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PRELIMINARY ECOLOGICAL APPRAISAL

Land at Golcar, Huddersfield
Report Reference: BG17.284
October 2017



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1 Summary

- 1.1 Brindle & Green Ecological Consultants Ltd were commissioned by Acumen Designers and Architects to undertake a Preliminary Ecological Appraisal incorporating a Phase 1 Habitat Survey and Protected Species Assessment at an area of land at Golcar, Huddersfield. This report summarises the potential ecological constraints to the outline planning application for the development of fourteen residential dwellings and associated access. Proposed site plans are presented in Appendix 6 of this report. The survey was carried out on the 20th September 2017.
- 1.2 The project area is approximately 0.5ha in extent and incorporates a mosaic of tall ruderal herbs and invasive weeds, broadleaved woodland, with scattered trees and scrub. The habitats on site have been evaluated as being of low ecological value in relation to local surroundings and a regional context.
- 1.3 The habitats described within this report have the potential to support a number of protected and/or notable species and as such, further protected species surveys and mitigation have been recommended to inform the baseline ecological impacts associated with the proposed development of the site.

A full description of the recommendations can be found within Chapter 7, the table overleaf is a summary of the ecological issues recommended for further consideration as a result of our initial investigations:

Ecological Consideration	Recommendations (e.g. further survey, mitigation)	Timing
Habitats	Construction of LEMP / EEMP to secure ecological enhancement and management within retained habitats. See Chapter 7 for details.	Pre-development
Breeding Birds	Vegetation removal to be undertaken outside nesting bird season. If this is not possible, alternative measures should be undertaken. See Chapter 7 for details.	Vegetation removal during October – February.
Foraging & Commuting Bats	Moderate value foraging and commuting recorded across the site. Where significant removal is proposed, further activity surveys should be carried out. See Chapter 7 for details.	April – October
Badgers	Badger survey to be undertaken during winter/spring.	November – May
Great Crested Newts	Site clearance should avoid hibernation period (October – February, inclusive). Sensitive working methods should be adopted during site clearance. See Section 7 for details.	March - September
Reptiles	Site clearance should avoid hibernation period (October – February, inclusive). Sensitive working methods should be adopted during site clearance. See Section 7 for details.	March - September
Invasive Species	Removal of invasive species by a specialist contractor.	Year round

2 Introduction

- 2.1 The purpose of this assessment was to provide a Preliminary Ecological Appraisal of the site incorporating a Phase 1 Habitat Survey and Protected Species Assessment to establish the likelihood of the site supporting protected species. The survey provides detail on the need for any additional, more detailed protected species surveys, likely mitigation and any opportunities for enhancement.
- 2.2 The project area is approximately 0.5ha in extent and is located within the south-western edge of the village of Golcar, within the western outskirts of the town of Huddersfield. The red line boundary contains a broadly rectangular area of land measuring approximately 0.45ha, and an adjacent rectangular strip of land measuring approximately 0.05ha which links the main portion of the application site to the end of Fullwood Drive. A public footpath lines a large portion of the site's western boundary and intersects the application site. Most of the site's boundaries are surrounded by unmanaged scrub, trees, grassland and woodland, similar to that on site. However, residential plots line part of the site's northern boundary, which, combined with the woodland forming the site's southern boundary, connecting the site to the wider environment. The site is the subject of an outline planning application for the development of fourteen residential dwellings and associated access. Proposed site plans are presented in Appendix 6 of this report.
- 2.3 The legislation relevant to protected species within the United Kingdom is summarised within Appendix 2.
- 2.4 Results and recommendations contained within this report have been prepared by an experienced ecologist and are therefore the view of Brindle & Green Limited. The survey is based on information provided by our client, the development proposals, results of the desk study, and our survey of the site. This report pertains to this information only.

3 Methodology

3.1 Desk Study

Table 1 below lists organisations and/or resources used as part of the desk study process. Data regarding any known statutory or non-statutory sites, in addition to any records for protected species, were requested from the following sources:

Table 1. Ecological Data Resources

Consultant	Requested Data	Search Radius	Date Requested
MAGIC Maps	National and International Site Designations Granted EPS Development Licences	2km	02/10/2017

A full local records centre data search was not requested by the client.

3.2 Surveyors

Survey carried out by Zoe Dryden BSc (Hons.), Ecologist.

The survey was supervised by Chris Needham MSc. MCIEEM who holds a Natural England Bat Licence (2015-10292-CLS-CLS) and Great Crested Newt Licence (2015-17910-CLS-CLS).

3.3 Survey Conditions

The survey was undertaken at 15:00pm on the 20th September 2017.

The outside temperature was recorded as 15°C, with dry, sunny conditions, and 6/8 cloud cover.

3.4 Extended Phase 1 Habitat Survey

- 3.4.1 A Phase 1 habitat survey was undertaken following survey guidance (JNCC 2007) to establish the presence and distribution of habitat types within the site and potential ecological constraints to development. A Phase 1 Habitat Map was produced (Appendix 1) and where additional details were required Target Notes have been provided (Appendix 2). A plant species list (Appendix 2) summarising all plants identified on site was produced during the survey and all scientific nomenclature was produced according to Stace (2010).

3.4.2 This survey was extended to note the potential for habitats on site to support protected and/or notable species and for evidence of any such species. The habitats on site were assessed for their suitability to support protected species in relation to the habitat type found at the site. Any incidental sightings or field signs were noted at the time of survey. Where evidence of, or the confirmed presence of a protected species was identified, further species specific surveys may be recommended to ensure that the presence or otherwise of a legally protected species is fully considered prior to the determination of any planning approval or to guide an EPS development licence.

3.4.3 Hedgerows on site were assessed following the Hedgerow Survey Handbook (DEFRA 2007), and defined as species-rich if the structural species making up a surveyed 30m section of hedgerow included at least four native woody species. Results were compiled and assessed against qualifying criteria within the Hedgerow Regulations (1997) and also the UK Biodiversity Action Plan.

3.4.4 Legislation, guidance and methodology for species relevant to this site are presented in full within Appendix 3 of this report.

3.4.5 Site Evaluation

Following the ecological appraisal the site was classified into one of six groups (Table 2), to indicate whether the site is considered to hold ecological value on a local, national or international scale. *This evaluation is intended as a guide and only targeted survey work can establish the significance of protected species populations onsite.*

Table 2. Definitions of each of the six evaluation brackets, indicating the importance of each habitat type and an example of their possible habitat status. (Table constructed following The CIEEM EcIA Guidelines, Terrestrial, Freshwater and Coastal (2016) pages 16-17).

Evaluation Value	Comparable example
International	An internationally designated site or candidate site, including habitat or species included within Special Protection Areas (SPA) / Special Areas of Conservation (SAC), Ramsar Sites, listed under Annex 1 of the Habitats Directive.
National	Sites designated at UK level, e.g. Sites of Special Scientific Interest (SSSI), supporting species considered nationally threatened or rare.

	A regularly occurring regionally or county significant population/number of any nationally important species A feature identified as of critical importance within Section 41 of the NERC Act (2006).
Regional	Key Habitat type included within BAP. A regularly occurring, locally significant number of a regionally important species.
County	Designated sites, such as Sites of Biological Importance (SBIs) or viable habitat / species populations of value at a county level (LBAP).
District	District level designated sites, such as Local Wildlife Sites (LWS) or habitats / species populations of value at a district (Which have features qualifying for LWS status). Sites/features that are scarce within the district or which appreciably enrich the district habitat resource.
Local / Site	Habitats or species populations of value in a local (i.e. within ~ 5km of the site) context. Habitats of poor to moderate biological diversity e.g. established conifer plantations, species poor hedgerows and un-intensively managed grassland which supports species which are common to the local area and whose loss can be easily mitigated.

3.5 Limitations

- 3.5.1 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment. The protected and notable species assessment provides a preliminary view of the likelihood of these species occurring on site, based upon the suitability of the habitats, known distribution of the species in the local area and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group.
- 3.5.2 Due to the overgrown nature of the onsite vegetation, it was not possible to access all areas of the site, however this is not considered to be a significant constraint to the survey and it was still deemed possible to confidently assess the onsite habitats for their importance. Where species assessments have not been fully comprehensible, further species surveys have been recommended.

3.6 Report Lifespan

Given the transient nature of the subject we would consider the survey results contained to be accurate for 2 years.

4 Site Context

4.1 Site Description

4.1.1 The application site can be found at: Grid Ref. SE 09654 15649. The site is located within the south-western edge of the village of Golcar, within the western outskirts of the town of Huddersfield. The red line boundary contains a broadly rectangular area of land measuring approximately 0.45ha, and an adjacent rectangular strip of land measuring approximately 0.05ha which links the main portion of the application site to the end of Fullwood Drive. A public footpath lines a large portion of the site's western boundary and intersects the two portions of the application site. Most of the site's boundaries are surrounded by unmanaged scrub, trees, grassland and woodland, similar to that on site. However, residential plots line part of the site's northern boundary, which, combined with the woodland lining the site's southern boundary, connect the site to the wider environment.

4.1.2 The wider environment is dominated by residential development interspersed with woodland and agricultural land to the north and east, and agricultural land and woodland to the south and west. A railway line lies approximately 440m south-east of the site at its closest point. In addition, Huddersfield Narrow Canal, the River Colne and the A62 run south-west to north-east, run approximately parallel to the railway, at approximately 570m, 600m and 830m, respectively, to the south-east of the site, providing barriers to terrestrial species dispersal.

4.2 Zone of Influence

The zone of influence describes the geographic extent of potential impacts of a proposed development. The scale of the redevelopment reduces the impact of the development on the wider area, however the suitability of the wider landscape to support foraging bats and birds, coupled with suitable commuting habitat increases the likelihood of these species being present on site. Although the site contains suitable habitats to support protected species, the woodland which encroaches into the southern end of the site is the only habitat which could be classed as being part of a wildlife corridor, due to the quality of the habitat and its close proximity to extensive woodland, south of Brook Lane, which provides major connectivity to the wider environment.



Figure 1. OS map of the project site and surrounding area.

Red line boundary depicts application site. Blue line depicts site ownership.

5 Results

5.1 Desk Study

5.1.1 Designated Sites

The site was subjected to a search for designated sites within a 2km radius of the site using data supplied by the online desk based resource MAGIC. A search of the online resource Magic Maps found no sites with Statutory designations within the 2km radius search. The closest designated site located to the application site is Gledholt Woods Local Nature Reserve (LNR), located approximately 3.3km north-east of the site.

5.1.2 Protected Species Assessment

Magic maps revealed a single granted EPS licence for the destruction of a common pipistrelle resting place, located approximately 2km south of the site, which expires in 2018.

5.2 Habitats

5.2.1 The habitat types recorded on site are summarised below, and the frequency and distribution of habitat types is displayed within a Phase 1 Habitat Survey Map (Appendix 1 and 2).

5.2.2 Table 5 provides a list of habitat types present on site along with their inclusion (or otherwise) in National (NBAP) and/or Local Biodiversity Action Plans (LBAP).

(It should be noted that additional information is included within the text where a classification under Phase 1 survey methodology does not mirror habitat types considered to be conservation priorities).

Table 5. JNCC Habitat Types found on site and inclusion within UK BAP habitats.

Habitat Type	NBAP	LBAP	N/A
Scrub			✓
Scattered Trees			✓
Semi-natural Broadleaf Woodland	✓	✓	
Tall Ruderal Herbs			✓
Invasive Weeds			✓
Bare Ground			✓

5.2.3 Scrub

Small patches of dense scrub were located in the eastern end of the main portion of the site and within the western end of the site. Scattered scrub was also present throughout the site. Bramble (*Rubus fruticosus*) was the dominant species scrub species recorded, however occasional hawthorn (*Crataegus monogyna*) was present and dogwood (*Cornus sanguinea*) and *Cotoneaster* sp. were rarely recorded.

5.2.4 Scattered Trees

Scattered trees of differing maturity were clustered inside the northern end of the eastern site boundary and towards the centre of the western half of the site. Species included sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), sessile oak (*Quercus petraea*), goat willow (*Salix caprea*), apple (*Malus* sp.) and Douglas fir (*Pseudotsuga menziesii*).



Figure 2. Scattered trees located towards the centre and within the eastern half of the site.

5.2.5 Semi-natural Broadleaf Woodland

An area of deciduous woodland was present within the blue line boundary (see Figure 1) and encroached upon the southern end of the application site. The

narrow strip of woodland which was recorded within the red line boundary covered approximately 0.05ha and contained sycamore, ash and sessile oak of different age classes. The ground within this heavily shaded region was relatively bare, however, in places where a ground layer was present, species including bramble, sapling holly (*Ilex aquifolium*), bracken (*Pteridium sp.*), ivy (*Hedera helix*), common nettle (*Urtica dioica*), herb Robert (*Geranium robertianum*) and wood avens (*Geum urbanum*) were recorded. The composition of the woodland understorey is representative of the NVC classification W10 woodland, however, a lack of ancient woodland indicators such as dog's mercury (*Mercurialis perennis*), or bluebell (*Hyacinthoides non-scripta*), in addition to the presence of non-native sycamore, and the age class of the trees recorded, suggests that the area is not ancient woodland and has been subjected to recent planting, at least along the northern edge which is contained within the site boundary.



Figure 3. Woodland edge at the southern end of the site.



Figure 4. Woodland edge at the southern end of the site.

5.2.6 Tall Ruderal Herbs

The main portion of the site was dominated by a mosaic of tall ruderal herbs and invasive weeds (Figure 5). The western half of the site (the strip of land which connected the site to Fullwood Drive) was dominated by tall ruderal herbs and contained scattered invasive weeds. The tall ruderal herbs present on site almost entirely comprised rosebay willowherb (*Chamerion angustifolium*) and common nettle, with less frequent cleavers (*Galium aparine*).

5.2.7 Invasive Weeds

Japanese knotweed (*Fallopia japonica*), Indian balsam (*Impatiens glandulifera*) and variegated yellow archangel (*Lamiastrum galeobdolon argentatum*) had established themselves onsite. A mosaic of Indian balsam and tall ruderal herbs dominated the main body of the site (Figure 5), whilst frequently scattered Indian balsam was present throughout the western half of the site (the strip of land within the red line boundary which connected the site to Fullwood Drive). Variegated yellow archangel only occurred once, within the north-western corner of the site. A dense region of Japanese knotweed was present approximately 10m outside of the southern site boundary, but within

land ownership (Figure 6; Appendix 1 & 2, T4). All of the above species are listed on Part II of Schedule 9 of the wildlife and countryside Act 1981 (as amended) and as such any person who causes these species to grow or spread in the wild by dumping or other means is guilty of an offence.

5.2.8 Bare Ground

A public footpath lined most of the western site boundary and intersected the site, dividing the main body of the site and the strip of land which connects the site to Fullwood Drive.



Figure 5. Mosaic of tall ruderal herbs and invasive weeds at western site boundary, adjacent to public footpath.



Figure 6. Dense Japanese knotweed present to east of public footpath, located approximately 10m south of the southern application site boundary, within land ownership.

5.3 Fauna

5.3.1 Breeding Birds

Scrub, scattered trees and broadleaf woodland on site provided suitable nesting bird habitat for a number of common bird species and it is possible that the site could support species of high conservation concern. Wood pigeon (*Columba palumbus*), jackdaw (*Corvus monedula*), jay (*Garrulus glandarius*) and magpie (*Pica pica*) were recorded on site.

5.3.2 Roosting Bats

All scattered trees present on site were assessed and categorised based on Bat Conservation Trust guidance (See Appendix 5). Although scattered trees of varying levels of maturity were present throughout the site, all were assessed to have negligible potential to support roosting bats due to a lack of suitable cracks, fissures or holes.

5.3.3 Foraging and Commuting Bats

The site was dominated by a mosaic of tall ruderal herbs and invasive weeds, both of which can be considered to provide foraging habitat for a very limited portion of the year and as a result are considered to provide negligible suitability for foraging and commuting bats in relation to the extensive surrounding woodland habitat. The scattered trees and woodland edge provide a higher quality habitat for bats for a longer period of the year and are well connected to the surrounding environment. The presence of further woodland to the south of the site and scattered trees immediately to the west, leading to greater expanses of woodland, water courses and agricultural fields in the wider environment, suggest that bats are likely to be present within the local area. The woodland and scattered trees are considered to provide moderate suitability foraging habitat, whilst the woodland edge also provides moderate commuting habitat.

5.3.4 Badgers (*Meles meles*)

Records relating to certain protected species including badger sett locations are sensitive in nature, and due to the risk of public interference are kept confidential. Details of results relating to badger have not been included in this report due to their sensitive nature, but will be submitted within a confidential appendix to support the planning submission (Appendix 9).

5.3.5 Great Crested Newts (*Triturus cristatus*)

No aquatic habitat was present within the application site, however there were 2 ponds located within 500metres of the site (Figure 7), neither of which could be accessed or assessed at the time of survey. Due to the small number of ponds located within the local surroundings and the large amount of residential development separating them, they are unlikely to support a metapopulation of great crested newts and, at most may support a small number of individuals. The tall ruderal herbs, invasive weeds, scattered scrub and woodland habitat on site provided suitable terrestrial habitat for great crested newts. However, as both ponds are positioned outside of the core breeding and terrestrial habitat zone for this species and both Pond 1 and Pond 2 are surrounded by suitable terrestrial habitat of equal or higher value to that on site, it is unlikely that should any newts be present in either pond that they would commute through the site or reside within the terrestrial habitat onsite. Therefore, the site is considered unlikely to support a population of great crested newts.

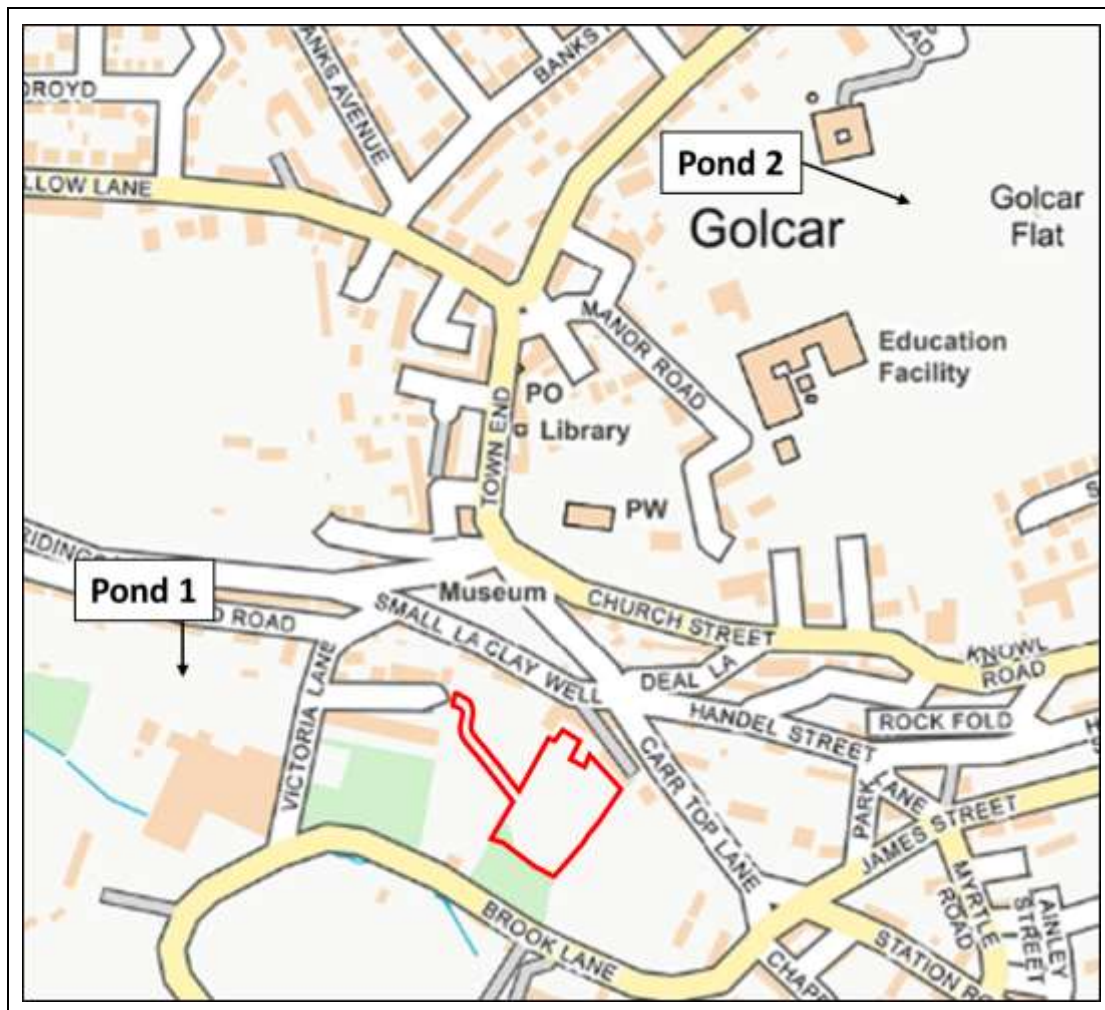


Figure 7. OS Map showing pond locations within a 500 metre radius of the site, Grid references and further detail on their suitability for GCN are evaluated in Table 6.

Table 6. Pond locations and suitability for great crested newts.

Pond No.	Grid Ref.	Habitat Suitability Index Score (See Appendix 9)	Distance from Site
1	SE 09408 15726	N/A – unable to access due to location on private land.	168m W
2	SE 09883 16051	N/A – unable to access due to location on private land.	428m NE



5.3.6 **Reptiles**

The site contained suitable refugia in the form of tall ruderal herbs, invasive weeds and scrub, and based on the mature residential gardens and agricultural land divided by hedgerows and watercourses within the surrounding environment, it is possible that common species of reptile may be present within the local surroundings. However, the site itself is not considered large enough to support a breeding reptile population on a permanent basis, and is more likely to support individuals on the edge of their range. Although no evidence of reptiles was recorded during the survey, visibility was restricted by the overgrown nature of the site, which in turn also reduces the presence of basking habitat considered essential for this species group.

6 Evaluation

6.1 Development Proposals

The site is the subject of an outline planning application for the development of fourteen residential dwellings and associated access. Proposed site plans are presented in Appendix 6 of this report.

6.2 Desk Study Impacts

Direct impacts on nearby designated sites as a result of the proposed development are considered unlikely as there were no designated sites located within 2km of the application site. The closest designated site was located 3.3km north-east of the application site and although linear features could connect to this site, it is difficult to substantiate an effect from the development.

6.3 Habitats

6.3.1 The habitats on site have been evaluated as being of low ecological value in relation to local surroundings and hold local value on a regional context. The site was dominated by a mosaic of tall ruderal herbs and invasive weeds, containing sparsely scattered or occasional dense scrub and scattered trees. A large majority of this area is planned for removal as part of the development, and none of the habitats are classed as national or local BAP habitats. Native Scrub is highlighted as a LBAP habitat within Kirklees, however the low species diversity, and sparsely recorded patches within a tall ruderal herb mosaic are not considered to hold the ecological value associated with this LBAP classification. Therefore, the removal is not considered likely to have a negative impact on local biodiversity, and, due to the present dominant coverage of Indian balsam, the removal of tall ruderal herbs and scrub alongside the invasive weeds is considered necessary, to prevent further spread. Ultimately, the removal of this tenacious species combined with recommended post construction ecological enhancements is considered likely to improve the quality of the habitats onsite when compared to the baseline survey.

6.3.2 The only potential UKBAP habitat present onsite is the semi-natural broadleaf woodland, which could be classed as Lowland Mixed Deciduous Woodland. However, this habitat will be predominantly retained as part of the design proposals, with only two trees on the north-western edge of the habitat planned

for removal/cutting back. The removal of these two individual trees is deemed unlikely to impact the woodland habitat either within, or outside of, the application site boundary, as connectivity across the southern edge of the site will be retained, preserving the habitats use as a wildlife corridor. Chapter 7 provides recommendations about enhancement opportunities to retain connectivity across the site.

- 6.3.3 The presence of Indian balsam, variegated yellow archangel and Japanese knotweed on site, Schedule 9 invasive species, requires treatment or removal prior to ground clearance. The recommendations (Section 7) of this report provides further guidance and advice on this subject.

6.4 **Breeding Birds**

- 6.4.1 All wild birds, their eggs and nests are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure, or take any wild bird whilst nesting, or take, damage or destroy the nest of any such bird while in use or being built. In addition, species listed on Schedule 1 of the Wildlife and Countryside Act 1981 or their dependant young are afforded additional protection from disturbance whilst they are at their nests.

- 6.4.2 The vegetation on site was considered to provide suitable nesting habitat for a number of common bird species, and has the potential to support birds of local and national interest. Any clearance works proposed on site should be well-timed in order to prevent direct or indirect impacts on individual birds, their young, eggs and habitats. Chapter 7 sets out important guidance on measures to avoid impacts on this species group and measures to support its conservation status.

6.5 **Roosting Bats**

All bats in the United Kingdom and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2010 (as amended). It is an offence to damage or destroy any bat roost, intentionally or recklessly obstruct a bat roost, deliberately, intentionally or recklessly disturb a bat or intentionally kill, injure or take any bat. Scattered trees on site were all awarded negligible potential to

support roosting bats. Therefore, roosting bats are not considered a constraint to this development and are not considered further within this report.

6.6 Foraging and Commuting Bats

6.6.1 The tall ruderal herbs, invasive weeds and sparsely scattered scrub were considered to provide negligible foraging and commuting habitat for bats, whilst the woodland edge and scattered trees are considered to provide moderate suitability foraging and commuting habitat. Due to the presence of extensive invasive weeds, and the location of the proposed plans, it is expected that the mosaic of tall ruderal herbs and invasive weeds will be removed entirely to facilitate development. As this habitat was awarded negligible suitability, it is not expected to have a long-term impact upon the local bat population.

6.6.2 Design proposals suggest that the woodland edge habitat will be retained, and that, although a large proportion of the scattered trees will be removed, replanting will take place within residential gardens and public open space within the redevelopment, reducing the long-term impact upon local bat populations to negligible levels. The removal of the scattered trees shouldn't cause a significant short-term impact upon commuting bats as local commuting routes are likely to utilise the woodland edge habitat on site, bypassing the scattered trees entirely. It is possible however, that the introduction of development associated lighting may cause disturbance to local bat populations utilising the woodland edge habitat and the adjacent scattered trees and woodland outside of the application site boundary. Chapter 7 sets out important guidance on measures to avoid impacts on this species group and measures to support its conservation status.

6.7 Badgers

Under the Protection of Badgers Act 1992, in England and Wales it is an offence to wilfully kill, injure, disturb or take any badger, or intentionally or recklessly damage, destroy, or obstruct access to any part of a badger sett. The site's location immediately adjacent to extensive woodland habitat which is well-connected to the surrounding environment suggests that badgers are likely to be present within the local area. Due to the overgrown nature of the onsite vegetation, it was not possible to thoroughly assess the site for evidence of badgers. Without knowing the extent of local badger populations and their dependence on the application site, mitigation to protect this species from

disturbance or injury, and loss of habitat during ground clearance and construction cannot be formed. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.8 Great Crested Newts

6.8.1 Great crested newts and their eggs, breeding sites and resting places are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2010 (as amended). Tall ruderal herbs and scrub provide suitable terrestrial habitat for GCN. The presence of two ponds within 500m of the site presents the possibility that great crested newts may reside within the local surroundings, however, the application site is outside of the core terrestrial habitat zone for this species (100metres from the pond), and as one pond is separated from the site by residential development and both are located within suitable surrounding terrestrial habitat, it is unlikely that if newts were present that they would commute from either pond, through or to the application site.

6.8.2 Design proposals suggest that the woodland within the southern end of the site will be retained, but that a large proportion of the tall ruderal herbs, invasive weeds and scrub will be cleared to facilitate development. Although the likelihood of great crested newts being present on site is low, it cannot be ruled out due to the extent of undisturbed habitat within the site boundary. Therefore, there is low potential that individuals could be directly injured or killed if appropriate measures are not put in place prior to ground clearance and development. Chapter 7 provides important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.9 Reptiles

Reptiles are protected under the Wildlife and Countryside Act 1981 (as amended) making it illegal to intentionally kill or injure reptiles. No evidence of reptiles was recorded during the survey and although the site supported elements of suitable habitat for common species of reptile, it is not large enough in area to support a significant population and is more likely to support occasional individuals on the edge of their range. Design proposals suggest that the tall ruderal herbs, invasive weeds and scrub are to be cleared to facilitate the development, which could result in the injury or death of individuals

if appropriate measures are not put in place prior to ground clearance to facilitate the development. Chapter 7 sets out important guidance on measures to avoid impacts on this species group and measures to support its conservation status.

7 Recommendations

As with all development sites; efforts should be made to support National and Local Biodiversity Action Plans, and seek opportunities to incorporate ecological enhancement schemes within the proposed development. Such site enhancements should be viewed positively in light of the NPPF (2012) which seeks biodiversity enhancements and net gain through the planning process.

The site should be the subject of the following mitigation measures and ecological enhancement:

7.1 Habitats

Habitats / Botanical	Timing
Recommendations	
A Landscape and Ecological Management Plan (LEMP) should be formulated to enhance and maintain retained habitats within the site ownership, in addition to enhancement within communal open space. The plan would seek to retain a buffer between the woodland edge and residential gardens, while integrating scrub and grassland enhancement and management in these areas and public open spaces. Planting of native hedgerow species as boundary features of the application site, and between residential gardens should be encouraged where possible.	Secured as a condition of planning. Replanting to be carried out during and post development.

7.2 Breeding Birds

Breeding Birds	Timing
Recommendations	
Vegetation on site has been identified as being suitable for use by breeding birds. Given their protection, development must be sympathetic to the value of this habitat and potential impacts on breeding birds, their eggs, nests and young. The breeding bird season is generally accepted as being between March and September. Developers should consider and implement the options appropriate to their scheme; a) Undertake vegetation clearance between the months of October and February where possible.	Vegetation clearance should take place between October and February.

b) Any vegetation proposed for removal between the months of March and September should be subjected to a search for active birds' nests 24 hours prior to commencement of works. This should confirm whether all or some clearance is achievable. c) In addition to a pre-works check, the clearance of vegetation between the months of March and September should be supervised by a suitably experienced ecologist.	
Enhancement Prescriptions	
In light of the National Planning Policy Framework (NPPF) that seeks net biodiversity gain within developments the following enhancements are suggested: x1 – 1SP Sparrow terrace to be installed on the wall of the eastern or northern elevation of 50% of buildings proposed for development. Bird boxes should be installed under the direction of a suitably experienced ecologist to ensure ideal location and fitting is achieved. If trees are removed, additional planting should be considered within new residential plots.	

7.3 Foraging & Commuting Bats

Foraging & Commuting Bats	Timing
Recommendations	
The habitats on site are considered favourable for foraging and commuting bats. The woodland and scattered trees throughout the site, were awarded moderate suitability. Development proposals on site should be considerate of this and should seek to retain and create connective habitats suitable for commuting and foraging bats which will, in turn, benefit a wider range of species. Linear features are widely recognised as being of most benefit to bats and should include protection of current boundary treelines and scrub, where possible. If the retention of boundary trees and scrub, and scattered trees across the site, is not possible, and significant portions of these habitats are proposed for removal only, then they should be subjected to further bat activity surveys to establish the significance of these commuting routes on site.	If significant proportions of tree and scrub habitat are proposed for removal only: Transect /spot count/ timed search survey: One survey visit per season: Spring- April/ May Summer- June/July/ Aug Autumn – Sept/ Oct AND Static automated surveys:

The tall ruderal herbs and invasive weeds are considered to provide low-negligible suitability habitat to foraging bats, due to their extensive coverage of the site. Although design plans have not yet been generated, it is assumed that a significant proportion of the tall ruderal herbs habitat will be proposed for clearance to facilitate the development and the adequate removal of the invasive weeds onsite. Due to this habitat being considered suitable for use by foraging bats on an infrequent basis, replacement planting of higher value habitat, such as hedgerows dividing proposed residential plots, should be secured as compensatory habitat. <i>It should be noted that due to the high levels of Indian balsam scattered across the site, combined with the dense coverage of overgrown scrub and tall ruderal herbs, a certain amount of scrub/tall ruderal herb removal will be required in order to facilitate the appropriate clearance of this invasive weed. It would also be necessary to carry out invasive weed clearance and a certain amount of scrub/tall ruderal herb clearance prior to any bat activity surveys being carried out. This is for the purpose of health and safety, in order to facilitate movement of surveyors around the site, and to prevent the further spread of invasive species.</i> Lighting Without natural buffering, disturbance through artificial lighting has the potential to negatively impact any bat populations that depend upon established linear features. Development associated lighting should be positioned in a manner that is sympathetic to site boundaries, specifically the trees which line the eastern and southern site boundaries. That is to say that light spill-over should be prevented from encroaching into these areas.	One location per transect, over a five-night period, per season: Spring- April/ May Summer- June/July/ Aug Autumn – Sept/ Oct In weather conditions conducive to finding bats.
Enhancement Prescriptions	
3m buffer zones surrounding vegetative boundary features to allow the establishment of further vegetation around site boundaries. To encourage the continued use of the adjacent woodland by local bat populations, the integration of bat boxes (such as a 2FR Schwegler Bat Tube) on all proposed residential dwellings located adjacent to the woodland habitat should be encouraged.	During/post development.

7.4 Badgers

Badgers	Timing
Recommendations	
The site supported habitat types considered suitable for supporting badgers. Although no evidence of badgers was found onsite, it was not possible to fully assess the site due to the overgrown vegetative cover across the site. It is advised that the site is subjected to a full badger survey comprising two visits during the winter/spring to check for evidence of use by badgers.	Two visits between November and May

7.5 Great Crested Newts

Great Crested Newts (GCN)	Timing
Recommendations	
Dense tall ruderal herbs, invasive weeds, scrub and grassland on site provide suitable terrestrial habitat for GCN. Although no GCN or evidence of GCN presence was found during the survey, there is a low potential that GCN may be present on site. As a precaution, sensitive working methods should be adopted, in order to reduce the risk of killing or injury of GCN during construction down to negligible levels: Clearance works of any onsite habitat should be carried out by hand by a suitably experienced ecologist or a specialist ecological contractor and should be cleared in two stages. Vegetation should first be strimmed to a height of approximately 30cm, to ensure that any individuals can move into the surrounding habitat minimizing the risk of an adverse effect on this species, then vegetation can be cleared completely by hand, in order to make the ground unsuitable for this species. Any vegetation cuttings and brash piles etc. should be dismantled by hand and removed from site. Should great crested newts be found at any point during this process, all works should stop and the advice of a suitably qualified ecologist or Natural England should be sought.	March – September

Enhancement Prescriptions	
The maintenance or establishment of a green corridor(s) through the site would be welcomed. GCN mitigation should aim to provide connectivity to wider habitats and between ponds whilst biodiversity more generally would also benefit.	Post construction

7.6 Reptiles

Reptiles	Timing
Recommendations	
Dense tall ruderal herbs, scrub and grassland on site provide suitable refugia for common species of reptiles. Although no reptiles or evidence of reptile presence was found during the survey, it is possible that small numbers of reptiles may occasionally utilise the site. As a precaution, sensitive working methods should be adopted, in order to reduce the risk of killing or injury of reptiles during construction down to negligible levels: Clearance works of any onsite habitat should be carried out by hand by a suitably experienced ecologist or a specialist ecological contractor and should be cleared in two stages. Vegetation should first be strimmed to a height of approximately 30cm, to ensure that any individuals can move into the surrounding habitat minimizing the risk of an adverse effect on reptiles, then vegetation can be cleared completely by hand, to make the ground unsuitable for this species group. Any vegetation cuttings and brash piles etc. should be dismantled by hand and removed from site. Should reptiles be found, individuals should be moved to comparable habitat, outside of the area to be directly affected.	March - September
Enhancement Prescriptions	
Planting of native hedgerows as boundary features between residential plots should be encouraged.	Post construction

7.7 Invasive Weeds

Invasive Species	Timing
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Recommendations	
Japanese knotweed, Indian balsam and variegated yellow archangel have established themselves on site. These invasive plants are classified as noxious weeds under Part II of Schedule 9 of the Wildlife and Countryside act 1981 and any person who causes these species to grow or spread in the wild by dumping or other means is guilty of an offence. It is important that all Japanese knotweed, Indian balsam, variegated yellow archangel and montbretia is treated prior any further works on site, to prevent transgression via machinery into a new area causing the species to spread. Manual removal of plants may be achievable however there is a greater chance of reoccurrence because below ground rhizomes can be missed. Manual removal would require all topsoil within 7metres of the plant stems (to a depth of 3metres) being removed and disposed of within an appropriate waste landfill. Specialist contractors can advise further and undertake chemical or manual treatment.	All year round.

Appendix 1. Phase 1 Habitat Plan



Phase one Habitat Survey

Project: BG17.284

Land at Golcar, Huddersfield

-  Dense Scrub
-  Scattered Scrub
-  Scattered Trees
-  Semi-natural Broadleaved Woodland
-  Tall Ruderal Herbs
-  Scattered Invasive Weeds
-  Mosaic of Tall Ruderal Herbs and Invasive Weeds
-  Bare Ground
-  Target Notes
-  Red Line Boundary

Appendix 2. Phase 1 Target Notes

Target Note Number	Description
T1	Small patch of variegated yellow archangel.
T2	Patch of unmanaged grassland containing Yorkshire fog (<i>Holcus lanatus</i>), common bent (<i>Agrostis capillaris</i>), perennial rye-grass (<i>Lolium perenne</i>) and creeping buttercup (<i>Ranunculus repens</i>).
T3	Scattered Indian balsam throughout this region.
T4	Dense Japanese knotweed recorded outside of the red line boundary, but within site ownership.
T5	Patch of unmanaged grassland containing Yorkshire fog, common bent, perennial rye-grass, tufted hair-grass (<i>Deschampsia cespitosa</i>) and creeping buttercup.
T6	Patch of unmanaged grassland containing Yorkshire fog, common bent, perennial rye-grass, tufted hair-grass and creeping buttercup.

Plant Species List with DAFOR Scale

Scientific nomenclature follows Stace (2010) for vascular plant species and common names follow BSBI List of British & Irish Vascular Plants and Stoneworts.

Please note that this plant species list was generated as part of a Phase 1 Habitat survey, and does not constitute a full botanical survey.

Abundance was estimated using the DAFOR scale as follows: D = dominant, A = abundant, F = frequent, O = occasional, R = rare, LF = locally frequent

Common Name	Scientific Name	Estimated Abundance (DAFOR)
Apple	<i>Malus sp.</i>	R
Ash	<i>Fraxinus excelsior</i>	F
Blackberry	<i>Rubus fruitcosus</i>	A
Bracken	<i>Pteridium sp.</i>	O
Buddleia	<i>Buddleja sp.</i>	R
Cleavers	<i>Galium aparine</i>	F
Common Bent	<i>Agrostis capillaris</i>	F
Common Nettle	<i>Urtica dioica</i>	D
Conifer	<i>Pinophyta spp.</i>	R
Cotoneaster	<i>Cotoneaster sp.</i>	R
Creeping Buttercup	<i>Ranunculus repens</i>	O
Dogwood	<i>Cornus sanguinea</i>	R
Douglas fir	<i>Pseudotsuga menziesii</i>	R
Elder	<i>Sambucus nigra</i>	O

Goat Willow	<i>Salix caprea</i>	O
Hawthorn	<i>Crataegus monogyna</i>	O
Herb Robert	<i>Geranium robertianum</i>	O
Holly	<i>Ilex aquifolium</i>	O
Honeysuckle	<i>Lonicera sp.</i>	R
Indian Balsam	<i>Impatiens glandulifera</i>	D
Ivy	<i>Hedera helix</i>	O
Japanese Knotweed	<i>Fallopia japonica</i>	A
Moss	<i>Bryophyta sp.</i>	O
Perennial Rye-grass	<i>Lolium perenne</i>	F
Rosebay Willowherb	<i>Poa Trivialis</i>	D
Sessile Oak	<i>Quercus petraea</i>	F
Sycamore	<i>Acer pseudoplatanus</i>	F
Tufted Hair-grass	<i>Deschampsia cespitosa</i>	R
Variegated Yellow Archangel	<i>Lamium galeobdolon argentatum</i>	R
Wood Avens	<i>Geum urbanum</i>	O
Yorkshire Fog	<i>Holcus lanatus</i>	F

Appendix 3. General References

- Bat Conservation Trust's 'Good Practice Survey Guidelines' (Rev 2012).
- Bell, S. McGillivray, D. (2006) *Environmental Law*. 6th ed. Oxford University Press.
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- Byron, H (2000) *Biodiversity and Environmental Impact Assessment: A Good Practice Guide for Road Schemes*. The RSPB, WWF-UK, English Nature and the Wildlife Trusts, Sandy.
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- Defra (2007) *Hedgerow Survey Handbook; A standard procedure for local surveys in the UK*. Defra, London.
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Treweek, J. (1999) *Ecological Impact Assessment*. Blackwell Science.

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Appendix 4. Legislation, Policy and Guidance

Articles of British wildlife and countryside legislation, policy guidance and both Local and National Biodiversity Action Plans (BAPs) are referred to. The articles of legislation are:

- The Wildlife and Countryside Act 1981 (as amended)
- The Conservation of Habitats and Species Regulations 2010 (as amended)
- Department for Communities and Local Government. National Planning Policy Framework. March 2012
- EC Council Directive on the Conservation of Wild Birds 79/409/EEC
- National Parks and Access to the Countryside Act 1949
- The Protection of Badgers Act 1992
- Land Drainage Act 1991
- The Countryside and Rights of Way Act 2000
- The Natural Environment and Rural Communities Act 2006
- The United Kingdom Biodiversity Action Plan 2006
- Hedgerow Regulations 1997
- Town and Country Planning Act 1990
- Local Biodiversity Action Plan (LBAP).

Appendix 5. Legislation, Guidance and Methodology in Relation to the Identified Constraints

Legislation, Guidance and Methodology

Birds

All nesting birds are protected under the Wildlife and Countryside Act 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, for species listed on Schedule 1 of the Wildlife and Countryside Act 1981 it is an offence to intentionally or recklessly cause disturbance at, on or near an 'active' nest.

The bird breeding season is typically accepted to start in February and continue through until August, however breeding birds can be found all year round depending on the given species and climatic conditions.

A site's habitat composition, locality, association to designated sites as well as current usage and management are all considered in the decision as to whether further bird related surveys are required. In addition, surveys may be recommended based on incidental bird records collected during a Preliminary Ecological Appraisal, species identified within an ecological data search or target species listed within a local biodiversity action plan.

Bird surveys are carried out in accordance with:

Gilbert G, Gibbons DW, Evans J. (1998) *Bird Monitoring Methods*. RSPB.

Survey Timing

Breeding Bird surveys (BBS): Four visits, evenly spaced between mid-April and mid-June. The standard BBS methodology may require amendment based on climate and weather conditions, the complexity of habitats within a site, the perceived ecological interest of a site and the extent of the survey area.

Wintering Bird surveys (WBS): Four visits, evenly spaced between October and February. The standard WBS methodology may require amendment based on climate and weather conditions, the complexity of habitats within a site, the perceived ecological interest of a site and the extent of the survey area.

Species Specific Surveys: Certain species owing to their migration patterns, habitat requirements, nocturnal habits and other ecological behaviours should be surveyed as per their given methodologies stated within Gilbert, G. et al (1998).

Roosting Bats

All bats in the United Kingdom and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2010 (as amended).

It is an offence to damage or destroy any bat roost, intentionally or recklessly obstruct a bat roost, deliberately, intentionally or recklessly disturb a bat or intentionally kill, injure or take any bat.

Areas of concern; can be encountered in many types of structure and care should therefore be taken when undertaking maintenance or demolition of suitable structures and trees.

Site assessments of buildings, commuting and foraging habitat and trees are undertaken in accordance with:

Collins, J (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, (3rd edition), Bat Conservation Trust, London

Preliminary Ecological Surveys look for evidence of bat presence such as feeding remains, bat droppings, roosting individuals and staining around potential access points.

The suitability of site features were also assessed because absence of bat evidence, is not confirmation of a negative result. Within buildings these features include suitable enclosed spaces such as slipped or missing roof tiles, gaps and cracks in brickwork, enclosed roof voids, accessibility into wall spaces, gaps along ridge rafters, joints in roof beams and the presence of suitable soffits and fascias.

Within tree features searched for include; natural holes, woodpecker holes, cracks/splits in major limbs, loose bark, hollows, and dense cover of ivy over the tree.

If evidence is found, or a building supports features conducive to supporting roosting bats then further presence / absence bat surveys and/or roost characterisation surveys are recommended.

Survey Timing:

Preliminary Ecological Appraisals can be undertaken throughout the year.

Presence /absence surveys and roost characterisation surveys are undertaken during the bat activity season between **May and September** (Specific timings are relative to the suitability of a structure for supporting protected species and weather dependent)

Bat Activity Transect surveys are carried out between **April and October** (weather dependent)

Hibernation surveys are carried out from **November to March**.

Guideline for assessing the suitability of a structure to support roosting habitat (Buildings and Trees), amended from Collins, J (2016).

Category	Description of roosting habitat	Number of presence / absence surveys required
No Potential	The structure or tree is wholly unsuitable for a bat roost.	None

Negligible Potential	Suitable cavities may exist but these are open to wind, rain or disturbance.	None
Low Potential	This category describes a structure with one or more potential roost sites that could be used by individual bats opportunistically and that are less than ideal in some way. For example, the feature may be subject to intermittent disturbance, and does not provide enough shelter, conditions* space and/or suitable surrounding habitat (e.g. unlikely to support a maternity or hibernation roost). This category described a tree of sufficient size and age to support roosting bats, but with no features observed from the ground, or the features only have a limited potential to support roosting bats.	One survey between May and August Trees – No further surveys required
Moderate Potential	This category describes a structure or tree considered to have one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions* and surrounding habitat but are unlikely to support a roost of high conservation status (With regard to roost type only – assessments are made irrespective of species conservation status, which is established after presence is confirmed) Features considered to have adequate potential would include cavities of appropriate dimensions that are generally free from disturbance and free from fluctuations in the weather.	Two surveys between May and September (with at least one survey undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to be ideally undertaken at least two weeks apart.
High Potential	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions* and surrounding habitat.	Three surveys between May and September (with at least two surveys undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to be undertaken. The third survey can be either Dusk or Dawn. The surveys should ideally be undertaken at least two weeks apart.

Confirmed	This category is where positive evidence of bats has been recorded. For example, bats are found; bat droppings may be present at a suitable location for roosting bats; existing bat records may be associated with the structure.	Three surveys between May and September (with at least two surveys undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to be undertaken. The third survey can be either Dusk or Dawn. The surveys should be undertaken at least two weeks apart.
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(* in this context conditions refers to the level of disturbance, light, height above ground, temperature, and humidity etc)

If bats are discovered emerging or re-entering any structure, the survey schedule should be appropriately adjusted to increase the survey effort so that sufficient information for roost characterisation can be collected to advise the planning application or EPS development license.

Foraging and Commuting bats

Habitat features on site were assessed for their suitability to support foraging and commuting bat populations. This assessment was independent from the suitability of the site to support roosting bats, and provides information on the likeness of bat foraging activity within the local environment, and the dependence of individuals on these features for commuting to alternative roosting sites, foraging and migration.

Potential suitability of foraging and commuting habitat within an application boundary. Features should be assessed following this guide and professional judgement. Adapted from Collins J (2016)

Category	Description of commuting and foraging habitat	Survey effort to establish the value of commuting and foraging habitat**
Negligible Potential	Negligible habitat features on site likely to be used by commuting or foraging bats	None
Low Potential	Habitat which could be used by low numbers of commuting bats such as an isolated gappy hedgerow, or an unvegetated stream unconnected to suitable habitat in the wider environment. Suitable, yet isolated habitat that could be used by foraging bats such as individual trees, or a patch of scrub.	Transect /spot count/ timed search survey: One survey visit per season: Spring- April/ May Summer- June/July/ Aug Autumn – Sept/ Oct In weather conditions conducive to finding bats AND

		Static automated surveys: One location per transect, over a five-night period, per season: Spring- April/ May Summer- June/July/ Aug Autumn – Sept/ Oct In weather conditions conducive to finding bats <i>Further survey may be required if surveys reveal higher activity than predicted from habitat alone</i>
Moderate Potential	Continuous habitat connected to the wider landscape that could be used by commuting bats, notably tree lines, hedgerows or linked back gardens. Habitat that is connected to the wider landscape which could be used by bats for foraging such as trees, open water, scrub or grassland.	Transect /spot count/ timed search survey One survey visit per month (April to October) In weather conditions conducive to finding bats At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period. AND Static automated surveys: Two locations per transect, over a five-night period, per month (April to October) In weather conditions conducive to finding bats
High Potential	Continuous, High-quality habitat that is well connected to the wider landscape which is considered to be highly conducive to commuting bats including river valleys, stream, hedgerows, 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,	Transect /spot count/ timed search survey Up to two survey visit per month (April to October) In weather conditions conducive to finding bats At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period.

	tree lined watercourses, and grazed parkland. Site is close to and connected to known roosts.	AND Static automated surveys: Three locations per transect, over a five-night period, per month (April to October) In weather conditions conducive to finding bats
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(** This is only a guide for survey effort required, the complexity of the site and the proposed disturbance / loss of features will determine the extent of works required on a site by site basis).

Badgers (*Meles meles*)

Badgers are protected under the Protection of Badgers Act 1992. It is illegal to wilfully kill, injure, disturb or take any badger, or attempt to do so and it is an offence to intentionally or recklessly damage, destroy, or obstruct access to any part of a badger sett.

Site assessments are undertaken in accordance with:
Harris S, Cresswell P and Jefferies D (1989). *Surveying Badgers*.

Badgers can be found along the side of arable fields but as their main diet is earthworms they are more commonly found where there is a patchwork of undisturbed grassland areas where an abundant supply of earthworms can be found. Consequently badgers are more common in areas that are used for grazing farm animals. Other features to be aware of when assessing the likelihood of badgers are suitable hedgerows, woodland and bankings where badgers are able to excavate setts. Also badgers prefer well drained areas and are less common where the water table is relatively high over large areas. If these types of suitable features are found in or around the project site then badger surveys are recommended.

Survey Timing

Badger surveys can be carried out throughout the year.

Amphibians

The great crested newt (*Triturus cristatus*) and atterjack toad (*Bufo calamita*), are fully protected under Schedule 5 of the wildlife and countryside Act 1981. The legislation protects these amphibians and their place of shelter or protection which may extend 500 metres from the breeding pond.

Great Crested Newt (*Triturus cristatus*)

The great crested newt (*Triturus cristatus*), is fully protected under Schedule 5 of the wildlife and countryside Act 1981 (As amended) and the Habitat regulations 2010, making it an offence to intentionally or recklessly kill, injure, disturb or take

great crested newts, intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection.

The legislation protects these amphibians and their place of shelter or protection which may extend 500 metres from the breeding pond. Sites should be considered suitable to support great crested newts if distribution and historical records suggest newts may be present, there is a pond within 500 metres of the development and the development site includes refuges (eg log piles or rubble), grassland, scrub, woodland or hedgerows.

Great crested newt site assessments are undertaken in accordance with: English Nature. (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough. and Langton T, Beckett C and Foster J (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

When searching for ponds, Brindle & Green apply a total of 4 sources to establish their location; reducing the likelihood of ponds being missed (where one mapping tool may not be 100% accurate). The following sources are used:

OS MAPPING VIA PRO MAP
GOOGLE EARTH PRO
GOOGLE MAPS
OS MAP VIEWER
ON SITE WALKOVER

Great crested newts (GCNs) are found in non-flowing water bodies that are free from high pollution levels, do not contain fish large fish (that can eat GCN eggs and larvae) and have adequate aquatic vegetation or dead leaves for GCNs to lay their eggs on. GCNs can be found foraging or hibernating within the terrestrial habitat linked to their breeding ponds. The surrounding habitat is therefore assessed for its suitability to accommodate GCN.

Habitat Suitability Index (HSI)

The waterbodies identified for survey were initially assessed via GCN Habitat Suitability Index (HSI) score for each of the waterbodies (Oldham et al, 2000).

The HSI is scored between 0 and 1 and can be interpreted as follows:

- <0.5 = poor
- 0.5 – 0.59 = below average
- 0.6 – 0.69 = average
- 0.7 – 0.79 = good
- >0.8 = excellent

Survey Timing:

Mid-March to Mid-June.

Presence/absence surveys of ponds

Undertake at least 4 visits between mid-March and mid-June with at least 2 visits in peak season (usually mid-April to mid-May). Using three methods per visit (preferably torch survey, bottle trapping and egg searching)

Population size class assessments in ponds

Undertake at least 6 visits (if you found newts during the first 4 presence/absence visits) between mid-March and mid-June with at least 3 visits in peak season (usually mid-April to mid-May)

Use torch surveys and bottle trapping on each visit.

Survey adult newts in spring to estimate whether the population is small, medium or large (You can combine results from multiple ponds if the newts regularly move between them, but only for counts you got on the same visit).

The maximum adult count per pond per night, peak counts per pond overall and total site count can be used to calculate the class population:

small - maximum counts up to 10

medium - maximum counts between 11 and 100

large - maximum counts over 100

Reptiles

Two species of reptile, the Sand Lizard (*Lacerta agilis*) and Smooth Snake (*Coronella austriaca*) and their habitats, are fully protected under Schedule 5, Section 9 of the Wildlife and Countryside Act 1981. All other native British reptiles are protected against intentional killing and injury.

British reptiles are found in exposed undisturbed areas. For example, areas without cultivation with differing areas of grassland sward length. Suitable areas include abandoned sand quarries, fallow farmland land, heathland, post-industrial land, railway corridors etc. Grass snake (*Natrix natrix*) are often found in areas of tall vegetation near water bodies.

Common lizard and slow worm favour areas of longer grassland with opportunities to bask in more open areas. Slow worm favour grassland, hedgerows, woodland borders (as do adder) and rural gardens, all of which are present on or near the site. Grass snake can be found near ponds.

If these types of suitable features are found then reptile surveys are recommended.

Edgar P, Foster J and Baker J (2010) Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth.

Gent T and Gibson S (2003) Herpetofauna Workers Manual. JNCC, Peterborough.

Survey Timing.

Surveys can only be undertaken during suitable weather conditions (Between March and September) when temperatures are between 9° C and 18° C. Consequently, the best time of year to survey is spring and autumn.

Invasive non-native weeds

Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*) are examples of invasive non-native weeds classified under Part II of Schedule 9 of the Wildlife and Countryside act 1981. Any person who causes these species to grow or spread in the wild by dumping or other means is guilty of an offence. The plant and the soil these species are found growing in are classified as waste material and should be treated as such.

A simple walk over survey of the site to determine if these species are present was carried out during the Preliminary Ecological Appraisal. A full list of Schedule 9 species can be found at http://www.plantlife.org.uk/our_work/campaigns/inns/invasive_non-native_plants_and_the_law/schedule9_england_wales/

Botanical Value

There are 60 plant species listed in Schedule 8 of the Wildlife and Countryside Act 1981 where it is an offence to intentionally pick or uproot or destroy any of these plant species.

During the Preliminary Ecological Appraisal notes are taken of areas that could contain rare or local important plant species/communities. Such areas could include mature woodland, calcareous sites, undisturbed areas such as ridge and furrow pasture or even semi-improved areas that have a varied sward length.

If habitat such as these are found on the project area during the Preliminary Ecological Appraisal then a full botanical survey will be recommended.

Survey Timing

Woodland during April.

Open areas from May to July.

Rodwell, J.S. Joint Nature Conservation Committee (JNCC). National Vegetation Classification: Users' handbook (2006). JNCC.

Ecological Enhancement

In March 2012 the Department for Communities and Local Government published the National Planning Policy Framework. This sets out planning policies on protection of biodiversity through the planning system. The document states - *opportunities to incorporate biodiversity in and around developments should be encouraged.*

Usually when reviewing how ecological enhancements can be implemented the Local Biodiversity Action Plan for the area is considered.

For new buildings guidance such as in the following will be used:
Williams, C. (2010) *Biodiversity for Low and Zero Carbon Buildings, A Technical Guide for New Build*. Riba Publishing.

Designated Protected Areas

Designated areas are Sites of Special Scientific Interest (SSSI) while others have been designated as having European protection status. Local authorities can also designate areas for nature conservation and in doing so may impose local authority byelaws to support local nature conservation objectives.

European designated status includes Special Protection Areas (SPAs) that preserve areas for birds and Special Areas of Conservation (SACs) which provides protection for habitats and the species which these habitats supports. Laws stipulate that SSSIs, SPAs and SACs have to be maintained in a 'favourable condition' which requires efforts to preventing any potential impacts to these sites.

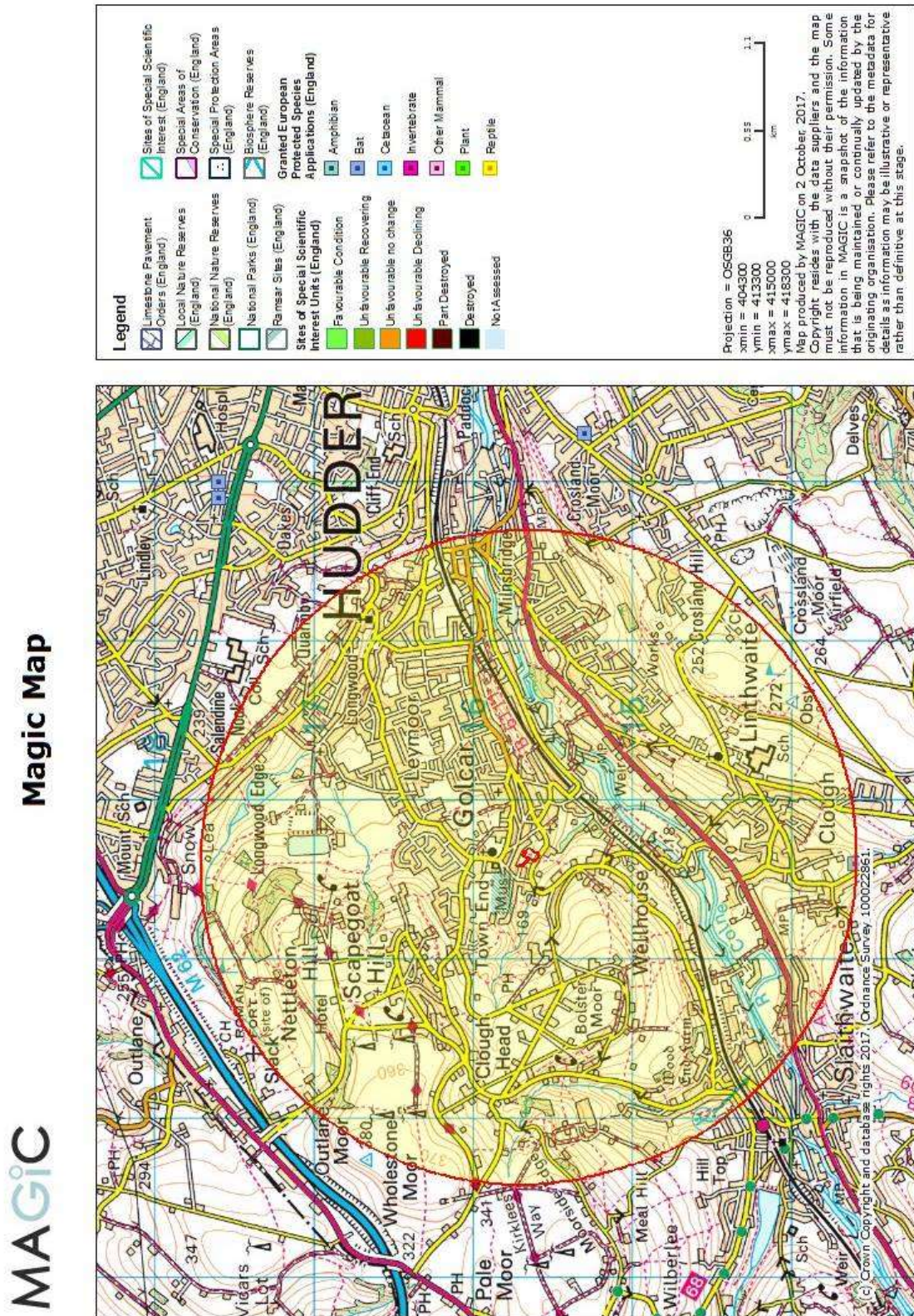
Information of Designated Protected Areas is received through Ecological Data Searches and Magic Map searches.

Appendix 6. Proposed Plans



Appendix 7. Magic Data

Two kilometre radius search of the project site.



02/10/2017

Site Check Report Report generated on Mon Oct 02 2017

You selected the location: Centroid Grid Ref: SE096156

The following features have been found in your search area:

Granted European Protected Species Applications (England)

Case reference of granted application	EPSM2009-1348
Species group to which licence relates	Bat
Species on the licence	C-PIP
Site county of licence	West Yorkshire
Licence Start Date	09/04/2013
Licence End Date	01/10/2018
Does licence impact on a breeding site	N
Does licence allow damage of breeding site	
Does licence allow damage of a resting place	
Does licence allow destruction of breeding site	N
Does licence allow destruction of a resting place	Y
Does licence impact on a hibernation site	Unknown
NERC agreement reference	Unknown

Areas of Outstanding Natural Beauty (England)

No Features found

Limestone Pavement Orders (England)

No Features found

Local Nature Reserves (England) - points

No Features found

Local Nature Reserves (England)

No Features found

National Nature Reserves (England) - points

No Features found

National Nature Reserves (England)

No Features found

National Parks (England)

No Features found

Ramsar Sites (England) - points

No Features found

Ramsar Sites (England)

No Features found

Sites of Special Scientific Interest Units (England) - points

No Features found

Sites of Special Scientific Interest Units (England)

No Features found

Sites of Special Scientific Interest (England) - points

No Features found

Sites of Special Scientific Interest (England)

No Features found

Special Areas of Conservation (England) - points

No Features found

Special Areas of Conservation (England)

No Features found

Special Protection Areas (England) - points

No Features found

Special Protection Areas (England)

No Features found

Biosphere Reserves (England) - points

No Features found

Biosphere Reserves (England)

No Features found

1/1

Appendix 8. Ecological Data Search Information

A data search was not requested for this site.

Appendix 9. Confidential Badger Records

10.1 Results

10.1.1 A well-worn mammal run was present within the edge of the woodland, in the south-eastern corner of the site (Figure A). The path led in a north-westerly direction along the woodland edge, and immediately adjacent to the south-eastern end of the track was an area of digging activity resembling snuffle holes (Figure B). The digging contained claw marks, although no pawprints could be seen and no latrines were located. It is possible that the digging may have been caused by badgers or foxes, however it is not believed to be the result of rabbits, due to a lack of rabbit droppings nearby and a lack of rabbit warrens.

10.1.2 No further evidence of badger such as setts or latrines was recorded onsite, however, due to the overgrown nature of the onsite vegetation, it is possible that evidence may have been overlooked. The presence of scattered scrub and woodland edge onsite provides suitable foraging resources for badgers and the site's connectivity to further woodland habitat, in the local and wider area, suggest that badgers are likely to be locally present and may utilise the site for foraging and commuting purposes. However, it is not clear as to whether badgers utilise the site on a more permanent basis, or whether they inhabit the site.

10.2 Evaluation

As the site is located next to extensive woodland habitat which is well-connected to the surrounding environment, it is likely that this transient species is present within the local area. Woodland and scattered scrub habitat onsite provides suitable foraging habitat for badgers and evidence of digging behaviour was recorded within the south-eastern corner of the site, immediately adjacent to a mammal run, suggesting that badgers could be utilising the habitat onsite for foraging activity. Due to the overgrown nature of vegetation onsite, it is possible that further evidence may have been missed. As the development will involve the clearance of dense vegetation, this could result in the injury or death of badgers and the potential destruction of an undiscovered sett.

10.3 Recommendations

It is recommended that a full badger survey is undertaken to establish if the site is inhabited by badgers and whether badgers are regularly utilising the site for foraging purposes

Accompanying photographs	
Grid reference	Photograph
Figure A SE 09642 15600	

Figure B

SE 09642
15600

