Glannau Gwaun Infant School

Brodog Lane, Fishguard

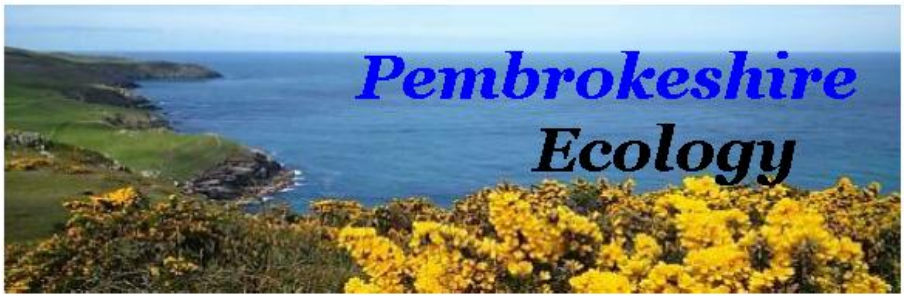
Pembrokeshire

SA65 9NW

OS Grid reference: SM 95589 37355

Report Progress

Item	Date sent	Authors	Reviewer
Draft report for review	3rd July 2018	*Anna Sutcliffe*	*Steve Sutcliffe*
Final Draft Report	7th July	*Anna Sutcliffe*	*Steve Sutcliffe*
Final Report with all plans etc	10th July	*Anna Sutcliffe*	*Steve Sutcliffe*
Draft Method Statement	**N/A**		
Final Method Statement	**N/A**		
Protected Species (bat) License	**N/A**		



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Protected Species Survey Report with specific reference to bats

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Owner	PCC	County Hall, Haverfordwest SA61 1TP	01437 764551	
Architect	Architects			
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This document has been prepared by Pembrokeshire Ecology as a partner of Biodiversity Solutions Limited for the agent AND OWNERS ATEB solely as a Protected Species Survey for Bats, (and Barn owls if applicable).

Survey dates - 2018	
15th June 2018	**Buildings [outside] and site**
15th June	**Dusk survey**
29th June 2018	**Pre-dawn survey**
Statics	**Deployment of statics during surveys only; no access to the inside of the buildings.**
Survey personnel	**Anna Sutcliffe, B.Sc. (Hons.), MCIEEM.** **NRW licensed and experienced bat surveyor and helped by one accredited agent and one trainee**
Planning Ref:	

CONTENTS

Executive Summary

Details

A bat assessment was commissioned for the former Infant School at Brodog Lane Fishguard in Pembrokeshire SA65 9NW.

Date of scoping: 15th May and 15th June 2018

Date of activity surveys: 15th June 2018 Dusk emergence survey

29th June 2018 Pre-dawn survey

Development plan: to build affordable housing on the site in 18 units.

Site and location

OS Grid Ref: SM 95589 37355. The site is situated on the north side of Brodog Lane next to the Police station on the right angled bend in that street.

Habitat close by is mostly urban but with larger houses and mature gardens on the east side of the site. The site is within 160m of good quality habitat on the coastal fringe of Old Fishguard harbour for good quality foraging and high quality roosting in mature trees. The east side of the site is next to several large houses with huge mature gardens linking the habitat from school to coast, most are very recently done up but on the south east corner of the site was assessed as having high bat roost potential.

Bat Roost potential of the buildings on site are at the best low potential and the least negligible.

Access points are those created by the vandalism and also by the boarding over of the vandalised walls, windows and ceilings creating gaps for bats to roost behind. New gaps have appeared on the west side in an entrance ceiling on a corner of the south west part of the building.

Actual bat signs: none

Bat Activity Surveys

A dusk activity survey on the 15th June 2018 found the following:

- No bats coming out of the buildings
- 1 x soprano pipistrelle bat passing at 2155hours...along the west boundary from the north to the south.
- Bat walked transect showed that 4 species of bat passed along the hedges and soprano pipistrelle bats were located foraging in the south west and south east corners of the site
- The most bat activity was along the eastern lane-whiskered, soprano and common pipistrelle bats – feeding/commuting.

The pre-dawn activity survey on the 29th June found the following:

- No entry into the buildings
- Most activity was along the east boundary with 3 bat species [common and soprano pipistrelle and whiskered bats] using this feature. Only 2 commuting soprano pipistrelle bats flying directly south to north along the west boundary

Conclusions and recommendations

1. The proposed works have the potential to have a significant impact on bats IF present is the buildings. There are no bats present so the demolition of the buildings can go ahead once suitable planning permission is obtained. [Please note that due to vandalism this building does have access locations that young bats in September and October may take advantage of PLEASE tell the ecologist when the demolition is going to take place.]
2. Enhancement measures – bats do use the eastern and western boundary and forage in the north east and north west corners. It is important to maintain those trees and habitat and to enhance the site for all biota.
3. Enhancement on site for house martin, house sparrow and common swifts are recommended.

1.0 INTRODUCTION

A bat assessment was commissioned for the former Infant School at Brodog Lane Fishguard in Pembrokeshire SA65 9NW. (OS grid reference: **SM 95589 37355**).

The property consists of pre-fabricated, single storey units with flat roofs and an open sided water tank store on top of a middle section of the school. (See site layout in Figure 1 and Appendix 3).

1.1 Works would impact on bats if they are roosting or using the buildings and as the building is designated to be demolished, a full assessment was commissioned.
Date of scoping: 15th May and 15th June 2018
Date of activity surveys: 15th June 2018 Dusk emergence survey
29th June 2018 Pre-dawn survey
Remote recording was also used during these two surveys to check on the bat activity along the good quality habitat on the east side
This report confirms the findings of these surveys

1. 2 Development proposal is to build 18 houses on this plot of land.

1.3 Aims and Objectives

The aims and objectives of the survey work were to:

1. Assess the buildings for current and potential use by bats through direct observation
2. Determine whether any bats are using the buildings, their numbers and if so, to identify their roost locations and access/exit points, where possible and also flight lines through the site
3. Recommend suitable mitigation / compensation for any loss or disturbance of actual bat roosts or areas likely to host roosts at other times of the year
4. Recommend bat enhancement measures for the buildings, if required
5. Recommend biodiversity enhancements for the new build houses and site boundaries.

2.0 METHODOLOGY

2.1 Desktop study

2.1.1 A desktop study was undertaken to support the field survey work.

2.1.2 Satellite imagery and Ordnance Survey maps were used to evaluate the site within the context of the local landscape. Satellite imagery of the area was assessed using Google Earth imagery and an Ordnance Survey maps [from Bing maps] of the area are presented in Appendix 3.

2.1.3 Local Records Centre information has already been obtained from the West Wales Biodiversity Information Centre. [WWBIC].

2.1.4 Designated sites [Special Areas for Conservation; Sites of Special Scientific Interest, local reserves] close to the project site – these were also assessed in the Desk Top study.

2.2 Bat Scoping Survey

2.2.1 The scoping survey of the buildings was undertaken by Anna Sutcliffe on the 15th June 2018.

2.2.2 **Buildings scoping survey** - methods

The walls of the school buildings were thoroughly inspected externally for bats and signs of bats (for example droppings, moth wings, scratch marks, oil staining) with the aid of a high-powered lamp and close focussing binoculars.

An Anabat Walkabout was used during that time to listen for any active bats present within the cracks and crevices at the time of the survey.

The buildings were also assessed for their potential to accommodate bats from both internal and external features.

2.3 Bat Activity Survey

All surveys are completed as described by the Bat Survey Guidelines 2016 [Bat Conservation Trust]

Dusk Activity Survey

2.3.1 A dusk activity survey was carried out on the 15th June 2018. This was used to identify any access points used by bats, to identify species and numbers and the level and type of activity present around the buildings and the site boundaries

2.3.2 A team of surveyors were employed to survey the buildings, covering all elevations between them (their locations and all facts are found in Section 3 Results and Appendices 5 and 6).

The lead surveyor has suitable and sufficient experience and is qualified with 9 years of bat survey experience as a licenced bat surveyor. The details are seen below as well as the equipment used during the surveys.

2.3.3 **Equipment -** The surveyors were equipped with Anabat SD2 units and Anabat Walkabout, the recording bat detectors are supplemented by using heterodyne detectors e.g. Batbox Duet and Pettersson D230 bat detectors for increased sensitivity to bat calls

2.3.4 The surveyors were in position from 2120hours, 15minutes before sunset and for 1.5hours afterwards. (Bat survey Guidelines, BCT 2016)

2.3.5 Survey conditions were optimal as seen above.

2.3.6 All recorded data was later analysed using AnalookW Software. The raw data files are held on disk by A. Sutcliffe of Pembrokeshire Ecology.

Pre-dawn Activity Survey [re-entry]

2.3.8 A pre-dawn roost re-entry survey was carried out on 29th June.

2.3.9 Surveyors were in position from 0306hours, 2hours before sunrise. (Bat survey Guidelines, BCT 2016). The survey finished at 0506hours

2.3.10 All recorded data were later analysed using AnalookW software. The raw data files are held on disc by A. Sutcliffe.

2.3.11 The weather conditions for all surveys need to be dry, with low speed winds and warm temperatures as not all bats show full activity in temperatures below 9°C. (Bat survey Guidelines, BCT 2016)

Remote recording

2.3.12 Remote recording (Anabat Express detector) took place on the good quality habitat along the lane and Pembrokeshire bank and hedge on the east side of the project site. Time periods were during the surveys only.

2.4 Limitations

2.4.1 The results and recommendations of the report are based on findings as they were at the time of the surveys. The surveyors cannot be held responsible for any base line changes that may have occurred since the surveys were conducted that may have any effect on the results and recommendations. All efforts were made to accurately survey the site, during good survey conditions.

2.4.2 The aim of a bat survey is to build as complete a picture as possible of how a site is being used by bats. This report's interpretations are based on the evidence collected on the survey dates and can only provide a snapshot of the site's use by bats. However, from this it is possible to assess the site's potential use by bats at other times of the year.

2.4.3 Bats are a difficult group to survey for and it is usually signs of their activity rather than their actual presence that indicates the existence of a bat roost. However, many species of bat in the UK are crevice dwelling and can hide away in the smallest of cracks. Signs of bats and the bats themselves can be difficult to find within a building and they frequently leave no signs of occupation, especially if they are cool roosting (See Appendix F). They can also remain hidden for prolonged periods of time if conditions are not favourable or if they do not need to feed.

2.4.4 Bats use a wide range of roosting places throughout the year and may move between one roost and others, sometimes as frequently as every few days. Such a roost may be only used once a year, but for that particular time or spell of weather, it may be important. Such roost sites can be especially difficult to find.

2.4.5 The assessment provided here is therefore based on the surveyors' knowledge and experience as to how bats may be using the site. The buildings were surveyed for features that could be exploited by each bat species and was assessed in the context of their immediate environs and the wider landscape.

2.4.6 There were no additional constraints affecting this survey.

3.0 RESULTS

3.1 Desktop study - site location and main features referred to in the text

Figure 1 – site lay out with approximate boundary in red. Roads are brown and dotted brown is the eastern lane leading to good habitat

3.1.1 Habitat Context

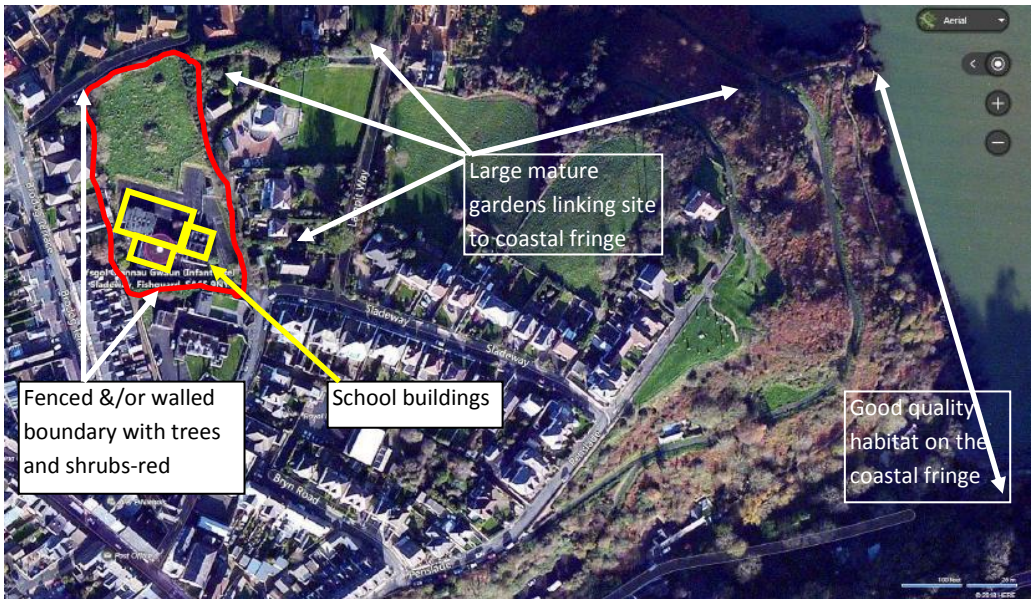


Figure 2 – Site boundary marked in red and buildings area in yellow. Site and habitat features labelled.

3.1.1a Labelled satellite imagery and an Ordnance Survey map of the site and surroundings can be seen above and in Appendix 3.

3.1.1.2 DESCRIPTIONS OF THE BUILDINGS AND SITE

3.1.1.2a **HABITAT**

The habitat around the school has been described in a separate ecological report. To summarise:
50% of the site is covered by buildings and hard standing – tarmac
50% is grassed playground which has been left for 7 years. The habitat is grass and low herbs in the central areas. Species are mainly those expected in a disturbed habitat with nutrient enhancement in some areas, but in others neutral grassland and signs of species from a wooded environment are present especially in the good quality boundary of Pembrokeshire bank and hedge on the east side.
Several areas of trees on the boundary:
Leylandii – south east and north east
Ash - semi mature North West and east hedge
Sycamore – semi mature North West and east hedge
Also:

- Hazel
- Holly
- Hawthorn
- Blackthorn
- Elder

3.1.2 Local Bat Species

3.1.2a **West Wales Biodiversity Information Centre (WWBIC) data search** – Table 1

Bat species	Distance from site	Locations
Brown long eared	301m	Fishguard FE centre
Soprano pipistrelle	301m	Fishguard FE centre
Common pipistrelle	301m	Fishguard FE centre
Greater horseshoe	1087m	Drim Mill
Daubentons	1087m	Drim Mill

3.2 BAT SCOPING SURVEY

3.2.1 Buildings description [Photos in Appendix 4; tabulated results of the buildings survey in Appendix 5]

Exterior

3.2.1 Main features:

- Single storey
- Flat roofed –poured bitumen felt
- Vandalised walls and ceilings with boarding that provide low quality shelter for bats to roost – north, south, east and west elevations.
- Walls in poor condition
- Not occupied for 7 years.
- No access to interior due to the presence of asbestos

Potential roost access features (See Figs 4-7in Appendix 4)

3.2.2 A small number of potential access points were identified externally:

- Gaps along the wall top on the western elevation behind the wooden fascia
- A 1" gap over the top of the door on the eastern elevation
- Two narrow open windows on the northern and western elevations

Evidence of bats and roof nesting birds (Fig. 10 in Appendix 4)

3.2.4 BATS – no roosting bats

Include other parts of the site that may be impacted by the development:

3.3 BAT ACTIVITY SURVEY

3.3.1 Surveyor experience

The surveyors all have many years of experience. The table which summarises this level of experience is seen below

3.3.2 The equipment used was: Recording bat detectors – Anabat SD2 and Anabat Walkabout and Heterodyne – Batbox Duet

Table 2 – surveyor experience and equipment

Surveyor	Licenced or accredited	Years of experience	Equipment				Location
Both surveys unless otherwise noted			Bat detector used	Torch	Binoculars	Endoscope	
Anna Sutcliffe	Licensed and suitably experienced	9years of bat surveys and 40 years of ecology surveys	Anabat Walkabout and Anabat SD2	Head & hand torch	yes	yes	W & N
Steve Sutcliffe	Accredited agent to Anna	7 years of experience with bats and 50 years with bird surveys	Anabat SD2 plus heterodyne Bat Box Duet	Head & hand torch	yes	no	E & N
Trainee-dusk only	training	10 years wildlife and bird surveys	Anabat SD2				S & W

3.3.2 Survey effort - Three surveyors were used for the dusk emergence and two on the dawn:

i. Location of surveyors and coverage can be seen in Table 2

ii. General conditions were excellent being warm, dry and calm. [see weather in Appendix 5]

iii. Static detectors were deployed on two occasions running for the duration of the surveys only.

iv. Map of static locations Appendix 3: Figure 3

3.3.3 This summary has been extrapolated from the data recording forms and the activity maps in Appendix E.

3.3.3.1 - 9TH May 2018

i. DUSK EMERGENCE SURVEY

Survey	Date 2018	Sunset /rise times	Survey times	Wind speed & Direction	Temp °C Start-finish	Cloud %	Dry / Wet
Dusk Presence/ Absence	09/05/18	2055	2040-2200	SW 3-4 - sheltered on site	11.5-9	100	Dry

ii. During the dusk survey, No bat species were recorded across the site on the handheld and remote detectors:

a. Soprano Pipistrelle (*Pipistrellus pygmaeus*)
b. Common Pipistrelle (*Pipistrellus pipistrellus*)
c. Myotis spp (whiskered bat-*Myotis mystacinus*)

iii. Activity of each species

See Map of activity in Appendix 5: next to tables of results for this survey

a. No bats around the buildings
b. Foraging bats in the north west and north east corners of the land around the tall trees
c. Foraging along the eastern lane and commuting from the bat roost/old house near the school
d. Commuting path for one bat south to north on the west boundary

iv. REMOTE STATIC DETECTOR RESULTS – location eastern lane

a. Myotis spp [most likely whiskered bat]
b. Common pipistrelle bats
c. soprano pipistrelle bats

3.3.3.2 DAWN SURVEY

i. 29th June - activity surveys

Survey	Date 2018	Sunset /rise times	Survey times	Wind speed & Direction	Temp °C Start-finish	Cloud %	Dry / Wet
Presence/ Absence/activity	29/06/18	0506	0306-0506	calm	19	0	dry

ii. During the dawn survey - No bat species were recorded accessing the buildings.

a. Soprano Pipistrelle (*Pipistrellus pygmaeus*)
b. Common Pipistrelle (*Pipistrellus pipistrellus*)
c. Whiskered bat (*Myotis mystacinus*)/Myotis spp

iii. Activity of each species

See Map of activity in Appendix 5 next to tables of results for this survey.

4.0 INTERPRETATION AND ASSESSMENT

4.1 The school buildings at Fishguard infant school are situated in moderate to low quality bat habitat but very close and connected to high potential habitat for feeding and roosting, 160m east.
The condition of the buildings is not favourable for bat maternity roosts and the data collected would indicate that no bats are roosting in the building during the dates of the survey work.

The activity surveys demonstrated a relatively medium to low level of use, by single or small numbers of bats along the main features of the project site.

Remote recording indicates that use is regular and consistent for at least the survey period along the east boundary in particular, mainly because there is a house which has bats roosting in at the south end of the lane near the entrance to the school.

Feeding:

- east lane and east hedge
- north east corner
- north west corner

Commuting

- East lane and hedge
- West boundary

5.0 CONCLUSIONS

5.1 From the evidence collected, no bats are roosting in the buildings at Brodog Lane primary school.

5.2 The demolition of these buildings can proceed with appropriate planning permissions.

An important note has been made:

These buildings are being vandalised and holes have been punched into the walls and ceilings. At the end of the year [August, September and October and March April] young bats disperse into the countryside and will take refuge and shelter in a wide variety of buildings.

IF the demolition goes ahead in those times please inform the ecologist so that she can brief the builders and be ready to come to site IF BAT(S) are found in the course of the demolition. Bats are protected species and this advice must be followed.

6.0 DRAFT METHOD STATEMENT – advice notes to read: no bats present so no method statement or licence for this site

6.1 There is no scope to retain any of the current buildings on site but no bat activity was noted.

6.1 New bat roost creation

6.1.2 All of the mitigation requirements will need to be added by the site architects to the site plan and architectural drawings provided for the planning application.

6.2 Timing of works – N/A

Cautionary note:
Bats can take advantage of any access point. In the autumn the young bats disperse from the nursery roost, they will investigate any potential building and so that time in the year this property may be visited by lone bats possibly sheltering from the rapid onset of inclement weather.

6.3 Additional Measures

6.3.1 The following additional measures will be taken on site.

a) **Contractor awareness induction**: Contractors working on the buildings will be made aware of the possibility of bats being present and a careful, precautionary approach taken when removing the roofs. All removed materials should also be hand lifted and checked before discarding.

b) **Lighting**: A lighting plan should be included on site plans, at least showing location and type of external lights;

c) Where exterior lighting is provided, it should be placed away from and shielded from casting light onto the trees and hedges around the site; low level, low wattage lighting should be used in these areas, if lighting is required there at all. Any such lighting should be on time restricted, motion sensitive triggers.

d) The spectral composition of the luminaires should emphasise the longer wavelengths - 'warm light' and avoid UV and blue/green light as these shorter wavelengths affect bat and insect behaviour.

e) **Timber treatment**: All timbers to be used where bats will be roosting or encouraged to roost, should be untreated, or if treatment is necessary, with bat friendly products, as highlighted in TIN092 (Natural England, 2011).

f) **Materials**: The materials used in the provision of bat roost access points and actual roost sites will be of natural, untreated materials, i.e. timber or stone-based products and not metals and plastics – surfaces need to be rough to help the bats grip.

7.0 REFERENCES

Bat Conservation Trust (2012). *Bats and Buildings: Bats and the Built Environment Series*. Bat Conservation Trust: London. Available from: file:///C:/Users/User/Downloads/Bats_and_Buildings_2012_web.pdf

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

Gunnel, K., Murphy, B. & Williams, C. (2013). *Designing for Biodiversity: a technical guide for new and existing buildings* (2nd ed.). RIBA: London.

8.0 APPENDICES

APPENDIX 1: Legislative Context

The following local and national planning policy relating to nature conservation and biodiversity are considered of relevance to the current proposal.

Certain species of animals and plants found in the wild in the UK are legally protected from being harmed or disturbed. These species are listed in the Wildlife and Countryside Act 1981 (as amended) or are named as European Protected Species (EPS) in the Conservation of Habitats and Species Regulations 2010.

There is also legislation that legally protects certain animals - for example, the Protection of Badgers Act (1992) protects badgers and their setts, and the Deer Act (1991) places restrictions on actions that can be taken against deer species.

8.1 Planning Policy Wales and Technical Advice Note 5

8.1.1 This document set out the land use planning policies of the Welsh Assembly Government, with Chapter 5 dealing with Conserving and Improving Natural Heritage and the Coast. The advice contained within Planning Policy Wales (PPW) is supplemented for some subjects by Technical Advice Notes (TAN's).

8.1.2 TAN 5 (Welsh Assembly Government, 2009) specifically provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species.

8.1.3 Under Section 2.4 within the TAN 5, 'when deciding planning applications that may affect nature conservation local planning authorities should':

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;
- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;

- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered;

8.2 Wildlife & Countryside Act 1981

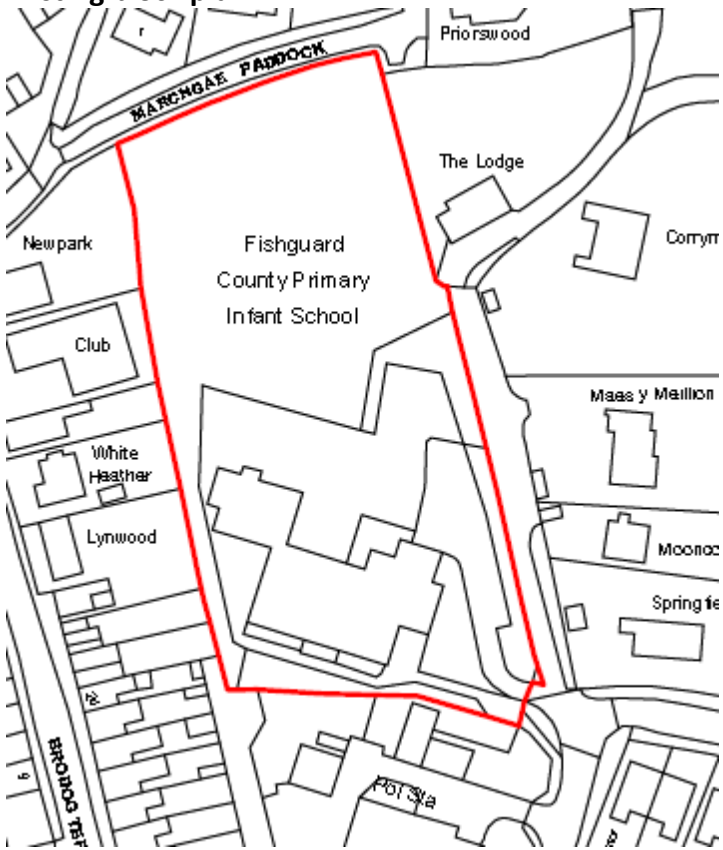
8.2.1 The Wildlife & Countryside Act 1981 (as amended) is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part I within the Act deals with the protection of wildlife.
8.2.2 The provisions relating to animals in the Act only apply to 'wild animals'; these are defined as those that are living wild or were living wild before being captured or killed. It does not apply to captive bred animals being held in captivity.
8.2.3 There are 'defences' provided by the legislation. These are cases where acts that would otherwise be prohibited by the legislation are permitted. Notably these allow things to happen that are reasonable, unpredictable and unavoidable, such as running over a badger on the road.
8.2.4 Licensing: certain prohibited actions under the Wildlife and Countryside Act may be undertaken under licence by the proper authority. For example scientific study that requires capturing protected animals can be allowed by obtaining a license. Trade in the more widespread species is also permitted if licensed.

8.3 Conservation of Habitats and Species Regulations 2017 [30TH NOVEMBER 2017]

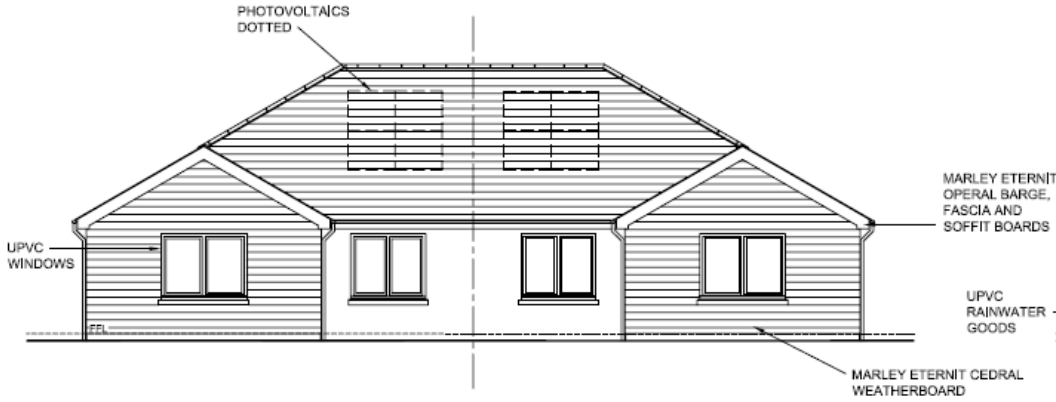
8.3.1 The Conservation of Habitats and Species Regulations 2017 (which are the principal means by which the EC Habitats Directive is transposed in England and Wales) update the legislation and consolidate all the many amendments which have been made to the Regulations since they were first made in 1994 and 2010
8.3.2 These regulations provide for the designation and protection of domestic and European Sites (e.g. Site of Special Scientific Interest [SSSI] and Special Area of Conservation [SAC]) the protection of European Protected Species (animals and plants listed in Annex IV Habitats Directive which are resident in the wild in Great Britain) and the adaptation of planning controls for the protection of such sites and species.
8.3.3 Under the regulations, public bodies (including the Local Planning Authority) have a duty in exercising their functions to have regard to the EC Habitats Directive.
8.3.4 Licensing: certain prohibited actions under the Regulations may be undertaken under licence by the proper authority. For example, where an EPS has been identified and the development risks intentionally, recklessly or deliberately affecting an EPS, then a ‘development licence’ may be required.

APPENDIX 2: Plans for the Site – architects

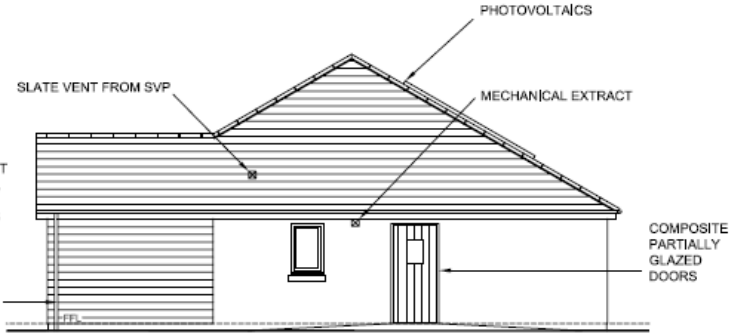
Existing block plan



Proposed Plans to demonstrate locations of enhancements



FRONT ELEVATION 1:100 (UNITS)



SIDE ELEVATION 1:100 (UNITS)

REAR ELEVATION 1:100 (UNITS)

SCALE IN METRES

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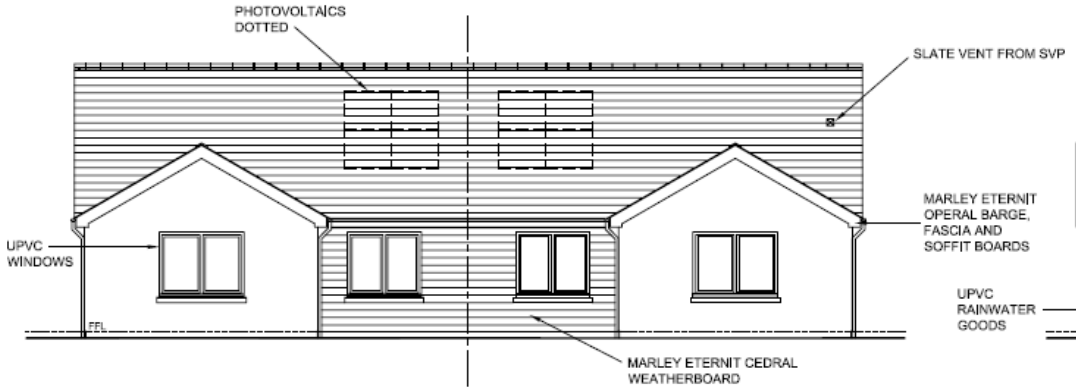
FOR PLANNING PURPOSES ONLY



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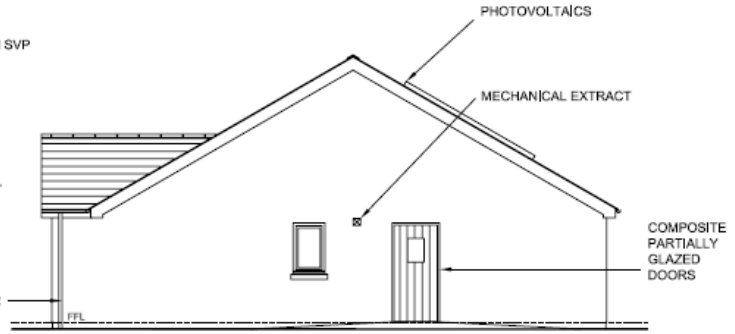

SIDE ELEVATION 1:100 (UNITS)

REAR ELEVATION 1:100 (UNITS)

SCALE IN METRES

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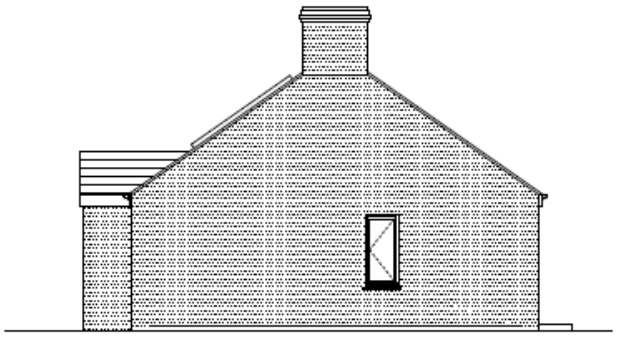
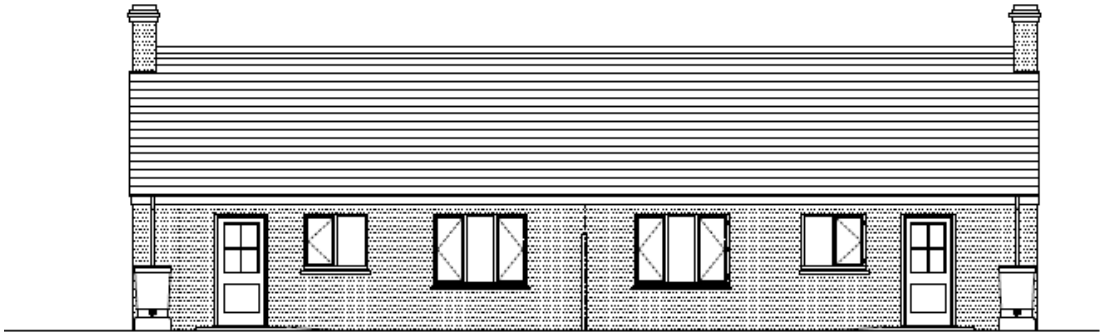
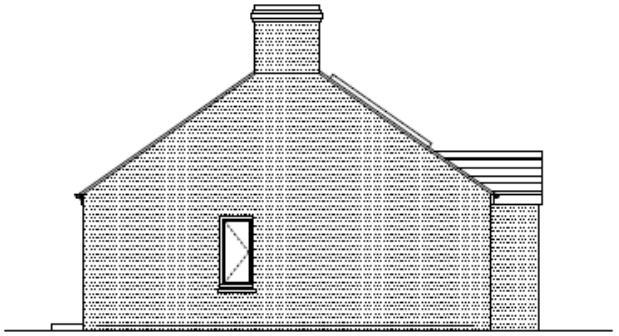
FRONT ELEVATION



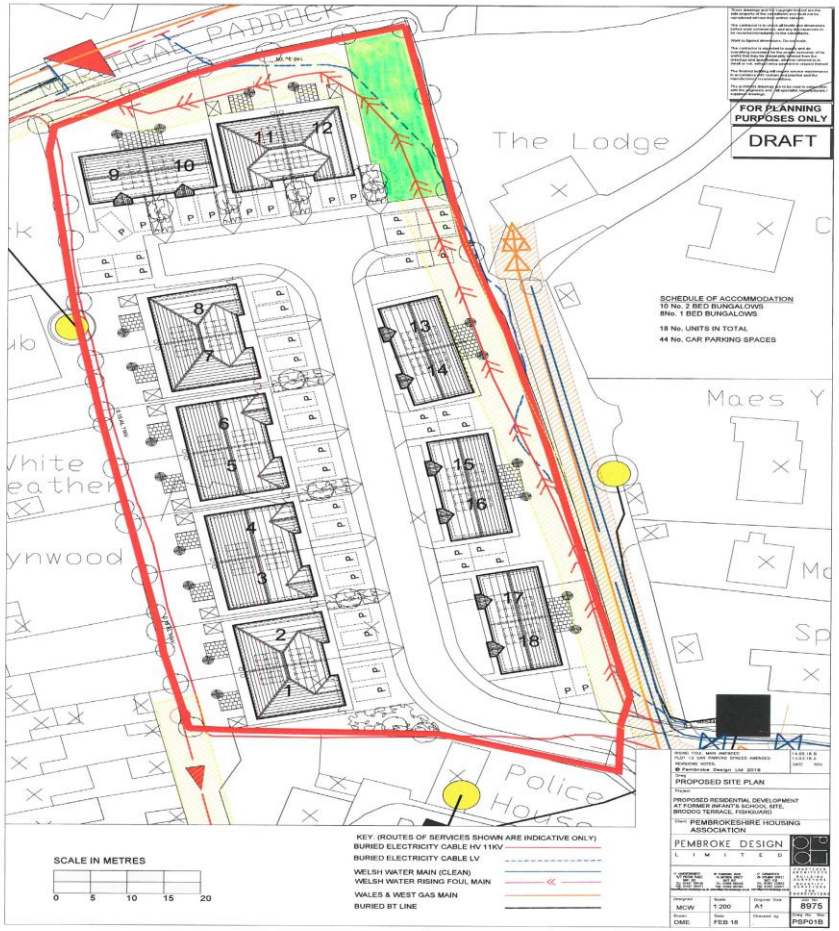
SIDE ELEVATION 1



REAR ELEVATION



SIDE ELEVATION 2



FOR PLANNING PURPOSES ONLY

DRAFT

SCHEDULE OF ACCOMMODATION
10 No. 2 BED BUNGALOWS
8No. 1 BED BUNGALOWS

18 No. UNITS IN TOTAL

44 No. CAR PARKING SPACES

SCALE IN METRES

0 5 10 15 20

KEY: (ROUTES OF SERVICES SHOWN ARE INDICATIVE ONLY)
BURIED ELECTRICITY CABLE HV 11KV
BURIED ELECTRICITY CABLE LV
WELSH WATER MAIN (CLEAN)
WELSH WATER RISING FOUL MAIN
WALES & WEST GAS MAIN
BURIED BT LINE

PROPOSED SITE PLAN

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT AT FORMER INFANTS SCHOOL SITE, BRODDG TERRACE, FISHGUARD

Client: PEMBROKESHIRE HOUSING ASSOCIATION

PEMBROKE DESIGN LIMITED

Designed	Scale	Original Size	Job No
MCW	1:200	A1	8975
Drawn	Date	Checked by	Drwg No / Rev
DME	FEB 16		PSP01B

Y:\PDL LIVE JOBS FOR DFS SHARE\8975 - OLD INFANTS SCHOOL, BRODDG TERRACE, FGUARD\PDL DRAWINGS\8975 EXISTING AND PROPOSED SITE PLAN 02.dwg

APPENDIX 3: Satellite and Ordnance Survey Imagery

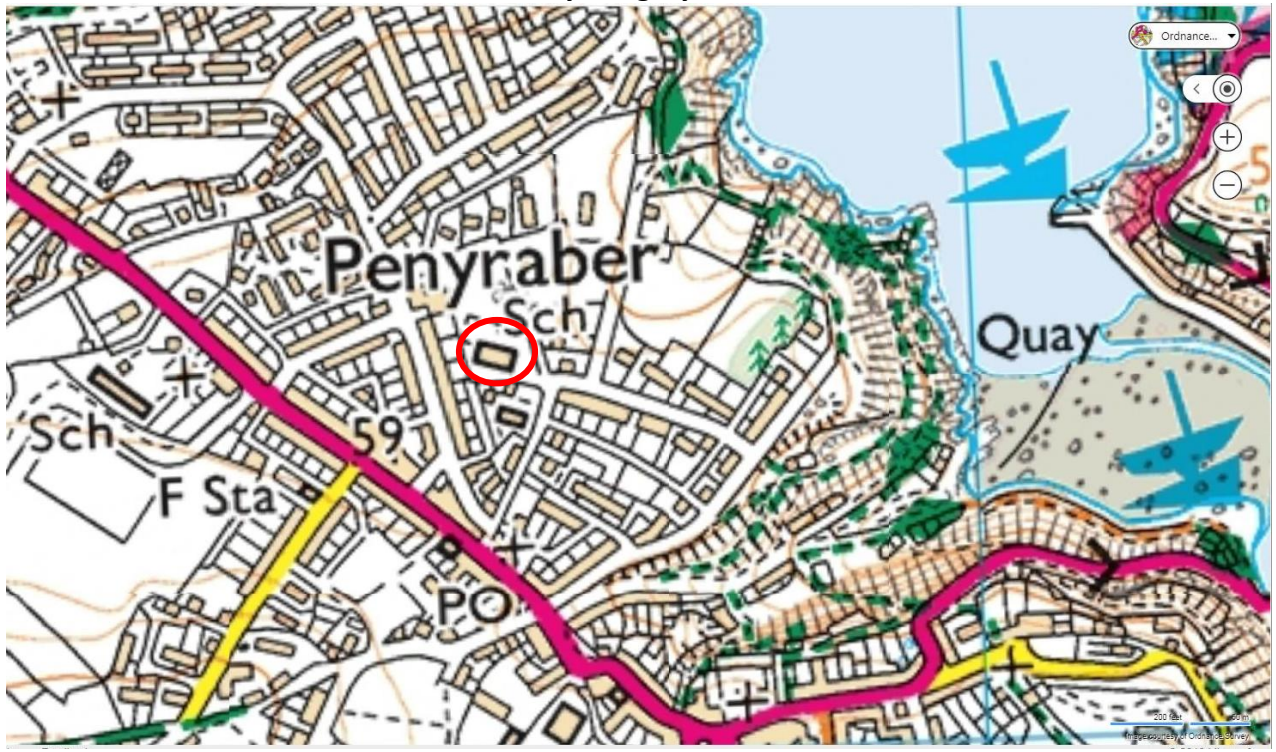


Figure 1 – Ordnance Survey map of area at 1:25,000 scale. Site circled in red

Figure 2 - Satellite imagery giving habitat / landscape context of the site (Base Map Source: Google Earth, 2017 – image from 2006)

Figure 3 - Closer view, showing habitats surrounding and leading to site and the location of the surveyors and Anabat Express detector (Base Map Source: Google Earth, 2017 – image from 2006)

Surveyor locations and Static Anabat Express

APPENDIX 4: PHOTOGRAPHS

Figure 1 - Building south east corner looking south

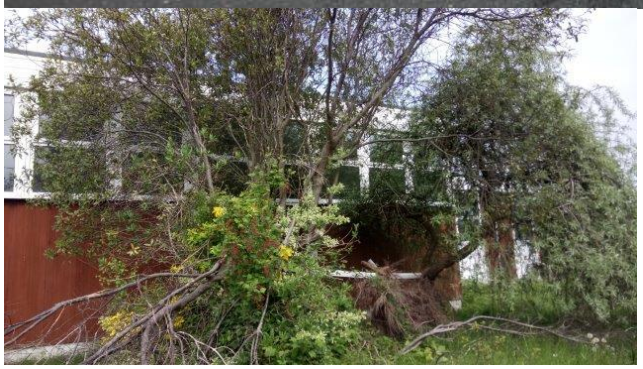


Figure 2 - Building South side

Figure 3 - Building West side

Figure 4 - Building North side

Plan 1 - External pictures – see Buildings survey table in Appendix 5 and plan below showing locations of each Potential Access Point.

PLAN OF THE SITE -potential access points identified: a-e.

Figure 4 - South West – southern entrance porch

Figure 5 - South West facing aspect but on the western side of the buildings – above and below

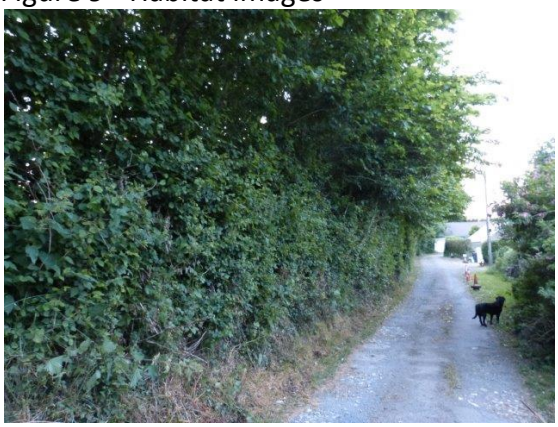
Figure 6 - North side of buildings – west end

Figure 7 - North side of buildings towards the east

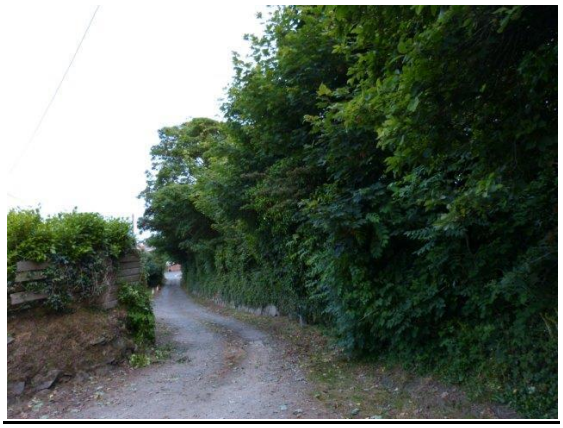
Figure 8 - South side on corner near entrance – not a PAP but tight fascias

<u>Internal pictures – no internal pictures as not access due to health and safety issues with asbestos</u>

Figure 9 - Habitat images



South end of lane on east boundary outside the project site



North end of the lane on east boundary

APPENDIX 5: Buildings Survey and Bat Activity Survey Results

5.1 Description of each feature with images below this table and Appendix 4 for additional images. Date=15th May 2018

5.1 Feature – EXTERNAL	Ref:also see Appendix 4	Material /construction/details/notes	Measurements in metres Length x Width x Height	Chimney	Aspect	Age and condition	Bat roost potential	Action in Once planning is approved
School buildings	Figures 1 and 2 in Section 4	-single storey -pre-fabricated with asbestos, fibre board and Rockwool insulation in the wall cavities	none	none	Front faces south	1960's moderate-poor condition	Negligible	demolish
Roof and roof void	Appendix 4	Rockwool insulation in the roof	none			1960's poor condition	Occasional use	demolish
walls	Appendix 4	Boarded and mended where vandalised but new holes hacked through on the west side	none		East end		Negligible	demolish
Fascias	Appendix 4	Wooden/plastic some gaps but mostly tight	30mm gaps		South and north		low	demolish
Barge boards	Appendix 4	none						demolish
Windows /doors	Appendix 4	UPVC- boarded up where vandalised. Boarding provides low potential bat roost locations					Negligible	
Entrance porches	Appendix 4	West side x 2: ceiling holes punched through						

5.2.1 Dusk emergence survey, 15th June 2018

KEY to tables below:
Emboldened text indicates bats roosting inside building
*****Indicate bats seen/recorded by more than one observer
NR = not recorded NS = not seen
HNS = Heard, not seen Rec. = Recorded
QSp = Uncertain species (call unclear)

5.2.1.1

Site address		**Ex Infant school at Brodog Lane Fishguard**	
Date/type of Survey		**15/06/18**	**Dusk Activity**
Sunrise/Sunset		**-**	**2136**
Time Start/Finish		**2120**	**2300**
Temperature		**14-16ºC**	
Wind		**Calm on west side of site but SW Force 3-4 on East side**	
Cloud	**Ppt/RH**	**4/8- 8/8 or 50% - 100%**	**Dry**
Any Comments		**Surveyor on West and North West corner**	

	Nos of passes by each bat species				
Times	**Soprano Pipistrelle**	**Common Pipistrelle**	**Myotis sp.**	**Natterers**	**Notes-includes Nos of bats**
2153	1*				1st bat, co-ordinated timings with south side. No=1 bat Rec.
2204-2215	1*	2	0	0	No of each spp = 1 bat. Rec.
2215-2230	6*	11	0	0	Common pipistrelle=2 bats. Rec.
2230-2245	12	2	0	0	Soprano pipistrelle No = 3 bats. Rec.
2245-2300	0	0	0	0	No bat calls after 2245. Rec.
No of bats out of this side					none

5.2.1a Remote recording – none

5.2.1.2 Surveyor 2 - South

Site address		**Ex Infant school at Brodog Lane Fishguard**	
Date/type of Survey		**15/06/18**	**Dusk Activity**
Sunrise/Sunset		**-**	**2136**
Time Start/Finish		**2120**	**2300**
Temperature		**14-16ºC**	
Wind		**Calm on west side of site but SW Force 3-4 on East side**	
Cloud	**Ppt/RH**	**50% - 100%**	**Dry/high humidity**
Any Comments		**Surveyor on South and South East corner**	

	Nos of passes by each bat species				
Times	**Soprano Pipistrelle**	**Common Pipistrelle**	**Myotis sp.**	**Natterers**	**Notes-includes Nos of bats**
2153	1*				1st bat, co-ordinated timings with south side. No=1 bat Rec.
2204-2215	2*	10	1		No of each spp = 1 bat. Rec.
2215-2230	1	2			Common pipistrelle=2 bats. Rec.
2230-2245	0	6*			Soprano pipistrelle No = 1 bat. Rec. Same activity as recorded by surveyor on the east side
2245-2300	0	0	0	0	No bat calls after 2245. Rec.
No of bats out of this side					none

5.2.1.3 – Surveyor 3 – East side

Site address		**Ex Infant school at Brodog Lane Fishguard**	
Date/type of Survey		**15/06/18**	**Dusk Activity**
Sunrise/Sunset		**-**	**2136**
Time Start/Finish		**2120**	**2300**
Temperature		**14-16ºC**	
Wind		**Calm on west side of site but SW Force 3-4 on East side**	
Cloud	**Ppt/RH**	**50% - 100%**	**Dry/high humidity**
Any Comments		**Surveyor on East and North East corner**	

	Nos of passes by each bat species				
Times	**Soprano Pipistrelle**	**Common Pipistrelle**	**Myotis sp.**	**Natterers**	**Notes-includes Nos of bats**
2153		1			
2204-2215					2212 – 1st bat. North to south Rec.
2215-2230					
2230-2245	0	6*			Common pipistrelle No = 1 bat. Rec. Foraging over lane same

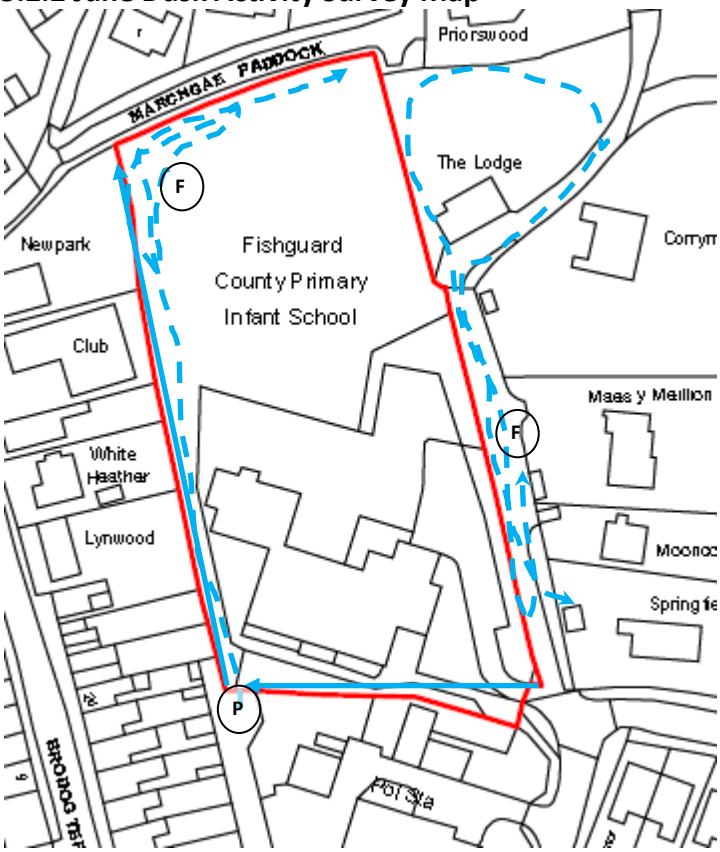
					activity as Rec. on south detector
2245-2300 No of bats out of this side	0	0	0	0	No bat calls after 2245. Rec. none

5.2.1.4 Remote detector in lane on east side of eastern boundary bank and hedge

Site address		**Ex Infant school at Brodog Lane Fishguard**	
Date/type of Survey		**15/06/18**	**Dusk Activity**
Sunrise/Sunset		**-**	**2136**
Time Start/Finish		**2120**	**2300**
Temperature		**14-16ºC**	
Wind		**Calm on west side of site but SW Force 3-4 on East side**	
Cloud	**Ppt/RH**	**50% - 100%**	**Dry/high humidity**
Any Comments		**On eastern lane – Anabat Express deployed at each end**	

	Nos of passes by each bat species				
Times	**Soprano Pipistrelle**	**Common Pipistrelle**	**Myotis sp.(whiskered)**		**Notes-includes Nos of bats**
2200			1		Rec. An early time for this species, most likely emerged from the old house on SE Corner of project site
2202-2215	24	3	2		Rec. Soprano pipistrelle bats: No=3 at once [min]. Common pipistrelle bat: No=1 bat
2215-2230	46	10			Rec.
2230-2245 2245-2300 No of bats out of this side	24 0	6 0	 0	 0	Rec. No bat calls after 2245. Rec. none

5.2.2 June Dusk Activity Survey Map



F	Feeding activity – DOTTED LINE ◄- - -
P	Bat pass –SOLID LINE ◄—
E	Emergence from building / roost

5.3 Pre-dawn re-entry survey, 29th June 2018

Site address		**Ex Infant school at Brodog Lane Fishguard - SURVEYOR 1**	
Date/type of Survey		**29th June**	**Pre-dawn activity**
Sunrise/Sunset		**0506**	
Time Start/Finish		**0306-0506**	
Temperature-°C		**19**	
Wind		**calm**	
Cloud	**Ppt**	**0**	**dry**

	Nos of bats by each bat species				
Times	**Soprano Pipistrelle**	**Common Pipistrelle**	**Myotis sp.**	**Whiskered**	**Notes-includes Nos of bats**
0355	1		1		Rec. direct flight west
0402	2	2		1	Rec. soprano pipistrelle bat x 1 on the west side flying directly N to S. Common pipistrelle and whiskered bat on east hedge at south end
0412	1				Rec. east hedge
0413-0506	0	0	0	0	No bats

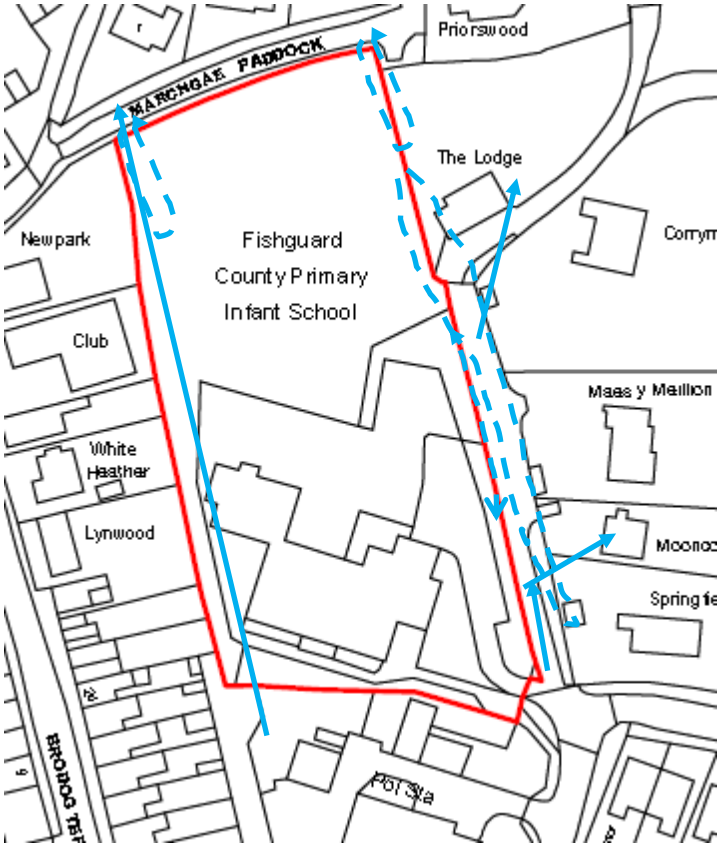
*****Indicate bats seen/recorded by more than one observer
HNS = Heard, not seen Rec. = Recorded

Site address		**Ex Infant school at Brodog Lane Fishguard - SURVEYOR 2**	
Date/type of Survey		**29th June**	**Pre-dawn activity**
Sunrise/Sunset		**0506**	
Time Start/Finish		**0306-0506**	
Temperature-°C		**19**	
Wind		**calm**	
Cloud	**Ppt**	**0**	**dry**

	Nos of bats by each bat species				
Times	**Soprano Pipistrelle**	**Common Pipistrelle**	**Myotis sp.**	**Whiskered**	**Notes-includes Nos of bats**
0355	1				Rec. direct flight North to south
0402					
0412	1				Rec. east hedge
0413-0506	0	0			No bats

*****Indicate bats seen/recorded by more than one observer
Rec. = Recorded

Plan of flight lines – pre-dawn



KEY

F Feeding activity dotted line

C Commute straight line – straight line

APPENDIX 6: Glossary

Transitional roosts
April-September/October. These sites are usually used by small groups of bats prior to taking up residence in, or after dispersal from, the maternity roost before and after hibernation. They are likely to be in or close to good feeding areas.

Maternity roosts
May–August. Predominantly warm sites where female bats congregate to give birth and rear their young and stay there until the young are weaned and independent [late July – August]. The sites are frequently traditional with the same individuals returning year after year. Enclosed roof spaces, wall cavities, soffit boxes, spaces under roofing materials and a variety of tree holes and crevices are all examples. These tend to disperse between August and September. Adult males are rarely found with the females.

Satellite Roost
May–August. Breeding females may have alternative roost sites in close proximity to the main nursery colony.

Mating Roosts
September–November. All bats in the UK are Polygamous i.e. males mate with several females. A roost site that a male bat will occupy and attempt to attract females to for mating and will defend against other males. Sometimes these occur in groups known as 'leks' and include cavities in stonework, underground sites, trees and buildings.

Hibernation roosts
October-March. Sheltered and undisturbed places with relatively high humidity and stable temperatures throughout the winter. For example: underground sites (caves, mines, adits etc.), deep cracks and crevices in built structures (houses, bridges etc.), hollows, cracks and crevices in trees.

Night roosts
March-November. Places away from the day roosts where bats rest after feeding during the night. These roosts vary in their conservation significance. Night roosts may be used by a single animal or the whole colony. Particular species depend on night roosts in key foraging areas e.g. lesser horseshoe bats.

Day Roosts
March-November. Daytime roosts for bats to rest in. Males of most species spend the summer roosting alone or in small groups. Bats regularly use a number of day roosts switching from one to the other depending on food sources and weather but conversely they can be resident for weeks.

Feeding Roost
May-November. These roosts can be occupied by a single animal or a few individuals throughout the active season. They vary in significance as they may be used by one or many

bats to hang up and feed, shelter from the weather, or to rest temporarily. Feeding roosts are often used by Plecotus and Rhinolophus species.

Swarming Sites

August-November. Large numbers of bats from several different species swarm around caves and mines. The bats are often Myotis species and appear to be important for mating. Bats travel many kilometres to attend and a good proportion will also hibernate at these sites.

6.1 BAT SURVEYS - Building and Tree bat roost potential Categories

Potential	Description of Buildings	Description of Trees
Known or confirmed	Confirmed signs of bat presence/occupation (droppings, oily staining around entry points, insect remains, odour, scratching) and actual bat presence.	Confirmed signs of bat presence/occupation (droppings, oily staining around entry points, insect remains, odour, scratching) and actual bat presence.
High	A structure 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 (e.g. temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat. Can include structures with points of access to the interior of the building and poorly maintained fabric providing ready access points for bats into structures, but at the same time not draughty. Structures of traditional stone, brick or timber construction. Structures with large (>20 cm) roof timbers with mortice joints, cracks and holes. Structures of pre or early 20th century construction. Structures with large complicated and/or uncluttered roof spaces providing unobstructed flying spaces. Structures with weather boarding and/or hanging tiles with gaps. Structures with accessible south facing roofs. Structures with proximity to good foraging habitat such as woodland, wetland, water and /or good hedgerows.	A 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 (e.g. temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions (e.g. temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat but unlikely to support a roost of high conservation status. Can include structures with some potential to support roosting bats, but fewer features than a high risk building. Features may include areas suitable for crevice dwelling and/or access points into structures. Some proximity to foraging habitat.	A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.

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 and/or suitable habitat to be used on a regular basis or by large numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).	Tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen have only very limited appropriate conditions and/or suitable habitat to be used on a regular basis or by large numbers of bats (i.e. unlikely to be suitable for maternity or hibernation
Negligible	No features suitable for roosting bats. Can include structures constructed from unsuitable materials e.g. prefabricated with steel and sheet material. Structure is draughty, light and cool buildings with no roosting opportunities. High levels of regular disturbance including external and/or internal lighting. Building is isolated from areas of foraging habitat.	Trees with no potential to support bats.

6.2 – Commuting and Foraging Habitat Potential Categories

Commuting and Foraging Potential	Descriptions
High	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
Moderate	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.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated 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 number of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.

APPENDIX 7: Additional Information

a) Emergency contact numbers for bat help and advice

Natural Resources Wales (NRW)	Tel: 0300 065 3000
Anna Sutcliffe	Tel: 01646 636754 and 07866 457 088
Sarah Allen.	Tel: 074947 45988

b) Further reading for information about bats

The Bat Conservation Trust website (including the 'Roost' section):
http://www.bats.org.uk/pages/about_bats.html

The Bats of Britain website:	http://www.bio.bris.ac.uk
Eurobats website:	www.eurobats.org

c) Bat box suppliers

NHBS: http://www.nhbs.com/
Habibat: http://www.habibat.co.uk/
Schwegler: www. Schwegler.com

d) More technical information on incorporating wildlife features into buildings can be found in the following publication:

Gunnell, K., Murphy, B. & Williams, C. (2013). *Designing for Biodiversity: a Technical Guide for New and Existing Buildings (2nd edition)*. RIBA: London.

APPENDIX 8 - DISCLAIMER

Copyright and Intellectual Property

- The copyright of ecology reports provided remain the property of the ecologist pending payment of the account in full.
- We provide species data sets to the local Biodiversity Information Centre on an annual basis which will include any records from your survey (species and general location.)

Accuracy of information

- Our ecologists are experienced and professional in their approach and work to published Professional Codes of Conduct (British Standard 42020:2013 "Biodiversity. Code of practice for planning and development" and CIEEM Guidelines for Ecological Report writing (2016) where appropriate. Ecologists are however working in the natural world which may be subject to rapid changes not under their control. The information they collect will be as accurate as possible based on the time of the year and the natural conditions they face but we, and they, cannot be held responsible for any changes which occur subsequently.
- The company warrants that the reports supplied will be based on information collected using reasonable care and skill. In some cases data sets may be large and in such circumstances ecologists will make professional judgements on their analysis and presentation of data.
- Most reports are valid for a maximum period of two years provided no significant changes have been made to the property or land use nearby.
- It is possible that further survey work is recommended which would be the subject of additional fees. In this event the company and the ecologists cannot accept any liability if the client proceeds without acting on this advice.
- Ecological reports provide information on the site as a whole and the company and the ecologists cannot be held responsible for the effects that the findings might have on any planning or developments proposed.
- Ecological reports are based on the findings during the survey, if conditions change after the site visit(s) then the report becomes null and void and the surveys will need to be repeated

Confidentiality

- The reports provided will be for the client's sole use and for the purposes declared in the initial contact and confirmed in our quotation.
- No other party may use, copy or rely on the report or any of its contents or conclusions without written confirmation from the author.
- The company will maintain a copy of the reports, on behalf of the ecologist, in an electronic format. It will not be provided to any other person without the clients consent.
- The bat survey data will be submitted to the West Wales Biodiversity Information Centre automatically unless otherwise requested

Limitation of Liability

- The company and its ecologist contractors shall not be held responsible for any claim arising out of any defect found in the service provided as a result of information provided which is subsequently found to be defective.

Contacts between the company, its ecologists and the client shall be governed by the laws of England and Wales.