Land at The Bell, 13 Frome Road, Rode, Frome, Somerset BA11 6PW

Preliminary Ecological Appraisal

November 2022

***on behalf of* Caldecotte Group**

Windrush Ecology Limited – Howbery Park – Benson Lane – Wallingford OX10 8BA
Tel 01491 822681 – Web www.windrushecology.com – Email enquiry@windrushecology.com
Company Registration No: 7068178 – Place of Registration – 4 Witan Way, Witney, Oxfordshire OX28 6FF

Disclaimer

This report is issued to the client for their sole use and for the intended purpose as stated in the agreement between the client and Windrush Ecology Ltd. This report may not be relied upon by any other party without the express written consent of Windrush Ecology Ltd.

Windrush Ecology Ltd has exercised due care in preparing this report. It has not independently verified information provided by others, and no warranty is made in relation to the content of this report and Windrush Ecology Ltd assumes no liability for any loss resulting from errors, omissions or misinterpretation made by others.

Any recommendation, opinion or finding stated in this report is based on the circumstances and facts as they existed at the time that Windrush Ecology Ltd performed the work. The content of this report has been provided in accordance with the provisions of the CIEEM Code of Conduct.

Nothing in this report constitutes legal opinion.

Client	Caldecotte Group
Job name	Land at The Bell, 13 Frome Road, Rode, Frome, Somerset BA11 6PW
Survey date	23rd June 2021
Report date	19th October 2021, revised 30th November 2022
Report title	Preliminary Ecological Appraisal
Reference	W4387_rep_Land at The Bell, Rode_30-11-22

	Signed	**Name**	**Position**	**Date**
Prepared by	[redacted]	Robbie Birkett *MSci*	Senior Ecologist	19/10/21
Reviewed by		Edward Bodsworth *MA (Cantab) PhD MCIEEM*	Director	19/10/21
Revised by		Edward Bodsworth *MA (Cantab) PhD MCIEEM*	Director	30/11/22

Report Contents

1 Introduction

1.1 Site Description & Context

The land at The Bell (referred to as the "site" for the purposes of this report) is located to the rear (north-west) of The Bell public house and its car park, on the outskirts of the village of Rode in Somerset BA11 6PW. The site covers an area of approximately 0.3ha and is centred on Ordnance Survey (OS) grid reference ST 8084 5358.

The site comprises a field of agriculturally improved grassland with hedgerow boundaries to the west, north and east sides of the field. The south-eastern boundary is marked by the carpark of the pub, which is an area of tarmacked hard-standing. The public house and its carpark are not located within the site, and the pub buildings were not surveyed for this study.

The site is situated in a semi-rural location on the edge of the village. To the north are a number of residential houses extending along either side of Church Lane. To the immediate south-west is an ~0.3ha area of woodland that appears to be managed as an informal garden for a property approximately 65m to the south. Beyond this woodland is a cluster of new residential development.

Open countryside is present within 50m of the site, to the east and west. Locally this is characterised by a patchwork of arable fields and improved pasture, set within a network of interconnecting hedgerows. Extensive areas of woodland tend of be scarce within the local landscape, although occasional copses can be found, for example in association at Rode Hill Fishery approximately 615m to the north-east. The River Frome passes on the western side of Rode, flowing within 830m of the site.

1.2 Proposed Works

There is a proposal to develop the site for residential use through the erection of three dwellings, with associated hard and soft landscaping. A new access will be created off Church Lane to the north-east. An indicative proposal plan is provided in Appendix 4.

1.3 Aims of Study

The aims of this study are to describe and evaluate the habitats present within the site and to assess the potential for the site to support protected and notable species. The habitats are evaluated, and the report discusses the potential impacts of the development on the ecology of the site and protected/notable species. Recommendations are made for appropriate mitigation & compensation measures in light of the impact assessment and the need for further ecological survey work is discussed.

2 Methodology

2.1 Desk Study

The Somerset Environmental Records Centre was contacted in June 2021 to gather records that it holds for protected and notable species, and non-statutory sites of nature conservation importance from within a 1km radius of the site.

The Multi-Agency Geographic Information for the Countryside (www.magic.gov.uk) website was searched for information regarding internationally protected sites (e.g. Special Areas of Conservation) within 5km of the site and statutory sites of nature conservation importance (e.g. Sites of Special Scientific Interest) within a 1km radius.

Other Internet resources interrogated as part of the desk study include:

Google Earth Pro
The Ordnance Survey - www.ordnancesurvey.co.uk
Old Maps - www.old-maps.co.uk
Where's the path - https://wtp2.appspot.com/wheresthepath.htm

Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 was also consulted to gather information pertaining to priority habitats and species for conservation action at the national and local level.

Aerial photography interpretation was used to place the site into an ecological context and to provide information on the nature of the habitats beyond the site boundary. The information gathered is used to provide a baseline to the habitat assessment.

2.2 Extended Phase 1 Habitat Survey

An extended Phase 1 Habitat Survey was undertaken on 23rd June 2021 by Edward Bodsworth *MA (Cantab) PhD MCIEEM*. A walkover of the site was conducted, and a description of the habitats present was prepared using standard Phase 1 Habitat Survey methodology (JNCC 2010).

Target notes were also prepared on features of particular ecological interest within the site and an assessment was made of the site's potential to support protected and notable species (such as species listed under Section 41 of the NERC Act 2006).

2.3 Limitations on Survey Data

As with any survey undertaken on a certain date, the data presented within this report provide information at particular point in time and present a 'snap-shot' of the ecological status of the site. Ecosystems and species behaviour/activity are dynamic and can change over time. Whilst this report presents a characterisation and evaluation of habitat and species status at the time of the study, it should not be taken as an exhaustive representation of the ecological status of the site either at present or into the future.

3 Results & Evaluation

3.1 Ecological Context

3.1.1 *National Character Area*

The land at The Bell is located on the edge of the village of Rode, within the county of Somerset. It is covered by the Avon Vales National Character Area (NCA) as defined by Natural England.

This NCA is an undulating, low-lying landscape of mixed, predominantly pastoral agriculture and small limestone-built towns, cut by the (Bristol) River Avon and its tributaries, and surrounded to the west, south and east by higher land. Woodlands lie on the steeper slopes and by watercourses, and in a few other areas within a structured farmland of medium to large fields and now straggly hedgerows. It is more than 80 per cent agricultural (both arable and pasture, with some localised nurseries and market gardening) and less than 10 per cent urban, but from the late 20th century onwards it has been subject to much development.

3.1.2 *Sites of Nature Conservation Importance*

3.1.2.1 Statutory Sites

There are no internationally designated sites of nature conservation importance, such as Special Areas of Conservation (SAC), within a 5km radius of the site.

There are no statutory sites of national conservation importance, such as Sites of Special Scientific Interest (SSSI) within a 5km radius of the site.

3.1.2.2 Non-statutory Sites

There are no non-statutory sites of nature conservation importance, such as Local Wildlife Sites within a 1km radius of the site.

3.1.3 *Protected Species Records*

The following sections provide a summary of the species data search results from Somerset Environmental Records Centre (SERC) and refers to the most pertinent species, given the nature of the habitats present within the site and the immediate locality.

3.1.3.1 Birds

The Records Centre holds 100 bird records from within the 1km search radius, pertaining to 21 different species. No records come from within or adjacent to the site, with the majority of records having been made at locations beyond 500m to the north-west.

Records include species typically associated with farmland and garden habitats such as barn owl *Tyto alba*, blackbird *Turdus merula*, skylark *Alauda arvensis*, little owl *Athene noctua*, kestrel *Falco tinnunculus* and sparrowhawk *Accipiter nisus*. There are also records of woodland species, such as siskin *Carduelis spinus*, tawny owl *Strix aluco* and green woodpecker *Picus viridis*.

Other birds recorded include those associated with wetland and riparian habitats, such as dipper *Cinclus cinclus*, goosander *Mergus merganser*, grey heron *Ardea cinerea*, kingfisher *Alcedo atthis* and little egret *Egretta garzetta*, however habitats within the site are unsuitable for these species.

3.1.3.2 Plants

The data search returned 93 records of flowering plants, pertaining to 45 species. A large proportion of plant records date from 1989, with the most recent record having been made in 2016.

The plants recorded are characteristic of a range of different habitat types, for example grassland species such as greater knapweed *Centaurea scabiosa*, common milkwort *Polygala vulgaris* and pyramidal orchid *Anacamptis pyramidalis*, woodland species such as spiked star-of-Bethlehem *Ornithogalum pyrenaicum*, bluebell *Hyacinthoides non-scripta* and monk's-hood *Aconitum napellus*, and species typical of arable land and disturbed ground such as wild mignonette *Reseda lutea*, grey field-speedwell *Veronica polita* and night-flowering catchfly *Silene noctiflora*.

3.1.3.3 Invertebrates

The data search returned two invertebrate records, both of which were made in 2008. These pertain to the buff ermine moth *Spilarctia luteum* and the rustic moth *Hoplodrina blanda*, which were recorded at the same location approximately 800m to the north-west.

Both species can be found in a wide range of habitats including gardens, farmland, grassland and woodland.

3.1.3.4 Mammals

The data search returned four bat records (species not specified), made between 1989 and 1993. The location of recording closest to the site was approximately 150m to the south.

The European hedgehog *Erinaceus europaeus* has been recorded twice within the search radius, with both records dating from 2015. The recording locations were approximately 530m to the north and 760m to the north-west of the site.

There are also 37 records of European otter *Lutra lutra*, all dating from between 2011 and 2019. The recording locations for this species are along the River Frome. There is also one record of water vole *Arvicola amphibius*, again made close to the River Frome, in 1995.

Habitats within the site are unsuitable for these two riparian/wetland species.

3.2 Habitats

Photographs of the site are presented in Appendix 1. Appendix 2 illustrates the location of the site and provides an aerial photograph of the site within the surrounding landscape. Please refer to Appendix 3 for a Phase 1 Habitat Plan, showing the location and extent of the following habitats.

3.2.1 *Improved Grassland*

The site comprises a field of agriculturally improved grassland, which appears to have developed from an area of amenity grassland (lawn) associated with The Bell pub. At the time of survey, the grassland exhibited a fairly tall sward of ~1m in height, although was lacking a 'thatch' that can indicate lack of management over multiple years; it is understood that the area of grassland was managed as amenity grassland until the closure of the pub in 2017, after which management has been semi-regular mowing.

The grassland is dominated by coarse grasses including false oat-grass *Arrhenatherum elatius*, cocksfoot grass *Dactylis glomerata*, meadow foxtail *Alopecurus pratensis* and Yorkshire fog *Holcus lanatus*. There is a low diversity of accompanying (broadleaved) herbs including burdock *Arctium minus*, creeping buttercup *Ranunculus repens*, great willowherb *Epilobium hirsutum*, cleavers *Galium aparine*, spear thistle *Cirsium vulgare*, creeping cinquefoil *Potentilla reptans*, cut-leaved cranesbill *Geranium dissectum*, hogweed *Heracleum sphondylium*, cow parsley *Anthriscus sylvestris* and goat's-beard *Tragopogon pratensis*.

The improved grassland is not considered to meet the criteria of any habitats of 'principal importance' as listed under Section 41 of the NERC Act 2006, such as 'Lowland Meadows'.

It is species-poor, being dominated by coarse grasses and common herbs typical of agriculturally improved land in lowland England. This habitat type will be ubiquitous throughout the local landscape and **is considered to be of low ecological value**.

3.2.2 *Hedgerows*

The south-western, north-western and north-eastern site boundaries are formed by lengths of hedgerow with trees. These enclose the site, separating it from an area of woodland to the south-west, a residential property to the north-west and Church Lane to the north-east. The south-western hedge is of greatest maturity and height, comprising predominately semi-mature trees, while trees within the other two boundaries are limited to occasional semi-mature standards.

All three hedgerows are of a similar species composition, with ash *Fraxinus excelsior* and field maple *Acer campestre* being the dominant trees species. Other woody species include elm *Ulmus procera*, elder *Sambucus nigra* and hawthorn *Crataegus monogyna*. Some Portuguese laurel *Prunus lusitanica* and cherry laurel *Prunus laurocerasus* were noted to the south end of the north-eastern hedgerow, where adjacent to the pub carpark (beyond the site boundary). The ground flora in all three cases is dominated by 'weedy' ruderal species such as bramble *Rubus fruticosus* agg., stinging nettle *Urtica dioica* and ivy *Hedera helix*.

While the hedgerows along the boundaries are connected with each other, they do not possess connectivity to the local farmland hedgerow network and do not form strong green linkages within the local landscape.

The hedgerows are not considered to meet the ecological criteria for 'important' hedgerows under the Hedgerows Regulations 1997, as they are relatively species-poor. They are however considered to meet the criteria for habitats of 'principal importance' (Hedgerows) as listed within Section 41 of the NERC Act 2006. As such, the boundary hedgerows are considered to be of **ecological value at the local level**.

3.2.3 *Hard-standing – South-eastern Boundary*

The south-eastern boundary is marked by the edge of the pub's tarmac carpark. This area of hard-standing is devoid of vegetation and is considered to be of **negligible ecological value**.

3.3 Species

3.3.1 *Birds*

Shrubs and trees within the boundary hedgerows offer potential nesting and foraging opportunities to a number of bird species. The breeding bird assemblage is considered likely to comprise primarily common garden and farmland species.

The assemblage may include species of 'principal importance' as listed within Section 41 of the NERC Act 2006, such as yellowhammer *Emberiza citrinella*, bullfinch *Pyrrhula pyrrhula* and song thrush *Turdus philomelos*, which although still common and widespread, have undergone significant population declines in the last century.

It is considered that the improved grassland unsuitable for ground-nesting birds, such as the skylark, due to the habitat's limited footprint, tall sward height and its enclosure by tall trees and hedgerows. Skylark strongly favour large fields where they can nest well away from tall boundaries which offer cover to terrestrial predators such as cats and perching spots for predatory raptors.

There are no suitable habitats for wetland bird species, including kingfisher.

3.3.2 *Plants*

No rare or scarce plants were noted within the site during the Phase 1 habitat survey.

The site is dominated by improved grassland that possesses a limited floristic diversity. The boundary hedgerows do not exhibit a notable botanical diversity.

3.3.3 *Invertebrates*

The improved grassland is not considered to represent an important habitat resource for scare or uncommon invertebrates, being species-poor and of limited structural diversity.

The boundary hedgerows form suitable habitat for a range of native invertebrates. This may include certain widespread species, for example the buff ermine and rustic moth, that are listed on Section 41 of the NERC Act 2006. Given the extent of hedgerow habitat within the site and the relative abundance of this habitat type within the local landscape, it is considered unlikely that the site supports any assemblages of rare/notable invertebrates that are significant at a local level.

3.3.4 *Reptiles*

Reptiles are considered to be likely absent from the site for a number of factors. Firstly, while the sward length at the time of survey was sufficiently long to offer cover to foraging reptiles, the grassland is managed through intermittent mowing, with suitability thereby not persisting throughout the year. There are no specific habitat features such as log or rubble piles that could offer shelter to reptiles or hibernation sites.

Secondly, historical aerial imagery and anecdotal evidence indicates that until recently the grassland will have been entirely unsuitable for reptiles, being regularly mown (as amenity grassland/lawn) when the pub was still open and active. Although suitability has increased with since the pub closure in 2017, the ecological context of the site is poor for reptiles, with no obvious source habitats within the locality from which the site could have been colonised. The majority of the surrounding habitats are gardens of residential properties, roads, improved grassland and arable farmland, which are likely to be poor for common reptiles.

3.3.5 *Amphibians*

The data search returned no records of amphibians, including the great crested newt *Triturus cristatus*, from within a 1km radius of the site.

There are no ponds or standing open waterbodies within, or adjacent to the site that amphibians could use for breeding.

Consultation of Ordnance Survey maps, satellite imagery and the government's MAGIC mapping tool indicates the presence of three ponds within 500m of the site: 'Farm Pool', located approximately 200m to the north-east; 'Green Park Pond', located approximately 340m to the south-west and a pond at Church Farm, located approximately 430m to the south-west.

Research studies have shown that while great crested newts can under certain circumstances disperse up to 500m from their breeding ponds during the terrestrial phase of their annual lifecycle, the maximum 'routine migratory distance' is 250m (Cresswell & Whitworth, 2004). Green Park Pond and the pond at Church Farm are located well outside of this routine migratory distance and are separated from the site by expanses of arable land and grazed pasture. Is it therefore considered highly unlikely that great crested newts (or other amphibians) would commute from these ponds into the site.

While Farm Pond is located within 250m, habitat connectivity between this pond and the site is considered poor. It is located on the opposite (south) side of the Frome Road (A361), which is a relatively busy road that will form a barrier to amphibian dispersal. Other intervening habitats comprise arable land, managed grassland and built development, none of which are conducive to amphibian dispersal. It thereby seems unlikely that great crested newts, or other amphibians, will be moving from this pond into the site during their terrestrial phase.

In light of the above discussion, it is considered unlikely that amphibians, including great crested newts, will be present within the site.

3.3.6 *Bats*

3.3.6.1 Roosting

There are no buildings or structures within the site that could offer shelter to roosting bats.

No bat roost features were noted in association with semi-mature trees within the hedgerow boundaries.

3.3.6.2 Foraging Habitat

The improved grassland which dominates the site is species-poor sward and is not predicted to support a high insect biomass and therefore large prey resource for bats.

The boundary hedgerows do offer suitable foraging opportunities, and it is anticipated that bat foraging activity within the site will be focused along these vegetated boundaries, particularly the south-western boundary which abuts an area of woodland.

3.3.6.3 Commuting Routes

The site is not predicted to play an important role in the dispersal behaviour of local bat populations.

Although the boundary hedgerows do form linear features along which bats could navigate, they do not possess direct connectivity to the wider hedgerow network, nor do they form a strong link between the open countryside and potential roosting habitat within nearby dwellings.

3.3.7 *Badgers*

No badger setts were noted within the site during the survey and no field signs of badgers were observed, such as dung pits, foraging scrapes and mammal tracks.

3.3.8 *Hedgehogs*

The boundary hedgerows are considered to offer suitable habitat for foraging and sheltering hedgehogs. The improved grassland within the interior of the site also offers suitable foraging habitat, although is considered unlikely to form a key habitat resource for local hedgehog populations.

3.3.9 *Hazel Dormouse*

Hazel dormice are considered to be absent.

Whilst overgrown hedgerows can offer habitat to this species, suitable hedgerows are those that have abundant hazel (as a food source) and that have strong habitat connections to woodland habitats that are also suitable for hazel dormice. Although a pocket of woodland is located to the immediate west of the site, this is of a limited size and lacks the habitat characteristics, such as a well-developed and dense understorey, required by this species.

The site (and neighbouring woodland pocket) does not possess connectivity to other woodland blocks within the wider landscape. In isolation, the hedgerows do not provide enough habitat for dormice.

3.3.10 *Other Species*

The site does not offer any habitat for otters or water voles.

4 Discussion

4.1 Relevant Legislation & Policy Guidance

4.1.1 *Nesting Birds*

Nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. The nesting season for most species is between March and August inclusive.

4.1.2 *The Natural Environment and Rural Communities Act 2006*

Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 places a duty on the Secretary of State to publish, review and revise lists of living organisms and types of habitat in England that are of principal importance for the purpose of conserving English biodiversity.

It also requires the Secretary of State to take, and promote the taking of, steps to further the conservation of the listed organisms and habitats. This is important in the context of planning decisions as the National Planning Policy Framework (paragraph 117) affords planning policy protection to the habitats of species listed by virtue of Section 41.

Habitats listed within Section 41 of the NERC Act 2006 that are considered to be relevant to the site include:

Hedgerows (south-western, north-western & north-eastern boundaries)

Species listed within Section 41 of the NERC Act 2006 that are considered to be potentially relevant to the site include:

Bird species including dunnock and song thrush (hedgerows & hedgerow trees provide potential nesting opportunities)
Common moth species (hedgerows offer potential habitat)
Bat species (hedgerows/trees offer limited potential foraging and dispersal habitat)
Hedgehog (potential foraging and sheltering habitat)

4.1.3 *The National Planning Policy Framework (NPPF)*

The revised National Planning Policy Framework was updated in February 2019 and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous National Planning Policy Framework published in March 2012 and revised in July 2018.

The NPPF states that planning policies and decisions should contribute to and enhance the natural and local environment by:

Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
Maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas and should be given great weight in National Parks and the Broads. The scale and extent of development within these designated areas should be limited. Planning permission should be refused for major development other than in exceptional

circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of:

> The need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;
> The cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and
> Any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.

Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 172), planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character.

To protect and enhance biodiversity and geodiversity, plans should:

> Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
> Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

When determining planning applications, local planning authorities should apply the following principles:

> If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
> Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
> Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
> Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

The following should be given the same protection as habitats sites:

> Potential Special Protection Areas and possible Special Areas of Conservation;
> Listed or proposed Ramsar sites; and
> Sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

4.2 Impact Assessment

The following section discusses the significance of potential impacts of proposed development on the overall ecology of the site and the identified ecological resources.

Proposals are for the erection of four dwellings with gardens and other associated landscaping. A new access will be created off Church Lane, involving the removal of a section of hedgerow on the north-east boundary. Other existing boundary hedgerows will be retained. New hedgerow planting will be provided along the currently unvegetated south-east boundary.

4.2.1 *Sites of Nature Conservation Importance*

There are no foreseeable impacts from the development on statutory/non-statutory sites of nature conservation importance. This is due to the distance of such sites from the area of proposed development, as well as the nature and scale of the proposals.

4.2.2 *Habitats*

Proposals will result in the loss of an area of improved grassland. This habitat is considered to be of low ecological value and is ubiquitous throughout the local landscape. As such, this loss is not predicted to have a significant ecological impact.

There will also be a loss of a short section of hedgerow along the north-eastern boundary to facilitate the proposed new access. It is estimated that an approximate length of 5m of hedgerow will be lost, with the vast majority of the hedgerow, including all standard trees being retained. Some woody vegetation encroaching into the interior of the site from the north-western boundary hedgerow will also be cut back.

The site's boundary hedgerows are considered to be of ecological value within a wider, local context, and are considered to meet the criteria for a habitat of 'principal importance' under Section 41 of the NERC Act 2006. Accordingly, the loss of hedgerow habitat will require compensation. This has been included within proposals, which incorporate approximately 45m of new hedgerow planting along the south-east boundary. The provision of this new length of hedgerow is considered to both offset the small scale loss of existing hedgerow and provide a biodiversity enhancement.

4.2.3 *Species*

4.2.3.1 Breeding Birds

Without sensitive timing, or the adoption of careful work practices, the clearance of woody hedgerow vegetation could result in the destruction of active birds' nests and the killing/injury of eggs/young.

There are no predicted impacts on ground-nesting species such as skylark.

4.2.3.2 Reptiles

There are predicted to be no significant impacts on reptiles, with reptiles considered likely to be absent from the site.

4.2.3.3 Amphibians

There are predicted to be no significant impacts on amphibians, or habitats that may be of value to breeding amphibians, including great crested newts. This is due to the distance of ponds from the site and the unsuitability of separating habitats for dispersing amphibians.

Furthermore, using Natural England's Rapid Risk Assessment tool to assess risks to great crested newts as a result of habitat loss, and an offence being committed under the law, the result is that an offence is 'highly unlikely', due to the distance of the ponds from the site, and the scale of potential habitat loss.

Component	**Likely effect** (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	**Notional offence probability score**
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.1
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
	Maximum:	0.1
Rapid risk assessment result:	**GREEN: OFFENCE HIGHLY UNLIKELY**	

4.2.3.4 Bats

There are no foreseeable impacts on roosting bats.

External lighting can have an impact on bats by affecting their activity and behaviour. In that certain species of bat have been shown to be attracted to mercury vapour lamps which emit light over a very broad-spectrum including UV light to which insects are particularly sensitive.

Furthermore, insects can be attracted in large numbers to mercury lamps and so can bats of the genera *Nyctalus* and *Pipistrellus*, including noctules *N. noctula* and common pipistrelles *P. pipistrellus* (Rydell and Racey 1993). Lighting has shown to have an opposite effect on certain other species, such as the lesser horseshoe bat *Rhinolophus hipposideros*, which have been shown to avoid areas of artificial light (Stone *et al.* 2009).

As a result of this discussion, new external lighting associated with development has the potential to have an adverse impact on foraging and commuting bats, particularly activity along the boundary hedgerows. Although disturbance by lighting is unlikely to result in significant impacts under the legal protection afforded to bats (and thus will not require a Bat Licence), lighting may result in a change in bat activity, which is not desirable.

4.2.3.5 Hedgehogs

The loss of improved grassland is not predicted to result in a significant reduction in the availability of foraging habitat for hedgehogs. In the long term, new residential gardens could provide alternative foraging habitat for this species.

Removal of a section of hedgerow will also result in the loss of habitat that is suitable for hedgehogs. However, the overall scale of habitat loss is considered to be relatively small, and the vast majority of hedgerow habitat will be retained. Furthermore, proposed new hedgerow planting will provide potential habitat for this species in the medium-long term. Given this, the loss of some hedgerow habitat is unlikely to have a significant impact on the local population of hedgehogs.

4.2.3.6 Other Species

There are predicted to be no significant impacts on other notable/protected species such as invertebrates, hazel dormice or badgers.

5 Recommendations

5.1 Further Surveys

No further surveys are considered necessary at the present time.

5.2 Habitats

5.2.1 *Protection of Existing Ecological Features*

It is recommended retained lengths of hedgerow along the south-western, north-western and north-eastern boundaries be protected during the construction phase of development. This should include the establishment of appropriately sized root protection areas, of at least 2m from the base of the hedgerows. Hedgerow trees should be protected in accordance with British Standard 5837:2012.

5.2.2 *New Hedgerow Planting*

It is recommended that new hedgerow planting along the south-eastern boundary comprise a mixture of native tree and shrub species, preferably those of local provenance. The following species are considered to be suitable:

Spindle *Euonymus europaeus*
Field maple *Acer campestre*
Hawthorn *Crataegus monogyna*
Hazel *Corylus avellana*
Pedunculate oak *Quercus robur*
Dog wood *Cornus sanguinea*
Guelder rose *Viburnum opulus*
Wayfaring tree *Viburnum lantana*
Crab apple *Malus sylvestris*
Elder *Sambucus nigra*

Hedgerow management should aim to generate an A-shaped hedge profile, i.e. bushy at the base and narrowing towards the top, in order to maximize the suitability for target species that will use hedgerow habitats such as farmland birds, small mammals, invertebrates and bats.

5.2.3 *New Landscape Planting*

It is recommended that new areas of garden planting are designed, planted and managed to maximise their value to wildlife. One key element of this would be the species used within the planting, which should comprise native species where possible, as well as ornamental plants of known value to wildlife. The key will be to provide a variety of flowers and fruits throughout the year in order to provide food for insects and birds, as well as providing potential nest sites through the planting of trees and shrubs.

Appendix 5 recommends a number of suitable species for landscape and garden planting schemes, including non-native species for more formal areas, although the species mix should by no means be limited to this list. Planting should aim to provide ground cover for animals such as hedgehogs and invertebrates, and so low-growing ground cover should be encouraged. Native species such as bugle, ivy and periwinkle could be used for this purpose, or ornamental species such as lady's mantle, elephant's ears or perennial geraniums may also be suitable for formal areas of ornamental planting. A diversity of structure should also be encouraged through the planting of small trees, with shrubs and herbaceous plant species established below.

5.3 Species

5.3.1 *Breeding Birds*

5.3.1.1 Sensitive Timing of Works

The clearance of all woody vegetation, for example to create the new access within the north-east hedgerow, should be timed to take place outside of the bird breeding season (avoiding March to August, inclusive) so as to avoid any impacts on active birds' nests.

If woody vegetation clearance is required between March and August, an ecologist should be appointed to assess if there are any risks to breeding birds to ensure compliance with the legal protection afforded to nesting birds under the Wildlife and Countryside Act 1981. This may require a survey for nesting birds by the ecologist immediately prior to the vegetation clearance works (usually recommended within 24 hours). If nesting birds were present, clearance work would need to be delayed in the vicinity of the nest to avoid damage or destruction of the nest until the young have fledged.

5.3.1.2 Enhancement of Nesting Opportunities

The provision of new bird nesting boxes within the site is recommended in order to provide suitable nest sites for species within the local area, as nest boxes can be excellent substitutes for the nesting potential of trees. Over 60 species are known to adopt nest boxes including blue tits, great tits, starlings, robins and sparrows. The location and nature of the nest box depends on the species it is designed for; boxes for tits, sparrows or starlings should be fixed two to four metres up a tree or a wall; open-fronted boxes for robins and wrens need to be low down, below 2m, and well-hidden in vegetation. Unless there are trees or buildings which shade the box during the day, boxes should be faced between north and east, thus avoiding strong sunlight and the wettest winds.

On new buildings, the integration of bird boxes is particularly recommended as species such as the house sparrow *Passer domesticus* will readily adopt such features as nest sites, with new integrated nesting features securing a biodiversity enhancement in the long term.

Recommended integrated boxes are:

Bird Brick Houses Standard Box or Sparrow Box
WoodStone Swift Nest Box
Schwegler No. 11 House Martin Terrace
Schwegler Brick Box Type 24

Other recommended boxes are:

Schwegler 2MR Open-Fronted Avianex
Schwegler Avianex Box
Vivara Pro Seville 32mm WoodStone Nest Box

5.3.2 *Reptiles*

As discussed in Section 3.3.1.4, reptiles are considered likely to be absent from the site.

However, given existing habitats do provide suitable cover for these species, it is recommended that the following precautionary working methods be followed to guard against residual risk of harm to individual animals during site preparation.

These methods will also act to prevent harm to hedgehogs.

5.3.2.1 Vegetation Clearance

Where required, clearance of improved grassland and hedgerow habitat should be undertaken across two phases.

Vegetation should initially be cut to a minimum height of 150mm using hand tools (strimmer, brush cutter, chainsaw etc.). The arisings should then be raked or lifted by hand and removed from the working zone on the same day. The habitats should then be left undisturbed for at least 24 hours to allow any resident reptiles or hedgehogs to leave the working area.

After the 24-hour period, full clearance to ground level should be carried out (avoiding wet weather). The direction of working should be towards the south-east boundary to encourage any remaining animals to disperse into the nearby safe habitat.

Any refugia uncovered during clearance such as log or rock piles (none observed) should be disassembled by hand and either be removed from the site immediately or relocated directly to permanent alternative location, well away from the working zone.

Following the completion of clearance works, all vegetation within cleared areas should be maintained at a short height in the lead up to and during construction works.

5.3.2.2 Vigilance and Sympathetic Working

All on-site staff should be made aware of the possibility that common reptiles and hedgehogs could be encountered. Vegetation clearance should proceed in a careful and sensitive manner with vigilance for these native species maintained throughout.

5.3.2.3 Discovery of Common Reptiles

If any common reptiles are found during vegetation clearance, they should in the first instance be given the opportunity to vacate the area to a safe location under their own power.

If they are unable to escape, or show no inclination to do so, then they should be carefully removed by hand and relocated directly to a suitable location, preferably dense vegetation or well away from the working zone.

Care should be taken to avoid allowing an animal to escape whilst in transit and fall onto hard surfaces. Handling should be kept to a minimum with non-latex gloves used where possible.

In the unlikely scenario that a brumating reptile is discovered, they should be covered over, and advice sought from an ecologist as to how to proceed.

5.3.3 *Bats*

There are no buildings within the site that could offer shelter to roosting bats. All trees located within the boundary hedgerows are to be retained. There are accordingly predicted to be no significant impacts on bats or the places that they use for breeding, shelter and/or protection (roosts) and no specific compensation measures are considered necessary (Mitchell-Jones 2004).

Since no significant impacts on bats are predicted under The Conservation of Habitats and Species Regulations 2017, a European Protected Species (bat) Licence will not be required for the proposed works to proceed.

5.3.3.1 Creation of Roost Opportunities (Enhancement)

Although it is not necessary from a legal perspective, consideration should be given to the provision of new roosting opportunities for bats within the redeveloped site, with these representing an enhancement to the existing situation.

Ideally new features would be integrated into the fabric of the proposed dwellings as integrated features tend to offer the greatest longevity whilst also allowing for species-specific enhancement to be accommodated discreetly. Examples of suitable integrated features are:

Schwegler 1FR Bat Tube
Bird Brick Houses – Bat Box
Green&Blue Bat Block

Alternatively, conventional bat boxes could be installed on external elevations or retained trees; these could be traditional wooden boxes, or preferably longer-lasting woodcrete boxes specifically designed for buildings (e.g. the Schwegler 1FQ or 1WQ bat boxes) or trees. If boxes are adopted, it is recommended that they be installed as high as possible on the exterior walls, just under the eaves. Bat boxes should be erected on southern and south-eastern elevations.

The new roosting opportunities should be orientated to face the vegetated site boundaries wherever possible and south and southeast-facing aspects should be favoured.

5.3.3.2 External Lighting

It is recommended new external lighting within the developed site be designed to maintain dark corridors along the boundary hedgerows where bat activity is expected to be concentrated. This will minimise any adverse impacts of new external lighting on bat foraging and dispersal behaviour.

External lighting throughout the re-developed site should be minimised, unless it is necessary for reasons of security and safety. Where external lighting is required, it should be kept at low level and a low intensity, with hoods and baffles used to direct the light to where it is required (Bat Conservation Trust 2018, Emery 2008). To minimise the impact on bats, the use of low pressured sodium lamps is recommended in preference to mercury or metal halide lamps which have a UV element that can affect the distribution of insects and attract bats to the area, affecting their natural behaviour (Bat Conservation Trust 2018).

The key principals for choosing a suitable type of lamp are:

Avoid blue-white short wavelength lights: these have a significant negative impact on the insect prey of bats. Use alternatives such as warm-white (long wavelength) lights as this will reduce the impact on insects and therefore bats.
Avoid lights with high UV content: (e.g. metal halide or mercury light sources) or reduce/completely remove the UV content of the light. Use UV filters or glass housings on lamps which filter out a lot of the UV content.

Selecting an appropriate lamp unit that is designed to be environmentally friendly will minimise light spill, but further controls can be imposed by installing directional accessories such as baffles, hoods and louvres on lamps to direct light away from ecologically sensitive areas, such as hedgerows.

LED (Light Emitting Diode) units are an effective way to direct the light into small target areas. Composite LEDs can be switched off to reduce/direct the light beam to specific areas.

5.3.3.3 Hedgehogs

It is recommended that any garden fences or walls erected within the development (that could act as a barrier to hedgehog movement) are made permeable for hedgehogs. This can be achieved by cutting or leaving a 13cm-by-13cm hole within the fence or wall; this is sufficient for any hedgehog to pass through and this is too small for nearly all pets.

Discovery of Hedgehogs

If a hedgehog is discovered during site clearance works, it should be either allowed to escape to a safe area under its own power or be moved by hand to a relatively nearby, safe location, preferably an area of long grass/vegetation close to tree cover. Hedgehogs should be moved no further than 200m from where they are found as they may have dependant young that rely on their return for survival.

When handling hedgehogs, gloves should be worn to protect the handler from their spines, infection and parasites.

In the unlikely event that an occupied hedgehog nest is disturbed, or a baby hedgehog is encountered (eyes shut) all works should stop in the vicinity and advice be sought from an appropriate wildlife hospital (such as Tiggywinkles) or animal charity (such as the RSPCA). If the nest has been exposed or destroyed then the entire nest should be covered over, for example with a bucket with breathing holes. Baby hedgehogs should not be handled with bare hands as this can result in abandonment by their mother.

6 References

Bat Conservation Trust, 2018. *Bats and artificial lighting in the UK: Bats and the Built Environment series.* The Bat Conservation Trust, London.

Bat Conservation Trust, 2008. *Bats and Lighting in the UK. Bats and the Built Environment Series*. Bat Conservation Trust.

CIEEM. 2017. *Guidelines for Preliminary Ecological Appraisal. 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM. 2018. *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.* Chartered Institute of Ecology and Environmental Management, Winchester

Cresswell W. and Whitworth R., 2004. *An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt Triturus cristatus*. English Nature Research Report 576. English Nature, Peterborough.

Gent, T. & Gibson, S., 2003. *Herpetofauna Workers Manual.* JNCC

JNCC, 2010. *Handbook for Phase 1 Habitat Survey - a technique for environmental audit*. JNCC First published 1990; reprinted in 1993; reprinted in 2003 with limited revisions & additions; reprinted in 2004; reprinted in 2007 with minor additions; reprinted in 2010.

Mitchell-Jones, A., 2004. *Bat Mitigation Guidelines*. English Nature.

Rydell J. & Racey, P. A. 1995. *Streetlamps and the feeding ecology of insectivorous bats*. Recent Advances in Bat Biology Zool Soc Lond Symposium abstracts

Stone, E.L., Jones, G., & Harris, S. 2009. *Street lighting disturbs commuting bats.* Current Biology 19:1-5.

7 Appendix 1. Photographs

Photograph 1. Field of improved grassland, with north-western hedgerow in background.

Photograph 2. Hedgerow with trees on south-western boundary.

Photograph 3. Hedgerow on north-eastern boundary.

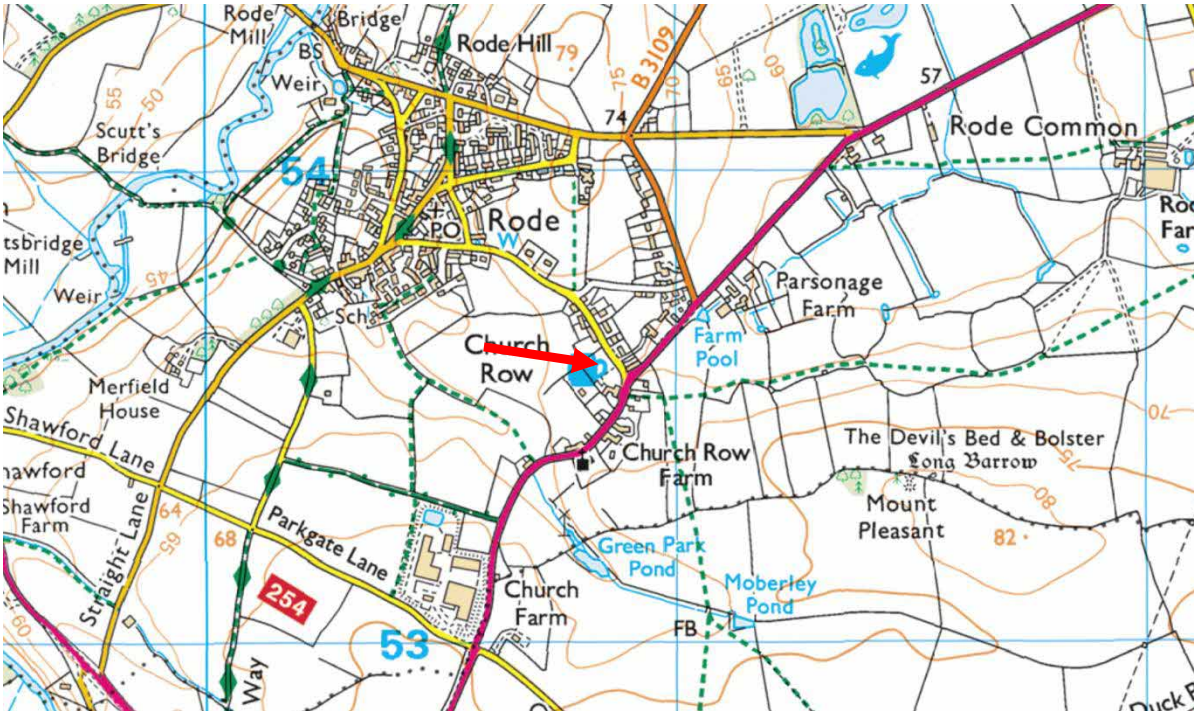
Photograph 4. Area of tarmac hard-standing forming south-east boundary.

Photograph 5. Improved grassland following late summer cut.

Photograph 6. Improved grassland following late summer cut.

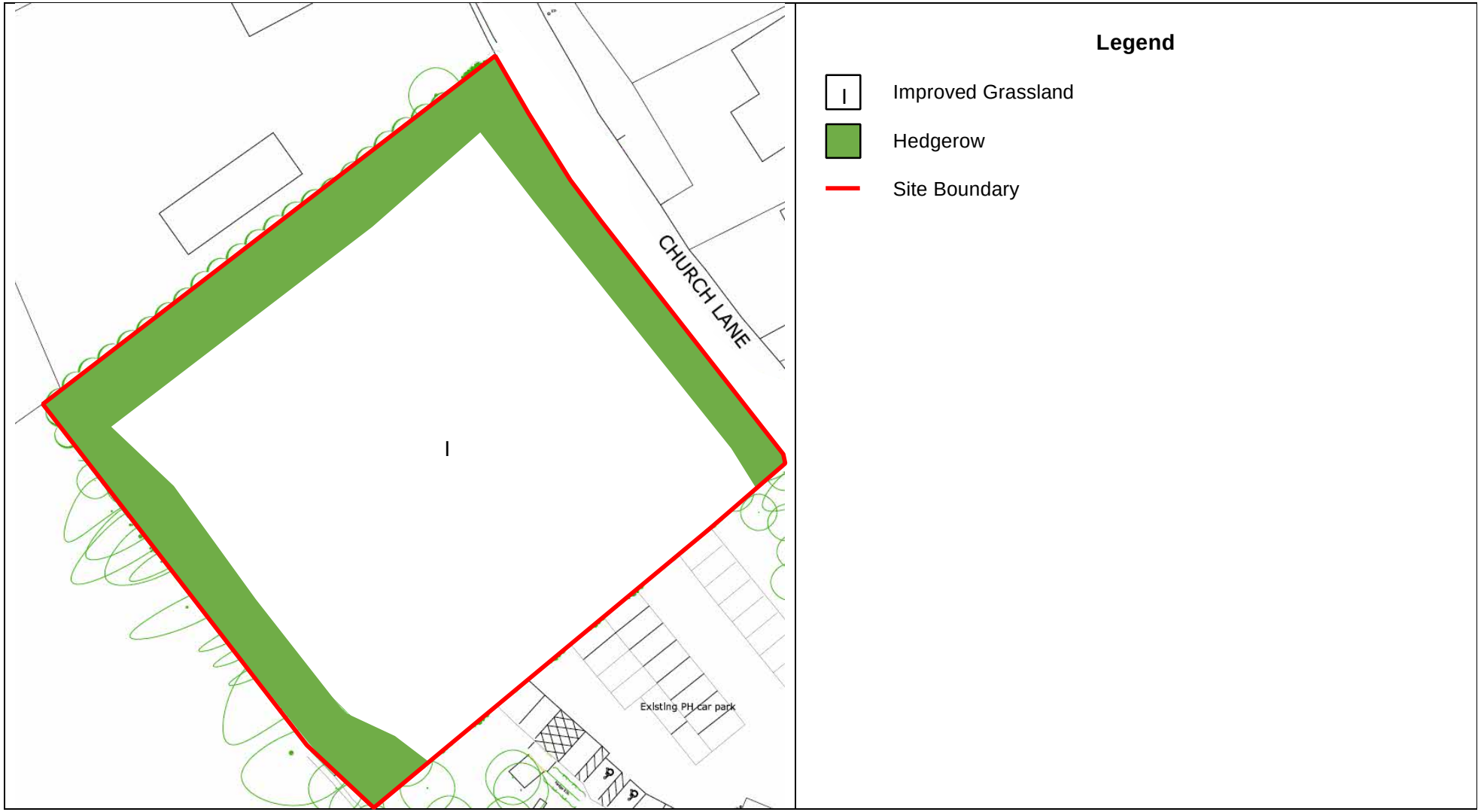
8 Appendix 2. Site Location Plans

Aerial photograph showing the location of Land at The Bell, Rode (outlined in red). Source: *Google Earth Pro*



Ordnance Survey map showing the location of the site (indicated by red arrow) within the local area. Image courtesy of Ordnance Survey © Crown Copyright.

9 Appendix 3. Phase 1 Habitat Plan



10 Appendix 4. Proposal Plans

windrush ecology.com

Rev B	28/11/22	Carport widened SA
Rev A	28/11/22	Parking adjusted SA

on behalf of: CaldecotteGroup

Issued for: PLANNING

drawing: Proposed Block Plan

drawing number: 11

revision: B

project: Bell Rode

project number: 7112

north:

scale: 1:500

paper size: A3

drawn by: SA

date: 15/09/22

checked:

date: XX/XX/XX

sursham tompkins est 1961
architectural services & project management
cottage farm ■ sywell ■ northampton ■ NN6 0BJ
t: 01604 64 65 66 ■ f: 01604 64 63 62 ■ e: info@surshamtompkins.co.uk
w: www.surshamtompkins.co.uk

FILE LOCATION - s:\projects\7112 cc bell, rode\02 drawings\02 planning\11b-12b layouts.dwg

11 Appendix 5. Species for Landscape and Ornamental Planting

Common Name	Botanical Name
Trees	
Field maple*	*Acer campestre*
Beech*	*Fagus sylvatica*
Hornbeam*	*Carpinus betulus*
Willow*	*Salix sp.*
Silver birch*	*Betula pendula*
Rowan*	*Sorbus aucuparia*
Whitebeam*	*Sorbus aria*
Alder*	*Alnus glutinosa*
Wild cherry*	*Prunus avium*
Flowering cherry	*Prunus sp.*
Flowering pear	*Pyrus calleryana*
Crab apple*	*Malus sylvestris*
Fruiting apple	*Malus sp.*
English oak*	*Quercus robur*
Elm*	*Ulmus sp.*
Small-leaved lime*	*Tilia cordata*
Shrubs	
Holly*	*Ilex aquifolium*
Hazel*	*Corylus avellana*
Wayfaring tree*	*Viburnum lantana*
Wild service tree*	*Sorbus torminalis*
Buckthorn*	*Rhamnus cathartica*
Guelder rose*	*Viburnum opulus*
Hawthorn*	*Crataegus monogyna*
Hebe	*Hebe sp.*
Rosemary	*Rosmarinus*
Ceanothus	*Ceanothus sp.*
Weigela	*Weigela sp.*
Dog rose	*Rosa canina*
Dogwood*	*Cornus sanguinea/alba*
Rose (single flowered varieties)	*Rosa sp.*
Wild privet*	*Ligustrum vulgare*
Garden privet	*Ligustrum ovalifolium*
Lilac	*Syringa vulgaris*
Escallonia	*Escallonia sp.*
Lavender	*Lavandula sp.*
Flowering currant	*Ribes sp.*
Honeysuckle*	*Lonicera periclymenum*
Mexican orange blossom	*Choisya sp.*
Spiraea	*Spiraea sp.*
Amelanchier	*Amelanchier lamarckii/canadensis*
Cotoneaster	*Cotoneaster sp.*
Yew*	*Taxus baccata*
Broom	*Cytisus sp.*

Common Name	Botanical Name
Rose of Sharon	*Hypericum calycinum*
Firethorn	*Pyracantha sp.*
Butterfly bush	*Buddleia davidii*
Clematis	*Clematis sp.*
Perennials	
Elephant's ears	*Bergenia cordifolia*
Sage	*Salvia sp.*
Lamb's ears	*Stachys byzantia*
Periwinkle*	*Vinca major & Vinca minor*
Ivy*	*Hedera helix*
Bugle*	*Ajuga reptans*
Lady's mantle	*Alchemilla mollis*
Geraniums	*Geranium sp.*
Globe thistle	*Echinops ritro*
Monk's hood	*Aconitum sp.*
Yarrow*	*Achillea millefolium*
Teasel*	*Dipsacus fullonum*
Oriental poppy	*Papaver orientalis*
Michaelmas daisy	*Aster sp.*
Bear's breeches	*Acanthus spinosus*
Montbretia	*Crocosmia sp.*
Purple coneflower	*Echinacea purpurea*
Ornamental onion	*Allium sp.*
Catmint	*Nepeta sp.*
Verbena	*Verbena sp., Verbena bonariensis*
Marjoram	*Origanum majorana*
Thyme	*Thymus sp.*
Crocus	*Crocus sp.*
Daffodil	*Narcissus sp.*
Snowdrop	*Galanthus nivalis*
Summer Snowflake*	*Leucojum aestivum*
Winter aconite	*Eranthis sp.*
Bluebell*	*Hyacinthoides non-scripta*
Primrose*	*Primula veris*
Forget-me-not*	*Myosotis sp.*
Grape hyacinth	*Muscari botryoides*
Hollyhock	*Althaea rosea*
Lenten rose	*Helleborus orientalis*
Foxglove*	*Digitalis purpurea*
Greater knapweed*	*Centaurea scabiosa*
Great mullein*	*Verbascum thapsus*
Toadflax*	*Linaria vulgaris*
Meadow crane's-bill*	*Geranium pratense*
**indicates native species*	