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Horizon Nuclear Power (Wylfa) Ltd

Consultancy Report:
Dalar Hir Bats and Barn Owl (*Tyto alba*) Baseline Surveys 2014

June 2014

Jonathan Jackson and Mark Jackson

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Executive Summary

Jacobs UK Ltd (Jacobs) was commissioned to carry out bat and barn owl surveys on land around Dalar Hir (the “survey area”), Anglesey, centred on National Grid Reference SH 32989 78381; this is in conjunction with potential development of the survey area. The survey area comprised an area of grazing and cultivated land situated to the north of the A55 on the Holyhead Road, northeast of Junction 4.

The report details the findings of preliminary surveys carried out in 2014 with the aim of establishing the potential for bats and barn owls to use the buildings in the survey area for breeding or roosting. The surveys included internal and external inspections of the buildings and recorded any field signs present. The buildings surveyed included the one remaining building at Dalar Hir Farm and 11 buildings associated with the Cartio Mon go-cart track. The report also includes analysis of the results in the context of the habitats present in the survey area and in the immediate surroundings.

No evidence of barn owl was found during the survey of any building in the survey area. However, several buildings were considered to be accessible by barn owls and provided potential roosting sites for this species. Building 12 contained hay bales which could provide a breeding location for barn owls; this was the only building with the potential to support breeding by the species.

The level of disturbance caused by human activity is considered to be highly influential on the likelihood of barn owl moving into any of the buildings with roosting potential. It is therefore not recommended that these surveys are repeated unless there is a reduction in human activity or buildings become disused. This excludes Building 12 which, if it is going to be demolished, should have follow up surveys.

The habitats in the survey area are suitable for foraging by barn owls. While no barn owl roosts were observed during the building surveys, the background data available show that they are present in the local area. It is therefore recommended that barn owls are considered by any future impact assessment required to support a planning application for development of the survey area.

The bat surveys recorded evidence of bats in one building and possible evidence of bats in a second building. Eight of the remaining buildings had a low potential to support roosting bats and two had no potential.

Overall the assessment of the buildings was that the Cartio Mon complex is likely to support low numbers of common or soprano pipistrelle bats, which are of low conservation concern. This assessment is based not only on the survey data, but the lack of roosting alternatives in an area of good foraging and commuting habitat for bats. The species likely to be present does not negate the legal protection afforded to all bats and their roosts by.

Further surveys would be required to determine species and number of bats using the buildings. Further surveys should also be commissioned to inform the impact on bats that any large scale development would have. This information should then be used to determine habitat maintenance and enhancement measures for the survey area for bats as part of any future development.

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Contents

1 Introduction

1.1 Overview

Jacobs was commissioned to undertake surveys of all buildings in the survey area as shown in Figure 1. The surveys were commissioned to establish the presence or likely absence of barn owl (*Tyto alba*) and bats (all species).

The findings from this work will assist in informing an Environmental Impact Assessment (EIA) for the survey area, as required.

1.2 Survey Area Description

The survey area is centred on National Grid Reference SH 32989 78381 and is located near to Junction 4 of the A55, directly north of the Holyhead road (A5), Anglesey, North Wales.

The survey area covers an area of approximately 24 ha and is largely comprised of improved grassland, semi-improved grassland and cultivated fields that are bounded by hedgerows. There are also strips of broadleaved woodland plantation on the northern, eastern and southern boundaries of the survey area. Other habitats present include three ponds and a ditch that runs from north to south through the centre of the survey area.

The survey area includes the go-cart track at Cartio Mon and 11 associated buildings to the east of the survey area and one remaining barn at Dalar Hir Farm to the west of the survey area.

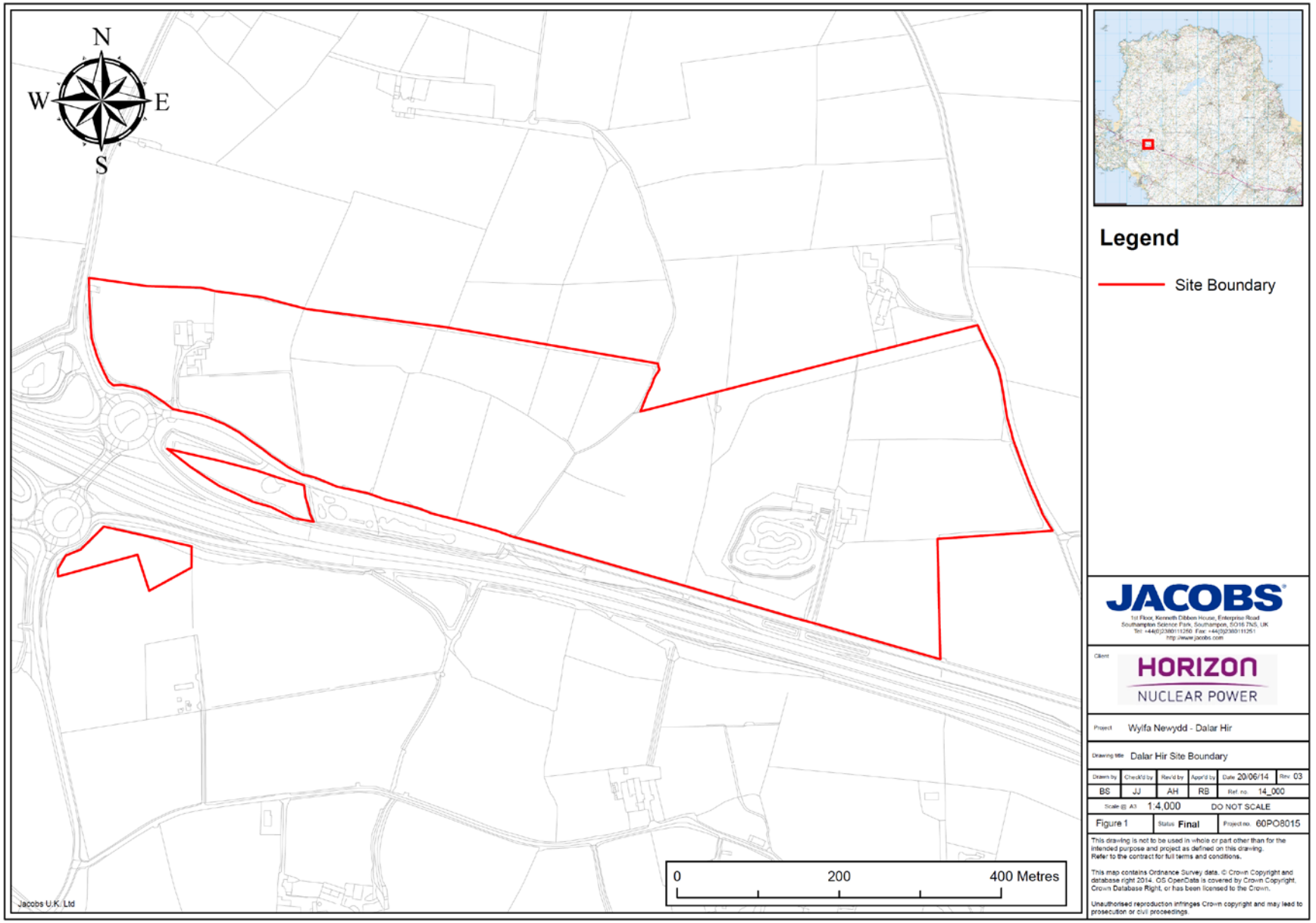

Figure 1: The survey area

1.3 Aims and Objectives

This report presents the findings of a bat and barn owl survey of all buildings within the survey area.

The aims of the surveys and report were to:

- complete internal and external inspections of the buildings recording entry and exit points suitable for barn owls and bats;
- record all evidence of use of the buildings by barn owls and bats;
- establish the potential for barn owl and bats to roost in the buildings; and,
- make recommendations for further surveys (if required).

1.4 Previous Background Data Searches

A background data search has not been completed to support the survey finding of this report. This is because a data search has already been completed as part of the Due Diligence Environmental Assessment Report (Mott MacDonald, 2013) and the Extended Phase 1 Habitat survey completed in 2013 (Jacobs, 2013) (Application Reference Number: 6.6.17). The results from the earlier data search are summarised below.

1.4.1 Statutory and non-statutory sites and habitats for nature conservation

There were no statutory or non-statutory designated sites within the survey area. However, the Environmental Due Diligence Assessment for the survey area identified Llyn Traffwll Site of Special Scientific Interest (SSSI) and the Valley Wetlands owned by the Royal Society for the Protection of Birds (RSPB) as being located 1 km to the south of the survey area (Mott MacDonald, 2013).

The SSSI has been designated for the small shallow lake that supports an abundance of wildfowl species.

The Valley Wetlands forms part of the SSSI, and although it is cited as being a non-statutory designated site in the Environmental Due Diligence Assessment (Mott MacDonald, 2013), it has no such non-statutory designation. The Valley Wetlands has reedbed habitats that support a number of reedbed specialist species e.g. water rail (*Rallus aquaticus*), marsh harrier (*Circus aeruginosus*) and Cetti's warbler (*Cettia cetti*), as well as other wildfowl species.

1.4.2 Barn owls

The National Biodiversity Network (NBN) gateway (www.nbn.org.uk) provided no records for barn owl within a 2 km radius of the boundary of the survey area. The Cofnod (North Wales Environmental Information Service) data provided records of this species within 1 km of the survey area (Mott MacDonald, 2013).

1.4.3 Bats

Protected mammal species records provided by NBN found six species of bat have been recorded within 2 km of the survey area. The species recorded were brown long-eared bat (*Plecotus auritus*), common pipistrelle bat (*Pipistrellus pipistrellus*), noctule bat (*Nyctalus noctula*), soprano pipistrelle bat (*Pipistrellus pygmaeus*), and whiskered bat (*Myotis mystacinus*). However, due to the sensitive nature of bat

roosts, the exact locations are undisclosed (Jacobs, 2013) (Application Reference Number: 6.6.17).

The Cofnod data listed three bat species within the same search radius. These were noctule bat, soprano pipistrelle bat and whiskered bat. The noctule bat and soprano pipistrelle bat records were from the vicinity of Llyn Traffwll SSSI and the whiskered bat records were from the vicinity of Dalar Hir Farm (Mott MacDonald, 2013).

1.5 Previous Survey Work

1.5.1 Due Diligence Environmental Assessment Report 2013

In July 2013, Mott MacDonald produced a Due Diligence Environmental Assessment Report (Mott MacDonald, 2013). The report assessed and highlighted the potential for any foreseeable risks in the survey area that would need to be considered in relation to ground conditions and ecology.

The report presented the findings of a Phase 1 Habitat survey. The survey classified the majority of the survey area as semi-improved grassland, with smaller areas of improved grassland and some woodland. The survey also found several buildings and water bodies and categorised all of the field boundaries.

The habitats were found to have potential to support foraging and commuting barn owl and bats. No attempt was made in this report to determine the potential of buildings or trees to support barn owl or bats.

1.5.2 Extended Phase 1 Habitat survey 2013

In September 2013, Jacobs completed an Extended Phase 1 Habitat survey (Jacobs, 2013) (Application Reference Number: 6.6.17). The surveys concurred with the findings of the Due Diligence Environmental Assessment Report (Mott MacDonald, 2013) and found habitats that had the potential to support foraging and commuting barn owl and bats. Buildings were identified with the potential to support roosts. No trees were identified with roosting features within the survey area. Furthermore, detailed internal inspections of buildings were recommended for both species.

2 Methodology

2.1 Introduction

The surveys were carried out in 2014 by Mark Jackson of Jacobs and Sam Dyer of the Cambrian Ecological Partnership working as a sub-contractor on behalf of Jacobs. Mark Jackson holds a survey licence for barn owls (NRW Licence No: 54018:OTH:DBE:2014) and Sam Dyer holds a licence for the survey of bats (NRW Licence No: 41752: OTH: CSAB: 2012).

Field signs of barn owl (e.g. pellets) and bats (e.g. droppings) can persist for many months and often for years and so there is no specific time of the year in which this type of survey needs to be completed.

2.2 Barn Owl Survey Methodology

2.2.1 Personal Communications

The Barn Owl Trust guidelines (2012) recommend that interviews are used in order to improve the understanding of barn owl populations within survey areas. This is due to the species being generally easy to identify in the field, and that knowledge of this charismatic species by the general public is often greater than for less noticeable species. The current occupants of Dalar Hir were therefore asked about their knowledge and experience of barn owls within the study area.

2.2.2 Habitat Assessment

A habitat suitability survey was undertaken to identify all areas that have the potential to provide foraging habitat for barn owl. Areas were described as providing suitable foraging habitat for barn owl dependant on certain habitat characteristics relating to their potential to support small mammal populations i.e. whether there was rank grassland providing cover and nest building opportunities. Small mammals are the preferred prey of barn owl, thus making their abundance a primary indicator of likely suitability for the species (Barn Owl Trust, 2012).

2.2.3 Building Inspections

All buildings in the survey area were inspected externally and internally for signs of breeding or roosting barn owl. This included recording any signs such as:

- chicks;
- eggs;
- droppings;
- pellets;
- feathers; and,
- adult birds in or near to buildings being surveyed.

A confirmed roosting site would be categorised as either a regular roost having greater than 10 pellets or an occasional roost with less than 10 pellets (Barn Owl Trust, 2012).

2.2.4 Barn Owl Survey Limitations

There were no limitations to the barn owl survey.

2.3 Bat Survey Methodology

2.3.1 Habitat Assessment

A habitat suitability survey was not undertaken as part of the bat survey owing to the survey area already having been assessed for suitability to support foraging bats by Jacobs in 2013 (Application Reference Number: 6.6.17). The 2013 assessment recorded significant amounts of habitat with the potential to support commuting and foraging bats including;

- hedges;
- deciduous plantation woodland;
- scattered scrub;
- habitat adjacent to ditches and ponds; and,
- around farm buildings.

The survey area is therefore considered suitable for foraging by bats and does not require a repeat of the habitat assessment. The context of the habitats in the survey area within the wider environment is discussed further in Section 4.

2.3.2 Building Inspections

All buildings were surveyed externally to look for potential entry and exit points for bats. All internal roof spaces, crevices and other likely roosting areas were then methodically searched for signs of bat occupation such as droppings, staining and feeding remains, as well as for the animals themselves. Surveyors used inspection mirrors, endoscopes and torches where necessary.

The buildings were then assessed with regards to their potential as roosts. The buildings were then placed in one of four categories: ‘high’, ‘moderate’, ‘low’ and ‘no’ potential. These assessments were made in the context of the nature of the buildings in the survey area and are in accordance with the Bat Conservation Trust document *Bat Surveys - Good Practice Guidelines* (Hundt, 2012).

2.3.3 Bat Survey Limitations

Initial bat surveys are only able to establish the suitability of buildings for bats and record field signs where present. If buildings are found to be suitable, but field signs are not present, it is still generally not possible to prove the absence of bats without further surveys.

3 Results

3.1 Barn Owl Survey Results

3.1.1 Personal communications with locals and landowners

Conversations with respect to barn owl sightings were undertaken with Martin Williams the director of Cartio Mon, who reported that he had not seen barn owls in the area (M Williams, pers. com.).

3.1.2 Habitat Assessment

The most suitable habitat for barn owl foraging was determined to be the deciduous plantation woodland and rough grassland in the central section of the survey area as shown in Figure 2.

3.1.3 Survey of Buildings and Trees

All 12 buildings in the study area were surveyed. Building descriptions and notes on their potential to support barn owls are provided in Table 1 and shown in Figure 3: .

Table 1: Building descriptions

Building Number	Description	Roosting or Nesting Potential
Building 1	A large open building used for storage and a mechanics workshop.	Access points were provided by the main workshop doors and a gap in the corner of the building (Figure 3: Access Point 1). There were many roosting opportunities, but no structures suitable for a nest site. Experiences high levels of disturbance reducing the likelihood of barn owls using the building for roosting.
Building 2	This large building used for storing the go-carts.	Many access points were present facing the open countryside (Figure 3: Access Point 2, 3 and 4). Roosting locations were present but none suitable for breeding. Experiences high levels of disturbance reducing the likelihood of barn owls using the building for roosting.
Building 3	A small storage out-house	There was one point of access through the open door of this out-house (Figure 3: Access Point 7). There was low potential to support roosting barn owl and no potential breeding locations.
Building 4	A small storage out-house	No access is possible to this building for barn owl as the door is kept closed and the building is effectively sealed.
Building 5	A small storage out-house	No access is possible to this building for barn owl as the door is kept closed and the building is effectively sealed.
Building 6	A small storage out-house	One point of access for barn owl was available through the open door (Figure 3: Access Point 6) and a second was present between the eaves. There was

Building Number	Description	Roosting or Nesting Potential
		low potential to support roosting barn owl and no potential breeding locations.
Building 7	A small storage out-house	No access is possible to this building for barn owl as the door is kept closed and the building is effectively sealed.
Building 8	A small storage out-house	One point of access was available through the open door (Figure 3: Access Point 5). There was low potential to support roosting barn owl and no potential breeding locations.
Building 9	This is a residence that belongs to Martin Williams the director of Cartio Mon.	No access is possible to this building for barn owl as the door is kept closed and the building is effectively sealed.
Building 10	The building accommodates the reception, toilets and dining area.	No access is possible to this building for barn owl as the door is kept closed and the building is effectively sealed.
Building 11	A portakabin used by the Cartio Mon staff for storage and a mess room.	No access is possible to this building for barn owl as the door is kept closed and the building is effectively sealed.
Building 12	A large open barn used for lambing and storage of hay bales.	Access was provided by the building being open-fronted. Roosting sites were present in the form of ledges, but these were too small, exposed and liable to be affected by disturbance to be used for breeding purposes. The building was visited a second time and was being used to store bales of hay. These could provide roosting and breeding locations for barn owls.

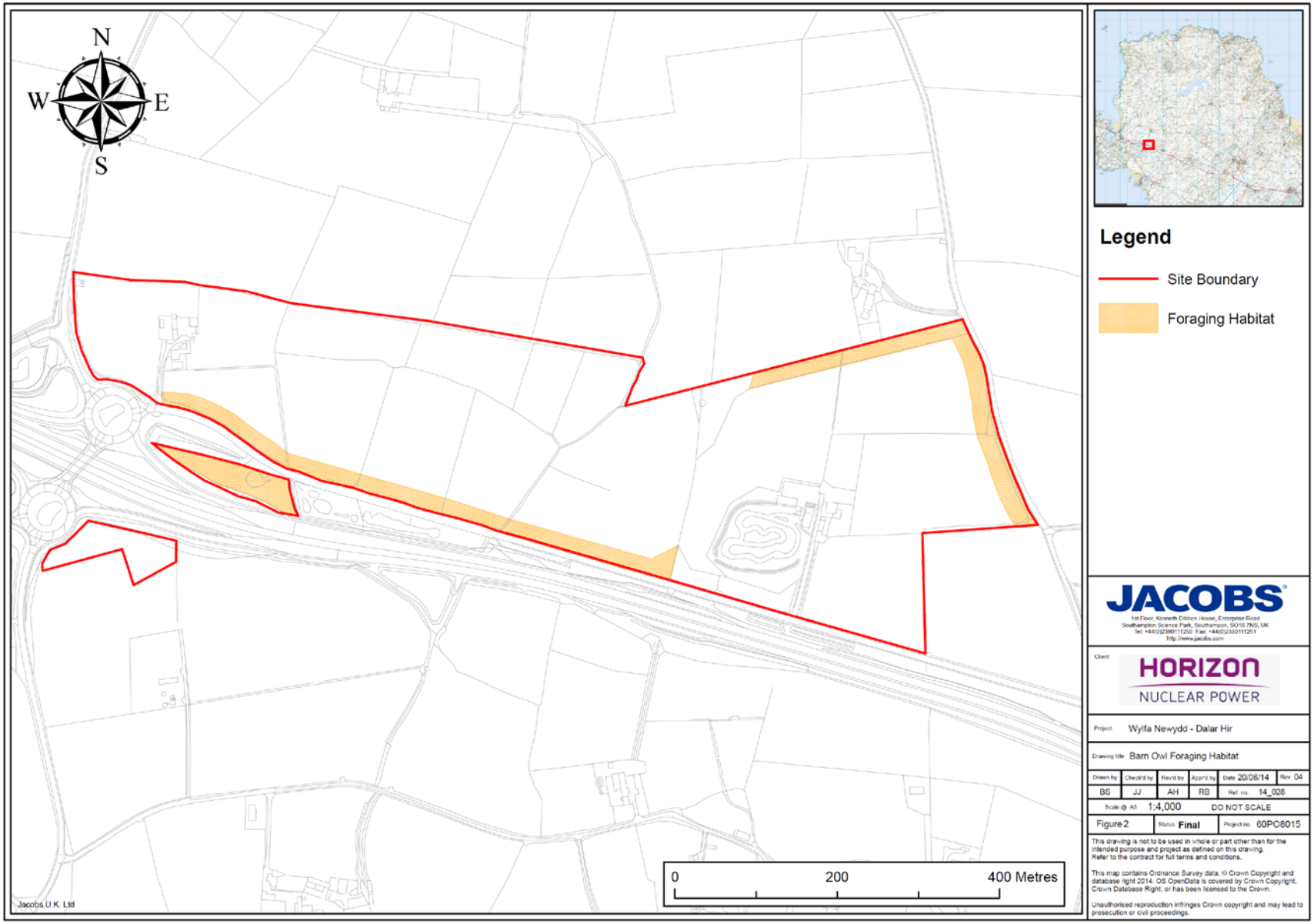

Figure 2: Location of suitable barn owl foraging habitat in the survey area

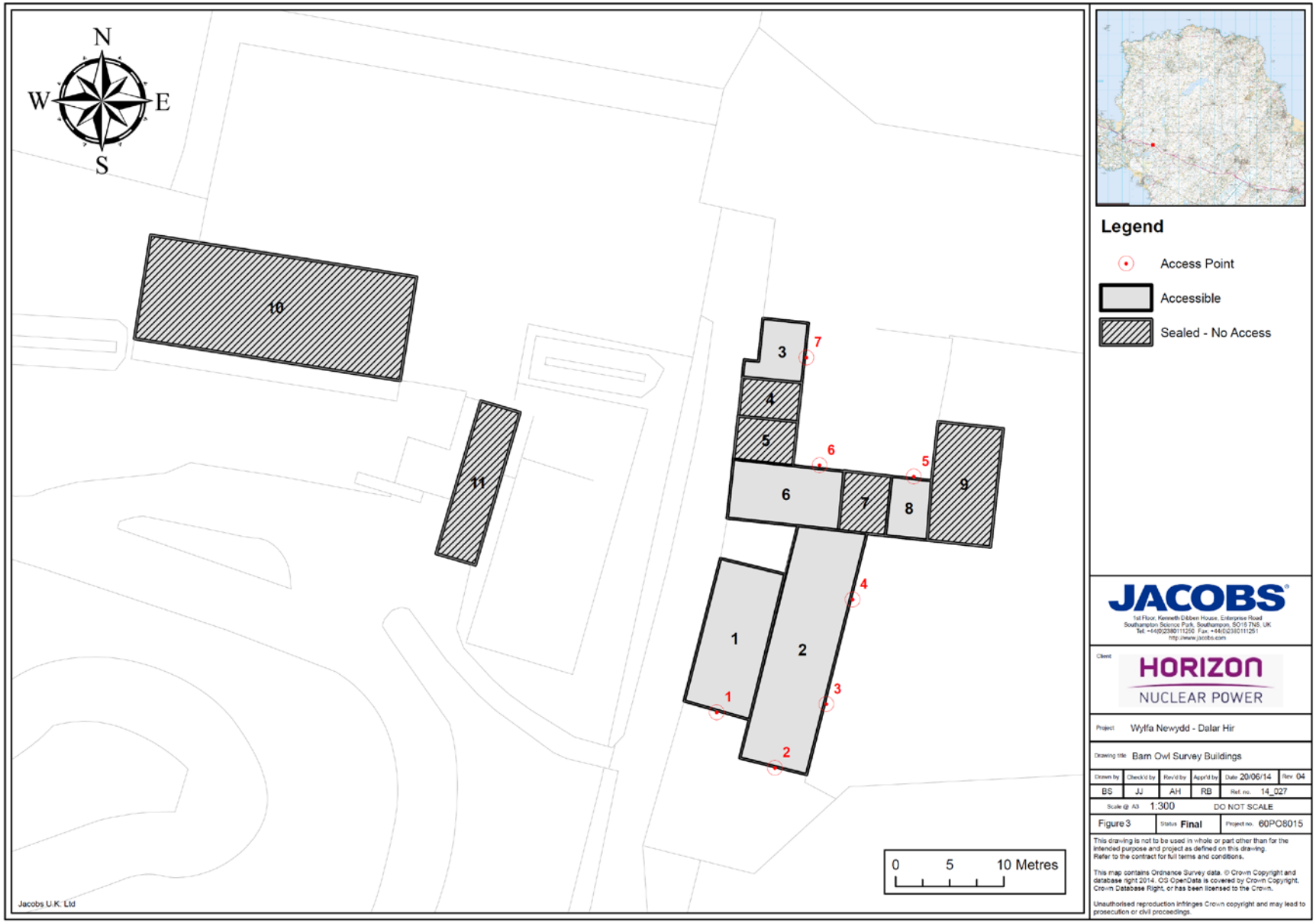

Figure 3: Map of the buildings in the survey area (excluding Building 12 located in the west of the survey area)

3.2 Bat Survey Results

Building descriptions are provided in the following sections. This includes building construction materials, access locations and any evidence of use by bats.

3.2.1 Building 1

Building 1 was a large garage/workshop that was being used for storage. The building was connected to Building 2 on the eastern wall. The wall comprised concrete blocks with metal cladding on the upper half, the roof is metal. Externally there were various access points for bats in the form of gaps between the metal roof and the walls. The interior of the building was light due to clear perspex panels in the roof. There were some roosting spaces provided by gaps in the block work. No evidence of bats was recorded in the building and it was considered to have a low potential to support roosting bats.

Plate 1: Building 1 (western aspect).

3.2.2 Building 2

Building 2 was the largest building within the complex. The building was being used to store the go-carts for Cartio Mon and also contained two cars and associated machinery. The building was connected to Building 7 to the north by a doorway and the western wall was shared by Building 1. The eastern external wall is comprised of blocks with several holes providing ventilation to the outside. The southern wall comprised blocks with a roll-up garage door. Several of the blocks were in poor condition and had holes that could allow access by bats. One hole contained an active house sparrow (*Passer domesticus)* nest. There was also a small section of external wall in courtyard between Building 1 and Building 6. The wall was also of block construction. In the upper left side of the wall there was a large opening allowing access into the building. The roof was comprised of corrugated iron with several perspex panels. There were several roosting opportunities in the interior of

the building. This included gaps in mortar between blocks and several larger gaps between vertical courses of blocks on the western side. However, the interior was very light and airy. There was no evidence of bats recorded during the survey and the building was considered to have a low potential to support roosting bats.

Plate 2: Building 2 (internal view).

3.2.3 Building 3

Building 3 was the distal building at the north-east end of the complex and was connected to Building 4 to the south. The building was being used for storage. The external walls were comprised of unrendered stone on the north and west side. The stonework was generally in good repair but there were sections of missing mortar that provided potential roosting locations for bats and access into the building. There was a significant gap on both sides between the wall-plate and the roof in which sparrows were nesting. The external wall on the east side comprised rendered stonework and had a doorway leading into the building. The roof comprised corrugated asbestos sheets in good order. Internally the building was well sealed with no other access points visible for bats other than the open door. There was a light panel in the roof. Roosting locations internally were minimal with the highest potential provided by a gap between the parallel ridge beams. There was no evidence of bats recorded during the survey and the building was considered to have a low potential to support roosting bats.

Plate 3: Building 3 (left) and combined roof (right) of Building 4 and Building 5 (eastern aspect).

3.2.4 Building 4

Building 4 was being used as an office in the western section of the complex. The external walls on the east side comprised of a timber frame with glass windows and a glazed door. Externally on the western side the wall was of the same construction as Building 3, and there was also evidence of nesting sparrows. The roof of Building 4 was made from corrugated iron and was in good order. Internally the walls were plastered and the ceilings had plasterboards. There were no visible access points for bats other than holes for cables that ran from Building 5 to Building 3, but these were not likely to be used by bats. There were no potential roosting locations observed and no evidence of bats was recorded. The building was light due to two large light panels in the roof. The building was considered to have low potential to support roosting bats.

Plate 4: Entrances to Building 3, 4 and 5 (western aspect).

3.2.5 Building 5

Building 5 was a games room containing a pool table. The walls and roof were of similar construction to Building 3 and Building 4. The external walls were unrendered stone with gaps that could support roosting bats and the roof was made from corrugated iron with one large perspex light panel. Internally the walls and ceilings were in good order with no obvious access points for bats. There were two cable duct holes similar to those in Building 4 that were also considered unlikely to be used by bats. There were no potential roosting locations observed and no evidence of bats was recorded. The building was considered to have low potential to support roosting bats.

3.2.6 Building 6

Building 6 was connected to the southern wall of Building 5. The building had several animal pens inside but did not have signs of recent use. The north-facing walls comprised unrendered stone with a doorway. The southern wall was also unrendered but had a bricked-up doorway and was in a poor state of repair. There were many potential roosting locations for bats and possible routes for bats to gain access into the building. The thickness of the walls here suggested that there was the potential for bats to roost throughout the buildings that were made of stone. The roof was of the same corrugated iron as Building 4 and Building 5. Internally there were two light panels but these were clouded and the inside was relatively dark. There was evidence of barn swallow (*Hirundo rustica*) in the form of droppings and old nests. Approximately five droppings were found that resembled those produced by bats, however, these may also have been desiccated partial bird droppings. Roosting opportunities were recorded in this building in the form of gaps on the wall plates and among the exposed rafters; however none were large enough to support anything other than single bats. The building was considered to have moderate potential to support roosting bats.

Plate 5: Internal view of Building 6.

3.2.7 Building 7

Building 7 was a small storage room that forms a corridor from the front courtyard through to Building 2. There were doors on the northern and southern walls which create a significant through-draft. Also the wall between Building 7 and Building 6 was only 1.8 m high with the rest open between the top of the wall and the eaves. Building 7 was therefore very draughty and light. On the east side of the wall near to the apex of the roof was an active barn swallow nest. It was considered extremely unlikely that bats would use this building for roosting, although the building may form an access path for any bats potentially using Building 6. No evidence of bats was recorded and the building was considered to have a low potential to support roosting bats.

Plate 6: Entrances to Building 6, 7 and 8 (southern aspect).

3.2.8 Building 8

Building 8 was very small and was being used as a drying room. The construction of the walls and roof were the same as Building 6 with the omission of a roof-light. Potential access points to the interior of the building were provided by gaps around the doors and also via pathways through the various gaps in the stonework. There were no obvious large roosting opportunities present although several small cracks and crevices were present. No evidence of bats was recorded during the survey. Overall this darker and warmer room (a tumble drier was present) is considered to have a low potential to support roosting bats.

3.2.9 Building 9

Building 9 comprised a large, occupied, two-story residential home with rendered walls. The walls were in good repair with no gaps that could provide access points to roosting locations for bats. The windows and doors were all present and in good states of repair. There were gaps in the plastic flashing on the eastern side, one of which was being used as an access point by a nesting sparrow.

The roof was comprised of slates and was generally in good repair. However, there were a small number of slightly lifted slates, small gaps under lead flashing around the southern chimney and a gap around a soil pipe. The potential was therefore identified for bats to roost between slates and the roof lining.

The loft space comprised of timber eaves and rafters and was lined with a modern breathable membrane. Scattered droppings (<10) from bats were found underneath the most recently added layer of fiberglass insulation. These dropping were not fresh and were of a size and shape consistent with pipistrelle bats. The droppings indicated that this part of the building has been used for roosting by low numbers of bats in the past. There was no evidence to suggest that the loft space within the building has ever supported a maternity roost.

The building therefore had been a bat roost in the past, but with a lack of evidence of use within the recent past (considered to be 2-3 years based on the age of the droppings and their position below the most recently added insulation), it was not classified as a current roost. However, further surveys would need to be conducted to confirm the status of the roost and to identify whether any other parts of the building might also support roosts (e.g. areas between slates and the roof lining).

Based on the above, the evidence suggested that the building was used as a roost in the past and that there was high potential for the building to support roosting bats.

Plate 7: Building 9 (eastern aspect).

3.2.10 Building 10

Building 10 was the largest building in the survey area and comprised the café, toilets, reception and recreation hall. The building was currently still under construction in 2014. The walls comprised concrete blocks that were being rendered during the survey visit. The walls did not have any potential to support roosting bats. The plastic flashing was generally in good order although there were missing end caps on the northern gables. These could provide access into a loft space but it is likely that these will be sealed as the building is completed. On the southern side above the terrace the rafters were still exposed where cladding had not been completed. Access into the spaces between rafters was therefore possible but only until the cladding is completed. The building was not inspected internally due to its newness making it unlikely that bats would be present. Currently there are several access points available into the building which could result in the building being used by bats. However, at the time of survey the building was considered to have a low potential to support roosting bats.

Plate 8: Building 10 (southern aspect).

3.2.11 Building 11

Building 11 was a small portacabin used for storage adjacent to the go-cart track. The walls of the building were made from timber and there were several windows and doors that were all in good order. There were no access points for bats to enter internal spaces. Internally there was no roof space. The building was considered to have no potential to support roosting bats.

Plate 9: Building 11 (northern aspect).

3.2.12 Building 12

Building 12 was a large three-sided barn. The walls of the barn were built from concrete blocks to 2 m high with slotted wooden walls between the top of the walls and the roof. The roof was of metal construction. Internally there was evidence of nesting barn swallows and house sparrows. There were small gaps behind the wooden rafters inside the building but these were mostly heavily cobwebbed. The size of the rafters was also relatively small and given the open nature of the barn it

is unlikely to be thermally stable and attractive to roosting bats. The building was therefore considered to have low potential to support roosting bats.

Plate 10: Building 12 (southern aspect).

Plate 11: Building 12 (internal eastern aspect).

3.3 Summary of Results

3.3.1 Barn owl survey summary

No field signs of barn owl were recorded in any building and there was initially no potential for any building to support nesting individuals. However, the results of a follow-up survey suggest that Building 12 does have potential to support breeding barn owl due to the presence of hay bales, which the species could use for roosting or nesting.

There were no available access points for barn owl to Building 4, 5, 7, 9, 10 and 11. Buildings 3, 6 and 8 had access points available to barn owl but with limited roosting opportunities. Building 1, 2 and 12 offered the best opportunities for roosting with the access points facing the open countryside.

3.3.2 Bat survey summary

Building 9 was considered to have a high potential to support roosting bats and was the only building where evidence of bats was recorded.

Building 6 was considered to have a moderate potential to support roosting bats as there were numerous roosting features present and droppings were found which could potentially be derived from bats.

Buildings 1, 2, 3, 4, 5, 7, 8, 10 and 12 all had low potential. The low potential assessment rating is based on there being some potential roost features present but no physical evidence of bats being found.

Building 11 had no potential to support roosting bats.

4 Discussion

4.1 Barn owl

In 1983 a study of barn owl on Anglesey was undertaken (Seel *et al*., 1983). The study found that the barn owl was widespread overall while being numerous in the west and most widespread in the south. The current population status of barn owl in Anglesey is unknown, but nationally the species population is in decline across Britain (Barn Owl Trust, 2012). The reasons for the decline of barn owl in Britain can be attributed to several factors including the reduction in food supply, loss of roost and nest sites and an increase in road traffic accidents (Barn Owl Trust, 2012).

The increase in agricultural intensification has resulted in the loss of prey-rich habitats, specifically the increase in stocking rates and the loss of rough field margins (Chamberlain *et al*., 2000 in the Barn owl conservation handbook, 2012). These factors have led to a decline in the availability of suitable barn owl prey, mainly voles, shrews, mice and brown rat, and this is closely associated with a decline in nesting success and an increase in barn owl mortality (Taylor, 1994).

In the context of the survey area the use of the buildings as breeding locations has been discounted with the exception of Building 12. However, the suitable habitats in the survey area do provide foraging habitats for barn owl that may be roosting or nesting nearby. While this is not supported by the evidence from the current owner who has never seen barn owls in the survey area, they still may be foraging in the study area.

This survey did not set out to establish the use of the survey area by foraging barn owl, but has identified this possibility from background data and habitat assessment. The potential conclusions that can be drawn from this assessment and recommendations are discussed in Section 5.

4.2 Bats

The buildings in the survey area in general have low potential to support roosting bats, although historic evidence of bat presence was recorded in the loft space of Building 9. However, the buildings in the survey area are relatively isolated from other buildings nearby and are surrounded by good habitat for the species group. Therefore if bats are using the foraging habitat nearby then they may well be roosting in the survey area in locations that could not be identified following the initial survey e.g. in concealed locations under lifted slates, in cavity walls, or crevices in the stone walls of the older part of the Dalar Hir complex in particular.

In the context of the wider environment the background data search showed that there are records of six species that have previously been recorded within 2 km of the survey area, including at the site itself (Mott MacDonald, 2013).

The habitats present in the survey area include lines of trees, scrub, hedges and waterbodies. These all represent suitable habitat for bats for foraging and commuting between roosting locations and the presence of these habitats increases the potential for roosts to be present nearby provided that suitable access points or roost locations exist.

5 Conclusion and Recommendations

5.1 Barn owl

Within the survey area approximately 10% of the total area was suitable for foraging barn owl. The significance of the habitat for barn owl cannot be established following the results of this survey as no barn owl were recorded roosting or breeding in any of the buildings surveyed.

However, despite the lack of evidence recorded during surveys, background data searches show that the species is likely to be found in suitable habitat on Anglesey, which would include the survey area. Any future impact assessment to inform development proposals for the site should therefore consider barn owl.

It is considered that further survey work to quantify the use of the survey area for foraging by barn owl would not be necessary. This is because impact assessments, mitigation and compensation measures required for any development of the survey area could be informed using an approach that would assume presence, rather than the disproportionate survey effort that would be required to prove likely absence. Barn owl is a highly mobile species and could start to use a site immediately following any survey which concluded that the species is likely to be absent.

The level of disturbance in all of the buildings is considered to be a limiting factor in the likelihood of barn owl using any of the potential roosting locations. Should the level of human activity reduce or if buildings become disused then the surveys should be repeated prior to determining any impacts on barn owl that any proposed development may have. This excludes Building 12 which could support roosting or breeding barn owl when hay bales are present. This building should therefore be revisited in the breeding season immediately preceding any impact assessment to see whether it is being used by barn owl at that time.

5.2 Bats

Evidence of low numbers of bats (possibly belonging to pipistrelle species) was found in the loft space of Building 9. Building 6 had moderate potential to support roosting bats although inconclusive evidence was found. The remaining buildings had low potential (Buildings 1, 2, 3, 4, 5, 7, 8, 10 and 12) or no potential (Building 11) to support roosting bats.

The survey area and associated habitats and buildings are located in an open rural setting which would comprise suitable foraging and commuting habitat for bats. If there are bats using the resources in the survey area, then the buildings present provide the only options for roosting in the immediate surroundings; this increases the likelihood of bats roosting in the survey area, even in buildings with low roost potential.

It is therefore considered that further surveys of all buildings with low, moderate and high bat roosting potential should be carried out to inform any future impact assessment required for development of the survey area. These surveys would comprise dusk emergence surveys and dawn re-entry surveys carried out according to current best practice guidelines (at the time of writing, this would be Hundt, 2012). The results of the surveys would inform the requirement for a mitigation strategy

and/or a European Protected Species Mitigation licence from Natural Resources Wales.

The habitats present are favourable for foraging and commuting bats. This is a product of good habitat heterogeneity and a lack of anthropogenic disturbance from street lighting or noise. It should therefore be recognised that although species roosting in the survey area are only likely to be those species which roost in buildings, the habitats may support species that use other nearby features for roosting (e.g. trees) that are not in the survey area. Further surveys comprising night-time activity surveys would therefore be required to determine the impacts on commuting and foraging bats that development of the survey area would have, in the event that significant proportions of these habitats would be lost. This is in addition to the further surveys recommended for the buildings with bat roosting potential and would also be required to inform any future planning application or environmental impact assessment prior to development of the survey area.

6 References

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Appendix A Protected Species Legislation

Below is a brief summary of the legal protection afforded to barn owls and bats.

Barn owls

Many resident, breeding, wintering and migratory bird populations within the UK are protected under European Legislation; the barn owl is included as one of the protected species. It is listed in the Bern Convention 1979 that places a legal obligation to protect this bird species. This convention has been implemented in UK law through the Wildlife and Countryside Act 1981 (as amended) (WCA).

The WCA is the principal UK legislation protection to wildlife. All wild birds (apart from certain species listed on Schedule 2) receive protection which prohibits the intentional killing, injuring and taking of any wild birds, their eggs and nests. Barn owls are also afforded special protection under Schedule 1 Part 1 of the WCA. Under this Act it is an offence to intentionally (or recklessly as amended by the Countryside Rights of Way Act, 2000):

- Deliberately, intentionally or recklessly, injure, kill or capture a wild bird;
- deliberately, intentionally or recklessly take or destroy the eggs or nest/ of a bird, while that nest is in use or being built;
- keep, transport, sell or exchange, offer for sale or advertise a barn owl as such;
- disturb a barn owl while it is building a nest or is at, on or near a nest containing eggs or young; or,
- disturb dependent young of such a bird.

Since barn owls do not build a nest but instead lay their eggs on a flat surface known as a scrape, the disturbance is considered liable to prosecution once the first egg is laid (Barn Owl Trust, 2012).

Bats

All British bat species and their roosts are protected through UK law and the Habitats Regulations. These afford bats protection against deliberate or reckless capture, killing, injury or disturbance, and damage, destruction or obstruction of roost sites. By law, a roost is any structure or place used by bats for shelter or protection; the protection afforded to roosts extends to when the roost is unoccupied.

A development which has the potential to disturb bats may require an EPS licence obtained from Natural Resources Wales (NRW). A licence may be granted before work commences to authorise actions which would otherwise be in breach of the protection afforded by the Habitats Regulations. If bat roosting presence is confirmed in any of the buildings likely to be affected by the proposed development then the above licencing procedure will be necessary.