



Preliminary Ecological Appraisal

Site: Land at Jamaica Inn,
Bolventor,
Launceston
Cornwall,
PL15 7TS

For: Mr. Allen Jackson

Report

prepared by: Richard Bates, ACIEEM, BSc(Hons).

July 2019, updated April 2021

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PLEASE NOTE: The contents of this report are based on the latest survey data. Should a period of more than 12 months pass between the issuing of this report and work commencing on a project, an update survey of the site may be required.

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Executive Summary

Survey dates: 30th July, 2019, walkover update survey 22nd February, 2021
Location: Land at Jamaica Inn, Bolventor, Cornwall, PL15 7TS.
Grid Reference: SX 18203 76658
Surveyor: Richard Bates, ACIEEM BSc.

Devon & Cornwall Ecology were commissioned to undertake a Preliminary Ecological Appraisal (PEA) survey of land at Jamaica Inn, Bolventor, Cornwall. The survey is to support an application to convert existing fields to use as a caravan and camping site.

The majority of the site comprises short semi-improved grassland. Cornish hedges are present across the site and along the boundaries. The field margins along the hedges comprise a mix of plant species common in semi-improved grassland. Multiple wood piles and grass cutting heaps were noted around the site during the initial PEA survey, but were absent during the walkover survey.

The proposed development will involve the conversion of the semi-improved grassland into caravan and camping plots. This will include the installation of 20 caravan plots on hard core bases and 10 tent pitches. A reinforced GeoGrid road will provide access around the camping area and will require the widening of an existing access point in one hedge. Access to the camping area will be provided through a new access point in the same hedge. All other hedges will remain unaffected.

The semi-improved grassland on site is a common, widespread habitat of low ecological value. The hedges are a mix of species poor and species rich Cornish hedges. The development will include the creation of areas of wildflower grassland and new lengths of hedgerow around the site boundaries.

Widening the existing gap and creating a new gap in one of the hedges will require the removal of a small amount of dense vegetation. Recommendations have been included in section 5 to ensure nesting birds are not affected by this vegetation removal. Recommendations have also been included in section 5 to make good this section of hedge and ensure a continuous vegetation cover once work is completed.

Recommendations have been included in section 5 to keep the site suitable for foraging and commuting bats. Site enhancements for biodiversity have also been included in section 5.

1. Introduction

Devon & Cornwall Ecology were commissioned to carry out a Preliminary Ecological Appraisal (PEA) survey of land at Jamaica Inn, Bolventor. The survey was undertaken in accordance with the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017), the guidelines presented in the *Handbook for Phase 1 Habitat Survey* (JNCC, 2010) and the guidelines presented in the Bat Conservation Trust's *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016). It was extended to include fauna species that are protected under legislation or are otherwise notable.

The survey was undertaken by Ecologist Richard Bates BSc (Hons) who is an experienced field ecologist and consultant with licences to survey for bats (2017-30400-CLS-CLS, Level 2) and great crested newts (2017-27940-CLS-CLS, Level 1). Subject to a Professional Code of Conduct, Richard is an Associate Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

The survey was undertaken to support a planning application for the construction of caravan and camping plots with an associated reinforced GeoGrid road. The site is under the ownership of the client, Mr. Allen Jackson, and is located adjacent to the Jamaica Inn public house and hotel. It is bordered by a small copse of broadleaved woodland to the southwest, the old A30 single carriageway to the southeast, the A30 dual carriageway to the northwest and the commercial properties to the northeast.

In the wider landscape, the site is located in the hamlet of Bolventor, which in turn is located in a rural agricultural setting; pasture fields and open moorland are present in all directions. Small copses of woodland are present along un-named watercourses to the northwest on the opposite side of the A30 dual carriageway. No substantial urban developments are present within 2km of the site other than the hamlet and the dual carriageway. A series of large ponds and lakes are present approximately 1km to the south and areas of blanket bog and upland fen are present to the north, southeast and southwest. The closest of these, an area of blanket bog, is located approximately 420m to the southwest. The site has very limited connectivity to the north and west due to the dual carriageway. It is less restricted to the east and south, but the presence of the old A30 main road does present a significant commuting barrier to certain terrestrial species. Past these barriers, a network of low Cornish hedges provides moderate to good commuting opportunities to the wider landscape.



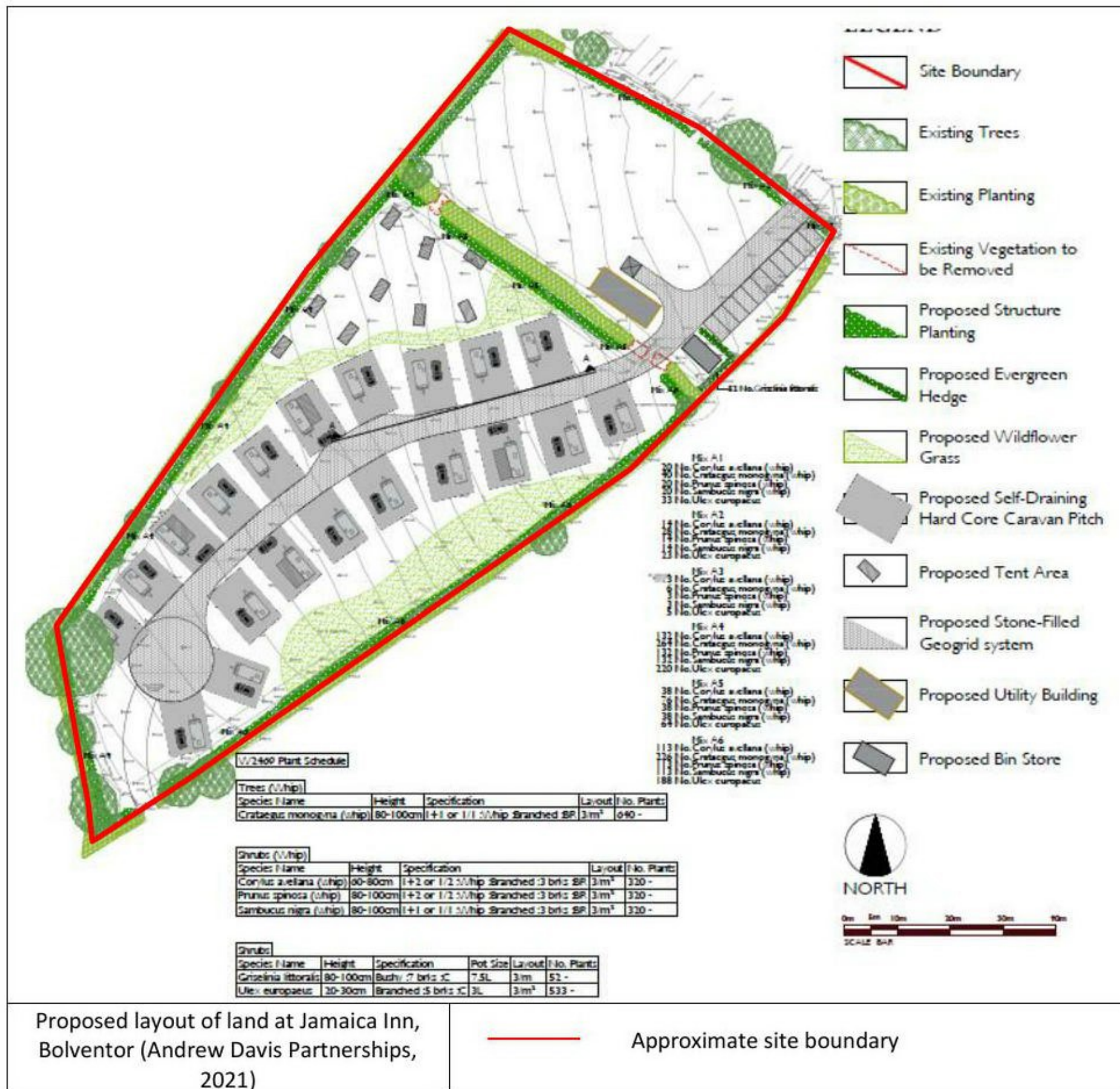
Wide view of land at Jamaica Inn, Bolventor (Google Earth Pro.)

— Approximate site boundary



Existing layout of land at Jamaica Inn, Bolventor (Google Earth Pro.)

— Approximate site boundary



2. Species records

A data search of protected species records has not been requested for this development. It is considered unlikely that a data search will provide productive information given the proposed works will affect areas of semi-improved grassland and a small section of hedge only and precautions outlined in section 5 mean it is unlikely to impact on protected species. Site boundaries and neighbouring habitats will remain intact and unaffected by the development. Provided the recommendations on artificial lighting in section 5 are complied with, no impact on bat foraging or commuting opportunities are predicted.

3. Methodology

Equipment

- Camera
- Binoculars

The entire site was surveyed for protected species, and for the potential for protected species. A habitat map of the site was produced and is available in Appendix 2. Habitat features of interest were also noted; Target Note (TN) descriptions of these features are included in this report and photographs of the site are available in Appendix 3. Consideration was also given to designated sites in the vicinity of the site. Potential impacts of the development on citation species or habitats were assessed. On site, species looked for included:

Bats: Where access was possible, any buildings were searched internally in all areas and examined externally from the ground. Trees with crevice potential for bats were examined using binoculars.

Breeding Birds: Areas suitable for use by nesting birds in the site and on any buildings were examined and the surveyor looked for evidence of past nest sites.

Reptiles and Amphibians: Habitat features that could be suitable as hibernacula or feeding/resting areas were looked for.

Badgers (*Meles meles*): Any area that could be used for feeding or could potentially contain a Badger sett was surveyed and any signs noted. Evidence of badger activity, such as latrines, forage marks and trails were noted.

Dormice (*Muscardinus avellanarius*): Areas with the potential to support dormice, such as hedgerows, woodland and areas of scrub, were noted.

Otters (*Lutra lutra*) and water voles (*Arvicola amphibious*): Habitats associated with either otters or water voles, such as streams, river banks and other riparian habitat, was inspected for evidence of or potential to support these species.

Legislation relating to the species above can be found in Appendix 1 of this report.

4. Results

4.1 Habitats – changes noted during walkover survey

The site is approximately 0.98ha in size and comprises short semi-improved neutral grassland and Cornish hedges. An initial PEA survey was undertaken in July 2019. However, as a period of more than 12 months had elapsed between the initial site survey and submission of the planning application, a walkover survey was undertaken in February 2021 to re-assess the habitats.

The walkover survey established one change to habitats and one change to identified target note features had occurred in the intervening period. During the initial site visit in July 2019, an area of the grassland at the southwest end of the site was noted as less frequently managed with a taller sward height. This area was cut on a regular basis (3 – 4 times per year) and did not develop into tussocky grassland. However, since the original survey was undertaken this area is now managed in the same cutting regime as the rest of the site; it has a uniform short sward height and is regularly mown. The original species composition of this area is presented below:

Less managed semi-improved grassland (Target note 1)

An area of less intensively managed semi-improved grassland is present towards the southern boundary of the site. This area is less regularly mown than the nearby short grassland and is allowed to develop to a sward height of approximately 30 – 40cm. As a result it has a slightly different composition of plant species to the shorter grassland. The following plants were noted:

Common name	Species	DARFOR scale (L-local, D-dominant, A-abundant, F-frequent, O-occasional, R-rare)
<i>Grasses, sedges and rushes</i>		
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>	LO
Crested dog's-tail	<i>Cynosurus cristatus</i>	LF
Cock's-foot	<i>Dactylis glomerata</i>	O
Yorkshire-fog	<i>Holcus lanatus</i>	LD
Perennial rye-grass	<i>Lolium perenne</i>	LO
Rough meadow-grass	<i>Poa trivialis</i>	LO
<i>Herbaceous species</i>		
Common knapweed	<i>Centaurea nigra</i>	A
Spear thistle	<i>Cersium vulgare</i>	R
Common bird's-foot-trefoil	<i>Lotus corniculatus</i>	O
Ribwort plantain	<i>Plantago lanceolata</i>	R
Creeping buttercup	<i>Ranunculus repens</i>	R
Common sorrel	<i>Rumex acetosa</i>	LA
Lesser stitchwort	<i>Stellaria graminea</i>	LF
Dandelion	<i>Taraxacum officinale agg.</i>	R
Germander speedwell	<i>Veronica chamaedrys</i>	R

4.2 Habitats – current habitats

The walkover survey confirms that all other habitats, including the rest of the semi-improved grassland and Cornish hedges, remain as previously noted. The site was assessed using the DARFOR scale and the following species were noted:

Short semi-improved grassland (Target note 2)

Short grassland is the predominant habitat on site. The sward height measures less than 5cm for the majority of the area. The following species were noted:

Common name	Species	DARFOR scale (L-local, D-dominant, A-abundant, F-frequent, O-occasional, R-rare)
<i>Grasses, sedges and rushes</i>		
Yorkshire-fog	<i>Holcus lanatus</i>	F
Perennial rye-grass	<i>Lolium perenne</i>	O
Annual meadow-grass	<i>Poa annua</i>	F
<i>Herbaceous species</i>		
Common knapweed	<i>Centaurea nigra</i>	F
Spear thistle	<i>Cirsium vulgare</i>	O
Common bird's-foot-trefoil	<i>Lotus corniculatus</i>	R
Ribwort plantain	<i>Plantago lanceolata</i>	O
Selfheal	<i>Prunella vulgaris</i>	R
Creeping buttercup	<i>Ranunculus repens</i>	R
Common ragwort	<i>Senecio jacobaea</i>	O
Lesser stitchwort	<i>Stellaria graminea</i>	R
Dandelion	<i>Taraxacum officinale agg.</i>	R
White clover	<i>Trifolium repens</i>	O
Germander speedwell	<i>Veronica chamaedrys</i>	R

Cornish Hedges (Target notes 3-9)

Seven Cornish hedges are present on site, forming the site boundaries and a division between fields. The following was noted about these hedges:

Hedge (see Phase 1 map)	Woody species	Ground flora	UK BAP status (80% native woody species)	Hedgerow Regs. 'Important' status	General description
TN3	Oak (<i>Quercus robur</i>) Elder (<i>Sambucus nigra</i>) Hawthorn (<i>Crataegus monogyna</i>)	Bramble (<i>Rubus fruticosus</i> agg.) Common nettle (<i>Urtica dioica</i>) Red campion (<i>Silene dioica</i>) Yorkshire-fog (<i>Holcus lanatus</i>) Rough meadow-grass (<i>Poa trivialis</i>) Wood meadow-grass (<i>Poa nemoralis</i>) Broad leaved dock (<i>Rumex obtusifolius</i>) Cleavers (<i>Galium aparine</i>)	Yes	No	Intact Cornish hedge approximately 30m long on southwest boundary of the site. Adjacent to small copse of deciduous woodland with a post-and-wire fence. Field margins approximately 0.5m wide. Species poor with mostly common and widespread ground flora.
TN4	Oak Elder Hawthorn	Yorkshire-fog Rough meadow-grass Cock's-foot (<i>Dactylis glomerata</i>) Soft rush (<i>Juncus effusus</i>) Purple moor grass (<i>Molinia caerulea</i>) Sweet vernal-grass (<i>Anthoxanthum odoratum</i>) False oat-grass (<i>Arrhenatherum elatius</i>) Common knapweed (<i>Centaurea nigra</i>) Fen bedstraw (<i>Galium uliginosum</i>) Tormentil (<i>Potentilla erecta</i>) Foxglove (<i>Digitalis purpurea</i>) Creeping buttercup (<i>Ranunculus repens</i>) Germander speedwell (<i>Veronica chamaedrys</i>) Fodder vetch (<i>Vicia villosa</i>) Bramble	Yes	No	Intact Cornish hedge approximately 130m in length. Adjacent to road and containing a post-and-wire fence. Field margins approximately 0.5m wide. Species poor but with a varied ground flora comprising occasional species associated with purple moor grass and rush pasture.

Hedge (see Phase 1 map)	Woody species	Ground flora	UK BAP status (80% native woody species)	Hedgerow Regs. 'Important' status	General description
		Common nettle Red campion Cleavers			
TN5	Blackthorn (<i>Prunus spinosa</i>) Hawthorn Elder	Yorkshire-fog Rough meadow-grass Rough chervil (<i>Chaerophyllum temulum</i>) Bramble Common nettle Red campion Broad leaved dock Cleavers Germander speedwell	Yes	No	A wide, intact Cornish hedge approximately 70m long with dense bushes, shrubs and a post-and-wire fence. This hedgerow separates two regularly used fields. Evidence of rabbits recorded in the hedgerow. Field margins are approximately 0.5m wide. Species poor with common and widespread ground flora.
TN6	Willow sp. (<i>Salix sp.</i>) Gorse (<i>Ulex europaeus</i>) Hawthorn Blackthorn saplings Elder	Yorkshire-fog Rough meadow-grass Cock's-foot Sweet vernal-grass False oat-grass Lesser stitchwort (<i>Stellaria graminea</i>) Yarrow (<i>Achillea millefolium</i>) Common bird's-foot trefoil (<i>Lotus corniculatus</i>) Common knapweed Foxglove Creeping buttercup Germander speedwell Bramble Common nettle Red campion Cleavers	Yes	No	Intact, Cornish hedge approximately 130m in length. Adjacent to A30 main road and containing a post-and-wire fence. Field margins approximately 0.5m wide. Species poor but with a varied ground flora.

Hedge (see Phase 1 map)	Woody species	Ground flora	UK BAP status (80% native woody species)	Hedgerow Regs. 'Important' status	General description
TN7	None	Yorkshire-fog Cock's-foot False oat-grass American willowherb (<i>Epilobium ciliatum</i>) Hedge bedstraw (<i>Galium mollugo</i>) Rosebay willowherb (<i>Chamerion angustifolium</i>) Broad leaved dock Cleavers Red campion Foxglove Bramble Common nettle	No – but listed under Cornwall's Biodiversity Action Plan	No	Intact, Cornish hedge approximately 30m in length. Adjacent to A30 main road and containing a post-and-wire fence. No trees or shrubs atop the hedge. Field margins approximately 0.5m wide. Species poor but with a varied ground of common and widespread species.
TN8	None	Annual meadow-grass (<i>Poa annua</i>) Yorkshire-fog False oat-grass Broad leaved dock Foxglove Red campion	No – but listed under Cornwall's Biodiversity Action Plan	No	Intact, heavily managed hedge with no trees or shrubs. Approximately 70m in length. Mostly a very short sward height with narrow field margins. Limited ground flora diversity.
TN9	None	Yorkshire-fog Cock's-foot False oat-grass Violet (<i>Viola sp.</i>) Yarrow Bramble Tormentil Fen bedstraw Common bird's foot-trefoil	No - but listed under Cornwall's Biodiversity Action Plan	No	Intact, heavily managed hedge with no trees or shrubs. Approximately 40m in length. A post-and-wire fence is present atop the hedge. Very short sward height except for approximately 10m of the southern end.

The proposed development will require the widening of an existing gap and the creation of a new gap in hedge TN 5, resulting in the loss of approximately 5m of Cornish hedge. This hedge is species poor with a common and widespread ground flora. It does, however, qualify as a UK priority habitat and Cornwall Biodiversity Action Plan habitat. As such recommendations have been included in section 5 to compensate for the loss of this small section of hedge.

Wood piles and grass cuttings (Target notes 10 & 11)

A purpose built, temporary wood pile was noted at the northern end of the site during the initial PEA survey. However, during the walkover survey the wood pile was absent; it was confirmed by the clients that this was gradually dismantled for use in the public house.

Large grass cutting piles (TN 10 & 11) were noted close to the hedges elsewhere on site. These were confirmed as present during the walkover survey. These features provide potential foraging and refuge opportunities for reptiles. The potential for reptiles is discussed in section 4.4 below.

4.3 Bats

No buildings are present on this site. A preliminary inspection of hedgerow trees recorded no potential to support roosting bats. This assessment was based on the criteria set out in Table 1 below, adapted from the Bat Conservation Trust *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins *et al*, 2016):

Table 1 - Criteria for assessing bat roosting potential of buildings and trees

Confirmed Roost	Evidence of bat occupation found
High Roosting Potential	With significant roosting potential, either because they contain a large number of suitable features or the features present appear optimal.
Medium Roosting Potential	Features with moderate roosting potential, with roosting features appearing less suitable.
Low or Negligible Roosting Potential	Buildings or trees with few, if any, features suitable for roosting.

The site was also assessed for potential to support commuting and foraging bats, based on the criteria set out in Table 2 below, adapted from the *Good Practice Guidelines* (Collins *et al*, 2016):

Table 2 - Criteria for assessing bat commuting and foraging habitats

Suitability	Description of habitats
<i>Negligible</i>	Negligible commuting features on site and/or unsuitable foraging features, such as large areas of hardstanding.
<i>Low</i>	Habitats that could be used by small numbers of commuting bats, such as gappy hedgerows or sites with limited connectivity to the wider landscape. Suitable but isolated foraging habitat that could be used by small numbers of bats, such as small patches of scrub or lone trees.
<i>Moderate</i>	Continuous commuting habitats connected to the wider landscape, such as a line of trees and scrub or linked residential gardens. Habitat that can be used for foraging and is connected to the wider landscape, such as trees, scrub, grassland and water.
<i>High</i>	Continuous, high quality habitat with good connectivity to the wider landscape. This would include features such as watercourses, river valleys, hedgerows and woodland edges. High quality foraging habitat that well connected to the wider landscape and likely to be used regularly by bats, such as broadleaved woodland, tree lined watercourses, grazed parkland or sites that are close to and/or connected to known roosts.

The hedges on site and surrounding habitats were assessed as providing *moderate* foraging and commuting opportunities for bats, based on guidance summarised in Table 2 above. However, the proposed development has been designed to complementary to its surroundings and will minimise any potential impacts. No trees will be removed as part of the development and no known or potential roosting opportunities will be affected. The hedges will remain intact and fully accessible for foraging bats both during and post-construction.

The only predicted impact from the development on foraging bats is the addition of artificial lighting during and post construction. **Recommendations have been included in section 5** to minimise disturbance to foraging and commuting bats. Provided these recommendations are adopted, it is unlikely that the proposed development will have any significant impact on bat foraging or commuting and no further survey work is required.

4.4 Nesting birds

Sections of hedges on site provide suitable nesting opportunities for birds, primarily where standard trees, shrubs and gorse occur. The proposed development will require the widening of an existing gap and the creation of a new gap in hedge TN 5, which currently has low, dense hawthorn and blackthorn shrub in the proposed work areas. These offer potential for nesting birds and **recommendations have been included in section 5** to prevent the disturbance of any birds that may be present.

4.5 Reptiles and Amphibians

Reptiles

The site was assessed as having low potential to support common reptile species along the field margins and negligible potential elsewhere. The majority of the site comprises very short grassland that offers very limited foraging opportunities and no refuge for reptiles. The presence of a small number of grass cutting piles within the field margins provides foraging and refuge opportunities for reptiles.

The proposed development includes the planting of new hedgerows along the field boundaries. This is unlikely to require the use of any heavy machinery but will require the dismantling of the existing grass piles. Due to the limited impact of the development on the field margins, **a precautionary approach has been recommended section 5.**

Amphibians

The PEA survey recorded low potential for amphibians to forage on site, primarily along the field margins. The majority of the site however, including the development area, is of negligible potential for amphibians. A desktop survey noted a network of four ponds is also located 150m to 250m northwest of the site. These ponds are situated on the opposite side of the A30 dual carriageway, which presents a significant barrier to commuting amphibians. The site is also isolated from the wider landscape by other nearby roads.

In addition, a search of publicly available records was undertaken and returned no instances of GCN within 10km of the site.

Given the significant barriers to GCN commuting present by the A30 dual carriageway, lack of local records and the geographical location of the site in Cornwall, it is considered highly unlikely that GCN would be present. Other amphibian species such as toads may be present, but are unlikely to be significantly affected by the proposed development. The majority of the site is of low foraging value to amphibians and all key commuting opportunities are due to be retained as part of the proposed development. No further survey work is required.

4.5 Badgers

A full search of the site revealed no evidence of badgers, such as latrines, foraging marks, trails or holes. No further surveys are required.

4.6 Dormice

The hedge boundaries on site provide limited foraging and nesting opportunities for dormice. Potential food sources are available from species such as hawthorn, but the variety and availability of seasonal food sources is very limited. The hedges are also fragmented from to the wider landscape as a whole by nearby roads. A search of publicly available records returned no instances of dormice within 10km. No further survey work is required.

4.7 Otters and Water Voles

The site is considered unsuitable for both otter and water vole. No suitable foraging or refuge habitat is present on site. No further survey work is required.

4.8 Hedgehogs

The site has limited potential to support hedgehogs, providing foraging and limited commuting opportunities along the site boundaries. However, although hedgehogs are a UK and Cornwall Biodiversity Action Plan (BAP) species, recommendations have not been included to enhance this particular site. The presence of the adjacent dual carriageway presents a serious mortality risk to hedgehogs and enhancing the site for this species would likely increase the risk of death for dispersing individuals.

4.9 Designated sites

A desktop survey for non-statutory designated sites within a 1km radius was undertaken, extending to 2km for statutory designated sites and 5km for European designated sites. The results of this search are detailed in Table 5 below:

Table 5: Statutory and non-statutory designated sites near Jamiaca Inn, Bolventor

Site name	Conservation status	Size (Ha)	Distance from site
River Camel	SAC ¹	619.65	4.8km west
Bodmin Moor, North	SSSI ²	4889.77	200m southwest
Dozmary Pool	SSSI	104.52	750m southeast

The River Camel SAC designated site, encompassing the River Camel Valley and Tributaries SSSI designated site, lies approximately 4.8km to the west at the closest point. This SAC is designated for its varied terrestrial habitats, including dry heath, old sessile oak woodland and alluvial forests rich in alder (*Alnus glutinosa*) and ash (*Fraxinus excelsior*). The river system has also been selected for its population of otters and bullhead (*Cottus gobio*) fish.

The proposed development is unlikely to have any direct impact on these designated sites through visual or noise disturbance, or through indirect impacts such as groundwater pollution.

Similarly, the scale of the proposed development is unlikely to have any significant impact on the SAC through increased visitor numbers. However, it is within 5km and as such is within the zone of influence for this European designated site. Policy 22 of the *Cornwall Local Plan: Strategic Policies 2010 – 2030* (Cornwall Council, 2016) indicates that developments within the zone of influence for European designates sites will need to provide appropriate mitigation for recreational impacts. Although no information specific to River Camel SAC could be found for this report, mitigation is likely to include existing measures such as financial contributions towards off-site mitigation. The level of contribution, should it be required, will need to be decided and secured with the local planning authority prior to approval for the development.

The Bodmin Moor, North SSSI site is designated for its unique status as the only upland massif in Cornwall and for its characteristic moorland habitats. These include wet heath, dry grassland, valley bogs, blanket bogs and crags. The wetland communities found within the site support a number of rare and local plants.

Dozmary Pool SSSI is a unique pond within Bodmin Moor and the largest natural freshwater lake in Cornwall. Its oligotrophic (nutrient poor) environment is home to specialised and nationally rare species, such as spring quillwort (*Isoetes echinospora*) and six-stamened waterwort (*Elatine hexandra*).

Both of these designated sites are located within 1km of the proposed development. They are within walking distance and may be subject to increased visitor numbers. The development is likely to be a dog friendly facility in keeping with the adjacent Jamaica Inn and hotel, and the Dozmary Pool SSSI site in particular could be negatively impacted by increased visits from dog walkers. Uncollected dog faeces

¹ SAC: Special Area of Conservation

² SSSI: Site of Special Scientific Interest

risks enriching the soil at this site and disrupting the natural, nutrient poor environment of the pool and surrounding land.

Similarly to the River Camel SAC, it is likely that a financial contribution towards the maintenance of these sites will be required to compensate for any increase in visitor numbers. This may involve consultation with the site custodian, Natural England, through the planning process. The level of contribution, should it be required, will need to be decided and secured with the local planning authority prior to approval for the development.

Constraints

Full access to the site was available and the surveys were undertaken in suitable conditions in July and February. As such compiling a definitive species list from individual visits is difficult as certain early or late flowering plants may not have been visible. However, the site comprises habitats that are widespread, the majority of which is semi-improved grassland. It is considered unlikely that any species of significance were missed during the surveys.

5. Recommendations

5.1 Hedges

The proposed development will require the widening of a gap and the creation of a new gap in hedge TN5. This will result in the loss of approximately 5m of hedge in order to allow vehicular and pedestrian access. To compensate for this loss, the following will be implemented on site:

- In accordance with the *Cornwall Planning for Biodiversity Guide* (Cornwall Council, 2018), the cut ends of the access points will be faced with similar stone to the original hedge to retain the character.
- Suitable native tree species, such as hazel (*Corylus avellana*), ash (*Fraxinus excelsior*) or oak (*Quercus robur*) will be planted on both sides and allowed to grow above the access point. This will help to close the gap in the hedgerow and create a continuous link of vegetation.
- Elsewhere on site, the central section of hedge TN 8 is currently heavily managed and has a very short sward height. This area will be allowed to grow in a management regime similar to the rest of the site, *i.e.* less frequent cutting, to provide a suitable vegetation link between the neighbouring hedges. This will compensate for the small area of vegetation lost in hedge TN 5 by improving approximately 30m of hedge. It will also provide insects, small mammals, reptiles and amphibians with better commuting and foraging opportunities along the hedge.

5.2 Bats

Bats are sensitive to artificial lighting, which can draw insect prey away from potential foraging areas while simultaneously discouraging bats from foraging and disrupting commuting routes. Currently a lighting plan is unavailable for the development. However, in order to preserve commuting and foraging opportunities, any new exterior lighting will incorporate the following (where applicable) to minimise the potential for light disturbance:

- Construction work on site will be limited to daylight hours only. No artificial use of lighting will be used for construction during the hours of darkness.
- External lighting used to illuminate any building entrances will use motion sensors. The use of sensors will reduce the amount of time the lights are on to only when needed.
- All external lights will be angled downwards and away from the site boundaries. The spread of light from these sources will be minimised by using hoods or cowls to limit light spill to below the horizontal, in line with guidance available in *Landscape and urban design for bats and biodiversity* (Gunnel, Grant, & Williams, 2012).
- Any required footpath lighting will consist of ground level bollard-style lighting or poll mounted lighting where an incorporated hood will direct the light downwards and away from the nearby foliage and commuting features. For either design, lighting will be restricted to providing 3 lux or less at ground level, in line with guidance available in *Bats and Lighting in the UK: Bats and the Built Environment Series* (Bat Conservation Trust, 2008).
- Where available, external lighting will incorporate LED luminaires or narrow spectrum bulbs that emit minimal ultra-violet light, as recommended in guidance from the Bat Conservation Trust & Institute of Lighting Professionals (2018) and the Bat Conservation Trust (2008) respectively. This will avoid attracting insects to lit areas, maintaining the availability of those insects for foraging bats.

5.3 Nesting birds

- The proposed development will require the removal of sections of hedge, as well as some construction works close to retained hedges. Where hedge sections are to be removed, works in those areas will be undertaken outside of the bird nesting season (March – August). If this timing is not possible, the hedges will be checked for nesting birds by an ecologist as part of a supervised vegetation clearance.
- Where nesting birds are discovered works within the area clearance will be postponed until the fledglings have left the nest.
- It is recommended that a minimum buffer zone of 2m is established around the retained hedges. This is to minimise disturbance to nesting birds and protect trees from construction related damage, in line with recommendations available in *BS5837:2012 Trees in relation to design, demolition and construction* (BSI Standards Publication, 2012).

5.4 Reptiles

The survey identified habitats on site that are currently unlikely to be colonised by common reptile species, but that have potential to become more suitable. This is particularly the case if a considerable time passes before construction commences and the semi-improved grassland and field margins are allowed to develop naturally. To prevent any colonisation prior to works commencing, the following will be undertaken to make the site unsuitable for reptiles:

- The vegetation within the proposed work area and along all hedges will be cut to a low sward height (<10cm) on a regular basis to prevent it becoming long, tussocky habitat favoured by reptiles.
- This cutting regime will be started outside of the reptile active period (April – October) to minimise the risk of reptiles being present during the initial cutting.
- The cutting regime will be maintained until immediately prior to construction work and new hedge planting being undertaken.
- After each cutting, all cut vegetation will be collected and removed to prevent it forming a ground level layer that reptiles can shelter beneath.
- The existing grass pile cuttings are located in areas of the site where new hedgerow planting is proposed. As such these piles will need to be dismantled prior to planting. The piles should be carefully dismantled by hand during the reptile active period (April – October).

5.5 Ecological enhancements

As part of the National Planning Policy Framework (2019), local planning authorities aim to secure enhancements for biodiversity for all developments. The current proposals include seeding of areas of wildflower grassland and extensive hedgerow plantings. However, opportunities for wildlife enhancements are limited at this site due to the lack of suitable locations. To achieve this aim the following will be incorporated into the development. Illustrative examples of these enhancements and proposed locations are available in Appendix 4:

- To enhance the biodiversity of the site, two Schwegler 1B bird boxes will be installed on trees along the northern boundary of the site. These trees are under the ownership of the clients and are due to be retained.

- The boxes should be positioned a minimum of 3m from ground level and preferably in a sheltered location to attract common bird species.
- Provision will be made for pollinating insects on site. A number of commercial products are available to 'house' important pollinators such as solitary bee and solitary wasp species. A minimum of two suitable products will be included to provide nesting opportunities and can be installed within the hedges of the site. The provision of nesting opportunities for pollinators will be of benefit to a range of important insect species, the plants they pollinate and the bird species that prey on them.

6. References

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Appendix 1: Legislation (summary)

Wildlife Protection legislation

This appendix details the legislation relevant to the protection of species and habitats. It also details the relevant policies within national, regional, and local planning policy.

National Planning Policy Framework (2019)

The National Planning Policy Framework (NPPF) is the Government's vision for biodiversity in England and is considered by local councils during all planning applications where development is proposed. The NPPF has a broad aim that any construction, development or regeneration proposals should maintain and enhance biodiversity, with the aim of securing biodiversity enhancements for all developments in order to facilitate sustainable development.

Biodiversity Action Plans (BAPs): BAPs set out policy for protecting and restoring priority species and habitats as part of the UK's response as signatories to the Convention on Biological Diversity. BAPs operate at both a national and local level with priority species and habitats identified at a national level and a series of Local BAPs that identify ecological features of particular importance to a particular area of the country. The requirement to consider and contribute towards BAP targets was strengthened through the **Countryside and Rights of Way (CROW) Act 2000**. Although now superseded by other legislation, the lists drawn up under the BAPs are still valuable reference sources on local and national wildlife priorities.

Natural Environment & Rural Communities (NERC) Act (2006)

The NERC Act 2006 amends the above mentioned CROW Act, obliging local authorities to include biodiversity considerations in their duties, including in consideration of planning applications. Under Section 41 of the Act, this consideration is based on lists of organisms and habitat types deemed to be of principal importance to in conserving biodiversity. These lists are primarily based on lists created for the UK and local authority BAPs.

Mammals:

Otters, dormice, water voles, and all bat species are fully protected under section 9 (5) of the Wildlife and Countryside Act 1981 (as amended). According to this act it is an offence to:

- Intentionally capture, kill or injure one of these animals
 - Intentionally or recklessly damage, destroy or obstruct access to any structure or place used by one of these animals for shelter or protection
 - Intentionally or recklessly disturb an animal whilst it is using this place
 - sell, offer for sale or advertise for one of these animals live or dead

Designated as European Protected Species' **otters, dormice, and all bat species** receive additional protection from the Conservation of Habitats and Species Regulations 2010, under Schedule 2 which implements the EC Directive 92/43/EEC in the United Kingdom. In accordance with this act, it is an offence to:

- Deliberately capture or kill a European Protected Species

- Deliberately disturb a European Protected Species
- Damage or destroy the breeding site or resting place of a European Protected Species

The **greater and lesser horseshoe bats**, **barbastelle** and **bechstein's bats**, are also listed under Schedule 2 of the Conservation of Habitats and Species Regulations. Areas which support populations of these species can therefore be considered for designation as a Special Areas of Conservation (**SACs**).

Birds:

Please Note: All breeding birds and their nests are protected under the general protection of Section 1 of the Wildlife and Countryside Act, 1981 as amended. This makes it an offence to disturb breeding birds.

Reptiles and Amphibians:

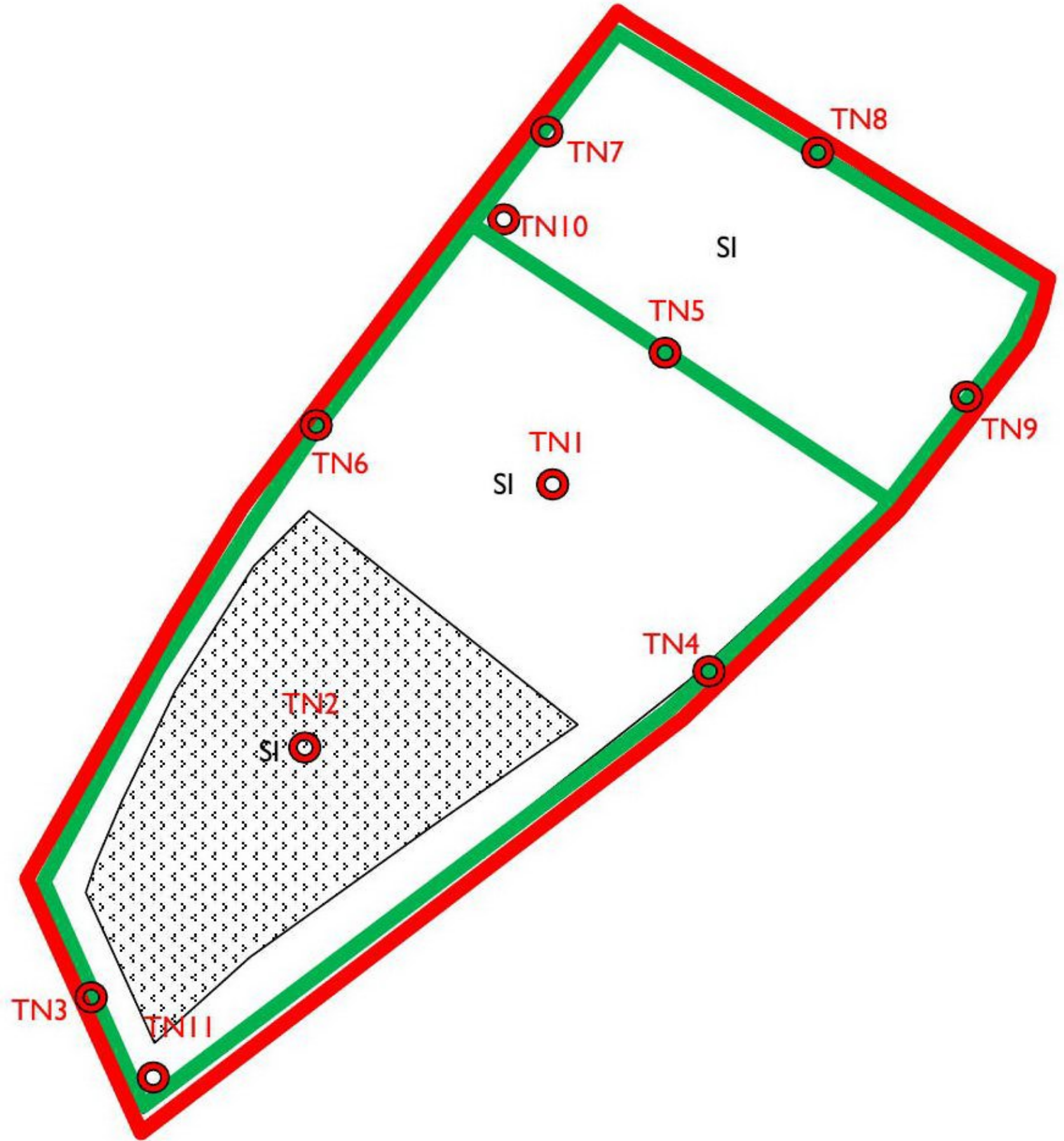
Slow worms, adders, grass snake, viviparous lizard, are protected against intentional killing, injuring or sale under section 9 (1) of the Wildlife and Countryside Act 1981 (as amended).

Great crested newt, natterjack toad, sand lizard and smooth snake are fully protected under section 9 (5) of the Wildlife and Countryside Act 1981 (as amended). These species also receive additional protection as **European Protected Species** under schedule 2 of the Conservation of Habitats and Species Regulations 2010, which implements the EC Directive 92/43/EEC in the United Kingdom.


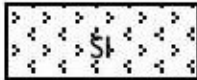

Badgers receive protection from the Protection of Badgers Act 1992. According to this act, it is an offence to:

- to willfully kill, injure, take, possess or cruelly ill-treat a badger;
- to attempt to do so; or
- to intentionally or recklessly interfere with a sett.

Appendix 2: Phase 1 Habitat Map



Key to phase 1 habitat map

	Short mown semi-improved grassland
	Less frequently managed semi-improved grassland – no longer present
	Cornish hedge

Target note	Description
TN1	An extensive area of well maintained, short sward semi-improved grassland. Common and widespread species are present.
TN2	An area of less regularly managed grassland, measuring approximately 0.27ha. Common and widespread species are present, similar in composition to TN1. This habitat is no longer present on site.
TN3	A short length of Cornish hedge. Intact but species poor with common ground flora.
TN4	Approximately 130m of intact Cornish hedge. Species poor but with a varied ground flora.
TN5	Approximately 70m of intact Cornish hedge. An existing access point in this hedge is due to be widened as part of the proposed development. Species poor but with a dense hawthorn/blackthorn tree line on top of the hedge. Common and widespread ground flora species.
TN6	Intact Cornish hedge approximately 130m in length. Species poor with a varied ground flora.
TN7	Intact Cornish hedge approximately 30m in length. No tree or shrub vegetation and a common and widespread ground flora.
TN8	Intact Cornish hedge approximately 70m in length. Heavily managed with very short sward height.
TN9	Intact Cornish hedge approximately 40m in length. Mostly heavily managed with a very short sward height.
TN11	A large grass cutting pile.
TN12	A large grass cutting pile.

Appendix 3: Photographs of site



Photograph 1 – View facing southwest showing areas of well maintained, short sward grassland.



Photograph 2 – View facing southwest showing well maintained grassland and hedge TN4, taken during updated survey.



Photograph 3 – View of hedge TN3 on southeast boundary with small area of adjacent woodland.



Photograph 4 – View of hedge TN3 taken during update survey.



Photograph 5 – View facing northeast, showing area gap in hedge TN5 to be widened.



Photograph 6 – View of gap in hedge TN5 taken during update survey.



Photograph 7 – View of wood pile that has since been removed.



Photograph 8 – View of grass cutting pile TN 10.



Photograph 9 – View facing southwest along hedge TN7.



Photograph 10 – View of hedge TN7 taken during update survey.



Photograph 11 – View of hedge TN9 showing sections of heavily and less heavily managed hedge.



Photograph 12 – View of hedge TN9 during update survey.



Photograph 11 – View of hedge TN8 facing northwest.



Photograph 12 – View of hedge TN8 taken during update survey.



Photograph 11 – View of hedge TN6 facing south.



Photograph 12 – View of hedge TN6 taken during update survey.

Appendix 4: Site wildlife enhancements

