

Common Name	Scientific name	Status	Dates
Wood warbler	<i>Phylloscopus sibilatrix</i>	Red List BoCC	2 records dated between 2010 and 2016.
Marsh tit	<i>Poecile palustris</i>	Red List BoCC, UK BAP	17 records dated between 1997 and 2019.
Bullfinch	<i>Pyrrhula pyrrhula</i>	Amber List BoCC, UK BAP	45 records dated between 2002 and 2015.
Firecrest	<i>Regulus ignicapilla</i>	Schedule 1 WCA,	5 records dated between 2010 and 2019.
Whinchat	<i>Saxicola rubetra</i>	Red List BoCC	1 record dated between 2002 and 2008.
Woodcock	<i>Scolopax rusticola</i>	Red List BoCC	5 records dated between 1994 and 2016.
Turtle dove	<i>Streptopelia turtur</i>	Red List BoCC, UK BAP	5 records dated between 1995 and 2009.
Starling	<i>Sturnus vulgaris</i>	Red List BoCC, UK BAP	22 records dated between 2000 and 2019.
Redwing	<i>Turdus iliacus</i>	Schedule 1 WCA, Red List BoCC	26 records dated between 1993 and 2019.
Song thrush	<i>Turdus philomelos</i>	Red List BoCC, UK BAP	9 records dated between 2010 and 2019.
Fieldfare	<i>Turdus pilaris</i>	Schedule 1 WCA, Red List BoCC	16 records dated between 1994 and 2019.
Mistle thrush	<i>Turdus viscivorus</i>	Red List BoCC	7 records dated between 1993 and 2013.
Barn owl	<i>Tyto alba</i>	Schedule 1 WCA	5 records dated between 2009 and 2017.
Lapwing	<i>Vanellus vanellus</i>	Red List BoCC, UK BAP	9 records dated between 1998 and 2016.
<b><i>Invertebrates - Coleoptera</i></b>			
Stag beetle	<i>Lucanus cervus</i>	Annex II <sup>14</sup> (non-priority)	9 records dated between 2007 and 2019.
<b><i>Invertebrates - Lepidoptera</i></b>			
Purple emperor	<i>Apatura iris</i>	IUCN <sup>15</sup> GB 2001 NT	1 record dated 2003.
Small heath	<i>Coenonympha pamphilus</i>	UKBAP	4 records dated between 1990 and 2020.
White admiral	<i>Limenitis camilla</i>	IUCN GB 2001 VU	23 records dated between 1992 and 2020
Grizzled skipper	<i>Pyrgus malvae</i>	IUCN GB 2001 VU	2 records dated 2002 and 2007.
<b><i>Mammals – bats</i></b>			
Serotine	<i>Eptesicus serotinus</i>	Schedule 2 Habs Regs, Schedule 5 WCA	7 records dated between 1982 and 2020.
Myotis species	<i>Myotis sp</i>	Schedule 2 Habs Regs, Schedule 5 WCA	12 records dated between 2012 and 2019.
Daubenton's bat	<i>Myotis daubentonii</i>	Schedule 2 Habs Regs, Schedule 5 WCA	3 records dated between 2006 and 2019.
Whiskered bat	<i>Myotis mystacinus</i>	Schedule 2 Habs Regs, Schedule 5 WCA	3 records dated between 2005 and 2019.

<sup>14</sup> Annex II of the Habitats Directive

<sup>15</sup> See IUCN (2001) guidelines, covering Great Britain

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Common Name	Scientific name	Status	Dates
Whiskered/Brandt's bat	<i>Myotis mystacinus/brandtii</i>	Schedule 2 Habs Regs, Schedule 5 WCA	4 records dated between 2005 and 2020.
Natterer's bat	<i>Myotis nattereri</i>	Schedule 2 Habs Regs, Schedule 5 WCA	2 records dated 2016.
Noctule	<i>Nyctalus noctula</i>	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	8 records dated between 1982 and 2016.
Pipistrelle species	<i>Pipistrellus sp.</i>	Schedule 2 Habs Regs, Schedule 5 WCA	18 records dated between 1985 and 2012.
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Schedule 2 Habs Regs, Schedule 5 WCA	51 records dated between 1982 and 2020.
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	11 records dated between 2008 and 2019.
Brown long-eared bat	<i>Plecotus auritus</i>	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	16 records dated between 1982 and 2019.
<b>Mammals – Terrestrial (non-bats)</b>			
West European hedgehog	<i>Erinaceus europaeus</i>	UK BAP	10 records dated between 2007 and 2019.
Eurasian badger	<i>Meles meles</i>	PBA <sup>16</sup>	6 records dated between 2002 and 2017.
Hazel dormouse	<i>Muscardinus avellanarius</i>	Schedule 2 Habs Regs, UK BAP, Schedule 5 WCA	17 records dated between 2006 and 2016.
<b>Invasive plants</b>			
Montbretia	<i>Crocsmia x crocosmifolia</i>	Schedule 9 WCA	5 records dated between 2014 and 2019.
Nuttall's waterweed	<i>Elodea nuttallii</i>	Schedule 9 WCA	2 records dated 2004 and 2014.
Japanese knotweed	<i>Fallopia japonica</i>	Schedule 9 WCA	7 records dated between 1997 and 2019.
Indian balsam (Himalayan balsam)	<i>Impatiens glandulifera</i>	Schedule 9 WCA	8 records dated between 2006 and 2019.
Variiegated yellow archangel	<i>Lamium galeobdolon argentatum</i>	Schedule 9 WCA	3 records dated between 1998 and 2019.
Virginia-creeper	<i>Parthenocissus quinquefolia</i>	Schedule 9 WCA	1 record dated 2013.
Rhododendron	<i>Rhododendron ponticum</i>	Schedule 9 WCA	3 records dated between 1991 and 2001.

*These records of protected, notable and invasive species in the vicinity of the site increase the likelihood of them being present where suitable habitat is identified in the field survey.*

<sup>16</sup> PBA: The Protection of Badgers Act 1992

## 4.2 Field survey

### 4.2.1 Vegetation

The accompanying UKHAB habitat map provided as appendix II depicts the habitats encountered and highlights areas of particular interest with target notes. Photographs of the site are provided as appendix III. On the 4<sup>th</sup> March 2023 the weather conditions were clear and sunny, 0/8 cloud cover, 2/12 wind with a temperature of between 11 and 12°C.

The site comprises a field approximately 2.3 hectares in size, which was previously arable, and has now transitioned to modified grassland. A small section of native hedgerow lies at the northeast of the site. No other habitats are recorded within the redline boundary and the site has been tracked across by large plant and is being used to store some construction materials. There is a purpose built walking route/ track along the western and southern site boundaries and the northern boundary is a field with similar habitat and species. The eastern site boundary is Heras fenced as it forms the construction site for the Western Link Road.

Descriptions of the habitats encountered during the survey are provided below:

#### *Habitats on-site*

##### *Modified grassland g4 (target note 1)*

The site comprises a field of modified grassland in moderate condition, which was previously an arable field. The sward cover is patchy in places with an average sward height of 15 and 20 centimetres, with some areas of longer tussocky grass. Common herbaceous species characteristic of disturbed ground is present throughout. Bare patches are present where colonisation has not yet covered areas of earth are also evident. Large patches of square-stalked willowherb (*Epilobium tetragonum*) are present in the east of the site. Earth mounds are also located within the site boundary which have started to become colonised.

Species present within the modified grassland include annual meadow-grass (*Poa annua*) (LA), cock's-foot (*Dactylis glomerata*) (LA), Yorkshire-fog (*Holcus lanatus*) (LA), common bent (*Agrostis capillaris*) (LF), false oat-grass (*Arrhenatherum elatius*) (LO), red fescue (*Festuca rubra*) (O), creeping buttercup (*Ranunculus repens*) (LD), dandelion (*Taraxacum* agg.) (O), Shepherd's purse (*Capsella bursa-pastoris*) (R), and water figwort (*Scrophularia auriculata*) (R).

There is a slight slope at the south-western corner of the site (target note 2) adjacent to the walking track. Species here include cock's-foot (LD), common nettle (*Urtica dioica*) (LF), common hogweed (*Heracleum sphondylium*) (R), Canadian fleabane (*Erigeron canadensis*) (O), bristly ox-tongue (*Picris echioides*) (O), scentless mayweed (*Tripleurospermum inodorum*) (R), creeping cinquefoil (*Potentilla reptans*) (R), cut-leaved crane's-bill (*Geranium dissectum*) (R), dandelion (*Taraxacum* agg.) (O), broad-leaved dock (*Rumex obtusifolius*) (LF), field speedwell (*Veronica persica*) (R), ribwort plantain (*Plantago lanceolata*) (R), creeping thistle (*Cirsium arvense*) (R), and burdock (*Arctium minus*) (R). Species encountered are presented in table 4 below.

**Table 4: Species recorded within modified grassland**

Common name	Scientific name	Abundance	Status
<b>Grass species</b>			
Common bent	<i>Agrostis capillaris</i>	LF	Common & widespread
False oat-grass	<i>Arrhenatherum elatius</i>	LO	Common & widespread
Cock's-foot	<i>Dactylis glomerata</i>	LD - LA	Common & widespread
Red fescue	<i>Festuca rubra</i>	O	Common & widespread
Yorkshire-fog	<i>Holcus lanatus</i>	LA	Common & widespread
Annual meadow-grass	<i>Poa annua</i>	LA	Common & widespread
<b>Herbaceous species</b>			
Burdock	<i>Articum minus</i>	R	Common & widespread
Shepherd's purse	<i>Capsella bursa-pastoris</i>	R	Common & widespread
Creeping thistle	<i>Cirsium arvense</i>	R	Common & widespread
Canadian fleabane	<i>Conyza canadensis</i>	O	Common & widespread
Square-stalked willowherb	<i>Epilobium tetragonum</i>	LD	Common & widespread
Cut-leaved crane's-bill	<i>Geranium dissectum</i>	R	Common & widespread
Bristly ox-tongue	<i>Helminthotheca echioides</i>	O	Common & widespread
Hogweed	<i>Heracleum sphondylium</i>	R	Common & widespread
Ribwort plantain	<i>Plantago lanceolata</i>	R	Common & widespread
Creeping cinquefoil	<i>Potentilla reptans</i>	R	Common & widespread
Creeping buttercup	<i>Ranunculus repens</i>	LD	Common & widespread
Broad-leaved dock	<i>Rumex obtusifolius</i>	LF	Common & widespread
Water figwort	<i>Scrophularia umbrosa</i>	R	Common & widespread
Dandelion	<i>Taraxacum agg</i>	O	Common & widespread
Scentless mayweed	<i>Tripleurospermum inodorum</i>	R	Common & widespread
Common nettle	<i>Urtica dioica</i>	LF	Common & widespread
Field speedwell	<i>Veronica persica</i>	R	Common & widespread

**Native hedgerow h2a6 (target note 7)**

A section of approximately 25 metres of other native hedgerow (h2a6) in good condition was located in the north east of the site. The entire hedgerow measures 176 metres long, 2 metres wide and 1.75 metres high and has been flailed. Species recorded include blackthorn (*Prunus spinosa*), hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), bracken (*Pteridium aquilinum*), bramble (*Rubus fruticosus* agg.), ivy (*Hedera helix*), field rose (*Rosa arvensis*) and goat willow (*Salix caprea*). The understorey comprises ivy, common nettle, false oat-grass, cock's-foot, annual meadow-grass and broad-leaved dock.

*The native hedgerow on site comprises 80% or more cover of at least one woody UK native species which qualifies the hedgerow as UK BAP Hedgerow habitat. The native hedgerow on site could also potentially qualify as 'Important' under the Hedgerow Regulations 1997. Further recommendations are provided in section 5.2. The hedgerow on site could potentially support nesting birds, foraging and commuting bats, and hazel dormice. These species are discussed further in section 4.2.2.*

### ***Habitats offsite***

There is a small triangular area of broadleaved woodland (target note 3) approximately 0.1 hectares located outside of the southeastern corner of the site boundary. The woodland comprises mature pedunculate oak (*Quercus robur*), alder (*Alnus glutinosa*), and goat willow. The understorey comprises blackthorn, hazel (*Corylus avellana*) (R), and holly (O). The ground flora comprises ivy (D), bramble (LA), common nettle (LF), red dead-nettle (*Lamium purpureum*) (LO), ground ivy (*Glechoma hederacea*) (LO), bracken (LF), creeping thistle (*Cirsium arvense*) (R), cleavers (*Galium aparine*) (R), bluebell (*Hyacinthoides non-scripta*) (R), broad-leaved dock (*Rumex obtusifolius*) (F), dog's mercury (*Mercurialis perennis*) (LF), primrose (*Primula vulgaris*) (R), and lords-and-ladies (*Arum maculatum*) (O).

There is a shallow wet drainage ditch approximately 0.25 metres wide and 20 centimetres deep running through the woodland area and continuing along the area to the south of the site. No vegetation is present, and the water has construction dust covering the bottom. There is a treeline of willow along the ditch further towards the southwest of the site (target note 4).

A dry drainage ditch (target note 5) is located around the field outside of the red line boundary. No vegetation is present.

Heras fencing and some construction works relating to the Western Link Road (target note 6) was noted in the eastern part of the site within the red line boundary.

Mature oaks (target note 8) are located outside the site boundary located within the native hedgerow (target note 9) to the northeast of the site.

## **4.2.2 Protected species assessment**

### ***Badger***

No evidence of badger including setts, latrines, mammal paths, footprints, hairs and foraging signs were recorded within the site boundary. As a highly mobile species that is recorded in the area, they may use the site for crossing or foraging or even sett building, at any point in the future.

*Further recommendations regarding construction impacts on badgers have been provided in section 5.3.*

### ***Bats***

#### Trees

No mature trees offering potential for bat roosting were identified on the site. Trees outside of the red line boundary were identified to provide potential bat roosting features (as illustrated in appendix IV), however these will not be impacted by the development.

*No further recommendations have been made regarding bat roosting features in trees on site.*

### Foraging and commuting habitat

The habitats within the site boundary provide low potential for bat foraging and commuting routes due to the lack of suitable habitats and linear features. The grassland habitat however does provide some potential foraging habitat for bats in the area. Bat transect and static surveys were undertaken across the site and adjacent sites from April to October 2023. The transect surveys recorded five species and two genus of bat including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle, noctule (*Nyctalus noctula*), serotine (*Eptesicus serotinus*), myotis species and long-eared species, with two calls from the Annex II barbastelle (*Barbastellus barbastellus*) from the transect in September detected adjacent to Plant Row woodland.

The majority of the activity recorded on the static detectors was from common pipistrelle bats, or unknown bat species calls. Static 1 was located within the hedgerow/ tree line south of the site boundary and detected a total of 2620 unidentified bat calls, followed by a peak count of 2434 passes from common pipistrelle bats. Three species of bat including common pipistrelle, soprano pipistrelle and nathusius pipistrelle, and three genus of bat including pipistrelle species, long-eared species and myotis species were detected throughout the survey period. The peak calls for long-eared bats were detected in April, pipistrelle species and unknown bat calls in May, common pipistrelle bats in June, and myotis and soprano pipistrelle bats in September. A single pass in April and September was detected for nathusius pipistrelle bats.

Static 2 was located within the hedgerow north of the boundary and detected common pipistrelles as the most frequent species with a count of 2083 passes. Five species of bat including the Annex II barbastelle, noctule, common pipistrelle, soprano pipistrelle and the Annex II greater horseshoe bat (*Rhinolophus ferrumequinnum*), and four genus of bat including myotis species, noctule/ serotine, pipistrelle species, and long-eared species were recorded. The peak calls for common pipistrelle bats were detected in May, with a single pass from the greater horseshoe bat also detected in May, four passes from barbastelle bats in June, noctule, noctule/ serotine, and soprano pipistrelle in June, pipistrelle species in July, and myotis species in October. The long-eared bat was detected in June and October only.

The results are summarised in appendix V along with the transect routes walked and location of static detectors.

*Further recommendations regarding foraging and commuting bats have been provided in section 5.4.*

### **Birds**

There is a short section of hedgerow at the northeast corner on site which offers habitat suitable to support foraging and nesting birds.

*Further recommendations have been made relating to nesting birds in section 5.5.*

### **Great crested newt**

Limited terrestrial habitat was recorded within the site boundary, although areas of tussocky grassland, and around the vegetated mounds provide some suitable habitat. The drainage

ditches outside the site boundary lacked vegetation and the water contained a large amount of construction dust and were not considered suitable aquatic habitat. The hedgerows and ditches may provide potential commuting routes for great crested newts which are known to be in the wider Berewood development and previous mitigation licences have been granted to facilitate works on the wider site. Waterbodies are located within 500 metres as illustrated in appendix VI. A masterplan and habitat management and maintenance plan has been produced as part of the wider site and no specific mitigation will be required for the loss of terrestrial habitat on this specific site.

*Further recommendations have been made relating to great crested newts in section 5.6.*

### ***Hazel dormouse***

The small section of hedgerow within the survey boundary provides suitable habitat for hazel dormice. A presence/absence survey was undertaken in 2023 across the wider site using nest tubes located in hedgerows and woodland within and adjacent to the site. The survey followed the methodology set out in the English Nature (2003) report and was undertaken from May to September 2023. A single hazel dormouse nest was present throughout the survey period, first detected in May, in a tube located on the edge of Plant Row woodland. The location of the nest is outside the redline boundary of Phase 11b however, due to the connectivity from the woodland to the onsite hedgerows it is considered likely that hazel dormouse are present in the hedgerow on site for commuting and foraging. The survey results are presented in table 6 below and in appendix VII.

**Table 6: 2023 dormouse survey results**

Survey visit number/ date	Surveyor	Survey	Weather conditions		Dormouse	Other
			Temp °C	wind / cloud / description		
16/05/23	Aimee Cokayne	Nest tubes	24	Wind-1/12 cloud 0/8 hot and sunny	0	Hazel dormouse nest in D8 with green leaves
15/06/23	Aimee Cokayne	Nest tubes	24	Wind-1/12 cloud 0/8 hot and sunny	0	Hazel dormouse nest in D8
20/07/23	Aimee Cokayne	Nest tubes	20	Wind-1/12 cloud 3/8 hot and sunny	0	Hazel dormouse nest in D8
15/08/23	Aimee Cokayne	Nest tubes	20-19	Wind-1/12 cloud 4/8 warm and still	0	Hazel dormouse nest in D8
21/09/23	Aimee Cokayne	Nest tubes	17	Wind 4/12, cloud 7/8, shattered showers	0	Hazel dormouse nest in D8

*Hazel dormice are present across the Berewood development site and further recommendations have been made in section 5.7.*

### ***Reptiles***

The field and grass-covered earth mounds may provide habitat and foraging opportunities for common reptile species, although at the time of survey the field was waterlogged in areas and had been tracked over with large plant on several occasions. The desk study returned six records of slow-worm, three records of grass snake and four records of common lizard within two kilometres of the development site.

A reptile presence/absence survey was undertaken in April and May 2023 based on the methodology set out in the Froglife Advice Sheet 10 Reptile survey. These surveys did not record any reptile presence within the redline. The results are presented in table 7 below.

**Table 7: 2023 reptile survey results**

Survey Date	Surveyor	Time	Weather conditions		Slow worm	Common lizard	Grass snake	Area recorded	Other species
			Temp °C	wind / cloud / description					
13/04/23	Colin Sutch	10.00	11	1 (wind), 2 (cloud), warm, dry	0	0	0	NA	0
17/04/23	Colin Sutch	12.45	14	1 (wind), 5 (cloud), warm, dry	0	0	0	NA	0
20/04/23	Colin Sutch	13.00	15	1 (wind), 0 (cloud), dry and sunny	0	0	0	NA	0
04/05/23	Aimee Cokayne		16	1 (wind), 8 (cloud), warm, overcast	0	0	0	NA	0
09/05/23	Colin Sutch	11.30	15	2 (wind), 8 (cloud), warm, dry	0	0	0	NA	1 toad
18/05/23	Colin Sutch	12.15	17	1 (wind), 4 (cloud), sunny, dry	0	0	0	NA	1 toad
25/05/23	Colin Sutch	09.00	15	1 (wind), 7 (cloud), dry	0	0	0	NA	1 toad

*No further recommendations have been made for reptiles.*

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

The land known as Phase 11b at Berewood is generally considered to be of low ecological value with ecological constraints relating to the presence of a section of hedgerow at the northeast corner that may support foraging badger, bats, birds, great crested newts and hazel dormice. The development may have the following impacts:

- Impacts on the nearby non-statutory designated site Newlands Row and Plant Row SNCI.
- Loss of native hedgerow which is considered to be a UKBAP habitat.
- The killing/injury of badgers during the construction.
- Disturbance to bats foraging in the local area through the use of lighting.
- The killing/injury of nesting birds during the clearance of the hedgerow.
- The killing/injury of great crested newts during clearance.
- The killing/injury of hazel dormice during clearance of hedgerow foraging habitat.

Mitigation strategies have been provided below to prevent and minimise these impacts.



## **5.1 Designated sites**

### **5.1.1 Summary of findings**

The Newlands Row and Plant Row SNCI, a non-statutory designated site, lies approximately 120 metres to the east of the site and is known to support hazel dormouse and badger.

### **5.1.2 Mitigation**

There is potential that indirect impacts to the nearby SINC site could arise during the construction phase of works. Therefore, a Construction Environmental Management Plan (CEMP) will need to be prepared and implemented. This will include detailed working methodologies to avoid impacts to the adjacent SINC during construction.

The following matters will be addressed in the CEMP:

- Protection of the adjacent SINC using Heras fencing during construction in accordance with British Standards Institute (2012) *Trees in Relation to Design, Demolition and Construction – Recommendations BS5837:2012* to ensure protection of root zones and no damage or disturbance to the trees. Fencing would be installed along the western link road on the eastern edge of the site.
- Briefing all site personnel and contractors about the presence and importance of the site and ensuring that no site personnel access the site and no littering occurs.
- Details of how materials and chemicals will be stored and controlled on-site to avoid pollution and siltation.
- All plant will be issued with nappies for use during refuelling. Any refuelling of plant vehicles will either take place off site or within a specific designated area on site.
- Details on the proposed construction methodology including factors such as construction access, methods of construction, timing of work and working hours.
- Industry standard dust suppression methodology during construction.
- Avoidance of night working to maintain dark corridors for foraging and commuting wildlife.

## **5.2 Hedgerows**

### **5.2.1 Summary of findings**

The native hedgerow at the northeast corner of the site is considered to be UKBAP hedgerow due to it comprising 80% native species. This hedgerow should therefore be retained in any development plan where possible.

## 5.2.2 Mitigation

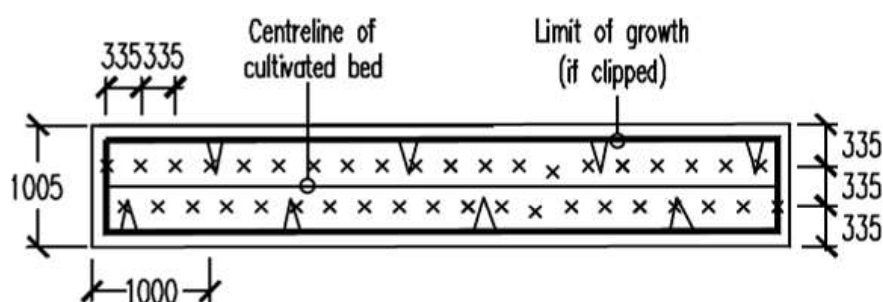
The following is recommended with regard to the hedgerow:

- To retain and protect hedgerows as far as possible within the development. Protection of retained hedgerows would be undertaken in accordance with the British Standards Institute (2012) *Trees in Relation to Design, Demolition and Construction – Recommendations BS5837:2012* by installing Heras fencing along the root protection zones before works.
- If the proposals involve clearance of the existing hedgerow to enable the development, which qualify as a section 41 habitat, it is likely to require mitigation for the loss which would be enforced by the Local Planning Authority.
- Mitigate any hedgerow loss using native tree planting that is equivalent to the length of habitat lost and more. This would provide suitable mitigation for the hedgerow loss resulting from the proposals as well as an additional habitat feature suitable for a range of fauna including birds, invertebrates, reptiles and amphibians. New hedgerow planting would also enhance the aesthetic appeal of the site and provide natural screening for the development.
- An example of the species that could be used within new hedgerow planting on site are summarised in table 8 below and following the planting pattern illustrated in diagram 1.

**Table 8: Species to be included in hedgerow/shrub planting**

Species	Proportion within hedgerow
Spindle ( <i>Euonymous europaea</i> )	10%
Hawthorn ( <i>Crataegus monogyna</i> )	15%
Blackthorn ( <i>Prunus spinosa</i> )	15%
Field maple ( <i>Acer campestre</i> )	15%
Dog rose ( <i>Rosa canina</i> )	5%
Hazel ( <i>Corylus avellana</i> )	20%
Elder ( <i>Sambucus nigra</i> )	10%
Crab apple ( <i>Malus sylvestris</i> )	5%
Guelder-rose ( <i>Viburnum opulus</i> )	5%
Pedunculate oak ( <i>Quercus robur</i> ) will be used for standard tree planting within the hedgerow.	

**Diagram 1: Planting Pattern**



## **5.3 Badger**

### **5.3.1 Summary of findings**

No evidence of badger was recorded on site during the survey; however badgers are recorded in Plant Row woodland approximately 120 metres east of the site. It is recognised that badgers are a highly mobile species and therefore, construction mitigation is proposed in line with the standard guidelines.

### **5.3.2 Mitigation**

The following construction mitigation measures are recommended:

- Install fencing in areas where it is important to exclude badgers for safety reasons e.g. fuel storage areas.
- Check any topsoil / material piles on a daily basis for badger activity.
- Temporarily fence any piles of material that are to be on site for a significant period of time to prevent badgers from accessing the fresh soil.
- Minimise night-working to avoid disturbance to badgers, and cease works in proximity to active setts at least two hours before sunset.
- Where possible excavations should not be left open overnight. However, if excavations are left open at night, then an earth / wooden ramps must be installed to allow any animals that fall in to escape. Work areas would be checked daily to ensure no animals are trapped.
- Cap any pipes over-night on site to avoid animals becoming trapped.

## **5.4 Bats**

### **5.4.1 Summary of findings**

The hedgerow and grassland on the site have been assessed as ‘low’ value foraging and commuting habitat for bats. Five species and two genus of bat were recorded using the surrounding habitats for commuting and foraging.

### **5.4.2 Mitigation**

The development layout should incorporate a suitable level of habitat on site to ensure that foraging and commuting bats will not be adversely impacted in the long-term. This might include retention and enhancement of existing hedgerow, new hedgerow planting and / or scrub habitat (refer to sections 5.2.2 and 5.8).

#### Lighting

Where lighting is required, it is recommended that the following measures should be implemented in order to minimise lighting disturbance on foraging and commuting bats, particularly for barbastelle and great horseshoe bats who are light sensitive species:

- Directing lighting only to areas where it is needed and away from any retained, newly created and/or enhanced habitats which are of value to foraging and commuting bats such as hedgerows, trees and woodland.
- Considered selection/design of the lighting systems, use of alternative lighting systems by using accessories such as cowls or hoods to minimise light spill.
- Using low intensity LED luminaires which lack UV elements, are of a warm white spectrum (ideally <2700Kelvin), and with peak wavelengths higher than 550nm.
- Restricting the height of any lighting columns to three metres or less.
- Preferentially using security lighting that is on a timer and only triggered at waist height.
- Areas of ‘dark habitat’ should be provided to ensure light sensitive bats can continue to forage and commute around the site.

### Construction phase

A number of measures to avoid/limit the disturbance impacts on foraging/commuting bats should be incorporated into a CEMP for the development works. Such measures will likely include restrictions on working hours during the bat activity season and limitations on the use of external lighting systems.

## **5.5 Birds**

### **5.5.1 Summary of findings**

The hedgerow on site provided potential nesting habitat for birds.

### **5.5.2 Mitigation**

The following precautions should negate the risk of harming nesting birds during the development:

- If clearance of the hedgerow is required it should where possible be undertaken outside of the bird nesting season, this is considered to extend from the 1<sup>st</sup> March to the 31<sup>st</sup> August, or if this is not possible, must be done under the supervision of an ecologist to ensure that nesting birds are not harmed. Where nesting birds are encountered, clearance and/or demolition must be postponed until the nestlings have fledged.
- Ecological enhancement measures suggested in section 5.8 will provide foraging and nesting opportunities for many species of bird.

## **5.6 Great crested newt**

### **5.6.1 Summary of findings**

Limited terrestrial habitat for great crested newt was recorded on site, although some areas of longer grass around the field margins and the hedgerow bases, and the colonised earth mounds do provide some potentially suitable habitat for foraging and shelter. A licence from Natural England may be required for works to this site, if suitable habitat is removed. It is recommended that a rapid risk assessment is conducted once the scheme design and extent of habitat loss is known. An example has been provided as appendix VI.

## 5.6.2 Mitigation

The time and cost implications relating to translocation exercises is considered to be disproportionate in relation to the likelihood of encountering great crested newts on site. Controlled habitat degradation and hand searching of potential areas suitable for great crested newts, along with adaptations / restrictions to construction working practices will be adopted. Mitigation will involve the following procedure:

- A suitably qualified ecologist will be present when any hedgerow is cleared and will carry out a fingertip search. Any great crested newts encountered will be moved to the adjacent woodland off site to the east.
- Works will only take place when newts are active between March and October in suitable weather conditions when temperatures are above 10°C.
- The root-balls of the hedgerows will be removed during the active season to ensure no hibernating great crested newts are encountered during the works.
- All contractors will be given a toolbox talk on the presence of newts and the eastern boundary of the site will be fenced off to ensure contractors do not enter the woodland area.
- Any trenches that are required as part of the works will be covered over for the night. If this is not possible the trenches will have sloping sides to ensure that if any newts enter the trenches at night that they can escape. If newts are present within the trenches when construction starts an ecologist will be contacted and the newt moved away from the works area.
- Materials and any arisings will be kept off the ground through the use of skips or pallets.

The Berewood masterplan for great crested newts incorporates extensive habitat creation which compensates for this potential loss of habitat.

## 5.7 Hazel dormice

### 5.7.1 Summary of findings

The hedgerow on the site provides suitable habitat for hazel dormouse and links into the surrounding local hedgerow and woodland networks. The woodlands within the Berewood development area are known to support populations of hazel dormice. A presence/absence survey was undertaken across the site using nest tubes located in hedgerows and woodland within and adjacent to the site from May to September 2023. A single hazel dormouse nest was present throughout the survey period, first detected in May, within a tube located on the edge of Plant Row woodland, over 100 metres east of the site. Although the location of the nest is outside the redline boundary of Phase 11b, due to the connectivity from the woodland to the onsite hedgerow it is considered possible that hazel dormouse are present in the hedgerows on site for commuting and foraging. Appropriate mitigation will therefore be required for any clearance of the hedgerow habitat on site as detailed below.

### 5.7.2 Mitigation

In order to mitigate the potential loss of hazel dormice foraging habitat and minimise any risk of harm to hazel dormice during any clearance of the hedgerow habitat, the following mitigation strategy will be followed: