

Project

Barry Docks, Wales
Bat Roost Survey Report

Project No

EN038

Client:

ABP Marine Environmental Research
Limited

Date

September 2014

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Client:

ABP Marine Environmental Research Limited

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28-07-2014 to 12-09-2014

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The advice which we have prepared and provided is true to the best of our knowledge and with the information made available at the time, and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct.

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Date

September 2014

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Summary

Following the Stage 1 Bat Survey undertaken during May 2014 (Thomson Ecology Report Reference AABP103/002/001), it was considered necessary that bat roost surveys be carried out in order to establish whether bats species were roosting within the network of buildings at Barry Docks, Wales (central Grid Reference ST 12996 67280).

The application site is located within a larger wider site. There are 23 buildings present within the wider site, mostly situated outside of the application site. Current development proposals include the clearance of some scrub habitat and the retention of all buildings. From the previous Stage 1 Bat Survey, 11 buildings within the wider site were identified as having the potential to support roosting bats. Multiple access and roosting points were identified across the 11 buildings; which included open windows, lifted flashing, gaps in soffit boxes and missing tiles.

Preliminary Roost Assessments were undertaken on four buildings that internal access could not be obtained during the initial surveys. The results of the internal inspection of these buildings confirmed that the level of potential previously assigned to the buildings was appropriate. A number of dusk emergence and dawn re-entry surveys were carried out on the 11 buildings. Roosting bats were confirmed in seven buildings. Species observed using the buildings were Common pipistrelle *Pipistrellus pipistrellus*, Soprano pipistrelle *Pipistrellus pygmaeus* and brown long-eared *Plecotus auritus*.

All buildings are outside of the development footprint and therefore, no significant negative impacts of the development on bats are anticipated and their conservation status will be sustained.

1 Introduction

1.1 Site Location & Surroundings

Barry Docks is located off Atlantic Way in Barry, Wales (central Grid Reference ST 12996 67280). The application site is bordered by Cadoxton River to the east and industrial buildings to the west. Rock and mud intertidal habitat is adjacent to the south of the application site and small areas of scrub and grassland are present to the north.

1.2 Site Description

The application site is located within a wider site that comprises mainly of hardstanding, buildings and scrub habitat. The application site itself is mostly hardstanding and bare ground, with a wide strip of scrub across the centre and a narrow strip around the edge. The wider site measures approximately 30 hectares, of which the application site covers approximately half. There are 23 buildings within the wider site, most of which are clustered outside of the application site.

1.3 Project Overview

ABP Marine Environmental Research Limited propose to construct a solar farm on previously developed land at Barry Docks. Development will be confined to the application site boundary. Current development proposals include the clearance of the central section of vegetation and the demolition of two buildings B3 and B7. Both were concluded during the previous study to have negligible bat potential and were not surveyed as part of this study.

1.4 Legislation and Policy Context

All native bat species are defined as European Protected Species (EPS) through inclusion in Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended); the UK implementation of the EU Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora.

In brief, these legislative instruments make it an offence to deliberately or recklessly kill, injure or capture any bat. Roosts are protected from damage or destruction, furthermore it is illegal to deliberately disturb a bat whether roosting or otherwise.

In addition, the following native bats are identified as Priority Species within the national Biodiversity Action Plan, and are therefore adopted as Species of Principal Importance in England under Section 41 of the Natural Environment and Rural Communities Act 2006:

- Barbastelle Bat - *Barbastella barbastellus*
- Bechstein's Bat - *Myotis bechsteinii*
- Noctule - *Nyctalus noctula*
- Soprano Pipistrelle - *Pipistrellus pygmaeus*
- Brown Long-eared Bat - *Plecotus auritus*
- Greater Horseshoe Bat - *Rhinolophus ferrumequinum*
- Lesser Horseshoe Bat - *Rhinolophus hipposideros*

Natural England are the Statutory Nature Conservation Organisation for England, and have issued guidance on appropriate mitigation for bats species in the context of development.

Table 1 Guidelines for proportionate mitigation, taken from the Natural England Bat Mitigation Guidelines (2004).

Conservation Significance	Roost Status	Mitigation/Compensation
Low	Feeding perches of common/species.	Flexibility over provision of bat-boxes, access to new buildings etc. No conditions about timing or monitoring.
	Individual bats of common species.	
Medium	Small numbers of common species. Not a maternity site.	Provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable based on the species' requirements. Minimal timing constraints or monitoring requirements.
	Feeding perches of Annex II species.	
	Small numbers of rarer species. Not a maternity site.	
High	Hibernation sites for small numbers of common/rarer species.	Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for two years preferred.
	Maternity sites of common species.	
Very High	Maternity sites of rarer species.	Timing constraints. Like-for-like replacement as a minimum. No destruction of former roost until replacement completed and usage demonstrated. Monitoring for at least 2 years.
	Significant hibernation sites for rarer/rarest species or all species assemblages.	
Critical	Sites meeting SSSI guidelines.	Natural England generally opposes interference. Seek improved roost provision. Timing constraints. No destruction of former roost until replacement completed and significant usage demonstrated. Monitoring for as long as possible.
	Maternity sites of rarest species.	

2 Methodology

2.1 Bat Roost Survey

Further to the Stage 1 Bat Survey undertaken of the wider site during May 2014 (Thomson Ecology Report Reference AABP103/002/001), which identified potential access and roosting points on 11 buildings that could be used by bats (see Table 2), it was considered necessary to perform bat roost surveys of these buildings. These surveys comprised preliminary bat roost assessments of buildings for which internal access was not available during the previous survey, dusk emergence and dawn re-entry of all 11 buildings and internal static monitoring of three buildings. These surveys would help confirm the results of the Stage 1 Bat Survey, as well as establish whether bats were roosting in any inaccessible areas.

Table 2 Buildings with potential to support roosting bats

Building Number	Building Name
B1	East Breakwater
B2	Powder Magazine, Coal Yard
B5	Mark Roberts Workshop
B6	Atlantic Shed
B9	Stone Masons Workshop
B12	Stone Masons Office
B14	Rail Weighbridge, Atlantic Way
B17	Unit 19 Arcade Workshop
B18	Nissen Hut, Rear of Wimborne Buildings
B19	Hut Rear of Wimborne Buildings
B21	Windward Shed

2.1.1 Preliminary Bat Roost Assessment

Internal and external inspections were undertaken for B5, B9, B12 and B18 on 29th July 2014, 30th July 2014 and 4th August 2014.

The aim of the inspections were to gather evidence to determine whether the buildings either had the *potential* to support bat roosts, or showed direct indications of current/previous use by roosting bats. All surveys were carried out in strict accordance with Best Practice Guidelines published by the Bat Conservation Trust (Hundt 2012).

During the survey, a search was made for direct evidence of bat activity, such as corpses, droppings, urine stains and scratch marks. Potential access points, particularly those free of cobwebs and other obstructions, were also recorded, irrespective of whether there was direct evidence of use in the vicinity.

2.1.2 Dusk Emergence and Dawn Re-Entry Surveys

The features targeted during dusk emergence and dawn re-entry surveys included the following:

- B1 – open windows and doors
- B2 – gap caused by collapsed wall and open door
- B5 – hole above door and broken windows
- B6 – gaps in soffit boxes and lifted flashing
- B9 – gap under window boarding and missing window
- B12 - lifted flashing and gap under ridge tiles
- B14 – missing tiles and broken windows
- B17 – gaps in corrugated sheeting and lifted flashing
- B18 – gaps in corrugated sheeting and gap between breeze blocks and roof
- B19 – open door and hole in wall
- B21 – gaps in soffit boxes and broken windows

These are some of the features highlighted by the internal and external inspections as holding significant access and roost potential.

The aim of the roost surveys carried out was to establish the presence or likely absence of bat species on-site, and to determine whether they were roosting within the buildings. All surveys were carried out in strict accordance with Best Practice Guidelines published by the Bat Conservation Trust (Hundt 2012).

Supplementary information such as foraging and commuting behaviour was noted in order to develop the best possible understanding of how the site is utilised by bats.

During July to September 2014, a number of dusk emergence and dawn re-entry surveys were carried out depending on the level of potential to support roosting bats assigned to each building, as shown in Table 3.

Table 3 Survey effort required for each building

Building	Level of Potential	Number of Surveys
B1	Low	Two dusk emergence and dawn re-entry surveys
B2	Moderate	Three dusk emergence and dawn re-entry surveys
B5	Low	Two dusk emergence and dawn re-entry surveys
B6	Low	Two dusk emergence and dawn re-entry surveys
B9	Low	Two dusk emergence and dawn re-entry surveys
B12	Moderate	Three dusk emergence and dawn re-entry surveys
B14	Moderate	Three dusk emergence and dawn re-entry surveys
B17	Low	Two dusk emergence and dawn re-entry surveys
B18	Moderate	Three dusk emergence and dawn re-entry surveys
B19	Low	Two dusk emergence and dawn re-entry surveys
B21	Low	Two dusk emergence and dawn re-entry surveys

All surveys were carried out using Bat Box Duet bat detectors and H1 Zoom Recorders. The Duet model bat detectors are considered to be ideal for consultancy surveys, due to their dual function. The heterodyne function of the detector is most suitable for in-situ species identification, while the frequency division function allows post-survey sonogram computer analysis. Over the course of the surveys, surveyors were positioned in order to maximise the visibility of areas with potential emergence points for roosting bats. Appendix B may be referred to for full survey data, as well as timing and meteorological data.

2.1.1 Static Monitoring

Buildings 6 and 21 are large, partially unoccupied/derelict buildings and were selected for internal static monitoring in order to strengthen any external observations. Building 18 was considered a suitable building for a night roost and was therefore also selected for internal static monitoring.

During August and September, a static monitoring device was left overnight inside the buildings on one or two occasions (see Table 4). All surveys were carried out using an Anabat Express detector, set to record from dusk to dawn using GPS fixing of its location.

Table 4 Static monitoring survey dates

Building	Survey Dates
B6	04/08/2014, 27/08/2014
B18	05/08/2014
B21	18/08/2014, 09/09/2014

2.2 Impact Assessment

A standardised methodology is adopted to undertake impact assessments for bat species identified within the zone of influence. This process supports the design of sufficient yet proportionate mitigation strategies. Guidance on appropriate levels of mitigation is taken from Natural England Bat Mitigation Guidelines (2004).

When assessing potential impacts from development operations, the following factors are considered:

- Baseline value of the ecological feature or resource.
- Positive or negative biodiversity outcome.
- Confidence in predictions.
- Magnitude of impact.
- Extent of impact.
- Duration of impact.
- Reversibility of impact.
- Timing and frequency of impact.

2.3 Personnel

The surveys were led by Katie Smart and Paula Richings, with assistance from Charlotte Faulkner.

Katie is an Assistant Consultant at enims Ltd. She holds a BSc (Hons) in Environmental Science from the University of Newcastle upon Tyne and an MSc with a DIC in Taxonomy and Biodiversity from Imperial College London. She has experience in the surveying and assessing impact on protected species and their habitats with particular training in badger, reptile and bat surveying. Katie is a graduate member of the Chartered Institute of Ecological and Environmental Management (Grad CIEEM).

Paula is an Assistant Consultant at enims Ltd. She holds a BSc (Hons) in Ecology from the University of East Anglia and is an Associate member of the Chartered Institute of Ecology and Environmental Management (ACIEEM). Paula has experience in surveying for a range of protected species, including dusk dawn surveys for bats and external assessments of buildings and trees for their potential to support roosting bats. She holds a great crested newt licence (WML-CL09) and has a keen interest in botany.

Charlotte is a Junior Consultant at enims Ltd. Charlotte hold a BSc (Hons) in Applied Ecology and Conservation from the University of Reading. Charlotte has 4 years of experience in surveying and assessing impacts on protected species and their habitats. Charlotte has carried out bat surveys using various recording and time expansion equipment and has also helped with radio tracking bats. Charlottes is a graduate member of the Chartered Institute of Ecological and Environmental Management (Grad CIEEM) and holds a great crested newt licence (WML-CL08).

3 Survey Results

3.1 Preliminary Bat Roost Assessment

Four buildings were assessed internally and externally for potential access and roosting points, details of which are given in Table 5.

Table 5 Results of internal and external assessment

Building	Internal Survey	External Survey	Level of Potential
B5	Walls and ceiling of plywood boarding in poor condition with torn insulation in some parts behind plywood boarding. No evidence of bats	Constructed of blue corrugated metal and red brick foundation with gable ends and pitched roof. Many access points for bats with gaps between corrugated metal roof and building structure	Low
B9	No access	Constructed of white cement bricks with gable ends and corrugated metal pitched roof. Many access points for bats with gaps between corrugated metal roof and building structure and gaps in roof itself	Low
B12	Roof supported by timber frame and bordered by plywood. No accessible gaps into the void and no cracks or crevices in timber frame. No evidence of bats	Constructed of dark red bricks with pitched, tiled roof and wooden soffit boxes. Many access points for bats with gaps between walls and soffit boxes and under roof tiles	Moderate
B18	Only northern occupied end of building accessible. Corrugated metal sheeting supported by timber. Back rooms (east section of building) constructed of plaster and plywood boarding. Many holes, gaps and crevices present in walls and ceiling. No evidence of bats	Cylindrical shaped long building with many gaps at the tops and sides of roof and walls. North end of the building sealed by wall constructed of cement blocks but many accessible gaps - constructed of crusting corrugated metal	Moderate

Following the preliminary bat roost assessments of buildings 5, 9, 12 and 18, the level of potential previously assigned to the buildings was considered to be appropriate.

3.2 Dusk Emergence and Dawn Re-Entry Survey Results

A summary of survey results for each building is given below. See Appendix B for full survey data, including meteorological data, for each visit.

3.2.1 Building 1

There were no instances of emergence or re-entry by bats observed during the two visits.

A very low level of foraging and commuting activity was observed around the building, with most records being of bats that were heard but not seen. Common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus* were the dominant species, with Leisler's bat *Nyctalus leisleri* heard but not seen once during the dusk survey on the second visit.

3.2.2 Building 2

There were three common pipistrelle emergences observed from the northern elevation of the building during the first visit and one emergence was seen during the third visit.

A moderate level of foraging and commuting activity was recorded all around the building and over the adjacent vegetation and yard. Common pipistrelle was the dominant species, with soprano pipistrelle also recorded occasionally. Leisler's bat and brown long-eared bat *Plecotus auritus* were observed once during the dusk survey on the second visit.

3.2.3 Building 5

One common pipistrelle emergence from the northern elevation and two re-entries on the southern elevation of the building were recorded during the first visit. On the second visit, emergences from the southern elevation by two common pipistrelle bats were observed.

A low level of foraging and commuting activity by bats was recorded from all around the building. Common pipistrelle was the dominant species observed, with soprano pipistrelle also recorded occasionally.

3.2.4 Building 6

During the first visit there were four emergences by common and soprano pipistrelle from the eastern, southern and western elevations of the building. One emergence and two re-entries of common pipistrelle were recorded during the second visit.

There was a moderate level of foraging and commuting activity from all around the building. Common and soprano pipistrelle were the dominant species with brown-long eared and a *Myotis* species also seen once during the first visit.

3.2.5 Building 9

There were no instances of emergence or re-entry by bats observed during the two visits.

Overall, there was a low level of commuting activity by bats observed around the building, with all records but one from the second visit being of bats that were heard but not seen. Common and soprano pipistrelle were the main species observed, with some records of brown long-eared during the dusk survey of the first visit.

3.2.6 Building 12

There were three emergences and two re-entries by brown long-eared bats on the northern elevation of the building during the first visit. On the second visit, one common pipistrelle emergence from the northern elevation of the building was observed.

A moderate level of foraging and commuting activity was recorded during the first visit, but the level observed during the second visit was much lower and by the third visit all records were of bats that were heard but not seen, with nothing at all recorded at dawn. Common pipistrelle was the dominant species across the three visits. Soprano pipistrelle was also recorded during the second and third, with brown long-eared bat only seen during the first.

3.2.7 Building 14

Three common pipistrelle emergences from the western elevation of the building were observed during the first visit.

There was a moderate level of foraging and commuting activity observed all around the building during the dusk surveys, although by the third visit the level of activity had lessened. Bat activity at dawn was much lower overall, with the majority of records being of bats that were heard but not seen and with nothing recorded at all during the third visit. Common pipistrelle was the only species recorded across all three visits.

3.2.8 Building 17

During the second visit, there were eight emergences of common and soprano pipistrelle bats from the eastern elevation and two common pipistrelle emergences from the southern elevation.

A moderate level of foraging and commuting activity was recorded during both visits, with the exception of the first dusk survey where nothing was recorded, likely due to rain. Bat activity was noticeably absent from the western elevation of the building. Common and soprano pipistrelles were the main species observed with a *Myotis* species also recorded during the first visit.

3.2.9 Building 18

One re-entry by common pipistrelle on the eastern elevation was observed during the first visit and one emergence on the southern elevation was seen during the second.

There was a moderate level of commuting activity recorded during the first visit, although this had lessened by the second and again by the third, with mostly bats being heard but not seen. Common pipistrelle was the only species recorded across all three visits.

3.2.10 Building 19

There were no instances of emergence or re-entry by bats observed during the two visits.

A low level of foraging and commuting activity was recorded during both visits, with lots of records being of bats that were heard but not seen. Common and soprano pipistrelles were the only species recorded.

3.2.11 Building 21

There were no instances of emergence or re-entry bats observed during the two visits.

No activity was recorded during either of the dawn surveys, but activity was observed around the building during both dusks, with the second visit proving more active. Common pipistrelle was the only species recorded across both visits.

3.3 Static Monitoring Results

There was no bat activity recorded inside any of the buildings between dusk and dawn on any of the dates the Anabat Express detector was deployed.

4 Assessment and Recommendations

4.1 Survey Outcome

The survey has demonstrated that seven buildings within the application site support active bat roosts. Buildings B2, B5, B14 and B18 were shown to support common pipistrelle bats, while B6 and B17 supports both common and soprano pipistrelle bats. In addition, B12 was shown to support brown long-eared and common pipistrelle bat roosts. Low numbers of bats were seen emerging and returning to roost, with the most recorded being 10 bats emerging from three different locations on B17. Emergence and re-entry events are largely inconsistent for each building and/or involve different access/egress points on each survey visit.

Given the low numbers recorded, lack of internal activity where monitored, the varied roost locations on each building observed over the survey period and the characteristics of the buildings, it is concluded that the buildings support intermittently used roosts such as transitional or day roosts.

4.2 Potential Impacts of Proposed Works

Where development proposals concern a known roost site, there is potential for an offence to be committed under the Conservation of Habitats and Species Regulations 2010 and the short term and long term impacts of the development should be considered.

Short Term Impacts

Construction activities could result in the killing, injury and disturbance of individual bats, primarily through the demolition of buildings on-site. However, current development proposals include the retention of buildings B2, B5, B6, B12, B14, B17 and B18. Therefore, there will be no direct impacts on roosting bats through killing or injury.

There is some potential for indirect impacts on bats roosting in buildings B2, B5 and B6 due to their proximity to the development. Construction activities may result in a slight temporary increase noise/vibratory disturbance above baseline levels, however, this is not anticipated to be sufficient enough to constitute an offence (i.e. by having an ecologically significant adverse effect).

Long Term Impacts

There will be some vegetation clearance as part of the development, resulting in the permanent loss of suitable bat habitat. The area of habitat to be lost is relatively small and suitable habitat is located immediately adjacent to the north of the application site and to the east. The existing vegetated bund running along the south-eastern and south-western boundaries is being retained under current proposals, providing a strip of scrub and tree habitat linked to the adjacent habitat to the north of the application site. In addition, new vegetated bunds created using the topsoil from site clearance are proposed for the north western boundary.

There is the potential for disturbance to bats roosting, foraging and commuting through increased lighting levels following construction i.e. through installation of lights on any substation buildings. However, recommendations given in Section 4.3 should ensure that the effects of lighting are minimal.

The application site is not currently considered to be of high conservation status with regards to bats. The species observed roosting within the buildings on-site are common and widespread (common pipistrelle, soprano pipistrelle and brown long-eared bat) and the level of activity recorded during the surveys does not suggest that the application site is an important site for these species. In addition, Leisler's and *Myotis* species were recorded using the site for foraging and commuting. Although Leisler's and some *Myotis* are not as common and widespread as the others, the level of activity observed again suggests the application site is not significant one for these species.

Conclusion

While roosting activity does take place on-site, the proposed development is highly unlikely to result in significant negative short term or long term impacts on bats or their roosts, and is compliant with the Conservation of Habitats and Species Regulations 2010.

4.3 Mitigation Measures

The National Planning Policy Framework (NPPF) outlines the mitigation hierarchy and promotes its use throughout the planning process to minimise harm to, and maximise benefits for, biodiversity resulting from development. The NPPF highlights that avoiding adverse effects to biodiversity through good design should be the primary objective for any proposed development. Any unavoidable adverse effects on biodiversity should be adequately mitigated to minimise any negative impacts of the development. Compensation may be used after avoidance and mitigation measures have been fully considered, in order to address any residual impacts of the proposals.

As no significant impacts to protected bat species are anticipated, no specific mitigation measures are required. However, in order to minimise disturbance to bats in the operational stage through increased lighting levels, the following measures should be followed:

- siting of associated buildings away from existing buildings and vegetation; and/or
- inclusion of bat sensitive external lighting (where lighting is required) in development proposals. These should be downward facing, use low energy bulbs and be directed away from the surrounding vegetation.

4.4 Data Constraints

The data and conclusions presented here are based on the current status of the development site and on the current development proposals. Should the development be delayed beyond two years of the date of this survey report, it is recommended that repeat assessment be undertaken in order to ensure the validity of these conclusions. In addition, should the scope of works change, and buildings are to be demolished, then an appropriately qualified ecologist should be consulted to review the impact assessment.

There are no factors, such as weather or access which detract from the reliability of the data presented here.

5 References

Hundt, L. (2012). *Bat Surveys: Good Practice Guidelines, 2nd edition*. Bat Conservation Trust, London.

Mitchell-Jones, A. J.(2004). *Natural England Bat Mitigation Guidelines*. English Nature. Peterborough.

Mitchell-Jones, A. J. and McLeish, A. P. eds., (2004). *Bat Workers' Manual*. Joint Nature Conservation Committee, Peterborough.

Thomson Ecology (2014) *Stage 1 Bat Survey – Proposed Solar Farm, Barry Docks, Wales*. AABP103/002/001.

Appendix A: Aerial Photograph of the Site



Aerial photograph showing the wider site (red line), application site boundary (blue line) and location of the buildings.

Appendix B: Dusk Emergence and Dawn Re-entry Survey Data

Building 1

Dusk

Location:	Barry Island B1	Project No:	EN038
Weather:	Overcast, cool, moderate wind		
Start temp:	16°C	End temp:	14°C
Date:	31/07/2014	Sunrise/ sunset times:	20:51
Start time:	20:20	End time:	22:20
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
N/A	N/A	N/A	

Dawn

Location:	Barry Island B1	Project No:	EN038
Weather:	Light breeze, dry, 100% overcast		
Start temp:	12°C	End temp:	10°C
Date:	01/08/2014	Sunrise/ sunset times:	05:23
Start time:	03:50	End time:	05:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
N/A	N/A	N/A	

Dusk

Location:	Barry Island B1	Project No:	EN038
Weather:	30% cloud cover, light wind, dry		
Start temp:	11°C	End temp:	10°C
Date:	20/08/2014	Sunrise/ sunset times:	20:34
Start time:	20:00	End time:	22:04
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:07	Common pipistrelle	1 heard but not seen.	
21:13	Soprano pipistrelle	1 heard but not seen.	
21:14	Common pipistrelle	South western elevation: 1 flew east to west over building.	
21:15	Common pipistrelle	South western elevation: 1 flew from west to building then north over bund.	
21:20	Common pipistrelle	North western elevation: 1 feeding over building and surrounding vegetation.	
21:21	Soprano pipistrelle	1 heard but not seen.	
21:26	Common pipistrelle	North western elevation: 1 feeding over building and surrounding vegetation.	
21:46	Leisler's	1 heard but not seen.	
21:47	Common pipistrelle	North western elevation: 1 feeding over building and surrounding vegetation.	
21:48	Soprano pipistrelle	1 heard but not seen.	

Dawn

Location:	Barry Island B1	Project No:	EN038
Weather:	40% cloud cover, light breeze, dry – rain started 05:45		
Start temp:	7°C	End temp:	9°C
Date:	21/08/2014	Sunrise/ sunset times:	06:06
Start time:	04:30	End time:	06:10
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
04:56	Common pipistrelle	1 heard feeding but not seen	
05:04	Common pipistrelle	Western elevation: 1 commuting north over building	
05:11	Common pipistrelle	1 heard but not seen	
05:15	Common pipistrelle	1 heard but not seen	
05:21	Common pipistrelle	1 heard but not seen	

Building 2**Dusk**

Location:	Barry Docks B2	Project No:	EN038
Weather:	Clear, dry, no wind		
Start temp:	19°C	End temp:	17°C
Date:	28/07/2014	Sunrise/ sunset times:	20:54
Start time:	20:20	End time:	22:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:27	Common pipistrelle	Northern elevation: 1 emergence. Flew to the south, from the building.	
21:38	Common pipistrelle	Eastern elevation: 1 foraging northwards to the north of the building.	
21:43	Common pipistrelle	Northern elevation: 1 flew east of the building and then returned a few seconds later, foraging in the trees nearby.	
21:45	Common pipistrelle	Northern elevation: SNH: 1 commuting from east to west between trees in front of building.	
21:58	Common pipistrelle	Eastern elevation: 1 flew from south to north in front of the building.	
22:00	Common pipistrelle	Northern elevation: 1 commuting from the east and then turned north, towards the building.	
22:05	Common pipistrelle	Northern elevation: 1 flew from east and turned north, went over building.	
22:06	Common pipistrelle	Eastern elevation: 1 emergence. Flew from northern corner of building and headed north	
22:09	Common pipistrelle	Eastern elevation: 1 emergence. Flew from northern corner of the building, heading east and then turning south, foraging behaviour.	
22:09	Common pipistrelle	Northern elevation: 1 flew from the east and then turned south towards the trees.	

Dawn

Location:	Barry Docks B2	Project No:	EN038
Weather:	Clear, dry, no wind		
Start temp:	16°C	End temp:	14°C
Date:	29/07/2014	Sunrise/ sunset times:	05:20
Start time:	03:30	End time:	05:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
04:26	Common pipistrelle	Eastern elevation: 1 commuting from north, circles in front of vegetation and building and then continues north-west.	
04:35	Common pipistrelle	Eastern elevation: 1 commuting from south and turning south-east in front of building.	
04:37	Common pipistrelle	Eastern elevation: 1 commuting from south and turning south-east in front of building.	
04:40	Common pipistrelle	Eastern elevation: 1 commuting from east to west, north of the building, remains in thick trees.	
04:42	Common pipistrelle	Eastern elevation: 1 commuting from east to west, north of the building, remains in thick trees.	
04:44	Common pipistrelle	Eastern elevation: 1 commuting from south to north, down lane towards vegetation.	
05:00	Common pipistrelle	Eastern elevation: 1 commuting from south to north in front of building.	

Dusk

Location:	Barry Docks B2	Project No:	EN038
Weather:	10% cloud cover, light wind,		
Start temp:	18°C	End temp:	16°C
Date:	06/08/2014	Sunrise/ sunset times:	20:40
Start time:	20:10	End time:	22:40
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:23	Common pipistrelle	Southern elevation: 1 foraging from south and turning east in front of building.	
21:31	Common pipistrelle	Southern elevation: 1 foraging from north to south to the east of building.	
21:31	Soprano pipistrelle	Southern elevation: 1 commuting from west to east in front of building.	

Dawn

Location:	Barry Docks B2	Project No:	EN038
Weather:	Clear, dry, no wind		
Start temp:	14°C	End temp:	13°C
Date:	07/08/2014	Sunrise/ sunset times:	05:33
Start time:	04:00	End time:	05:45
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
04:46	Soprano pipistrelle	Southern elevation: 1 commuting from south to north to the east of the building.	
04:48	Common pipistrelle	Southern elevation: 1 commuting from west to east from the vegetation to the east of the building.	
04:54	Soprano pipistrelle	Southern elevation: 1 commuting (and providing foraging buzzes) from west to east from the vegetation to the east of the building.	
04:56	Common pipistrelle	Southern elevation: 1 flew in from south-east, circled twice to the east of the building and then continued east.	
05:03	Common pipistrelle	Southern elevation: 1 Seen not heard; commuting from south-east to north-west to the east of the building.	
05:04	Common pipistrelle	Southern elevation: 3 commuting from south to north into vegetation over building.	
05:04	Common pipistrelle	Southern elevation: 1 commuting from north (from vegetation next to building) to south-east.	
05:06	Common pipistrelle	Southern elevation: 1 commuting from south to north-east over building.	

Dusk

Location:	Barry Docks B2	Project No:	EN038
Weather:	100% cloud cover, light wind, dry		
Start temp:	18°C	End temp:	16°C
Date:	26/08/2014	Sunrise/ sunset times:	20:12
Start time:	19:45	End time:	21:42
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
20:39	Common pipistrelle	Southern elevation: 1 commuting west across yard in front of building.	
20:45	Leisler's	Western elevation: 1 commuting east over vegetation to north of building.	
20:50	Common pipistrelle	Southern elevation: 1 emergence. From southern elevation from behind dense vegetation.	
20:52	Common pipistrelle	Western elevation: 1 flying from north side of building and feeding over yard to south.	
20:55	Common pipistrelle	Southern elevation: 1 feeding south along a linear route over vegetation to the east of building.	
21:00	Common pipistrelle	1 heard commuting but not seen.	
21:05	Common pipistrelle	Southern elevation: 2 commuting east across front of building.	
21:10	Common pipistrelle	1 heard feeding but not seen.	
21:20	Common pipistrelle	Western elevation: 1 flew from south then east over vegetation to the north of the building.	
21:22	Common pipistrelle	Western elevation: 1 commuting east over yard	
21:29	Common pipistrelle	Western elevation: 1 commuting north over surrounding vegetation.	
21:34	Soprano pipistrelle	1 heard but not seen.	

Dawn

Location:	Barry Docks B2	Project No:	EN038
Weather:	70% cloud cover, light wind, dry		
Start temp:	15°C	End temp:	14°C
Date:	27/08/2014	Sunrise/ sunset times:	06:18
Start time:	04:30	End time:	06:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
05:15	Soprano pipistrelle	1 heard but not seen.	
05:17	Common pipistrelle	Western elevation: 1 feeding south east along a linear route over yard to south of building.	
05:21	Common pipistrelle	Western elevation: 1 commuting south over vegetation to east of building.	
05:26	Brown long-eared	Western elevation: 1 commuting south over building.	
05:27	Common pipistrelle	Southern elevation: 1 commuting east over yard to south of building.	
05:33	Soprano pipistrelle	Southern elevation: 1 commuting south over building.	
05:38	Common pipistrelle	1 heard feeding but not seen.	
05:40	Common pipistrelle	Western elevation: 1 feeding south along a linear route over building.	
05:41	Common pipistrelle	Southern elevation: 1 feeding east along a linear route across the front of the building.	
05:43	Common pipistrelle	Southern elevation: 1 flew in from the west and foraged over vegetation to the north east of the building.	
05:43	Common pipistrelle	Western elevation: 1 feeding over vegetation to the east of the building.	

Building 5**Dusk**

Location:	Barry Docks B5	Project No:	EN038
Weather:	Mostly dry (light shower at 21.45), 90% cloud cover, wind low to moderate Westerly gusts.		
Start temp:	18°C	End temp:	16°C
Date:	31/07/2014	Sunrise/ sunset times:	20:51
Start time:	20:20	End time:	22:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:30	Common Pipistrelle	Northern elevation: 1 commuting south over building.	
21:33	Common Pipistrelle	Southern elevation: seen not heard: 1 circling due east of building.	
21:52	Common Pipistrelle	Southern elevation: 1 flying south over building.	
21:53	Common Pipistrelle	Northern elevation: 1 commuting west across building.	
22:00	Common Pipistrelle	Northern elevation: 1 commuting east across building.	
22:05	Common Pipistrelle	Northern elevation: 1 commuting west across building.	
22:10	Common Pipistrelle	Northern elevation: 1 commuting west across building.	
22:16	Common Pipistrelle	Northern elevation: 1 commuting west across building.	

Dawn

Location:	Barry Docks B5	Project No:	EN038
Weather:	Dry, 90% cloud cover, slight wind		
Start temp:	12°C	End temp:	14°C
Date:	01/08/2014	Sunrise/ sunset times:	05:23
Start time:	03:40	End time:	05:40
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
04:45	Common Pipistrelle	Northern elevation: 1 commuting east across building.	
05:08	Common Pipistrelle	Southern elevation: Max. 5 swarming (repeated circular flying) due south of building.	
05:14	Common Pipistrelle	Southern elevation: Min. 2 re-entries around large doorway on southern side of building. Possibly used drainpipe west of doorway.	

Dusk

Location:	Barry Docks B5	Project No:	EN038
Weather:	100% cloud cover, light wind, dry		
Start temp:	18°C	End temp:	16°C
Date:	26/08/2014	Sunrise/ sunset times:	20:12
Start time:	19:40	End time:	21:42
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
20:32	Common pipistrelle	Northern elevation: 1 commuting west across front of building.	
20:41	Common pipistrelle	Southern elevation: 2 emergences. Flew south east and north west.	
20:43	Soprano pipistrelle	Northern elevation: 1 commuting south across west side of building.	
20:49	Soprano pipistrelle	Northern elevation: 1 commuting south across west side of building.	
20:50	Soprano pipistrelle	Southern elevation: 1 commuting west across front of building.	
21:07	Common pipistrelle	1 heard feeding but not seen.	
21:15	Common pipistrelle	1 heard but not seen.	
21:37	Common pipistrelle	1 heard feeding but not seen.	
21:42	Soprano pipistrelle	1 heard but not seen.	

Dawn

Location:	Barry Docks B5	Project No:	EN038
Weather:	70% cloud cover, light wind, dry		
Start temp:	15°C	End temp:	14°C
Date:	27/08/2014	Sunrise/ sunset times:	06:18
Start time:	04:48	End time:	06:18
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
05:24	Common pipistrelle	1 heard feeding but not seen.	

Building 6

Dusk

Location:	Barry Island B6	Project No:	EN038
Weather:	Dry, 5% cloud cover, no wind.		
Start temp:	15°C	End temp:	13°C
Date:	04/08/2014	Sunrise/ sunset times:	20:44
Start time:	20:15	End time:	22:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:26	Soprano pipistrelle	Northern elevation: 1 flying south, diverting east around building.	
21:17	Soprano pipistrelle	Northern elevation: 1 flying south, diverting east around building.	
21:17	Common pipistrelle	Eastern elevation: 1 emergence from hole around gutter	
21:18	Common pipistrelle	Eastern elevation: Foraging.	
21:21	Common pipistrelle	Eastern elevation: 2 foraging.	
21:23	Common pipistrelle	Southern elevation: 1 flying south, turning west.	
21:26	Common pipistrelle	Western elevation: 1 emergence. Flew west.	
21:27	Common pipistrelle	Western elevation: flying south.	
21:29	Common pipistrelle	Northern elevation: 2 flying from north east to east over building	
21:32	Soprano pipistrelle	Southern elevation: 2 flying south on east side of building, turning north west.	
21:35	Soprano pipistrelle	Southern elevation: 1 flying west, turning south.	
21:35	Common pipistrelle	Northern elevation: 1 circling due north east of building for 1 min.	
21:38	Soprano pipistrelle	Southern elevation: 2 emerging from hole around gutter, flying south.	
21:39	Soprano pipistrelle	Southern elevation: 2 flying east, circling due south west of building before flying south.	
21:42	Common pipistrelle	Southern elevation: 1 flying west, turning north.	
21:43	Brown Long-eared	Eastern elevation: 1 foraging.	
21:44	Common pipistrelle	Southern elevation: 1 feeding, flying south, turning north east.	
21:49	Common pipistrelle	Southern elevation: 1 flying north on west side of building.	
21:56	Common pipistrelle	Eastern elevation: 1 foraging.	
21:56	<i>Myotis</i> species	Southern elevation: 1 flying north, circling before turning east.	
22:02	Common pipistrelle	Eastern elevation: 1 foraging.	
22:05	Common pipistrelle	Southern elevation: 1 flying south east	

22:06	Common pipistrelle	Eastern elevation: 1 foraging.
22:08	Common pipistrelle	Southern elevation: 1 flying north on east side of building.

Dawn

Location:	Barry Island B6	Project No:	EN038
Weather:	Light rain, dry patches, 100% cloud cover, slight wind		
Start temp:	14°C	End temp:	12°C
Date:	05/08/2014	Sunrise/ sunset times:	05:31
Start time:	04:00	End time:	06:00
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
05:05	<i>Myotis</i> species	Eastern elevation: 1 foraging length of building, flying north.	

Dusk

Location:	Barry Island B6	Project No:	EN038
Weather:	100% cloud cover, moderate wind, heavy rain prior to start of survey		
Start temp:	19°C	End temp:	18°C
Date:	27/08/2014	Sunrise/ sunset times:	20:10
Start time:	19:40	End time:	21:40
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
20:35	Common pipistrelle	1 heard commuting but not seen.	
20:43	Common pipistrelle	Northern elevation: 1 feeding over vegetation in front of building.	
20:38	Common pipistrelle	Western elevation: 1 emergence. Flew west.	
20:52	Pipistrelle species	1 heard but not seen.	
21:09	Soprano pipistrelle	1 heard but not seen.	
21:09	Common pipistrelle	Eastern elevation: 1 feeding over yard in front of building.	
21:12	Pipistrelle species	1 heard but not seen.	

Dawn

Location:	Barry Island B6	Project No:	EN038
Weather:	100% cloud cover, light wind, damp (rain overnight)		
Start temp:	16°C	End temp:	14°C
Date:	28/08/2014	Sunrise/ sunset times:	06:20
Start time:	04:50	End time:	06:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
04:57	Common pipistrelle	1 heard but not seen.	
05:16	Soprano pipistrelle	1 heard but not seen.	
05:27	Common pipistrelle	1 heard but not seen.	
05:30	Common pipistrelle	Eastern elevation: 1 feeding south along a linear route in front of building.	
05:35	Common pipistrelle	1 heard but not seen.	
05:40	Common pipistrelle	Southern elevation: 1 circling above south west corner of building.	
05:47	Common pipistrelle	Southern elevation: 1 commuting east across front of building.	
05:48	Common pipistrelle	Northern elevation: 1 commuting north over building.	
05:49	Common pipistrelle	Eastern elevation: 1 feeding north along a linear route in front of building.	
05:56	Common pipistrelle	Eastern elevation: 2 re-entries. Point of entry through gap between roof and corrugated panel.	

Building 9**Dusk**

Location:	Barry Docks B9	Project No:	EN038
Weather:	Moderate-strong breeze, 50% cloud cover, dry		
Start temp:	18°C	End temp:	16°C
Date:	30/07/2014	Sunrise/ sunset times:	20:51
Start time:	20:20	End time:	22:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:37	Common pipistrelle	South-east elevation: 1 commuting from west to east just beyond hedges of coal yard.	
21:38	Common pipistrelle	South-east elevation: 1 commuting from south to west, south of the building.	
21:40	Brown long eared	South-west elevation: 1 commuting from west to east in coal yard south of the building.	
21:41	Common pipistrelle	South-west elevation: 1 commuting from east to west south of the building, circled in coal yard and then headed south.	
21:58	Common pipistrelle	South-east elevation: 1 foraging around shrubs on border of coal yard.	
22:08	Brown long eared	South-west elevation: 1 commuting from west to east over building.	
22:08	Brown long eared	South-west elevation: 1 commuting from north to south west of the building and turned west.	

Dawn

Location:	Barry Docks B9	Project No:	EN038
Weather:	90% cloud cover, light breeze, dry		
Start temp:	14°C	End temp:	13°C
Date:	31/07/2014	Sunrise/ sunset times:	05:23
Start time:	03:50	End time:	05:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
04:25	Soprano pipistrelle	South-west elevation: 1 commuting from south to north, east of the building.	

Dusk

Location:	Barry Docks B9	Project No:	EN038
Weather:	20% cloud cover, light wind, dry		
Start temp:	13°C	End temp:	12°C
Date:	19/08/2014	Sunrise/ sunset times:	20:30
Start time:	20:00	End time:	22:00

Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)
21:02	Common pipistrelle	1 heard but not seen.
21:09	Common pipistrelle	1 heard but not seen.
21:17	Common pipistrelle	1 heard but not seen.
21:21	Common pipistrelle	1 heard but not seen.
21:32	Pipistelle species	1 heard but not seen.
21:40	Soprano pipistrelle	1 heard but not seen.
21:44	Soprano pipistrelle	1 heard but not seen.
21:49	Common pipistrelle	1 heard but not seen.
21:53	Soprano pipistrelle	1 heard but not seen.

Dawn

Location:	Barry Docks B9	Project No:	EN038
Weather:	90% cloud cover, light wind, dry		
Start temp:	11°C	End temp:	11°C
Date:	20/08/2014	Sunrise/ sunset times:	06:02
Start time:	04:30	End time:	06:15
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
05:18	Soprano pipistrelle	North-west elevation: 1 commuting south west then west along vegetation on other side of road.	
05:38	Common pipistrelle	1 heard but not seen.	

Building 12

Dusk

Location:	Barry Docks B12	Project No:	EN038
Weather:	Moderate-strong breeze, 50% cloud cover, dry		
Start temp:	18°C	End temp:	16°C
Date:	30/07/2014	Sunrise/ sunset times:	20:51
Start time:	20:20	End time:	22:20
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:33	Common pipistrelle	South-east elevation: 1 commuting from north to south east of the building, after foraging from hedges.	
21:38	Brown long eared	South-east elevation: 3 emerging from north-east ridge of building between the gaps in the tiles.	
22:12	Common pipistrelle	North-west elevation: 1 flew from east to west over building.	

Dawn

Location:	Barry Docks B12	Project No:	EN038
Weather:	90% cloud cover, light breeze, dry		
Start temp:	14°C	End temp:	13°C
Date:	31/07/2014	Sunrise/ sunset times:	05:23
Start time:	03:50	End time:	05:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
04:10	Common pipistrelle	South-east elevation: 1 commuting up and down lane next to building for 5 minutes.	
04:14	Brown long eared	South-east elevation: 1 commuting from north to south along lane next to building.	
04:17	Brown long eared	North-west elevation: 1 foraging in hedges in lane to the west of the building.	
04:32	Common pipistrelle	South-east elevation: 1 commuting from south to north along lane next to building.	
04:19	Brown long eared	North-west elevation: 1 foraging in hedges in lane to the west of the building.	
04:20	Common pipistrelle	North-west elevation: 1 commuting from south to north along lane to the west of the building.	
04:40	Brown long eared	North-west elevation: 1 commuting and foraging from north to south in lane to the west of the building.	
04:45	Common pipistrelle	North-west elevation: 1 commuting and foraging north to south just next to the building.	
04:45	Brown long eared	North-west elevation: 1 re-entry. Commuting from west and turned into gap between building and hedges to the north and re-entering in the north-west ridge.	
04:48	Common pipistrelle	North-west elevation: 1 commuting and foraging from south to north in the lane to the west of the building.	

04:48	Brown long eared	South-east elevation: 1 commuting from east to west just to the south of the building.
04:55	Brown long eared	South-east elevation: 1 re-entry. Circling in yard and then disappearing to the north of the building.
05:03	Common pipistrelle	North-west elevation: 1 foraging in the hedges in the lane west of the building and then continuing north.

Dusk

Location:	Barry Docks B12	Project No:	EN038
Weather:	20% cloud cover, light wind, dry		
Start temp:	13°C	End temp:	12°C
Date:	19/08/2014	Sunrise/ sunset times:	20:30
Start time:	20:00	End time:	22:00
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:04	Common pipistrelle	South-east elevation: 1 commuting south west.	
21:09	Common pipistrelle	South-west elevation: 1 feeding south along a linear route.	
21:10	Common pipistrelle	North-east elevation: 1 emergence. Flew north-east from building.	
21:13	Common pipistrelle	1 heard commuting but not seen.	
21:15	Common pipistrelle	North-east elevation: 1 commuting west across front of building.	
21:15	Common pipistrelle	South-east elevation: 1 feeding in a circular pattern.	
21:22	Common pipistrelle	South-west elevation: 1 feeding north east along a linear route.	
21:31	Common pipistrelle	1 heard feeding but not seen.	
21:40	Soprano pipistrelle	1 heard commuting but not seen.	
21:43	Soprano pipistrelle	1 heard feeding but not seen.	
21:50	Common pipistrelle	1 heard feeding but not seen.	
21:54	Soprano pipistrelle	1 heard commuting but not seen.	

Dawn

Location:	Barry Docks B12	Project No:	EN038
Weather:	90% cloud cover, light wind, dry		
Start temp:	11°C	End temp:	11°C
Date:	20/08/2014	Sunrise/ sunset times:	06:02
Start time:	04:30	End time:	06:15
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
05:16	Soprano pipistrelle	1 heard feeding but not seen.	
05:38	Common pipistrelle	South-east elevation: 1 circling for approximately 2 minutes.	
05:41	Common pipistrelle	North-east elevation: 1 commuting east in front of building.	

Dusk

Location:	Barry Docks B12	Project No:	EN038
Weather:	100% cloud cover, light wind, dry		
Start temp:	18°C	End temp:	16°C
Date:	11/09/2014	Sunrise/ sunset times:	19:36
Start time:	19:05	End time:	21:06
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
20:16	Common pipistrelle	1 heard commuting but not seen.	
20:22	Soprano pipistrelle	1 heard but not seen.	
20:30	Soprano pipistrelle	1 heard commuting but not seen.	
20:42	Common pipistrelle	2 heard feeding but not seen.	
20:58	Common pipistrelle	1 heard but not seen.	
21:04	Common pipistrelle	1 heard commuting but not seen.	

Dawn

Location:	Barry Docks B12	Project No:	EN038
Weather:	90% cloud cover, light wind, dry		
Start temp:	14°C	End temp:	14°C
Date:	12/09/2014	Sunrise/ sunset times:	06:44
Start time:	05:10	End time:	07:00
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
N/A	N/A	N/A	

Building 14

Dusk

Location:	Barry Docks B14	Project No:	EN038
Weather:	Dry, warm, slight breeze		
Start temp:	19°C	End temp:	17°C
Date:	28/07/2014	Sunrise/ sunset times:	20:54
Start time:	20:30	End time:	22:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:43	Common pipistrelle	North-eastern elevation: 1 commuting from south to north.	
21:43	Common pipistrelle	North-eastern elevation: 1 commuting from north to south.	
21:47	Common pipistrelle	North-eastern elevation: 1 commuting from north to south.	
21:49	Common pipistrelle	North-eastern elevation: 1 commuting from south to north.	
21:50	Common pipistrelle	Western elevation: 1 emergence. From loose tile in north-east corner of building and commuting west.	
21:51	Common pipistrelle	North-eastern elevation: 1 commuting from north to south.	
21:53	Common pipistrelle	Western elevation: 1 emergence. From loose tile just below ridge on western elevation.	
21:55	Common pipistrelle	Western elevation: 1 emergence. From soffit box on western elevation of building.	
21:56	Common pipistrelle	North-eastern elevation: 2 feeding north of the building.	
21:56	Common pipistrelle	North-eastern elevation: 1 commuting from north to south.	
21:57	Common pipistrelle	Western elevation: 1 commuting from east and turning south in front of building.	
22:03	Common pipistrelle	North-eastern elevation: 1 commuting south to north.	
22:08	Common pipistrelle	North-eastern elevation: 1 commuting from south to north.	

Dawn

Location:	Barry Docks B14	Project No:	EN038
Weather:	Clear, dry, warm, still		
Start temp:	16°C	End temp:	14°C
Date:	29/07/2014	Sunrise/ sunset times:	05:20
Start time:	03:30	End time:	05:30

Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)
03:30	Common pipistrelle	1 heard but not seen.
03:31	Common pipistrelle	1 heard but not seen.
03:32	Common pipistrelle	1 heard but not seen.
03:40	Common pipistrelle	1 heard but not seen.
03:43	Common pipistrelle	1 heard but not seen.
03:45	Common pipistrelle	1 heard but not seen.
03:50	Common pipistrelle	2 heard but not seen.
04:01	Common pipistrelle	1 heard but not seen.
04:05	Common pipistrelle	1 heard but not seen.
04:10	Common pipistrelle	1 heard but not seen.
05:00	Common pipistrelle	North-eastern elevation: 1 commuting west.

Dusk

Location:	Barry Docks B14	Project No:	EN038
Weather:	30% cloud cover, light wind, dry		
Start temp:	12°C	End temp:	11°C
Date:	20/08/2014	Sunrise/ sunset times:	20:34
Start time:	20:05	End time:	22:04
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
20:58	Common pipistrelle	South-east elevation: 1 commuting north west over building.	
21:02	Common pipistrelle	South-east elevation: 1 feeding in yard to the south.	
21:07	Common pipistrelle	South-east elevation: 1 feeding along a linear route west to east then west again.	
21:10	Common pipistrelle	South-east elevation: 1 feeding in circular pattern in front of building.	
21:14	Common pipistrelle	North-west elevation: 1 feeding in front of building.	
21:17	Common pipistrelle	South-east elevation: 1 flying from north of building and feeding in circular pattern in front of building.	
21:23	Common pipistrelle	South-east elevation: 2 commuting east.	
21:31	Common pipistrelle	1 heard commuting but not seen.	
21:41	Common pipistrelle	2 heard feeding but not seen.	
21:45	Common pipistrelle	North-west elevation: 1 feeding north along linear route to the west of the building.	
21:52	Common pipistrelle	1 heard feeding but not seen.	
21:56	Common pipistrelle	2 heard feeding but not seen.	
22:01	Common pipistrelle	1 heard but not seen.	

Dawn

Location:	Barry Docks B14	Project No:	EN038
Weather:	40% cloud cover, light wind, dry – rain started 05:45		
Start temp:	8°C	End temp:	7°C
Date:	21/08/14	Sunrise/ sunset times:	06:06
Start time:	04:30	End time:	06:10
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
05:17	Common pipistrelle	1 heard commuting but not seen.	

Dusk

Location:	Barry Docks B14	Project No:	EN038
Weather:	60% cloud cover, no wind, dry		
Start temp:	18°C	End temp:	17°C
Date:	08/09/2014	Sunrise/ sunset times:	19:43
Start time:	19:15	End time:	21:13
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
20:18	Common pipistrelle	South-east elevation: 1 commuting south across front of building.	
20:25	Common pipistrelle	South-east elevation: 1 feeding in a figure of eight pattern above fence line to the south of the building.	
20:35	Common pipistrelle	1 heard feeding but not seen.	
20:45	Common pipistrelle	1 heard commuting but not seen.	
21:08	Common pipistrelle	1 heard feeding but not seen.	

Dawn

Location:	Barry Docks B14	Project No:	EN038
Weather:	100% cloud cover, light wind, dry		
Start temp:	14°C	End temp:	12°C
Date:	09/09/2014	Sunrise/ sunset times:	06:39
Start time:	05:00	End time:	06:45
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
N/A	N/A	N/A	

Building 17

Dusk

Location:	Barry Docks B17	Project No:	EN038
Weather:	Overcast, raining, slight breeze		
Start temp:	18°C	End temp:	16°C
Date:	05/08/2014	Sunrise/ sunset times:	20:42
Start time:	20:20	End time:	22:20
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
N/A	N/A	N/A	

Dawn

Location:	Barry Docks B17	Project No:	EN038
Weather:	90% cloud cover, cool, rain stopped, slight breeze		
Start temp:	16°C	End temp:	16°C
Date:	06/08/2014	Sunrise/ sunset times:	05:32
Start time:	03:50	End time:	05:50
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
04:28	Common pipistrelle	Eastern elevation: 1 circling in front of building (twice).	
04:32	<i>Myotis</i> sp.	Eastern elevation: 1 commuting north to south along building.	
04:32	<i>Myotis</i> sp.	Eastern elevation: 1 flying from north to south.	
04:32	Common pipistrelle	Eastern elevation: 1 commuting from south-west and flying length of building and back to corner (three times).	
04:36	<i>Myotis</i> sp.	Eastern elevation: 1 commuting from north to south.	
04:37	Soprano pipistrelle	Eastern elevation: 1 north-east of building (three times).	
04:40	<i>Myotis</i> sp.	Eastern elevation: 1 circling anti-clockwise in front of building and continuing south.	
04:42	Common pipistrelle	Eastern elevation: 1 circling in front of building and continuing south.	
04:43	Soprano pipistrelle	Eastern elevation: 1 commuting from north to south along building (twice).	
04:45	Common pipistrelle	Eastern elevation: 1 circling clockwise in front of building (three times).	
04:48	<i>Myotis</i> sp.	Eastern elevation: 1 circling in trees to the north-east of the building.	
04:49	Common pipistrelle	Eastern elevation: 1 circling anti-clockwise in front of building (twice) and continuing south.	
04:51	<i>Myotis</i> sp.	Eastern elevation: 1 circling anti-clockwise in front of building (twice) and continuing north.	
05:08	Common pipistrelle	Eastern elevation: 1 commuting from north to south in front of building.	
05:09	Soprano pipistrelle	Eastern elevation: 1 circling and diving anti-clockwise in front of building (twice) and continuing north.	
05:10	Common pipistrelle	Eastern elevation: 1 commuting from south, circling anti-clockwise in front of building (twice) and continuing north.	
05:11	Soprano pipistrelle	Eastern elevation: 1 commuting from south and turning east in front of building.	

Dusk

Location:	Barry Docks B17	Project No:	EN038
Weather:	20% cloud cover, moderate wind, dry		
Start temp:	17°C	End temp:	15°C
Date:	28/08/2014	Sunrise/ sunset times:	20:08
Start time:	19:40	End time:	21:40
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
20:20	Common pipistrelle	Southern elevation: 1 emergence. Flew south west.	
20:32	Common pipistrelle	Eastern elevation: 1 feeding over north east corner of building for 6 minutes.	
20:39	Soprano pipistrelle	Eastern elevation: 2 flew south from building then flew lengths, north then south, repeatedly in front of building.	
20:40	Common pipistrelle	Southern elevation: 1 emergence. Flew south.	
20:42	Soprano pipistrelle	Eastern elevation: 2 emergences. Flew lengths, north then south, repeatedly in front of building while feeding.	
20:43	Common pipistrelle	Eastern elevation: 1 feeding over north east corner of building.	
20:43	Common pipistrelle	North eastern elevation: 1 circling above vegetation east of building.	
20:45	Soprano pipistrelle	Eastern elevation: 2 emergences. Flew south.	
20:48	Common pipistrelle	Southern elevation: 1 feeding east along a linear route in front of building.	
20:48	Common pipistrelle	Eastern elevation: 2 emergences. Flew lengths, north then south, repeatedly in front of building while feeding.	
20:50	<i>Myotis</i> sp.	Eastern elevation: 1 flew south from building.	
20:50	Common pipistrelle	North western elevation: 3 commuting east along north side of building.	
21:51	Common pipistrelle	Southern elevation: 1 feeding south east along a linear route in front of building.	
20:52	Soprano pipistrelle	Eastern elevation: 1 flying lengths, north then south, repeatedly in front of building while feeding.	
20:55	Soprano pipistrelle	Eastern elevation: 2 emergences. Flew south.	
21:01	Common pipistrelle	Eastern elevation: 1 flying lengths, north then south, repeatedly in front of building while feeding.	
21:02	Soprano pipistrelle	Eastern elevation: 2 flying lengths, north then south, repeatedly in front of building while feeding.	
21:09	Soprano pipistrelle	Eastern elevation: 1 circling above north eastern corner of building.	

21:10	Common pipistrelle	North eastern elevation: 1 commuting west along north side of building.
21:11	Common pipistrelle	North eastern elevation: 1 commuting south over vegetation east of building.
21:14	Common pipistrelle	1 heard feeding but not seen.
21:18	<i>Myotis</i> sp.	1 heard feeding but not seen.
21:22	Common pipistrelle	1 heard but not seen.
21:30	Common pipistrelle	1 heard but not seen.

Dawn

Location:	Barry Docks B17	Project No:	EN038
Weather:	90% cloud cover, moderate wind, dry		
Start temp:	17°C	End temp:	15°C
Date:	29/08/2014	Sunrise/ sunset times:	06:20
Start time:	04:30	End time:	06:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
05:22	Common pipistrelle	1 heard commuting but not seen.	
05:23	Common pipistrelle	Southern elevation: 1 commuting east across front of building.	
05:47	Soprano pipistrelle	Eastern elevation: 1 flying south from building.	

Building 18

Dusk

Location:	Barry Island B18	Project No:	EN038
Weather:	Light Breeze, 40% cloud cover, dry		
Start temp:	19°C	End temp:	17°C
Date:	29/07/2014	Sunrise/ sunset times:	20:53
Start time:	20:30	End time:	22:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:41	Common pipistrelle	Southern elevation: 1 commuting north to south over building.	
21:41	Common pipistrelle	Southern elevation: 1 commuting from south, circling over building and heading north.	
21:57	Common pipistrelle	Southern elevation: 1 commuting from north, dipping down and continuing south, foraging behaviour east of the building.	
22:03	Common pipistrelle	Eastern elevation: 1 commuting from south-east to north-west to the east of the building.	
21:59	Common pipistrelle	Western elevation: 1 commuting from east to west down lane, south of the building, foraging behaviour.	

Dawn

Location:	Barry Docks B18	Project No:	EN038
Weather:	Clear, dry, cool, still		
Start temp:	16°C	End temp:	13°C
Date:	30/07/2014	Sunrise/ sunset times:	05:21
Start time:	03:30	End time:	05:30
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
04:35	Common pipistrelle	Southern elevation: 1 commuting from north to south north of the building.	
04:36	Common pipistrelle	Eastern elevation: 1 commuting from north-west to south-east to the east of the building.	
04:40	Common pipistrelle	Southern elevation: 1 commuting south-east to north-west level with building.	
04:43	Common pipistrelle	Western elevation: 1 commuting from west to east down lane, south of the building.	
04:46	Common pipistrelle	Southern elevation: 1 commuting from west to east down lane.	
04:52	Common pipistrelle	Eastern elevation: SNH: 1 commuting from north to south, east of the building.	
04:56	Common pipistrelle	Eastern elevation: SNH: 1 commuting from east and turning north in front of building.	
05:02	Common pipistrelle	Eastern elevation: 1 re-entry in the gap between the top of the wall and the curved top of the building.	
05:05	Common pipistrelle	Southern elevation: 1 commuting from west to east next to buildings south of lane and building.	

Dusk

Location:	Barry Island B18	Project No:	EN038
Weather:	100% cloud cover, moderate wind, light drizzle		
Start temp:	13°C	End temp:	13°C
Date:	21/08/2014	Sunrise/ sunset times:	20:28
Start time:	20:00	End time:	21:58
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:27	Common pipistrelle	1 heard commuting but not seen.	

Dawn

Location:	Barry Island B18	Project No:	EN038
Weather:	40% cloud cover, light wind, damp (rain overnight)		
Start temp:	11°C	End temp:	10°C
Date:	22/08/2014	Sunrise/ sunset times:	06:08
Start time:	04:15	End time:	06:15
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
05:25	Common pipstrelle	Southern elevation: 1 commuting north along west side of building	
05:30	Common pipstrelle	Southern elevation: 1 commuting east from west side of building	
05:47	Common pipstrelle	Southern elevation: 1 re-entry through gap under curved roof and top of wall	

Dusk

Location:	Barry Island B18	Project No:	EN038
Weather:	80% cloud cover, no wind, dry		
Start temp:	18°C	End temp:	15°C
Date:	10/09/2014	Sunrise/ sunset times:	19:39
Start time:	19:10	End time:	21:09
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
20:04	Common pipstrelle	1 heard commuting but not seen	
20:05	Common pipstrelle	Southern elevation: 1 emergence from a gap between the roof and the wall in south east corner of building. Flew south	
20:08	Common pipstrelle	Southern elevation: 1 feeding over vegetation south of building then flying west	
20:17	Common pipstrelle	Western elevation: 1 feeding north along road in front of building	
20:20	Common pipstrelle	Southern elevation: 1 commuting south along road in front of building	
20:23	Common pipstrelle	Southern elevation: 1 feeding north along road then returning south east to vegetation south of building	
20:25	Common pipstrelle	1 heard commuting but not seen	
20:28	Common pipstrelle	Southern elevation: 1 commuting east over vegetation south of building	
20:28	Common pipstrelle	Southern elevation: 1 feeding north along road in front of building	
20:40	Common pipstrelle	1 heard commuting but not seen	
20:45	Common pipstrelle	1 heard commuting but not seen	
20:51	Common pipstrelle	1 heard commuting but not seen	

20:54	Common pipstrelle	Northern elevation: 1 circling in front of building
21:00	Common pipstrelle	1 heard feeding but not seen
21:05	Common pipstrelle	1 heard commuting but not seen
21:07	Common pipstrelle	1 heard commuting but not seen

Dawn

Location:	Barry Island B18	Project No:	EN038
Weather:	10% cloud cover, very light wind, dry		
Start temp:	12°C	End temp:	11°C
Date:	11/09/2014	Sunrise/ sunset times:	06:42
Start time:	05:10	End time:	06:50
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
05:41	Common pipstrelle	1 heard commuting but not seen	
05:58	Common pipstrelle	1 heard commuting but not seen	
06:09	Common pipstrelle	1 heard commuting but not seen	

Building 19

Dusk

Location:	Barry Docks B19	Project No:	EN038
Weather:	Dry, 25% cloud cover, slight wind		
Start temp:	18°C	End temp:	16°C
Date:	06/08/2014	Sunrise/ sunset times:	20:40
Start time:	20:10	End time:	22:45
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
N/A	N/A	N/A	

Dawn

Location:	Barry Docks B19	Project No:	EN038
Weather:	Dry, still, clear		
Start temp:	14°C	End temp:	12°C
Date:	07/08/2014	Sunrise/ sunset times:	05:33
Start time:	04:00	End time:	05:45
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
05:02	Common pipistrelle	Southern elevation: 1 commuting south east of the building	
05:15	Soprano pipistrelle	Southern elevation: 1 circling south of the building and continuing west	
05:15	Soprano pipistrelle	Southern elevation: 1 circling south of the building several times	
05:18	Soprano pipistrelle	Southern elevation: 1 circling very high south of building	

Dusk

Location:	Barry Docks B19	Project No:	EN038
Weather:	60% cloud cover, no wind, dry		
Start temp:	18°C	End temp:	17°C
Date:	08/09/2014	Sunrise/ sunset times:	19:43
Start time:	19:15	End time:	21:15
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
20:08	Common pipistrelle	South-east elevation: 1 commuting east over the building	
20:14	Common pipistrelle	North-west elevation: 1 commuting west in front of building	
20:20	Pipistrelle species	South-east elevation: 1 commuting south east in front of building	
20:33	Common pipistrelle	1 heard but not seen	
20:35	Common pipistrelle	1 heard but not seen	
20:37	Soprano pipistrelle	North-west elevation: 1 commuting north west over building	
20:52	Common pipistrelle	2 heard but not seen	
21:00	Pipistrelle species	1 heard but not seen	
21:08	Common pipistrelle	1 heard but not seen	
21:14	Common pipistrelle	1 heard but not seen	

Dawn

Location:	Barry Docks B19	Project No:	EN038
Weather:	100% cloud cover, light wind, dry		
Start temp:	14°C	End temp:	12°C
Date:	09/09/2014	Sunrise/ sunset times:	06:39
Start time:	05:00	End time:	06:50
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
05:43	Pipstrelle species	1 heard but not seen	
05:48	Common pipistrelle	North-west elevation: 1 commuting west over vegetation in yard north of building	
06:04	Pipstrelle species	1 heard but not seen	
06:07	Common pipistrelle	North-west elevation: 1 feeding over vegetation in yard north of building	
06:08	Common pipistrelle	South-eastern elevation: 1 circling in front of building	
06:10	Common pipistrelle	South-eastern elevation: 1 commuting north east over vegetation	

Building 21**Dusk**

Location:	Barry Docks B21	Project No:	EN038
Weather:	Dry, clear, moderate breeze		
Start temp:	12°C	End temp:	10°C
Date:	18/08/2014	Sunrise/ sunset times:	20:30
Start time:	20:00	End time:	22:00
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
21:00	Common pipistrelle	South-west elevation: 1 commuting east along path in front of building	
21:03	Common pipistrelle	North-west elevation: 1 commuting north in front of building	
21:05	Common pipistrelle	North-west elevation: 1 commuting west in front of building	
21:15	Common pipistrelle	North-west elevation: 1 circling in front of building adjacent to vegetation	
21:37	Common pipistrelle	South-west elevation: 1 commuting west along road in front of building	
21:40	Common pipistrelle	North-west elevation: 1 commuting west in front of building	
21:44	Common pipistrelle	1 heard but not seen	
21:55	Common pipistrelle	1 heard but not seen	

Dawn

Location:	Barry Docks B21	Project No:	EN038
Weather:	Dry with brief shower towards end, 90% cloud, light breeze		
Start temp:	10°C	End temp:	8°C
Date:	19/08/2014	Sunrise/ sunset times:	06:05
Start time:	04:30	End time:	06:15
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
N/A	N/A	N/A	

Dusk

Location:	Barry Docks B21	Project No:	EN038
Weather:	20% cloud cover, no wind, dry		
Start temp:	20°C	End temp:	13°C
Date:	09/09/2014	Sunrise/ sunset times:	19:41
Start time:	19:10	End time:	21:15
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
20:05	Common pipstrelle	North-east elevation: 1 commuting west along road in front of building	
20:06	Common pipstrelle	North-west elevation: 1 commuting north east along road in front of building	
20:08	Common pipstrelle	North-east elevation: 1 commuting west along road in front of building	
20:14	Common pipstrelle	South-west elevation: 1 commuting north east along road in front of building	
20:16	Common pipstrelle	South-west elevation: 1 commuting west over building	
20:17	Common pipstrelle	South-west elevation: 1 commuting west from vegetation to the south east of the building	
20:23	Common pipstrelle	North-east elevation: 1 feeding west along road in front of building	
20:24	Common pipstrelle	North-east elevation: 1 feeding above road in front of building	
20:30	Common pipstrelle	North-east elevation: 1 feeding north east along a linear route from yard to the north west of the building	
20:37	Common pipstrelle	South-east elevation: 1 circling above road in front of building	
20:41	Common pipstrelle	South-east elevation: 1 circling above road in front of building	

20:43	Common pipistrelle	North-east elevation: 1 feeding above road in front of building
20:44	Common pipistrelle	1 heard commuting but not seen
20:49	Common pipistrelle	South-east elevation: 1 feeding south west along road in front of building
20:51	Common pipistrelle	1 heard feeding but not seen
20:57	Common pipistrelle	1 heard commuting but not seen
21:05	Common pipistrelle	South-west elevation: 1 feeding over vegetation to the south east of the building
21:07	Common pipistrelle	1 heard feeding but not seen

Dawn

Location:	Barry Docks B21	Project No:	EN038
Weather:	80% cloud cover, no wind, dry		
Start temp:	12°C	End temp:	10°C
Date:	10/09/2014	Sunrise/ sunset times:	06:41
Start time:	05:10	End time:	07:00
Time	Species	Notes (flight path, emerging/ re-entering, location observed, behaviour)	
N/A	N/A	N/A	

Appendix C: Bat Activity Maps

Bat activity map for B1



Bat activity map for B2



Bat activity map for B5



Bat activity map for B6



Bat activity map for B9



Bat activity map for B12



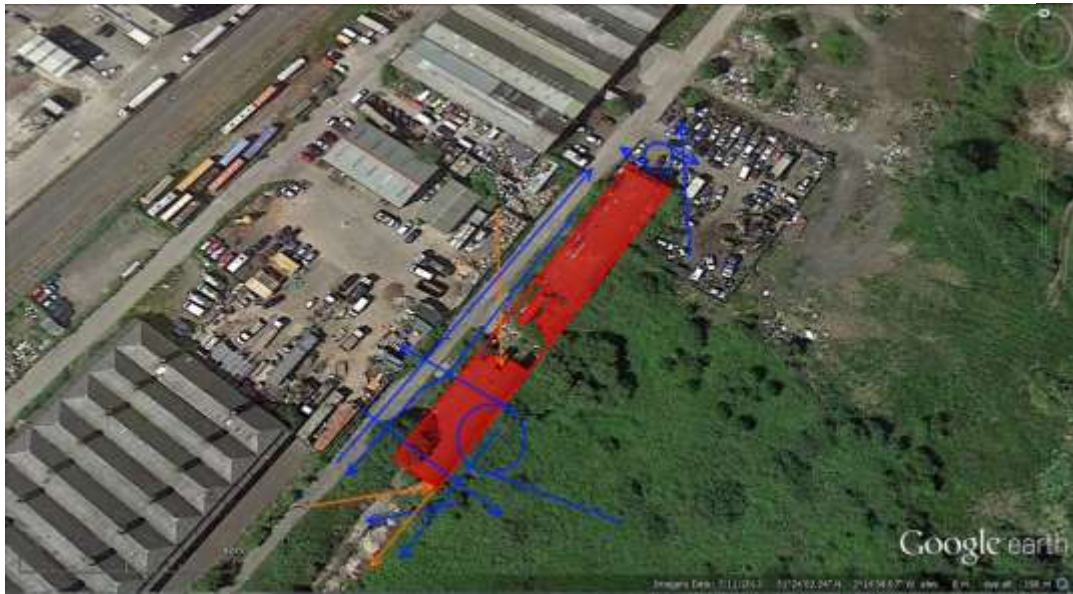
Bat activity map for B14



Bat activity map for B17



Bat activity map for B18



Bat activity map for B19



Bat activity map for B21

