13 (2) Protection from commercial exploitation and sale			
Bluebell	<i>Hyacinthoides non-scripta</i>		
Bryophytes – Full Protection under Schedule 8 at all times			
Anamodon – Long-leaved	<i>Anomodon langifolius</i>	Flamingo Moss	<i>Desmatodon cernuus</i>
Blackwort	<i>Southbya nigrella</i>	Frostwort	<i>Gymnomitrium apiculatum</i>
Crystalwort – Lizard	<i>Riccia bifurca</i>	Glaucous Beard Moss	<i>Barbula glauca</i>
Earwort – Marsh	<i>Jamesoniella undulifolia</i>	Green Shield Moss	<i>Buxbaumia viridis</i>
Feathermoss – Polar	<i>Hygrohypnum polare</i>	Hair Silk Moss	<i>Plagiothecium piliferum</i>
Flapwort – Norfolk	<i>Leiocolea rutheana</i>	Knothole Moss	<i>Zygodon forsteri</i>
Grimmia – Blunt-leaved	<i>Grimmia unicolor</i>	Large Yellow Feather Moss	<i>Scorpidium turgescens</i>
Petalwort	<i>Petalophyllum ralfsii</i>	Millimetre Moss	<i>Micromitrium tenerum</i>
Lindenberg's Leafy-Liverwort	<i>Adelanthus lindenbergianus</i>	Multi-fruited River Moss	<i>Cryphaea lamyana</i>
Feather-moss Slender Green	<i>Drepanocladus vernicosus</i>	Nowell's Limestone Moss	<i>Zygodon gracilis</i>
Alpine Copper-Moss	<i>Mielichoferia meilichoferia</i>	Rigid Apple Moss	<i>Bartramia stricta</i>
Baltic Bog-Moss	<i>Sphagnum balticum</i>	Round-leaved feather Moss	<i>Rhynchostegium rotundifolium</i>
Blue Dew-Moss	<i>Saelania glaucescens</i>	Schleicher's Thread Moss	<i>Bryum schleicheri</i>
Blunt-leaved bristle-Moss	<i>Orthotrichum obtusifolium</i>	Triangular Pygmy Moss	<i>Acaulon triquetrum</i>
Bright-Green Cave-Moss	<i>Cyclodictyon laetevirens</i>	Turpswort	<i>Geocalyx graveolens</i>
Cordate Beard Moss	<i>Barbula cordata</i>	Vaucher's Feather Moss	<i>Hypnum vaucheri</i>
Cornish Path Moss	<i>Ditrichum cornubicum</i>	Western Rustwort	<i>Marsupella profunda</i>
Derbyshire Feather Moss	<i>Thamnobryum angustifolium</i>		
Stoneworts – Full Protection under Schedule 8 at all times			
Bearded Stonewort	<i>Chara canescens</i>	Foxtail Stonewort	<i>Lamprothamnium papillosum</i>

⁷ Includes both subspecies: *perennis* & *prostratus*

Lichens – Full Protection under Schedule 8 at all times			
New Forest Beech Lichen	<i>Enterographa elaborata</i>	Forked Hair Lichen	<i>Bryoria furcellata</i>
Snow Caloplaca	<i>Caloplaca nivalis</i>	Golden Hair Lichen	<i>Teloschistes flavicans</i>
Tree Catapyrenium	<i>Catapyrenium psoromoides</i>	Orange-fruited Elm Lichen	<i>Caloplaca luteoalba</i>
Laurer's Catillaria	<i>Catillaria laurei</i>	River Jelly Lichen	<i>Collema dichotomum</i>
Convolute Cladonia	<i>Cladonia convoluta</i>	Starry Breck Lichen	<i>Buellia asterella</i>
Upright Mountain Cladonia	<i>Cladonia stricta</i>	Caledonia Pannaria	<i>Pannaria ignobilis</i>
Goblin Lights	<i>Catolechia wahlenbergii</i>	New Forest Parmelia	<i>Parmelia minarum</i>
Elm Gyalecta	<i>Gyalecta ulmi</i>	Oil Stain Parmentaria	<i>Parmentaria chilensis</i>
Tarn Lecanora	<i>Lecanora archariana</i>	Southern Grey Physcia	<i>Physcia tribacioides</i>
Copper Lecidea	<i>Lecidea inops</i>	Ragged Pseudo-cyphellaria	<i>Pseudocyphellaria lacerata</i>
Arctic Kidney Lichen	<i>Nephroma arcticum</i>	Rusty Alpine Psora	<i>Psora rubiformis</i>
Ciliate Strap Lichen	<i>Heterodermia leucomelos</i>	Rock Nail	<i>Calicium corynellum</i>
Coralloid Rosette Lichen	<i>Heterodermia propagulifera</i>	Serpentine Selanopsora	<i>Selanopsora liparina</i>
Ear-lobed Dog Lichen	<i>Peltigera lepidophora</i>	Sulphur Tresses	<i>Alectoria ochroleuca</i>
Lichens – Partial Protection under Section 13 (2) Commercial Exploitation and Sale Only			
Tree Lungwort	<i>Lobaria pulmonaria</i>		
Fungi – Full Protection under Schedule 8 at all times			
Royal Bolete	<i>Boletus regius</i>	Oak Polypore	<i>Buglossosporus pulvinus</i>
Hedgehog Fungus	<i>Hericium erinaceum</i>	Sandy Stilt Ball	<i>Battaria phalloides</i>
Invasive plant species listed in Schedule 9			
Australian swamp stonecrop or New Zealand pygmyweed	<i>Crassula helmsii</i>	Japanese rose	<i>Rosa rugosa</i>
Californian red seaweed	<i>Pilea californica</i>	Japanese seaweed	<i>Sargassum muticum</i>
Curly waterweed	<i>Lagarosiphon major</i>	Laver seaweeds (except native species)	<i>Porphyra</i> spp
Duck potato	<i>Sagittaria latifolia</i>	Parrot's-feather	<i>Myriophyllum aquaticum</i>
Entire-leaved cotoneaster	<i>Cotoneaster integrifolius</i>	Perfoliate alexanders	<i>Smyrnium perfoliatum</i>
False Virginia creeper	<i>Parthenocissus inserta</i>	Pontic rhododendron	<i>Rhododendron ponticum</i>
Fanwort or Carolina water-shield	<i>Cabomba caroliniana</i>	Purple dewplant	<i>Disphyma crassifolium</i>
Few-flowered garlic	<i>Allium paradoxum</i>	Red algae	<i>Grateloupia luxurians</i>
Floating pennywort	<i>Hydrocotyle ranunculoides</i>	Rhododendron	<i>Rhododendron ponticum</i> × <i>Rhododendron maximum</i>
Floating water primrose	<i>Ludwigia peploides</i>	Small-leaved cotoneaster	<i>Cotoneaster microphyllus</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>	Three-cornered garlic	<i>Allium triquetrum</i>
Giant kelp	<i>Macrocystis</i> spp.	Variegated yellow archangel	<i>Lamiastrum galeobdolon</i> subsp. <i>argentatum</i>
Giant knotweed	<i>Fallopia sachalinensis</i>	Virginia creeper	<i>Parthenocissus quinquefolia</i>
Giant rhubarb	<i>Gunnera tinctoria</i>	Wakame	<i>Undaria pinnatifida</i>
Giant salvinia	<i>Salvinia molesta</i>	Wall cotoneaster	<i>Cotoneaster horizontalis</i>
Green seafingers	<i>Codium fragile</i>	Water fern	<i>Azolla filiculoides</i>
Himalayan cotoneaster	<i>Cotoneaster simonsii</i>	Water hyacinth	<i>Eichhornia crassipes</i>
Hollyberry cotoneaster	<i>Cotoneaster bullatus</i>	Water lettuce	<i>Pistia stratiotes</i>

Hooked asparagus seaweed	<i>Asparagopsis armata</i>	Water primrose	<i>Ludwigia grandiflora</i>
Hottentot fig	<i>Carpobrotus edulis</i>	Water primrose	<i>Ludwigia uruguayensis</i>
Hybrid knotweed	<i>Fallopia japonica</i> × <i>Fallopia sachalinensis</i>	Waterweeds	<i>Elodea</i> spp.
Indian (Himalayan) balsam	<i>Impatiens glandulifera</i>	Yellow azalea	<i>Rhododendron luteum</i>
Japanese knotweed	<i>Reynoutria japonica</i>		

Protection of Badgers Act 1992

The main legislation protecting badgers in England and Wales is the Protection of Badgers Act 1992 (the 1992 Act). Under the 1992 Act it is an offence to: wilfully kill, injure, take or attempt to kill, injure or take a badger; dig for a badger; interfere with a badger sett by, damaging a sett or any part thereof, destroying a sett, obstructing access to a sett, causing a dog to enter a sett or disturbing a badger while occupying a sett.

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger"

Natural Environment and Rural Communities Act 2006

Section 41 (S41) of this Act requires the Secretary of State to publish a list (in consultation with Natural England) of Habitats and Species which are of Principal Importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies including local and regional authorities, in implementing their duty under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal (e.g. planning) functions. The S41 list includes 65 Habitats of Principal Importance and 1,150 Species of Principal Importance.

Hedgerow Regulations 1997

The Hedgerow Regulations were made under Section 97 of the Environment Act 1995 and came into force in 1997. They introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification. Important hedgerows are defined by complex assessment criteria, which draw on biodiversity features, historical context and the landscape value of the hedgerow.

Birds of Conservation Concern

This is a review of the status of all birds occurring regularly in the United Kingdom. It is regularly updated and is prepared by leading bird conservation organisations, including the British Trust for Ornithology (BTO), Joint Nature Conservation Committee (JNCC) and The Royal Society for the Protection of Birds (RSPB).

The latest report was produced in 2015 (Eaton *et al*, 2015) and identified 67 red list species, 96 amber species, and 81 green species. The criteria are complex, but generally:

Red list species are those that have shown a decline of the breeding population, non-breeding population or breeding range of more than 50% in the last 25 years.

Amber list species are those that have shown a decline of the breeding population, non-breeding population or breeding range of between 25% and 50% in the last 25 years. Species that have a UK breeding population of less than 300 or a non-breeding population of less than 900 individuals are also included, together with those whose 50% of the population is localised in 10 sites or fewer and those whose 20% of the European population is found in the UK.

Green list species are all regularly occurring species that do not qualify under any of the red or amber criteria are green listed



Global IUCN Red List

The International Union for Conservation of Nature (IUCN) Threatened Species was devised to provide a list of those species that are most at risk of becoming extinct globally. It provides taxonomic, conservation status and distribution information about threatened taxa around the globe.

The system catalogues threatened species into groups of varying levels of threat, which are: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CE), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD), Not Evaluated (NE). Criteria for designation into each of the categories is complex, and consider several principles.

Local Biodiversity Action Plan (LBAP)

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level), and are usually drawn up by a consortium of local Government organisations and conservation charities.

Some LBAP's may also include Habitat Action Plans (HAP) and/or Species Action Plans (SAP), which are used to guide and inform the local decision making process.

Wild Mammals (Protection) Act 1996

This Act offers protects a form of protection to all wild species of mammals, irrespective of other legislation, and focussed on animal welfare, rather than conservation.

Unless covered by one of the exceptions, a person is guilty of an offence if he mutilates, kicks, beats, nails or otherwise impales, stabs, burns, stones, crushes, drowns, drags or asphyxiates any wild mammal with intent to inflict unnecessary suffering.

It's application is typically restricted to preventing deliberate harm to wildlife (in general) during construction works etc.

Appendix D – Target Notes

Target Note	Description	Photograph
1	An area of introduced shrub planting, forming part of a carpark border. Some short ephemeral herbs have colonised beneath the larger shrubs. Shrub species include broad-leaved sage <i>Salvia officinalis</i>, common thyme <i>Thymus vulgaris</i>, eastern white-cedar <i>Thuja occidentalis</i>, elephants-ear <i>Bergenia crassifolia</i>, Japanese camellia <i>Camellia japonica</i>, a juniper species <i>Juniperus spp.</i> and white spruce <i>Picea glauca</i>. Ephemeral herbs that are colonising beneath these shrubs include: common groundsel <i>Senecio vulgaris</i>, common sowthistle <i>Sonchus oleraceus</i>, hairy bittercress <i>Cardamine hirsuta</i> square-stalked willowherb <i>Epilobium tetragonum</i>. Small tufts of annual meadow grass <i>Poa annua</i> are also present.	
2	A small stand of wall cotoneaster <i>Cotoneaster horizontalis</i> (Schedule 9 W&CA) is located immediately adjacent to TN1.	

Target Note	Description	Photograph
3	A large wild privet <i>Ligustrum vulgare</i> bush is located in the north-western portion of site. It has partially been colonised by ivy <i>Hedera helix</i> and a large proportion of the ground layer is covered in ivy also. There are sparse swathes of annual meadow grass <i>Poa annua</i> present, as well as numerous scattered herbs. Herbaceous species include chickweed <i>Stellaria media</i>, common daisy <i>Bellis perennis</i>, common groundsel <i>Senecio vulgaris</i>, common nettle <i>Urtica dioica</i>, common sowthistle <i>Sonchus oleraceus</i>, dandelion <i>Taraxacum officianales</i>, petty spurge <i>Euphorbia peplus</i>, and speedwell species <i>Veronica</i> spp.. A singular bluebell species <i>Hyacinthoides</i> sp. plant exists in this area, however the habitat is not suited to the native common bluebell <i>Hyacinthoides non-scripta</i>. It is thought that it is more likely to be Spanish bluebell <i>Hyacinthoides hispanica</i> or hybrid species, that has escaped from neighbouring residential gardens.	 
4	A small area of scrub located on site, in the form of three hawthorn <i>Crataegus Monogyna</i>. These are approximately 4m in height and have been colonised heavily by ivy <i>Hedera helix</i>. The ground layer is largely the same as in TN3 with the addition of a small patch of lesser periwinkle <i>Vinca minor</i>.	

Target Note	Description	Photograph
5	A small area of amenity grassland, with a maximum height of 5cm . It is dominated by annual meadow grass <i>Poa annua</i> , with interspersed herbs including chickweed <i>Stellaria media</i> , common groundsel <i>Senecio vulgaris</i> , dandelion <i>Taraxacum officinales</i> and ribwort plantain <i>Plantago lanceolata</i> .	
6	An area of turf associated with the garden area of the public house. Defined as 'Other habitat'.	
7	A number of plant boxes are present, closely associated with the garden area of the public house. These contain introduced shrubs, primarily Yucca <i>Yucca</i> spp. and Fortune's spindle <i>Euonymus fortunei</i> . These boxes have also been colonised by herbs including common groundsel <i>Senecio vulgaris</i> , common sorrel <i>Rumex acetosa</i> and yarrow <i>Achillea millefolium</i> .	

Target Note	Description	Photograph
8	A large stand of late cotoneaster <i>Cotoneaster lacteus</i> is planted adjacent to the entrance to the public house as an ornamental feature.	
9	Another area of introduced shrubs associated with the entrance of the public house. Species include common myrtle <i>Myrtus communis</i> , evergreen spindle <i>Euonymus japonicus</i> , late cotoneaster <i>Cotoneaster lacteus</i> , pampas grass <i>Cortaderia selloana</i> and wild privet <i>Ligustrum vulgare</i> .	
10	The Holt public house, likely Victoria era, assessed to have moderate suitability for roosting bats due to type and number of potential roosting features, habitats on site and in the wider landscape. It includes a large area of hardstanding forming it's carpark and courtyard.	
11	Outbuilding/storage building associated with the Holt public house. Similarly, due to the number and type of potential roosting features, habitats on site and in the wider landscape it is assessed as having moderate potential for roosting bats.	

Target Note	Description	Photograph
12	Two dis-used birds (likely pigeon) nests located on the Holt public house. One is situated on atop a security light the second is within a gap created by decorative wooden brackets associated with the soffit box.	

Appendix E – Wildlife Friendly Planting

Aim at having flowers in bloom throughout the year, including both annuals and herbaceous perennials. Below are some suggestions, but this is not an exhaustive list. Flowering times are approximate, varying dependent on region. Regular dead-heading extends flowering period in many flowers.

A=annual, HA=hardy, annual, HHA=half-hardy annual, P=perennial, W=wild flower.

Flowers for borders			
St. John's Wort	<i>Hypericum</i>	P	March
Marigolds	<i>Calendula</i>	H/A	March-October
Aubrietia	<i>Aubrietia deltoidea</i>	P	March-June
Honesty	<i>Lunaria rediviva</i>	HB	March
Forget-me-not	<i>Myosotis</i> sp.	A/P	March-May
Elephant ears	<i>Bergenia</i>	P	April
Wallflowers	<i>Erysimum</i>	B	April-June
Cranesbills	<i>Geranium</i> sp.	P	May-September
Yarrow	<i>Achillea</i>	P	May-
Poppies	<i>Papaver</i> sp.	A	May- July
Dames violet	<i>Hesperis matronalis</i>	P	May-August
Red Valerian	<i>Centranthus ruber</i>	P	May-Sept
Poached egg plant	<i>Limnanthes</i>	HA	June-August
Knapweed	<i>Centaurea nigra</i>	P	June-September
Phacelia		HA	June-September
Ox-eye daisy	<i>Leucanthemum vulgare</i>	P	June-August
Evening primrose	<i>Oenothera biennis</i>	B	June-September
Candytuft	<i>Iberis umbellata</i>	HA	June-September
Sweet William	<i>Dianthus barbatus</i>	B	June-July
Blanket flowers	<i>Gaillardia</i>	P	June -
Verbena	<i>Verbena bonariensis</i>	HHA	June-October
Scabious	<i>Knautia arvensis</i>	P	July-August
Night-scented stock	<i>Mattiola bicornia</i>	HA	July-August
Pincushion flower	<i>Scabious</i> sp.	A/P	July-September
Cherry pie	<i>Heliotrope</i>	HHA	July-October
Mexican aster	<i>Cosmos</i> sp.	A/P	July-October
Cone flower	<i>Rudbeckia</i> sp.	A/P	August-November
Mallow	<i>Lavatera</i> sp.	P	August-October
Michaelmas daisy	<i>Aster</i> sp.	P	August-September
Ice plant 'Pink lady'	<i>Sedum spectabile</i>	P	September
Herbs – both leaves and flowers are fragrant			
Fennel	<i>Foeniculum vulgare</i>		July-September
Bergamont	<i>Monarda didyma</i>		June-September
Sweet Cicely	<i>Myrrhis odorata</i>		April-June

Hyssop	<i>Hyssopus officinalis</i>	July-September
Feverfew	<i>Tanacetum parthenium</i>	June-September
Borage	<i>Borago officinalis</i>	May-September
Rosemary	<i>Rosmarinus officinalis</i>	March-May
Lemon balm	<i>Melissa officinalis</i>	
Coriander	<i>Coprianrum sativum</i>	June-August
Lavenders	<i>Lavendula</i> sp.	
Marjoram	<i>Origanum</i> sp.	
Trees, shrubs and climbers important to insects		
Oak	<i>Quercus</i> sp.	large gardens only
Silver birch	<i>Betula pendula</i>	
Common alder	<i>Alnus glutinosa</i>	Suitable for coppicing
Hazel	<i>Corylus avellana</i>	Suitable for coppicing
Elder	<i>Sambucus nigra</i>	Small
Goat willow	<i>Salix caprea</i>	Suitable for coppicing
Hawthorn	<i>Crataegus monogyna</i>	Suitable for coppicing
Honeysuckle	<i>Lonicera</i> sp.	Grow a variety for succession
Dog rose	<i>Rosa canina</i>	Climber
Bramble	<i>Rubus fruticosus</i>	Climber
Ivy	<i>Hedera helix</i>	Climber
Buddleia	<i>Buddleia davidii</i>	Shrub
Guelder rose	<i>Viburnum opulus</i>	Shrub
Gorse	<i>Ulex</i> sp.	Shrub
Plants for pond edges and marshy areas		
Purple loosestrife	<i>Lythrum salicaria</i>	W June-August
Meadow sweet	<i>Filipendula ulmaria</i>	W June-September
Lady's smock	<i>Cardamine pratensis</i>	W April-June
Water mint	<i>Mentha aquatica</i>	W July-September
Angelica	<i>Angelica sylvestris</i>	W July-September
Hemp agrimony	<i>Eupatorium cannabinum</i>	W March-May
Marsh marigold	<i>Caltha palustris</i>	W June-September
Creeping Jenny	<i>Lysimachia nummularium</i>	W May-August
Fringed water lily	<i>Nymphoides peltata</i>	W June-September
Water forget-me-not	<i>Myosotis scorpioides</i>	W June-September

Allow part lawns to grow long in summer and cut in autumn, removing the clippings. Avoid using fertilisers. Compost heaps are food producers of insects too.

(Source: 'Gardening for bats', Bat Conservation Trust, 2004)

Appendix F – Wildlife Boxes

Introduction

The information in this appendix relates to bat and bird boxes that can be easily incorporated into building and landscape plans. The information provided is not exhaustive and provides examples of some of the types of boxes available.

Including bat and bird boxes throughout the development site has a number of benefits:

- Any roosting or resting places lost as a result of the work will be replaced;
- The ecological value of the site will be enhanced;
- Priority species within the UK and local Biodiversity Action Plans (BAPs) will be encouraged.

Bats

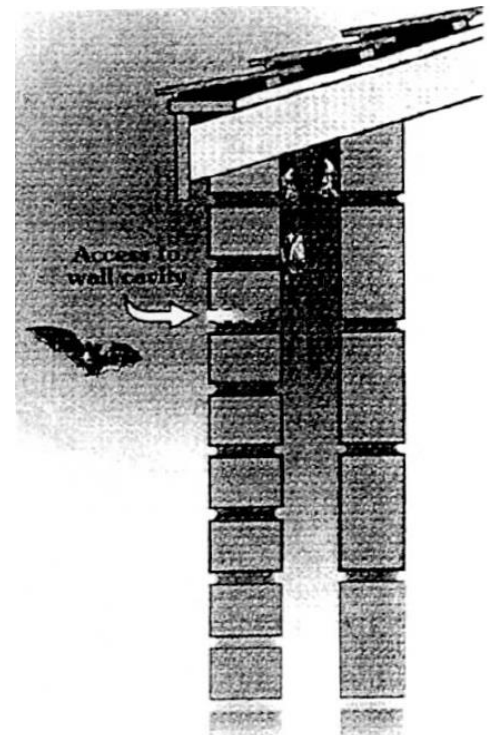
For Buildings

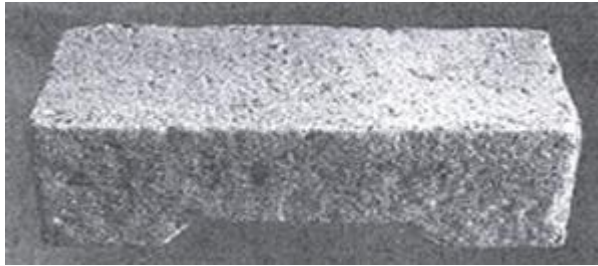
The inclusion of a variety of bat bricks, tubes and boxes for buildings is recommended to encourage a diversity of bat species. Bat bricks and tubes require no maintenance.

Bat Access and Roost Bricks

Source: Marshalls Clay Products (approved by the Bat conservation Trust)

'... Marshall Clay Products have been producing a Bat Access Brick specially designed to help the country's badly depleted bat population by provided access to wall cavities or roof spaces where most bat colonies tend to be (see diagram). In recent years bats have been declining at an alarming rate. Nearly all colonies tend to be on the outside of houses, in wall cavities, under slates, flashing or tiles, et c. ... Contrary to popular opinion, bats do not make pests and do absolutely no damage to buildings or roof timbers, indeed many people encourage bat colonies in their area because of the large number of insect pests, woodworm, et c. which they eat. Most colonises will use a house for only a few weeks in summer before dispersing in autumn.'





A Bat Brick should ideally be placed as high as possible at the gable apex or close to the soffit.

Marshall's Clay Products - Quarry Lane, Howley Park, Woodkirk, Dewsbury, West Yorkshire, WF12 7JJ – Tel: (01132) 203535, Fax: (01132) 203555.

Marshall's Bat Access Brick, which is now also available in stone.

Bat Tube

Brick bat tubes are designed for buildings, or underneath bridges, arches or tunnels, where conditions are relatively humid. They are particularly useful for new buildings or bridges to attract bats, or to provide new roost sites where existing buildings with bats are being renovated.

This long box can be installed within brick masonry, beneath plasterwork or wood panelling, or incorporated into concrete structures such as factory buildings or bridges. Inside it contains a woodcrete surface, a roughened wood board, and a metal mesh, providing a choice of roosting areas depending on the weather conditions and the bats' habits. This box is maintenance-free as the entrance slit is at the bottom.

No painting required, but if painting is necessary a natural breathable paint should be used.

Width: 20cm; Height: 47.5cm; Depth: 12.5cm; Entrance Width: 15cm; Entrance Depth: 2cm; Weight: 13kg



Bird Boxes

A variety of bird box designs could be installed throughout the development site to attract a diversity of species. Open fronted boxes will attract species such as robins, pied wagtails and spotted flycatchers, while boxes with entrance holes will attract tits, wrens and tree sparrows. Roost pockets will be used by roosting birds over the winter and by smaller species, such as wrens, for nesting in the spring.



Open Fronted Boxes

This box is attractive to robins, pied wagtails, spotted flycatcher, wrens and black redstarts and is best sited on the walls of buildings with the entrance on one side.

These woodcrete boxes are designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting. They can be expected to last 25 years or more without maintenance.



Boxes with Entrance Holes

This box is attractive to smaller birds such as tits, wrens and tree sparrows. Sparrow terraces are also available.





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