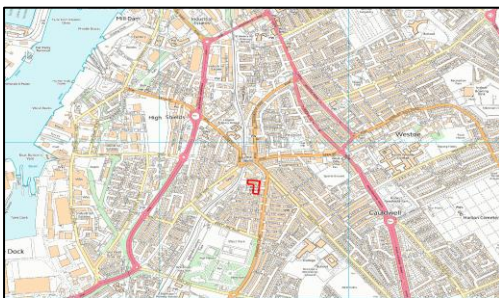


# PRELIMINARY ECOLOGICAL APPRAISAL AND BAT SURVEY

## GORDON HOUSE, SOUTH SHIELDS



APRIL 2017  
DRAFT

**CLIENT** Gus Robinson Developments Ltd.  
**PROJECT NAME** Gordon House, South Shields  
**PROJECT NUMBER** 4977

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REPORT VERSION	STATUS	DATE	CHANGES	AUTHOR	PROOF READ	APPROVED
R01	Draft	06/04/17	First draft	MW	MR	MEM

UNLESS REQUESTED OTHERWISE, THE INFORMATION BELOW, RELATING TO THE LOCAL AREA, WILL BE PROVIDED TO THE LOCAL ENVIRONMENTAL RECORDS CENTRE

SPECIES	RECORDER	DATE	LOCATION (4 FIG. NGR)	ABUNDANCE	COMMENT
Dunnoek	E3 Ecology	21/03/17	NZ3665	1	Singing
Herring gull	E3 Ecology	21/03/17	NZ3665	1	Overflying

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## **A. SUMMARY**

E3 Ecology Ltd was commissioned by Gus Robinson Developments Ltd. in March 2017 to undertake a Preliminary Ecological Appraisal (PEA) and daytime bat risk assessment of Gordon House, South Shields. A detailed external and internal inspection of the structure and habitats on site was undertaken on 21<sup>st</sup> March 2017.

The development proposal comprises demolition of the existing building and infrastructure and rebuilding with 18 residential units and associated gardens.

Consultation with the Multi Agency Geographic Information for the Countryside (MAGIC) website indicated that the Northumbria Coast Special Protection Area (SPA) and Ramsar site lies ~ 2km to the north east and the Durham Coast Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) lies ~1.9km to the north east. SSSI Impact Risk Zones, viewed on the MAGIC website, indicate the site is within a distance of these designated sites where the local planning authority should consult Natural England on likely risks from any residential developments with a total net gain in residential units. It is therefore considered likely that a shadow Habitat Regulations Assessment will be required to assess any significant effects development of the site could have on the designated sites. This approach should be confirmed with the local planning authority (LPA). Consultation has also taken place with Durham Bat Group to obtain local bat records for the area. This information will be appended upon receipt.

Preliminary Ecological Appraisal indicated habitats on site predominantly comprise the building of Gordon House with hard standing and amenity grassland associated with a car parking area to the south. Small areas of introduced shrubs are located to the south of the car parking area and to the north of Gordon House.

Assessment of the survey results suggest that hard standing, amenity grassland and introduced shrub habitats are all of low habitat value.

The Wildlife and Countryside Act 1981 Schedule 9 listed invasive species small leaved cotoneaster was recorded within all areas of introduced shrubs. This should be removed from site in accordance with the attached method statement (appendix 4)

With regard to bats, the site is situated in an area dominated by residential housing with a linear area of trees and shrubs associated with the Metro line ~50m to the west and parkland associated with West Park ~350m to the south. Amenity grassland areas and parkland also exist to the east associated with Wawn Street ~270m to the north east, rugby fields ~310m to the east and Harton Cemetery ~620m to the east. These areas are poorly linked to the site. Overall, the habitats in the local area are of low suitability for use by roosting bats.

The building to be demolished is modern, two storey, 'L' shaped, of brick construction with cavity walls. There is a small entrance porch to the north. A section of porch roof edging has fallen away giving access to the underside of flat roof tiles. Pointing throughout is in relatively good condition. Windows are modern wooden framed double glazed units that appear to be well sealed. The roof is pitched with vertical wooden boarded peaks to the southern and western elevations. On both elevations there appears to be a gap on the lowest board of this peak. The ridge tiles were mostly well sealed however a small gap was present to the north east of the ridge and a lifted tile also present in this area. The roof covering consists of concrete pantiles

that extend to the eaves. Where meeting the eaves the tiles are internally covered by a grill. On a number of tiles this grill could not be seen and was considered to be missing allowing entry under the tiles. Internally a steel framed roof structure with wooden rafters is present. Wall tops were visible with gaps present. Rock wool loft insulation and traditional sarking were noted. Loft spaces were cluttered with air ducting pipes and internal metal framework. Perimeter steelwork was sprayed with concrete. Loft spaces were internally sectioned off and no evidence of outside light entering loft areas was recorded. Thorough internal, where access was available, and external inspection of the building recorded no evidence indicating the presence of bats. Overall, the building is considered to be of low suitability for use by roosting bats and a single dusk or dawn survey is recommended.

With regard to other protected or otherwise notable species, due to lack of suitable habitat otter, water vole, white clawed crayfish, badger, red squirrel, reptiles, protected and priority invertebrates and common toad are all considered likely to be absent from site. Hedgehog, if present in the local area, may forage across the site on occasion however the site, with poor foraging resources and being open and exposed in character is likely to be of low value to them. A small number of garden bird species may use areas of introduced shrub for nesting however this habitat, being limited in size and also exposed, is considered to be of low value to them. The roof of Gordon House is considered unsuitable for nesting gull species.

Potential impacts and suitable mitigation will need to be fine-tuned following further survey work and on consultation with the LPA. However, based on this initial assessment potential impacts of the development are:

- Secondary impacts upon statutorily designated sites to the north east caused by a total net gain in residential units
- The potential spread of small leaved cotoneaster, listed on Schedule 9 of the Wildlife and Countryside Act 1981 as an invasive species
- The loss of a small number of potential crevice bat roost sites
- Harm/disturbance to bats should they be present at the time of demolition
- Disturbance from additional lighting to bats commuting and foraging in the local area
- Harm/disturbance to nesting bird species should introduced shrub clearance be undertaken during the nesting season (March to August inclusive)
- Harm to mammal species including hedgehog through entrapment in trenches during the development phase
- The loss of ~150m<sup>2</sup> of amenity grassland, ~2000m<sup>2</sup> of hard standing and small areas of introduced shrubs of low habitat value

Key mitigation measures are likely to include:

- Landscape planting will be designed to enhance structural diversity, and will include plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain the food resource for bats and wildlife generally.
- The Schedule 9 listed invasive species small leaved cotoneaster will be removed according with the attached method statement (appendix 4)

- External lighting that may reduce bat use of the buildings will be avoided. High intensity security lights will be avoided as far as practical, and any lighting in areas identified as being important for bats will be low level (2m) and low lumin.
- Vegetation clearance will be undertaken outside of the bird nesting season (March to August inclusive) unless a checking survey by a suitably experienced ornithologist confirms the absence of active nests
- Any excavations left open overnight will have a means of escape for mammals that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°

The local planning authority is likely to require the means of delivery of the mitigation to be identified. It is recommended that mitigation and enhancement proposals are incorporated into the master-planning documents.

**Before this report can be used to support a planning application it is recommended that:**

- Consultation is undertaken with the LPA with regard to the requirement for a Shadow Habitat Regulations Assessment to assess any significant effects development of the site could have on the designated sites.
- **One dusk emergence or dawn re-entry survey between May and August is recommended. Should bat roosts be recorded during this survey a further dusk emergence or dawn re-entry survey may then be required in order to characterise the roost.**
- **Final development plans are provided to allow completion of a detailed impact assessment and design of appropriate mitigation.**

*If you are assessing this report for a local planning authority and have any difficulties interpreting plans and figures from a scanned version of the report, E3 Ecology Ltd would be happy to email a PDF copy to you. Please contact us on 01434 230982.*



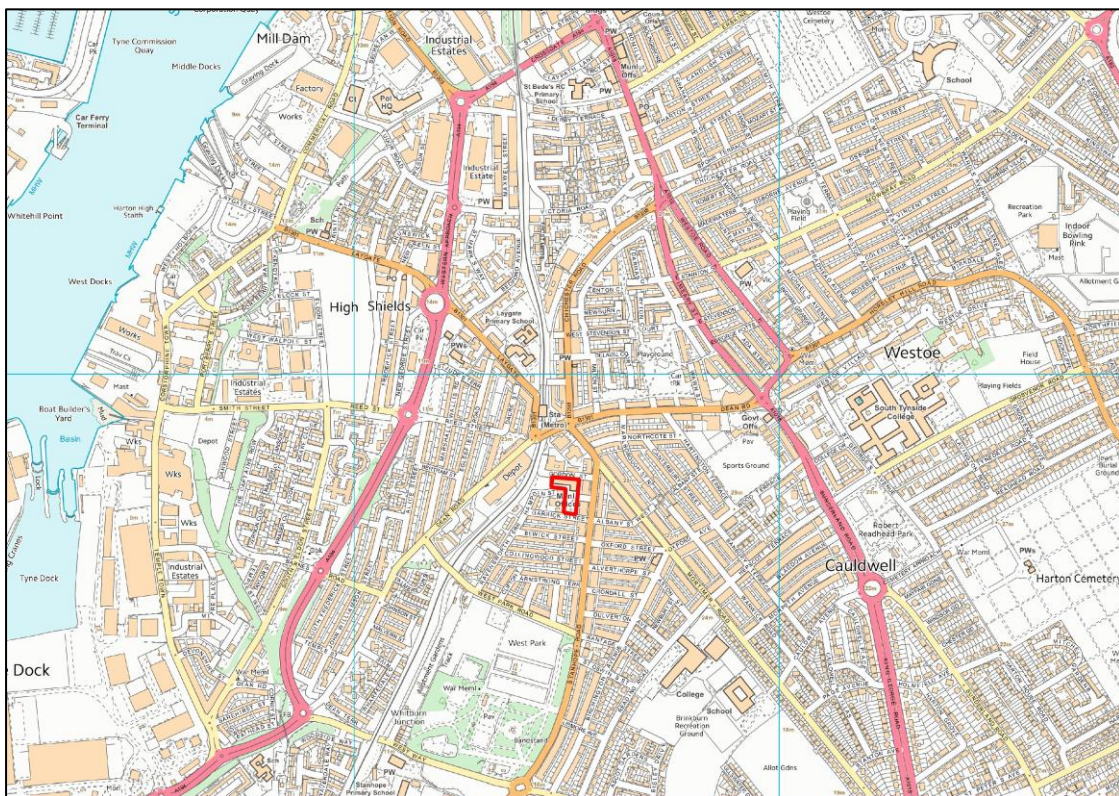
## B. INTRODUCTION

E3 Ecology Ltd was commissioned by Gus Robinson Developments Ltd. in March 2017 to undertake a Preliminary Ecological Appraisal (PEA) and daytime bat risk assessment of Gordon House, South Shields.

The purpose of this report is:

- To identify key ecological constraints to the proposed development
- To inform master-planning to allow significant ecological effects to be avoided or minimised wherever possible
- To allow the further ecological surveys needed to inform an ecological impact assessment to be identified and appropriately designed
- To allow likely mitigation or compensation measures to be developed
- To form a basis for agreeing the scope of the ecological impact assessment with relevant consultees

The site is located off the B1298, Stanhope Road, Chichester, South Shields at an approximate central grid reference of NZ364657. The site location is illustrated below in Figure 1.



**FIGURE 1: SITE LOCATION**

*(OS mapping © Crown copyright and database rights 2016/2017 OS 0100039392)*

The development proposal comprises demolition of the existing building and infrastructure and rebuilding with 18 residential units and associated gardens. An outline proposal is shown in figure 2 below.





## C. PLANNING POLICY AND LEGISLATIVE CONTEXT

### C.1 NATIONAL PLANNING POLICY

Table 1 details the key paragraphs from the National Planning Policy Framework (NPPF)<sup>1</sup> relating to the natural environment:

TABLE 1: NATIONAL PLANNING POLICY FRAMEWORK: NATURAL ENVIRONMENT	
Statement	Paragraph
The planning system should contribute to and enhance the natural and local environment by: <ul style="list-style-type: none"> <li>o Recognising the wider benefits of ecosystem services;</li> <li>o Minimising impacts on biodiversity and providing net gains in biodiversity where possible</li> </ul>	109
Planning policies and decisions should encourage the effective use of land by re-using land that has been previously developed (brownfield land), provided that it is not of high environmental value.	111
Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife sites will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks	113
To minimise impacts on biodiversity, planning policies should: <ul style="list-style-type: none"> <li>o Promote the preservation, restoration and re-creation of priority habitats ecological networks and the protection and recovery of priority species populations, linked to national and local targets</li> </ul>	117
When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principals: <ul style="list-style-type: none"> <li>o If significant harm resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;</li> <li>o Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;</li> <li>o Opportunities to incorporate biodiversity in and around developments should be encouraged;</li> <li>o Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees, found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss</li> </ul>	118
By encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation	125

Section 40 of the Natural Environment and Rural Communities Act 2006, places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity.

Planning Practice Guidance<sup>2</sup> states:

- *'The National Planning Policy Framework is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution' (para. 007).*

<sup>1</sup> National Planning Policy Framework (March 2012), Department for Communities and Local Government,

<sup>2</sup> Planning Practice Guidance: Natural Environment ([www.planningguidance.communities.gov](http://www.planningguidance.communities.gov))

- *'Information on biodiversity impacts and opportunities should inform all stages of development .... An ecological survey will be necessary in advance of a planning application if the type and location of development are such that the impact on biodiversity may be significant and existing information is lacking or inadequate' (para. 016).*
- *'Where an Environmental Impact Assessment is not needed it might still be appropriate to undertake an ecological survey, for example, where protected species may be present' (para. 016).*
- *'Local planning authorities should only require ecological surveys where clearly justified, for example if they consider there is a reasonable likelihood of a protected species being present and affected by development. Assessments should be proportionate to the nature and scale of development proposed and the likely impact on biodiversity' (para. 016).*
- *'Biodiversity enhancement in and around development should be led by a local understanding of ecological networks, and should seek to include:*
  - *habitat restoration, re-creation and expansion;*
  - *improved links between existing sites;*
  - *buffering of existing important sites;*
  - *new biodiversity features within development; and*
  - *securing management for long term enhancement' (para. 017).*

## C.2 PROTECTED SPECIES LEGISLATION

The table below details the relevant legislation for those protected species that may be present on this site.

TABLE 2: SUMMARISED SPECIES LEGISLATION		
Species	Relevant Legislation	Level of Protection
<b>Bats (All species)</b>	<ul style="list-style-type: none"> <li>• Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended</li> <li>• Classified as European protected species under Conservation of Habitats and Species Regulations 2010</li> <li>• Bats are also protected by the Wild Mammals (Protection) Act 1996</li> </ul>	<p>The WCA (1981) and Habitat Regulations (2010) make it an offence to:</p> <ul style="list-style-type: none"> <li>• Intentionally kill, injure, or take any species of bat</li> <li>• Intentionally or recklessly disturb bats</li> <li>• Intentionally or recklessly damage destroy or obstruct access to bat roosts</li> </ul>
<b>Birds</b>	<ul style="list-style-type: none"> <li>• Protection under the Wildlife and Countryside Act (1981) as amended with the exception of some species listed in Schedule 2 of the Act</li> </ul>	<p>The WCA (1981) makes it an offence to (with exceptions for certain species):</p> <ul style="list-style-type: none"> <li>• Intentionally kill, injure or take any wild bird</li> <li>• Intentionally take, damage or destroy nests in use or being built (including ground nesting birds)</li> <li>• Intentionally take, damage or destroy eggs</li> <li>• Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst they are at their nests</li> </ul>
<p><i>Under the Countryside and Rights of Way Act 2000 (CROW Act) the offence in section 9(4) of the Wildlife and Countryside Act 1981 of damaging a place of shelter or disturbing those species given full protection under the act is extended to cover reckless damage or disturbance.</i></p>		

### C.3 INVASIVE SPECIES LEGISLATION

The table below details the legislation in relation to invasive species and lists those invasive species most likely to be found in this region.

<b>Relevant Legislation</b>	<b>Description of Offence</b>	<b>Species</b> <i>(Covered by the Legislation and most likely to be found in this Region)</i>
Listed on Part II of Schedule 9 of the Wildlife and Countryside Act (1981 as amended)	Section 14 of the WCA (1981) states: <ul style="list-style-type: none"> <li>if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence.</li> </ul>	Himalayan balsam Cotoneaster Montbretia Japanese knotweed Giant hogweed Rhododendron

### C.4 PRIORITY SPECIES

Although not afforded any legal protection, national priority species (species of principal importance, as listed in Section 41 of the NERC Act (2006)), and local and regional priority species, as detailed within the relevant biodiversity action plans, are material considerations in the planning process and as such have been assessed accordingly within this report.

The table below details the local biodiversity action plan relevant to the area within which this site lies, and the species/species groups and habitats listed as priorities within the plan.

<b>Durham Biodiversity Action Plan</b>					
<b>Species</b>			<b>Habitats</b>		
Barn Owl	Coastal Birds	Farmland Birds	Native Hedgerows	Veteran Trees, Parkland and Wood Pasture	Woodland and Scrub
Nightjar	Spotted Flycatcher	Upland Birds	Ponds, Lakes & Reservoirs	Lowland Fen	Rivers & Streams
Urban and Garden Wildlife	Freshwater Fish	Grass Snake	Blanket Bog and Upland Wet Heath	Calaminarian Grassland	Upland Calcareous Grassland
Great Crested Newt	Reptiles	Chalk Carpet Moth	Upland Dry heath and Acid Grassland	Upland Haymeadows	Upland Screes and Rock Habitats
Cistus Forrester	Dark Green Fritillary	Dingy Skipper	Brownfield Sites	Built Structures	Coastal Habitats
Glow Worm	Grayling	Green Hairstreak	Lowland Heath	Lowland Meadows & Pasture	Magnesian Limestone Grassland
Least Minor Moth	Mud Snail	Northern Brown Argus	Transport Corridors	Waxcap Grassland	
Northern Dart	Round Mouthed Whorl Snail	Small Pearl-bordered Fritillary			
White Clawed Crayfish	White-letter Hairstreak	Badger			
Bats	Brown Hare	Dormouse			
Harvest Mouse	Hedgehog	Otter			

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Pine Marten	Polecat	Red Squirrel	
Water Vole	Water Shrew	Black Poplar	
Juniper	Pale Bristle-Moss	Yellow Marsh Saxifrage	

## **D. METHODOLOGY**

### **D.1 SCOPE OF STUDY**

The scope of the study, in terms of the survey area and the desk study area, is based on professional judgement. The likely zone of influence of the proposal has been considered, including both potential direct effects such as habitat loss and potential indirect effects such as disturbance. Consideration has been given to potential effects both during the construction and operational phases of the development.

For this site the survey area comprised the red line boundary as defined within Figure 3 with, in addition, a 50m buffer around the periphery appraised where access was available. The survey area included all potential roost sites within and adjacent to the survey area, which may be affected by the proposals.

The desk study included an assessment of land-use in the surrounding area and a data search covering a 2km buffer zone (see below for further detail).

The following types of ecological receptors have been considered:

- Statutorily designated sites for nature conservation
- Non-statutorily designated sites for nature conservation
- Species protected by law
- Species and/or habitats listed under the NERC Act (2009) as being of principal importance for conservation of biodiversity
- Species and/or habitats listed in relevant local biodiversity action plans

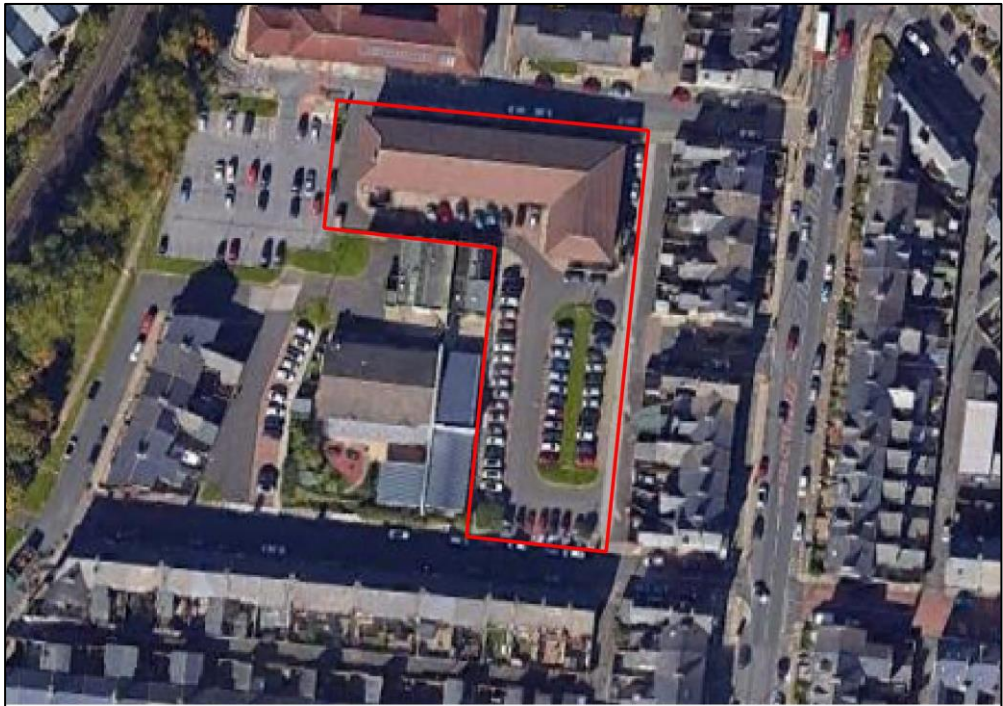
The level of survey effort employed at the site has taken account of the recommendations within the Bat Conservation Trust Good Practice Survey Guidelines<sup>3</sup>.

Figure 3 illustrates the site boundary whilst, to provide context, Figure 4 illustrates the broad habitats present on site and within an approximate 500m buffer zone.

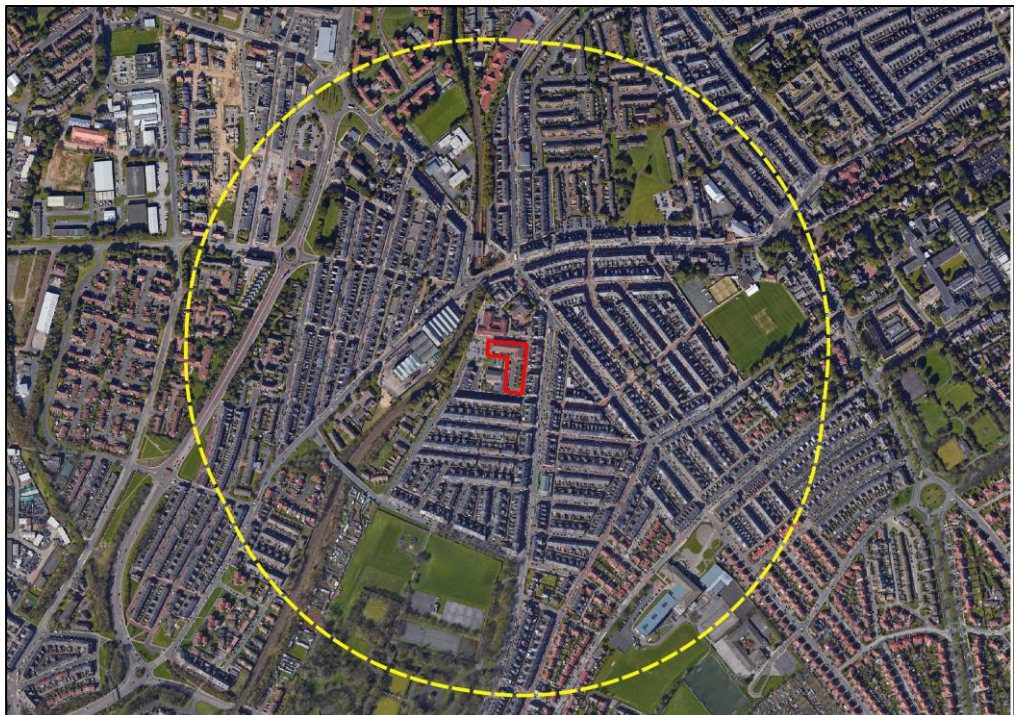
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<sup>3</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust





**FIGURE 3: SITE BOUNDARY**  
(Reproduced under licence from Google Earth Pro.)



**FIGURE 4: SITE AND SETTING**  
(Reproduced under licence from Google Earth Pro.)

## **D.2 DESK STUDY**

Initially, the site was assessed from aerial photographs and 1:25,000 Ordnance Survey maps. Following this, a data search was submitted to the local bat group in March 2017, requesting data relating to notable bat records within 2km of the survey area. In addition, a search was made of the Multi Agency Geographic Information for the Countryside (MAGIC) website<sup>4</sup> for all statutorily protected sites for nature conservation within 2km of the survey area.

## **D.3 PRELIMINARY FIELD STUDY METHODOLOGY**

### **D.3.1 PHASE 1 HABITAT SURVEY**

#### **D.3.1.1 *SURVEY METHODS***

The field survey of the proposed site was conducted using the methodology of the Joint Nature Conservation Committee's Phase 1 Habitat Survey, as outlined in their habitat-mapping manual<sup>5</sup>. Each parcel of land was assessed by a trained surveyor and classified as one of ninety habitat types. These were then mapped and the habitat information supplemented by dominant and indicator species codes and target notes where appropriate. Where areas within the study area do not fall into the Phase 1 Habitat Survey classification, alternative methods of classification have been used.

### **D.3.2 PRELIMINARY PROTECTED AND PRIORITY SPECIES APPRAISAL**

Where there is a risk of legally protected species and/or otherwise notable species<sup>6</sup> being present, an initial appraisal was completed to inform the proposals. This appraisal included the following key elements:

- Structures were assessed for the risk of supporting roosting bats and the potential suitability of the habitat for in relation to commuting and foraging activity by these species was also considered (see below).
- Wetlands, where present, were reviewed for their potential use by great crested newt, otter and water voles,
- If present, any trackways regularly used by badger were noted and any badger sett usage assessed by the presence of freshly dug earth or bedding at the entrance.
- The suitability of the suite of habitats present for use by reptiles was assessed.
- Likely use of the site by birds was assessed from the species seen during the survey, and the habitats present.
- Potential use by otherwise notable species was determined based on the broad habitat types present on site, any recent records obtained through the desk study and the geographical distribution of the species. Where specific habitat requirements for notable species have been recorded on site these have been noted, and used as part of this appraisal. The species groups assessed are limited to birds, freshwater fish, amphibians, reptiles, terrestrial mammals, butterflies and dragonflies.

Where it is considered likely that there is a significant risk of protected or otherwise notable species being affected or where habitats are of particularly high value

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<sup>4</sup> Multi Agency Geographic Information for the Countryside ([www.magic.gov.uk](http://www.magic.gov.uk))

<sup>5</sup> Handbook for Phase 1 habitat survey, A Technique For Environmental Audit, JNCC, 2010

<sup>6</sup> To include national priority species as listed in Section 41 of the NERC Act (2006) and local or regional priority species as listed within the relevant Biodiversity Action Plan

additional specialist survey work has been recommended. Further survey work may also be recommended where development proposals have the potential to affect statutorily designated sites in the vicinity.

### D.3.3 HABITAT SUITABILITY ASSESSMENT (BATS)

The potential suitability of the habitats within the survey area in relation to commuting and foraging bats was classified as negligible, low, moderate or high, based on guidelines provided by the Bat Conservation Trust<sup>7</sup> and detailed within Table 5.

<b>TABLE 5: GUIDELINES FOR ASSESSING THE POTENTIAL SUITABILITY OF PROPOSED DEVELOPMENT SITES FOR BATS, BASED ON PRESENCE OF HABITAT FEATURES WITHIN THE LANDSCAPE.</b> <i>(TO BE APPLIED USING PROFESSIONAL JUDGEMENT, TABLE 4.1 BAT SURVEY GUIDELINES)</i>	
<b>Suitability</b>	<b>Commuting and foraging habitats</b>
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 un-vegetated 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.

### D.3.4 DAYTIME BAT RISK ASSESSMENT (STRUCTURES)

A daytime assessment was made of all structures affected by the proposed development, in order to evaluate their potential for supporting bat roosts, and, where present, to record signs of use by bats.

Structures were inspected both externally and internally where access was available. Binoculars and extendable ladders were used to assist with the inspection for droppings and other field signs.

Where present, soffits, purlins and ridge boards were searched thoroughly, together with the walls and floor under potential roost sites and any mortise joints, particularly in the gable walls. Wherever practicable, roof spaces and attic areas were surveyed for signs of droppings, which persist all year in dry conditions, food debris, entry points and bats themselves.

<sup>7</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust



Externally, the building was examined for potential roost access points indicated by clean crevices, urine marks, polished wood or stonework and droppings. Particular attention was given to sheltered areas under the eaves of buildings, window ledges and towards the tops of windows where droppings are less likely to have been washed off.

Structures were categorised as having negligible, low, moderate or high suitability to be used by roosting bats, based on guidelines provided by the Bat Conservation Trust<sup>8</sup> and detailed within Table 6.

<b>TABLE 6: GUIDELINES FOR ASSESSING THE POTENTIAL SUITABILITY OF PROPOSED DEVELOPMENT SITES FOR BATS, BASED ON PRESENCE OF ROOSTING HABITAT FEATURES (STRUCTURES)</b> (TO BE APPLIED USING PROFESSIONAL JUDGEMENT, TABLE 4.1 BAT SURVEY GUIDELINES)	
<b>Suitability</b>	<b>Roosting Habitats</b>
Negligible	Negligible habitat features 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 by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A structure 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 with one or more potential roost site that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

The bat risk assessment of the structures was undertaken on 21<sup>st</sup> March 2017.

Note that comments on the state of the structures within the site relate solely to their potential use by bats and must not be taken as a professional assessment of the structural integrity or safety of the structures. For example, descriptions of walls and roofs being in 'good' or 'poor condition' relate to likely provision of roost sites for bats, potential access routes to roost sites, and likely persistence of field signs such as droppings and feeding remains, which will not persist in exposed conditions. Maternity roosts are less likely to be present in cool, exposed, damp and draughty locations which may develop in a building in poor condition.

#### D.3.5 PRELIMINARY SURVEY/RISK ASSESSMENT - EQUIPMENT

- Clulite CB2 high powered torch.
- 10 x 40 binoculars
- Digital camera
- Extendable ladders

#### D.3.6 PRELIMINARY SURVEY/RISK ASSESSMENT - ENVIRONMENTAL CONDITIONS

<b>TABLE 7: DAYTIME SURVEY CONDITIONS</b>				
<b>DATE</b>	<b>TEMPERATURE</b>	<b>CLOUD COVER</b>	<b>PRECIPITATION</b>	<b>WIND CONDITIONS</b>
21/03/17	6°C	10%	None	F5NE

<sup>8</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust

### D.3.7 PRELIMINARY SURVEY/RISK ASSESSMENT - CONSTRAINTS

Access to all areas of the internal loft space was not available due to the presence of air ducting pipes and a lack of entrance hatches. Close access to some exterior roof areas was not possible due to exterior perimeter fencing. Binoculars were used to assist in such cases. High winds persisted during the latter part of the survey. These constraints are not considered to have unduly affected the outcome of the survey.

#### D.3.7.1 *SURVEY EFFORT*

The level of survey effort recommended has taken account of the guidance provided by the Bat Conservation Trust (BCT)<sup>9</sup> and summarised within Table 8.

<b>TABLE 8: RECOMMENDED NUMBER AND TIMING OF PRESENCE/ABSENCE SURVEY VISITS REQUIRED TO PROVIDE CONFIDENCE IN NEGATIVE PRELIMINARY ROOST ASSESSMENT RESULTS (FROM TABLE 7.1 AND TABLE 7.3 BCT GUIDELINES)</b>			
	<b>Low Roost Suitability*</b>	<b>Moderate Roost Suitability</b>	<b>High Roost Suitability</b>
Recommended minimum number of survey visits for presence/absence survey to give confidence in a negative result	One survey visit. One dusk emergence or dawn re-entry survey (structures).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.
Recommended timings for presence/absence surveys	May to August	May to September with at least one of the surveys between May and August	May to September with at least two of the surveys between May and August
* If a structure is classified as having low suitability for bats an ecologist should make a professional judgement on how to proceed based on all of the evidence available. If sufficient areas of a structure have been inspected and no evidence found (and is unlikely to have been removed by weather or cleaning or be hidden), then further surveys may not be appropriate.			
<b>Note:</b> Where a roost is confirmed as being present, further surveys may be required to fully characterise the roost			

The recommendations provided above are guidelines and it is recognised by BCT that 'the number of visits could be adjusted (up or down) if necessary by the ecologist, bearing in mind the site-specific circumstances'.

### D.4 PERSONNEL

The table below details the personnel who undertook the survey work.

<b>TABLE 9: PERSONNEL</b>			
<b>Name</b>	<b>Position</b>	<b>Professional Qualifications</b>	<b>Natural England Survey Licence Numbers</b>
Mark Wilson	Graduate Ecologist	BSc MSc	-

Further details of experience and qualifications are available at [www.e3ecology.co.uk](http://www.e3ecology.co.uk).

<sup>9</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust



## D.5 ASSESSMENT METHODOLOGY

The relative value of the ecological receptors (habitats, species and designated sites) was assessed using a geographical frame of reference. For designated sites this is generally a straightforward process with the assigned designation generally being indicative of a particular value, e.g. Sites of Special Scientific Interest are designated under national legislation and are therefore generally considered to be receptors of national value. The assignment of value to non-designated receptors is less straightforward and as recognised by the Guidelines for Ecological Impact Assessment produced by the Chartered Institute of Ecology and Environmental Management<sup>10</sup>, is a complex and subjective process and requires the application of professional judgement.

When assessing the value of species and habitats, relevant documents and legislation are considered including the lists of species and habitat of principal importance annexed to the NERC Act (2006) and those provided within relevant local Biodiversity Action Plans. Data provided through consultation is also considered. These data sources can provide context at a local, regional and national scale.

The table below provides examples of receptors of value at different geographical scales.

<b>Level of Value</b>	<b>Examples</b>
<b>International</b>	An internationally designated site or candidate site.
	A site meeting criteria for international designation.
	The site is of functional importance* to a species population with internationally important numbers (i.e. >1% of the biogeographic population)
<b>National</b>	A nationally designated site.
	The site is of functional importance* to a species population with nationally important numbers (i.e. >1% of the national population)
<b>Regional</b>	The site is of functional importance* to a species population with regionally important numbers (i.e. >1% of the regional population)
<b>County</b>	A Local Wildlife Site (LWS) or equivalent, designated at a County level
	The site is of functional importance* to a species population of county value (i.e. >1% of the county population)
<b>District</b>	A Local Wildlife Site (LWS) or equivalent, designated at a District level
	The site is of functional importance* to a species population of district value (i.e. >1% of the district population)
<b>Parish</b>	A species population considered to appreciably enrich the nature conservation resource within the context of the parish.
	Local Nature Reserves
<b>Local</b>	A species population that contributes to local biodiversity but are not exceptional in the context of the parish.
<b>Low</b>	Habitats that are unexceptional and common to the local area.
* <i>Functional importance defined as 'a feature which, based on professional judgement, is of importance to the day to day functioning of the population, the loss of which would have a detectable adverse effect on that population'</i>	

Higher quality sites for bats are likely to have a good number of bats and range of species, particularly species that are scarcer in the region and require higher habitat

10 Chartered Institute for Ecology and Environmental Management (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal

quality such as whiskered/Brandt's, Natterer's, brown long-eared bat and Nathusius. Sites with over five species regularly recorded will generally be of above average quality.

## E. RESULTS

### E.1 DESKTOP STUDY

#### E.1.1 PRE-EXISTING INFORMATION

##### **ORDNANCE SURVEY MAPPING AND AERIAL PHOTOGRAPHY**

Figures 1 (B) and 4 (D1) show that general land use in the surrounding area predominantly comprises residential housing with a linear area of trees and shrubs associated with the Metro line ~50m to the west and parkland associated with West Park ~350m to the south. Amenity grassland areas and parkland also exist to the east associated with Wawn Street ~270m to the north east, rugby fields ~310m to the east and Harton Cemetery ~620m to the east.

The most recent aerial photograph of the site (Figure 3, D1, April 2015) indicates that habitats on site are dominated by the building of Gordon House with car parking areas, road access and amenity grassland to the south. Historic imagery suggests that on site habitats have remained the same since at least 2001.

##### **MULTI AGENCY GEOGRAPHIC INFORMATION FOR THE COUNTRYSIDE WEBSITE<sup>11</sup>**

The table below details the internationally and nationally statutorily designated sites within 2km of the survey area.

<b>Designation</b>	<b>Site Name</b>	<b>Reason for Designation</b>	<b>Distance from Survey Area</b>
Ramsar	Northumbria Coast	As with the SPA, the Northumbria Coast Ramsar site comprises several discrete sections of rocky foreshore between Spittal, in the north of Northumberland, and an area just south of Blackhall Rocks in County Durham. These stretches of coast regularly support nationally important numbers of Purple sandpiper and high concentrations of Turnstone. The Ramsar site also includes an area of sandy beach at Low Newton, which supports a nationally important breeding colony of little tern, and parts of three artificial pier structures which form important roost sites for purple sandpiper.	2km to north east
Special Protection Area	Northumbria Coast	<b>During the breeding season;</b>  Little Tern <i>Sterna albifrons</i> , 40 pairs representing at least 1.7% of the breeding population in Great Britain (5 year peak mean 1991/2 - 1995/6). It is proposed to add Arctic tern <i>Sterna paradisaea</i> to the citation.  This site also qualifies under <b>Article 4.2</b> of the Directive (79/409/EEC) by supporting populations of European	2km to north east

<sup>11</sup> Multi Agency Geographic Information for the Countryside (MAGIC) [www.magic.gov.uk](http://www.magic.gov.uk)

		<p>importance of the following migratory species:</p> <p><b>Over winter;</b></p> <p>Purple Sandpiper <i>Calidris maritima</i>, 763 individuals representing at least 1.5% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6)</p> <p>Turnstone <i>Arenaria interpres</i>, 1,456 individuals representing at least 2.1% of the wintering Western Palearctic - wintering population (5 year peak mean 1991/2 - 1995/6)</p>	
Special Area of Conservation	Durham Coast	<p>The Durham Coast is the only example of vegetated sea cliffs on magnesian limestone exposures in the UK. These cliffs extend along the North Sea coast for over 20 km from South Shields southwards to Blackhall Rocks. Their vegetation is unique in the British Isles and consists of a complex mosaic of paramaritime, mesotrophic and calcicolous grasslands, tall-herb fen, seepage flushes and wind-pruned scrub. Within these habitats rare species of contrasting phytogeographic distributions often grow together forming unusual and species-rich communities of high scientific interest. The communities present on the sea cliffs are largely maintained by natural processes including exposure to sea spray, erosion and slippage of the soft magnesian limestone bedrock and overlying glacial drifts, as well as localised flushing by calcareous water.</p>	1900m to north east
Site of Special Scientific Interest	Durham Coast	<p>The Durham Coast between South Shields and Hart Warren is of considerable biological, geological and physiographic interest. It contains most of the paramaritime Magnesian Limestone vegetation in Britain, as well as a species-rich dune system, and supports nationally important numbers of wintering shore birds and breeding little terns which contribute to the internationally important populations of the north-east coast.</p>	1900m to north east

## E.1.2 CONSULTATION

### **DURHAM BAT GROUP**

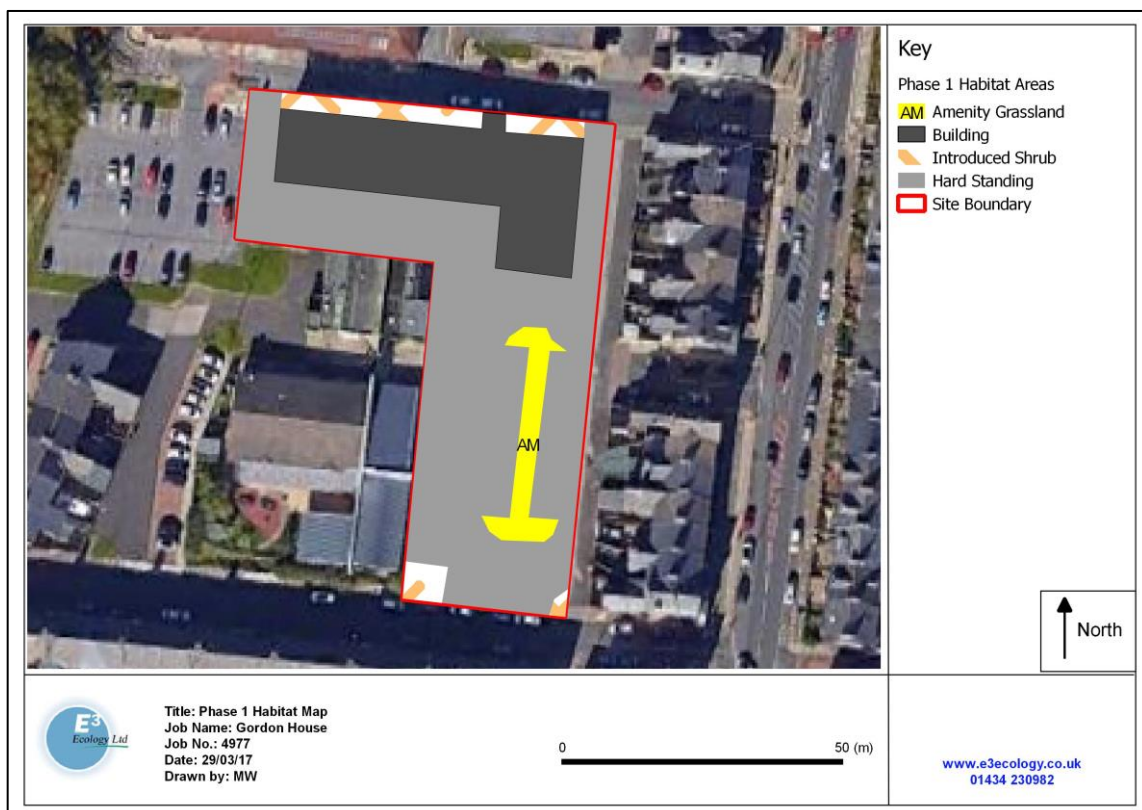
A request for bat records within 2km of the site was sent to Durham Bat Group in March 2017. These records will be appended upon receipt.

## E.2 **FIELD SURVEY**

### E.2.1 HABITATS

Habitats on site predominantly comprise the building of Gordon House with hard standing and amenity grassland associated with a car parking area to the south. Small areas of introduced shrubs are found far to the south of the car parking area and to the north of Gordon House.

The habitats present within the survey area are illustrated within Figure 5 and described in more detail below.



**FIGURE 5: HABITAT MAP**  
(Reproduced under licence from Google Earth Pro.)



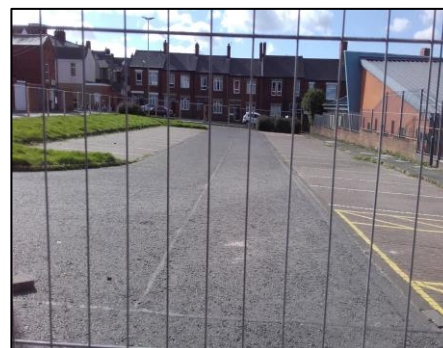
### **AMENITY GRASSLAND**

Lush green in appearance and tufted to 10cm at the time of survey showing evidence of previously having been mown but left to grow over the early spring. The grassed area is considered species poor with 90% grass coverage; grass species recorded were perennial rye grass (*Lolium perenne*) and Yorkshire fog (*Holcus lanatus*) and forb species dandelion (*Taraxacum sp.*), chickweed (*Stellaria media*), shepherds purse (*Capsella bursa-pastoris*) cut leaved cranesbill (*Geranium dissectum*) broad-leaved dock (*Rumex obtusifolius*) and daisy (*Bellis perennis*).



### **HARD STANDING**

A mixture of tarmacked roads giving access to block paved parking areas and paths surrounding the building. Ephemeral weeds growth was recorded. Species recorded were shepherd's purse, groundsel (*Senecio vulgaris*), hairy bittercress (*Cardamine hirsuta*), broad-leaved willowherb (*Epilobium montanum*), common mouse ear (*Cerastium fontanum*) and goldenrod (*Solidago virgaurea*).



### **INTRODUCED SHRUBS**

To the north of Gordon House and in two locations to the south of the car parking area are borders of introduced shrubs. Shrub height was recorded as up to 1.5m and species recorded were small-leaved cotoneaster (*Cotoneaster microphyllus*) – listed as invasive on Schedule 9 of the Wildlife and Countryside Act 1981, Berberis species, Wilson's honeysuckle (*Lonicera nitida*), laurel species and self-sown elder (*Sambucus nigra*).



## **E.2.2 SPECIES (EXCLUDING BATS)**

### **OTTER, WHITE-CLAWED CRAYFISH AND WATER VOLE**

There are no water courses on or adjacent to the site and no habitat present considered to be of value to any of these species. All these species are therefore considered likely to be absent from site.

### **GREAT CRESTED NEWT**

Using Ordnance Survey maps and aerial imagery no ponds have been recorded on site or within 500m. Habitats present are considered sub-optimal for this species therefore great crested newt are considered likely to be absent from site.

### ***BIRDS***

An adult male dunnock was recorded perching on top of introduced shrubs to the south of the site, behaviour indicative of establishing a breeding territory. Such species have potential to nest within the shrubbery present on site. Herring gull were recorded over flying the site. The roof of Gordon House, being pitched in nature, is not considered suitable for this species to nest. No evidence was recorded of birds nesting within the fabric of Gordon House.

### ***BADGER***

Habitats on site are sub-optimal for this species for sett building and foraging and the surrounding habitat is urban development, therefore this species is considered likely to be absent from site.

### ***REPTILES***

Habitats on site are sub-optimal for this taxon, lacking in the type of structural diversity required. Within such a built up environment it is considered this taxon is likely to be absent from site.

### ***RED SQUIRREL***

The site is entirely lacking in tree cover, a habitat requirement of this species, therefore red squirrel are considered likely to be absent from site.

### ***INVERTEBRATES***

The site is lacking in the type of structural diversity and larval food plants required by protected and priority invertebrate species therefore they are considered likely to be absent from site.

### ***NATIONAL PRIORITY AND LOCAL BAP SPECIES***

Due to a lack of breeding ponds in the surrounding area and a lack of suitable habitat on site common toad are considered likely to be absent from site. Hedgehog may be present in the local area, for example within West Park or the Metro line to the west. It is considered that they may, on occasion, forage on site.

### **E.3 DAYTIME RISK ASSESSMENT (BATS)**

#### **E.3.1 HABITATS**

The site is predominantly comprised of a large building and hard standing areas used for car parking. Small amounts of amenity grassland and introduced shrubs are also present. On site habitats are considered to be of negligible suitability for bats. Habitat present in the local area, along the Metro line to the west and within West Park to the south, has the potential to provide low quality foraging for bats.

#### **FORAGING HABITATS**

Habitats on site, being dominated by a large building and hard standing with small areas of amenity grassland and introduced shrubs, are considered to be suboptimal for bat foraging. A limited amount of better foraging habitat is present within the locality to the west alongside the Metro line and to the south associated with West Park.



#### **COMMUTING ROUTES**

Tree and shrub vegetation associated with the Metro line, ~50m to the west of the site, is considered to provide good linkage to better foraging habitat associated with West Park to the south. Bats using this linkage could also potentially access more open areas of better quality foraging habitat further afield to the south.



#### **SHELTERED FLIGHT AREAS**

Gordon house could potentially be used by bats as a sheltered flight area in times of high winds and foul weather however there is little vegetation surrounding the building except for introduced shrubs to the north.



#### **ALTERNATIVE ROOST LOCATIONS**

Being situated within an area of densely terraced residential accommodation it is considered likely there will be numerous alternative roost locations for bats.





### E.3.2 BUILDINGS

Building descriptions are provided below. Building features which have the potential to support roosting bats are underlined, whilst, where recorded, field signs that confirm bat use are in bold.

#### **GORDON HOUSE**

- Two storey, 'L' shaped and approximately 55m in length and 25m maximum width.
- Modern brick construction with cavity walls. Pointing appears to be in good condition throughout.
- Windows are modern wooden framed double glazed units that appear to be well sealed.
- The roof is pitched with vertical wooden boarded peaks to the southern and western elevations.
- On both elevations there appears to be a gap on the lowest board of this peak. As these features were at height and perimeter fencing prevented direct viewing access it was unable to be seen if these gaps were viable for roosting bats.
- Boxed eaves all around the building appears to be well sealed with occasional gaps. However these gaps appeared, under torchlight, to be blocked preventing any access.
- The roof covering consists of concrete pantiles that extend to the eaves. Where meeting the eaves the tiles are internally covered by a grill.
- On a number of tiles this grill could not be seen and was considered to be missing allowing entry under the tiles - 1 tile to north east corner, tiles to the south of the internal 'L' shape, 4 tiles to the south east corner and 5 tiles to the western elevation.
- The ridge tiles were mostly well sealed however a small gap was present to the north east of the ridge and a lifted tile also present in this area.
- A small porch to the north of the building is present. A section of roof edging has fallen away giving access to the underside of flat roof tiles.



Internal:

- Steel framed roof structure with wooden

rafters. Wall tops were visible with gaps present. Rock wool loft insulation and traditional sarking were noted. Loft space cluttered with air ducting pipes and internal metal framework. Perimeter steelwork sprayed with concrete. Loft spaces internally sectioned off. No evidence of outside light entering loft area.

- No evidence recorded indicating the presence of bats internally or externally.

#### E.4 OVERVIEW OF SITE SUITABILITY

TABLE 12: OVERVIEW OF SITE SUITABILITY FOR BATS				
HABITATS AND SETTING <sup>12</sup>				
	NEGLECTIBLE	LOW	MODERATE	HIGH
HABITATS AND COVER WITHIN 200M	City Centre	Open, exposed arable, amenity grass or pasture	Hedges and trees linking site to wider countryside	Excellent cover with mature trees and/or good hedges
HABITATS WITHIN 1KM	City Centre	Little tree cover, few hedges, urban dominated	Semi-natural habitats e.g. trees, hedgerows	Good network of woods, wetland and hedges
ALTERNATIVE ROOSTS WITHIN 1KM	City centre	Numerous alternative roost sites	A number of similar buildings in the local area	Few alternative buildings and site of good quality for roosts
SETTING	Inner city	Urban with little green space	Build development with green-space, wetland, trees	Rural Lowland with woodland and trees.
DISTANCE TO WATER/ MARSH	>1km	500m-1000m	200m-500m	<200m
DISTANCE TO WOODLAND/ SCRUB	>1km	500m-1000m	200m-500m	<200m
DISTANCE TO SPECIES-RICH GRASSLAND	>1km	500m-1000m	200m-500m	<200m
COMMUTING ROUTES	Isolated by development, major roads, large scale agriculture	No potential flyways linking site to wider countryside	Some potential commuting routes to and from site	Site is well connected to surrounding area with multiple flyways
BUILDINGS <sup>2</sup>				
	MINIMAL	LOW	MEDIUM	HIGH

<sup>12</sup> Building and habitat risk assessment technique audited in a research project with York University which compared the risk assessment scoring with the results of detailed field assessment for over 100 sites. Statistically significant associations were found between habitat setting and building features and the presence of absence of different bat species. For example habitat connections and nearby woodland were significant for brown long-eared bats and the presence of species-rich grassland is important for many species.



<b>AGE (APPROX.)</b>	<b>Modern</b>	<b>Post 1940s</b>	<b>1900-1940</b>	<b>Pre 20<sup>th</sup> C</b>
<b>BUILDING/ COMPLEX TYPE</b>	Industrial complex of modern design	Single, large building	Several buildings, large old single structure	Traditional farm buildings, country house, hospital
<b>BUILDING - STOREYS</b>	N/A	Single storey	Multiple storeys	Multiple storeys with large roof voids
<b>STONE/BRICK WORK</b>	No detectable crevices	Well pointed	Some cracks and crevices	Poor condition, many crevices, thick walls
<b>FRAMEWORK – TIMBERS/STEEL</b>	Modern metal frame	Timber purlins, sheet asbestos	Timbers kingpost or similar	Large timbers traditional joints
<b>ROOF VOID</b>	Fully sealed or flat roof	Small, cluttered void	Medium, relatively open	Large, open, interconnected
<b>ROOF COVERING</b>	Modern sheet materials and tightly sealed	Good condition Modern materials	Some potential access routes, slates, tiles	Uneven with gaps, not too open, stone slates
<b>ADDITIONAL FEATURES</b>	Very well maintained and tightly sealed	No features with potential access	Some features with potential access	Hanging tiles, cladding, barge boards
<b>EXTERNAL LIGHTING</b>	Extensive security lights covering much of the site	Widespread areas above 2 lux at night	Intermittent lights of low intensity	Minimal
<b>BUILDING USE</b>	Very noisy, dusty	Regular use	Intermittent use	Disused

It can be seen from the above table that habitats and setting could mostly be described as having low suitability and the building, low to medium suitability of supporting bat species. In this case many of the features providing potential access routes into the building, such as the unmeshed pantiles and gaps associated with the roof boards and ridge tiles, are considered likely to be limited in nature. Furthermore habitats and setting are considered to be of low suitability and considered unlikely to support a maternity roost. These factors considered the building is thought to be of low suitability for roosting bats.

### **E.5 ADDITIONAL SPECIES GROUPS**

Small leaved cotoneaster, listed on Schedule 9 of the Wildlife and Countryside Act 1981 as an invasive species, was recorded within all areas of introduced shrubs.

## **F. SITE ASSESSMENT**

### **F.1 HABITATS**

Hard standing, amenity grassland and introduced shrub habitats recorded on site are all considered to be of low habitat value.

### **F.2 NOTABLE SPECIES (EXCLUDING BATS)**

Otter, water vole, white clawed crayfish, badger, red squirrel, reptiles, protected and priority invertebrates and common toad are all considered likely to be absent from site. Hedgehog, if present in the local area, may forage across the site on occasion however the site, with poor foraging resources and being open and exposed in character is likely to be of low value to them. A small number of garden bird species may use areas of introduced shrub for nesting however this habitat, being limited in size and also exposed is considered to be of low value to them. The roof of Gordon House is considered unsuitable for nesting gull species.

### **F.3 ASSESSMENT OF SURVEY FINDINGS (BATS)**

The site and setting are considered to be of low suitability for bats, most likely limited to small numbers of pipistrelle species. The building is considered to be of low to moderate suitability. Survey has recorded one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites are not considered to provide enough space, shelter, protection, appropriate conditions and suitable surrounding habitat to be used by larger numbers of bats and as such one dusk emergence or dawn re-entry survey between May and August is recommended. Should bat roosts be recorded during this survey a further dusk emergence or dawn re-entry survey would then be required in order to characterise the roost.

### **F.4 LIMITATIONS AND CONSTRAINTS**

Access to all areas of the internal loft space was not available due to the presence of air ducting pipes and a lack of entrance hatches. Close access to some exterior roof areas was not possible due to exterior perimeter fencing. Binoculars were used to assist in such cases. High winds persisted during the latter part of the survey. These constraints are not considered to have unduly affected the outcome of the survey.

## **G. IMPACT ASSESSMENT**

An impact assessment cannot be fully completed until further survey work, detailed below, has been undertaken. However, the likely effects of the proposed development, without appropriate targeted mitigation and/or compensation, are detailed below.

### **G.1 POTENTIAL IMPACTS AND/OR EFFECTS<sup>13</sup>**

#### **G.1.1 HABITATS**

- The loss of ~150m<sup>2</sup> of amenity grassland of low habitat value
- The loss of ~2000m<sup>2</sup> of hard standing of low habitat value
- The loss of small areas of introduced shrubs of low habitat value
- The potential spread of small leaved cotoneaster, listed on Schedule 9 of the Wildlife and Countryside Act 1981 as an invasive species

#### **G.1.2 SPECIES**

- The loss of a small number of potential crevice bat roost sites
- Potential harm/disturbance to bats should they be present at the time of demolition
- Disturbance from additional lighting to bats commuting and foraging in the local area
- Harm/disturbance to nesting bird species should introduced shrub clearance be undertaken during the nesting season (March to August inclusive)
- Harm to mammal species including hedgehog through entrapment in trenches during the development phase

### **G.2 POTENTIAL IMPACTS AND/OR EFFECTS ON STATUTORY AND NON-STATUTORY SITES DESIGNATED FOR NATURE CONSERVATION**

The site lies within 2km of SPA and Ramsar, SAC and SSSI sites. SSSI Impact Risk Zones, viewed on the MAGIC website, have been taken into consideration. These are used to assess planning applications for likely impacts on SSSIs, SACs, SPAs and Ramsar sites. The site is within a distance of these designated sites where the local planning authority should consult Natural England on likely risks from any residential developments with a total net gain in residential units. It is therefore considered likely a Shadow Habitat Regulations Assessment will be required to assess any significant effects development of the site could have on the designated sites. This approach should be confirmed with the local planning authority.

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<sup>13</sup> An impact is defined as an action resulting in changes to an ecological feature. For example, construction works removing a hedgerow. An effect is defined as the outcome to an ecological feature from an impact. For example, the effect on a dormouse population of the loss of a hedgerow.



## H. RECOMMENDATIONS

The recommendations have been based upon survey effort to date and may evolve with future findings.

The mitigation strategy aims to minimise effects on biodiversity by:

- avoiding significant negative impacts where possible through good design; and
- developing approaches to mitigate any remaining unavoidable impacts.

Where any significant residual impacts on biodiversity are anticipated, compensation may then be proposed. This approach is in-line with CIEEM recommendations<sup>14</sup>.

### H.1 FURTHER SURVEY

As per the Bat Conservation Trust Bat Surveys, Good Practice Guidelines<sup>15</sup>, the following additional survey is recommended to ensure a robust assessment of bat activity at the site:

- One dusk emergence or dawn re-entry survey between May and August is recommended. Should bat roosts be recorded during this survey a further dusk emergence or dawn re-entry survey may then be required in order to characterise the roost.

Should roosting bats be recorded this will result in a requirement for additional mitigation and a compensation strategy. In this eventuality these would be fully detailed in accordance with survey results. Provisional recommendations are included within H2 below.

If development does not happen within 12 months of this report, an updating survey will be required, ideally to be undertaken between May and August.

### H.2 AVOIDANCE AND MITIGATION STRATEGY

#### H.2.1 SITE DESIGN

- External lighting that may reduce bat use of the buildings will be avoided. High intensity security lights will be avoided as far as practical, and any lighting in areas identified as being important for bats will be low level (2m) and low lumin. Where security lights are required, these will be of minimum practicable brightness, be set on a short timer and will be motion sensitive only to larger objects.

#### H.2.2 TIMING OF WORKS

- Vegetation clearance will be undertaken outside of the bird nesting season (March to August inclusive) unless a checking survey by a suitably experienced ornithologist confirms the absence of active nests.
- If, during further survey works bats roosts are recorded, works to the building will not commence until a Natural England development licence has been

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<sup>14</sup> Chartered Institute for Ecology and Environmental Management (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal

<sup>15</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust

obtained. Otherwise, demolition works will follow a precautionary method statement.

### H.2.3 WORKING METHODS AND BEST PRACTICE

- Any excavations left open overnight will have a means of escape for mammals that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°.
- The Schedule 9 listed invasive species small leaved cotoneaster will be removed according with the attached method statement (appendix 4).
- Potential bat roosting features will be incorporated into the design. This will be finalised following further survey work, however, could include bat bricks, external bat boxes and/or gaps under ridge tiles.

The following measures should be included as general good working practice:

- Timber treatments that are toxic to mammals will be avoided. If required, timber treatment will be carried out in the spring or autumn. Both pre-treated timbers and timber treatments will use chemicals classed as safe for use where bats may be present (see [http://www.jncc.gov.uk/pdf/batwork\\_manualpt4.pdf](http://www.jncc.gov.uk/pdf/batwork_manualpt4.pdf)).

### H.3 **ADDITIONAL ENHANCEMENT RECOMMENDATIONS**

The following additional enhancement measures are recommended in order to further enhance the site for biodiversity:

- The landscape planting will be designed to enhance structural diversity, and will include plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain the food resource for bats and wildlife generally.



## **I. CONCLUSIONS**

In order to meet current guidelines one dusk emergence or dawn re-entry bat survey between May and August is recommended. Should bat roosts be recorded during this survey a further dusk emergence or dawn re-entry survey would then be required in order to characterise the roost.

The site is within a distance of statutorily designated sites where the local planning authority should consult Natural England on likely risks from any residential developments with a total net gain in residential units. It is therefore recommended further investigation as to the likely significant effects development of the site could have on the designated sites should be undertaken.

Proposals provide an opportunity for ecological benefit through the removal of the Schedule 9 listed invasive species small leaved cotoneaster and landscape planting, designed to enhance structural diversity, including plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain the food resource for bats and wildlife generally and contributing to local and national conservation targets.

## **APPENDIX 1. STATUTORILY AND NON- STATUTORILY DESIGNATED SITES**

### **STATUTORILY DESIGNATED SITES**

#### Ramsar Sites

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention recognizes wetlands as important ecosystems and includes a range of wetland types from marsh to both fresh and salt water habitats. The wetlands can also include additional areas adjacent to the main water-bodies such as river banks or coastal areas where appropriate.

#### Special Protection Areas (SPAs)

SPAs are classified by the UK Government under the EC Birds Directive and comprise areas which are important for both rare and migratory birds.

#### Special Areas of Conservation

SACs are designated under the EC Habitats Directive and are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the Conservation of Habitats and Species Regulations 2010 (as amended) unless they are offshore.

#### Sites of Special Scientific Interest

SSSIs are designated as sites which are examples of important flora, fauna, or geological or physiographical features. They are notified under the Wildlife and Countryside Act 1981 with improved provisions introduced by the Countryside and Rights of Way Act 2000. They are often components of larger SACs or SPAs.

#### National Nature Reserves (NNRs)

NNRs are designated by Natural England under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 and support important ecosystems which are managed for conservation. They may also provide important opportunities for recreation and scientific study.

#### Country Parks

Country Parks are statutorily designated and managed by local authorities in England and Wales under the Countryside Act 1968. They do not necessarily have any nature conservation importance, but provide opportunities for recreation and leisure near urban areas.

### **NON-STATUTORILY DESIGNATED SITES**

#### Local Nature Reserves (LNRs)

LNRs are designated under the National Parks and Access to the Countryside Act 1949 by local authorities in consultation with Natural England. They are managed for nature conservation and used as a recreational and educational resource.

#### Non-Governmental Organisation Property

These are sites of biodiversity importance which are managed as reserves by a range of NGOs. Examples include sites owned by the RSPB, the Woodland Trust and the Wildlife Trusts

#### Local Wildlife Sites (LWSs)

These are sites defined within the local plans under the Town and Country Planning system and are material considerations of any planning application determination. They are designated by the local authority although criteria can vary between authorities.

## APPENDIX 2.BAT ECOLOGY

### BAT LIFECYCLE

Bat survey timings are based on the lifecycle of bats which varies through the calendar year. The table below illustrates recommended survey timings and how they relate to the bat lifecycle:

BAT LIFECYCLE AS IT RELATES TO SURVEY TIMING <sup>16</sup>													
SURVEY TYPE	J	F	M	A	M	J	J	A	S	O	N	D	
Roost Inspection	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark
Mating/Swarming Survey							Light	Dark	Dark	Dark	Light	Light	
Hibernation Survey	Dark	Dark	Dark	Light									Dark
Tree survey from the ground	Dark	Dark	Dark	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Dark
Tree roost activity survey				Light	Dark	Dark	Dark	Dark	Dark	Dark	Light		
Building roost activity survey					Dark	Dark	Dark	Dark	Light	Light			
Dark grey are optimal timings, light grey suboptimal.													
BAT ROOST USE THROUGH THE YEAR													
Day Roost					Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	
Night Roost	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark
Feeding Roost				Dark	Dark	Dark	Dark	Dark	Dark	Dark			
Transitional/Occasional Roost			Dark	Dark	Dark						Dark	Dark	Dark
Swarming Site								Dark	Dark	Dark	Dark		
Mating Site								Dark	Dark	Dark	Dark		
Maternity Roost					Dark	Dark	Dark	Dark	Dark				
Hibernation Roost	Dark	Dark	Dark	Dark								Dark	Dark
Satellite Roost					Dark	Dark	Dark	Dark	Dark				

<sup>16</sup> Based on information provided within Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust

## BAT ROOST TYPES

Bat Roost Types	
Roost Type	Definition
Day Roost	A place where individual bats or small groups of males, rest or shelter in the day but are rarely found by night in the summer.
Night Roost	A place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or could be used regularly by the whole colony.
Feeding Roost	A place where individual bats or a few individuals rest or feed during the night but are rarely present by day.
Transitional/Occasional Roost	Used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
Swarming Site	Where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites.
Mating Site	Sites where mating takes place from late summer and can continue through winter.
Maternity Roost	Where female bats give birth and raise their young to independence. Females typically give birth to a single pup per year, therefore these roosts are critical to the long-term survival of a colony. Disturbance of maternity roosts can lead to abandonment and death of young.
Hibernation Roost	Where bats may be found individually or together during winter. They have a constant cool temperature and high humidity. Bats are particularly vulnerable to disturbance during the hibernation period as, once roused, they may be unable to replace energy lost due to a lack of sufficient available insect prey at this time.
Satellite Roost	An alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

## SPECIES SPECIFIC ECOLOGY

Pipistrelle maternity colonies generally consist of 25 to 100 individuals, but colonies numbering up to 1000 are not uncommon<sup>17</sup>. Adult females often form large maternity roosts, occupied between May and August, and frequently number around 300 individuals. Males are often solitary or in small groups during the summer, later congregating with the females at winter hibernation roosts<sup>18</sup>.

Maternity colonies of brown long-eared bats are generally small, consisting of 10 to 20 adults<sup>19,20</sup> (although numbers are likely to be underestimated, due to presence in inaccessible areas of the roost). In exceptional circumstances, colonies can reach 200+ bats.

Natterer's bats roost within crevices and cavities, typically within hollow trees, old buildings, caves and tunnels<sup>21</sup>. Maternity colonies comprising up to 200 adult females can be found in buildings during the summer months while bachelor roosts comprising up to 28 males have been recorded during the summer months in Scotland<sup>22</sup>. Maternity roosts are not exclusively female, with both adult and immature males comprising up to 25% of the colony. Male only

<sup>17</sup> Roberts, G.M. & Hutson, A.M. 2000. *Pipistrelle*. British Bats No. 6. The Bat Conservation Trust, London

<sup>18</sup> Corbet, G.B & Southern, H.N., 1964. The handbook of British Mammals).

<sup>19</sup> Speakman, J. R. *et al.*, 1991. Minimum summer populations and densities of bats in NE Scotland, near the northern borders of their distributions. *J. Appl. Ecol.*,225: 327-345

<sup>20</sup> Entwistle, A.C., 1994. Roost ecology of the brown long-eared bat *Plecotus auritus* in north-east Scotland. Unpublished PhD thesis, University of Aberdeen, UK

<sup>21</sup> Stebbings, R.E. 1991. Natterer's bat *Myotis nattereri*. In The handbook of British Mammals. 3<sup>rd</sup> Edition Corbet, G.B. & Harris, S. (Eds) Oxford: Blackwell Scientific.

<sup>22</sup> Swift, S. M. 1997 Roosting and foraging behaviour of Natterer's bats (*Myotis Nattereri*) close to the northern border of their distribution. *J. Zool. (Lond)* **242**: 375-384.

colonies have been found with up to 30 bats<sup>23</sup>. Foraging individuals will perch during the night at roosts near to foraging areas, not used as day roosts. Mostly these roosts are trees or shrubs but barns will also be used<sup>24</sup>.

Whiskered bats roost in trees and buildings. Nursery roosts can number over 100 bats, and are almost exclusively female bats. This species hibernates singly in caves, hanging on the open wall or in crevices<sup>23</sup>.

Brandt's bat is thought to have similar roosting behaviour and foraging ecology to the whiskered bat, however, further research is needed to clarify this<sup>23</sup>.

A third small *Myotis* species, the Alcathe's bat has recently been confirmed within the UK.

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<sup>23</sup> Altringham, J.D. 2003. British Bats. The New Naturalist. Pub. Harper Collins.

<sup>24</sup> Smith, P.G. & Racey, P.A. 2005. The itinerant Natterer: physical and thermal characteristics of summer roosts of *Myotis nattereri* (Mammalia: Chiroptera) J. Zool. Lond. 266: 171-180.

## APPENDIX 3.BATS AND DEVELOPMENT

A list of development types likely to affect bats where they impact on particular features is provided within the table below.

<b>PLANNING AND DEVELOPMENT TRIGGER LIST FOR BAT SURVEYS<sup>25</sup></b>	
<b>NATURE OF WORK</b>	<b>TYPE OF BUILDING OR FEATURE</b>
<b>Conversion, modification, demolition or removal of buildings (including hotels, schools, hospitals, churches, commercial premises and derelict buildings)</b>	Agricultural buildings e.g. farmhouses, barns and outbuildings) of traditional brick or stone construction and/or with exposed wooden beams
	Buildings with weather boarding and/or hanging tiles that are within 200m of woodland and/or water
	Pre-1960 detached buildings and structures within 200m of woodland and/or water
	Pre-1914 buildings within 400m of woodland and/or water
	Pre-1914 buildings with gable ends or slate roofs, regardless of location
	Buildings located within, or immediately adjacent to woodland and/or immediately adjacent to water
	Dutch barns or livestock buildings with a single skin roof and board and gap or Yorkshire boarding if following a preliminary roost assessment, the building appears particularly suited to bats
<b>Any development works</b>	Any underground duct or structure including tunnels, mines, kilns, ice houses, adits, military fortifications, air raid shelters, cellars
	Unused industrial chimneys that are lined and of brick/stone construction
<b>Floodlighting</b>	Churches and listed buildings, green space (e.g. sports pitches) within 50m of woodland, water, field hedgerows or lines of trees with connectivity to woodland or water
	Any building listed in reference 1
<b>Felling, removal or lopping</b>	Woodland
	Field hedgerows and/or lines of trees with connectivity to woodland or water bodies
	Old and veteran trees that are more than 100 years old
	Mature trees with obvious holes, cracks or cavities or which are covered with mature ivy (including dead trees)
<b>Any development works</b>	Within 200m of rivers, streams, canals, lakes, reedbeds or other aquatic habitats
<b>Any development works</b>	Within or immediately adjacent to quarries or gravel pits
	Immediately adjacent to or affecting natural cliff faces and rock outcrops with crevices or caves and sinkholes
<b>Any single or multiple wind turbine construction</b>	N/A – although for single turbines this can depend on size and location
<b>Any development works</b>	Sites where bats are known to be present

<sup>25</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust



A summary of the likely scale of impact at a site level in relation to various bat features and development effects is provided below.

<b>SUMMARY OF MAIN IMPACTS AT SITE LEVEL</b>				
<b>Habitat Feature</b>	<b>Development Effect</b>	<b>Scale of impact</b>		
		<b>Low</b>	<b>Medium</b>	<b>High</b>
<b>Maternity Roost</b>	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Temporary disturbance outside breeding season	✓		
	Post-development interference			✓
<b>Major Hibernation</b>	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Temporary disturbance outside hibernation season	✓		
	Post-development interference			✓
<b>Minor Hibernation</b>	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Modified management		✓	
	Temporary disturbance outside hibernation season	✓		
	Post-development interference		✓	
	Temporary destruction then reinstatement	✓		
<b>Mating</b>	Destruction		✓	
	Isolation caused by fragmentation		✓	
	Partial destruction; modification	✓		
	Modified management	✓		
	Temporary disturbance outside hibernation season	✓		
	Post-development interference	✓		
	Temporary destruction then reinstatement	✓		
<b>Night Roost</b>	Destruction	✓		
	Isolation caused by fragmentation	✓		
	Partial destruction; modification	✓		
	Modified management	✓		
	Temporary disturbance outside hibernation season	✓		
	Post-development interference	✓		
	Temporary destruction then reinstatement	✓		

N.B. This is a general guide only and does not take into account species differences. Medium impacts in particular depend on the care with which any mitigation is designed and implemented and could range between high and low.

## APPENDIX 4. CONTROL OF COTONEASTER SPECIES

### Background

Cotoneasters have been cultivated in the UK for almost 200 years and more than 100 species are known. However where they become established they can become dominant to the exclusion of native species.

Cotoneasters generally reproduce mainly by seed but can also grow from shallow roots of other plants. The seed dispersal strategy used by this genus is generally targeted at birds, which eat the seeds and then disperse seeds in their droppings. Typically these seeds then germinate in the first year after being deposited. Cotoneaster fruit in the autumn, and this can continue through the winter, providing a winter resource for birds.



### What are the environmental issues associated with Cotoneaster?

Under the Wildlife and Countryside Act 1981 / Wildlife (Northern Ireland) Order 1985, which was updated in 2010, under section 14(2) it is an offence "to plant or otherwise encourage" the growth of a number of species of *Cotoneaster*. This could include cutting the plant or roots and disturbing surrounding soil if not correctly managed.

Any polluted soil or plant material which is viable that you discard or intend to discard should be appropriately disposed of at a licensed landfill.

### Control of Cotoneaster sp

Although there are a number of options available for the treatment of these species, the majority of these require a number of years in order to be effective. The two methods outlined below are the most effective in the time scales generally required by the construction industry.

#### ***Physical Control***

Small, individual plants can be removed by hand, ideally before the fruits ripen to prevent further spread. If cotoneaster plants are removed before the fruits ripen, any fruits that fall to the ground will be unlikely to spread viable seed.

Larger plants or groups of plants can be removed with mechanical equipment with the roots dug out. It is essential that the stumps and roots are completely removed, as both can re-sprout. In such a situation it pays to remove too much material – which can involve clearing the area 2m around the plant to a depth of 1m, in order to ensure that the entire root system has been removed.

Ongoing maintenance of such areas needs to be undertaken to ensure that there is no re-growth through seedlings.

Even with great care, a certain amount of regrowth in the spring would be expected and any should be treated with an appropriate herbicide as discussed above.

### ***Chemical Control***

Cotoneasters can be treated with glyphosphate to control spread. Smaller plants can be sprayed directly while larger individuals should be mechanically cut to the stump with the stump then painted with glyphosphate.

Anyone planning to spray a herbicide must be "competent in their duties and have received adequate instruction and guidance in the safe and efficient use of pesticides." This means that the person who will be undertaking the spraying must hold a Certificate of Competence for herbicide use or should work under the direct supervision of a certificate holder. A Certificate of Technical Competence can be obtained by attending a short course at an agricultural college or similar institution.

The most effective active ingredient for use is called glyphosate. This is the active ingredient found in 'Round Up' and other similar herbicides. It is because it does not kill the plant immediately. Instead, the herbicide soaks through the leaves and is taken into the plant root system. The greater the number of green leaves present, the larger the quantity of herbicide that can be absorbed into the plant. It can take up to ten days for the plant to begin to die off after treatment and you should always watch for regrowth.

### **Disposal of Cotoneaster sp – Removal from Site**

- Polluted material should be removed from the site for disposal, unless otherwise agreed with the Environmental Regulator and Client.
- As the species is considered to be a pollutant, you can apply to Customs and Excise for a 'Landfill Tax Exemption' for polluted soil.
- Any bags/skips containing these species should be covered to avoid spread of seeds along public highways.
- If contaminated soil is not treated on site or retained on site, Waste Transfer documentation will be required for any polluted material leaving the site.
- Check with the disposal site in advance that they can receive material containing these species. Be aware, the disposal site may require notice to allow an area to be prepared for this material away from the landfill liner.
- Chipped waste that is removed from the site should not be disposed of in adjacent waterbodies or left on adjacent land.

### **Working Methods in Areas Where Cotoneaster sp is Present**

- Polluted areas should be clearly marked out on site.
- Use of tracked machinery should be limited until areas polluted with these species have been cleared and/or identified and cordoned off.
- Areas where these species have been identified should be cleared slowly, one at a time with ongoing assessment of the extent of polluted ground. Only essential vehicles should be present in polluted areas.
- Never stockpile potentially polluted material within 10 metres of a watercourse.
- Care should be taken to ensure that polluted material is not dropped or transferred to other areas of the site.
- Remaining contaminated soil should be monitored for regrowth, particularly during the growing season and, if necessary, treated with an appropriate herbicide as discussed above.

- All site operatives should be made aware of the requirements associated with the removal/disposal of this species in order to help limit accidental spread.
- All haulage lorries or dumpers carrying these species should be covered.
- Never use a strimmer, mower (without collection bucket) or chipper on these species.