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West Pier, Scarborough, North Yorkshire

Bat Survey, May 2023.

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Notes :	This report contains sensitive information concerning protected species and caution should be exercised when copying and distributing to third parties.	

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1.0 EXECUTIVE SUMMARY

1.1 In January 2022 and January 2023, Wold Ecology was commissioned by Scarborough Borough Council to undertake a bat survey and assessment at West Pier, Scarborough. The site is located at approximate National Grid Reference TA 04788 88678, in North Yorkshire.

1.2 The field survey results are summarised below:

		Application Site Status
Proceed with caution, timing constraints	Birds	Birds are afforded various levels of protection and levels of conservation status on a species by species basis. The most significant general legislation for British birds lies within Part 1 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation, it is an offence to, kill, injure or take any wild bird, take, damage or destroy the nest of any wild bird while that nest is in use or being built, take or destroy an egg of any wild bird. All nests should remain undisturbed and intact until after the breeding bird season – mid February to early September. Planning consent for a development does not provide a defence against prosecution under this act. No bird's nests were observed in the buildings (refer to section 8.0).
No roosting bats, Method Statement approach (Section 7.0) – Building 1 – 6	Bats	The field surveys during January 2023 and May 2023 did not identify any evidence of roosting bats. As no bats or signs of bats were recorded in the studied buildings, a Natural England European Protected Species development license is not required. The method statement outlined in section 7.2 details the best working practice and precautions to be taken to avoid breaking the law and must be followed and provided to all contractors involved with the renovation and demolition of the buildings.
No constraints	Barn owl	There was no evidence of barn owls <i>Tyto alba</i> roosting in the buildings. There was no suitable access for barn owls to roost in the buildings. No further surveys recommended.

1.3 **Bat roosts are protected throughout the year, whether bats are present or not.**

1.4 All bats and their roosts are fully protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and are further protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Should any bats or evidence of bats be found prior to or during development, work must stop immediately, and Natural England contacted for further advice. This is a legal requirement under the aforementioned acts and applies to whoever carries out the work.

1.5 Planning consent for a development does not provide a defence against prosecution under this act.

1.6 Habitat enhancement for bats should be implemented as outlined in section 7.0, in order to improve foraging opportunities to bats in the local area.

1.7 The data collected to support the output of this report is valid for one year. This report is valid until **May 2024**. After this time, additional surveys need to be undertaken to confirm that the status of the buildings, as a bat roost, has not changed.

2.0 INTRODUCTION

2.1 Background Information

2.1.1 In January 2022 and January 2023, Wold Ecology was commissioned by Scarborough Borough Council to undertake a bat survey and assessment at West Pier, Scarborough. The site is located at approximate National Grid Reference TA 04788 88678, in North Yorkshire.

2.1.2 The Application Site comprises the following:

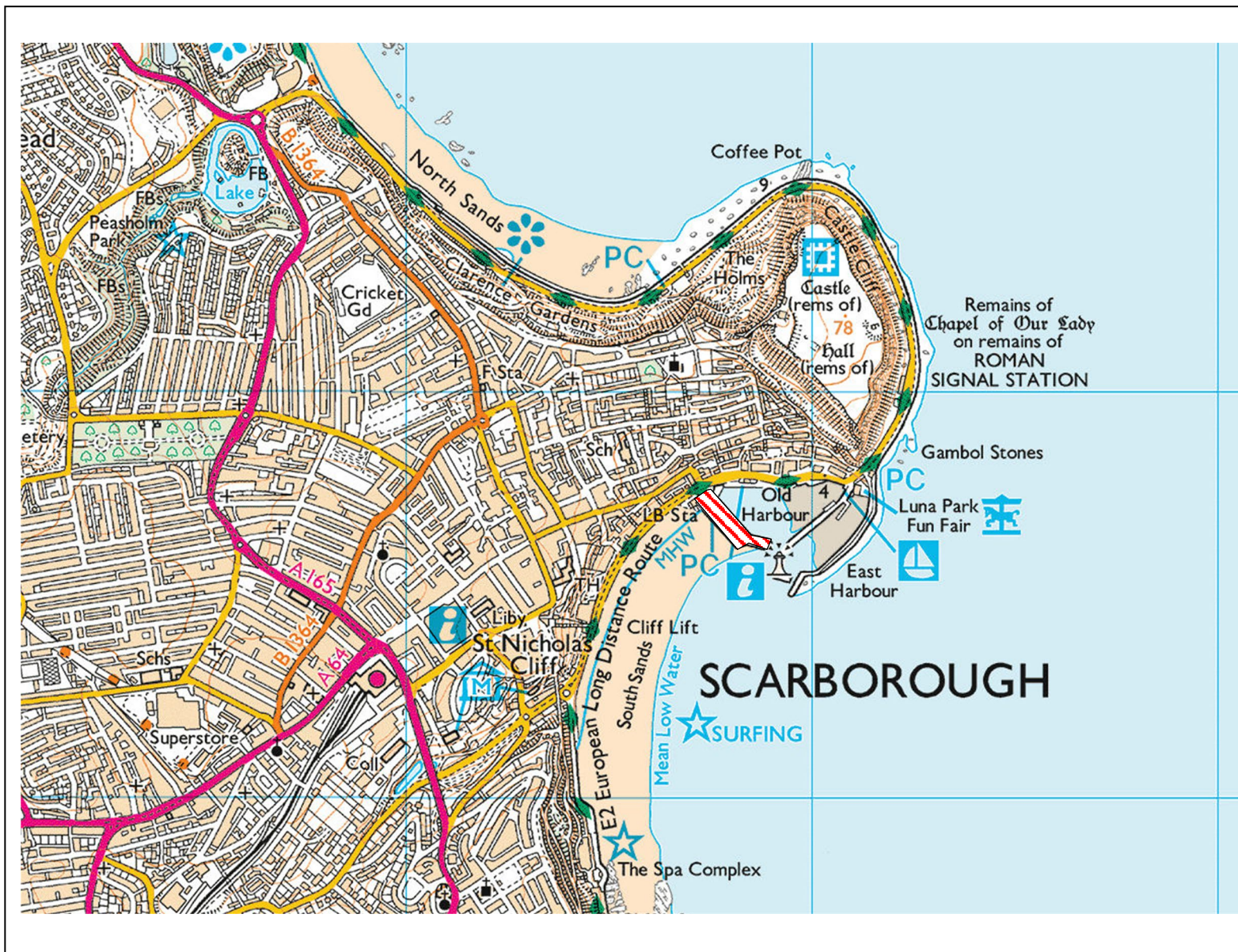
- Buildings 1 – 6

2.1.3 The proposed development includes the demolition of the kiosks (building 6), building 4 and 5, internal conversion and alterations including minor repair works to the remaining buildings on site.

2.2 Survey Objectives

2.2.1 The site was visited and assessed on 27th January 2022, 2nd February 2023, and 2nd May 2023; this was to determine whether the buildings on site contained bat roosts. The work involved the following elements:

Survey objective	Yes/No	Comments
Determine presence/absence of roosting bats	Yes	A daytime, visual inspection for bat roosts and roosting bats. Internal inspection of all accessible roof voids. An assessment of the on-site potential for bats and the likelihood of their presence. Desktop study.
Determine bat usage e.g.s maternity roost, summer roosts	Yes	An assessment of whether bats are a constraint to the development. Emergence (dusk) survey. Hibernation survey. Endoscope survey (where accessible)
Identify swarming, commuting or mating sites	Yes	The survey looked at commuting routes from the roost to foraging grounds to ensure works did not impact these.
Other	Yes	The production of a non-technical summary of the legal implications behind bat presence.
		Report the findings of the field survey work and identify recommendations for a potential mitigation strategy.



NORTH ↑

Scale: 1:25,000

Drawing title:
Location Map

KEY

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3.0 BACKGROUND TO SPECIES

3.1 Ecological overview

3.1.1 There are seventeen species of bat that currently breed in the UK. There is a wide variety of roost type and ecological characteristics between species and for this reason it is necessary to determine the species of bat and the type of roost resident in a structure prior to development. Roosts are utilised by different species of bat, at different times of year for different purposes i.e. summer, breeding, hibernating, and mating etc. (for more detailed information see section 9.0).

3.1.2 Bat populations have undergone a significant decline in the latter part of the 20th century; the main factors cited for causing loss and decline include:

- A reduction in insect prey abundance, due to high intensity farming practice and inappropriate riparian management.
- Loss of insect-rich feeding habitats and flyways, due to loss of wetlands, hedgerows, and other suitable prey habitats.
- Loss of winter roosting sites in buildings and old trees.
- Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.

3.2 Legal Framework

3.2.1 A bat survey is required prior to planning permission being granted for a development, in order to prevent the potential disturbance, injury and /or death of bats and the disturbance, obstruction and/or destruction of their roosting places. This is in compliance with the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, provision 41 states an offence is committed if a person:

- (a) Deliberately captures, injures, or kills any wild animal of a European protected species (i.e. bats),
- (b) Deliberately disturbs wild animals of any such species,
- (c) Deliberately takes or destroys the eggs of such an animal, or
- (d) Damages or destroys a breeding site or resting place of such an animal.

3.2.2 Section 9 of the Wildlife and Countryside Act (1981) states:

- It is an offence for anyone without a licence to kill, injure, disturb, catch, handle, possess or exchange a bat intentionally. It is also illegal for anyone without a licence to intentionally damage or obstruct access to any place that a bat uses for shelter or protection.

3.2.3 Bat roosts are protected throughout the year, whether or not bats are occupying a roost site.

3.3 Planning Policy Guidance

3.3.1 A bat survey is a requirement of the Local Planning Authority (LPA), as part of the planning application process. This is specified in the following government policy:

- National Planning Policy Framework (NPPF): Conserving and Enhancing the Natural Environment.

- 3.3.2 To protect and enhance biodiversity and geodiversity, plans should:
- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation.
 - b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.
 - c) Protect and enhance valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan).
 - d) recognise the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland.
 - e) Minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
 - f) Prevent new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.
- 3.3.3 When determining planning applications, local planning authorities should apply the following principles:
- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
 - b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted.
 - c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists; and
 - d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
- 3.3.4 The LPA has to assess whether the development proposal would breach Article 12(1) of the Habitats Directive. If Article 12(1) would be breached, the LPA would have to consider whether Natural England was likely to grant a European protected species licence for the development; and in so doing the LPA would have to consider the three derogation tests:

- a) 'Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'.

In addition, the LPA must be satisfied that:

- (b) 'That there is no satisfactory alternative'
- (c) 'That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.

3.3.5 Relevant Case Law

- Woolley v Cheshire East Borough (2009).
- R. (Morge) v Hampshire County Council (2011).
- Prideaux v. Buckinghamshire County Council and Fcc Environmental UK Limited (2013).

3.3.6 The rulings summarise that if it is clear or perhaps very likely that the requirements of the Directive cannot be met because there is a satisfactory alternative or because there are no conceivable 'other imperative reasons of over-riding public interest' then the authority should act on that and refuse permission.'

3.3.7 The conclusion of the judgement is that LPAs must ensure that the option/alternative that best takes into account all the relevant considerations (not just EPS) should be the preferred option assuming that the other two tests specified in Article 16 (1) are also met.

3.3.8 The judgements also clarified that it was not sufficient for planning authorities to claim that they had discharged their duties by imposing a condition on a consent that requires the developer to obtain a licence from Natural England. Natural England considers it essential that appropriate survey information supports a planning application prior to the determination. Natural England does not regard the conditioning of surveys to a planning consent as an appropriate use of conditions.

4.0 ASSESSMENT METHODOLOGY

4.1 Status of species present in Yorkshire

Bat Specie	UK Status	UK Distribution	Yorkshire Distribution
Common Pipistrelle	Not threatened	Common & widespread	Common & widespread.
Soprano pipistrelle	Not threatened	Common & widespread	Less common than common pipistrelle but fairly widespread.
Nathusius's pipistrelle	Rare	Restricted. Throughout British Isles.	Scarce, bat detector records only.
Brown long-eared	Not threatened	Widespread	Widespread.
Daubenton's	Not threatened	Widespread	Widespread.
Natterer's	Not threatened	Widespread (except N & W Scotland)	Present
Brandt's	Endangered	England and Wales	Few confirmed records.
Whiskered	Endangered	England, Wales, Ireland & S Scotland.	Present.
Noctule	Vulnerable	England, Wales, S Scotland.	Widespread
Leisler	Vulnerable	Widespread throughout the British Isles, except N Scotland.	Rare (locally common in West Yorkshire).
Barbastelle	Rare	England.	No records since 1950's.

Source - <http://www.yorkbats.freeserve.co.uk/bats.htm>

4.2 Data Review and Desk Study

4.2.1 Currently, there is no pre-existing information on bats at the site.

4.2.2 Wold Ecology employees, field surveyors and network of associate ecologists have recorded brown long-eared *Plecotus auritus*, noctule *Nyctalus noctula*, Natterer's *Myotis nattereri*, Daubenton's *Myotis daubentonii*, whiskered *Myotis mystacinus*, soprano pipistrelle *Pipistrellus pygmaeus* and common pipistrelle *Pipistrellus pipistrellus* within 5km of the Application Site. Wold Ecology bat records date from 2006 and include over 1000 bat activity surveys.

4.2.3 There are no known Natural England development licenses relating to bats within 2km of the Application Site (source – www.magic.gov.uk).

4.2.4 Wold Ecology bat activity surveys within 2km of the Application Site have recorded the following roosts:

Date	Taxon Name	Common Name	Location	County	Grid reference	Record Type	Abundance
June 2018	Pipistrellus pipistrellus	Common Pipistrelle	Bramcote Pavilion, Scarborough	N. Yorkshire	TA 04448 87193	Day	1

4.2.5 Consultation with the North Yorkshire Bat Group identified the following bat records within Scarborough.

Species	Site	Gridref	Date	Comment
Unknown	30 Graylands Park Avenue, Newby	TA023896	05-Jul-85	
Brown Long-eared Bat	Scarborough	TA0286	1985	
Unknown	85 Weaponess Valley Road, Scarborough	TA036873	30-Aug-84	Summer roost
Unknown	Brook Street, Scarborough	TA0388	08-Dec-86	Hibernating
Unknown	5 Granby Place, Scarborough	TA043888	10-Apr-87	Grounded
Pipistrelle species	3 Belvedere Road, Scarborough	TA045872	25-Jun-85	Injured
Unknown	Mill House Animal Sanctuary, Castle Road, Sca	TA0488	07-Aug-85	Roost?
Pipistrelle species	Scarborough	TA0388	08-Aug-91	Grounded
Unknown	86 Station Road, Scalby, Scarborough	TA020909	23-Apr-08	?Roost
Pipistrelle species	19 Fieldside, Scarborough	TA025898	07-Aug-08	Grounded bat
Unknown	Park Manor Hotel, Northstead Manor Dr.	TA030891	27-Jun-00	Bats getting inside building
Unknown	123 Scholes Park Road, Scarborough	TA031907	03-Jul-03	Grounded
Unknown	20 Lowdale Avenue, Scarborough	TA032897	11-Jul-03	Summer roost
Unknown	10 Spring Bank, Scarborough	TA033875	08-Dec-03	Bat inside building
Pipistrelle species	TA035882	TA035882	27-Jul-03	
Pipistrelle species	Scarborough	TA035882	06-Jun-04	
Pipistrelle species	Scarborough	TA035882	15-Jun-04	
Pipistrelle species	Scarborough	TA035882	10-Jun-08	Roost
Pipistrelle species	Scarborough	TA035882	25-Jun-08	Roost
Unknown	1 Westwood Road, Scarborough	TA036877	17-Aug-05	Grounded bat
Unknown	75 Queen's Parade, Scarborough	TA039893	16-Jul-07	Bat found in garden.
Pipistrelle species	Tudor House Hotel, Marine Drive	TA039896	12-Aug-07	Juvenile bat fell from sky near hotel.
Soprano Pipistrelle	Wood End, The Crescent, Scarborough	TA041881	27-Apr-06	In flight
Whiskered / Brandt's Bat	Wood End, The Crescent, Scarborough	TA041881	27-Apr-06	In flight
Common Pipistrelle	Wood End, The Crescent, Scarborough	TA041881	27-Apr-06	In flight
Common Pipistrelle	Wood End, The Crescent, Scarborough	TA041881	19-Jun-06	Summer roost
Common Pipistrelle	Albion Road, Scarborough	TA042877	30-Jun-09	In flight
Pipistrelle species	64 North Street, Scalby, Scarborough	TA042887	15-Jul-03	Summer roost
Unknown	Mansion House Hotel, 45 Esplanade	TA044873	28-Feb-08	Grounded bat

4.3 Daytime and Visual Inspection

4.3.1 The daytime assessment identified whether the area had any signs of occupancy and/or bat usage. This took the form of a methodical search, both internally and externally, for actual roosting bats and their signs. Specifically, the visual survey involved:

- Assessment for droppings on walls, windowsills and in accessible roof spaces.
- Endoscope survey.
- Scratch marks and staining on beams, other internal structures and potential entrance and exit holes.
- Wing fragments of butterfly and moth species underneath beams and other internal structures.
- The presence of dense spider webs at a potential roost can often indicate absence of bats.
- Assessment of crevices and cracks in the buildings to assess their importance for roosting bats.

4.3.2 Summary of daytime inspection and visual survey

Date of each survey visit	Structure reference/location	Equipment used/available	Weather
27/01/22	Buildings 1 – 6	Cluson CB2 lamp Dart endoscope Dewalt Laser Measure. 3.9m telescopic ladders Binoculars	10°C, 10% cloud. Beaufort 1, SW. No recent rain.
Comments (to include # of surveyors used for each visit): 1 surveyor undertook the visual inspection.			
02/02/23	Buildings 1 – 6	Cluson CB2 lamp Dart endoscope Dewalt Laser Measure 3.9m telescopic ladders Binoculars	6°C, 50% cloud. Beaufort 0. No recent rain.
Comments (to include # of surveyors used for each visit): 1 surveyor undertook the visual inspection.			
Personnel: Chris Toohie (Class 2 bat license - 2019-44215-CLS-CLS and RC027) – 2 nd February 2023 Daniel Lombard (Class 1 bat licence – 2015-11490-CLS-CLS) – 27 th January 2022			

4.4 Activity Surveys

4.4.1 Emergence surveys are used to determine bat presence in a building and can also give a good estimate of the numbers present. Bats can emerge up to 15 minutes before sunset and 2 hours after sunset. The survey times ensured that bats would have emerged from their roost sites and would be foraging (see section 9.4 and 9.5).

4.4.2 Summary of emergence survey(s)

Date of each survey visit	Start/end times and times of sunset	Structure reference/location	Equipment used/available	Weather
02/05/23	Sunset: 20:35 Start: 20:20 Finish: 22:15	Building 2 Building 5	Cluson CB2 lamp Digital thermometer Anabat Walkabout Wildlife Acoustics EM Touch 2 PRO EM3 Anabat Express Pulsar Helion thermal imaging scope Reolink 4K PoE IP Camera Nightfox Red Night vision camera	11°C - 8°C, 100% cloud. Beaufort 1, SE. No recent rain.
Comments (to include # of surveyors used for each visit): 6 surveyors were positioned around the site so that all potential access points, identified in the daytime, visual inspection, could be observed.				
Personnel: Daniel Lombard (Class 1 bat licence – 2015-11490-CLS-CLS) – 2 nd May 2023 Graham Coulbeck (2021-55198-CLS-CLS) – 2023 – 2 nd May 2023				

Josh Saunders (2020 – 46828 – CLS-CLS) – 2023 – 2nd May 2023
 Abi Catherall (Class 1 bat license 2022-10667-CL17-BAT) – 2nd May 2023
 Craig Hullah and Lyndsey Crawford-Darwell – 2nd May 2023

4.5 Summary of personnel

Chris Toohie MCIEEM	Project Manager of Wold Ecology with over 17 years' experience surveying bats. Chris has conducted over 950 bat activity surveys since 2006, held over 155 Natural England development licenses and is one of only 221 (January 2023) Natural England Registered Consultants who can hold a Bat Mitigation Class Licence.	RC027 and 2019-44215- CLS-CLS
Daniel Lombard MCIEEM	Experienced bat surveyor since 2008, Daniel has assisted with over 500 bat surveys for Wold Ecology and is currently working towards his bat handling license.	2015-11490- CLS-CLS
Graham Coulbeck	Experienced Wold Ecology Ltd bat surveyor with over 3 years of bat activity survey experience undertaken under the tuition of Wold Ecology licensed bat ecologists. Graham has undertaken over 250 bat activity surveys.	2021-55198- CLS-CLS
Josh Saunders	Experienced Wold Ecology Ltd bat surveyor, Josh has conducted over 300 bat activity surveys for Wold Ecology since 2017.	2020 – 46828 – CLS-CLS
Abi Catherall	Experienced bat surveyor, Abi has conducted over 100 bat activity surveys including bat monitoring with the North Yorkshire Bat Group.	2022-10667- CL17-BAT
Craig Hullah	Experienced Wold Ecology Ltd bat surveyor with over 3 years of bat activity survey experience undertaken under the tuition of Wold Ecology licensed bat ecologists. Craig has undertaken over 100 bat activity surveys.	N/A
Lyndsey Crawford- Darwell	Wold Ecology Ltd associate with bat activity survey experience undertaken under the tuition of Wold Ecology licensed bat ecologists.	N/A

5.0 RESULTS

5.1 Habitat description

5.1.1 The Application Site is located on the eastern edge of Scarborough town, in an urban coastal location. The Application Site is less than 1ha and is immediately surrounded by seashore, residential dwellings, fishing units, commercial units, retail outlets, businesses and a harbour including well-lit and heavily disturbed infrastructure. There are no other structures within the red line boundary which have bat roosting potential.

5.1.2 Adjacent and surrounding landscapes

5.1.2.1 Terrestrial habitats within 2km of Scarborough West Pier is primarily urban habitats dominated by buildings and roads. Additionally, coastal habitat including sandy beaches, harbour and open inshore waters are present ensuring the buildings are located in a relatively exposed location. Woodland cover within 2km is limited and occurs as small areas of tree cover associated with Scarborough Castle Headland and amenity tree planting; the nearest area of significant tree cover (group of more than 3 trees) is located 300m northeast of the pier. The Application Site is not directly connected to any optimum bat foraging habitat, connectivity with no optimum bat foraging or commuting habitat present within 300m.

5.1.3 Habitat Summary

5.1.3.1 A summary of the surrounding habitat is (radius of 2 - 3km from the site):

- Buildings – business, retail, fishing, and residential properties
- Scarborough Castle
- Hedgerow
- Mature trees and woodland
- Oliver's Mount Plantation
- Arable
- Mature private gardens
- Ponds and watercourses
- Grazed pasture
- The North Sea Coastline

5.1.4 Core sustenance zones

5.1.4.1 The following tables ascertain bat species (typical of the locality) core sustenance zone and which habitats are of primary importance for foraging to support the roost

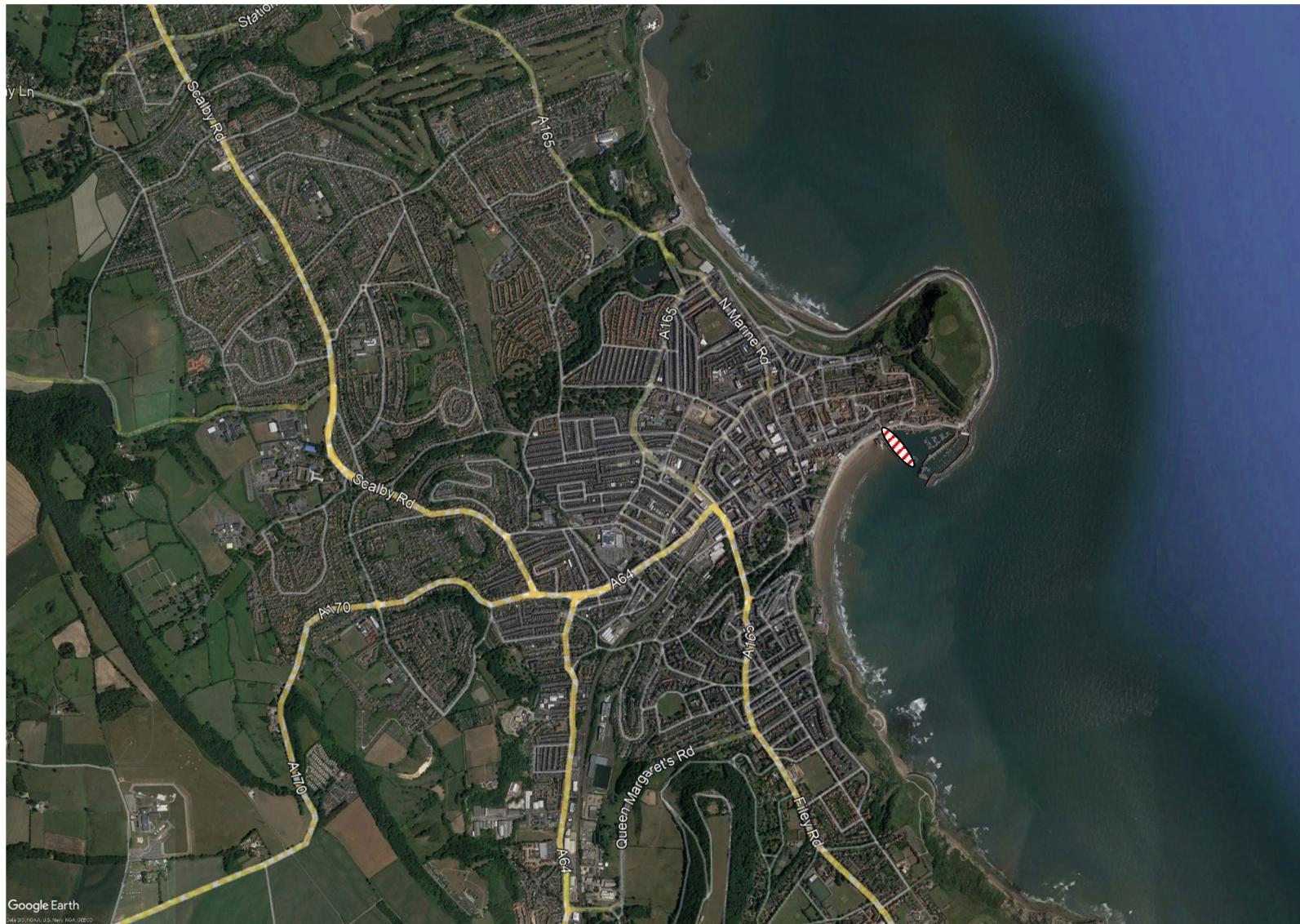
Species	CSZ radius (km)
Brown long-eared bat <i>Plecotus auritus</i>	3
Daubenton's bat <i>Myotis daubentonii</i>	2
Natterer's bat <i>Myotis nattereri</i>	4
Whiskered/Brandt's/Alcathoe bat <i>Myotis mystacinus/brandtii/alcatboe</i>	1
Common pipistrelle <i>Pipistrellus pipistrellus</i>	2
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	3
Nathusius pipistrelle <i>Pipistrellus nathusii</i>	3
Noctule <i>Nyctalus noctula</i>	4
Leisler's bat <i>Nyctalus leisleri</i>	3

5.1.5 Wold Ecology concludes that the immediately adjacent habitats (within the development zone of influence and up to 50m from the Application Site boundary) are only likely to be used by occasionally commuting and foraging bats. Primary and secondary habitats are limited within 2km and these sub optimum urban habitats are extensive, well lit, disturbed, exposed and fragmented; they are similar to surrounding urban and maritime habitats and consequently, the Application Site and surrounding habitats are not considered to be integral to the favourable conservation status of local bat populations and are considered to have negligible suitability for commuting and foraging bats.

5.1.6 Wold Ecology concludes that habitats within 3km primarily comprise fragmented sub optimum and secondary habitats features which are relatively isolated and located in excess of 500m from the Application Site.

5.1.7 Primary and secondary bat habitats in relation to core sustenance zones

Bat species	Primary habitats/features	Secondary habitats
Noctule		Found in a range of habitats foraging in the open or often over trees, pasture and water
Leisler's	Sympathetically managed pasture appears to be a preferred foraging habitat in both Great Britain and Ireland (Shiel and Fairley, 1999; Waters et al., 1999), Use is also made of woodland edges and tree-lined roads (Waters et al., 1999; Russ and Montgomery, 2002).	Drainage channels, lakes, rivers, canals, coniferous forests, parkland
Common pipistrelle	The common pipistrelle bat forages over sympathetically managed grazed pasture and deciduous woodland.	
Soprano pipistrelle	The soprano pipistrelle bat is frequently reported to make particular use of riparian habitat (Davidson-Watts and Jones, 2006; Nicholls and A. Racey, 2006; Lintott et al., 2016	In woodlands edges
Nathusius pipistrelle	Riparian habitats, large freshwater lakes, estuaries and canals. Broad-leaved & mixed woodland edges and parkland.	Managed gardens and fields around lakes
Whiskered bat	Studies indicate a preference for, mixed or broadleaved woodland, hedgerows, Sympathetically grazed pasture riparian vegetation and wetlands.	Orchards
Brandt's bat	Woodland, particularly damp areas close to water (Taake, 1984).	Sympathetically grazed pasture.
Brown long-eared bat	The species is strongly associated with trees, particularly broadleaved preferring woodland with a cluttered understorey, (Murphy <i>et al</i> , 2012)	Will forage in mixed woodland and also forages around trees in more open habitats, including parks, orchards and gardens (Dietz and Keifer, 2016).
Natterer's bat	The species is commonly associated with trees, particularly broadleaved woodland, but also makes use of tree-lined river corridors, trees in parkland, and hedgerows adjacent to pasture (Parsons and Jones, 2003; Smith and Racey, 2008; Zeale et al., 2016).	It also forages over grassland
Daubenton's bat	The species is strongly associated with riparian habitats. It prefers large waterways with abundant woodland in the local environment (Langton et al., 2010) and, at least in upland riverine environments, it appears to select locations with trees on both banks (Warren et al., 2000)	Also forages in woodland
Alcathoe bat	Little evidence on its habitat preferences in Great Britain. However, the species is usually captured in areas with extensive semi-ancient woodland ((Jan et al., 2010; Daniel Whitby, pers. comm.); Daniel Whitby, pers. comm.).	No specific needs known



NORTH 

Scale: 1:25,000

Drawing title:
Aerial Photograph

KEY

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5.2 Building descriptions

5.2.1 The bat survey and assessment targeted the following (see section 5.5):

- a. **Building 1** - is two storeys and comprises brick walls and a pitched roof covered with rosemary tiles. The roof is supported by smooth sawn timbers and is partially lined with a breathable membrane; part of the roof was replaced during 2022. The building is used as offices and a public toilet.
- b. **Building 2** – is two storeys and comprises brick walls and a pitched roof covered with rosemary tiles. The roof is supported by smooth sawn timbers and is not lined. The building is used for offices, retail, storage and seafood processing.
- c. **Building 3** – is two storeys and comprises brick walls and a pitched roof covered with flat concrete tiles. The building is used for offices, retail, a café, storage and seafood processing.
- d. **Building 4** – is single storey and comprises brick walls with steel cladding and a pitched roof covered with corrugated pressed steel; a small section of building has a flat roof covered in asphalt. The building is used for seafood processing.
- e. **Building 5** – is two storeys and comprises brick walls and a pitched roof covered with flat concrete tiles. The building is used offices and for storage.
- f. **Building 6** – is single storey and comprises brick walls and a mono pitched roof covered with asphalt. The roof is supported by smooth sawn timbers and is not lined. The building is used as food stalls.

5.2.2 **Building 1** (see 5.5 plates 2 - 4) - no roosting opportunities were present within the fabric of the building due to the following:

- During the 2022 survey, this building was in the process of being re-roofed making it unlikely any bat roosting potential will exist after these works within the roof. It is unknown whether this roof had bat roosting potential or support roosting bats prior to these works.
- During 2023, sections of the roof remained unaltered and numerous broken tiles were present although due to the majority of the roof not being lined, the gaps were unsuitable for roosting bats.
- There are no gaps in the external mortar suitable for roosting bats. Wind damaged stonework was of insufficient depth to support roosting bats.
- The timber doors and timber window frames were tight fitting.
- The building is well lit and in an exposed location.
- There are no gaps in the roof structure to support roosting bats.
- There were no obvious bat access points into the roof void.
- Due to the unlined nature of the roof structure, the roof void was very draughty ensuring fluctuating temperatures and climates within the roof.
- No evidence of bats was observed.
- The building has been assessed as having a NEGLIGIBLE SUITABILITY to support bats.

5.2.3 **Building 2** (see 5.5 plates 5 - 7) - the following roosting opportunities were present within the fabric of the building:

- There are no gaps beneath the lead ridges, and none are missing.
- Loose fitting tiles with gaps beneath although the majority (over 95%) are tight fitting.
- Missing/slipped tiles.
- Lead flashing is tight fitting.

- Missing mortar in the external stone work although these were checked with an endoscope and no evidence of bats were observed.
- Gaps adjacent to timber doors and timber windows although these were checked with an endoscope and no evidence of bats were observed.
- There was no open doors/window access into the building.
- Gaps adjacent to steel lintels.
- The building is well lit and in an exposed location.
- Gaps above the internal wall plates were too wide to support roosting bats.
- Gaps between the internal roof timbers and tiles above were too wide to support roosting bats.
- Due to the partially unlined nature of the roof structure and gap between tiles and internal roof boarding, the roof void was very draughty ensuring fluctuating temperatures and climates within the roof.
- There were no obvious bat access points into the roof void.
- No evidence of bats was observed.
- The building has been assessed as having a **LOW SUITABILITY** to support bats.

5.2.4 **Building 3** (see 5.5 plates 6 and 8) - no roosting opportunities were present within the fabric of the building due to the following:

- There are no gaps beneath the ridge tiles, and none are missing.
- Approximately 5 loose fitting tiles with gaps beneath were present adjacent to roof vents; the remaining tiles are tight fitting.
- Gaps behind lead flashing which had peeled back due to strong winds and was unsuitable for roosting bats.
- Coping stones were tight fitting.
- The boxed timber eaves are tight fitting and there are no gaps in the external mortar suitable for roosting bats.
- The timber doors and timber window frames were tight fitting.
- The building is well lit and in an exposed location.
- There were no obvious access points into the roof void.
- No evidence of bats was observed.
- The building has been assessed as having a **NEGLIGIBLE SUITABILITY** to support bats.

5.2.5 **Building 4** (see 5.5 plate 9) - no roosting opportunities were present within the fabric of the building due to the following:

- The flat roof asphalt covered roof was tightfitting.
- The eaves are tight fitting and missing mortar in putlock holes on walls were inspected with an endoscope and no evidence of bats were observed. The majority were full of debris and of insufficient depth to support roosting bats.
- The timber/UPVC doors and window frames were tight fitting.
- There are no gaps within the metal roof structure to support roosting bats.
- The doors frames were tight fitting.
- Steel cladding on walls is tight fitting.
- The building is well lit and in an exposed location.
- There were no obvious access points into the roof void.
- No evidence of bats was observed.
- The building has been assessed as having a **NEGLIGIBLE SUITABILITY** to support bats.

5.2.6 **Building 5** (see 5.5 plates 11 and 12) - the following roosting opportunities were present within the fabric of the building:

- There are no gaps beneath the ridge tiles, and none are missing.
- Gaps in missing mortar below gable coping stones.
- Gaps above the eaves.
- Missing mortar in putlock holes.
- Gaps adjacent to timber doors and timber windows.
- The building is well lit and in an exposed location.
- There was no open doors/window bat access into the building.
- No evidence of bats was observed.
- The building has been assessed as having a **LOW SUITABILITY** to support bats.

5.2.7 **Building 6** (see 5.5 plates 1) - no roosting opportunities were present within the fabric of the kiosks due to the following:

- The single pitched asphalt covered roof was tightfitting.
- The eaves are tight fitting and there are no gaps in the external mortar suitable for roosting bats.
- The single skin brick structure ensures that there are no gaps within a wall cavity.
- The timber doors and timber window frames were tight fitting.
- There are no gaps in the roof structure to support roosting bats.
- There was no open doors/window access into the building.
- No evidence of bats was observed.
- The kiosks have been assessed as having a **NEGLIGIBLE SUITABILITY** to support bats.

5.3 Based on the field survey and the criteria in table 4.1 (Bat Surveys for Professional Ecologists – 3rd Edition, p35. Bat Conservation Trust, 2016), the Application Site and studied buildings have the following suitability for bats:

	Negligible	Low	Moderate	High
Application Site habitats (<3km)	X			
Building 1	X			
Building 2		X		
Building 3	X			
Building 4	X			
Building 5		X		
Building 6	X			

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^a and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation ^b). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. ^c	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^a 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).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	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 ^a and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Source - Bat Surveys for Professional Ecologists – 3rd Edition, p35. Bat Conservation Trust, 2016.

5.3 Justification of activity surveys

5.3.1 The level of survey to give confidence in a **negative result** is summarised as (Bat Surveys for Professional Ecologists, 3rd Edition. Bat Conservation Trust, 2016):

Low Roost Suitability	Moderate Roost Suitability	High Roost Suitability
One survey visit. One dusk emergence or dawn re-entry survey.	Two separate survey visits. One dusk emergence survey and a separate dawn re-entry survey.	Three separate survey visits. At least one dusk emergence survey and a separate dawn re-entry survey. The third visit could either be dusk or dawn.
May to August.	May to September with at least one survey between May to August.	May to September with at least two surveys between May to August.

Activity surveys should be at least 2 weeks apart. Moderate buildings will be assessed according to site location and habitats within the locality and if there is a possibility that late emerging bats are present, a dawn survey will be more appropriate.

5.3.2 The Application Site requires the following surveys between May and late September:

	Emergence (dusk)			Re-entry (dawn)		
	LOW	MOD	HIGH	LOW	MOD	HIGH
Building 2	x 1					
Building 5	x 1					
Buildings 1, 3, 4 and 6	Negligible building - No further surveys recommended.					

5.4 Results of Activity Surveys

5.4.1 Emergence Survey

5.4.1.1 2nd May 2023

- No bats were observed during the survey or seen emerging from the buildings.
- Wold Ecology have been undertaking bat surveys during April and May throughout North & East Yorkshire and have observed/detected common pipistrelle, soprano pipistrelle, Daubenton's, natterer's, whiskered, noctule and brown long-eared bats in flight and in roosts. It is considered that bats are fully active in the wider area.

5.4.1.2 For survey results see appendix 10.4.

5.5

Photographs of key features – February 2023

Plate 1 – Kiosks (Building 6), north and west elevation.



Plate 2 – Building 1, east elevation and north gable.



Plate 3 – Building 1, west elevation and north gable.



Plate 4 – Building 1, internal roof void.



Plate 5 – Building 2, west elevation and north gable.



Plate 6 – Buildings 2 and 3, east elevation and north gable.



Plate 7 – Building 2, internal roof void.



Plate 8 – Building 3, west elevation and south gable.



Plate 9 – Building 4, west elevation and south gable.



Plate 10 – Building 8, west elevation and north gable.



Plate 11 – Building 5, east elevation and south gable.



Plate 12 – Building 5, east elevation and north gable.





NORTH ↑
 Not to Scale

Drawing title:
 Layout plan of the
 Application Site and
 summary of bat surveys.

KEY

⊕ Location of surveyor –
 2nd May 2023

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5.6

Summary of field surveys conducted in 2023

Date	Type of survey	Results
02/02/23	Habitat assessment	Wold Ecology concludes that the immediately adjacent habitats (within the development zone of influence and up to 50m from the Application Site boundary) are only likely to be used by occasionally commuting and foraging bats. Primary and secondary habitats are limited within 2km, and these sub optimum urban habitats are extensive, well lit, disturbed, exposed and fragmented; they are similar to surrounding urban and maritime habitats and consequently, the Application Site and surrounding habitats are not considered to be integral to the favourable conservation status of local bat populations and are considered to have negligible suitability for commuting and foraging bats.
02/02/23	Visual inspection.	<i>Building 1</i> There were no signs of roosting bats or bat activity, and the building has no features to support roosting bats. Consequently, the building has a NEGLIGIBLE SUITABILITY to support roosting bats (see 5.3 plates 2 - 4).
		<i>Building 2</i> There were no signs of roosting bats or bat activity, and the building has few features to support roosting bats. Consequently, the building has a LOW SUITABILITY to support roosting bats (see 5.3 plates 5 - 7).
		<i>Building 3</i> There were no signs of roosting bats or bat activity, and the building has no features to support roosting bats. Consequently, the building has a NEGLIGIBLE SUITABILITY to support roosting bats (see 5.3 plates 6 and 8).
		<i>Building 4</i> There were no signs of roosting bats or bat activity, and the building has no features to support roosting bats. Consequently, the building has a NEGLIGIBLE SUITABILITY to support roosting bats (see 5.3 plate 9).
		<i>Building 5</i> There were no signs of roosting bats or bat activity, and the building has few features to support roosting bats. Consequently, the building has a LOW SUITABILITY to support roosting bats (see 5.3 plates 11 and 12).
		<i>Building 6</i> There were no signs of roosting bats or bat activity, and the building has no features to support roosting bats. Consequently, the building has a NEGLIGIBLE SUITABILITY to support roosting bats (see 5.3 plate 1).
02/02/23	Hibernation.	No hibernating bats were observed during the endoscope survey.
02/05/23	Emergence	No roosting bats were observed emerging from the buildings.

5.7 Interpretation and Evaluation of Survey Results

5.7.1 Presence/absence

- 5.7.1.1 No roosting bats or evidence of roosting bats were observed during the field surveys. No bats were observed during the activity surveys, primarily due to the site location, poor habitat connectivity within the locality, lighting, suboptimum habitats immediately adjacent to the buildings and exposed conditions in association with the North Sea.

5.7.2 Site Status Assessment

- 5.7.2.1 Based on a building inspection and an emergence survey, it has been determined that the kiosks and buildings 1 – 6, 8 & 9 are unlikely to support a bat roost. The results are based on survey work conducted in May, but as the buildings have a low suitability to support roosting bats, there remains the possibility that bats could use the buildings at other times of the year.
- 5.7.2.2 West Pier is located adjacent to exposed, fragmented, well-lit and sub-optimum foraging habitat that is unlikely to have an important role in the ecology of the local bat population.

5.7.3 Constraints

- 5.7.3.1 A bat activity survey has not been undertaken between the months of June and August.

6.0 IMPACT ASSESSMENT

- 6.1 Based on current information, the kiosks and buildings 1 – 6, 8 & 9 do not support a bat roost. Consequently, the impact to roosting bats from the conversion and demolition of the buildings is considered to be **negligible**.
- 6.2 The current information obtained is based on a desk top study, visual inspection and activity survey conducted in May. No bat activity surrounding the buildings was observed and consequently, the impact to bat populations locally, nationally and regionally from the proposed development is considered to be **negligible**.

7.0 MITIGATION & COMPENSATION

7.1 Legal Protection

7.1.1 Legal obligations towards bats are generally concerned with roost protection. All developments, known to contain bat roosts, require a development licence from Natural England. Under the Wildlife and Countryside Act (1981) and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, it is an offence for anyone without a licence to:

- Deliberately take , injure or kill a wild bat
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.
- Damage or destroy a place used by bats for breeding or resting (roosts) (even if bats are not occupying the roost at the time)
- Possess or advertise/sell/exchange a bat of a species found in the wild in the EU (dead or alive) or any part of a bat.
- Intentionally or recklessly obstruct access to a bat roost.

7.1.2 Planning consent for a development does not provide a defence against prosecution under these acts.

7.1.3 **Bat roosts are protected throughout the year, whether bats are present or not.**

7.1.4 As no bat roosts or evidence of bats were detected in the kiosks and buildings 1 – 6, 8 & 9 during the surveys, conversion and demolition work to the aforementioned buildings would not require a Natural England development licence. However, buildings 2 and 5 have a low suitability of bat interest and therefore have features that could support roosting bats. There is a low possibility that individual bats could roost in the buildings at any time during the year. The following procedures highlighted in Section 7.2 should be adopted during the demolition/conversion works. Section 7.2 identifies working practices or precautions necessary to avoid injury or death to any bats that may be present in the buildings.

7.2 Method Statement

7.2.1 **This statement should be copied to contractors and all those involved with tile removal, soft strip, demolition, timber treatment, roofing, structural works, new glazing and building works, whose work may affect bats and their roosts on site. Even though bats have not been found, building works should occur as though bats could be present.**

- 7.2.2 Timing
- 7.2.2.1 There are no mandatory timing constraints when roosting bats have not been found.
- 7.2.3 Locating Bats
- 7.2.3.1 Bats are by nature highly secretive, mobile mammals, therefore bats and their roosts can be very difficult to detect. A pipistrelle bat is capable of roosting in a crack measuring 20mm. In order to reduce any unnecessary disturbance, injury or death of any late discoveries of individual bats roosting in the buildings the following procedures should be implemented. Common roosts locations must be checked. These include:
- Underneath tiles and roof coverings
 - Underneath ridge tiles
 - Crevices in brick work and gaps in mortar
 - Above the eaves and internal wall plates
 - Around window/door frames
 - Around steel lintels
 - Beneath lead flashing
- 7.2.4 Working Approach
- 7.2.4.1 Careful removal by hand of all fittings and fixtures as describe in 7.2.3. Wall cavities should be checked prior to demolition (where applicable) and pointing.
- 7.2.4.2 Remove roof coverings by hand. Only half of the roof should be removed on the first day and the second half 24 hours later. This will create unfavourable conditions for any bats still roosting within the roof structure and encourage the bats to leave on their own accord.
- 7.2.4.3 In the unlikely event that bats are discovered:
- Immediately stop the work that you are undertaking.
 - Do not expose the bat or cause it to fly out of the roost on its own accord.
 - Contact Wold Ecology on 01377 200242 or 07795 071504 for advice.
 - Advise colleagues in the vicinity of your work why you have stopped and advise them to be aware of the potential for bats being disturbed, injured or killed.
 - Immediately report the matter to your site manager/line manager who will inform relevant personnel.
 - Grounded bats must be carefully placed in a lidded, ventilated box with a piece of clean cloth and a small shallow container with some water. The box must be kept in a safe and quiet location.
 - Any underweight or injured bats must be taken into temporary care by an experienced bat carer and looked after until such time that the bat can be transferred to a suitable replacement roost at the same site, or weather conditions are suitable for release at the same site.
- 7.2.4.4 Bats will only be handled by a licensed bat ecologist, wearing gloves, who has received a rabies vaccination. The bat will be placed either into a holding box, with water provided, and re-released close to the farm at dusk, or placed into a bat box located on site.

- 7.2.4.5 Injured bats will be taken into care (as directed by the Bat Workers Manual, section 7.3, pages 64 – 66: 3rd edition 2004) and fed and cared for until such time when conditions are suitable (night time temperature are >6⁰C) for them to be released at dusk in the mitigation area.
- 7.2.5 Bat boxes
- 7.2.5.1 Specially designed bat boxes can be located on site. Schwegler Bat Boxes are recommended and well tested boxes. The following bat boxes provide additional roost habitats and are available from Wold Ecology:
- The **1FQ** is an attractive box designed specifically to be fitted on the external wall of a house, barn or other building. Equally appealing to bats as a roost or a nursery, it features a special porous coating to help maintain the ideal temperature inside along with a rough sawn front panel to enable the bats to land securely.
- 7.2.5.2 The majority of these boxes are self-cleaning as they are designed so that the droppings fall out of the entrance. This reduces the possibility of smell during the summer months. For more information on designs and installation of bat boxes see: www.schwegler-natur.de and www.bct.org.uk.
- 7.2.5.3 Wold Ecology recommends that at least 1 bat box is sited on a building on site. Bat boxes should be erected on south, east or west elevations/aspects; 3-5 metres above ground level or close to roof lines.
- 7.2.6 Lighting
- 7.2.6.1 Lighting has a detrimental effect on bat activity; many bats will actually avoid areas that are well lit. Lighting can cause habitat fragmentation by preventing bats from commuting between roosts and foraging grounds (A.J Mitchell-Jones 2004).
- 7.2.6.2 It is recommended that a lighting consultant is employed to design a lighting plan based on the following principles:
- Luminaire and light spill accessories - Lighting should be directed to where it is needed, and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.
 - If applicable, the height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting, this can take the form of low level lighting that is as directional as possible and below 1 lux at ground level.
 - Aim for lighting column of 5m or less, hooded and cowled to prevent light spill, for main lighting columns.
 - All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
 - LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
 - A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
 - Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).

- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.
- Light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding

7.2.6.3 At this site, new lighting design will ensure lights will **not** be mounted where they will shine directly on to bat boxes.

7.2.7 Timber treatment

7.2.7.1 It is good practice, where bats may come into contact with roof timbers, to carry out timber treatment using Permethryn type chemicals on the Natural England list of approved safe chemicals. New pre-treated timbers i.e. tanalised timber will be allowed to dry thoroughly before use, if applicable. A list of Natural England approved paints and timber treatments is available at <https://www.gov.uk/guidance/bat-roosts-use-of-chemical-pest-control-products-and-timber-treatments-in-or-near-them>

8.0 BIRDS

8.1 Birds are afforded various levels of protection and levels of conservation status on a species by species basis. The most significant general legislation for British birds lies within Part 1 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation, it is an offence to, kill, injure or take any wild bird, take, damage or destroy the nest of any wild bird while that nest is in use or being built, take or destroy an egg of any wild bird.

8.2 The daytime assessment identified whether the studied buildings had any signs of residency and/or barn owl usage. Specifically, the visual survey involved:

- An assessment of the suitability of buildings or stone feature to enable access for breeding barn owls.
- A thorough check for pellets, feathers or signs of old nest remains in the form of pellet debris and/or old broken egg shells.

8.3 The visual inspection also recorded any other visible active/disused nests and bird activity within the buildings.

8.4 Field survey results

8.4.1 There was no evidence of barn owls *Tyto alba* roosting in the buildings and there was no suitable access for barn owls to roost in the buildings. No further surveys are recommended.

8.4.2 No birds' nests were observed in the buildings.

8.5 Biodiversity Gains and Recommendation

8.5.1 All nests should remain undisturbed and intact until after the breeding bird season – mid February to early September. Any destructive building works (e.g. demolition, roof stripping, internal conversion, pointing of masonry etc.) should be undertaken outside of the bird nesting season which is between the months of mid-September and early February inclusive or be carefully checked by an ecologist to confirm no active nests are present. If nesting birds are found during the watching brief, destructive works will need to stop until the young have fledged.

8.5.2 In order to increase nesting opportunities for birds, it is recommended that Schwegler bird boxes are erected throughout the site. Local Authority guidance recommends that 25% of houses within a development should contain a bird box.

8.5.3 Bird boxes will target species of conservation concern. A summary of recommended bird boxes are listed below:

Name	Description	Number
Schwegler sparrow terrace #1SP	Brick building box	3

8.5.4 Boxes should be placed so that the entrance does not face the prevailing wind, rain and strong sunlight. The sector from north to south east should be used, with south facing boxes positioned in more shaded areas.

8.5.5 Many species will use boxes at a wide variety of heights however to give the box protection in areas with a lot of human or mammalian predator activity they should be placed approximately 3-4 metres above ground level. A clear flight path should be available to and from the nest box.

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Thomas, D.W. 1995. The physiological ecology of hibernation in vespertilionid bats. Symposia of the Zoological Society of London 67: 233–244.

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UK Mammals: Species Status and Population Trends. JNCC / Tracking Mammals Partnership. 2005

www.bats.org.uk

10.0 APPENDICES

10.1 Background to Bats - Bat Biology.

- 10.1.1 Bats roost in a variety of places such as caves, mines, trees, and buildings. Woodlands, pasture, ponds and slow flowing rivers or canals provide suitable feeding areas for bats as they support an abundance of suitable insect forage. Bats tend to feed during the first two to three hours after sunset and again before dawn, when insect activity is at its most intense (JNCC 2004).
- 10.1.2 Bat activity over the course of a year reflects the seasonal climate and the availability of food as follows (The Bat Conservation Trust, undated):
January - March - insect prey is scarce, and bats will hibernate alone or in small groups.
April - May - insects are more plentiful and bats will become active. They may become torpid (cool and inactive) in bad weather. Females will start to form groups and will roost in several sites.
June - July - females gather in maternity roosts and give birth to young, which are suckled for several weeks. Males roost alone nearby.
August - September – mothers leave the roost before the young. Bats mate and build up fat for the winter.
October - December – Bats search for potential hibernacula. They become torpid for longer periods and then hibernate.
- 10.1.3 Bats do not stay in the same roost throughout the year. They have different requirements of roosts at different times of the year. During late April/May the bats leave their winter roosts and the females come together to form ‘nursery roosts’, these usually consist of pregnant females along with a few non-breeding and immature females. At this time, the males roost either singly or in small numbers. The single offspring is born during late June early July and can fly within 3-5 weeks.
- 10.1.4 Typical roost sites are cracks and crevices in buildings and other structures but more typically under hanging tiles, slates, soffits and cavity walls of fairly modern buildings or holes and splits in trees.
- 10.1.5 The conditions needed by bats for hibernation require the maintenance of a relatively stable low temperature (2 – 6^o). Suitable sites include; old trees, caves, cellars, tunnels, and icehouses.
- 10.1.6 Whilst the summer roosts consist of single species (although 2 – 3 species can be found within one large structure but occupying separate roost sites), winter sites often consist of 4 – 6 different species of bat, although there is often niche separation.
- 10.1.7 Bats have a complex social structure based on ‘meta populations’ and also utilise other transitional or intermediate roost sites. The several different types of roost, which bats occupy throughout the year, are as follows:
- **Day roost:** a place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer.
 - **Night roost:** a place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.

- **Feeding roost:** a place where individual bats or a few individuals rest or feed during the night but are rarely present by day.
- **Transitional/occasional roost:** used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
- **Swarming site:** where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites
- **Mating sites:** sites where mating takes place from later summer and can continue through winter.
- **Maternity roost:** where female bats give birth and raise their young to independence.
- **Hibernation roost:** where bats may be found individually or together during winter. They have a constant cool temperature and high humidity. These have to be cold and free from any temperature fluctuation with high humidity. The coldness enables bats to lower their body temperature and become torpid. This saves a lot of energy, enabling them to survive on the fat stores within their bodies that they have built up throughout the summer.
- **Satellite roost:** an alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

10.1.8 The main threats to bats include:

- Habitat loss (e.g. deforestation)
- Loss of feeding areas as a result of modern forestry and farming practices.
- Use of toxic agrochemicals and remedial timber treatment chemicals.
- Disturbance and damage to bat roosts.

10.1.9 Bats have been in decline both nationally and internationally during the latter part of the 20th Century. Bats require a variety of specific habitats in order to meet the basic needs of feeding, breeding, and hibernating and are therefore extremely vulnerable to change such as the loss of flight lines through the removal of hedgerows. It is thought that even the two most common and widespread bats, the common pipistrelle and the soprano pipistrelle, have declined by an estimated 70% (1978-1993 figures). There are a number of bat species, which are now considered seriously threatened with one species, the greater mouse-eared bat being classed as extinct as it is no longer breeding in the U.K.

10.1.10 All European bats are listed in Annex IV of the EC Directive 92/94/EEC ‘The Conservation of Natural Habitats and of Wild Fauna and Flora’ as needing “strict protection”. This is translated into British Law under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. British bats are included under Schedule 5 of the Wildlife & Countryside Act 1981. They can therefore be described as a ‘fully protected’ or ‘protected’ species.

10.1.11 A summary of the legal protection afforded to bats under both European and British law is provided by the Bat Conservation Trust (BCT, 2010): ‘All European bat species and their roosts are listed in Annex IV of the EC Directive 92/94/EEC ‘The Conservation of Natural Habitats and of Wild Fauna and Flora’ as needing “strict protection”. This is implemented in Britain under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. In summary, in the UK, it is an offence to:

- Deliberately capture, injure, or kill a bat;

- Deliberately disturb a bat in a way that would affect its ability to survive, breed or rear young, hibernate or migrate or significantly affect the local distribution or abundance of the species;
 - Damage or destroy a roost (this is an absolute offence); and
 - Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.’
- 10.1.12 The species is also listed in Appendix II of the Bonn Convention (and its Agreement on the Conservation of Bats in Europe) and Appendix II of the Bern Convention (and Recommendation 36 on the Conservation of Underground Habitats). Although these are recommendations and not statutory instruments.
- 10.1.13 Natural England is the Government body responsible for nature conservation. Local planning authorities must consult them before granting planning permission for any work that would be likely to result in harm to the species or its habitat. Natural England issue “survey” licenses for survey work that requires the disturbance or capture of a species for scientific purposes. They also issue “conservation” licenses that are required for actions that are intended to improve the natural habitat of a European protected species or to halt the natural degradation of its habitat.
- 10.1.14 ‘Development’ licences are issued by Natural England for any actions that may compromise the protection of a European protected species, including bats, under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. This includes all developments and engineering schemes, regardless of whether or not they require planning permission.
- 10.1.15 The UK Biodiversity Action Plan states that although the pipistrelle is one of the most abundant and widespread bat species in the UK, it is still thought to have undergone a significant decline in the latter part of this century. The main factors cited for causing loss and decline include:
- A reduction in insect prey abundance, due to high intensity farming practice and inappropriate riparian management.
 - Loss of insect-rich feeding habitats and flyways, due to loss of wetlands, hedgerows, and other suitable prey habitats.
 - Loss of winter roosting sites in buildings and old trees.
 - Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.

10.2 Significance of bat roosts, appraising the nature conservation value;

- 10.2.1 The significance of bat roosts should be appraised against the following table. Where the extent of the bat roost is unclear a precautionary approach should be taken in evaluating the significance of the roost and the highest potential category should be selected.

Table 10.2.1 Appraisal of significance of bat roosts.

Scale	Summary	Examples
International	Any significant roosting sites for European Annex 2 species	Barbastelle bat roosts are only known applicable feature in East Anglia.
National	Any roosts qualifying as SSSI under the EN criteria.	Details of criteria are given in

		9.1.2 Site Selection Guidelines for Biological SSSI's.
Regional	Any significant bat roosts and features, equivalent in interest to qualifying a site as a Country Wildlife Site.	Breeding and hibernation roosts of most species.
Local	All other sites supporting feeding bats as Wildlife and Countryside Act protected species.	Bats foraging within a structure, night roosts and minor transition roosts.

10.3 Summary of conservation significance of roost types (Bat Mitigation Guidelines, 2004).

Roost type	Development effect	Scale of impact		
		Low	Medium	High
Maternity	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Temporary disturbance outside breeding season	✓		
	Post-development interference			✓
Major hibernation	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Temporary disturbance outside hibernation season	✓		
	Post-development interference			✓
Minor hibernation	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction, modification		✓	
	Modified management		✓	
	Temporary disturbance outside hibernation season	✓		
	Post-development interference		✓	
	Temporary destruction, then reinstatement	✓		
Mating	Destruction		✓	
	Isolation caused by fragmentation		✓	
	Partial destruction	✓		
	Modified management	✓		
	Temporary disturbance	✓		
	Post-development interference	✓		
	Temporary destruction, then reinstatement	✓		
Night roost	Destruction	✓		
	Isolation caused by fragmentation	✓		
	Partial destruction	✓		
	Modified management	✓		
	Temporary disturbance	✓		
	Post-development interference	✓		
	Temporary destruction, then reinstatement	✓		

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

10.4 Bat records for activity surveys conducted in 2023

Date – 2nd May 2023
No bats were observed during the survey.