

Ecological Impact Assessment

Barnsley Business and Innovation
Centre, Barnsley, Wilthorpe Road

Sturrock & Crone - Chartered
Surveyors

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QUALITY ASSURANCE

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A INTRODUCTION

1 The principal author of the following report was Belinda Wiggs BA Hons MCIEEM Senior Ecologist for Access Ecology Ltd.

2 Access Ecology Ltd was commissioned on 20th March 2017 by Barnsley Business Innovation Centre BBIC to undertake ecological survey works at the location listed within Table 1. The broad location of the site is included in APPENDIX A.

Table 1. Site Location Details

SITE ADDRESS	GRID REFERENCE (SITE CENTROID)
BBIC Barnsley Business and Innovation Centre, Wilthorpe Road, Barnsley, S75 1JL	SE 32960 07709

3 This report has been designed to comply with standard reporting guidelines provided within both the *British Standard Biodiversity – Code of practice for planning and development – BS 42020:2013* (BSI, 2013) and the *Chartered Institute of Ecology and Environmental Management Guidelines for Ecological Report Writing* (CIEEM, 2015).

A.1 Background to Survey

4 This Ecological Impact Assessment EclA was commissioned to repeat the Ecological Appraisal carried out by Sheaf Ecology in 2013. This EclA report is to support the resubmission of an expired planning application approved in 2013 ref 2013/0337 on the Barnsley Planning Portal for the “erection of new Business Innovation Centre incorporating a mix of offices and workshop units and associated works.”

5 Selected areas were chosen to be surveyed and are numbered Area A, B, C, D and Area E, which replicates the numbering system in the Ecological Appraisal 2013. The main survey site, Area A, is approximately 0.25ha and comprises a mix of amenity grassland, small areas of mixed plantation of native trees with tall ruderals in the shrub layer, ornamental shrubs and access roads and car parks. The other sections, Areas B, C, D and E contain small swards of amenity grassland with occasional young trees and patches of introduced shrubs.

6 Access Ecology Ltd has been provided with the plans and background information as shown within Table 2.

Table 2. Pre-existing Information

TYPE	ITEM TITLE / REFERENCE	DATE ISSUED / PUBLISHED
Report	0337 BBIC Ecological Appraisal by Sheaf Ecology	Amended 2013
Report	0337 BBIC Tree Report by Sheaf Ecology	Amended 2013
Plan	Site layout with proposed development plan	March 2013

A.2 Purpose of the Report

7 Table 3 shows the purpose of the report.

Table 3. Purpose of the Report

OBJECTIVES
To identify and assess the impacts of the development proposal on ecological features, particularly and significant effects and impacts on any designated sites or protected species.
To highlight how significant ecological effects will be avoided or mitigated for wherever possible
To outline appropriate compensation and enhancement measures

A.3 Survey Validity

8 The results of this report are considered to be valid for up to two years of the date of publication: April 2017.

B PLANNING POLICY AND LEGISLATION

9 This legal information is presented in summary form and is intended for general guidance only. It is recommended the original documentation is referred to for detailed and definitive information. Web addresses are located in section H.1.

Habitat Regulations

10 The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is absent at the time).

Wildlife & Countryside Act 1981

11 The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006 (which also places a duty on authorities to have due regard for biodiversity and nature conservation) consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

12 Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;

13 Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;

- Pick or uproot any wild plant listed under Schedule 8 of the Act.
- Plant or otherwise cause any species listed in part 2 of Schedule 9 (Which includes Japanese Knotweed) to grow in the wild.

National Planning Policy Framework

14 The NPPF outlines government planning policies and how they should be applied within local authorities. The framework places an emphasis on sustainable development, encouraging the re-use of land that has previously been developed over using land that has a higher environmental value and by minimising impacts on biodiversity. The NPPF states that developments should aim to conserve or enhance biodiversity and encourages opportunities to incorporate biodiversity in and around developments.

Biodiversity Action Plans

- 15 The original objective of the UK Biodiversity Action Plan (UKBAP) was to fulfil the requirements of the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with specific action plans defining the measures considered necessary to ensure their conservation. Regional and local BAPs have also been developed for species/habitats of nature conservation importance both regionally and locally.

Local Structure Plans

- 16 County, District and Local Councils have Structure Plans and other policy documents that include targets and policies which aim to maintain and enhance biodiversity through the planning system.

C METHODOLOGY

C.1 Scope of the Assessment

C.1.1 Zone of Influence

17 The predicted zone of influence is considered to be the site only as the site is relatively isolated within the urban environment. However, for the purposes of the data search, the potential zone of influence for highly mobile species (i.e. badgers, bats and nesting birds) has been considered up to 2km from the site.

C.1.2 Ecological Resources/Features Considered Relevant

18 Table 4 lists the ecological resources/features that are considered within this report. These resources/features are considered relevant to the site and type of development proposed.

Table 4. Ecological Resources/Features Considered Relevant

RESOURCE/FEATURE
Internationally Designated Wildlife Sites
Nationally Designated Wildlife Sites
Locally Designated Wildlife Sites
European Protected Species
Section 41 Habitats and Species
LBAP Habitats or Species

C.2 Desk Study

C.2.1 Records Data Search

19 Ecological record information for the site and surrounding area was requested from the organisations included within Table 5. The type of records requested and the distance from the site are also included within Table 5.

Table 5. Organisations consulted regarding species records

DATE CONSULTED	ORGANISATION	RECORDS REQUESTED
28 March 2017	Barnsley Biological Records Centre	All protected and notable species records within 2km of the site
28 March 2017	Multi-Agency Geographic Information for the Countryside (MAGIC)	Granted EPSM Mitigation Licences (bats & great crested newts) within 2km radius of the site

C.2.2 Designated Wildlife Sites

20 Information regarding designated wildlife sites within the local area was requested from the organisations within Table 6.

Table 6. Organisations consulted regarding designated sites

DATE CONSULTED	ORGANISATION	RECORDS REQUESTED
28 th March 2017	Multi-Agency Geographic Information for the Countryside (MAGIC)	Local Nature Reserves, National Nature Reserves, Ancient woodland, Sites of Special Scientific Interest, Areas of Outstanding Natural Beauty, Special Areas of Conservation, Special Protection Areas or Ramsar sites within a 2km radius of the site
28 th march 2017	Barnsley Records Centre	Local Wildlife Sites within a 2km radius of the site

C.3 Field Survey

21 Table 7 lists the surveys carried out on site and the personnel who undertook them. Summary methodologies are also provided below.

Table 6. Survey, Dates, Type and Personnel

DATE(S)	SURVEY TYPE	PERSONNEL
24 th March 2017	Phase 1 Habitat Survey	Belinda Wiggs BA Hons, MCIEEM Senior Ecologist and Elizabeth McBride BSc Hons MCIEEM Ecologist
	Ground-based Risk Assessment of Trees for Bats	
	Other Protected and Notable Species Risk Assessment	

C.3.1 Phase 1 Habitat Survey

22 The Phase 1 Habitat Survey was carried out in accordance with the standard methodology as described in the Joint Nature Conservation Committee Phase 1 Habitat Survey handbook (JNCC, 2003), with minor adjustments to illustrate and examine the habitats with greater precision. Target notes have been used to annotate areas of the site of ecological interest including, where applicable.

23 Dominant plant species were noted, as were any uncommon species or species indicative of particular habitat types.

24 During the survey, an assessment was made to look for controlled invasive, non-native species including Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*), giant hogweed (*Heracleum mantegazzianum*) and Australian swamp stonecrop (*Crassula helmsii*).

C.3.2 Ground-based Risk Assessment of Trees for Bats

25 Trees within the curtailment of the site were visually assessed from the ground for potential bat roosting features in accordance with the methods outlined in *Bat Surveys for Professional Ecologists Good Practice Guidelines* (Collins, J. (ed.), 2016).

26 Each tree was inspected for features which may be used by roosting bats including natural holes, woodpecker holes, cracks/splits in major limbs, loose bark, dense thick-stemmed ivy, hollows, cavities and bird or bat boxes.

27 When a roost is positively identified during the assessment, the tree within which the roost is identified is classed as roost present. Other trees are classed as having high, moderate, low or negligible potential to contain bats roosts based upon the number and quality of features present, and the trees position in relation to surrounding environs.

C.3.3 Other Protected and Notable Species Risk Assessment

28 The habitats within the curtailment of the site and within a 25m radius of the site boundary were assessed for their suitability to support, or searched for field signs indicating the presence of, other protected and notable species including (but not limited to) badgers, reptiles and nesting birds.

C.4 Assessment Methodology

C.4.1 Evaluation of Ecological Features

29 The following criteria have been used to assess the value of any identified receptors within the identified zone of influence. The criteria have been applied to the habitats and species that need to be assessed because they are of biodiversity value rather than because they are legally protected (although it is recognised that there may be overlap).

- The habitats, vegetation plant and animal life have been evaluated with reference to standard nature conservation criteria as described by Ratcliffe (1977) and the Nature Conservancy Council (1989). These are size (extent), diversity, naturalness, rarity, fragility, typicalness, recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal;
- The National Vegetation Classification (NVC) was used to evaluate those habitats that can be assessed in terms of plant communities.
- Government advice on wildlife, as set out in NPPF, has been taken into consideration. References to have been made to the associated documents, namely the Countryside and Rights of Way Act.
- Attention has also been given to the objectives of the UKBAP and to local BAPs and species action plans.

30 In addition to the actual value of habitats and wildlife, secondary (or supporting) value, potential value and social value have been considered. For example, some features that are

currently of no particular ecological interest in themselves may nevertheless perform an ecological function, e.g. because they act as a buffer against negative impacts, or because they enable in some other way the effective conservation of a more valuable feature. An example of a feature which is of secondary value is the presence of small pockets of green spaces within an urban environment as the green spaces may create 'stepping stones' and contribute to the dispersal, migration and genetic exchange of wild species (including protected species).

- 31 Where possible, the potential value of a feature has been recognised. The potential value of a feature is related to the ease by which a feature (such as a habitat) can be altered for example by a change in the management to improve and enhance the feature and possible achieve biodiversity targets as defined in the UK and Local BAPs.
- 32 Using the evaluation tools described above a set of Valued Ecological Receptors has been identified. The value assigned to a receptor determines the geographic scale at which the impact is significant. The ecological receptor is considered valuable (or has the potential to become valuable) on the scale detailed in Table 8 below.

Table 7. Criteria for Determining Value

RECEPTOR VALUE	DESCRIPTION
International	International importance, plus biodiversity assets such as: <ul style="list-style-type: none"> • Internationally (including European) designated sites: Special Protection Area (SPA), Ramsar, Special Area for Conservation (SAC); • A site which meets the criteria for designation as an international site but is not designated; • A significant* population of a European protected species in this geographical region; • A small population of a European protected species not typical of the geographical region. <p>*e.g. a population of bird species representative of more than 1% of the international population.</p>
National/UK	National importance, plus biodiversity assets such as: <ul style="list-style-type: none"> • Nationally designated sites: Sites of Special Scientific Interest (SSSI), National Nature Reserve (NNR); • A site which meets the criteria for designation as a national site but is not designated; • A significant* population of a more common and widespread European protected species in this geographical region. • A significant population of a protected species under all parts of Schedule 1, 5 or 6 of the Wildlife and Countryside Act 1981 e.g. badger <p>*e.g. a population of bird species representative of more than 1% of the national population.</p>
Regional	Regional importance, plus biodiversity assets such as: <ul style="list-style-type: none"> • A good/typical example of a UK BAP Priority Habitat that satisfies all the criteria in the Priority Habitat definition but is in some way slightly enhanced (e.g. presence of a species that is localised in the region) • A regularly occurring, locally significant population of a species listed as being nationally scarce
County/ District	County or District importance, plus the biodiversity assets such as:

RECEPTOR VALUE	DESCRIPTION
	<ul style="list-style-type: none"> • Sites of county importance (non-statutory) designated by local authorities or others, including semi-natural ancient woodland greater than 0.25ha, and species equivalents. • UK Biodiversity Action Plan (BAP) Priority Habitats as defined by Section 74 of the Countryside and Rights of Way Act 2000 and UK BAP (2007). • Significant populations of UK Biodiversity Action Plan Species as defined by Section 74 of the Country side and Rights of Way Act and the UK BAP (2007).
Local	Local/Parish importance, plus biodiversity assets such as: <ul style="list-style-type: none"> • Populations of UK BAP Priority Species which are not considered to be exceptional or of significance in the local geographic area. • Areas of habitat which appreciably enrich the habitat resource in the local or parish contexts but are not of substantive biological importance e.g. local green spaces and wildlife corridors within an urban area • Habitats and species listed on the Local BAP (but not already listed as UK BAP Priority Habitats and Species)
Within the zone of immediate influence only/ Site	Less than local importance, with very limited biodiversity assets such as: <ul style="list-style-type: none"> • Species poor vegetation communities; • Typical populations of common and widespread mammal, bird, amphibian and/or reptile species. • Habitats which are sub-optimal for use by wildlife because of problems with the structure, species composition and/or very limited in size.
Negative	Presence of species of flora or fauna listed under Schedule 9 of the Wildlife and Countryside Act 1981 or other non-native invasive/injurious species that have potential to have a significant impact on the native flora and fauna and could be considered to have an ecological, commercial or social adverse effect, usually at the local or site level.

C.4.2 Assessment of Impacts

33 Assessment of potential ecological impacts resulting from the implementation of the proposed development is based on predicting ecologically significant changes (impacts) to the baseline conditions of the site that are likely to occur.

34 Impacts are predicted based on the potential effects that the proposals would have on those aspects of ecological structure and function on which the identified Valued Ecological Receptors depend. Natural trends and inherent resilience of a receptor have been considered and changes will be discussed using the following headings:

- Direction (positive/negative): whether the effect will result in net loss or degradation of a Valued Ecological Receptor or whether it will enhance or improve it;
- Magnitude and/or extent of impact;
- Duration (short-or long-term, where short-term is defined and the duration of anticipated activity which results in an effect);
- Reversibility (chance of recovery/replacement within a reasonable timeframe); and
- Timing and frequency: consideration of the timing of events in relation to ecological change. Some effects may be of greater significance if they take place at certain time of year (e.g. breeding season). The extent to which an effect is repeated may also be of importance.

- 35 Each ecological receptor has been assessed to determine the likely construction and operational impacts of implementation of the development proposals, to outline any mitigation required and to highlight residual impacts.
- 36 A precautionary approach has been taken in the prediction of impacts. Where there is any doubt, the impact is given at a higher level.
- 37 Table 9 details the criteria used in the assessment of magnitude of an identified impact on the identified Valued Ecological Receptors.

Table 8. Magnitude of Impact for Ecological Assessment

MAGNITUDE OF IMPACT	DESCRIPTION
Major	The proposed development would cause a large change to existing environmental conditions. This includes major effects on the integrity of large-scale and ecological significant areas; the land being affected is likely to comprise a designated site (SPA, SAC, SSSI etc.) or key habitats as listed in the UK BAP (lowland meadow, lowland dry acid grassland, standing open waters etc.) and/or support significant populations of statutory protected species.
Moderate	The proposed development would cause a noticeable change to existing environmental condition. This includes major effects on a scale that would affect a moderate proportion of an area that is considered to be ecologically important, including designated sites, key habitats, local sites of substantive biological importance (LWSs) but will not affect the overall integrity of the area, Also included here are minor scale effects on protected species.
Minor	The proposed development would cause a small change to existing environmental conditions. This includes major effects on common wildlife habits, common types of semi-natural vegetation and minor but valuable wildlife features in the landscape. Other important but not protected species may experience temporary disturbance and minor effects.
Negligible	The proposed development would cause no discernible change to existing environmental conditions. Temporary or very small-scale damage to common types of semi-natural vegetation or habitat, or minor losses of such habitat is included here. This includes minor effects on very common wildlife species.

C.4.3 Significance Criteria

- 38 An ecologically significant impact is defined as one that affects the integrity of a site or ecosystem, or the conservation status of a habitat or species within a geographical area.
- 39 It must be recognised that there are limitations associated with the scope of any assessment. The relevance of surveys conducted at this stage must be considered at the time of implementation of site specific proposals. This would be achieved through the projection of current baseline conditions through the provision for updated survey to refine assessments throughout the development period. This is dealt with in the ecological evaluation (Section F of this EciA).
- 40 The significance has been assessed on the basis of the value of the features and the magnitude of effects taking into account professional judgement.
- 41 It is generally the case that no significant effect can occur to features of less than local importance, other than in exceptional circumstances such as where a feature has high social or economic value, or the magnitude effect is particularly high.

D BASELINE ECOLOGICAL CONDITIONS

D.1 Records Data Search

42 Barnsley Biological Records centre returned a list of species records. Those considered most relevant to the habitats within the site, the predicted zone of influence and the proposed development have been extracted and their relevance discussed in relation to each species in Section E.4. A summary table of the relevant ecological records is included as APPENDIX A.5.

43 The search of the MAGIC database revealed the presence of two granted European Protected Species Mitigation (EPSM) licences within a 2km radius of the site, one for bats and one for great crested newts. Both are located over 1km away from the site.

D.2 Designated Sites

44 The search of the MAGIC database revealed that there are no nationally designated sites or ancient woodland within a 2km radius of the site.

45 There are three Local Wildlife Sites (LWS) within 2km. None of these designated sites are within or directly adjacent to the site, or connected to the site by a direct pollution corridor. The closest is Redbrook Pastures LWS, which is approximately 800m south-west.

46 A summary table of all the designated sites is provided in APPENDIX A.6 and A.7.

D.3 Habitats

47 Four habitat types were recorded within the site boundary - amenity grassland, mixed deciduous woodland, scattered trees and introduced shrubs. A Phase 1 Habitat Plan of the site is provided in APPENDIX A.2. The plant species list is recorded in APPENDIX A.3. Site images can be seen in APPENDIX A.4. The site images were taken at the same fixed point locations as the photographs taken for the Ecological Appraisal 2013 to facilitate comparison. A description of each habitat is provided below.

48 Survey areas were numbered Area A, B, C, D and E, replicating the numbering system used in the Ecological Appraisal 2013.

49 The main part of the site proposed for development is along the northern edge of the site and is referred to as Area A in the Ecological Appraisal 2013 by Sheaf Ecology Ltd. It is approximately 0.3ha and comprises of amenity grassland, mixed deciduous plantation young woodland with tall ruderals in the ground flora and some areas of ornamental shrubs.

D.3.1 Area A

D.3.1.1 Amenity Grassland

50 The amenity grassland is frequently but not closely mown and contains commonly occurring neutral grassland species such as perennial rye grass *Lolium perenne*, Yorkshire fog *Holcus lanatus*, bent grass *Agrostis* sp., annual meadow grass *Poa annua*, cock's foot grass *Dactylis*

glomerata. With commonly occurring herbs including occasional ribwort plantain *Plantago lanceolata*, common mouse ear *Cerastium fontanum*, dandelion *Taraxacum officinale*, field speedwell *Veronica persica* and creeping buttercup *Ranunculus repens*.

D.3.1.2 Mixed Woodland

51 The woodland is divided into 2 sections. The trees in the western section include abundant mature and semi-mature Corsican pine *Pinus nigra*, young alder *Alnus glutinosa*, occasional young hawthorn *Crataegus monogyna*, and rare specimens of London plane *Platanus x acerifolia*, beech *Fagus sylvatica* and rowan *Sorbus aucuparia*. The understorey consists of abundant bramble *Rubus fruticosus* and un-cut tall ruderals of commonly occurring species including nettle *Urtica dioica*, cow parsley *Anthriscus sylvestris*, cleavers *Galium aparine*, nipplewort *Lapsana communis* and sowthistle *Sonchus arvenses*.

52 The eastern section of the woodland is dominated by young specimens of common alder and silver birch *Betula pendula* with rare specimens of beech, cherry *Prunus avium*. There is abundant alder and birch regeneration in the understorey with abundant bramble. The ground flora consists of commonly occurring woodland species such as herb bennet *Geum urbanum*, hedge woundwort *Stachys sylvatica*, forget me not *Myosotis* sp., red campion *Silene dioica* and daffodils *narcissi* sp.

D.3.1.3 Scattered Trees

53 To the south of Area A, adjacent to the western boundary are several clumps of young trees and scrub. Along the western boundary fence there are young beech, alder, hawthorn and birch.

54 In one small area in the car park there are two cherry, one rowan and two Swedish whitebeam *Sorbus intermedia* over amenity grassland.

D.3.2 Area B

55 This is a very small area of recently disturbed ground with bare patches at the eastern end of the northern existing building. It is surrounded on all sides by concrete footpaths, roads and the adjacent building.

Scattered trees

56 There are three young *Sorbus* trees and the stumps of cotoneaster shrubs that have been removed. The ground flora consists of frequent groundsel *Senecio vulgaris*, dandelion *Taraxacum officinale* and common mouse ear with occasional forget me not, violets *Viola* sp and wild strawberry *Fragaria vesca*.

D.3.3 Area C

57 Area C occurs just to the east of Area B at the periphery of the site. It is surrounded on all sides by concrete footpaths and roads.

Amenity grassland

58 There is a small area of amenity grassland with young trees and ornamental shrubs along three sides. The grassland supports commonly occurring herbs such as daisy *Bellis perennis* dandelion and abundant lawn moss *Rhytidiadelphus squarrosus*.

Scattered trees

59 The young trees around the periphery are alder, Norway maple *Acer platanoides*, guelder rose *Viburnum opulus* and elder *Sambucus nigra*.

Introduced shrubs

60 The ornamental shrubs include berberis, rose of Sharon *Hypericum calycinum*, dogwood *Cornus sanguinea* and cotoneaster *Cotoneaster* sp. The majority of these shrubs have been cut to the height of approximately 1m tall.

D.3.4 Area D

61 Area D is to the south of Area C and is at the eastern end of the southern existing building. It is surrounded on all sides by concrete footpaths, roads and the adjacent building.

Amenity grassland

62 The grassland supports abundant lawn moss and occasional herbs of ribwort plantain *Plantago lanceolata*, white clover, dandelion and daisy.

Scattered trees

63 There are occasional trees of birch and field maple *Acer campestre* around the periphery of the lawn.

Introduced shrubs

64 The shrubs include dogwood, hebe and berberis.

D.3.5 Area E

65 Area E is to the western end of the existing building. It is surrounded by concrete footpaths, roads and the adjacent building.

Amenity grassland

66 The grassland supports locally abundant yarrow *Achillea millefolium*, white clover, daisy and dandelion.

Scattered trees

67 The trees here are a weeping willow *Salix* sp. and a young white birch *Betula* sp. planted within the lawn.

D.4 Controlled Invasive Species

68 No invasive species were located during this survey.

D.5 Species

D.5.1 Bats

69 None of the trees within the curtailment of the survey area contain features to support roosting bats. As a result, all trees within the survey area are classed as having **negligible** potential to support roosting bats. Additionally, there were no historical bat roost records for the site returned in the data search, with the closest roosts record being of a mixed species roosts of common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule bat *Nyctalus noctula* and Leisler's bat *Nyctalus leisleri* approximately 500m west of the site.

70 The trees within the site are considered to offer moderate suitability for commuting and foraging for bats, particularly due to their connectivity to suitable roosting, foraging and commuting habitats in the wider area via the treeline and residential gardens.

71 Great Crested Newts

72 There are no waterbodies within the curtailment of the site. Examination of Ordnance Survey maps revealed that there are five waterbodies within 1km of the site, the closest is approximately 400m north-east.

73 The data search revealed five great crested newt records from within a 2km radius of the site. The closest record is from the Barnsley Canal LWS, which is approximately 900m north of the site.

74 The five waterbodies, including Barnsley Canal, are separated from the site by significant areas of housing or business/industrial parks, along with roads and hard standing.

75 The site itself is considered to have low value as terrestrial amphibian habitat due to the large areas of hard standing and mown amenity grassland. As a result it is considered highly unlikely that great crested newts will be present within the site proposed for development.

D.5.2 Reptiles

76 The habitats within the site are considered to offer low suitability for reptile species due to the lack of suitable structure within the habitat and lack of connectivity to and from other suitable habitats within the wider area. The low suitability of the site is reduced further by the presence of domestic housing surrounding the site which increases chances of predation by domestic cats.

77 No evidence of reptiles was observed during the survey and no records of reptiles were returned in the biological data for the survey area or from within a 2km radius of the site. As a result it is considered highly unlikely that reptiles will be present within the site proposed for development.

D.5.3 Nesting Birds

78 The trees and scrub within the survey area are considered to offer suitable nesting habitat for common tree and garden birds such as song thrush *Turdus philomelos*, house sparrow *Passer domesticus* and dunnock *Prunella modularis*.

79 The grassland within the site may also offer suitable foraging habitat for the above birds, as well as starlings *Sturnus vulgaris*, particularly given that the houses surrounding the site may offer suitable nesting opportunities for the latter. Records of all these species were returned in the biological records, although none of these were for the site itself.

D.5.4 Badgers

80 No badger *Meles meles* setts, latrines or snuffle holes were observed within the survey area or the immediate surrounds.

81 One badger record was returned in the data search, but was located over 1.1km from the site. Whilst this indicates that badgers are present in the wider area, the isolation of the site within a built-up area and the lack of local badger records makes it unlikely that badgers are using the site.

E ECOLOGICAL EVALUATION

E.1 Evaluation of Ecological Receptors

82 This section provides an account of the valued ecological receptors including nature conservation sites, habitats and species identified within the potential zone of influence of the development proposals. The identification of ecological receptors is based on the desktop study and field surveys.

E.2 Statutory and Non-statutory Designated Sites

83 None of the identified designated sites are within, adjacent to, or connected to the site by a direct pollution corridor. As none of the sites will be directly affected by the proposed development, no further consideration is required at this stage.

E.3 Habitats

E.3.1 Amenity Grassland

84 The grasses and herbs occurring within the amenity grassland are all commonly occurring neutral grassland species which are likely to be present as a result of re-seeding during previous landscape development of the site. This habitat is considered to be of **site** importance only.

E.3.2 Mixed Woodland

85 The mixed woodland in Area A western section contains some mature specimens of Corsican pine and alder, whilst the beech, rowan, and hawthorn are younger trees. The Corsican pines are good specimens. However, it is a small area of planted mixed woodland and therefore is considered to be of **site** value only.

86 According to the plans for the site, some of these trees will be lost to the proposed development.

E.3.3 Scattered Trees

87 Many of the single trees within the amenity grassland and ornamental shrub beds are relatively young specimens and include non-native species. They are located in relatively isolated and disturbed areas, at the edge of the car parks.

88 The young scattered trees across the site are of relatively low ecological value, are considered to be of **site** value.

E.3.4 Introduced shrubs

89 The introduced shrubs within the site have limited value as shelter and cover and connective habitat for animals migrating around the built-up urban area. However, they are considered to be **site** value only.

E.4 Species

E.4.1 Bats

E.4.1.1 Roosting

90 The trees within the site have negligible potential to support roosting bats. As a result no further consideration is required at this stage.

E.4.1.2 Foraging and Commuting

91 It is considered likely that common bat species may occasionally utilise habitats within the site for foraging and commuting purposes and as a result these habitats are considered to be of **site** value for bats.

E.4.2 Great Crested Newts

92 The assessment has found that it is highly unlikely that great crested newts will be present within the area proposed for development. As a result, no further consideration is required at this stage.

E.4.3 Reptiles

93 The assessment has found that it is highly unlikely that reptiles will be present within the area proposed for development. As a result, no further consideration is required at this stage.

E.4.4 Nesting Birds

94 The assessment has found that there is suitable, albeit limited, nesting and foraging habitat for birds in the area proposed for development. Due to the amount and structure of suitable nesting and foraging habitat it is considered that the site will support no more than typical populations of common birds and as a result these features are considered to be of **site** value only for birds.

E.4.5 Badgers

95 There are no links to woodland in the adjacent area or the surrounding countryside and therefore it is considered unlikely that badger will access this site and therefore require no further consideration.

F ASSESSMENT OF IMPACTS

F.1 Brief Outline and Appraisal of Proposals

96 The proposal for the site is to construct an additional building within Area A with additional areas of car parking and access roadways. This will result in the loss of some of the existing habitats on the site including some of the mixed woodland, and a number of the scattered trees, introduced shrubs and amenity grassland within the surveyed areas.

97 The impact assessment is based on the proposed layout of the development shown on plan provided by William Saunders 2013. If these proposals change significantly, the impact assessment should be undertaken against the new plans for the site.

F.2 Future Ecological baseline Conditions without the Development

98 Without the proposed development the current land use across the site is unlikely to change significantly within 10 years. This means that the relatively low ecological value of the site will persist.

F.3 Identification of Sources of Potential Impacts

99 Each identified valuable ecological receptor has been assessed to determine the likely construction and operational impacts of implementation of the proposed development, to identify any mitigation required and to determine any residual impacts.

100 Both qualitative and quantitative information has been used to identify likely significant ecological impacts.

101 Impacts associated with the following activities on identified valued receptors at the site clearance/ construction and operational phases are discussed in the following section.

F.3.1 Potential sources of Impacts during Site Clearance/ Construction

102 The potential sources of impacts during the site clearance/construction period are listed below:

- Habitat loss;
- Disturbance/Injury/death to fauna and/or damage to retained habitats during vegetation clearance, earthworks and operation of machinery (including pollution from spills, dust and sedimentation);

F.3.2 Potential Sources of Impacts during Operation (post-development)

103 There are no potential sources of impacts present in the operational phase of the development.

F.4 Assessment of Impacts

F.4.1 Amenity grassland

F.4.1.1 Impacts

Habitat Loss

104 The amenity grassland has a low ecological / botanical value. The loss of amenity grassland is considered to be a **negligible negative insignificant impact at site level**.

F.4.1.2 Mitigation

Habitat Loss

105 N/A

F.4.1.3 Residual Effects

Habitat Loss

106 A negligible negative insignificant impact at site level.

F.4.2 Mixed woodland

F.4.2.1 Impacts

Habitat Loss

107 The majority of the trees within the woodland are young, commonly occurring species. The loss of a section of the mixed woodland and will result in a **minor negative insignificant impact at site level**.

F.4.2.2 Mitigation

Habitat Loss

108 N/A

F.4.2.3 Residual Effects

Habitat Loss

109 A minor negative insignificant impact at site level.

Habitat Damage

110 There is a risk of damage to the sections of mixed woodland to be retained and particularly the mature Corsican pines. This would result in a **minor negative insignificant impact at site level**.

F.4.2.4 Mitigation

111 An appropriate method statement for the protection of the retained habitats (including trees) will be employed for the duration of the site clearance / construction phase of the development.

112 This will include appropriate tree protection measures for in line with guidance contained within BS 5837:2012 Trees in relation to design demolition and construction. Additionally, the retained habitats will be protected for the full duration of the site clearance and construction phase with temporary Heras fencing (or similar), which will also include appropriate signage so that all those working on the site are aware of the purpose of the fencing.

F.4.2.5 Residual Effects

Habitat Damage

113 With the recommended mitigation in place there will be no significant or insignificant residual effects.

F.4.3 Scattered Trees

F.4.3.1 Impacts

Habitat Loss

114 The loss of scattered trees of a variety of species will result in a **negligible negative insignificant impact at site level.**

F.4.3.2 Mitigation

Habitat Loss

115 N/A

F.4.3.3 Residual Effects

Habitat Loss

116 A negligible negative insignificant impact at site level.

F.4.4 Introduced shrubs

F.4.4.1 Impacts

Habitat Loss

117 The loss of the introduced shrubs will result in a **negligible negative insignificant impact at local level.**

F.4.4.2 Mitigation

Habitat Loss

118 N/A

F.4.4.3 Residual Effects

Habitat Loss

119 A negligible negative insignificant impact at local level.

F.4.5 Bats – Foraging and Commuting

F.4.5.1 Impacts

Habitat Loss

120 The loss of moderately suitable foraging and commuting habitats for bats is considered to offer a **negligible negative insignificant impact at site level.**

F.4.5.2 Mitigation

Habitat Loss

121 N/A

F.4.5.3 Residual Effects

Habitat Loss

122 Negligible negative insignificant impact at site level.

F.4.6 Nesting Birds

F.4.6.1 Impacts

Habitat Loss

123 There will be a loss of potential nesting bird habitat in the woodland, scattered trees and shrubs, and a loss of potential foraging habitat for birds in the grassland and trees. This habitat loss is assessed as having a **negligible negative insignificant impact at site level.**

Disturbance/Injury/Death to Individuals

124 Under the Wildlife and Countryside Act 1981, as amended (section1), it is an offence to remove, damage or destroy the nest of any wild bird while that nest is in use or being built. Planning consent for a development does not provide a defence against prosecution under this act.

125 The removal of potential bird nesting habitat may result in the destruction/damage of nests and therefore a breach of the above law. If unmitigated, the removal of the potential nesting habitat would offer a **negligible negative significant impact at the site level.**

F.4.6.2 Mitigation

Habitat Loss

126 N/A

Disturbance/Injury/Death to Individuals

127 The following reasonable avoidance measures will be put in place to ensure the protection of nesting birds throughout the clearance and construction phase.

- In order to minimise the risk to nesting birds, vegetation clearance works (where possible) will be conducted outside the main bird nesting period – 1st March to 31st August.
- All habitats present on the site (with the exception of the grassland) will be assumed to contain nesting birds between 1st March and 31st August, inclusive, unless a recent pre-works inspection has been undertaken by a competent ecologist to assess the nesting bird activity on site during this period which has shown with absolute certainty that nesting birds are not present.
- Workers will be made aware of the potential for nesting birds on the site. If at any point during the development active bird nests are suspected to be within the work area, works will be suspended immediately and the advice of a suitably experienced Ecologist sought.

F.4.6.3 Residual Effects

Habitat Loss

128 A negligible negative insignificant impact at site level.

Disturbance/Injury/Death to Individuals

129 With the recommended mitigation in place there will be no significant or insignificant residual effects.

F.5 Summary of Residual Effects

130 Table 10 below provides a summary of residual effects.

Table 9. Summary of Residual Effects

Valued Ecological Receptor	Ecological Value	Identified Impact	Significance of Impact Without Mitigation	Mitigation Measure	Residual Effect
Amenity grassland	Site	Habitat Loss	Negligible Negative Insignificant	N/A	Negligible Negative Insignificant
Mixed woodland	Site	Habitat loss	Negligible Negative Insignificant	N/A	Negligible Negative Insignificant
		Habitat damage	Minor negative insignificant impact at site level.	Appropriate method statement tree protection measures guidance contained within BS 5837:2012	None/Neutral
Scattered trees	Site	Habitat loss	Negligible Negative Insignificant	N/A	Negligible Negative Insignificant
Introduced shrubs	Site	Habitat loss	Negligible Negative Insignificant	N/A	Negligible Negative Insignificant
Bats – Foraging and Commuting	Site	Habitat Loss	Negligible Negative Insignificant	N/A	Negligible Negative Insignificant
Nesting Birds	Site	Habitat Loss (nesting and foraging)	Negligible Negative Insignificant	N/A	Negligible Negative Insignificant
		Disturbance/ Injury Death to Individuals	Negligible Negative Significant	Reasonable avoidance measures including vegetation clearance works timed to avoid bird nesting season (Mar-Aug inc.) or pre- works inspection by Ecologist	None/Neutral

G COMPENSATION AND ENHANCEMENT

131 The overall impact of the loss of the habitats is minimal as the areas for redevelopment are small and the plant species are all commonly occurring.

132 There are no current plans for any green landscaping across the site. However, as the NPPF states that there should be no net loss to biodiversity as a result of development, the developer may wish to incorporate some green landscaping into the scheme. This could be done by:

- Planting of native trees – scattered or in small groups – recommended species include sessile oak, rowan, hawthorn, field maple, bird cherry *Prunus padus* and holly *Ilex aquifolium*.
- Installing bird and bat boxes across the site – examples included in Appendix B.1 and B.2.
- Native shrub planting

133 It is considered that, if integrated into the proposed development, the features described above would neutralise the **negligible negative insignificant** residual effects.

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H.1 UK Legislation and Policy Web Addresses:

Conservation of Habitats and Species Regulations 2010:

http://www.opsi.gov.uk/si/si2010/uksi_20100490_en_1

Habitats Directive:

www.europa.eu.int/eur-lex/en/lif/dat/1992/en_392L0043

Wildlife and Countryside Act 1981:

www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1

Countryside and Rights of Way Act 2000:

www.legislation.hmso.gov.uk/acts/acts2000/20000037

Natural Environment and Rural Communities Act 2006:

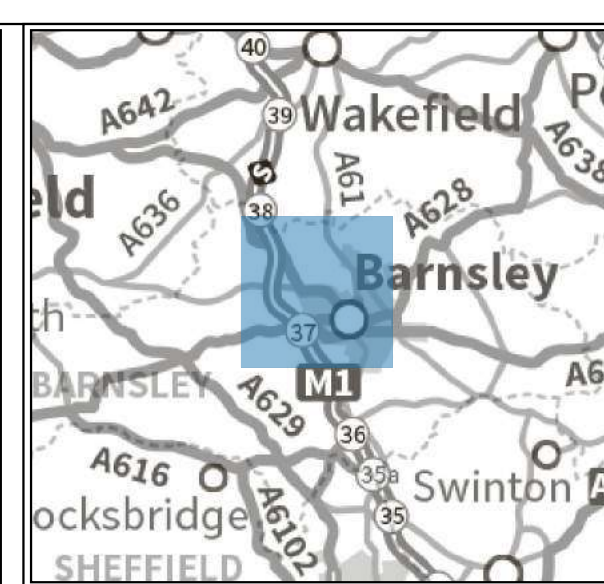
http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

National Parks and Access to the Countryside Act 1949:

http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1949/cukpga_19490097_en_1

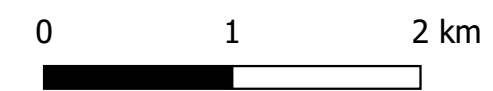
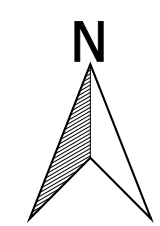
National Planning Policy Framework:

<http://www.communities.gov.uk/publications/planningandbuilding/nppf>



Legend

 Site Location



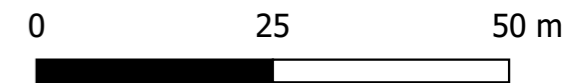
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Project	1238 - BBIC Wilthorpe Road Barnsley		
Title	Location Plan		
Site XY	SE 32960 07709		
Client	Sturrock and Crone		
Map date	Size	Author	Version
05.04.17	A3	AL	V1



Legend

- Mixed plantation
- A Amenity grassland
- Introduced shrubs
- Bare ground
- Scattered broadleaved trees



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Project	1238 BBIC		
Title	Phase 1 Habitat Map - March 2017		
Site XY	SE 329 077		
Client	Sturrock and Crone - Chartered Surveyors		
Map date	Size	Author	Version
07/04/2017	A3	EM	1

Job Name / Number	1238 BBIC Barnsley	Date 24/03/2017
Ecologists	BW	
Area Reference	Habitat Type	Description
A	A1.3.2 Woodland. C3.2 Tall ruderals. J2 Amenity grassland. J4 Introduced shrub.	young mixed plantation woodland with tall ruderals. Lawn, not close cut.
B	J3 Ephemeral, short perennial. J4 Introduced shrubs	recently cut shrubs, bare ground.
C	J2 Amenity Grassland. J4 Introduced shrubs	small lawn with shrubs around edges
D	J2 Amenity Grassland. J4 Introduced shrubs	small lawn with shrubs around edges
E	J2 Amenity Grassland. J4 Introduced shrubs	small lawn with shrubs around edges

Species List			
Area Reference	Common Name	Scientific Name	DAFOR
A - west	beech	<i>Fagus sylvatica</i>	R
	alder	<i>Alnus glutinosa</i>	A
	cow parsley	<i>Anthriscus sylvestris</i>	LF
	daisy	<i>Bellis perennis</i>	O
	common mouse ear	<i>Cerastium fontanum</i>	O
	hawthorn	<i>Crataegus monogyna</i>	O
	cleavers	<i>Galium apraine</i>	LO
	Yorkshire fog	<i>Holcus lanatus</i>	F
	nipplewort	<i>Lapsana communis</i>	LO
	perennial rye grass	<i>Lolium perenne</i>	A
	Corsican pine	<i>Pinus nigra</i>	A
	ribwort plantain	<i>Plantago lanceolata</i>	O
	London plane	<i>Platanus × acerifolia,</i>	R
	cherry	<i>Prunus avium</i>	O
	creeping buttercup	<i>Ranunculus repens</i>	O
	bramble	<i>Rubus fruticosus</i>	LA
	rowan	<i>Sorbus aucuparia</i>	R
Swedish whitebeam	<i>Sorbus intermedia</i>	R	
dandelion	<i>Taraxacum officianalis</i>	O	
nettle	<i>Urtica dioca</i>	LF	
field speedwell	<i>Veronica persica</i>	O	
A - east	alder	<i>Alnus glutinosa</i>	A

	alder	<i>Alnus glutinosa</i>	A
	cowparsley	<i>Anthriscus sylvestris</i>	A
	birch	<i>Betula pendula</i>	A
	borage	<i>Borago officinalis</i>	O
	spear thistle	<i>Cirsium arvense</i>	O
	cotoneaster	<i>Cotoneaster sp</i>	LA
	beech	<i>Fagus sylvatica</i>	R
	ash	<i>Fraxinus excelsior</i>	R
	cleavers	<i>Galium aparine</i>	F
	cleavers	<i>Galium aparine</i>	A
	cranesbill	<i>Geranium sp.</i>	R
	herb bennet	<i>Geum urbanum</i>	O
	ivy	<i>Hedera helix</i>	LA
	larch	<i>Larix decidua</i>	O
	forget me not	<i>Myosotis sp.</i>	R
	daffodils	<i>Narcissi sp.</i>	O
	cherry	<i>Prunus avium</i>	O
	bramble	<i>Rubus fruticosus</i>	LA
	broad leaved dock	<i>Rumex obtusifolius</i>	O
	ragwort	<i>Senecio jacobaea</i>	O
	hedge woundwort	<i>Stachys sylvatica</i>	R
	chickweed	<i>Stellaria media</i>	O
A - south	alder	<i>Alnus glutinosa</i>	F
	cow parsley	<i>Anthriscus sylvestris</i>	F
	silver birch	<i>Betula pendular</i>	O
	hawthorn	<i>Crataegus monogyna</i>	O
	beech	<i>Fagus sylvatica</i>	F
	Spanish bluebell	<i>Hyacinthoides hispanica</i>	R
	bramble	<i>Rubus fruticosus</i>	O
	elder	<i>Sambucus nigra</i>	O
	nettle	<i>Urtica dioica</i>	O
	field speedwell	<i>Veronica persicaria</i>	O
B	daisy	<i>Bellis perennis</i>	O
	bittercress	<i>Cardamine sp.</i>	O
	spear thistle	<i>Cirsium arvense</i>	O
	cotoneaster	<i>Cotoneaster sp.</i>	R
	common mouse ear	<i>Crerastium fontanum</i>	F
	wild strawberry	<i>Fragaria vesca</i>	O
	herb bennet	<i>geum urbanum</i>	O
	forget me not	<i>Myosotis sp.</i>	O
	ribwort plantain	<i>Plantago lanceolata</i>	O
	moss	<i>Rhitidiadelphus squarrosus</i>	O
	groundsel	<i>Senecio vulgare</i>	F
	Sorbus sp.	<i>Sorbus sp.</i>	O
	dandelion	<i>Taraxacum officianalis</i>	F

	nettle	<i>Urtica dioica</i>	O
	violets	<i>Viola sp.</i>	O
C	Norway maple	<i>Acer platanoides</i>	O
	alder	<i>Alnus glutinosa</i>	O
	daisy	<i>Bellis perennis</i>	O
	berberis	<i>Berberis sp.</i>	F
	dogwood	<i>Cornus sanguinea</i>	F
	cotoneaster	<i>Cotoneaster</i>	A
	ivy	<i>Hedera helix</i>	A
	rose of Sharon	<i>Hypericum calycinum</i>	A
	moss	<i>Rhitiadelphus squarrosus</i>	A
	elder	<i>Sambucus nigra</i>	O
	dandelion	<i>Taraxacum officianalis</i>	O
	guelder rose	<i>Viburnum opulus</i>	F
D	field maple	<i>Acer campestre</i>	O
	daisy	<i>Bellis perennis</i>	O
	berberis	<i>Berberis sp.</i>	F
	silver birch	<i>Betula pendular</i>	O
	Senecio sunshine	<i>Brachiglottis sunshine</i>	F
	dogwood	<i>Cornus sanguinea</i>	LA
	cock's foot grass	<i>Dactyllis glomerata</i>	O
	hebe	<i>Hebe sp.</i>	O
	ivy	<i>Hedera helix</i>	LA
	ribwprt plantain	<i>Plantago lanceolata</i>	O
	dandelion	<i>Taraxacum officianalis</i>	O
	white clover	<i>Trifolium repens</i>	O
E	yarrow	<i>Alchemilla vulgaris</i>	LA
	daisy	<i>Bellis perennis</i>	O
	white birch	<i>Betula sp.</i>	R
	spear thistle	<i>Cirsium arvense</i>	O
	cock's foot grass	<i>Dactyllis glomerata</i>	F
	Yorkshire fog	<i>Holcus lanatus</i>	F
	perennial rys grass	<i>Lolium perenne</i>	F
	ribwort plantain	<i>Plantago lanceolata</i>	O
	weeping willow	<i>Salix sp.</i>	R
	ragwort	<i>Senecio jacobaea</i>	O
	dandelion	<i>Taraxacum officianalis</i>	O
	white clover	<i>Trifolium repens</i>	O

key

D = Dominant
A = Abundant
F = frequent
O = Occasional
R = Rare
L = Localised

Photo 1. Area A south, on western boundary.



Photo 2. Area A western plantation



Photo 3 Area A hardstanding



Photo 4 Area A western plantation



Photo 5. Area A eastern plantation



Photo 6 Area A Introduced shrubs



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		Title	A.4. Site Images 1
		Client	Sturrock and Crone
		Date	24 march 2017
		Ref	1238 Images 1 BW

Photo 7. Area B facing north west



Photo 8. Area C western side



Photo 9. Area C eastern side



Photo 10 Area D facing south east



Photo 11. Area D facing south



Photo 12 Area E facing west



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		Title	A.4. Site Images 2
<p>info@accessecology.co.uk</p>	<p>www.accessecology.co.uk</p>	Client	Sturrock and Crone
		Date	24 march 2017
		Ref	1238 Images 2 BW

The results received from Barnsley Biological Records Centre are listed below.

Group	Scientific Name	Common Name	Date	OS Grid Ref	Location
amphibian	<i>Bufo bufo</i>	Common Toad	16/05/2012	SE3442707981	Barnsley Canal at Wilthorpe LWS
amphibian	<i>Bufo bufo</i>	Common Toad	10/06/2016	SE344079	Barnsley Canal general
amphibian	<i>Bufo bufo</i>	Common Toad	13/04/2012	SE344080	Barnsley Canal general
amphibian	<i>Bufo bufo</i>	Common Toad	05/06/2014	SE31880884	Barnsley
amphibian	<i>Bufo bufo</i>	Common Toad	04/04/2016	SE327089	Barnsley
amphibian	<i>Bufo bufo</i>	Common Toad	06/05/2012	SE334086	Darton
amphibian	<i>Bufo bufo</i>	Common Toad	04/04/2016	SE3270108924	Darton Sewage Treatment Works
amphibian	<i>Bufo bufo</i>	Common Toad	16/05/2012	SE339082	Wilthorpe Marsh
amphibian	<i>Rana temporaria</i>	Common Frog	16/05/2012	SE336084	Barnsley Canal at Wilthorpe LWS
amphibian	<i>Rana temporaria</i>	Common Frog	06/05/2014	SE31750860	Barnsley
amphibian	<i>Rana temporaria</i>	Common Frog	22/04/2014	SE31880884	Barnsley
amphibian	<i>Rana temporaria</i>	Common Frog	25/09/2011	SE331094	Darton pond 4
amphibian	<i>Triturus cristatus</i>	Great Crested Newt	16/05/2012	SE3355908513	Barnsley Canal at Wilthorpe LWS
amphibian	<i>Triturus cristatus</i>	Great Crested Newt	16/05/2012	SE335085	Barnsley Canal at Wilthorpe LWS
amphibian	<i>Triturus cristatus</i>	Great Crested Newt	01/04/2016	SE337084	Barnsley Canal general
amphibian	<i>Triturus cristatus</i>	Great Crested Newt	11/05/2012	SE3228908791	Barnsley Canal: E of Low Barugh
amphibian	<i>Triturus cristatus</i>	Great Crested Newt	15/05/2014	SE31880884	Barnsley
amphibian	<i>Triturus cristatus</i>	Great Crested Newt	06/05/2012	SE336084	Darton
amphibian	<i>Triturus cristatus</i>	Great Crested Newt	25/09/2011	SE335085	Darton
amphibian	<i>Triturus vulgaris</i>	Smooth Newt	16/05/2012	SE3367208436	Barnsley Canal at Wilthorpe LWS
amphibian	<i>Triturus vulgaris</i>	Smooth Newt	01/04/2016	SE337083	Barnsley Canal general
amphibian	<i>Triturus vulgaris</i>	Smooth Newt	13/04/2012	SE344080	Barnsley Canal general
amphibian	<i>Triturus vulgaris</i>	Smooth Newt	15/05/2014	SE31880884	Barnsley
amphibian	<i>Triturus vulgaris</i>	Smooth Newt	06/05/2012	SE329095	Darton
amphibian	<i>Triturus vulgaris</i>	Smooth Newt	25/09/2011	SE336084	Darton pond 8
amphibian	<i>Triturus vulgaris</i>	Smooth Newt	01/05/2009	SE322086	Stainborough Park LWS
amphibian	<i>Triturus vulgaris</i>	Smooth Newt	16/05/2012	SE339082	Wilthorpe Marsh
amphibian	<i>Triturus vulgaris</i>	Smooth Newt	12/05/2011	SE3308	Wilthorpe Marsh
crustacean	<i>Austropotamobius pallipes</i>	White-clawed Freshwater Crayfish	30/10/2010	SE348079	Smithies
flowering plant	<i>Centaurea cyanus</i>	Cornflower	10/11/2015	SE317093	Barnsley
insect - butterfly	<i>Coenonympha pamphilus</i>	Small Heath	28/05/2009	SE3308	Barnsley Canal at Wilthorpe LWS
insect - butterfly	<i>Coenonympha pamphilus</i>	Small Heath	22/05/2011	SE344080	Barnsley Canal: Smithy Green
insect - butterfly	<i>Coenonympha pamphilus</i>	Small Heath	09/06/2013	SE332096	Mapplewell Tip
insect - butterfly	<i>Coenonympha pamphilus</i>	Small Heath	01/03/2009	SE3309	North Gawber
insect - butterfly	<i>Coenonympha pamphilus</i>	Small Heath	06/07/2013	SE3309	North Gawber
insect - butterfly	<i>Coenonympha pamphilus</i>	Small Heath	07/08/2011	SE3308	Wilthorpe Marsh

insect - butterfly	<i>Erynnis tages</i>	Dingy Skipper	09/06/2013	SE332096	Mapplewell Tip
insect - butterfly	<i>Erynnis tages</i>	Dingy Skipper	01/03/2009	SE3309	North Gawber
insect - butterfly	<i>Lasiommata megera</i>	Wall	01/03/2009	SE3309	North Gawber
insect - moth	<i>Tyria jacobaeae</i>	Cinnabar	07/07/2013	SE3309	Mapplewell Tip
terrestrial mammal	<i>Erinaceus europaeus</i>	Hedgehog	25/05/2013	SE3108	Barugh Green
terrestrial mammal	<i>Erinaceus europaeus</i>	Hedgehog	04/08/2007	SE310073	Higham
terrestrial mammal	<i>Lutra lutra</i>	Otter	17/01/2007	SE34730792	Fleets
terrestrial mammal	<i>Meles meles</i>	Badger	03/05/2012		
terrestrial mammal	<i>Micromys minutus</i>	Harvest Mouse	03/05/2012	SE322086	Barugh Green
terrestrial mammal	<i>Mustela vison</i>	American Mink	25/02/2016	SE3308	Barnsley Canal at Wilthorpe LWS
terrestrial mammal	<i>Myotis daubentoni</i>	Daubenton's Bat	23/07/2011	SE33200885	Wilthorpe Marsh
terrestrial mammal	<i>Nyctalus leisleri</i>	Leisler's Bat	27/05/2012	SE32370779	Barnsley
terrestrial mammal	<i>Nyctalus noctula</i>	Noctule	31/03/2014	SE310073	Higham
terrestrial mammal	<i>Nyctalus noctula</i>	Noctule	01/08/2013	SE3309	North Gawber
terrestrial mammal	<i>Pipistrellus</i>	Pipistrelle Bat species	29/02/2012	SE320071	Gawber
terrestrial mammal	<i>Pipistrellus</i>	Pipistrelle Bat species	22/04/2015	SE310073	Higham
terrestrial mammal	<i>Pipistrellus pipistrellus</i>	Pipistrelle	27/05/2012	SE32370779	Barnsley
terrestrial mammal	<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	15/08/2014	SE3406	Barnsley
terrestrial mammal	<i>Pipistrellus pipistrellus</i>	Pipistrelle	08/05/2011	SE32350776	Barnsley
terrestrial mammal	<i>Pipistrellus pipistrellus</i>	Pipistrelle	14/08/2013	SE3309	North Gawber
terrestrial mammal	<i>Pipistrellus pipistrellus</i>	Pipistrelle	23/07/2011	SE32600800	Redbrook Pastures LWS
terrestrial mammal	<i>Pipistrellus pipistrellus</i>	Pipistrelle	22/03/2011	SE33600878	Wilthorpe Marsh
terrestrial mammal	<i>Pipistrellus pipistrellus</i>	Pipistrelle	23/07/2011	SE33000884	Wilthorpe Marsh
terrestrial mammal	<i>Pipistrellus pipistrellus</i>	Pipistrelle	16/05/2012	SE3402708231	Barnsley Canal at Wilthorpe LWS
terrestrial mammal	<i>Pipistrellus pipistrellus</i>	Pipistrelle	05/07/2013	SE320092	Barnsley
terrestrial mammal	<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	27/05/2012	SE32370779	Barnsley
terrestrial mammal	<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	08/04/2007	SE319090	Barnsley

Due to the high level of bird recording in the Barnsley area, the bird records have been separated from the above table and summarised below.

Group	Scientific Name	Common Name	Date of most Recent Record	Number of Records within 2km
bird	<i>Alauda arvensis</i>	Skylark	10/10/2014	8
bird	<i>Alcedo atthis</i>	Kingfisher	18/01/2015	15
bird	<i>Anas crecca</i>	Eurasian Teal	25/02/2016	27
bird	<i>Anas penelope</i>	Wigeon	29/12/2010	1
bird	<i>Anas strepera</i>	Gadwall	25/02/2016	17
bird	<i>Anser brachyrhynchus</i>	Pink-Footed Goose	17/11/2015	22
bird	<i>Anthus pratensis</i>	Meadow Pipit	23/09/2015	16
bird	<i>Anthus trivialis</i>	Tree Pipit	25/09/2011	1
bird	<i>Apus apus</i>	Swift	01/08/2015	11
bird	<i>Caprimulgus europaeus</i>	Nightjar	14/05/2011	1
bird	<i>Carduelis cabaret</i>	Lesser Redpoll	15/03/2014	4
bird	<i>Carduelis cannabina</i>	Common Linnet	25/02/2016	11
bird	<i>Carduelis flammaea</i>	Redpoll	08/01/2011	5
bird	<i>Charadrius dubius</i>	Little Ringed Plover	12/06/2010	7
bird	<i>Coccothraustes coccothraustes</i>	Hawfinch	26/02/2009	1
bird	<i>Columba oenas</i>	Stock Dove	18/12/2015	4
bird	<i>Cuculus canorus</i>	Cuckoo	25/05/2013	11
bird	<i>Cygnus olor</i>	Mute Swan	24/01/2013	3
bird	<i>Delichon urbica</i>	House Martin	01/09/2015	12
bird	<i>Emberiza calandra</i>	Corn Bunting	25/01/2009	1
bird	<i>Emberiza citrinella</i>	Yellowhammer	04/05/2013	13
bird	<i>Emberiza schoeniclus</i>	Reed Bunting	25/05/2013	34
bird	<i>Falco columbarius</i>	Merlin	07/10/2014	1
bird	<i>Falco peregrinus</i>	Peregrine	19/02/2013	5
bird	<i>Falco peregrinus</i>	Peregrine	30/10/2010	1
bird	<i>Falco subbuteo</i>	Hobby	31/05/2008	19
bird	<i>Falco tinnunculus</i>	Common Kestrel	25/02/2016	60
bird	<i>Gallinago gallinago</i>	Snipe	15/03/2014	12
bird	<i>Haematopus ostralegus</i>	Oystercatcher	06/04/2013	6
bird	<i>Larus canus</i>	Common Gull	13/01/2013	3
bird	<i>Larus ridibundus</i>	Black-Headed Gull	06/08/2014	14
bird	<i>Locustella naevia</i>	Grasshopper Warbler	03/05/2012	11
bird	<i>Lymnocyptes minimus</i>	Jack Snipe	18/01/2015	35
bird	<i>Miliaria calandra</i>	Corn Bunting	25/01/2009	1
bird	<i>Motacilla cinerea</i>	Grey Wagtail	18/01/2015	8
bird	<i>Motacilla flava</i>	Yellow Wagtail	27/04/2009	3
bird	<i>Numenius arquata</i>	Curlew	06/04/2013	2
bird	<i>Pandion haliaetus</i>	Osprey	09/09/2011	1
bird	<i>Parus montanus</i>	Willow Tit	20/01/2014	31
bird	<i>Parus palustris</i>	Marsh Tit	25/01/2009	1
bird	<i>Passer domesticus</i>	House Sparrow	06/02/2015	142
bird	<i>Passer montanus</i>	Tree Sparrow	06/10/2015	5
bird	<i>Perdix perdix</i>	Grey Partridge	09/04/2013	10
bird	<i>Pernis apivorus</i>	Honey Buzzard	25/07/2010	1
bird	<i>Phalacrocorax carbo</i>	Cormorant	18/01/2015	5
bird	<i>Phoenicurus phoenicurus</i>	Redstart	25/04/2009	1
bird	<i>Phylloscopus trochilus</i>	Willow Warbler	04/05/2013	5
bird	<i>Picus viridis</i>	Green Woodpecker	18/01/2015	14
bird	<i>Pluvialis apricaria</i>	Golden Plover	06/12/2015	4

bird	<i>Poecile palustris</i>	Marsh Tit	25/01/2009	1
bird	<i>Prunella modularis</i>	Dunnock	18/02/2013	87
bird	<i>Pyrrhula pyrrhula</i>	Common Bullfinch	25/02/2016	35
bird	<i>Rallus aquaticus</i>	Water Rail	18/01/2015	48
bird	<i>Riparia riparia</i>	Sand Martin	29/04/2011	2
bird	<i>Saxicola torquata</i>	Stonechat	05/10/2008	1
bird	<i>Scolopax rusticola</i>	Woodcock	21/02/2015	3
bird	<i>Sturnus vulgaris</i>	Starling	08/11/2014	113
bird	<i>Tadorna tadorna</i>	Shelduck	29/12/2010	1
bird	<i>Tringa glareola</i>	Wood Sandpiper	09/05/2008	1
bird	<i>Tringa ochropus</i>	Green Sandpiper	23/03/2013	13
bird	<i>Tringa totanus</i>	Redshank	11/04/2009	3
bird	<i>Turdus iliacus</i>	Redwing	25/02/2016	24
bird	<i>Turdus philomelos</i>	Song Thrush	25/02/2016	31
bird	<i>Turdus pilaris</i>	Fieldfare	18/01/2015	12
bird	<i>Turdus viscivorus</i>	Mistle Thrush	27/02/2016	11
bird	<i>Vanellus vanellus</i>	Northern Lapwing	25/02/2016	20

Designated Sites

A MAGIC search was conducted in order to search for the following designations within 2km of the site:

- Local Nature Reserves
- National Nature Reserves
- Areas of Outstanding Natural Beauty
- National Parks
- Ramsar Sites
- Special Areas of Conservations
- Special Protection Areas
- Sites of Special Scientific Interests
- Ancient Woodlands
- Important Birds Area

Barnsley Biological Records Centre was contacted for information on Local Wildlife Sites (LWS) within 2km of the site.

Granted European Protected Species Mitigation Licenses were also searched for within 2km of the site. The results of the search are shown in tables 1 and 2:

The MAGIC search did not reveal any of the above mentioned sites within 2km.

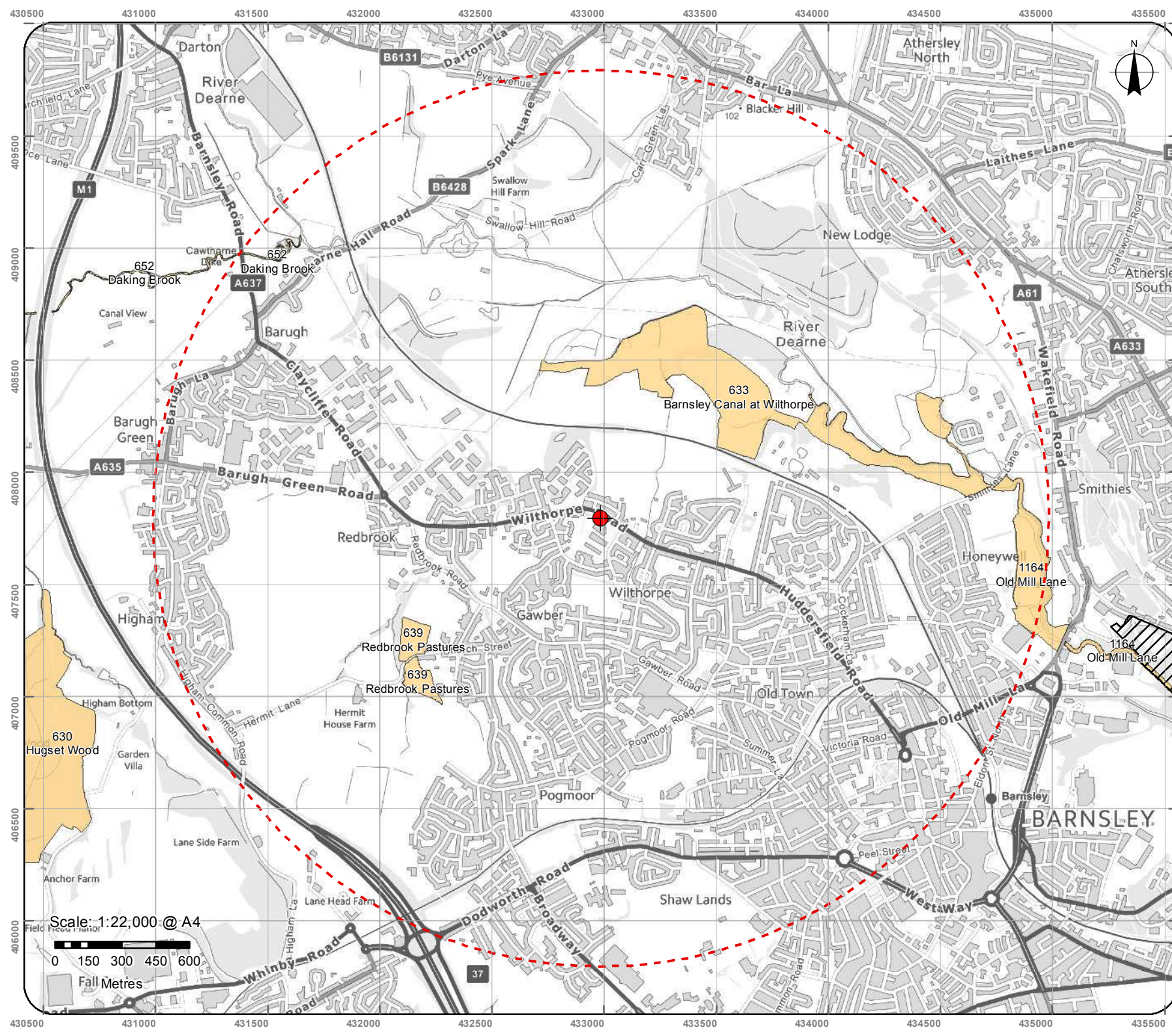
Table 1 Local Wildlife Site details provided by Barnsley Biological Records Centre

Site Name	Designation	Grid Reference	Distance from Site (km)	Bearing
Barnsley Canal	Local Wildlife Site	SE 335 083	0.9	NE
Redbrook Pastures	Local Wildlife Site	SE 321 072	0.9	SW
Old Mill Lane	Local Wildlife Site	SE 349 076	1.9	E
Daking Brook	Local Wildlife Site	SE 314 090	1.9	NW

Granted European Protected Species Mitigation Licenses (EPSML)

Table 2 MAGIC search results for EPSML

Species	Start date	End date	Distance (Km)
Bat – Common pipistrelle	Oct 2013	Sept 2014	1.4
Great crested newt	March 2016	July 2022	1.6

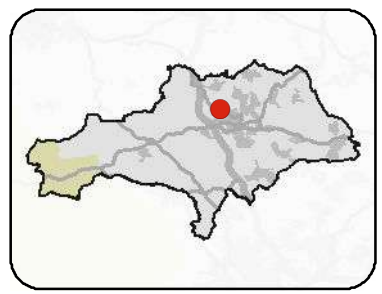


Barnsley Biological Records Centre

Statutory and Non Statutory
Local Wildlife Sites
Within the Search Area

Land at Barnsley Business & Innovation Centre

-  Location
-  2km Radius
-  Local Wildlife Sites
-  LNR Natural England
-  Sheffield City Boundary



Map Created - 30 Mar 2017



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Scale: 1:22,000 @ A4
0 150 300 450 600
Fall Metres

Swallows

Considerations when choosing a swallow nest box:

Design - Either a nest platform/ledge or a ready-made bowl shaped nest
Example A

Material - Wood-concrete

Dimensions - Platform must be 260mm (w) x 100mm (d)

Access dimensions - Minimum 50 mm (h) 70 mm (w)

Considerations when installing a swallow nest box:

Where - Inside a cold roof space with permanent access, preferably in outbuildings or under deep eaves.

Height - At least 5m

How many - Nests should be placed at intervals of at least 1m

Other - Dropping will occur below the nest so provide a ledge below to catch them.



Swifts

Considerations when choosing a swift nest box:

Material - Wood-concrete or brick

Design - Preferably integral to the building example C and D. Can be integrated with a bat box example B.

Dimensions - 400mm (w) x 200mm (d) x 150 mm (h) or slightly smaller

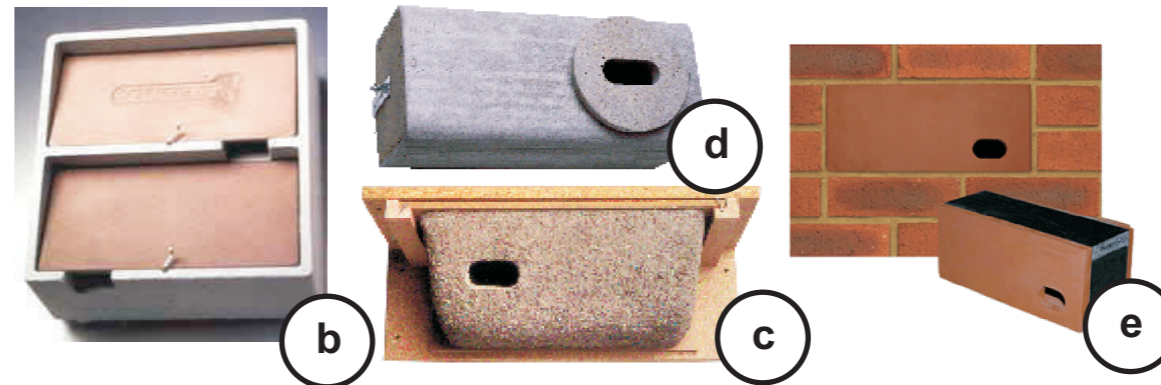
Access dimensions - 30mm (h) x 65 mm (w) oval or rectangle

Considerations when installing a swift nest box:

Where - Anywhere away from direct sunlight and disturbance, preferably under the eaves

Height - At least 5m

How many - Swifts are colonial nesters so ideally 1-4 on a house or 10-20 on a larger building



House Sparrows

Considerations when choosing a house sparrow nest box:

Design - Either singly, which can be used by many small bird species example G, or in a terrace example F.

Material - Wood-concrete

Dimensions - 150mm (w) x 150mm (d) x 350 mm (h)

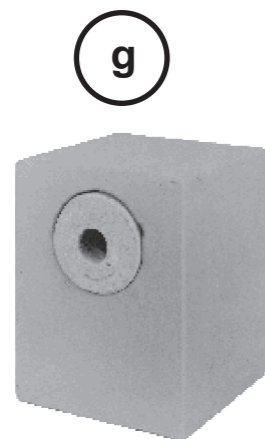
Access dimensions - A 32 mm round hole

Considerations when installing a house sparrow nest box:

Where - Ideally within the structure at eaves level, example H, otherwise externally at the same location

Height - At least 3 m

How many - House sparrows nest in large colonies so fix 10-20 boxes together, 20-30 cm apart.



House Martins

Considerations when choosing a house martin nest box:

Design - Bowl shaped nest attached to a board in groups. Examples I and J.

Material - Air-permeable wood-concrete with a 75% wood content

Dimensions - 180mm in diameter

Access dimensions - A semi-circular hole 25mm (h) x 60-65mm (w)

Considerations when installing a house martin nest box:

Where - Externally under overhanging eaves on north and east facing walls

Height - At least 5m

How many - Fix nests in groups to increase the likelihood of use

Other - Dropping will occur below the nest so provide a ledge below to catch them.



- a** Schwegler Swallow Nest No. 11
- b** Schwegler Swift & Bat Box 1MF
- c** Schwegler Swift Box No. 18
- d** Schwegler Swift Box Type 25
- e** Ibstock swift box
- f** Schwegler Sparrow Terrace 1SP
- g** Schwegler Brick Box Type 24
- h** Boxes under eaves
- I** Schwegler House Martin Nest No. 9A
- J** Schwegler House Martin Facade No. 11

All pictures have been taken from the websites of Schwegler, Ibstock, Habitat Aid and Wild About Britain.

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Project	
Title	Bird box designs
Client	
Date	
Ref	

Crevice-dwelling bats

Crevice-dwelling bats are those species which choose crevices or narrow gaps within which to roost. These species are Pipistrelle's, Brandt's, whiskered, noctule, serotine, Leisler's, Daubenton's, barbastelle and Bechstein's.

To provide artificial roosting space for crevice-dwelling bats boxes can either be incorporated into the building, attached to external walls or attached to trees.

Considerations when choosing a crevice-dwelling bat box:

Materials - Rough (for grip), non-toxic and non-corrosive. We recommend wood-concrete (woodcrete)

Access dimensions - 15-20mm (h) x 20-50mm (w)

Dimensions - any size as long as it includes crevices of 20-30mm

Tree-mounted Boxes

Tree-mounted boxes cannot provide the constant temperature that bats prefer for roost sites. However boxes with a choice of panels at different temperatures can compensate for these fluctuations.

Tree-mounted bat boxes have the advantages of being easy to install and access for cleaning and monitoring.

When installing a bat box on a tree position it at a height of 2-7m, away from artificial lights.



b

c

Externally-mounted boxes

Externally-mounted boxes are easy to install and access. They can be mounted on external or internal walls and should be at a height of at least 3m from the ground facing south-southeast.



a

Boxes incorporated into walls

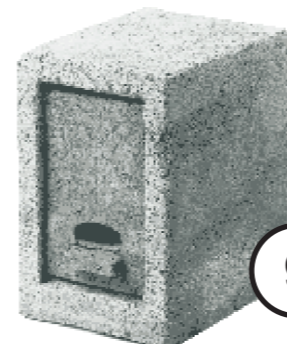
Bat boxes can be incorporated into internal, external or cavity walls and roofs by replacing bricks (d, g, h), facia boards/soffits (f) or roof tiles (e).

Boxes should be installed on the most southerly or westerly aspect, for use as summer maternity roosts, and on northerly aspects, for use during the winter and by males all year round.

The access point should not be illuminated by artificial lights and the box should be positioned at least 2-7m above the ground.



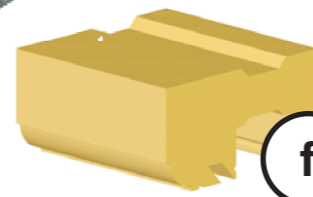
d



g



e



f



h

- a Improved Treble Crevice bat box
- b Schwegler 1FF Bat Box
- c Schwegler Bat Hibernation box 1FW
- d Schwegler Bat Access panel 1FE
- e Tudor Roof Tile Co. Bat Access Tile Set
- f RoofBLOCK Bat Roost
- g Schwegler Brick Box Type 27
- h Schwegler Bat Tube 1FE

All pictures have been taken from the websites of The Nest Box Company Schwegler, Tudor Roof Tile Co. and RoofBLOCK.

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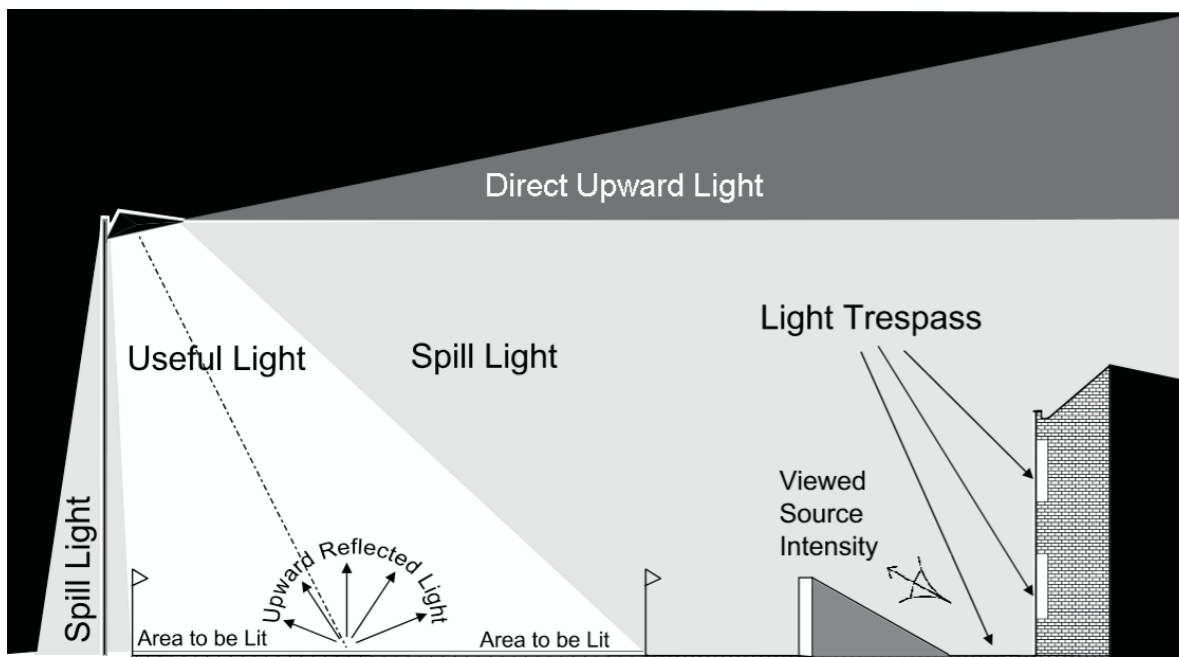
Project	
Title	
Client	
Date	
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Lighting and Bats

Artificial lighting can often have an adverse affect on nocturnal species, especially bats. If it is necessary to illuminate a building known to be used by roosting bats considerations should be made of the quantity, location and type of lighting used.

How can lights endanger bats?

- Light falling on a bat roost access point delays bats from emerging and significantly reduces the amount of time they spend foraging.
- At worst bats may abandon an illuminated roost which would result in a breach of national and European legislation.
- Some bat species, including Britains rarest, avoid the same bright lights that their insect prey are attracted to. Resulting in bat foraging habitat becoming devoid of insect prey.
- Important foraging habitats such as river corridors and hedgerows are not used by bats if they are illuminated. Illuminated roads can act as barriers to bat flight paths, disrupting foraging.



1.

Initial Considerations

- Only use lighting when it is necessary.
- Do not illuminate a known bat roost access point.
- Light intensity should be as low as guidelines permit.

2.

What type of light to choose

- Close offset lighting reduces light pollution, is more specific so can avoid bat sensitive areas and can better highlight a buildings features.
- Choose low pressure sodium lights.
- If using a mercury light fit a UV filter.
- Choose a light with a luminaire designed to reduce light spill.

3.

How to reduce light spill

- Hoods, cowls, louvres and shields can be fitted to lights to direct light to the intended area only.
- Plant a natural barrier of trees or shrubs to protect against light spill.

4.

Final Considerations

- Use timers to reduce the hours lit.
- Tailor lighting timetables to wildlife ecology.
- LED lighting responds to need by detecting the presence of pedestrians, reducing lighting hours.

The Bat Conservation Trust
www.bat.org.uk

The Institution of Lighting Engineers (ILE)
www.ile.org.uk

The Bats and Lighting Research project
www.batsandlighting.co.uk/index.html

All pictures have been taken from the
Institution of Lighting Engineers Guidance
Notes on the Reduction of Obtrusive Light.

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