

ECOLOGICAL APPRAISAL

LAND AT PALLETT HILL, CATTERICK



MAY 2016

DRAFT

CLIENT Pallett Hill Sand and Gravel Company Ltd.
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Unless requested otherwise, the information below will be provided to the Local Environmental Records Centre (NEYEDC)				
Species	Recorder	Date	Location (4 Fig. NGR)	Abundance
Black-headed Gull	E3 Ecology	March 2016	SE 236 979	12
Dunnoek	E3 Ecology	March 2016	SE 236 979	4
Herring Gull	E3 Ecology	March 2016	SE 236 979	15
House Sparrow	E3 Ecology	March 2016	SE 236 979	11
Lesser Redpoll	E3 Ecology	March 2016	SE 236 979	2
Starling	E3 Ecology	March 2016	SE 236 979	4
Wood Pigeon	E3 Ecology	March 2016	SE 236 979	5
Curlew	E3 Ecology	March 2016	SE 236 979	1
Mallard	E3 Ecology	March 2016	SE 236 979	2
Oystercatcher	E3 Ecology	March 2016	SE 236 979	1
Skylark	E3 Ecology	March 2016	SE 236 979	2
Song Thrush	E3 Ecology	March 2016	SE 236 979	1
Wigeon	E3 Ecology	March 2016	SE 236 979	57
Swift	E3 Ecology	May 2016	SE 236 979	4
House martin	E3 Ecology	May 2016	SE 236 979	2

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CONTENTS

A.	SUMMARY	5
B.	INTRODUCTION	7
C.	PLANNING POLICY AND LEGISLATIVE CONTEXT	9
C.1	NATIONAL PLANNING POLICY	9
C.2	PROTECTED SPECIES LEGISLATION	10
C.3	INVASIVE SPECIES LEGISLATION	11
C.4	PROTECTED SITE LEGISLATION	11
C.5	PRIORITY SPECIES	11
D.	METHODOLOGY	12
D.1	SCOPE OF STUDY	12
D.2	DESK STUDY	13
D.3	PRELIMINARY FIELD SURVEY METHODOLOGY	14
D.3.1	PHASE 1 HABITAT SURVEY	14
D.3.2	PRELIMINARY PROTECTED AND PRIORITY SPECIES APPRAISAL	14
D.3.3	ENVIRONMENTAL CONDITIONS	15
D.3.4	SURVEY CONSTRAINTS	15
D.4	DETAILED FIELD STUDY METHODOLOGY	16
D.4.1	ORNITHOLOGICAL ASSESSMENT	16
D.5	PERSONNEL	17
D.6	ASSESSMENT METHODOLOGY	17
E.	RESULTS	19
E.1	DESK STUDY	19
E.1.1	PRE-EXISTING INFORMATION	19
E.1.2	CONSULTATION	20
E.2	FIELD SURVEY	26
E.2.1	HABITATS	26
E.2.2	TARGET NOTES	29
E.2.3	SPECIES	30
E.2.4	ORNITHOLOGY	31
E.2.5	BREEDING BIRD WALKOVER SURVEY	34
F.	SITE ASSESSMENT	36
F.1	HABITATS	36
F.2	NOTABLE SPECIES	36
F.3	ORNITHOLOGICAL ASSESSMENT	36
F.3.1	OVER WINTERING BIRDS	36
F.3.2	BREEDING BIRDS	36
F.4	LIMITATIONS	36
G.	IMPACT ASSESSMENT	37
H.	RECOMMENDATIONS	38
H.1	FURTHER SURVEY	38
H.2	AVOIDANCE AND MITIGATION STRATEGY	38
H.3	COMPENSATION STRATEGY	39

TABLES NUMBERS NEED SORTING

TABLE 1: NATIONAL PLANNING POLICY FRAMEWORK: NATURAL ENVIRONMENT	9
TABLE 2: SUMMARISED SPECIES LEGISLATION	10
TABLE 3: SUMMARISED INVASIVE SPECIES LEGISLATION.....	11
TABLE 4: GUIDELINES FOR ASSESSING THE POTENTIAL SUITABILITY OF PROPOSED DEVELOPMENT SITES FOR BATS, BASED ON PRESENCE OF ROOSTING HABITAT FEATURES (TREES).....	15
TABLE 5: SURVEY CONDITIONS	15
TABLE 6: SURVEY CONDITIONS	17
TABLE 7: PERSONNEL.....	17
TABLE 8: ECOLOGICAL RECEPTOR VALUATION.....	18
TABLE 9: DESIGNATED SITES	19
TABLE 10: CONSULTATION RECORDS	20
TABLE 11: CONSULTATION RECORDS FROM PALLETT HILL SINC	20
TABLE 12: LOCAL WILDLIFE SITES (SINCS)	21
TABLE 13: YWT RESERVES.....	22
TABLE 14: SITE-BASED HABITAT DATA	22
TABLE 15: NOTABLE SPECIES RECORDED DURING PREVIOUS SURVEYS IN 2004 TO 2005 AND 2007 TO.....	24
TABLE 16: WATERFOWL SPECIES OF CONSERVATION CONCERN RECORDED WITHIN THE PALLETT HILL SINC, 2012 – 13.....	24
TABLE 17: WATERFOWL SPECIES OF LOWER CONSERVATION CONCERN RECORDED WITHIN THE SURVEY AREA, 2012 - 13.....	25
TABLE 18: DATA SUMMARISED FROM AECOM MONITORING	25
TABLE 19: SPECIES AND NUMBERS OF WINTERING BIRDS.	31
TABLE 20: SPECIES AND NUMBERS OF WINTERING BIRDS AT SWALE LAKES.	33
TABLE 21: SPECIES AND NUMBERS OF BREEDING BIRDS ON SITE AND WITHIN THE SINC.....	34

FIGURES

FIGURE 1: SITE LOCATION	7
FIGURE 2: DEVELOPMENT PROPOSALS.....	8
FIGURE 3: SURVEY AREA.....	12
FIGURE 4: SITE AND SETTING.....	13
FIGURE 5: PALLETT HILL SINC BOUNDARY.....	22
FIGURE 6: DESIGNATED SITES	23
FIGURE 7: HABITAT MAP	27
FIGURE 8: WINTERING BIRD DISTRIBUTION	32
FIGURE 9: WINTERING BIRD FLIGHTLINE MAP	33

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A. SUMMARY

E3 Ecology Ltd was commissioned by the Pallett Hill Sand and Gravel Company Ltd in March 2016 to undertake an Ecological Impact Assessment (EcIA) of land at Pallett Hill, Catterick, North Yorkshire. An ornithological assessment of the site was also undertaken.

The proposed development comprises the construction of 10 detached and linked dwellings on the land adjacent to Manor Farm, with vehicular and pedestrian access from High Green.

Consultation with the Multi Agency Geographic Information for the Countryside (MAGIC) website indicated the presence of the Swale Lakes Site of Special Scientific Interest (SSSI) approximately 1100m to the east, whilst the local records centre indicated the site abuts the Pallett Hill SINC. Both sites are designated for their importance to wintering birds. Due to the nature and size of the site and proposed development no impacts on the SSSI are envisaged with only minor potential effects predicted on the SINC.

Survey of the site indicated that it comprises an area of previously grazed semi-improved grassland with a short sward. The site is bounded by a combination of stone walls, wood panel and post and wire fencing. Small lengths of relatively recently planted hedgerow are present to the eastern boundaries, whilst plantation broadleaf woodland and scrub are present to the western boundary associated with the Pallett Hill SINC. The grassland habitat is considered to be of low value, with the hedgerow, scrub and trees considered to be of up to local importance, principally due to functions that they provide to breeding birds and potentially commuting bats.

The site is concluded to be of low value to bats, offering no roosting opportunities and only limited potential foraging habitats. The boundary features are likely to be used at some level by commuting bats, moving between Catterick village and foraging areas associated with the adjacent waterbody and SINC.

From the initial survey it was considered that the site was likely to be of low value to wintering and breeding birds. The site consists of a small area of grazed grassland, with a short sward length and is relatively highly disturbed by dog walkers. The site was found to support no ground nesting species during the May visit. The boundary features, adjacent gardens and woodland in the wider area are of greater suitability to nesting birds and a range of species were recorded nesting or holding territory in these areas. The adjacent Pallett Hill SINC is considered to be of County importance to wintering birds, with surveys of the SINC for the widening of the A1 indicating the presence of a range of wetland species in good numbers throughout the winter. It is considered that this SINC is linked to the nearby Swale Lakes SSSI. Survey in May recorded far fewer species within the adjacent SINC than are known to be present during the wintering period, with the majority recorded from the scrub and hedgerows.

No evidence of badger was recorded during the survey and the risk of sett creation on site is considered to be low. The species may forage on site on occasion, but with abundant habitat in the wider area the value of the site to badger is low.

Given the lack of suitable habitats no other protected species are considered likely to be present on site. Hedgehog a national priority species may be present on site on occasion.

Potential impacts of the development without mitigation include:

- Loss of grassland of low habitat value.
- Potential loss of scrub, hedgerow and trees considered to be of local value.
- A low level of increased disturbance to the Pallett Hill SINC, present abutting the western boundary, both during and post construction.

- Harm to mammals, including hedgehogs and potentially badgers, which may become trapped in excavations overnight during construction.
- Harm/disturbance to nesting birds should vegetation clearance be undertaken during the nesting season (March to August inclusive).
- Disturbance to potential bat commuting and foraging habitat associated with the hedgerow and scrub/woodland at the site boundaries through increased lighting post development.
- Garden habitats post development have the potential to improve the foraging opportunities on site for bat species such as common pipistrelle and other wildlife, such as hedgehog. Bird nesting opportunities will also be increased in the longer term, complementing the hedgerow habitats present.
- Potential increase in predation through an increase in cats associated with the development.

Key mitigation measures include:

- Hedgerows, scrub and mature trees at the site boundaries will be retained and supplemented with additional planting. Plant species utilised within the development will be fruit and berry bearing providing foraging opportunities to a range of species.
- Lighting along the hedgerows will be kept to a minimum.
- The creation of small gaps in fencing to allow small mammals, such as hedgehogs, to move between gardens.
- Bat roosting opportunities will be included within 3 of the new build properties/garages on site.
- 6 nest boxes suitable for use by a range of species will be installed on the new properties, to include opportunities for both starling and house sparrow.
- Areas of diverse grassland will be created within the landscaped areas to increase foraging opportunities to a range of species.
- Vegetation clearance/tree felling will be avoided. Should this be required it will be undertaken outside of the bird nesting season (March to August inclusive) unless a checking survey by a suitably experienced ornithologist confirms the absence of active nests.
- Any excavations left open overnight will have a means of escape for mammals that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°.
- The roots and crowns of retained trees to the site boundaries will be protected throughout the development through the provision of adequate construction exclusion zones in accordance with the guidance given by BS5837:2012.
- Interpretation panels to be installed at the site access points to the SINC, highlighting the importance of the site and the potential for disturbance.
- New home owners to be provided with information regarding the adjacent SINC and the potential for disturbance, particularly though walking dogs off leads.
- The western site boundary will be fenced with closed board fencing to limit noise and light spill to the adjacent SINC

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

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

B. INTRODUCTION

E3 Ecology Ltd was commissioned by the Pallett Hill Sand and Gravel Company Ltd in March to undertake an Ecological Impact Assessment (EclA) of land at Pallett Hill, Catterick, North Yorkshire. An ornithological assessment of the site was also undertaken.

The purpose of this report is:

- To identify and describe all potentially significant ecological effects associated with the proposed development
- To set out the mitigation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects
- To identify how mitigation measures will/could be secured
- To provide an assessment of the significance of any residual effects
- To identify appropriate enhancement measures
- To set out any requirements for post-construction monitoring

The site is located to the south of Pallett Hill Farm, Catterick Village at an approximate central grid reference of SE 236 979. The site location is illustrated below in Figure 1.

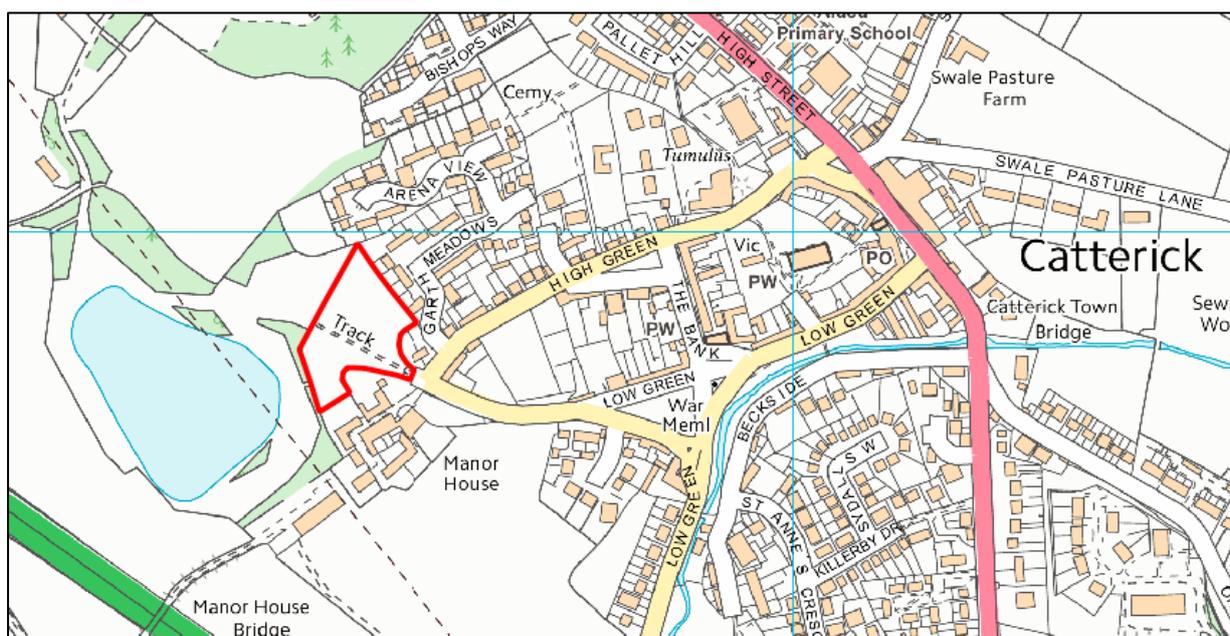


FIGURE 1: SITE LOCATION
(Reproduced from the Ordnance Survey map under licence)

It is proposed to construct 10 detached and linked dwellings on the land adjacent to Manor Farm, with vehicular and pedestrian access from High Green. The proposed indicative layout includes four affordable or starter homes and six larger “executive” type dwellings. These are grouped around an informal green.



FIGURE 2: DEVELOPMENT PROPOSALS

C. PLANNING POLICY AND LEGISLATIVE CONTEXT

C.1 NATIONAL PLANNING POLICY

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

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

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

Planning Practice Guidance² states:

- *'The National Planning Policy Framework is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution' (para. 007).*
- *'Information on biodiversity impacts and opportunities should inform all stages of development An ecological survey will be necessary in advance of a planning application if the type and location of development are such that the impact on biodiversity may be significant and existing information is lacking or inadequate' (para. 016).*
- *'Where an Environmental Impact Assessment is not needed it might still be appropriate to undertake an ecological survey, for example, where protected species may be present' (para. 016).*

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

² Planning Practice Guidance: Natural Environment (www.planningguidance.communities.gov)

- ‘Local planning authorities should only require ecological surveys where clearly justified, for example if they consider there is a reasonable likelihood of a protected species being present and affected by development. Assessments should be proportionate to the nature and scale of development proposed and the likely impact on biodiversity’ (para. 016).
- ‘Biodiversity enhancement in and around development should be led by a local understanding of ecological networks, and should seek to include:
 - habitat restoration, re-creation and expansion;
 - improved links between existing sites;
 - buffering of existing important sites;
 - new biodiversity features within development; and
 - securing management for long term enhancement’ (para. 017).

C.2 PROTECTED SPECIES LEGISLATION

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

TABLE 2: SUMMARISED SPECIES LEGISLATION		
Species	Relevant Legislation	Level of Protection
Bats (All species)	<ul style="list-style-type: none"> • Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended • Classified as European protected species under Conservation of Habitats and Species Regulations 2010 • Bats are also protected by the Wild Mammals (Protection) Act 1996 	The WCA (1981) and Habitat Regulations (2010) make it an offence to: <ul style="list-style-type: none"> • Intentionally kill, injure, or take any species of bat • Intentionally or recklessly disturb bats • Intentionally or recklessly damage destroy or obstruct access to bat roosts
Birds	<ul style="list-style-type: none"> • Protection under the Wildlife and Countryside Act (1981) as amended with the exception of some species listed in Schedule 2 of the Act 	The WCA (1981) makes it an offence to (with exceptions for certain species): <ul style="list-style-type: none"> • Intentionally kill, injure or take any wild bird • Intentionally take, damage or destroy nests in use or being built (including ground nesting birds) • Intentionally take, damage or destroy eggs • Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst they are at their nests
Badger	<ul style="list-style-type: none"> • Protection of Badgers Act 1992 • Badgers are also protected by the Wild Mammals (Protection) Act 1996 	The Protection of Badgers Act (1992) makes it an offence to intentionally or recklessly: <ul style="list-style-type: none"> • Damage a badger sett or any part of it • Destroy a badger sett • Obstruct access to, or any entrance of a badger sett • Disturb a badger whilst it is occupying a badger sett
Common reptiles (Slow-worm, Adder, Grass Snake, Common Lizard)	<ul style="list-style-type: none"> • Partially protected by the Wildlife and Countryside Act 	The WCA (1981) makes it an offence to: <ul style="list-style-type: none"> • intentionally kill or injure these animals • Sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead animals or part of these animals
<p><i>Under the Countryside and Rights of Way Act 2000 (CROW Act) the offence in section 9(4) of the Wildlife and Countryside Act 1981 of damaging a place of shelter or disturbing those species given full protection under the act is extended to cover reckless damage or disturbance.</i></p>		

C.3 INVASIVE SPECIES LEGISLATION

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

TABLE 3: SUMMARISED INVASIVE SPECIES LEGISLATION		
Relevant Legislation	Description of Offence	Species <i>(Covered by the Legislation and most likely to be found in this Region)</i>
Listed on Part II of Schedule 9 of the Wildlife and Countryside Act (1981 as amended)	Section 14 of the WCA (1981) states: <ul style="list-style-type: none"> if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence. 	Himalayan balsam Cotoneaster Montbretia Japanese knotweed Giant hogweed Rhododendron

C.4 PROTECTED SITE LEGISLATION

Details of the legislation surrounding protected sites are provided in the appendices.

C.5 PRIORITY SPECIES

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

D. METHODOLOGY

D.1 SCOPE OF STUDY

The scope of the study, in terms of the survey area and the desk study area, is based on professional judgement. The scope has been determined based on the site's characteristics, the nature of the surrounding area, the development proposed at the time of reporting and the likely associated zone of influence.

For this site the survey area comprised the red line boundary as defined within Figure 3 with, in addition, a 50m buffer around the periphery appraised where access was available. In addition to this the adjacent SINC was subject to ornithological assessment and a single visit was made to the Swale Lakes SSSI to provide a comparison of bird usage. The desk study included an assessment of land-use in the surrounding area and a data search covering a 2km buffer zone (see below for further detail).

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



FIGURE 3: SURVEY AREA
(Reproduced under licence from Google Earth Pro.)



FIGURE 4: SITE AND SETTING
(Reproduced from Bing Maps.)

D.2 DESK STUDY

Initially, the site was assessed from aerial photographs and 1:25000 Ordnance Survey maps. Following this, a data search was submitted to the Local Ecological Records Centre in March 2016, requesting data relating to protected or otherwise notable species and non-statutory sites for nature conservation within 2km of the survey area. In addition, a search was made of the Multi Agency Geographic Information for the Countryside (MAGIC) website³ for all statutorily protected sites for nature conservation within 2km of the survey area.

Consultation with the Local Planning Authority by the client's planning representative highlighted that the site adjoins the (amended) boundary of the Pallett Hill Site of Importance for Nature Conservation (SINC) and that this report should assess the use of the SINC by birds and should consider how the SINC can be protected.

³ Multi Agency Geographic Information for the Countryside (www.magic.gov.uk)

D.3 PRELIMINARY FIELD SURVEY METHODOLOGY

D.3.1 PHASE 1 HABITAT SURVEY

D.3.1.1 SURVEY METHODS

The field survey of the proposed site was conducted using the methodology of the Joint Nature Conservation Committee's Phase 1 Habitat Survey, as outlined in their habitat-mapping manual⁴. Each parcel of land was assessed by a trained surveyor and classified as one of ninety habitat types. These were then mapped and the habitat information supplemented by dominant and indicator species codes and target notes where appropriate. Habitats identified as being of particular interest, potentially of parish conservation value or above, were then studied in more detail. Plant species lists with abundance were recorded for such areas. Where areas within the study area do not fall into the Phase 1 Habitat Survey classification, alternative methods of classification have been used.

D.3.1.2 SURVEY EQUIPMENT

The following equipment was used during the phase 1 habitat survey:

- Zeiss 8x42 Victory HT Binoculars
- Canon Digital Camera
- Swarovski ATS Telescope

D.3.2 PRELIMINARY PROTECTED AND PRIORITY SPECIES APPRAISAL

D.3.2.1 SURVEY METHODS

Where there is a risk of legally protected species and/or otherwise notable species⁵ being present, an initial appraisal was completed to inform the proposals. This appraisal included the following key elements:

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

A preliminary assessment was made of any trees affected by the proposed development. Trees were inspected and assessed for their potential to support roosting bats and were categorised as negligible, low, moderate or high suitability for roosting bats based on

⁴ Handbook for Phase 1 habitat survey, A Technique For Environmental Audit, JNCC, 2010

⁵ To include national priority species as listed in Section 41 of the NERC Act (2006) and local or regional priority species as listed within the relevant Biodiversity Action Plan

guidelines provided within the Bat Conservation Trust Bat Survey: Good Practice Guidelines⁶ and detailed within Table 4.

TABLE 4: GUIDELINES FOR ASSESSING THE POTENTIAL SUITABILITY OF PROPOSED DEVELOPMENT SITES FOR BATS, BASED ON PRESENCE OF ROOSTING HABITAT FEATURES (TREES) <i>(TO BE APPLIED USING PROFESSIONAL JUDGEMENT, TABLE 4.1 BAT SURVEY GUIDELINES)</i>	
Suitability	Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A tree with one or more potential roost site that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

The assessment is based upon the age and species of the tree, the presence of features with potential to support roosting bats and the location of the tree and habitats present in the surrounding area. Any potential roosting locations and field signs that could indicate bat use, such as droppings, staining and scratch marks were noted.

Where it is considered likely that there is a significant risk of protected or otherwise notable species being affected or where habitats are of particularly high value additional specialist survey work has been recommended. Further survey work may also be recommended where development proposals have the potential to affect statutorily designated sites in the vicinity.

D.3.3 ENVIRONMENTAL CONDITIONS

The table below details the environmental conditions during the preliminary ecological appraisal.

TABLE 5: SURVEY CONDITIONS				
Date	Temperature	Cloud Cover	Precipitation	Wind Conditions
11.03.16	5.5°C	100%	None	SW0-1

D.3.4 SURVEY CONSTRAINTS

Survey was undertaken at a time of year which is suboptimal for the detection and identification of some plant species, though in this instance, based on the nature of the site, this is not considered to have greatly constrained the survey.

⁶ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

D.4 DETAILED FIELD STUDY METHODOLOGY

D.4.1 ORNITHOLOGICAL ASSESSMENT

D.4.1.1 WINTERING BIRD WALKOVER

The site was surveyed by an experienced ornithologist who is able to identify all commonly occurring UK bird species by sight and call. Initially the habitats were studied and assessed for their likely bird use from aerial photographs. The surveyor then moved slowly around the site and the adjacent SINC stopping to listen to calls and to scan for birds using high quality binoculars and, where appropriate, a telescope.

Birds seen or heard were recorded as accurately as possible on a plan of the site using an Apple iPad running the 'GIS Pro' application.

Survey techniques used good field craft to minimise disturbance to birds, wearing dull clothes, avoiding being silhouetted against the skyline, moving slowly and then spending time in one location to allow birds to become active again. Where sensitive species are present, such as roosting raptors, priority has been given to protecting the birds, rather than gathering very detailed information, generally by quiet observation from a distance.

The identity and activity of all birds were mapped using the British Trust for Ornithology's standard list of codes for bird species and activities. Care was taken to record as much detail as possible, such as the age and sex of the bird.

D.4.1.2 BREEDING BIRD WALKOVER METHODS

The site was surveyed by an experienced ornithologist who is able to identify all commonly occurring UK bird species by sight and call. Initially the habitats were studied and assessed for their likely bird use from aerial photographs. The surveyor then moved slowly around the site, stopping to listen to calls and to scan for birds using high quality binoculars and, where appropriate, a telescope.

Birds seen or heard were recorded as accurately as possible on a plan of the site using an Apple iPad running the 'GIS Pro' application.

Survey techniques used good field craft to minimise disturbance to birds, wearing dull clothes, avoiding being silhouetted against the skyline, moving slowly and then spending time in one location to allow birds to become active again. Where sensitive species are present, such as nesting raptors, priority has been given to protecting the birds, rather than gathering very detailed information, generally by quiet observation from a distance.

The identity and activity of all birds were mapped using the British Trust for Ornithology's standard list of codes for bird species and activities. Care was taken to record as much detail as possible, such as the age and sex of the bird, as such detail is often vital during analysis. Other species and habitats of nature conservation value were recorded where noted.

D.4.1.3 SURVEY EQUIPMENT

The following equipment was used during the PEA survey:

- Zeiss 8x42 Victory HT Binoculars
- Canon Digital Camera
- Swarovski ATS Telescope

D.4.1.4 SURVEY DATES

Survey	Date	Temperature	Cloud Cover	Precipitation	Wind Conditions
Winter Walkover	11.03.16	5.5°C	100%	None	SW0-1
Breeding Walkover	21.05.16	17°C	100%	None	SW2-3

D.4.1.5 SURVEY CONSTRAINTS

There were considered to be no major constraints to wintering bird survey of the site and the adjacent SINC. The survey was undertaken during late winter/early spring when commissioned and as such may not be representative of either early winter or the autumn passage period. This has been addressed through a risk assessment and is not considered to be a major constraint.

There were considered to be no major constraints to the breeding bird assessment.

D.5 PERSONNEL

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

Name	Position	Professional Qualifications	Natural England Survey Licence Numbers
Mark Osborne	Associate Director	CEcol MCIEEM	2015-14412-CLS-CLS (Bats), 2015-14496-CLS-CLS (Bats), CLS 863 (GCN*), CL29/00185 (Barn Owl)

*GCN – Great Crested Newt,

Further details of experience and qualifications are available at www.e3ecology.co.uk.

D.6 ASSESSMENT METHODOLOGY

The relative value of the ecological receptors (habitats, species and designated sites) was assessed using a geographical frame of reference. For designated sites this is generally a straightforward process with the assigned designation generally being indicative of a particular value, e.g. Sites of Special Scientific Interest are designated under national legislation and are therefore generally considered to be receptors of national value. The assignment of value to non-designated receptors is less straightforward and as recognised by the Guidelines for Ecological Impact Assessment produced by the Chartered Institute of Ecology and Environmental Management⁷, is a complex and subjective process and requires the application of professional judgement.

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

⁷ Chartered Institute for Ecology and Environmental Management (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal

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

TABLE 8: ECOLOGICAL RECEPTOR VALUATION	
Level of Value	Examples
International	An internationally designated site or candidate site.
	A site meeting criteria for international designation.
	A substantial* area of a habitat listed on Annex I of the EC Habitats Directive or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole.
	The site is of functional importance** to a species population with internationally important numbers (i.e. >1% of the biogeographic population)
National	A nationally designated site.
	A substantial* area of a habitat listed as a Habitat of Principal Importance within Section 41 of the NERC Act (2006) or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole.
	The site is of functional importance** to a species population with nationally important numbers (i.e. >1% of the national population)
Regional	An area of habitat that falls slightly below the criteria necessary for designation as a SSSI but is considered of greater than county value.
	The site is of functional importance** to a species population with regionally important numbers (i.e. >1% of the regional population)
County	A Local Wildlife Site (LWS) or equivalent, designated at a County level
	A substantial* area of a habitat listed within the relevant County Biodiversity Action plan or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole.
	The site is of functional importance** to a species population of county value (i.e. >1% of the county population)
District	A Local Wildlife Site (LWS) or equivalent, designated at a District level
	A substantial* area of a habitat listed within the relevant District Biodiversity Action plan or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole.
	The site is of functional importance** to a species population of district value (i.e. >1% of the district population)
Parish	Area of habitat or species population considered to appreciably enrich the habitat resource within the context of the parish.
	Local Nature Reserves
Local	Habitats and species that contribute to local biodiversity but are not exceptional in the context of the parish.
Low	Habitats that are unexceptional and common to the local area.
*Substantial defined as 'of considerable size or value within that area based on professional judgement, rather than a small, inconsequential area'	
** Functional importance defined as 'a feature which, based on professional judgement, is of importance to the day to day functioning of the population, the loss of which would have a detectable adverse effect on that population'	

E. RESULTS

E.1 DESK STUDY

E.1.1 PRE-EXISTING INFORMATION

ORDNANCE SURVEY MAPPING AND AERIAL PHOTOGRAPHY

Figures 1 (A1) and 3 (C1) show that to the south is the existing residential complex at Chapman's Court, to the east the rear gardens of the residential properties at 1-5 Garth Meadows and 51–53 High Green. The site is contained to the east by existing mature woodland and to the north agricultural land, woodland and a children's playground. The development site does not form part of the former Pallett Hill Quarry and does not make up any of the adjacent Pallett Hill SINC.

The most recent aerial photograph of the site (Figure 2, C1, 2009) indicates that habitats on site are dominated by semi-improved grassland. Historic imagery, dating back to 2001 indicated that it was largely under similar management, though suggests that the site also supported small patches of scrub.

MULTI AGENCY GEOGRAPHIC INFORMATION FOR THE COUNTRYSIDE WEBSITE⁸

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

Designation	Site Name	Reason for Designation⁹	Distance from Survey Area	Condition
Site of Special Scientific Interest	Swale Lakes	The site known as Swale Lakes is of interest for its diverse population of breeding birds and large numbers of wintering wildfowl and waders. The site lies approximately 200 m east of the River Swale and comprises a shallow lake of 11 ha, feeder streams and a pond of 0.7 ha. with associated areas of tall fen vegetation, scrub, broad-leaved and mixed plantation and grassland. Apart from some initial tree planting and agricultural use of the grassland, these habitats have developed naturally from gravel workings largely undisturbed since extraction ceased in the early 1970s. Nesting mainly on the shore and islands of the main lake, breeding wildfowl include mallard, shoveler, tufted duck, pochard, mute swan, shelduck, great crested grebe and little grebe which also breed on the small pond. Breeding waders are oystercatchers, common sandpiper, ringed plover and most notably, little ringed plover. One pair of common tern have bred in recent years. Summer records of quail indicate possible breeding by this species which, in average years, is otherwise absent from Richmondshire and Craven. The juxtaposition of the main lake and the River Swale adds considerably to the importance of the site for several other species, including kingfisher which breed nearby on the river at this point and feed at Swale Lakes. Grey heron also feed here; there is a heronry within 5 km of the lake. Waders on migration, including such species as snipe, greenshank and ruff, feed along the muddy shoreline of the lake.	~1100m East	Unfavourable/ declining (assessment On 10/12/2014)

⁸ Multi Agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk

⁹ http://www.sssi.naturalengland.org.uk/citation/citation_photo/1003166.pdf

Designation	Site Name	Reason for Designation ⁹	Distance from Survey Area	Condition
		During winter the site attracts large numbers of wildfowl. Peak counts of over 1300 wigeon, 410 greylag geese, 255 teal, 500 coot, 243 pochard and 388 tufted duck have been recorded along with small herds of Bewick's and whooper swan. The grasslands around the lake are an important feeding area for grazing wildfowl, together with large flocks of lapwing and golden plover.		

PREVIOUS SURVEY WORK BY E3

E3 Ecology have undertaken a range of ornithological surveys within the local area, including both wintering and breeding assessments of a number of large gravel extraction sites in the wider area. These have highlighted that the ornithological value of wetlands in this area is in general high with a range of scarce species recorded, including little ringed plover and avocet. These sites, particularly where mud is available provide important stop off points for migrating waders and wildfowl.

E.1.2 CONSULTATION

LOCAL RECORD CENTRE

The table below summarises the records provided by the local records centre, North and East Yorkshire Ecological Data Centre (NEYEDC). The full data search results can be provided on request.

Taxon	Species	No. of Records within Search Area	Notes
Amphibian	Common Toad	4	All records from Ellerton Quarry
Crustacean	Freshwater Crayfish	2	Both from 1990
Invertebrate	Wall	1	Howe Hill Riverside
Terrestrial Mammal	West European Hedgehog	1	2001
	Brown Hare	2	Ellerton Quarry
	European Otter	16	Principally from River Swale
	Eastern Grey Squirrel	8	Ellerton Quarry

The records centre also provided over 700 bird records from the 2km search area. The following table highlights those from the adjacent SINC.

Species	National Priority Species	Notes/Likely status on development site
Blackbird		Potential breeding species on site boundaries
Canada Goose*		Likely absent from site
Common Sandpiper		Likely absent from site
Coot		Likely absent from site
Greylag Goose*		Likely absent from site
Moorhen		Likely absent from site
Redshank		Likely absent from site
Rook		Potential foraging on site
Swallow		Foraging over site
Notes:		

Red List Species are listed within the BoCC4 list as species of high national conservation concern. Amber listed species are listed within the BoCC4 list as species of medium national conservation concern¹⁰
*Geese at this location are considered feral and not of a migratory population.

All bird species recorded within 2km and their conservation status can be found within appendix 3.

In addition, the records centre provided information relating to the following non-statutory designates sites which lie within the search area:

Local Nature Reserves

There were no Local Nature Reserves found within the search area.

Local Wildlife Sites¹¹

The following sites were found to be within (or partly within) the 2km search area. Their locations are illustrated on figure 5.

TABLE 12: LOCAL WILDLIFE SITES (SINCS)			
Site Code	Site Name	Grid Reference	SINC status¹²
SE29-08	Howe Hill Riverside	SE 233 995	Deleted SINC
SE29-11	Limekiln Wood	SE 235 966	Deleted SINC
SE29-16	Catterick Gravel Pits	SE 239 990	SINC
SE29-10	Pallet Hill	SE 232 981	SINC

The Pallet Hill SINC is located abutting the western boundary of the site; the SINC boundary is illustrated below.

¹⁰ Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708-746

¹¹ Local Wildlife Sites are known in North Yorkshire as SINCS (Sites of Importance for Nature Conservation) NEYEDC

¹² SINCS that have been deleted by the North Yorkshire SINC panel have been surveyed and assessed against the SINC selection guidelines and found not to qualify as a SINC. These are still reported as some district planning authorities may still use the list of SINCS in their local development plan and not the dynamic process developed by the North Yorkshire SINC group. As such, SINCS that have been deleted should be considered for any planning applications. In addition these sites may not be of sufficient quality to qualify as a SINC but are still likely to be of higher ecological quality than other land in the area.

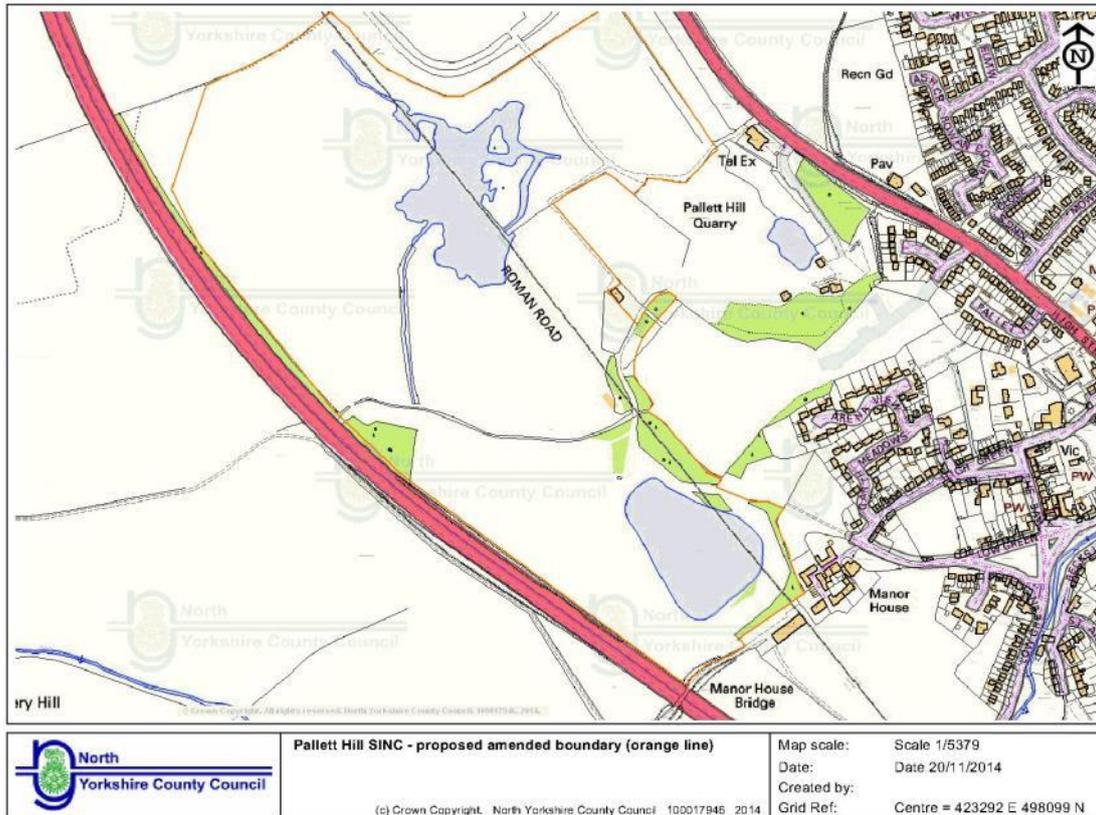


FIGURE 5: PALLETT HILL SINC BOUNDARY

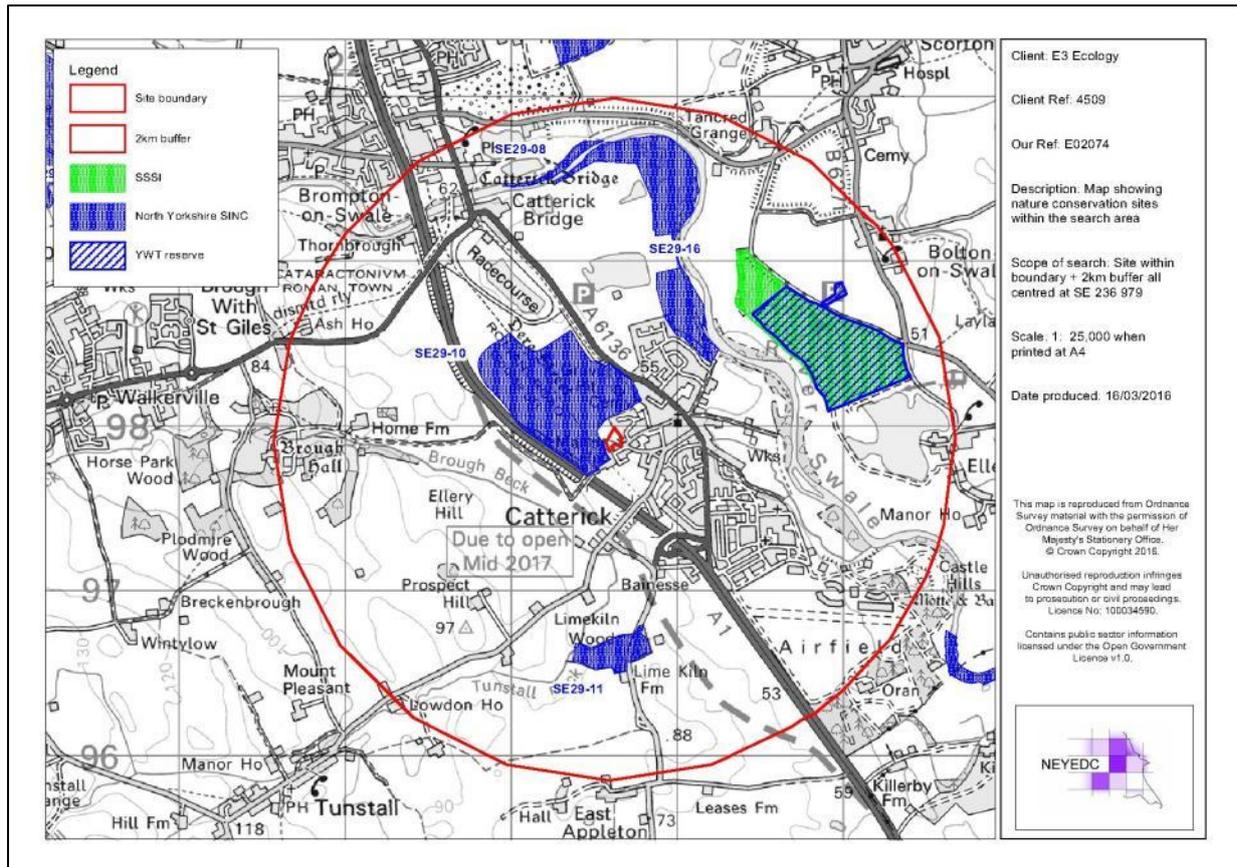
Yorkshire Wildlife Trust (YWT) Reserves
A single YWT is present within the search area:

TABLE 13: YWT RESERVES	
Site	Grid Reference
Bolton-on-Swale Lake	SE 249 984

Site-based Habitat data

NEYEDC searched the Woodland Inventory & Grassland Inventory and the following areas were found, their locations are illustrated within the map in Appendix 2:

TABLE 14: SITE-BASED HABITAT DATA		
Designation	Name or location of site	Grid Reference
Ancient & Semi-Natural Woodland Wet woodland	Limekiln Wood	SE 237 966
Undetermined grassland	Catterick Gravel Pits	SE 239 990



**FIGURE 6: DESIGNATED SITES
(Provided by NEYEDC 2016)**

LOCAL PLANNING AUTHORITY AND YORKSHIRE WILDLIFE TRUST

Consultation undertaken by the developer's planning consultant with the LPA and Yorkshire Wildlife Trust's Conservation Officer is summarised below.

It is important that:

- Areas within the adjacent SINC important to birds are identified
- Existing bird survey data from the widening of the A1 is requested from David Cole at NYCC
- An assessment is made of whether birds for which the nearby Swale lakes SSSI is designated are using the SINC site.
- An in combination assessment is undertaken.

EXISTING DATA¹³

Wintering and breeding bird surveys of Pallet Hill SINC were conducted by AECOM between 2004 and 2005 and repeated in 2007 and 2008 as part of the environmental assessment of the A1 Dishforth to Barton Improvement.

Surveys indicated that the wetland habitats at Pallet Hill SINC supported a large and diverse assemblage of wintering waterfowl. These species and their conservation status¹⁴ are listed in the following table:

¹³ AECOM (2013) Pallet Hill SINC Wintering Bird Survey Report

¹⁴ Conservation status has been amended from the initial report to reflect current conservation status (2016).

TABLE 15: NOTABLE SPECIES RECORDED DURING PREVIOUS SURVEYS IN 2004 TO 2005 AND 2007 TO 2008			
Species	Annex 1¹⁵	Schedule 1¹⁶	National Priority Species
Kingfisher	✓	✓	
Shoveler			
Teal			
Wigeon			
Mallard			
Greylag Goose*			
Pochard**			
Tufted Duck**			
Barnacle Goose*			
Goldeneye			
Black-headed Gull			
Snipe			
Oystercatcher			
Herring Gull			✓
Common Gull			
Lesser black-backed Gull			
Curlew**			✓
Ruff		✓	
Golden Plover**	✓		
Shelduck			
Redshank			
Lapwing			✓

Notes
Red List Species are listed within the BoCC4 list as species of high national conservation concern. Amber listed species are listed within the BoCC4 list as species of medium national conservation concern¹⁰
*Geese at this location are considered feral and not of a migratory population. As such of minimal conservation concern.
**Previously Amber listed.

Further wintering bird surveys were conducted between December 2012 and March 2013 during which the following “wetland” species of conservation concern were recorded. The table below highlights the species their conservation status and the peak count recorded.

TABLE 16: WATERFOWL SPECIES OF CONSERVATION CONCERN RECORDED WITHIN THE PALLETT HILL SINC, 2012 – 13				
Species	Peak Count	Annex 1	Schedule 1	National Priority Species
Black-headed gull	132			
Bar-tailed godwit	2	✓		
Herring gull	3			✓
Curlew**	116			✓
Golden plover**	60	✓		
Greylag goose*	104			
Lapwing	280			✓
Little grebe**	1			
Mallard	29			
Redshank	8			
Ringed plover	8			

¹⁵ These are rare breeding European birds such as golden plover and hen harrier, which are afforded special protection under Annex 1 of the EC Birds Directive.

¹⁶ These are rare or threatened breeding UK birds, such as peregrine or corncrake, which are afforded special protection under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). In addition to the protection from killing or taking that all birds, their nests and eggs have under the Act, Schedule 1 birds and their young must not be disturbed at the nest.

TABLE 16: WATERFOWL SPECIES OF CONSERVATION CONCERN RECORDED WITHIN THE PALLETT HILL SINC, 2012 – 13

Species	Peak Count	Annex 1	Schedule 1	National Priority Species
Ruff	4		✓	
Shelduck	15			
Shoveler	9			
Snipe	1			
Teal	94			
Tufted duck**	23			
Wigeon	184			

Notes

Red List Species are listed within the BoCC4 list as species of high national conservation concern. Amber listed species are listed within the BoCC4 list as species of medium national conservation concern¹⁰

*Geese at this location are considered feral and not of a migratory population.

**Previously Amber listed.

A number of other wetland species were recorded during the surveys:

TABLE 17: WATERFOWL SPECIES OF LOWER CONSERVATION CONCERN RECORDED WITHIN THE SURVEY AREA, 2012 - 13.

Species	Peak Count
Canada geese*	12
Coot	94
Cormorant	11
Grey heron	4
Great crested grebe	3
Moorhen	5
Goosander	8
Mute swan**	2

* Geese at this location are considered feral and not of a migratory population.

**Mute Swan has subsequently been listed as of amber conservation concern (2016)

A number of non-waterfowl species were frequently recorded feeding/using the survey area. It was considered that the flocks of starlings recorded foraging throughout the SINC were of greatest significance.

Further updating surveys were undertaken by AECOM in 2015. The results of which are listed below:

TABLE 18: DATA SUMMARISED FROM AECOM MONITORING¹⁷

Species	Date					
	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15
Black-headed Gull				1		2
Canada Goose*	1	6				14
Common Gull						1
Common Sandpiper		1				
Coot	22	15				10
Curlew				3	58	3
Golden Plover						1+
Goosander						2
Green Sandpiper			2	1		
Grey Heron		1	1	1		1
Grey Wagtail						1

¹⁷ Additional Monitoring data (AECOM) as provided by D.Coles at the LPA

TABLE 18: DATA SUMMARISED FROM AECOM MONITORING ¹⁷						
Species	Date					
	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15
Greylag Goose*	1	100	17			4
Hybrid/Feral Goose	1	10		5	6	
Kingfisher		1				1
Lapwing	1	26	135	8		
Little Egret				7	1	
Little Ringed Plover	2	7	2			
Mallard	43	11	15	11	6	8
Moorhen	1	5	10	4		2
Mute Swan					6	
Oystercatcher	1	1				
Redshank	1	1				3
Ruff				2		
Shelduck	10					
Shoveler	1					
Snipe		1				
Teal			8	3	3	39
Tufted Duck	8	2	4	12	9	4
Wigeon				11	10	92

Notes
Red List Species are listed within the BoCC4 list as species of high national conservation concern.
Amber listed species are listed within the BoCC4 list as species of medium national conservation concern¹⁰
*Geese at this location are considered feral and not of a migratory population.

It was noted that the SINC was heavily modified between the September and October visits. The wetland had been partially in-filled and bunded reducing the area of open water (favoured by diving and dabbling ducks) and shallow flooded grassland/mud which are favoured by breeding and wintering waders and grazing wildfowl (eg. wigeon). The banks of the wetland are now elevated, with the effect of reducing foraging habitat for waders/grazing wild fowl restricting the sight-lines required by roosting/foraging waterfowl. The suitability of the site to support a diverse assemblage of non-breeding and breeding waterfowl (including ducks, geese, waders) has been greatly reduced; this was reflected by the low numbers/diversity of waterfowl which were recorded on this monitoring visit in comparison to previous surveys at this site at a similar time of year.

E.2 FIELD SURVEY

E.2.1 HABITATS

The site comprises 0.53 hectares of land at the south of Pallett Hill Farm, Catterick Village. The development site comprises an area of previously grazed semi-improved grassland with a short sward. The site is bounded by a combination of stone walls, wood panel and post and wire fencing. Small lengths of relatively recently planted hedgerow are present to the eastern boundaries, whilst plantation broadleaf woodland and scrub are present to the western boundary associated with the Pallet Hill SINC.

A similar grassland field is present to the north with a belt of more mature mixed plantation woodland present further to the north of the site, adjacent to a children's play area. There are no areas of standing water on site, though a large waterbody (5800m²); supporting fish is present approximately 45m to the west within the SINC. A bridleway runs through the development site connecting the village to the adjacent SINC. A dog waste bin is present within the site and evidence indicated that it is very well used for dog walking and recreational purposes, with a number of golf balls evident on site.

The habitats present within the development site are illustrated within Figure 6 and described in more detail below.

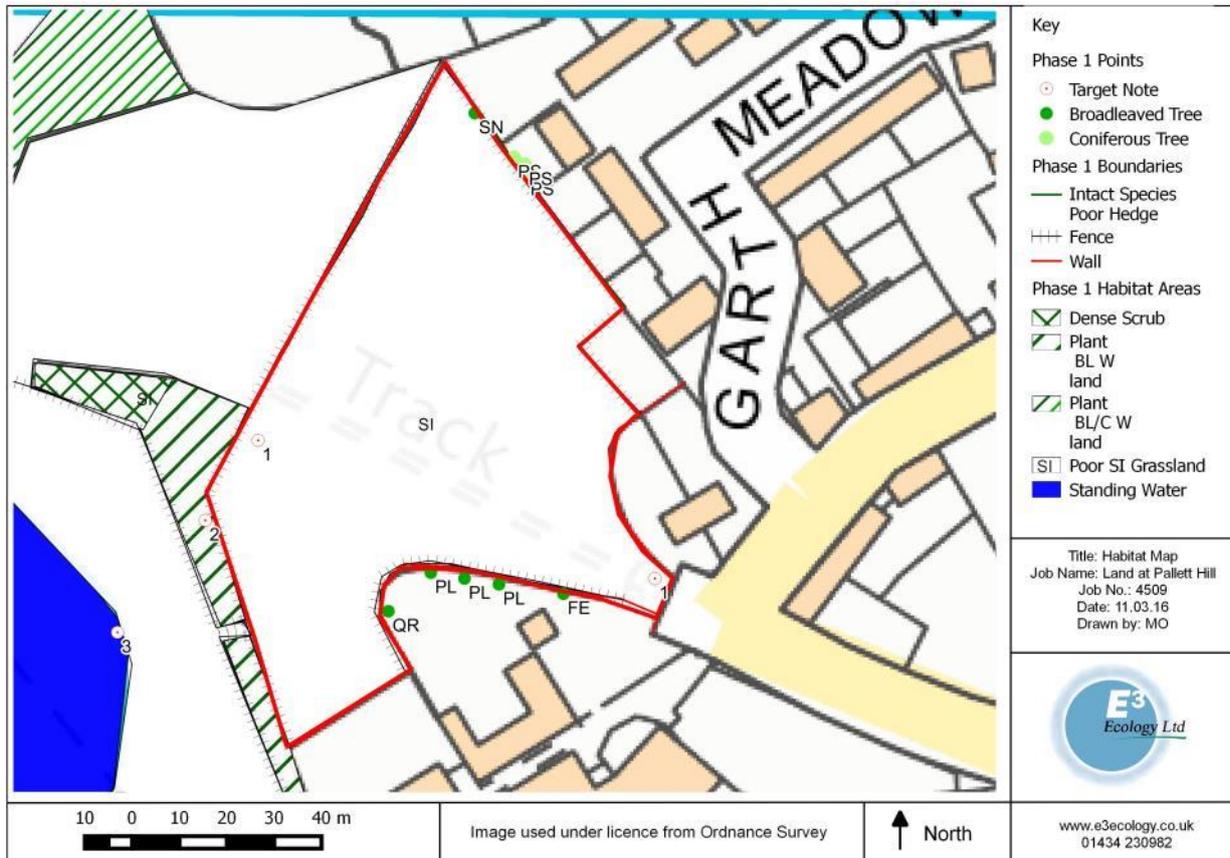


FIGURE 7: HABITAT MAP
(Reproduced from the Ordnance Survey map under licence)

GRASSLAND

The field comprises semi-improved grassland that has been recently grazed by both cattle and sheep. At the time of survey the sward height was short, ~5cm, and dominated by grass species, including perennial rye grass (*Lolium perenne*), cock's foot (*Dactylus glomerata*), fescues (*Festuca* sp.) and Yorkshire fog (*Holcus lanatus*). Forb species recorded include creeping buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), common nettle (*Urtica dioica*), ribwort plantain (*Plantago lanceolata*), creeping thistle (*Cirsium arvense*), spear thistle (*Cirsium vulgare*) cow parsley (*Anthriscus sylvestris*), cleavers (*Galium aparine*) hogweed (*Heracleum sphondylium*), bramble (*Rubus fruticosus*), broad-leaved dock (*Rumex obtusifolius*) and occasional lesser celandine (*Ranunculus ficaria*), yarrow (*Achillea millefolium*) and daffodils (*Narcissus* sp.).



HEDGEROW

Small sections of hedgerow are present at some of the eastern and western boundaries. These lie outwith the site and are dominated by hawthorn (*Crataegus monogyna*) and approximately 1.5m in height. Other species present on occasion include ivy (*Hedera helix*), rose (*Rosa* sp.) and holly (*Ilex aquifolium*) and elder (*Sambucus nigra*). The ground flora is as described above in the grassland section.



WOODLAND

A small section of broadleaf plantation woodland is present to the western and north western boundary. These areas comprise immature to semi-mature tree specimens to approximately 8m in height. Species present include: ash (*Fraxinus excelsior*), yew (*Taxus baccata*), cherry sp. (*Prunus* sp.) and *Salix* sp. The small area grades into scrub dominated by hawthorn and blackthorn (*Prunus spinosa*).



WETLAND

A large waterbody, known to support fish, is present approximately 45m to the west of the site associated with the Pallett Hill SNCI (Target Note 3). It is described fully within the Target Notes Section.



BOUNDARY FEATURES

The site is bound by a combination of stone walls, wood panel and post and wire fencing.



E.2.2 TARGET NOTES

TARGET NOTE 1 – LOG AND WOOD PILES

Two piles of recently chopped logs are present on the site.



TARGET NOTE 2 – MIXED PLANTATION WOODLAND

A more mature area of plantation woodland present to the north. The woodland is approximately 10-12m in height and densely planted. The trees are semi-mature and appeared well sealed, lacking potential roosting features for bats. Species present include: oak sp. (*Quercus* sp.), beech (*Fagus sylvatica*), hornbeam (*Carpinus betulus*), Scot's pine (*Pinus sylvestris*) and hawthorn.



The ground layer supports nettle and bramble and occasional lesser celandine. The woodland provides a sheltered foraging area for bats roosting locally and offers a foraging and nesting resource for birds, with a number of the species recorded from this feature during the survey.

TARGET NOTE 3 – PALLETT HILL SINC

The Pallett Hill SINC is present adjacent to the site's western boundary. The area of the SINC closest to the site is dominated by a large, 5.8ha lake, supporting fish. The lake is surrounded by managed semi-improved grassland interspersed with small plantation woodland blocks. The SINC provides a recreational area for people living in the village of Catterick, with a number of people noted walking dogs within the site during the survey.



The adjacent water body is used by over-wintering, migratory and breeding birds including waterfowl. The SINC is known to support a wide variety of bird species, and forms an important wetland complex with the River Swale. The SINC provides one of the few sites in the local area, which contains open water and associated wet grassland habitat, though the more ornithologically diverse Swale Lakes SSSI is present approximately 1300 to the east.

A number of waterfowl were recorded during the survey, including a flock of 57 wigeon, foraging on the grassland. The waterbody is considered to be of very limited value to great crested newts being large and in use as a fishery. Emergent or aquatic vegetation appeared lacking and the waterbody is known to support both feral



and migratory wildfowl.

The site was found to support a superficially similar assemblage to the Swale Lakes SSSI. Though the species such as wigeon and tufted duck that were recorded at both sites, were recorded in far greater numbers at the Swale Lakes SSSI. It is considered that there is likely to be a link between the sites with some interchange of birds, however the disturbed nature of the SINC is likely to lower its suitability.

E.2.3 SPECIES

BATS

There are no potential roosting features within the site boundary. Foraging habitats within the site are limited, with the boundary trees and hedgerow providing some opportunities. The boundaries, although suboptimal and largely lacking vegetation, are likely to be used by commuting bats, linking between potential roost locations within the village to areas of good quality foraging in the wider area. The adjacent SINC provides an area of good quality foraging, with small plantation blocks and the large waterbody providing a range of opportunities.

OTTER

No evidence of this species was recorded and the site provides very limited habitat of value to otter, lacking water and suitable areas for lying up or holt creation. The species is considered likely absent though may commute across the site on occasion. This species is potentially present on the SINC at times and could lie up in adjacent areas of cover.

GREAT CRESTED NEWT

There are no waterbodies present within the site, though a single waterbody is present within the adjacent SINC. The adjacent waterbody is a large private fishery located approximately 45m to the west of the site, with a further pond present approximately 450m to the north associated with Pallett Hill Quarry. Surveys undertaken for the widening of the A1 trunk road also indicate that great crested newts are likely absent from the neighbouring waterbody¹⁸. Given the nature of the closest waterbody, the nature and small size of the site, the low value of the habitats for amphibians and that no records were provided by NEYEDC, great crested newts are considered most likely to be absent from the site.

BADGER

No evidence of this species was recorded during the survey and the site lacks opportunities for sett creation. The adjacent woodland habitats provide potential areas for sett creation, though the disturbed nature of the site is likely to limit its value to the species. The grassland provides potential foraging habitat to the species.

WATER VOLE

Habitats on site are unsuitable for water vole, lacking either standing or running water. Water vole are therefore considered likely to be absent.

REPTILES

¹⁸ A1(M) Dishforth to Barton Improvement Great Crested Newt Habitat Suitability Index (HSI) Assessment – Leeming to Barton Section (2013)

The habitats on site are suboptimal for reptiles and no records were provided by the local records centre. Reptiles are therefore considered likely to be absent from the site.

RED SQUIRREL

The site lacks suitable habitat for red squirrel and this species is therefore considered likely to be absent.

INVERTEBRATES

Given the nature of the habitats present, the site is considered unlikely to support any invertebrate species of conservation concern.

NATIONAL PRIORITY AND LOCAL BAP SPECIES

Hedgehog a national priority species may be present on site on occasion.

E.2.4 ORNITHOLOGY

The site supports a very limited range of habitats suitable for nesting birds. The grassland field is small in size, supports a short sward and is heavily disturbed by dog walkers, as such the majority of nesting species are likely to be present within the boundary woodland and hedgerow or gardens adjacent. The grassland is likely to be used as a foraging resource by a limited number of species such as starling and song thrush. The site is likely to support a range of species typical to the urban edge in this location. Species recorded are listed within the following sections.

E.2.4.1 WINTERING BIRD SURVEY

A single wintering bird walkover survey was undertaken, during which a total of 14 species were recorded either from the site or from adjacent land, with a further 12 species recorded from the SINC. The table below details the species and numbers recorded within the proposed development site and the SINC, whilst Figure 5, Section E2.5, illustrates the locations of these records.

TABLE 19: SPECIES AND NUMBERS OF WINTERING BIRDS.				
Species	BTO Code	Number	National Priority Species	Notes
Onsite				
Blackbird	B.	3		Calling from hedgerow and plantation at site boundaries
Black-headed Gull	BH	12		Overflying
Blue Tit	BT	3		Singing from gardens to east
Collared Dove	CD	2		Pair loafing in trees at south of site
Chaffinch	CH	1		Single bird calling from woodland edge, north of site
Dunnock	D.	4	✓	Individual birds singing from boundaries
Goldfinch	GO	3		Overflying site
Great Tit	GT	2		Calling from gardens
Herring Gull	HG	15	✓	Overflying site
House Sparrow	HS	11	✓	Flock calling from garden to east
Lesser Redpoll	LR	2	✓	Overflying site
Robin	R.	1		Singing from scrub on western boundary
Starling	SG	4	✓	Calling from buildings to the east of the site
Wood Pigeon	WP	5		Overflying site
Wren	WR	1		Calling from scrub
SINC (section closest to the site)				
Canada Goose*	CJ	1		Single bird foraging on grassland. Flew east
Curlew	CU	1	✓	Calling and foraging on wet grassland
Feral Goose*	FG	4		Loafing on waterbody

TABLE 19: SPECIES AND NUMBERS OF WINTERING BIRDS.				
Species	BTO Code	Number	National Priority Species	Notes
Greylag Goose*	GJ	1		Single bird foraging on grassland. Flew east
Magpie	MG	2		Pair foraging on western edge of the waterbody
Mallard	MA	2		Feeding on waterbody
Oystercatcher	OC	1		Overflying and calling over site
Skylark	S.	2	✓	Overflying
Song Thrush	ST	1	✓	Singing from small plantation
Tufted Duck	TU	7		Feeding on waterbody
Wigeon	WN	57		Feeding on waterbody

Notes:
Red List Species are listed within the BoCC4 list as species of high national conservation concern.
Amber listed species are listed within the BoCC4 list as species of medium national conservation concern
*Geese at this location are considered feral and not of a migratory population.

E.2.4.2 WINTERING BIRD DISTRIBUTION ON SITE AND ADJACENT

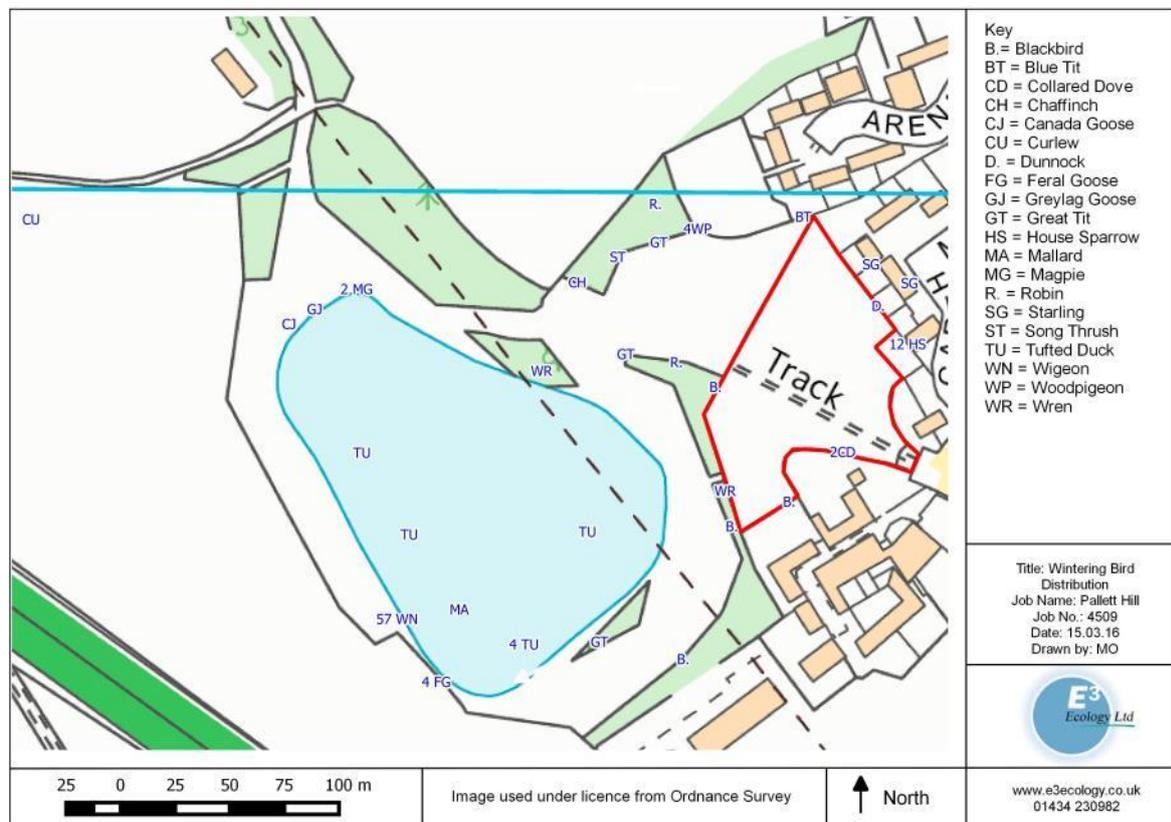


FIGURE 8: WINTERING BIRD DISTRIBUTION

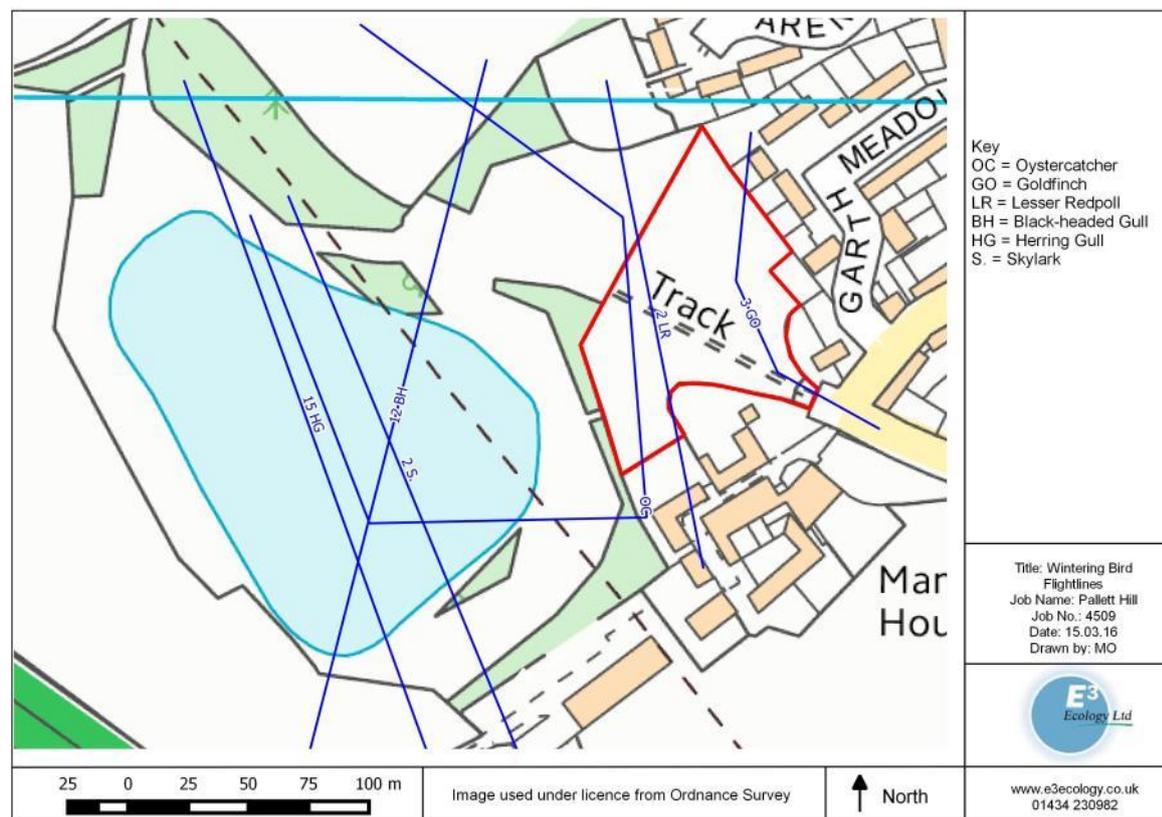


FIGURE 9: WINTERING BIRD FLIGHTLINE MAP

E.2.4.3 SWALE LAKES SSSI WINTER COUNT

A single wintering bird check was undertaken of the Swale Lakes SSSI to provide comparison counts with those recorded at Pallett Hill SINC. The counts were made immediately after the survey of the SINC. The table below details the species and numbers recorded within SSSI.

TABLE 20: SPECIES AND NUMBERS OF WINTERING BIRDS AT SWALE LAKES.			
Species	Number	National Priority Species	Notes
Canada Goose*	58+		Foraging within flooded grassland field and on main lake
Coot	43		On waterbody
Cormorant	39		On waterbody
Curlew	157	✓	Foraging within flooded grassland field
Gadwall	13		On waterbody
Goldeneye	17		On waterbody
Great Crested Grebe	2		On waterbody
Greylag Goose*	85+		Foraging within flooded grassland field and on main lake
Mallard	24		On waterbody
Moorhen	3		On waterbody
Mute Swan	6		On waterbody
Oystercatcher	6		Foraging within flooded grassland field
Pochard	27		On waterbody
Starling	93	✓	Foraging within flooded grassland field
Teal	9		On waterbody
Tufted Duck	40		On waterbody
Wigeon	217		On waterbody

Notes:
Red List Species are listed within the BoCC4 list as species of high national conservation concern.
Amber listed species are listed within the BoCC4 list as species of medium national conservation concern
*Geese at this location are considered feral and not of a migratory population.

E.2.5 BREEDING BIRD WALKOVER SURVEY

A single breeding bird walkover survey was undertaken, during which a total of 12 species were recorded either overflying the proposed development site or from the boundaries and adjacent gardens. No bird species were recorded from the grassland proposed for development. The table below details the species and numbers recorded within the proposed development site and the SINC.

Table 21: Species and numbers of breeding birds on site and within the SINC				
Species	BTO Code	Number	National Priority Species	Notes
Onsite				
Blackbird	B.	3		Singing from house roof adjacent to site/foraging onsite
Collared Dove	CD	2		Pair loafing in adjacent garden
Chaffinch	CH	1		Single bird singing from scrub
Dunnock	D.	1	✓	Singing from garden to south
House Martin	HM	2		Overflying site
House Sparrow	HS	18	✓	Calling from hedgerow to east
Robin	R.	1		Foraging on site
Starling	SG	15	✓	Calling from building roofs to the east of the site
Stock Dove	SD	1		Overflying site
Swallow	SL	2		Overflying site
Wood Pigeon	WP	1		Overflying site
Wren	WR	1		Singing from garden to south
SINC				
Blackbird	B.	1		Singing from woodland
Blackcap	BC	1		Singing from woodland
Blue Tit	BT	1		Singing from woodland
Canada Goose*	CG	16		Loafing in field with juveniles
Carrion Crow	C.	1		Foraging at water's edge
Chaffinch	CH	1		Singing from woodland edge
Chiffchaff	CC	1		Singing from scrub to west
Coot	CO	4		On northern waterbody
Dunnock	D.	2	✓	Calling from scrub
Gadwall	GA	2		On northern waterbody
Goldfinch	GO	5		Overflying site
Great Crested Grebe	GG	2		On southern waterbody
Great Tit	GT	2		Calling from woodland
Greylag Goose*	GJ	9		Loafing in field with juveniles
House Martin	HM	1		Overflying site
Jackdaw	JD	15		Overflying site and foraging within the grassland
Lesser Black-backed Gull	LB	3		Overflying site
Mallard	MA	7		On both water bodies
Moorhen	MH	2		On northern waterbody
Mute Swan	MS	4		On northern waterbody
Oystercatcher	OC	2		At northern waterbody edge
Pheasant	PH	1		Calling to the east
Robin	R.	1		Singing from plantation
Sand Martin	SM	21		Overflying and colony within slope to racecourse
Shelduck	SU	4		On northern waterbody
Skylark	S.	1	✓	Singing to the north, at the racecourse
Starling	SG	41	✓	Overflying site and foraging within the grassland
Stock Dove	SD	2		Overflying site
Treecreeper	TC	1		Within woodland plantation
Tufted Duck	TU	4		On northern waterbody
Whitethroat	WH	1		Singing from scrub
Willow Warbler	WW	1		Singing from scrub
Wren	WR	2		Singing from scrub and woodland

Notes:

Red List Species are listed within the BoCC4 list as species of high national conservation concern.

Amber listed species are listed within the BoCC4 list as species of medium national conservation concern

*Geese at this location are considered feral and not of a migratory population.

F. SITE ASSESSMENT

F.1 HABITATS

The habitats on site are considered to be of low value and found readily in the wider area. The site is made up of an area of grazed semi-improved. The hedgerow, scrub and plantations are considered to be of local value.

F.2 NOTABLE SPECIES

The site is concluded to be of low value to bats, offering no roosting opportunities and only limited potential foraging habitats. The boundary features are likely to be used at some level by commuting bats, moving between Catterick village and foraging areas associated with the adjacent waterbody and SINC. However the plantation woodland to the north and gardens to the south are likely to provide better connectivity and as such it is that the site will be used less frequently.

Badger may forage on site on occasion, but the risk of sett creation is considered low. The site is of low value to badger.

Given the lack of suitable habitats no other protected species are considered likely to be present on site. Hedgehog a national priority species, may be present on site on occasion.

F.3 ORNITHOLOGICAL ASSESSMENT

F.3.1 OVER WINTERING BIRDS

From the initial survey it is considered that the site is likely to be of low value to wintering birds. The site consists of a small area of grazed grassland, with a short sward length and is relatively highly disturbed by dog walkers. The adjacent SINC is of greater value and is known to support an assemblage of wintering species similar to that recorded at Swale Lakes SSSI. The assemblage is however less diverse, with those species recorded at both sites being present in lower numbers at Pallett Hill SINC.

Based on the results of the surveys undertaken by AECOM as listed within Section E1.2 the adjacent SINC is considered to be of county value to wintering birds and is linked to other wetlands in the wider area, including Swale Lakes SSSI.

F.3.2 BREEDING BIRDS

Due to the lack of features present, the site is considered to also be of low value to nesting birds, with the majority of opportunities likely to be primarily associated with the plantation, scrub and hedgerow at the site boundaries and in the wider area. No birds were recorded nesting within the development site, though a number of species, including robin, starling and house sparrow were recorded foraging.

F.4 LIMITATIONS

Due to the time of commission, the survey was undertaken at a suboptimal time of year for the detection and identification of certain plant species, though this not considered to have been a major constraint. Wintering bird survey was completed late in the season, however this has been supplemented by previous year's data gathered for the widening of the A1, provided by the LPA.

G. IMPACT ASSESSMENT

Likely effects of the proposed development, without appropriate targeted mitigation and/or compensation, are detailed below.

G.1 Potential Impacts and/or Effects¹⁹

G.1.1 Habitats

- Loss of grassland of low habitat value.
- Potential loss of scrub, hedgerow and trees considered to be of local value.
- A low level of increased disturbance to the Pallett Hill SINC, present abutting the western boundary, both during and post construction.

G.1.2 Species

- Harm/disturbance to nesting birds should vegetation clearance be undertaken during the nesting season (March to August inclusive).
- Harm to mammals, including hedgehogs and potentially badgers, which may become trapped in excavations overnight during construction.
- Disturbance to potential bat commuting and foraging habitat associated with the hedgerow and scrub/woodland at the site boundaries through increased lighting post development.
- Garden habitats post development have the potential to improve the foraging opportunities on site for bat species such as common pipistrelle and other wildlife, such as hedgehog. With bird nesting opportunities also being increased in the longer term and complementing the hedgerow habitats present.

G.2 Potential Impacts and/or Effects on Statutory and Non Statutory Sites Designated for Nature Conservation

No impacts are envisaged on the Swale Lakes SSSI, present ~1300m to the east. It is considered that there is the potential for a minor increase in disturbance to the adjacent SINC. This is likely to be limited as the proposal is for only 10 additional units.

¹⁹ An impact is defined as an action resulting in changes to an ecological feature. For example, construction works removing a hedgerow. An effect is defined as the outcome to an ecological feature from an impact. For example, the effect on a dormouse population of the loss of a hedgerow.

H. RECOMMENDATIONS

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

The mitigation strategy aims to minimise effects on biodiversity by:

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

Where any significant residual impacts on biodiversity are anticipated, compensation may then be proposed. This approach is in-line with CIEEM recommendations²⁰.

H.1 FURTHER SURVEY

Due to the small size and nature of the site, low value to bats, it is considered that further Bat Activity surveys, in line with BCT Guidance²¹ are not necessary.

H.2 AVOIDANCE AND MITIGATION STRATEGY

Site Design

- Hedgerows, scrub and mature trees at the site boundaries will be retained and supplemented with additional planting. Plant species utilised within the development will be fruit and berry bearing providing foraging opportunities to a range of species.
- Lighting along the hedgerows will be kept to a minimum.
- The creation of small gaps in fencing to allow small mammals, such as hedgehogs, to move between gardens.
- Bat roosting opportunities will be included within 3 of the new build properties/garages on site.
- 6 nest boxes suitable for use by a range of species will be installed on the new properties, to include opportunities for both starling and house sparrow.
- Areas of diverse grassland will be created within the landscaped areas to increase foraging opportunities to a range of species.

Timing of Works

- Vegetation clearance/tree felling will be avoided. Should this be required it will be undertaken outside of the bird nesting season (March to August inclusive) unless a checking survey by a suitably experienced ornithologist confirms the absence of active nests.

Working Methods and Best Practice

- Any excavations left open overnight will have a means of escape for mammals that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°.
- The roots and crowns of retained trees to the site boundaries will be protected throughout the development through the provision of adequate construction exclusion zones in accordance with the guidance given by BS5837:2012.

²⁰ Chartered Institute for Ecology and Environmental Management (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal

²¹ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

H.3 COMPENSATION STRATEGY

The following compensation strategy is proposed for impacts to the SINC:

- Interpretation panels to be installed at the access points to the SINC, highlighting the importance of the site and the potential for disturbance.
- New home owners to be provided with information regarding the adjacent SINC and the potential for disturbance, particularly though walking dogs off leads.
- The western site boundary will fenced with closed board fencing to limit noise and light spill to the adjacent site.

APPENDIX 1. STATUTORILY AND NON-STATUTORILY DESIGNATED SITES

Statutorily Designated Sites

Ramsar Sites

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

Special Protection Areas (SPAs)

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

Special Areas of Conservation

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

Sites of Special Scientific Interest

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

National Nature Reserves (NNRs)

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

Country Parks

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

Non-Statutorily Designated Sites

Local Nature Reserves (LNRs)

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

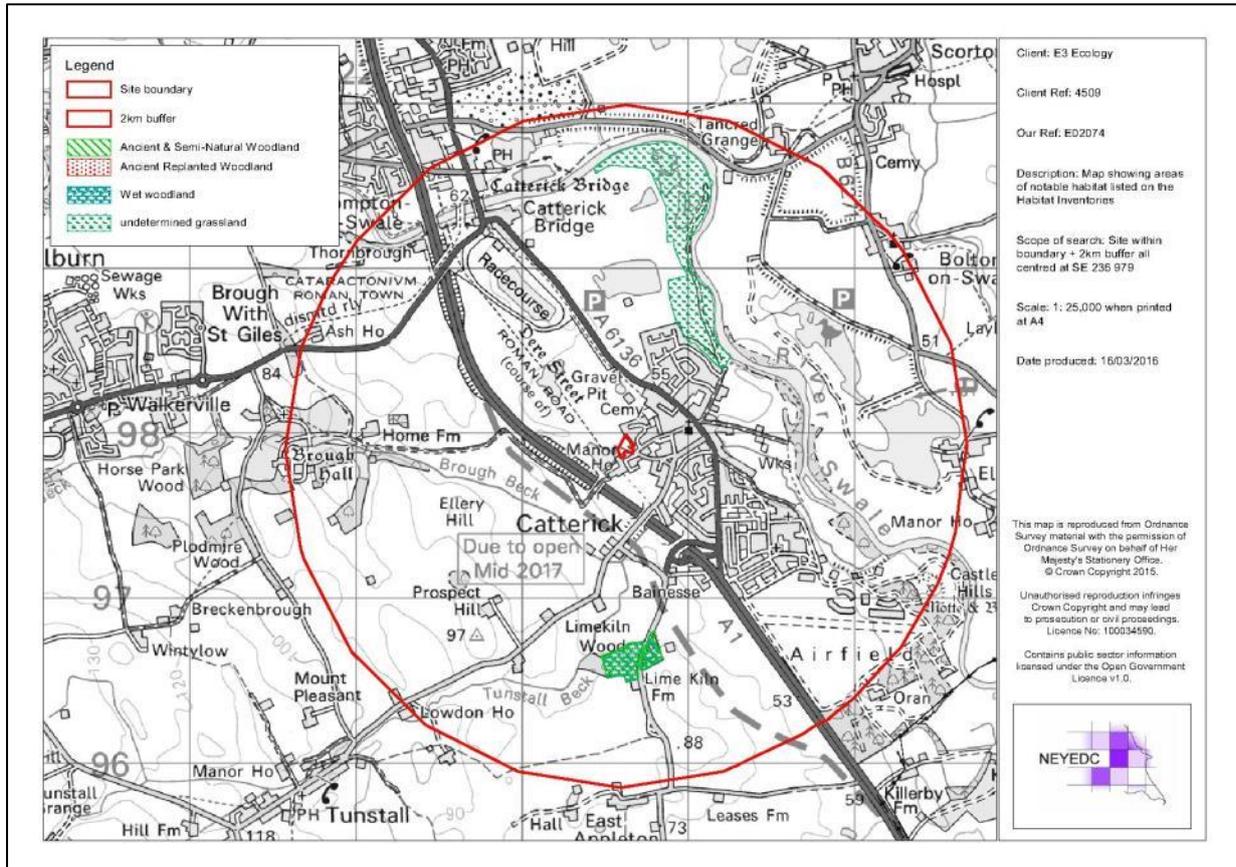
Non-Governmental Organisation Property

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

Local Wildlife Sites (LWSs)

These are sites defined within the local plans under the Town and Country Planning system and are material considerations of any planning application determination. They are designated by the local authority although criteria for designation can vary between authorities. In North Yorkshire they are known as SINCs.

APPENDIX 2. HABITAT DATA (NEYEDC)



APPENDIX 3. BIRD SPECIES RECORDED WITHIN 2KM AND THEIR CONSERVATION STATUS

Arctic Tern	Collared Dove	Dipper	Green Woodpecker	Lesser Spotted Woodpecker	Osprey	Rock Pipit
Barnacle Goose	Grasshopper Warbler	Dunlin	Greenfinch	Little Grebe	Oystercatcher	Rook
Bar-tailed Godwit	Kestrel	Dunnock	Greenshank	Little Owl	Pectoral Sandpiper	Rose-ringed Parakeet
Bean Goose	Kingfisher	Wigeon	Grey Partridge	Little ringed Plover	Peregrine	Ruddy Duck
Black Grouse	Moorhen	Fieldfare	Grey Phalarope	Little Stint	Pied Wagtail	Turnstone
Black Tern	Pheasant	Gadwall	Grey Plover	Little Tern	Pink-footed Goose	Ruff
Blackbird	Common Pochard	Garganey	Grey Wagtail	Long-billed Dowitcher	Knot	Sand Martin
Black-headed Gull	Quail	Goldcrest	Greylag Goose*	Long-tailed Duck	Red-breasted Merganser	Sanderling
Black-necked Grebe	Common Redpoll	Golden Plover	Hawfinch	Magpie	Red-crested Pochard	Sandwich Tern
Black-tailed Godwit	Redstart	Goldeneye	Hen Harrier	Mallard	Red-legged Partridge	Skylark
Black-throated Diver	Common Scoter	Goldfinch	Herring Gull	Marsh Harrier	Red-necked Grebe	Slavonian Grebe
Blue Tit	Shelduck	Goosander	Hobby	Marsh Tit	Redshank	Smew
Blue-winged Teal	Snipe	Great Black-backed Gull	House Martin	Meadow Pipit	Red-throated Diver	Snow Bunting
Brambling	Starling	Great Northern Diver	House Sparrow	Mediterranean Gull	Redwing	Snow Goose
Brent Goose	Common Tern	Great Spotted Woodpecker	Jack Snipe	Merlin	Reed Bunting	Sparrowhawk
Bullfinch	Coot	Great Tit	Jackdaw	Common Gull	Ring Ouzel	Spoonbill
Buzzard	Corn Bunting	Canada Goose	Jay	Mute Swan	Ringed Plover	Spotted Flycatcher
Carrion Crow	Crossbill	Greater Scaup	Lapland Longspur	Pintail	Ring-necked Duck	Spotted Redshank
Caspian Tern	Curlew	White-fronted Goose	Lapwing	Shoveler	Robin	Stock Dove
Citrine Wagtail	Curlew Sandpiper	Green Sandpiper	Lesser Black-backed Gull	Wheatear	Rock Dove	Stonechat
Swallow	Tree Sparrow	Whimbrel	Wood Pigeon	Yellow Wagtail	Twite	Tree Pipit
Tawny Owl	Tufted Duck	Whooper Swan	Wood Sandpiper	Yellowhammer	Upland Sandpiper	Water Rail
Teal	Bewick's Swan	Red Grouse	Woodcock	Nuthatch	Wren	