

**PRELIMINARY ECOLOGICAL
APPRAISAL**

**at
Land at Healey Lane
Rochdale
Greater Manchester
OL12 0SX**

**Client:
AJ Cocker Associates**

**Client Address:
176 Drake Street
Rochdale
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**JCA Ref:
16529/AmB**

Date of Report: 20/01/2021



Quality Assurance

Version	Desktop Survey Completed:		Site Surveyed:		Report Completed:		Reviewed:	
	Date	Name	Date	Name	Date	Name	Date	Name
15828b /AmB	11/01/2021	Amanda Beck	06/01/2021	Amanda Beck	20/01/2021	Amanda Beck	21/01/2021	Adam West

This report has been prepared and provided in accordance with the *British Standard 42020: Biodiversity – Code of practice for planning and development 2018* and the *CIEEM's Code of Professional Conduct*.

Risk Assessment Completed	
Bio-security Procedure Completed	
Lone Worker Procedure Completed	



Summary

JCA Limited has been commissioned by A J Cocker Associates to undertake a Preliminary Ecological Appraisal (PEA) of a site located in Rochdale. The site is located at Ordnance Survey (OS) National Grid Reference SD8918415375 with nearby postcode OL12 0SX.

A desk study and field survey were undertaken in order to assess the potential of the site to support protected habitats and species and species of conservation concern. Recommendations for further survey, avoidance, mitigation and enhancement – where appropriate - have been made and are summarised in Table 1 on the following page and are detailed in full in Chapter 6 of this report.

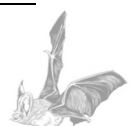
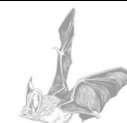


Table 1: summary of ecological receptors at the site and recommended mitigation.

Receptor	Potential Risk to Project if No Action Taken	Cause of Impact Description of Effect	Further Survey Required	Mitigation Required
Designated sites				
Statutorily protected	None	None	None	None
Non-statutorily protected	None	None	None	None
S41 habitat	None	None	None	None
Other habitats	None	None	None	None
Protected species				
Flora (WCA Sch 8, CHSR Sch 5)	None	None	None	None
Invertebrates	None	The removal of bramble and nettles on site will impact on the available habitat for priority species moths feeding and breeding habitats.	None	If evidence of white ermine and small square spot moths are observed in adult, caterpillar or egg forms then all work must stop, and an ecologist contacted for advice on how to proceed with vegetation removal.
White-clawed crayfish	None	None	None	None
Fish	None	None	None	None
Great crested newt	None	None	None	None
Reptiles	None	None	None	None
Birds	Moderate	The removal of trees on site will impact on the available habitat for nesting, feeding and breeding birds.	If trees and vegetation are to be removed during the nesting bird season February 1st to August 31st a nesting bird survey will be required and must be conducted within 24 hours of vegetation removal.	Any new trees or shrubs to be planted should be native, contain high levels of nectar, pollen, seeds and fruit to attract a variety of insects for birds to feed on. Bird boxes must be installed on new residential dwellings.



Bats	Moderate	The removal of trees and vegetation on site will cause a loss of potential foraging and commuting habitat for bats.	One site survey visit to be conducted each month April to October in appropriate weather conditions. Static detectors to be deployed on trees. With one survey being a dusk/dawn survey within a 24-hour period.	Integral bat boxes must be installed on new buildings. Lighting must follow the ILP and Bat Conservation Trust guidelines so bats commuting flight paths are not disturbed. Any new trees or shrubs to be planted should be native, contain high levels of nectar, pollen, seeds and fruit to attract a variety of insects for feeding bats
Badgers	None	None	None	None
Otters	None	None	None	None
Water voles	None	None	None	None
Other Species e.g. S41 species	None	None	None	None
Invasive Species (WCA Sch 9) Injurious Weeds (Weeds Act, 1959)				
	None	None	None	None
Key: S41 habitat/species – habitats and species listed as priority for conservation importance under Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006. WCA Sch – Wildlife and Countryside Act 1981 (as amended) Schedule CHSR Sch – Conservation of Habitats and Species Regulations 2017 Schedule				



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1. Introduction

1.1 Background

1.1.1 In January 2021, JCA Limited was instructed by A. J. Cocker Associates to undertake a Preliminary Ecological Appraisal (PEA) of a site located at Land at Healey Lane, Rochdale hereafter referred to as 'the site'. The purpose of the survey is to establish a baseline of ecological information and assess whether the proposed works, hereafter referred to as 'the scheme', have the potential to adversely affect any protected or notable habitats or species.

1.2 Scheme Description and Location

1.2.1 The site is located at Ordnance Survey (OS) National Grid Reference SD8918415375, with nearby postcode OL12 0SX. The site is triangle in shape with the land sloping north to south. The site consists of poor semi-improved grassland with tall ruderal, mixed scattered trees, introduced shrubs, scattered and dense scrub. The site boundaries have a mixture of wooden fencing and stone walls.

1.2.2 The site is bordered in all directions by residential dwellings. To the south is Shawclough Community Primary School with Healey Primary School to the north-east. To the west is Thrum Hall Methodist Church. To the north is open agricultural fields. In the south-west is open grassland with tree lines. To the west 10.9km from site is Healey Dell Nature Reserve with the nearest water body being 881m east from site.

1.2.3 The scheme is to remove some of the vegetation while retaining some of the broad-leaved trees to the east and south to build a three-bedroom residential house with attached garage, parking and gardens.

1.3 Aims and Objectives

1.3.1 The purpose of the survey is to establish a baseline of ecological information and assess whether the proposed development activities have the potential to adversely affect any protected or notable habitats or species. The following tasks have been undertaken:

- Desktop study – a review of environmental records for the surrounding area to obtain existing information on statutory and non-



statutory designated sites of nature conservation interest, and the presence of protected and notable habitats and species within the site and its environs, including the results of any recent ecological surveys in the area.

- Field surveys – an Extended Phase 1 Habitat survey involving a site visit to record habitat types and dominant vegetation, including any invasive species. During this survey evidence of protected or notable fauna and habitats or habitat capable of supporting protected or notable fauna was recorded.
- Ecological report – an assessment of the potential ecological constraints to the proposed works at the site and recommendations for further survey, avoidance, mitigation, and enhancement where appropriate. Locations of any features constituting ecological constraints or of other ecological interest and vegetation recorded on and around the development are included in an accompanying Phase 1 Habitat Map (Appendix 1). This report and the maps are supported by photographs (Appendix 3) and information regarding current legislation (Appendix 7).



2. Methodology

2.1 Desktop Study

2.1.1 The desktop study involved conducting database searches for statutory and non-statutory designated sites and European Protected Species (EPS) licensing applications within a 2km radius of the site. In addition, international sites designated for bats within 30km of the site were searched for. The baseline conditions are based on a review of existing available information including:

- MAGIC (Multi-Agency Geographical Information for the Countryside) website (to identify statutory designated sites and EPS licences).
- Ordnance Survey mapping (to identify potentially notable habitats including ponds).
- Aerial photography (to identify potentially notable habitats).
- Data search for records of protected/notable species on and within 2km of the site within the last ten (10) years (exempting bat roosts, of which all records are included) obtained from Greater Manchester Local Record Centre and Lancashire Environmental Record Centre, the local environmental record centres for Greater Manchester and Lancashire, along with information for non-statutory wildlife sites.

2.1.2 The records were checked against species listed as priority species under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and the Greater Manchester and Lancashire Biodiversity Action Plans (LBAP) to assess national and regional habitat and species status.

2.2 Field Survey

2.2.1 A Phase 1 survey of the site was conducted on Land at Healey Lane, Rochdale. All areas of the site were investigated and areas around the site where access permitted.

2.2.2 The vegetation and habitat types within the site were noted during the survey in accordance with the categories specified for a Phase 1 Vegetation and Habitat Survey (Joint Nature Conservation Committee, 2010). Dominant and abundant plant species were recorded for each habitat present.



2.2.3 The site was inspected for evidence of, and its potential to support, protected or notable species, especially those listed under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, the Wildlife & Countryside Act (WCA) 1981 (as amended), including those given a higher level of legal protection under the NERC Act 2006 and Countryside & Rights of Way (CRoW) Act 2000, and those listed on the LBAP. The following species were considered:

- Invertebrates (including white-clawed crayfish *Austropotamobius pallipes*).
- Great crested newt *Triturus cristatus* freshwater habitat potential within 500m of the site.
- Reptile habitat within the site.
- Nesting and foraging habitat for birds within the site.
- Bat roost potential and foraging habitat within the site.
- Badger *Meles meles* setts within 30m of the site, where accessible.
- Otters *Lutra lutra* and suitable habitat within 30m of the site, where accessible.
- Water vole *Arvicola amphibius* habitat within 20m of the site, where accessible.
- Other notable species.
- Invasive species.

2.3 Survey Constraints

2.3.1 To determine presence or likely absence of protected species usually requires multiple visits at suitable times of the year. As a result, the survey undertaken focused 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 the National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2018), especially those given protection under UK wildlife legislation.

2.3.2 The optimum time of year for completing the survey is between April and September, as many plant species have a seasonal expression in spring and summer only. The survey was undertaken on 6th January 2021.



- 2.3.3 The survey was conducted during the sub-optimal time for botanical surveys. Therefore, many of the plant species encountered were either not in flower/leaf or were dead.
- 2.3.4 Plant species that may be present in the summer months are often not visible in the winter. If a more accurate and comprehensive floral record is required, the optimum time to conduct botanical surveys would be between the months of April and September.
- 2.3.5 There were no perceived limitations that would significantly impact on the conclusions and recommendations given within this report due to habitats on site not suitable to support rare plant species.
- 2.3.6 The details of this report will remain valid for a period of 18 months. If works have not commenced within this period or land use on site changes, it is recommended that a new review of the ecological conditions is undertaken.

2.4 Scoping Survey Methodology

- 2.4.1 The site was surveyed for foraging, commuting and roosting potential. A detailed search of habitat and trees were conducted during daylight hours in order to identify potential bat roosting sites and look for evidence of bat activity. Potential roost sites and features deemed to be of value to bats were documented.
- 2.4.2 All surveys are conducted by experienced surveyors using the following equipment to ensure an accurate assessment; a printed site map, camera and a 1 million candlelight torch.
- 2.4.3 Signs that bats have previously or are currently using a potential roost site include:
- Scratch marks, urine and oil stains around holes in trees.
 - Droppings, carcasses and/or food remains found around the site.
 - Bats observed flying in/out of a hole in a tree.
 - Bats heard 'chattering' within a potential roost site, especially on warm summer days.
- 2.4.4 Limitations: It must be highlighted that the absence of any of these signs is not proof that the site is not being used by bats. Weathering and other factors will often remove any signs of bat activity, especially when present on the exterior of a tree. As previously explained, many bat



species will have several roost sites which they regularly move between and therefore an absence during a survey visit does not exclude their presence at a later date.

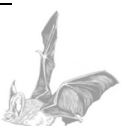
2.4.5 Please see **Table 1** below for guidelines used for assessing the roosting potential of a site. Please note these guidelines are applied using the professional judgement of the licenced bat worker undertaking the assessment.

Table 1: Guidelines used for assessing the bat roosting suitability of a site (taken from the BCT: Bat surveys for professional Ecologists, Good Practice Guidelines; 3rd Edition).

Suitability	Roosting Features Present	Commuting & Foraging Habitats	Number of surveys/visits required
Negligible	Negligible building structures or trees on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.	None
Low	A structure with one or more potential roosting sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, or appropriate conditions and/or suitable surrounding habitat, to be used on a regular basis or by larger numbers of bats e.g. unlikely to support hibernation or maternity roosts. A tree of sufficient size and age to contain features suitable for bat roosting, but with no features seen from the ground. No signs of bat use found during the initial assessment.	Habitat that could be used by a small number of commuting bats such as gappy hedgerow or unvegetated stream, but isolated. i.e. not very well connected to the surrounding landscape by other habitats. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in parkland situation) or a patch of scrub.	One for emergence re-entry surveys Activity surveys:- One survey visit per season, (Spring-April/May), (Summer- June/July), (Autumn - September/October).
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 habitats but unlikely to support a roost of high conservation status. With respect to roost type only- the assessment in this table are made irrespective of species conservation status, which is established after presence is confirmed).	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.	Two for emergence re-entry surveys One survey visit per month from April to October. With one survey being a dusk to dawn survey within a 24-hour period.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by a larger number of bats (maternity roosts, hibernating bats) on a regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used more regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edges. High-quality habitat that is well connected to the wider	Three for emergence re-entry surveys. Two survey visit per month from April to October with one survey being a dusk to dawn survey within a 24-hour period.



		landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Sites that are close to and well connected to known roosts.	
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3. Desk Study Results

3.1 Statutory Designated Sites

3.1.1 The MAGIC website revealed no internationally designated sites within 2km of the site.

3.1.2 The MAGIC website revealed one nationally designated site within 2km of the site, detailed in **Table 2** below.

Table 2: Nationally designated sites within 2km of the site, identified on MAGIC.

Site Name	Designation	Distance (m) and Direction from Site	Reasons for Designation
Healey Dell	LNR	1.0km west	The site sits within the River Spodden valley along a disused railway line from Rochdale to Bacup. The site has ancient woodland, scrub, tall ruderal, wetland and grassland habitats. Acid woodland can be found along the river with hazel that has been previously coppiced. There is an array of ground flora including bluebells <i>Hyacinthoides non-scripta</i> , ferns and grasses. To the north is rich wet grassland with an old mill lodge to the centre of the site surrounded by scrub and grasses. To the south of the site is a small pond. It is an important breeding site for birds: sparrowhawk <i>Accipiter nisus</i> , kestrel <i>Falco tinnunculus</i> , tawny owl <i>Strix aluco</i> , green woodpecker <i>Picus viridis</i> , great spotted woodpecker <i>Dendrocopos major</i> , mistle thrush <i>Turdus viscivorus</i> , wood warbler <i>Phylloscopus sibilatrix</i> , nuthatcher <i>Sitta europaea</i> , tree creeper <i>Certhia familiaris</i> and bullfinch <i>Pyrrhula pyrrhula</i> .
Key: LNR – Local Nature Reserve			

3.1.3 The MAGIC website revealed no SACs designated for bats within 30km of the site.

3.1.4 Records received from Lancashire Environmental Record Network (LERN) revealed two non-statutory designated sites within 2km of the site, detailed in **Table 3** below.



Table 3: non-statutory designated sites within 2km of the site, returned from LERN.

Site Name	Distance (m) and Direction from Site	Reasons for Designation
Brown House Wham & Hamer Pasture Reservoir LWS	912m north	A disused reservoir with species-rich vegetation that is well established. Rush dominated marshy areas with areas of drier vegetation typical of heathland communities. There is a diverse range of mosses including sphagnum species. Plant species in the north represent dry acid grassland with marshy areas.
Rushy Hill BHS	941.5m north	Upland heathland with an acid grassland mosaic. A small basin mire is present to the south-west of the site. South facing slopes are covered by dwarf shrubs of heather <i>Calluna sp.</i> , bilberry <i>Vaccinium myrtillus</i> and crowberry <i>Empetrum nigrum</i> . The site is upland heath priority habitat of UK Biodiversity Action Plan with Fe3 and He1 habitats.
Buckley Wood Reservoir SBI	895.3m east	An ancient woodland with a reservoir built in 1841 which contains a mosaic of habitats for flora and wildlife.
Healey Dell SBI	1.0km west	Details about site in table 3.
Key: LWS – Local Wildlife Site BHS – Biological Heritage Site SBI – Site of Biological Interest		

3.2 Section 41 of the NERC Act 2006 Priority Habitat Inventory

3.2.1 The MAGIC website revealed the following habitats within 2km of the site:

- There are twenty-eight pieces of National Forestry Inventory of deciduous woodland. The nearest parcel of land is 137.5m west.
- There are nine parcels of open mosaic habitat of National Habitat Network. The nearest parcel of land is 744m north.
- There is one parcel of land 851.8m east of Lowland fens.
- There is one parcel of land 1km south of BAP Priority Habitat woodland and parkland.



- There are five parcels of land of ancient & semi-natural woodland. The nearest parcel of land being 1.2km west.
- There is one parcel of upland heathland 1.3km north-east.
- There is one parcel of land 1.4km east of ancient, replanted woodland.
- There are two parcels of land of Priority Habitat Inventory, lowland heath. The nearest parcel of land being 1.6km north-west.
- There is one parcel of land of Priority Habitat Inventory, good quality semi-improved grassland (non-priority) 1.7km north-west.

3.3 Protected and Notable Species

3.3.1 European Protected Species (EPS) Licence Applications

The MAGIC website revealed no EPS licence applications within 2km of the site:

3.3.2 Records of Protected and Notable Species

Table 4: summary of relevant records returned by Greater Manchester Local Record Centre of protected and notable species within 2km of the site.

Taxonomic Group	Common Name	Scientific Name	On site	Within 500m	Within 1km	Within 2km	Notes
Bats	Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	x	✓	✓	✓	Forty-four records from 2011 to 2019. Twenty of these records are of bats injured, four had to be euthanised due to breaks in shoulders and humerus's. Two bats were trapped in buildings. Nine records were of bats heard on bat detectors. Seven records were of dead bats along with bats foraging and commuting. Three records are within 500m of bats with injuries within 16m, 29m, 32m.



	Pipistrelle species	<i>Pipistrellus sp.</i>	x	x	✓	✓	Thirteen records from 2010 to 2019 of bats in flight.
	Nathusius pipistrelle	<i>Pipistrellus nathusii</i>	x	x	✓	✓	One record from 2013 of a dead adult male that was grounded, thin and dehydrated.
	Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	x	x	✓	✓	One record from 2013 of dead bat with an injured forearm.
	Daubenton's bat	<i>Myotis daubentonii</i>	x	x	✓	✓	Four records from 2010 to 2013 of three adult bats foraging together, one heard on a detector and two counted on NBMP transect survey.
	Noctule bat	<i>Nyctalus noctula</i>	x	x	✓	✓	Eleven records dating from 2013 of bats heard on bat detectors.
Bat roosts	Unidentified pipistrelle bat species	<i>Pipistrellus sp.</i>	x	x	✓	✓	Thirteen bat roost records from 2007 to 2014. One record being of a maternity roost, one with bat droppings in and one roost found during building works.
	Common pipistrelle	<i>Pipistrellus pipistrellus</i>	x	✓	✓	✓	Twenty records of bat roosts from 1997 to 2015. One is a hibernation bat roost, two mixed sex bat roosts. One roost with forty to fifty bats. Two roosts with bat droppings in. One record within 30m of bat droppings and prey in a bat roost.
	Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	x	x	✓	✓	Five bat roost records from 2003 to 2004, two being maternity bat roosts.
	Daubenton's bat	<i>Myotis daubentonii</i>	x	x	✓	✓	One bat roost record from 2014 with six adults in. Not a breeding roost.
	Unknown Bat species	<i>Chiroptera sp.</i>	x	✓	✓	✓	Two records from 2007 to 2014 of adult bat roost. One record within 21m of two adult bats in a roost.



Mammals	Water vole	<i>Arvicola amphibius</i>	x	x	✓	✓	One record from 2015 of droppings.
	Hedgehog	<i>Erinaceus europaeus</i>	x	x	✓	✓	Two records from 2016 to 2017. One record of an adult hedgehog the other of a dead roadkill.
	Badger	<i>Meles meles</i>	x	x	✓	✓	Seventeen records from 2010 to 2019 of setts, footprints, observation of young and adult badgers. One record of a dead badger.
Birds	Barn Owl	<i>Tyto alba</i>	x	x	✓	✓	One record from 2013 of a female bird with an injured forearm which died. Schedule 1 bird.
	Black redstart	<i>Phoenicurus ochruros</i>	x	x	✓	✓	One record from 2014 of a male adult bird. Schedule 1 bird and red listed Bird of Conservation Concern..
	Peregrine	<i>Falco peregrinus</i>	x	x	✓	✓	Five records from 2011 to 2018 of adult birds. Schedule 1 bird
	Kingfisher	<i>Alcedo atthis</i>	x	x	✓	✓	Three records from 2010 to 2018 of birds in a nest and sitting in a tree. Schedule 1 species.
	Grey Partridge	<i>Perdix perdix</i>	x	✓	✓	✓	Two records from 2010 to 2018 of birds flying. Red Listed Bird of Conservation Concern. One record within 50m of two birds flying together over field.
	Bullfinch	<i>Pyrrhula pyrrhula</i>	x	x	✓	✓	Thirty-four records dating from 2010 to 2017 of young begging, juvenile birds observed, birds calling and flying. Amber Listed Bird of Conservation Concern.
	Dunnock	<i>Prunella modularis</i>	x	✓	✓	✓	One hundred and forty-nine records dating from 2010 to 2017 of birds flying, singing males, fledglings and birds observed and heard on breeding bird



							survey. Amber Listed Bird of Conservation Concern. Three records of adult birds within 50m of the site.
	House sparrow	<i>Passer domesticus</i>	x	x	✓	✓	One hundred and thirty records dating from 2010 to 2017 of singing males, birds in flight, courtship and displays, fledglings and birds counted on breeding bird survey. Red Listed Bird of Conservation Concern.
	Song Thrush	<i>Turdus philomelos</i>	x	✓	✓	✓	Thirty-nine records dating from 2011 to 2018 of singing males, and birds observed on breeding bird survey. Red Listed Bird of Conservation Concern. One record within 50m of a singing male bird.
	Starling	<i>Sturdus vulgaris</i>	x	✓	✓	✓	One hundred and thirty-two records dating from 2010 to 2017 of birds flying, foraging on grass, flying over fields, nest building, collecting nest material, in nest with young, recently fledged chicks, juveniles being fed by adults, singing males, nests found. Red Listed Bird of Conservation Concern. One record of a nest with young in 50m from site.
	Linnet	<i>Linaria cannabina</i>	x	✓	✓	✓	Sixteen records from 2010 to 2015 of adults flying, juveniles begging and young fledglings. Red Listed Bird of Conservation Concern. One record within 50m of an adult bird.
	Skylark	<i>Alauda arvensis</i>	x	✓	✓	✓	Five records from 2010 to 2016 of



							singing males and adult birds seen. Red Listed Bird of Conservation Concern. One record within 50m of a bird.
	Lesser redpoll	<i>Carduelis cabaret</i>	x	x	✓	✓	Four records from 2010 to 2016 of bird feeding on birch in a park and bird flying overhead. Red Listed Bird of Conservation Concern.
	Lapwing	<i>Vanellus vanellus</i>	x	x	✓	✓	Eleven records from 2012 to 2016 of Courtship and display, birds flying, small chicks, agitated behaviour and young fledglings. Red Listed Bird of Conservation Concern.
	Reed bunting	<i>Emberiza schoeniclus</i>	x	x	✓	✓	Twelve records from 2010 to 2016 of singing males and birds carrying faecal sacs. Amber Listed Bird of Conservation Concern.
	Wood warbler	<i>Phylloscopus sibilatrix</i>	x	x	✓	✓	One record from 2015 of a bird singing. Amber Listed Bird of Conservation Concern.
	Spotted Flycatcher	<i>Muscicapa striata</i>	x	x	✓	✓	One record from 2013 of fifty to sixty birds in a group. Red Listed Bird of Conservation Concern.
Invertebrates	Small heath	<i>Coenonympha pamphilus</i>	x	x	✓	✓	Eleven records dating from 2010 to 2013 of adult butterflies. UK BAP Priority species.
	Small square spot	<i>Diarsia rubi</i>	x	x	✓	✓	Eleven records from 2010 to 2011 of adult moths. UK BAP Priority species.
	Wall	<i>Lasiommata megera</i>	x	x	✓	✓	Eleven records dating from 2010 to 2017 of adults observed. UK BAP Priority species.
	White ermine	<i>Spilosoma lubricipeda</i>	x	x	✓	✓	One record from 2014 of caterpillar.



							UK BAP Priority species.
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3.3.3 Records of Protected and Notable Species

Table 5: summary of relevant records returned by Lancashire Environmental Record Network of protected and notable species within 2km of the site.

Taxonomic Group	Common Name	Scientific Name	On site	Within 500m	Within 1km	Within 2km	Notes
Bats	Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	x	✓	✓	✓	Thirty-three records dating from 2018 to 2019. Records included twenty-one injured bats, with one euthanised and seven bats which died. Other records are of bats heard on aural bat detectors, observed commuting and foraging. Two records are within 500m one record of a bats with injuries that later died 29m from site and one bat that had to be euthanised 16m from site.
	Pipistrelle species	<i>Pipistrellus sp.</i>	x	✓	✓	✓	Two records dating from 2011 to 2019 of bats commuting.
	Unidentified myotis bat species	<i>Myotis sp.</i>	x	x	✓	✓	One record from 2013 of bat heard on a detector on a transect survey.
	Daubenton's bat	<i>Myotis daubentonii</i>	x	x	✓	✓	Two records from 2010 to 2011 of bats foraging.
	Unknown bat species	<i>Chiroptera sp.</i>	x	✓	✓	✓	One record from 2011 of a bat foraging.
	Noctule bat	<i>Nyctalus noctula</i>	x	x	✓	✓	Eight records from 2013 of bats heard on aural bat detectors.
Bat roosts	Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	x	x	✓	✓	Nine bat roosts, four being maternity and one with bat droppings.
	Pipistrelle species	<i>Pipistrellus sp.</i>	x	✓	✓	✓	Twenty-one records from 1990 to 2019 of bat roosts, two being maternity roosts, one a hibernation roosts and the other with bat droppings. One record is within 32m of the site boundary.
	Unknown bat species	<i>Chiroptera sp.</i>	x	✓	✓	✓	One record from 2014 of bat roost 32m from site.



Schedule 9 species	Japanese knotweed	<i>Fallopia japonica</i>	x	x	✓	✓	Eight records from 2011 to 2015.
	Spanish bluebell	<i>Hyacinthoides non-hispanica</i>	x	x	✓	✓	One record from 2017.
	Himalayan balsam	<i>Impatiens glandulifera</i>	x	x	✓	✓	Twenty-five records from 2011 to 2015.
	Rhododendron ponticum	<i>Rhododendron ponticum</i>	x	x	✓	✓	Three records from 2012 to 2015.
	Harlequin Ladybird	<i>Harmonia axyridis</i>	x	x	✓	✓	One record from 2011.
Other plants	Bluebell	<i>Hyacinthoides non-scripta</i>	x	x	✓	✓	Two records from 2012. Protected under the Wildlife and Countryside Act.



4. Field Survey Results

4.1 Habitats

A2.1 Dense/continuous scrub

4.1.1 Bramble *Rubus fruticosus* is growing in large amounts to the south-west corner of the site and along the southern boundary walls.

A2.2 Scattered scrub

4.1.2 Bramble is growing outwards from the dense scrub in the south, west and east among grassland.

A3.1 Scattered broad-leaved trees

4.1.3 Semi-mature and mature trees consisting of: sycamore *Acer pseudoplatans*, silver birch *Betula pendula*, common hornbeam *Carpinus betulus*, hawthorn *Crataegus monogyna*, common holly *Ilex aquifolium*, hybrid black poplar *Populus x canadensis*, goat willow *Salix caprea*, crack willow *Salix fragilis* and common lime *Tilia x europaea* are growing on all the site boundaries with self-seeded young trees growing among tall ruderal and grassland dotted over the site. Some of the semi-mature trees have ivy *Hedera helix* and travellers joy *Clematis vitalba* growing over branches and trunks.

A3.2 Scattered coniferous trees

4.1.4 Two cypress *Cupressus sp.* trees are growing together on the western boundary.

B6* Poor semi-improved grassland

4.1.5 Grassland cover the centre of the site mainly with odd patches to the east and north. Species consist of common bent *Agrostis capillaris*, garlic mustard *Alliaria petiolate*, foxglove *Digitalis purpurea*, tall fescue *Festuca arundinacea*, wood aven *Geum urbanum*, yellow archangel *Lamium galeobolus*, creeping buttercup *Ranunculus repens*, Nightshade species *Solanaceae sp.*, and comfrey *Symphyllum officinale*. The land slopes from the north to the south with the grassland in the south being damp due to water running from the top of the site and collecting at the bottom of the site.



C3.1 Tall ruderal

4.1.6 Tall ruderals are scattered along the site boundaries and within the grassland. Species included: rosebay willowherb *Chamerion angustifolium*, creeping thistle *Cirsium arvense*, nipplewort *Lapsana sp.*, broad-leaved dock *Rumex obtusifolius* and common nettle *Urtica dioica*.

E2.2 Basic flush

4.1.7 Basic flush is to the southern part of the site where water has run from north to the south of the site. Compact rush *Juncus conglomeratus* and soft rush *Juncus effusus* are growing in this part of the site.

J1*4 Introduced shrub

4.1.8 Introduced shrubs are growing in raised stone walled beds and among the grassland species are: Pendulous sedge *Carex pendula*, Pampus grass **T1**. *Cortaderia solloana*, dogwood *Cornus sp.*, St. John's wort *Hypericum perforatum*, garden balsam *Impatiens balsamina* and snowberry Symphoric arpas. To the west, east and north Tom thumb cotoneaster **T2**. *Cotoneaster apiculatus* was observed growing.

J3.5 Wall

4.1.9 To the south and west is a stone wall along the site boundary with herb Robert *Geranium robertianum*, common ivy, common dandelion *Taraxacum officinale* and soft-shield ferns *Polystichum setiferum*, growing within the wall mortar.

J4 Fence

4.1.10 Fencing is wooden to the north and east, to the north it sits on a stone wall. To the east the fence backs onto neighbouring residential gardens.

4.2 Protected and Notable Species

4.2.1 Flora: The data search revealed one record of native bluebells within 1km of the site. However, this species was not observed on site during the survey. The proposed development site does not offer the required habitats to support this plant species. Therefore, flora will not be mentioned further in this report.



- 4.2.2 White-clawed crayfish: The data search revealed no records of white-clawed crayfish *Austropotamobius papillipes* within 2km of the site. There are no waterbodies on site or nearby the proposed development that can support white-clawed crayfish. Therefore, white-clawed crayfish will not be mentioned further in this report.
- 4.2.3 Invertebrates: There are thirty-four records of four invertebrate species, two are butterflies and two are moth species. All species are UK Priority species have been recorded within 1km of the site. Bramble on site is suitable for the small square spot moth and nettles for the white ermine moths caterpillar's food. The site does have habitats suitable for these two species to feed and breed on.
- 4.2.4 Amphibians: There are no records within 2km of the site boundary. There are no waterbodies on site or within 500m of the site to support amphibians. Therefore, amphibians will not be mentioned further in this report.
- 4.2.5 Reptiles: The data search did not reveal any records of reptiles within a 2km radius. The mosaic of habitats on site are not suitable for basking, hibernating or feeding reptiles. Therefore, reptiles will not be mentioned further in this report.
- 4.2.6 Birds: The data search revealed five hundred and forty-seven records of seventeen bird species within 2km of the site. Four of these bird species are Schedule 1 birds, eleven are red listed and four bird species are amber listed species. Seven records are of birds within 50m of the site, species include: linnet, grey partridge, dunnock, song thrush and starlings. Records were of birds flying over, male birds singing and a bird in the nest with young. There are trees, bramble and grassland on site to support nesting and feeding birds. There are nesting opportunities for birds in the trees on site and birds were observed sitting and singing in trees **T3** and seen flying into dense scrub on site **T4** during the survey species observed in trees, on holly and in bramble were starlings, magpies *Pica pica*, robin *Erithacus rubecula*, blue tit *Cyanistes caeruleus*, wood pigeons *Columba palumbus* and dunnock bird species.
- 4.2.7 Bats: There are one hundred and seventy-three records within 2km of the site of nine bat species. Records included bats recorded on ecological surveys, injured bats, grounded bats, bats trapped in buildings, commuting and foraging bats. Fifty-two of these records are of bat roosts of six bat species within 2km of the site. There are three records of bat roosts of common pipistrelle, pipistrelle bat species and



an unknown bat species within 21m to 30m from the site. There are another eight records within 500m of the site of commuting and foraging bats with five records of injured bats within 16m to 32m from site. There are no buildings or trees on site with holes or crevices for bat roosting however the grassland, bramble and trees lines on site along with back gardens backing onto the proposed development site do offer foraging and commuting habitat for bats.

- 4.2.8 Badgers: The data search revealed seventeen records of badger setts, badger tracks and one dead badger within a 1km radius of the proposed development site. There are no steep embankments or mature hedgerows that are suitable for badger setts. Therefore, badgers will not be mentioned further in this report.
- 4.2.9 Otters: There were no records within 2km of otters *Lutra lutra*. There are no waterbodies on site or in the surrounding residential housing that would support otters. Therefore, otters will not be mentioned further in this report.
- 4.2.10 Water Voles: There is one record of water voles within 1km of the site. Due to no rivers or streams on site, there are no vegetation corridors that water voles can feed and commute along. Therefore, water voles will not be mentioned further in this report.
- 4.2.11 Other Notable Species: There were two records of hedgehogs within 1km of the site, one was an observation of an adult hedgehog the other record is of a roadkill hedgehog. There is grassland and bramble on site to support foraging and nesting hedgehogs.
- 4.2.12 Invasive Species: The data search revealed thirty-eight records of four invasive plant species and one invertebrate species all within 1km of the site. No invasive insects were observed on site and there are no records within 500m. A species of cotoneaster **T2** and pampas grass **T1** were both observed on site.



5. Assessment

5.1 Designated Sites

5.1.1 Statutory designated sites

There is one statutory nature conservation site within 1km west of the site's boundary: Healey Dell a Local Nature Reserve. The site consists of an ancient woodland with a mosaic of habitats and a small pond that support important habitat for breeding birds. As there are no woodlands or ponds on site and the site is surrounded by residential housing along with the tree canopy being open to the centre of the site, it is unlikely that species using Healey Dell site will be able to establish themselves on the development site. Therefore, there will be no impact on the statutory designated site from the proposed development.

5.1.2 Non-statutory designated sites

There are two confirmed non-statutorily sites within 2km of the proposed development. Hamer Pasture Reservoir a local wildlife site 912m north which is a disused reservoir, with wet areas and dry acid grassland. Rushy Hill a Biological Heritage Site 941.5m north which consists of acid grassland and upland heathland which is a UK Priority Habitat. Due to different habitats on the proposed development site along with habitat fragmentation of roads and residential dwellings many of the floral and wildlife species inhabiting the non-statutorily sites would not be able to survive on the development site. Therefore, the proposed development will not have an impact on these non-statutory sites.

5.2 Habitats

5.2.1 The most valuable habitats for biodiversity within the development site is dense scrub and mature trees. The proposed works will impact on these habitats due to their removal; this will limit birds, hedgehogs and bats foraging and nesting opportunities.

The other habitats described in Chapter 4, Section 4.1 have lower biodiversity and provide less opportunity to support protected or notable species. The flora recorded in these habitats is considered to be locally common and widespread and they do not fall into any of the NERC S41 or Local BAP Priority Habitat descriptions.



5.3 Protected and Notable Species

- 5.3.1 Birds: The removal of trees and vegetation will reduce nesting and feeding opportunities for birds.
- 5.3.2 Bats: The removal of trees and vegetation will reduce the potential for foraging and commuting bats.
- 5.3.3 Hedgehogs: The removal of dense scrub and grassland will reduce the potential for nesting and feeding hedgehogs.
- 5.3.4 Invertebrates: The removal of vegetation will reduce the potential for feeding and breeding UK Priority moth species.



6 Recommendations

6.1 Habitats

- 6.1.1 A Biodiversity Enhancement Plan should be designed pre-construction and be implemented post construction during the landscape phase of the development. This would be performed alongside the Biometric 2.0 calculation that is required for all developments to demonstrate a biodiversity net gain of at least 10% post development. The biodiversity enhancement plan will provide opportunities for local wildlife and aim to retain or enhance LBAP priority habitats, to ensure the development does not have a significant impact on local or national wildlife populations.
- 6.1.2 The proposed works provide an opportunity to institute enhancement for biodiversity. A landscaping plan should be devised which incorporates, native species with known benefits to wildlife common in the area.

6.2 Further Surveys Required

- 6.2.1 If the trees are to be taken down during the nesting bird period 1st February to 31st August, then a Nesting Bird survey will be required 24 hours prior to the removal of trees to confirm the presence or absence of nesting birds.
- 6.2.2 As the site has been considered to have moderate potential of supporting commuting and foraging bats. We recommend that bat activity surveys must be carried out to understand bat behaviour and which species are using Land at Healey Lane, Rochdale.
- 6.2.3 As the site has been considered to have a moderate potential for supporting bat activity, one survey per month will be required between April to October. One survey must be a dusk to dawn survey within 24-hour period. Static detectors must be deployed over five consecutive nights per month in appropriate weather for bats.
- 6.2.4 If the white ermine or small square spot moths are observed on bramble or nettles on site in adult or caterpillar form then an ecologist must be contact on how to proceed with the vegetation removal as both these species are UK Priority Species.



7 References

Guidelines for surveys and report writing:

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Joint Nature Conservation Committee (JNCC), (2010) *Handbook for Phase 1 habitat survey: A technique for environmental audit*.

Websites:

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Environmental management: Wildlife and habitat conservation - GOV.UK (2016) Gov.uk.

Available at: <https://www.gov.uk/topic/environmental-management/wildlife-habitat-conservation> (Accessed: 21 September 2016).

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The RSPB (2016). Available at: <http://www.rspb.org.uk/> (Accessed: 21 September 2016).

Surveys and mitigation plans: protected species - Detailed guidance (2015) Gov.uk. Available at: <https://www.gov.uk/guidance/surveys-and-mitigation-plans-protected-species> (Accessed: 21 September 2016).

Within this detailed guidance on surveys and mitigation information is available on the following protected species:

- Bats
- Natterjack toads
- Otters
- Reptiles
- Water voles
- White-clawed crayfish
- Wild birds
- Hazel dormice
- Great crested newts
- Badgers

Wildlife licences: when you need to apply - Detailed guidance (2014) Gov.uk. Available at: <https://www.gov.uk/guidance/wildlife-licences> (Accessed: 21 September 2016).

Within this detailed guidance on licensing information is available on licences for the following protected species:

- Bats
- Natterjack toads
- Otters
- Reptiles
- Water voles
- White-clawed crayfish
- Wild birds
- Hazel dormice
- Great crested newts
- Badgers

As well as:

- Non-native Bumblebee species
- Deer
- Freshwater fish
- Invertebrates
- Mink, coypu, muskrat and grey squirrel
- Plants



Species Specific Information:

Badgers:

Natural England, (2007) Badgers and Development: A Guide to Best Practice and Licensing.

Competencies for Species Survey: Badger, Chartered Institute of Ecology and Environmental Management CIEEM, 2013. Accessed 2018-06-21

Bats:

Bat Conservation Trust, (2007) Bats, Development & Planning in England. London.

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Great Crested Newts:

Langton, T., Beckett, C. and Foster, J. (2001) Great Crested Newt Conservation Handbook. Halesworth: Froglife. pdf

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Water Voles:

Natural England, (2008) *Water voles - the law in practice. Guidance for planners and developers*.

Water Vole Conservation and Management: Lessons From Four Case Studies, Jemma Louise Gaskin, 2016

Stoddart, D.M. (1970), *Individual range, dispersal in a population of water voles (Arvicola terrestris (L.))*. *Journal of Animal Ecology* 39, 403-425.

Water Vole Conservation Handbook, 2nd Edn. Wildlife Conservation Research Unit, University of Oxford, Oxford.

Strachan, R. (2009), *Populations and Persistence – Developing a Strategy for Conserving Water Voles in the UK*, Presentation to Warwickshire Wildlife Trust, 2nd April 2009, Environment Agency, Wales

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Strachan, R., Moorehouse, T. and Gelling, M. (2011), *Water Vole Conservation Handbook*, 3rd Edn, WILDCRU

White-clawed Crayfish:

Peay, S. (2002) *Guidance on Habitat for White-clawed Crayfish and its Restoration*. Kendal: English Nature

Relevant Legislation:

Wildlife and Countryside Act 1981, (c. 69) (as amended). Available at:
<http://www.legislation.gov.uk/ukpga/1981/69>

Countryside and Rights of Way Act 2000 (c.37). Available at:
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(

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at:
<https://www.legislation.gov.uk/uksi/2019/9780111176573>

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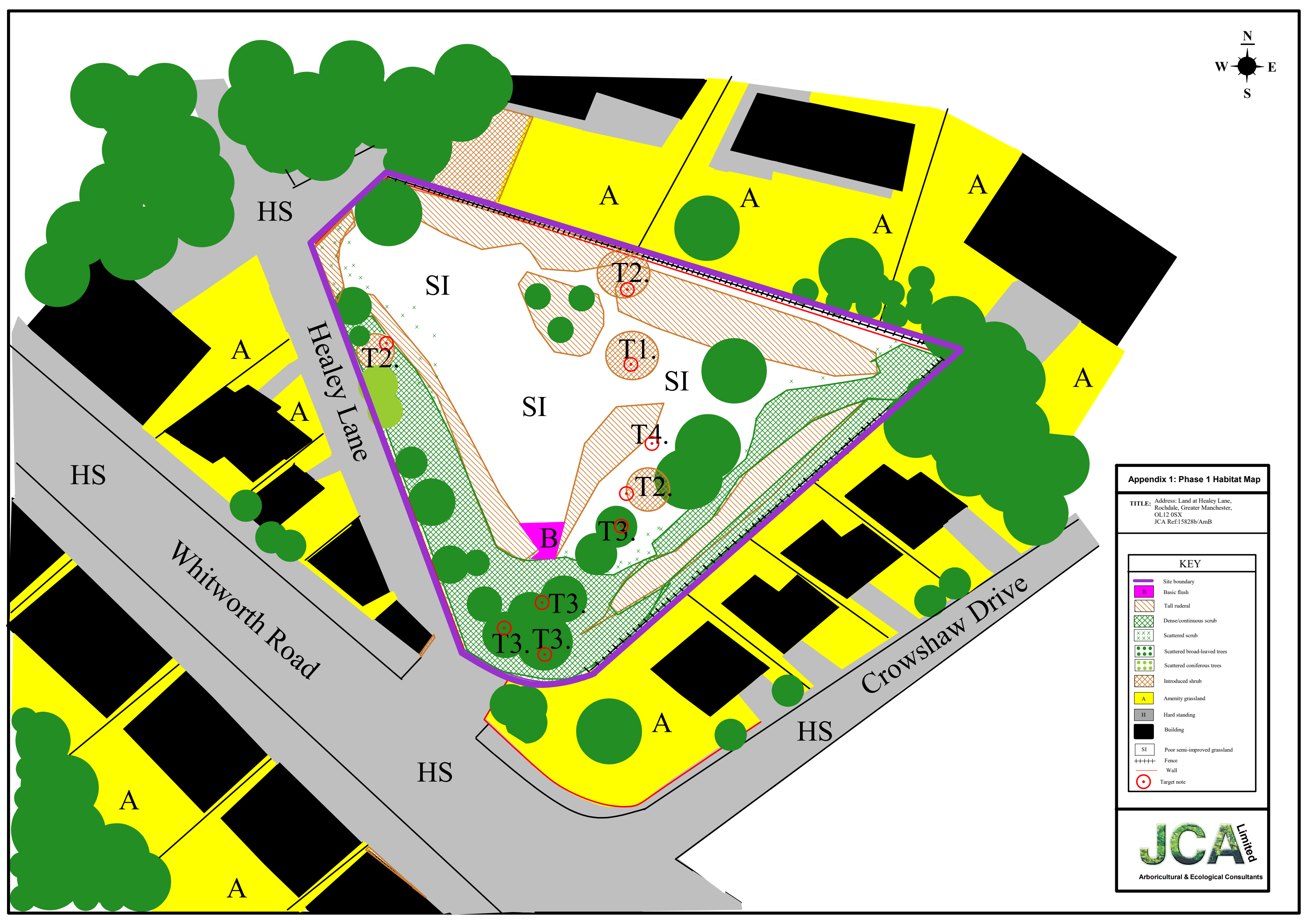
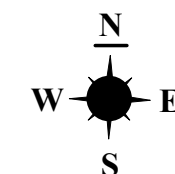
The Hedgerow Regulations 1997 (No. 1160). Available at:
<http://www.legislation.gov.uk/uksi/1997/1160/contents/made>



Appendices

Appendix 1: Phase 1 Habitat Map





Appendix 1: Phase 1 Habitat Map

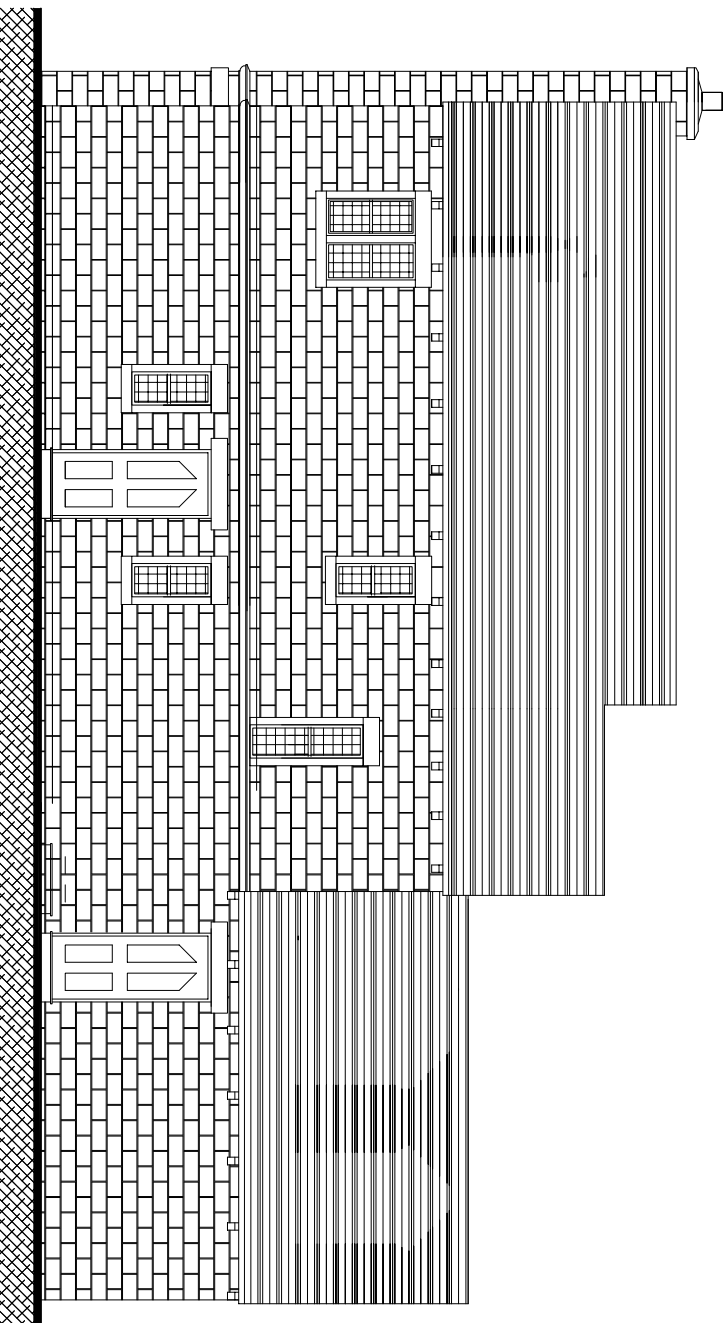
TITLE: Address: Land at Healey Lane,
Rochdale, Greater Manchester,
OL12 0SX
JCA Ref:15828b/AmB

KEY	
	Site boundary
	Basic flush
	Tall ruderal
	Dense/continuous scrub
	Scattered scrub
	Scattered broad-leaved trees
	Scattered coniferous trees
	Introduced shrub
	Amenity grassland
	Hard standing
	Building
	Poor semi-improved grassland
	Fence
	Wall
	Target note

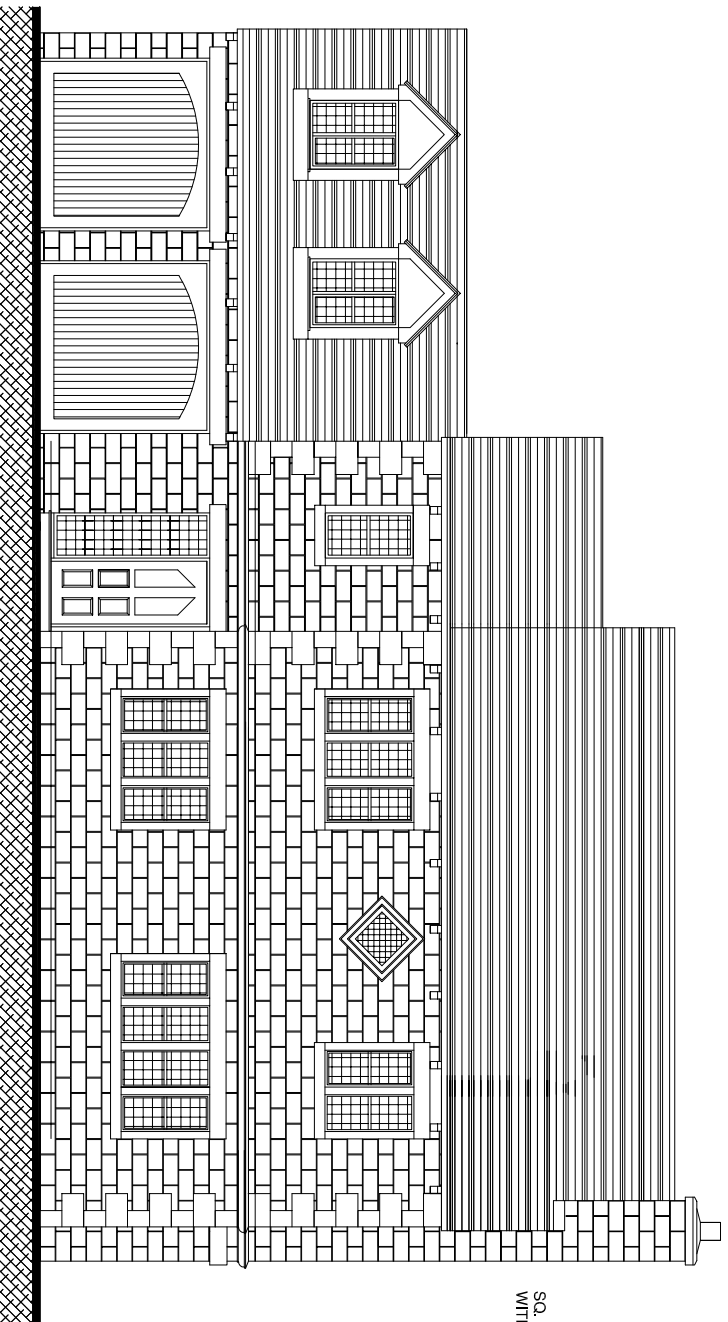
JCA Limited
Arboricultural & Ecological Consultants

Appendix 2: Proposed Development Plan

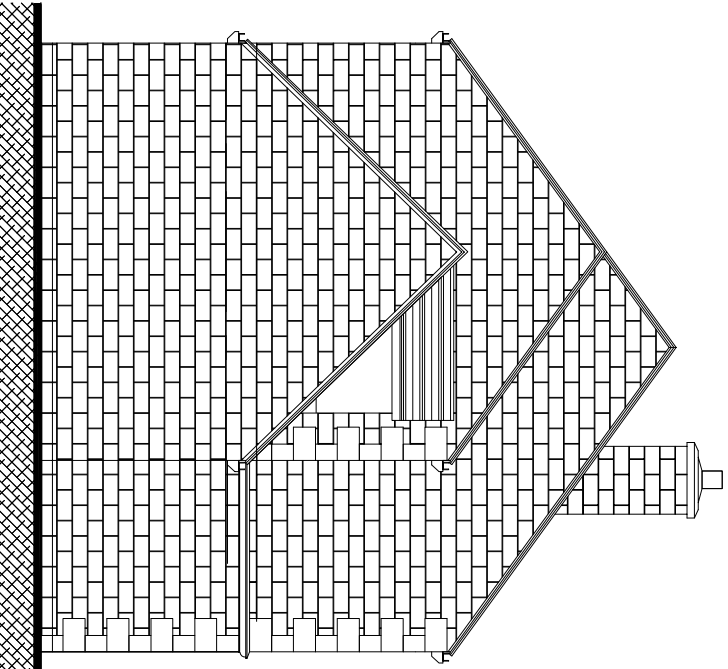




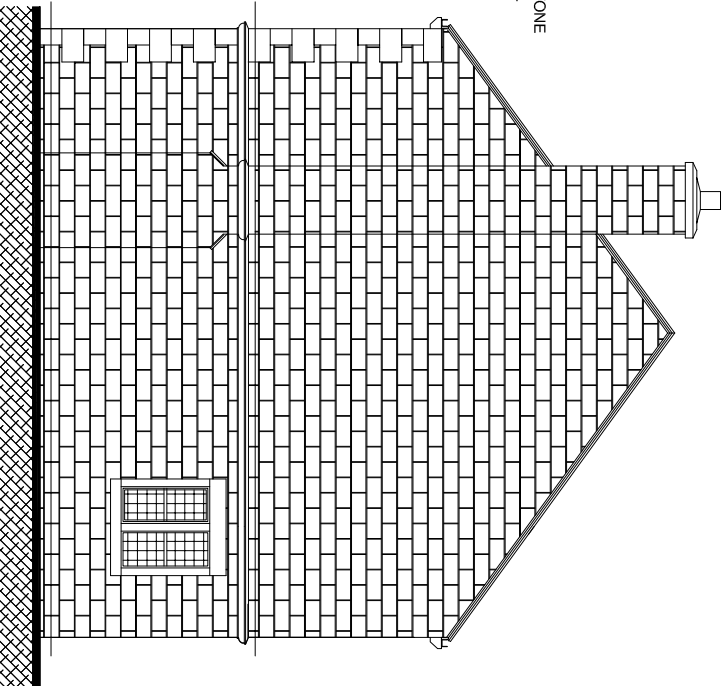
Rear Elevation



Front Elevation



Side Elevation

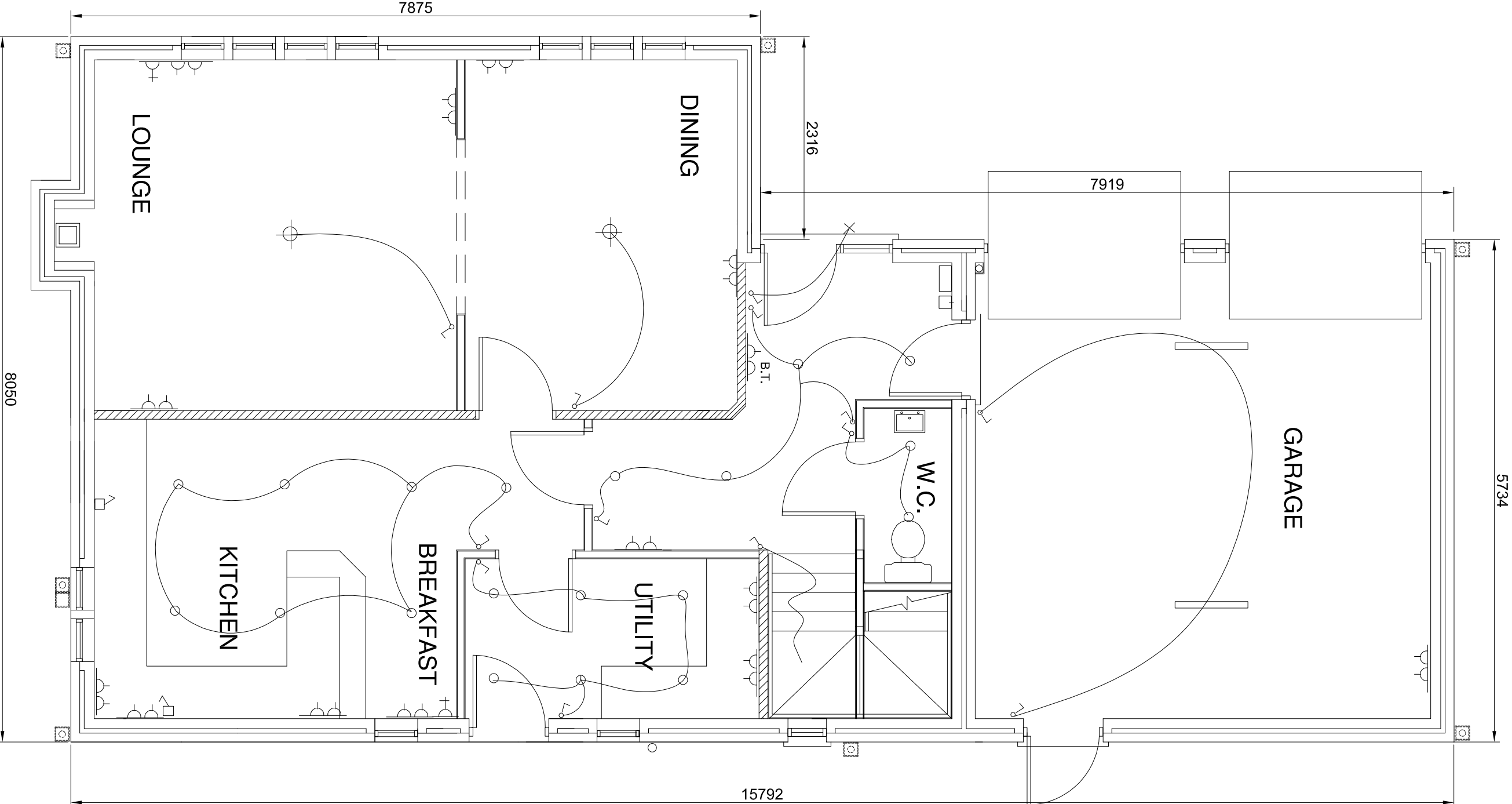


Side Elevation

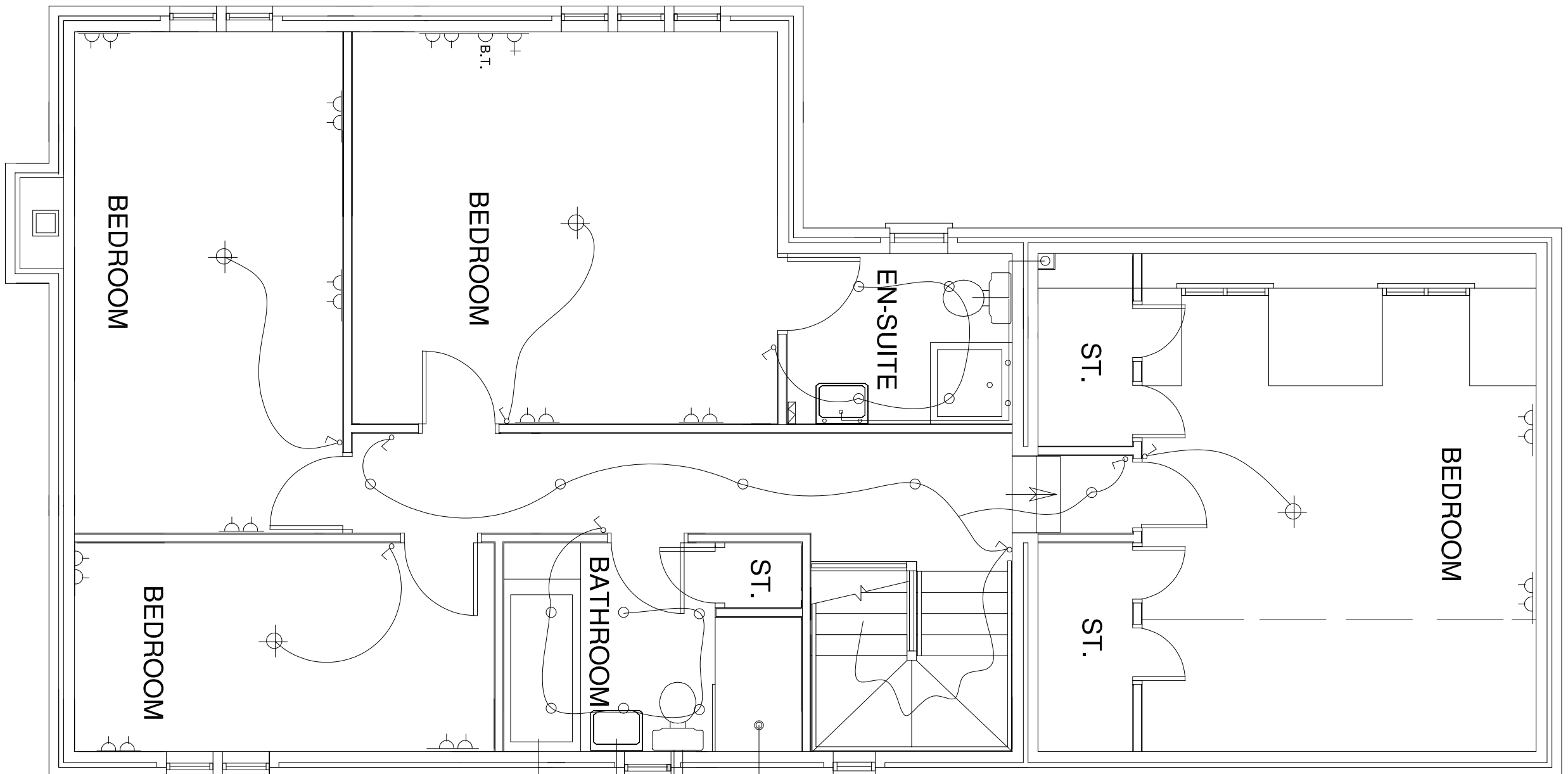
- General Notes:
- Mafley Edgemere reconstituted slate interlocking tiles to roof.
 - Marshalls Cromwell Rustic Yorkstone reconstituted walling to elevations with smooth reconstituted stone quoins, stone heads, sills and window surrounds as shown.
 - Windows to be PVC-U double glazed units to current Building Regulations - colour to L.A. approval.
 - External doors to be insulated composite doors in PVC-U frames to match windows - colour to L.A. approval - main entrance door to provide disabled accessibility to current Building Regulations.
 - Paths around the property and patio area formed in p.c.conc paving flags laid on semi-dry mortar mix on compacted and blinded stone sub base.
 - Proprietary insulated GFR dormer windows to bedroom over garage incorporating all necessary drips, trims, flashings as required.

Hatching denotes drive entrance formed in tarmac to match adjoining drive/Healey Lane

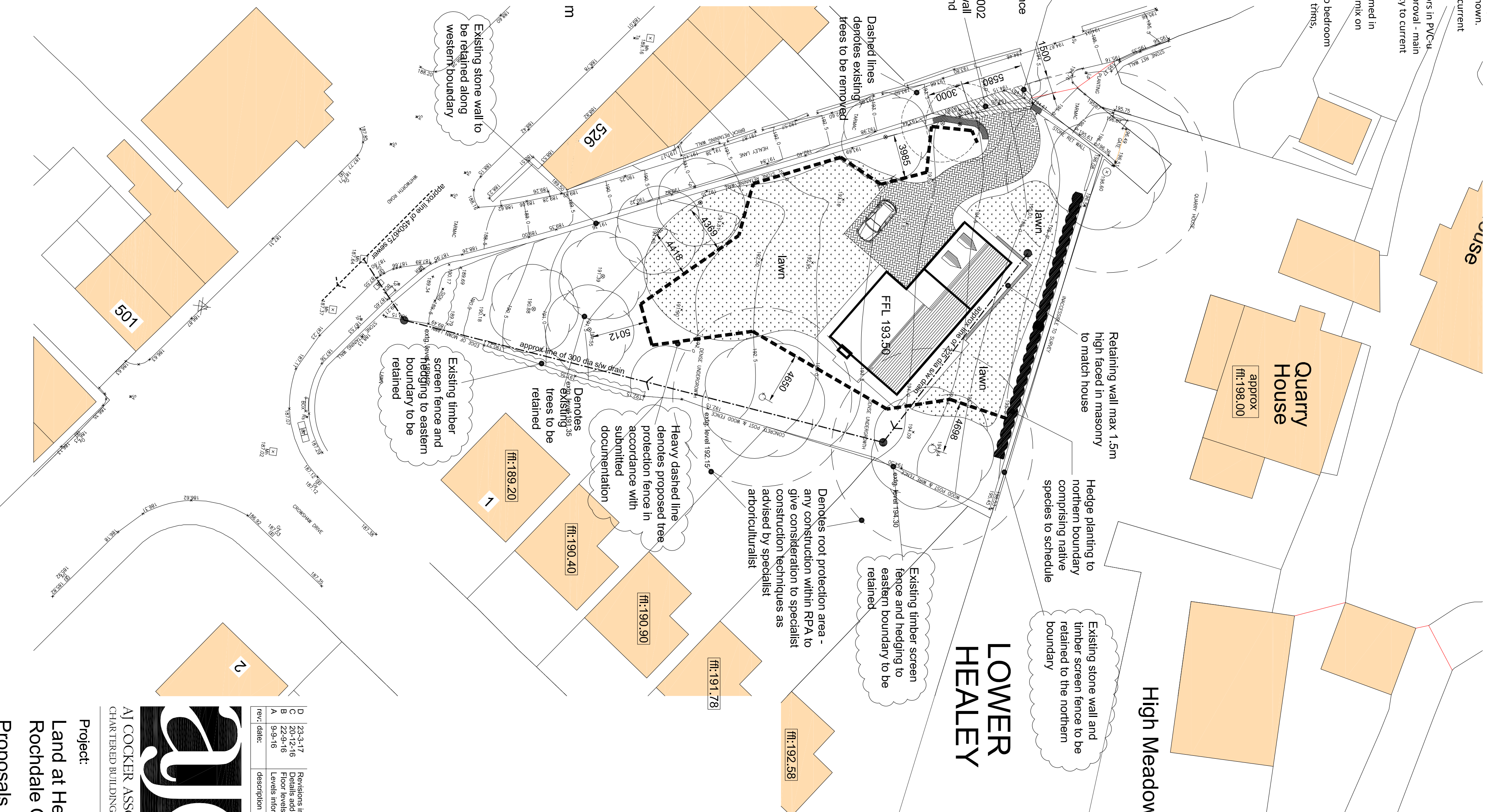
Form passing place in accordance with planning consent ref: 12/56293/OUT and Healey Consulting drawing number OP002 - Section of existing dry stone wall to be taken down as required and rebuilt to match existing in accordance with structural engineers design and details



Ground Floor Plan



First Floor Plan



Site Plan 1:250



Location Plan 1:1250

LANDSCAPING
Topsoil
Imported top soil to comply with BS3882:1994. Where topsoil is absent imported top soil shall be spread to a depth of 0.2m. Within any tree protection areas, to minimize disturbance of tree roots during planting operations, topsoil shall be spread to a maximum depth of 0.15m over existing top soil.

Planting:
All hardy nursery stock shall comply with BS: 3936, Specification for nursery stock. All site preparation, planting and post planting aftercare shall comply with "Handling and Establishment of Landscape Plants" 1996 published by the committee for Plant Supply and Establishment. All stock to be planted at the sizes and densities detailed in the planting schedule. All trees of a height greater than 1.5 meters shall be supported using a wooden stake of a top diameter not less than 50mm. The tree stake shall be driven to a depth of not less than 0.5m. The height of the stake above the ground level shall be equal to 1/3rd the height of the tree. All staked trees shall be attached to the top of the stake with a single proprietary tree tie.

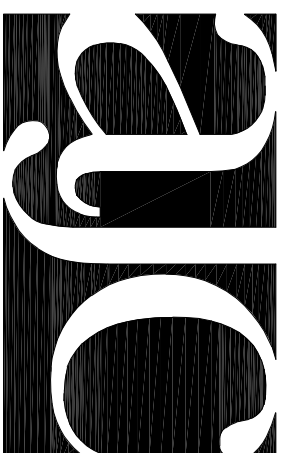
Matching:
All planted ornamental stock shall be matched with a coarse grade of part-composed wood-chip or bark mulch. The mulch shall be spread to a depth of 50mm to a radius of 300mm around all shrubs and transplants and a radius of 500mm around all trees of a height greater than 1.0m.

Hedge planting to northern boundary:
To be carried out in accordance with BS4228:1989 Code of practice for general landscape operations. Hedging plants to be planted in two, staggered, rows at a density of not less than 5 per meter with approx 450mm between plants in the same row and 300-400mm between rows. Hedgeway shrubs should be either notch planted or trench planted. Trenches dug to a min depth of 400mm and width 600mm with plants put into ground at the same depth at which they had been grown in the nursery. Typical planting schedule:
Hawthorn (Crataegus monogyna) 60%
Blackthorn (Prunus spinosa) 20%
Elder (Sambucus nigra) 10%
Dog rose (Rosa canina) 5%
Honeysuckle (Lonicera periclymenum) 5%

Understorey planting -generally existing understorey planting to be retained where possible supplemented on the basis of the following native species 3L pot size planted
Wood sorrel (Oxalis acetosella)
Wood anemone (Anemone nemorosa)
Lesser celandine (Ranunculus ficaria)
Herb robert (Geranium robertianum)

Include a few native ferns at rate of 1 plant per square meter, such as:
Male fern (Dryopteris filix-mas)
Hart's tongue (Asplenium scolopendrium)
Hard fern (Blechnum spicant)

rev	date	description
D	23-3-17	Revisions in respect of planning conditions
C	23-3-17	Revisions in respect of planning conditions
B	22-3-16	Floor levels interpreted for surrounding properties
A	9-3-16	Levels information added from topographical survey



AL COCKER ASSOCIATES
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mail@ajcockerassociates.co.uk
www.ajcockerassociates.co.uk



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Project:	Land at Healey Lane Rochdale OL12 0SX	scale: 1:50/1:100 date: June 2016
Proposals		drawn: NL
Client: Mr.&Mrs. Noakley		Dwg. Nr. H376/001/D

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CDM:
Clients and contractors working on projects lasting more than 30 days or involving more than 500 person days must fill their details under the CDM regulations 2015

Appendix 3: Photographic Evidence



Photo 1 View along western boundary.



Photo 2: View to the east towards residential back gardens.

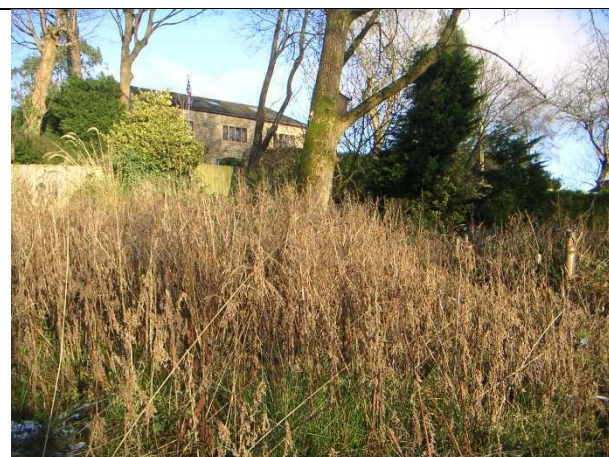


Photo 3: view to the north boundary.



Photo 4: Tall ruderal among grassland.



Photo 5: Dense scrub to west boundary.



Photo 6: Grassland, broad-leaved trees and dense scrub.





Photo 7: Large area of cotoneaster to east.



Photo 8: Tall ruderals on edges of site.



Photo 9: Coniferous tree to the west.



Photo 10: South-west corner of the site dense scrub.



Photo 11: View across site looking east.



Photo 12: Western wall outside boundary line.



Appendix 4: Species List

To be submitted to the appropriate Local Records Centre

Site Name: Land at Healey Lane, Rochdale

Provided by: JCA Limited

Grid Ref: SD891153

Verified by: Amanda Beck

Table 6: Complete list of species encountered during survey.

Common Name	Scientific Name	Number	Comment
Sycamore	<i>Acer pseudoplatanus</i>	N/A	None
Common bent	<i>Agrostis capillaris</i>	N/A	None
Garlic mustard	<i>Allaria petiolata</i>	N/A	None
Silver birch	<i>Betula pendula</i>	N/A	None
Pendulous sedge	<i>Carex pendula</i>	N/A	None
Common hornbeam	<i>Carpinus betulus</i>	N/A	None
Rosebay willowherb	<i>Chamaenerion angustifolium</i>	N/A	None
Creeping thistle	<i>Cirsium arvense</i>	N/A	None
Travellers joy	<i>Clematis vitalba</i>	N/A	Growing on tree branches to west.
Woodpigeon	<i>Columba palumbus</i>	1	Target Note 1. Sitting in tree to east of site.
Dogwood	<i>Cornus sp.</i>	N/A	None
Pampus grass	<i>Cortaderia selloana</i>	N/A	None
Tom thumb cotoneaster	<i>Cotoneaster apiculatus</i>	N/A	Target Note 2. growing in the east, north and west.
Hawthorn	<i>Crataegus monogyna</i>	N/A	None
Cypress	<i>Cupressus sp.</i>	N/A	None



Blue tit	<i>Cyanistes caeruleus</i>	1	Target Note 3. Flew onto branch trees in east.
Foxglove	<i>Digitalis purpurea</i>	N/A	None
Robin	<i>Erithacus rubecula</i>	1	Target Note 4. Sitting on holly.
Tall fescue	<i>Festuca arundinacea</i>	N/A	None
Herb Robert	<i>Geranium robertianum</i>	N/A	None
Wood aven	<i>Geum urbanum</i>	N/A	None
Common ivy	<i>Hedera helix</i>	N/A	On walls and growing around trees.
St. John's wort	<i>Hypericum perforatum</i>	N/A	None
Common holly	<i>Ilex aquifolium</i>	N/A	None
Garden balsam	<i>Impatiens balsamina</i>	N/A	None
Compact rush	<i>Juncus conglomeratus</i>	N/A	None
Soft rush	<i>Juncus effusus</i>	N/A	None
Yellow archangel	<i>Lamium galeobdolon</i>	N/A	None
Nipplewort	<i>Lapsana communis</i>	N/A	None
Magpie	<i>Pica pica</i>	3	Target Note 5. Sitting in trees to east of site.
Soft shield fern	<i>Polystichum setiferum</i>	N/A	None
Hybrid black polar	<i>Populus x canadensis</i>	N/A	None
Dunnock	<i>Prunella modularis</i>	1	Target Note 6. Flew into tall ruderal in east.
Creeping buttercup	<i>Ranunculus repens</i>	N/A	None
Bramble	<i>Rubus fruticosus</i>	N/A	None
Broad-leaved dock	<i>Rumex obtusifolius</i>	N/A	None
Goat willow	<i>Salix caprea</i>	N/A	None



Crack willow	<i>Salix fragilis</i>	N/A	None
Nightshade sp.	<i>Solanaceae sp.</i>	N/A	None
Starling	<i>Sturnus vulgaris</i>	12	Target Note 7. Sitting on branches and singing in trees to east.
Snowberry	<i>Symphoricarpos</i>	N/A	None
Comfrey	<i>Symphyllum officinale</i>	N/A	None
Common dandelion	<i>Taraxcum officinale</i>	N/A	None
Common lime	<i>Tilia x europaea</i>	N/A	None
Common nettle	<i>Urtica dioica</i>	N/A	None



Appendix 5: Bat Survey Calendar

Figure 1: Survey timings calendar (taken from BCT: Bat surveys for professional Ecologists, Good Practice Guidelines; 3rd Edition).

Survey type	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Preliminary ecological appraisal - fieldwork												
Preliminary roost assessment - structures ^a												
Emergence/re-entry survey for maternity or summer roosts ^b												
Emergence/re-entry survey for transitional roosts ^b												
Emergence survey for mating roosts ^b												
Hibernation survey - structures ^a												
Preliminary ground level roost assessment - trees ^d												
Potential roost feature (PRF) inspection survey - trees												
Ground level bat activity survey - transects and automated/static												
Pre-, during and post-hibernation - automated/static bat activity survey												
Swarming survey												
Back-tracking survey												
Trapping survey ^e												
Radio tagging and tracking survey ^e												

= optimal period
 = sub-optimal period

= weather or location dependent (i.e. may not be suitable due to spring and autumn conditions in any one year or in more northerly latitudes). Note that October surveys are not acceptable in Scotland.

^a Not including trees



Appendix 6: Glossary

Activity surveys - are used to assess the level of bat activity at a site. This can be done either by using equipment such as an AnaBat device, or manually walking around a site with a heterodyne detector, documenting the number of bat passes and interceptions.

Dawn surveys - begin around 2 hours before and up to sunrise when bats are returning to their roosts from foraging, and swarming behaviour can be seen close to roost entrances.

Dusk surveys - begin around 30 minutes before sunset and up to 2 hours afterwards. These are done in order to see bats emerging from their roost sites at night.

Echolocation – is a system similar to sonar that allows bats to travel and forage even in total darkness. Bats make a call and then listen to the returning echoes in order to build up a map of their surrounding area. This allows bats to gauge the identity and distance of an object by how long the echo takes to return to them.

Habitat - the ecological or environmental area that is inhabited by a particular species of animal, plant or other type of organism.

Hibernation - is a state of inactivity and metabolic depression characterized by lower body temperature, slower breathing, and lower metabolic rate. Hibernating animals conserve energy, especially during winter when food is short, tapping energy reserves, i.e. body fat, at a slow rate.

Hibernacula - typically consist of underground sites, such as caves and cellars, which remain relatively cold and humid. Bats will hibernate to conserve energy over the winter months when falling temperatures cause a drop in the abundance of insects. These will typically be colonised around November to around March.

Insectivorous – is when an organism feeds exclusively on insects.

Nocturnal - a behaviour characterized by being active during the night and sleeping during the day.

Maternity roosts – colonised around late May early June and consist of mature females and their young. These roosts need to be warm and quiet, and are used up until around August, with females typically leaving first and then the young.

Mating roosts – mating begins around late October to November. Males of most species use special mating calls to attract females. These can include purrs, clicks and buzzing.

Roost – a site where bats live during the day, rear young and hibernate. These can be in manmade structures, such as buildings, bridges, tunnels, cellars and mines, or natural features such as mature trees and caves.

Roosts in buildings – many types of buildings will be used by bats. The most likely sites are agricultural buildings (e.g. farmhouses and barns), buildings with exposed wooden beams (greater than 20cm thick), buildings with weather boarding and/or hanging tiles, and buildings close to woodland and/or water.

Roosts in trees – these are typically in mature trees with deep sheltered cracks, under loose sections of bark, or in woodpecker holes.

Species – a group of organisms in which all members can interbreed and produce viable offspring.

Summer roosts (non-breeding) - these are generally occupied by groups of males and immature females during the summer and are usually only occupied for a short period before the group moves to another location.

Swarming – a behaviour exhibited by bats returning to their roost sites at dawn. Bats can be seen repeatedly flying to and from the roost entrance, making it much easier for consultants to identify where roosts are on a building or structure.



Temporary/Transitory roosts – These are used after hibernation (March – April) before mature females disperse to maternity roosts and male/immature females colonise summer (non-breeding) roosts. Similarly, temporary roosts form before hibernation (August -October).

Underground Roosts – these are typically used during the winter and can be mines, caves, tunnels or cellars.



Appendix 7: Protected Species Information

The following species are fully protected in UK law, under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019:

- All UK bat species
- Dormouse
- Great Crested Newt and Natterjack Toad
- Large Blue Butterfly
- Otter
- Pine Marten
- Polecat
- Scottish Wild Cat
- Smooth Snake and Sand Lizard
- Various aquatic and plant species

These species are afforded the highest protection in the UK. Under this protection it is an offence to; deliberately capture, injure or kill any wild animal of a European protected species; deliberately disturb wild animal of any such species; deliberately take or destroy the eggs of such an animal, or damage or destroy a breeding site or resting place of such an animal.

In addition to this it is an offence to be in possession of, or to control, transport, sell or exchange, or to offer for sale or exchange, a European Protected species.

The following species are protected under UK law, such as the Wildlife and Countryside Act 1981 (as amended):

- Badger
- Nesting birds
- Red Squirrel
- Reptiles (Adder, Common lizard, Grass snake, Slow worm)
- Water Vole
- White Clawed Crayfish
- Various bird species i.e. Barn Owl
- Various plant species

Therefore, under this protection it is an offence to; kill, injure or take any of the above species.

Nesting birds are only protected during the breeding season whilst on their nest. In addition to the adults being protected, the eggs, young and nest itself whilst in use are protected.

The Wildlife and Countryside Act 1981 also contains measures to prevent the establishment of non-native species which may be detrimental to native wildlife, prohibiting



the release of animals and planting of plants listed in Schedule 9 in England and Wales (e.g. Japanese Knotweed and Himalayan Balsam).

Badgers are protected under The Protection of Badgers Act 1992. Under this legislation it is an offence to; take, injure, kill, or cruelly ill-treat a badger; interfere with a badger sett; sell or possess a live badger; or mark or ring a badger.

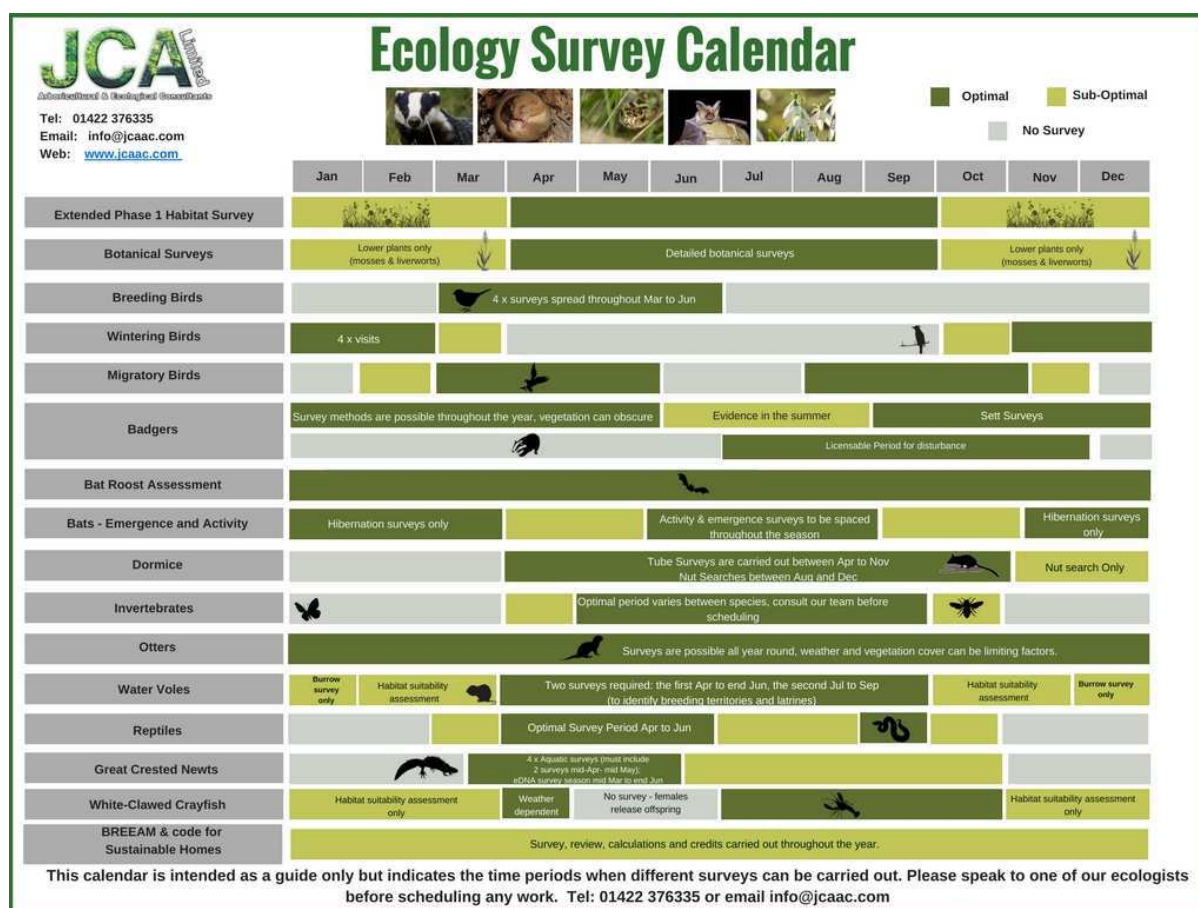
The following habitat types are protected under UK Law:

- Habitats that are used by protected species
- Habitats that fall within designated sites
- Hedgerows
- Individual trees/woods can be protected under Tree Preservation Orders



Appendix 8: Survey Calendar

Figure 2: Survey calendar for protected species and habitat surveys.



The information which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and bona fide opinions.

Signed



.....
Amanda Beck *Qualifying CIEEM member*

Assistant Ecologist

20th January 2021

Reviewed by



.....
Adam West

Senior Ecologist

21st January 2021

For and on behalf of **JCA Ltd**

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ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes
- Butterfly & Insect Surveys

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)
- Planting Schemes
- Monitoring of bird or bat boxes.

ARBORICULTURAL SERVICES

Guidance for Architects & Developers

- British Standard 5837 Surveys
- Arboricultural Implications Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control



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