



Dormouse Survey

Boverton, Vale of Glamorgan

For

Barratt Homes South Wales

Project No.: ABAW105/006

June 2016

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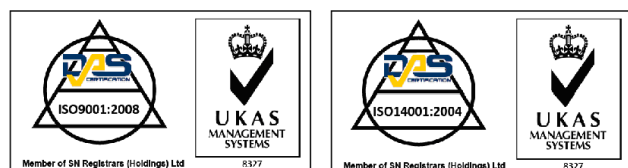
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1. Summary and Main Recommendations

1.1 Summary

1.1.1 Barratt Homes South Wales is seeking planning permission for a residential development located adjacent to the B4265 Llantwit Major Bypass, Boverton, Vale of Glamorgan. The development will be located on 1.8 hectares (ha) of farmland and will comprise the construction of 64 residential units with associated tree and hedgerow planting, and public open spaces, whilst the survey area totals 2.41 ha. The location of the site is shown in Figure 1.

1.1.2 In March 2015 Thomson Ecology was commissioned to undertake dormouse surveys at the site. The brief was to undertake an assessment of the suitability of habitat within the site for dormouse and undertake a dormouse nest tube survey on the site, comprising one visit to deploy the tubes and six survey visits to check for the presence of dormouse.

1.1.3 Evidence of dormouse presence on site was found during the nest tube survey, with nests being recorded in one internal hedge and a hedgerow on the south western perimeter of the site. These results suggest that the species is also likely to be present in suitable connected habitat around the edge of the site, and adjacent to the site.

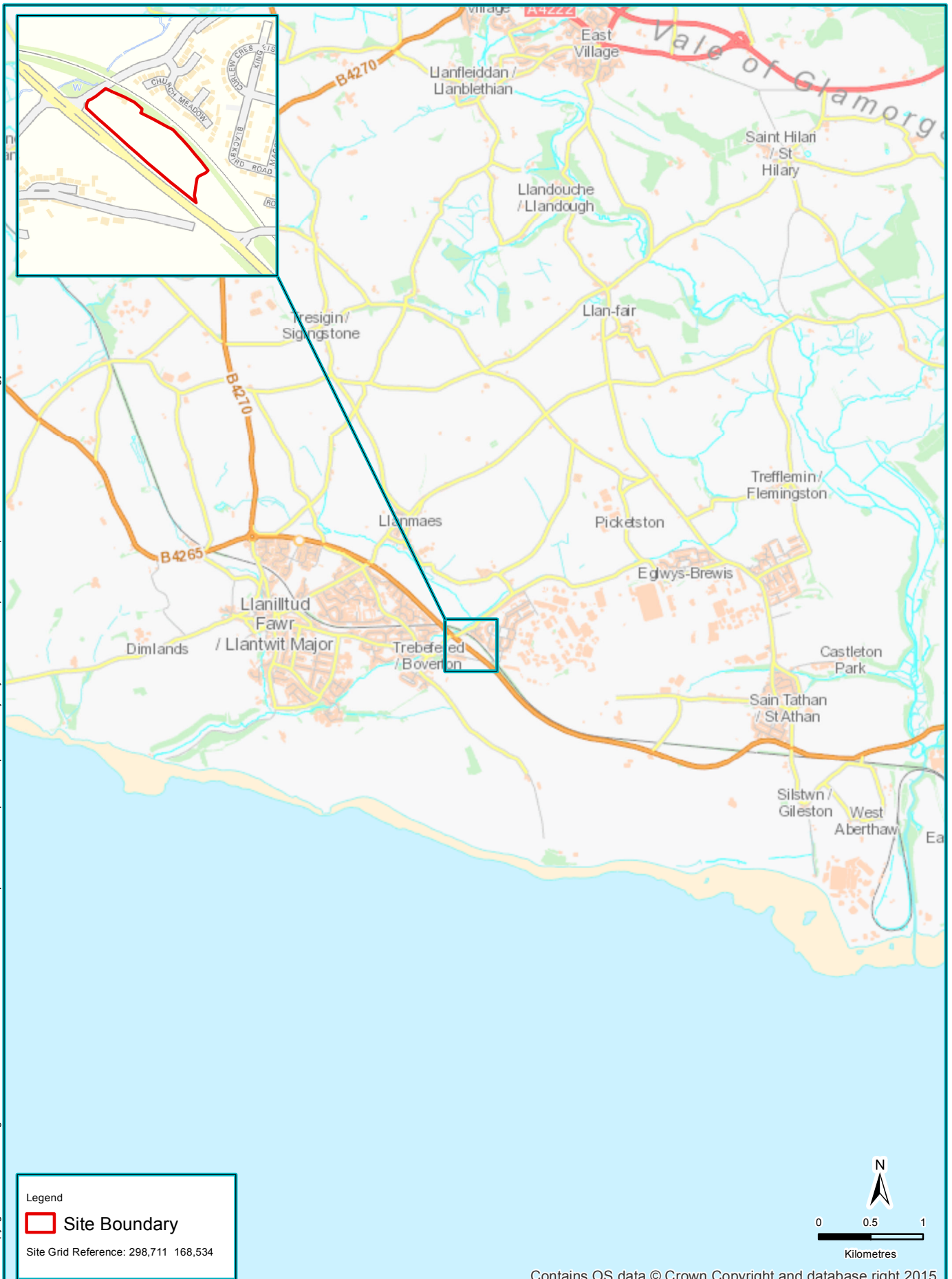
1.2 Main Recommendations

1.2.1 Without mitigation, it is possible that dormice will be disturbed, harmed or their habitat destroyed as a result of the proposed development.

1.2.2 In order for the works to proceed lawfully, a European Protected Species Licence application for dormouse including a mitigation method statement should be prepared and submitted to Natural Resources Wales, once planning permission has been received.

1.2.3 The results of these surveys will be used to inform the planning application with respect to dormouse and to inform appropriate mitigation methods to be formulated based upon finalised development plans.

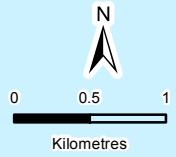
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Legend

Site Boundary

Site Grid Reference: 298,711 168,534







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Client	Barratt Homes South Wales		Drawing Ref	ABAW105/19307/1	
Figure Number	1		Scale at A3	1:50,000	
Figure Title	Site Location		Drawn	KM	Checked
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		Date	09/06/2016	Date	09/06/2016

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Legend

-  Photograph Location and Direction
-  Suitable Dormouse Habitat
-  Survey Boundary
-  Site Boundary

Site Grid Reference: 298,712 168,532

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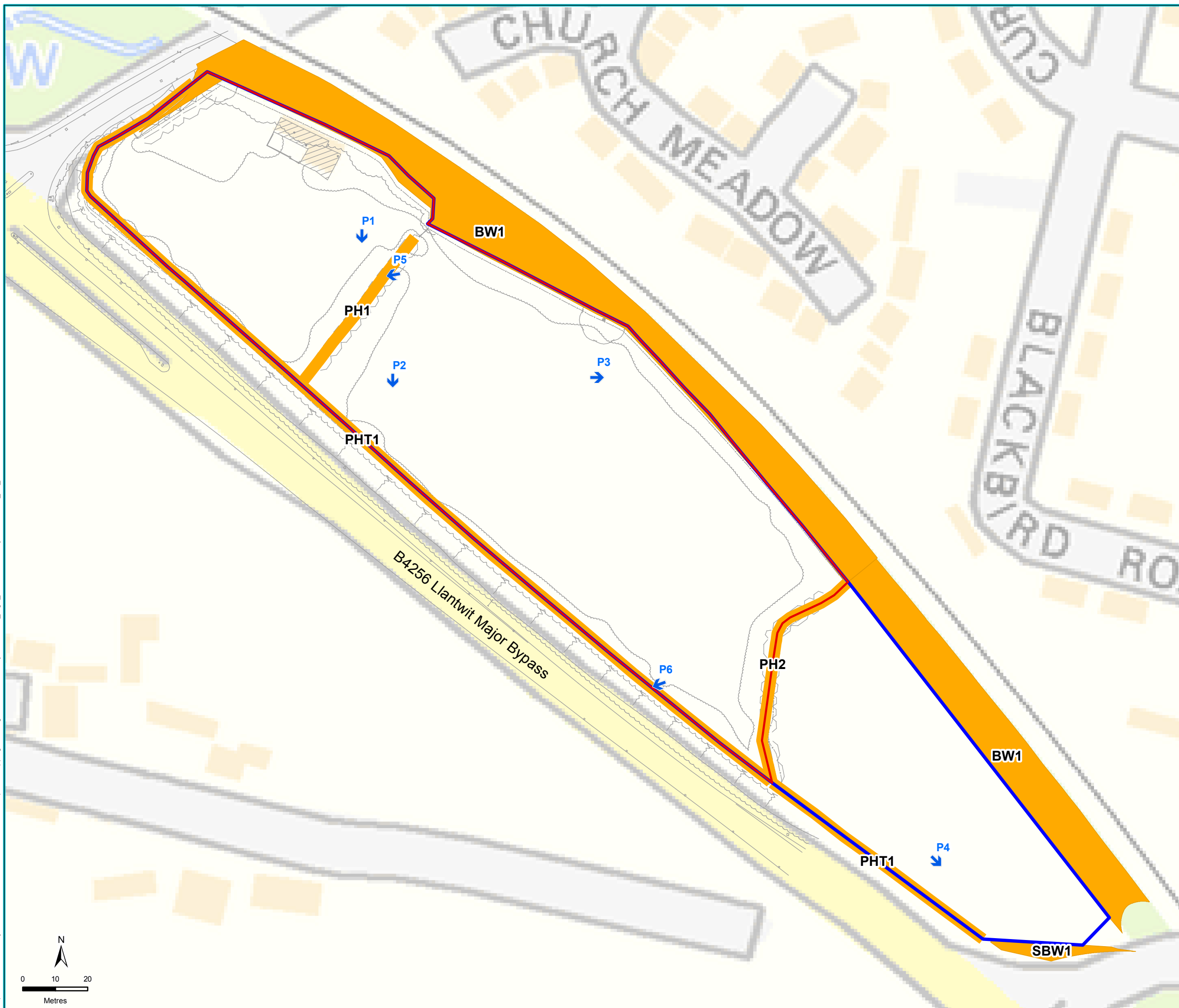
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Date 09/06/2016	Date 09/06/2016

Client
Barratt Homes South Wales

Figure Number
2

Figure Title
Habitat Suitability Assessment



Legend

- Dormouse Nest Found
- Dormouse Tube Location
- Suitable Dormouse Habitat
- Survey Boundary
- Site Boundary



Site Grid Reference: 298,712 168,532

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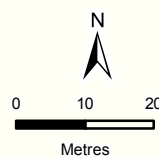
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Client
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Figure Number
3

Figure Title
Results of Dormouse Nest Tube Survey





Photograph 1:
Species poor hedge (PH1) looking south.



Photograph 2:
Species poor hedge with trees (PHT1) along south western site boundary.



Photograph 3:
Edge of broadleaved woodland (BW1) along north eastern site boundary.



Photograph 4:
Scattered broadleaved trees (SBW1).




Photograph 5:
Dormouse nest in Tube 10 in PH1.



Photograph 6:
Temporary dormouse resting nest in Tube 26 in PHT1.

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Figure Number	4		Scale at A4	Not applicable	
Figure Title	Photographs of the Site		Drawn	DJ	Checked
				AC	
			Date	08/09/2015	Date
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2. Introduction

2.1 Development Background

- 2.1.1** Barratt Homes South Wales is proposing the development of 64 residential units on a site in Boverton, Vale of Glamorgan. The site comprises fields and hedgerows and one disused building. The proposed development will include an access road joining the B4265 at the southern edge of the site. The proposals are hereafter referred to as 'the development'.
- 2.1.2** The development will be located on a parcel of farmland with an area of approximately 1.8 ha (Grid Reference SS 986 685), bounded by the B4265 Llantwit Major bypass to the west and the Vale of Glamorgan railway line to the east (Figure 1). The area affected by the development is hereafter referred to as 'the site'.
- 2.1.3** The site lies within an area that has been identified for potential housing development under Policy MG2 in the Vale of Glamorgan Deposit Local Development Plan 2011 - 2026. Policy MG2 - Housing Allocations states that *'in order to meet the housing requirement identified in policy SP3 land is allocated for residential development at the following locations'* where the site is identified as site number '22 - Land adjacent to Llantwit Major bypass'. Barratt Homes South Wales is currently seeking planning permission for the development.

2.2 Ecology Background

- 2.2.1** In July 2014, Thomson Ecology was commissioned by Barratt Homes South Wales to undertake an extended Phase 1 habitat survey and desk study to inform a planning application for the original Phase 1 site boundary (Thomson Ecology Report Ref: ABAW105/002/002 issued August 2014). No records of dormouse were recorded within 1 kilometre (km) of the site during the desk study; however information provided by the Vale of Glamorgan County Ecologist in November 2014 indicated the presence of a recent dormouse record in habitat connected to the site. Consequently, a dormouse survey at the site was recommended for 2015.
- 2.2.2** In April 2015, Thomson Ecology was commissioned by Barratt Homes South Wales to undertake an extended Phase 1 habitat survey of an additional field to be included within the development (Thomson Ecology Report Ref: ABAW105/009/003/002, issued May 2015). Habitat suitable to support dormouse was identified in the form of broadleaved woodland and hedgerows.
- 2.2.3** In June 2016, Barratt Homes South Wales informed Thomson Ecology that this additional field was no longer to be included in the proposed development, however, the survey area includes the site and the additional field (see Figure 2).
- 2.2.4** A summary of the biology, conservation status and legal protection of dormouse is given in Appendix 1.

2.3 The Brief and Objectives

2.3.1 Barton Willmore LLP commissioned Thomson Ecology, on behalf of Barratt Homes South Wales, on 11th March 2015 to undertake a dormouse survey on the development site. The brief included:

- One visit to deploy a minimum of 50 nest tubes, spaced approximately every 20m, in areas of suitable habitat within the site;
- A habitat suitability assessment;
- Six monthly visits to check nest tubes for signs of dormouse activity, removing them on the final (sixth) visit; and
- Production of a survey report (supported by appropriate digitised mapping), which will provide the methods and results of the survey any legal and planning policy issues relating to dormouse and the development, our recommendations as to how these may be overcome.

2.4 Limitations

2.4.1 The surveys were carried out at optimum times of year and at suitable intervals for this type of survey.

2.5 Surveyors

2.5.1 The surveys were undertaken by Janine Burnham BSc (Hons) MRes, Natural Resources Wales European Protected Species (Dormouse) Licence Number: 61538: OTH: SA: 2015.

3. Methodology

3.1 General Approach

- 3.1.1 Following an initial desk study, a survey area was defined which encompassed the whole development site.
- 3.1.2 Within the survey area, habitat that is potentially suitable for dormouse was identified. Such habitat included woodland, scrub and hedgerows.
- 3.1.3 Each of the areas of potential dormouse habitat were then subject to a habitat suitability assessment. Where habitat was found to be suitable, a dormouse survey was undertaken using dormouse nest tube survey methods to determine the presence or likely absence of dormouse. Survey effort was focussed on hedgerows and woodland which were assessed as providing suitable habitat for dormouse.
- 3.1.4 The survey methods used are based on those described in Bright *et al.*, 2006.

3.2 Desk Study

- 3.2.1 Records of dormouse within a 1 km radius of the development site were obtained from South Wales Biological Records Centre (SEWBRc).
- 3.2.2 For continuity between Thomson Ecology reports the habitat identification codes have remained the same as those in the Phase 1 Habitat Assessment reports for the site (Thomson Ecology Report Ref: ABAW105/002/001 and ABAW/009/003/001).

3.3 Habitat Assessment

- 3.3.1 An assessment of habitat suitability for dormice was made of all potential dormouse habitats in the survey area. This included all areas of woodland, scrub and hedgerows.
- 3.3.2 Within each area of potentially suitable habitat (or habitat parcel), the following features were recorded:
- Type of habitat and size in hectares;
 - Tree, shrub and climbing species and their abundance on the DAFOR scale;
 - Density of the canopy layer expressed as an average percent cover;
 - Degree of continuity in the shrub layer expressed as an average percent cover;
 - Degree of connectivity with other areas of potential habitat expressed as high, medium or low;
 - Presence of potential summer and winter nest sites, such as tree holes, deep litter layers, wood piles and tangled woody vegetation;

- Evidence and stocking density, where known, of grazing animals, including deer and livestock;
- Evidence of likely presence of competitors and predators, such as squirrel and cats, respectively; and
- Evidence of woodland management techniques *e.g.* coppicing.

3.3.3 For each hedgerow, additional habitat information was recorded, including:

- Hedgerow structure (leggy, dense, with trees, without trees, layered);
- Average height and width;
- Degree (annually, less frequent or none) and type of hedgerow management (flailed, traditional or none); and
- Number of gaps and length of gap as a percentage of the total length of the field boundary.

3.3.4 Each area of potentially suitable habitat was then assessed and assigned a category of negligible, low, good or excellent suitability (Figure 2), using the criteria in Table 1 below:

Table 1: Assessment of Habitat Suitability for Dormouse

Category	Examples
Negligible	Annually cut hedgerows in arable landscapes. Small (<5ha) area of woodland which is isolated from others by 500m or more and lacks two or more key features. Woodland or scrub which floods throughout in winter.
Low	Annually cut hedgerows in wooded landscapes. Small (<5ha) area of woodland which is isolated and lacks up to one of the key features*. Moderate (5 - 20ha) or large areas (>20ha) of woodland or scrub which lack two or more of the key features.
Good	Moderate areas of woodland or scrub (5 - 20ha) with all the key features but which are isolated from other areas of high suitability woodland. Large areas of woodland (>20ha) which lack one of the key features. Infrequently cut hedgerows that are relatively isolated but have some connectivity to other areas of suitable dormouse habitat.
Excellent	Small and moderate areas of woodland with all the key features and well connected to other areas of suitable dormouse habitat. Large areas (>20ha) of woodland or scrub with all the key features. Infrequently cut hedgerows either in dense networks or linking areas of high suitability woodland.

Category	Examples
	Large areas (>20ha) of young plantation with good connectivity to other areas of suitable dormouse habitat.

*Key Features for dormouse: (i) mixed vegetation comprising a high proportion of at least three of these species: hazel (*Corylus avellana*), oak (*Quercus* sp.), honeysuckle (*Lonicera periclymenum*) and bramble (*Rubus fruticosus*); (ii) a dense shrub layer; (iii) no or relatively open tree canopy (above the shrub layer); (iv) scattered old trees with hollows, dense tangled vegetation, nest boxes or other suitable nest sites, such as dense leaf litter; and (v) tree stumps with cavities at around ground level or other suitable hibernation sites.

3.3.5 Areas of suitable habitat were selected for a dormouse presence, or likely absence, survey.

3.4 Dormouse Nest Tube Survey

3.4.1 Nest tubes placed in appropriate places in suitable habitat may be used by dormouse to nest in. Dormouse summer and breeding nests within nest tubes can often be distinguished from other animal nests by a number of key characteristics: (i) they often incorporate strips of honeysuckle bark, or other shredded bark and green leaves and (ii) lack an obvious entrance hole.

3.4.2 Nest tubes constructed from folded corrugated plastic sheeting (approximately 60mm x 60mm wide and 250mm long) were used. Each nest tube has a sliding plywood base, which also forms the end of the tube and provides a platform extending approximately 50mm from the front of the tube.

3.4.3 The nest tubes were installed on 19th March 2015, a month before the first survey visit, in order to allow dormouse time to find and nest in the tubes before the first survey visit. Sixty nest tubes were installed across the site. Nest tubes were installed along the hedgerows bounding the bordering the site and the two internal hedges at 20 metre intervals.

3.4.4 Dormouse nest tubes were fastened to scrub or beneath a horizontal tree branch of sufficient thickness at a height of approximately 1.5m using garden wire. Tubes were positioned with the entrance of the tube orientated towards the centre of the shrub and angled slightly downwards to prevent water collecting within the tube. Each nest tube was given a number and its location recorded on a GPS enabled mobile mapper. The location of the nest tubes is shown on Figure 3.

3.4.5 The nest tubes were left *in situ* for the duration of the survey and subsequently removed on completion of the survey, excluding any nest tubes which contained dormice or dormouse nests during the survey as these might still be in use by dormouse.

3.4.6 All tubes were checked for the presence of dormice or their nests once a month for a total of six times between April and September. The dates of each survey visit are provided in Table 2.

Table 2: Dates of dormouse survey visits

Survey Date	Visit Number
19/03/2015	Deployment of survey tubes
20/04/2015	Visit 1
19/05/2015	Visit 2
18/06/2015	Visit 3
20/07/2015	Visit 4
13/08/2015	Visit 5
04/09/2015	Visit 6 and collection of dormouse nest tubes*

*Excluding any nest tubes which contained dormouse or dormouse nests that have been retained on site after the survey was completed.

3.4.7 The number of the nest tubes deployed and the timing of the survey met the requirements for a thorough survey (Bright *et al*, 2006). This is defined as a survey in which the combined dormouse detection probability scores from Table 3 below exceed 20 points and the survey is conducted over a minimum period of five months. The score for this survey was 25.2 points.

Table 3: Dormouse detection probability scores (examples).

Month	Score with 50 tubes	Score with 100 tubes	Score with 150 tubes
April	1	2	3
May	4	8	12
June	2	4	6
July	2	4	6
August	5	10	15
September	7	14	21
October	2	4	6
November	2	4	6

4. Results

4.1 Desk Study

- 4.1.1 No records of dormouse within 1km of the site were identified, however information provided by the Vale of Glamorgan County Ecologist in November 2014 indicated the presence of a recent dormouse record in habitat connected to the site.

4.2 Habitat Assessment

- 4.2.1 All habitats with potential to support dormouse (species poor hedgerows (PH1 and PH2), species poor hedgerow with trees (PHT1), semi-natural broadleaved woodland (SBW1) and broadleaved woodland (BW1)) were assessed as having good suitability for dormouse (see Figure 2). Habitat continuity and the degree of connectivity across the site and to surrounding suitable habitat is high and the dense shrub layer and understorey offer medium potential for nesting opportunities.
- 4.2.2 The complete data set on which the assessment of habitat suitability for dormouse was assessed are presented in Appendix 2.
- 4.2.3 Following the assessment of habitat suitability for dormouse confirming the presence of habitat with good suitability for dormouse and the record highlighted by the Vale of Glamorgan Council, it was considered necessary to conduct a dormouse nest tube survey for presence/absence of dormouse across the site.

4.3 Dormouse Nest Tube Survey

- 4.3.1 A complete dormouse nest was found in Nest Tube 10 located in species poor hedgerow PH1 and evidence of a temporary dormouse resting nest in Nest Tube 26 located in PHT1 on the second survey visit (see Figure 3).
- 4.3.2 Other small mammal species incidentally recorded using nest tubes included wood mouse (*Apodemus sylvatica*). Bird droppings were also recorded within the nest tubes.

5. Legal and Planning Policy Issues

- 5.1.1** The content of the legislation and planning policy section is the legislation and planning policy issues that we know are relevant based on this dormouse nest tube survey.
- 5.1.2** As set out in Appendix 1, dormouse and their habitats are strictly protected by a range of legislation and policy, including the following:
- Conservation (Habitats &c) Regulations 2010, as amended;
 - Wildlife and Countryside Act 1981, as amended;
 - Countryside and Rights of Way Act 2000;
 - Natural Environment and Rural Communities Act 2006; and
 - Planning Policy Wales (PPW).
- 5.1.3** Furthermore, development affecting dormice is governed by a licensing procedure administered by Natural Resources Wales (NRW).
- 5.1.4** The Hedgerow Regulations (1997) provide for the conservation of 'important' hedgerows and their constituent trees. The presence of a protected species such as dormice is included in the assessment of whether a hedgerow is considered 'important' and applications to remove such hedgerows must be made to the planning authority.
- 5.1.5** Dormice are a Species of Principal Importance (SPI) for the conservation of biodiversity in Wales under Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006 and are also a Vale of Glamorgan Local BAP Priority Species. This places a duty on all government departments to have regard for the conservation of these species and on the Welsh Ministers to further, or promote others to further, the conservation of these species. Additionally, some of the habitats of SPI's receive protection through planning policy.
- 5.1.6** As evidence of dormouse presence was found on the site a European Protected Species Licence (EPSL) from NRW, detailing appropriate mitigation, will be required. Without mitigation and licensing, the development would contravene the legislation and policy set out above with respect to dormouse. This is because the clearance of vegetation prior to the development could result in harm to individual dormouse, the loss of suitable dormouse habitat and affect the ability of dormouse to disperse. However, using established mitigation techniques it should be possible to:
- Avoid harm to individual dormouse during the development process; and
 - Maintain the population of dormouse at a favourable conservation status through the creation of replacement habitats and enhancement of existing habitat.
- 5.1.7** As dormouse is a European Protected Species the local planning authority will be required to consider three licencing tests in the determination of the planning application for this development that is:

- The purpose of the work is for preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;
- There is no satisfactory alternative; and
- The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

5.1.8 Mitigation measures for dormouse are outlined in Section 6.

6. Recommendations

6.1 Mitigation

6.1.1 Without mitigation measures dormouse populations may be negatively affected both during and after development works so a European Protected Species Licence (EPSL) from Natural Resources Wales (NRW) will be required. The EPSL application will require the production of a detailed mitigation method statement describing the mitigation approach. No mitigation can be undertaken without approval of the appropriate licence and mitigation method statement, which once issued, makes the licence and associated mitigation method statement a legally binding document.

6.1.2 It will be necessary to implement mitigation methods to minimise any negative impacts of the development on the dormouse population.

6.1.3 Important elements of the mitigation measures likely to be included in the mitigation method statement are outlined in the following paragraphs:

- Where hedgerow removal is proposed (PH1 and PH2 and a section of PHT1 for the construction of the access road), techniques to persuade any dormice present to move away to suitable habitat should be employed;
- Searches for nests and animals, in vegetation both above ground and at ground level, should be undertaken by a suitably licenced ecologist immediately prior to any clearance;
- Ideally clearance should be carried out in the winter, to encourage dormouse to move to retained areas of suitable habitat when they emerge from hibernation. Vegetation should be cut to a height of 30 - 50 cm above ground level between November and March, this should be undertaken in a sensitive manner to minimise the likelihood of disturbing or killing hibernating dormouse. Stump extraction should then take place after dormouse emerge from hibernation in the following spring;
- If removal is not possible during the winter months, as the lengths of hedge to be removed are short, summer clearance should be an acceptable alternative. May or late September are the best times for these works to avoid the likelihood of young being present in nests. Small sections (approximately 10 m) of vegetation could be removed on successive days in the direction of any suitable habitat that is being retained on site. Clearance should be undertaken using hand tools at a slow pace; dormice are active at this time of year and therefore will be able to respond immediately. However, it is important to note that there are restrictions on hedge removal/vegetation clearance at this time of year due to the bird nesting season;
- Native hedgerow species should be planted within the development to compensate for the loss of habitat from hedge removal. The compensatory planting should be like for like in terms of area of habitat that is removed from the site;
- Dormouse nest boxes should be installed in adjacent suitable habitat, prior to any development work commencing on site, to make it attractive to displaced dormouse;

- All lighting during the development should be directed away from hedgerows, woodland and scrub areas to reduce light pollution and disturbance to dormice; and
- Management of new and remaining habitat should be sympathetic to dormice *i.e.* no intensive flailing of hedges or aggressive scrub management.

6.1.4 The proposed mitigation strategy outlined above is subject to approval by NRW.

6.2 Opportunities for Enhancement

6.2.1 Habitat enhancement and expansion could be achieved by supplementary planting of native tree and shrub species on site following the development to increase the diversity and availability of food resources for dormice.

6.2.2 Any sparsely vegetated areas and hedgerows could be supplemented by planting of species known to benefit dormice. Species such as hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*) and honeysuckle (*Lonicera periclymenum*) provide important food resources for dormice, help to improve habitat connectivity and provide nesting opportunities.

6.3 Further Survey

6.3.1 No further surveys for dormouse are recommended.

7. Conclusion

- 7.1.1** The survey found evidence of the presence of dormouse on the site in hedgerows PH1 and PHT1. As dormouse are present in one area of the site they are also likely to be present in connected suitable habitat along the hedgerows across the site and around the perimeters of the site.
- 7.1.2** As dormouse is a European protected species, mitigation is required, under licence from NRW, to allow development of the site to proceed. The data collected during this survey can be used to inform a dormouse licence mitigation method statement for the site to be submitted to NRW for approval.

8. References

- 8.1.1 Bright, P., Morris, P. & Mitchell-Jones, A. (2006) The dormouse conservation handbook 2nd Edition. English Nature, Peterborough.
- 8.1.2 Thomson Ecology Ltd. (2015) Boverton, Vale of Glamorgan, Phase Desk Study and Extended Phase 1 Habitat Survey (report reference ABAW105/002/002). Thomson Ecology Ltd.
- 8.1.3 Thomson Ecology Ltd. (2015) Boverton, Vale of Glamorgan, Phase Desk Study and Extended Phase 1 Habitat Survey (report reference ABAW105/009/003/003). Thomson Ecology Ltd.

9. Appendix 1 - Dormouse Ecology

9.1 Introduction

9.1.1 A summary of the biology of the common dormouse (*Muscardinus avellanarius*) and the legislation and policy that protects this species is given below.

9.2 Biology

9.2.1 Two species of dormouse occur in Britain, the common dormouse (also known as the hazel dormouse) and the edible dormouse, (*Glis glis*) (also known as the fat dormouse). The edible dormouse was introduced to the UK in 1902 and its distribution is mainly restricted to the Chilterns, within a 25 mile radius of Tring, where it was first released in 1902. This summary will focus on the common dormouse, our native species which has undergone a rapid decline in numbers and distribution over the last century.

9.2.2 The common dormouse is physically quite distinctive from other native small mammals, having an orange-brown coat (when adult), large dark eyes and a thickly furred tail.

9.2.3 It is a nocturnal animal and is active between April and late October, spending the remainder of the year in hibernation. During its active season, however, adverse weather (cold and wet conditions) can reduce activity and summer torpor is common. It is a highly arboreal species and individuals rarely travel far from their nests in one night (70 metres). Generally dormice only descend to the ground to hibernate during the winter months, though on occasion individuals may descend to gather nest making material and to cross narrow lanes and tracks when moving between adjacent parcels of habitat.

9.2.4 Dormice typically live 2-3 years and first breed in the year following birth. Young are born between June and September and are weaned between 6-8 weeks later. A second litter in the same year is reasonably common, the success of which is influenced by food availability.

9.2.5 The dormouse builds three types of nest: summer, breeding, and hibernation. The summer and breeding nests are normally to be found above ground in tangles of vegetation, holes in trees and hedgerows whilst winter hibernation nests are usually constructed at ground level or below ground level under moss, leaf-litter, old stools, wood piles and rocks.

9.2.6 Dormouse habitat is traditionally thought of as ancient semi-natural woodlands with mixed species rich under storey, whilst open coppiced woodland and hedgerows are also important habitats. However, dormice have also been found in a variety of other habitats, including pure sessile oak woodlands; pure beech woodlands; replanted ancient conifer plantations; gorse and bracken scrub; coastal scrub; alder/reed beds; bramble thickets and even overgrown gardens.

9.2.7 The principal factor governing habitat suitability appears to be food availability. Important food species include hazel, being the principal source of nuts in the autumn prior to hibernation; blackthorn, being a particularly important nectar and flower source in early spring; brambles, being important as a source of berries; and, honeysuckle, being a source of not only nectar and flowers but easily shredded bark, for nesting material. Sycamore and other species which are

characterised by a high insect biomass, become especially important during the mid summer as other food sources are low at this time.

9.2.8 This species has undergone a rapid decline in numbers, which can be attributed to a variety of factors including direct habitat loss, isolation and other habitat fragmentation effects.

9.2.9 The current distribution and status of the dormouse, however, is not well understood. The species has a rather localised distribution in Wales, as it is on the western edge of its range here. There are four key areas for dormice in Wales: central and eastern Monmouthshire, east Montgomeryshire, south east Radnor/east Brecon and Carmarthen/west Glamorgan. Most records come from suitable habitat in southern and eastern parts of Wales, although scattered populations are known in the south west of Wales.

9.3 Site Designation

9.3.1 Some sites with dormouse populations may be designated as Special Areas of Conservation (SAC) under the Conservation of Habitats and Species (Amendment) Regulations 2012 (which replaces the Conservation (Habitats &c) Regulations 1994) and/or Sites of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act (WCA), 1981 (as amended).

9.3.2 However, the Habitats Directive does not require that SACs are designated specifically to protect dormouse populations and, according to NCC guidelines, the presence of dormouse on its own is not normally considered to be sufficient for the designation of a SSSI. Instead, the guidelines imply that the presence of dormouse within an SSSI should be regarded as an attribute which enhances the value of an already important site.

9.3.3 Sites designated for nature conservation at the county level may include dormouse populations as part of the site qualifying criteria, although the criteria used may vary from county to county. Such sites are protected through the planning system and there is generally a presumption against development that affects such sites in local authority development plans.

9.4 Planning Policy

9.4.1 Planning Guidance, Technical Advice Note 5; Nature conservation and planning (TAN5) gives further direction with respect to land use and development. It states that protected species, including dormice, should be a material planning consideration when local authorities are considering a development proposal that is deemed likely to result in disturbance or harm to the species or its habitat.

9.4.2 Furthermore, the Natural Environment and Rural Communities (NERC) Act (2006) places a duty on all public authorities to conserve biodiversity; conserve including preservation and enhancement.

9.5 Species Protection

9.5.1 Dormice are protected under the Conservation of Habitats and Species (Amendment) Regulations 2012 (which replaces the 1994 Regulations). The Regulations make it an offence, with very few exceptions, to:

- Deliberately capture, injure or kill a dormouse;
- Deliberately disturb a dormouse in such a way as to be likely:
 - i. to impair its ability to survive, to breed or reproduce, or to rear or nurture its young; or
 - ii. to impair its ability to hibernate or migrate; or
 - iii. to affect significantly the local distribution or abundance of the species to which they belong.
- Damage or destroy a breeding site or resting place of a dormouse; and
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead dormouse, or any part of, or anything derived from such an animal or plant.

9.5.2 In addition to the protection given to Dormice under the Conservation of Habitats and Species (Amendment) Regulations 2012 already described, the dormouse is also partially protected in Wales under the Wildlife and Countryside Act, which adds the following offences (with certain exceptions):

- Disturbance while it is occupying a structure or place which it uses for shelter or protection; or
- Obstructing access to any structure or place used for shelter or protection.

9.5.3 The dormouse is also incidentally protected by The Hedgerow Regulations (1997), the aim of which is to prevent the removal of 'important' hedgerows which includes those which support Schedule 5 species of the WCA 1981. If dormice are known to be using the hedgerows or to have done so within the last 5 years, then they are afforded some protection.

9.5.4 If proposed work could cause killing, injury or disturbance to either of dormice or damage to their habitats, appropriate mitigation which seeks to avoid these impacts should be devised and implemented under licence. Licences for 'scientific or educational', 'ringing or marking' and 'conservation' may be issued by Natural Resources Wales, licences for the reason of 'preserving public health or public safety' by the Welsh Assembly Government (WAG).

9.6 UK Post-2010 Biodiversity Framework and Species of Principal Importance

9.6.1 Published by the Joint Nature Conservation Committee (JNCC) and the Department for Environment, Farming and Rural Affairs (Defra) in July 2012, the UK Post-2010 Biodiversity Framework identifies UK-scale activities and priority works that are required to deliver the EU Biodiversity Strategy. Following a process of devolution, the framework is underpinned by country level strategies which are now largely responsible for continuing the work carried out under the former UK Biodiversity Action Plans (UK BAP). JNCC guidance dictates that UK BAP background information on priority species and habitats still remains relevant and it now forms the basis of country specific priority lists which, for Wales, are specified under Section 42 of the NERC Act 2006. The Section 42 list is used as a guide and a reference for ensuring that appropriate consideration is given to the conservation of biodiversity in all development activity, and affords legal protection to those species and habitats it includes. The dormouse has been

adopted as a Species of Principal Importance for the Conservation of Biodiversity in Wales. This places a duty on all government departments to have regard for the conservation of these species and on the Secretary of State to further, or promote others to further, the conservation of these species. Furthermore, TAN5 states that species of Principal Importance for the conservation of biodiversity should be protected from the adverse effects of development, which presumably includes those listed the former UK BAP and on Local or Regional priorities species lists.

9.7 References

- 9.7.1 Bright, P., Morris, P. & Mitchell-Jones, A. (2006) The dormouse conservation handbook 2nd Edition. English Nature, Peterborough.
- 9.7.2 JNCC and Defra (on behalf of the Four Countries' Biodiversity Group). (2012). UK Post-2010 Biodiversity Framework. Available from: <http://jncc.defra.gov.uk/page-6189>.
- 9.7.3 Morris, P. (2004) Dormice. Whittet Books, Stowmarket.
- 9.7.4 Highways Agency (1996 et seq) Design Manual for Roads and Bridges, Volume 10 Environmental Design and Management, Section 4 The Good Roads Guide - Nature Conservation, Part 5 Nature Conservation Management Advice in Relation to Dormice.

10. Appendix 2 - Dormouse Habitat Suitability Assessment Index Data

ALL HABITATS		PH1	PH2	PHT1	BW1	SBW1
Type	Hedge	Hedge	Hedge	Hedge with Trees	Broadleaved Woodland	Broadleaved Trees
Area/ Length	57m	73m	415m		0.46	N/A
Species abundance DAFOR	Frequent elder (<i>Sambucus nigra</i>), hawthorn (<i>Crataegus monogyna</i>) and blackthorn (<i>Prunus spinosa</i>) in shrub layer with frequent bramble (<i>Rubus fruticosus agg.</i>) in the understorey	Dominant hawthorn (<i>Crataegus monogyna</i>) with occasional elder (<i>Sambucus nigra</i>). Ivy (<i>Hedera helix</i>) is frequent throughout the hedge, and the understorey is dominated by bramble (<i>Rubus fruticosus agg.</i>).	Abundant mature ash (<i>Fraxinus excelsior</i>) and occasional sycamore (<i>Acer pseudoplatanus</i>) and hornbeam (<i>Carpinus betulus</i>) trees, with Scots pine (<i>Pinus sylvestris</i>) also present. The shrub layer features abundant hawthorn (<i>Crataegus monogyna</i>) with bramble (<i>Rubus fruticosus agg.</i>), ivy (<i>Hedera helix</i>) and elder (<i>Sambucus nigra</i>) also present.	Abundant ash (<i>Fraxinus excelsior</i>), and frequent sycamore (<i>Acer pseudoplatanus</i>). The shrub layer includes abundant hawthorn (<i>Crataegus monogyna</i>) with occasional elm (<i>Ulmus procera</i>) and blackthorn (<i>Prunus spinosa</i>) and sycamore (<i>Acer pseudoplatanus</i>) saplings, and the ground flora includes abundant ivy (<i>Hedera helix</i>). Rare honeysuckle also present (<i>Lonicera periclymenum</i>).	Dominant sycamore (<i>Acer pseudoplatanus</i>), with each tree having abundant cover of ivy (<i>Hedera helix</i>). The ground layer consists of occasional bramble (<i>Rubus fruticosus agg.</i>).	
Canopy density %	90	75	95	80	40	
Shrub continuity %	90	100	80	80	30	
Degree of connectivity	High	High	High	High	High	
Nest site potential	Dense shrub layer and understorey offer medium potential for nesting opportunities.	Dense shrub layer and understorey offer medium potential for nesting opportunities.	Dense shrub layer and understorey offer medium potential for nesting opportunities.	Trees with holes in and dense scrub layer offer high potential for nesting opportunities.	Mature trees and connectivity with scrub layer offer high potential for nesting opportunities.	
Evidence of competitors and predators	Surrounded by residential area where cats may be present. No evidence of wild competitors or predators recorded during assessment.	Surrounded by residential area where cats may be present. No evidence of wild competitors or predators recorded during assessment.	Surrounded by residential area where cats may be present. No evidence of wild competitors or predators recorded during assessment.	Surrounded by residential area where cats may be present. No evidence of wild competitors or predators recorded during assessment.	Surrounded by residential area where cats may be present. No evidence of wild competitors or predators recorded during assessment.	
Grazing evidence	None	None	None	None	None	
Woodland management	None	None	None	None	None	
HEDGES						
Structure	Dense	Dense	Dense with trees	N/A	N/A	
Height	5	5	10	N/A	N/A	
Width	3	3	8	N/A	N/A	
Management	No	No	No	N/A	N/A	
Gaps %	1 gap, 10%	0	0	N/A	N/A	