Land at The Griffin, Mill Street, Frizington CA26 3SQ

ECOLOGICAL SURVEY AND ASSESSMENT (including a Daylight Licensed Bat Survey)

March 2022

[ERAP (Consultant Ecologists) Ltd ref: 2021-390]

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CONTENTS

List of Tables

List of Figures

Document Control

Survey Type:	**Surveyors[1]**	**Survey Date(s)**
Phase 1 Habitat and Daylight bat survey	Brian Robinson B.Sc. (Hons) MCIEEM Senior Ecologist	20th January 2022
Reporting	**Personnel**	**Date**
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Bats
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SUMMARY

i. This ecological survey and assessment presents the ecological, biodiversity and nature conservation status of land at The Griffin, Mill Street, Frizington CA26 3SQ. The assessment was requested in connection with proposals to demolish the disused and derelict former public house and redevelop the site to a refuelling station. It is also proposed to renovate and extend the existing SPAR retail outlet within the site boundary.

ii. This report presents the results of a desktop study and data search, extended Phase 1 Habitat Survey and a licensed daylight bat survey carried out in January 2022. Further surveys are required to determine the presence or absence of roosting bats at Buildings 1 and 2; details of the further surveys required are presented at **Section 5.2**. Otherwise, the scope of survey undertaken is appropriate to identify potential ecological constraints, the remit of mitigation required and opportunities for biodiversity associated with the development proposals.

iii. The approximately 0.25 hectare site is located near the centre of the village of Frizington and comprises two buildings surrounded by hard standing with small areas of unmanaged grassland and scrub to the west and north of Building 1 (the former Griffin Public House).

iv. The proposals will have no adverse effect on statutory or non-statutory designated sites for nature conservation.

v. Only common and widespread plant species were found. None of the habitats present are representative of semi-natural habitat. The NVC communities present are typical of the geographical area and conditions present. No Priority Habitats are present. None of the habitats within the site are considered to hold any importance in terms of their geographical context.

vi. Measures to ensure protection of the garden habitats adjacent to the site are recommended at **Section 5.3**.

vii. Montbretia, an invasive species listed under *Schedule 9 of the Wildlife and Countryside Act 1981* (as amended), has been detected within the site. Further guidance is presented at **Section 5.4** of this report.

viii. Buildings 1 and 2 are considered to be of 'moderate' and 'low' suitability for use by roosting bats respectively. Further surveys are required to determine the presence or absence of roosting bats. The scope and timing of these surveys are presented at **Section 5.2**. Otherwise it is not considered that any other surveys are required to determine the presence or absence of protected species at the site.

ix. Unsuitable use of lighting at the site has the potential to impact upon the suitability of habitats within the wider area for foraging and commuting bats. Measures to ensure the proposed habitats, and habitats within the wider area, are not adversely impacted by lighting are presented at **Section 5.3**. Measures to ensure nesting birds are not impacted during the construction phase of the proposed development are presented at **Section 5.3**. Recommendations to ensure the works will not impact other wildlife such as hedgehog, a Priority Species, are presented in **Section 5.3**. Recommendations for enhancements for nesting birds and other wildlife are presented at **Section 5.5**.

x. The recommendations in **Section 5.0** outline all the mandatory measures and additional actions to be applied to ensure compliance with wildlife legislation, the National Planning Policy Framework (NPPF) and best practice. The proposals will secure an opportunity to implement beneficial measures such as habitat creation that will safeguard habitats for wildlife such as birds and bats, with the aim of providing a net gain in biodiversity in accordance with the principles of the NPPF.

xi. Further surveys are required to determine the presence or absence of roosting bats at the site. Otherwise it is concluded that the proposals are feasible and acceptable in accordance with ecological considerations and relevant planning policy. Redevelopment at the site will provide an opportunity to secure ecological enhancement for wildlife associated with residential areas.

1.0 INTRODUCTION

1.1 Background and Rationale

1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned by Smith & Love Planning Consultants to carry out an ecological assessment of land at The Griffin, Mill Street, Frizington CA26 3SQ (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is NY 03360 17191. An aerial image of the site and its surrounding habitats is appended at **Figure 1** (source image: ESRI World Imagery).

1.1.2 The assessment was requested in connection with a planning application to demolish the disused and derelict former public house and redevelop the site to a refuelling station. It is also proposed to renovate and extend the existing SPAR retail outlet within the site boundary.

1.2 Scope of Works

1.2.1 The scope of ecological works undertaken in January 2022 comprised:

a. A desktop study and data search for known ecological information at the site and the local area;

b. An Extended Phase 1 Habitat Survey and assessment;

c. Assessment of the ecological value of the habitats within the site with the use of the National Vegetation Classification (NVC) and the Ratcliffe criteria, as presented in *A Nature Conservation Review* (Ratcliffe, 1977);

d. Survey and assessment of all habitats for relevant statutorily protected species[1] and other wildlife including badger (*Meles meles*), bird species (including barn owl (*Tyto alba*)) and reptiles;

e. A licensed daylight bat survey of the buildings (no trees are present in the site);

f. The identification of any potential ecological constraints on the proposals and the specification of the scope of mitigation and ecological enhancement required in accordance with wildlife legislation, planning policy guidance and other relevant guidance; and

g. The identification of any further surveys or precautionary actions that may be required to inform the progression of the site through the planning process and / or prior to the commencement of any construction activities.

2.0 METHOD OF SURVEY

2.1 Desktop Study and Data Search

2.1.1 The following sources of information and ecological records were consulted:

a. MAGiC: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;

b. Cumbria Biodiversity Data Centre (CBDC); and

c. Cumbria Biodiversity Action Plan (BAP).

[1] In accordance with *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact on the Planning System* (Ministry of Housing, Communities & Local Government, 2005) developers should not be required to undertake surveys for protected species unless there is reasonable likelihood of the species being present and affected by the development. In this instance (for example) there are no ponds within 500 metres of the site, and no ditches or watercourses within or in proximity to the site; there has therefore been no requirement to consider great crested newt (*Triturus cristatus*), water vole (*Arvicola amphibius*) or otter (*Lutra lutra*) as part of this assessment.

2.2 Vegetation and Habitats

2.2.1 An Extended Phase 1 Habitat Survey of the site was carried out by Brian Robinson on 20th January 2022. The weather was dry and sunny with a light air (Beaufort scale 1) with an air temperature of 3°C.

2.2.2 A habitat and vegetation map was produced for the site and the immediate surrounding area at a scale of 1:750 (refer to **Figure 2**). The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC, 2010) with minor adjustments to illustrate and examine the habitats with greater precision.

2.2.3 On site habitat mapping was assisted via use of GPS technology and QField on-site mapping software, using *Location Plan Near CA26 2SA* (Ordnance Survey, 2021) and *Richardson Frizington: Existing Site Plan Dwg. No. 03 Rev P1* (Harry Walters & Livesey Ltd, 2020) as base plans.

2.2.4 The plant species within the site boundary were determined with estimates of the distribution, ground cover, abundance and constancy of individual species. The estimation of abundance was based on the DAFOR system, where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare, this being a widely used and accepted system employed by ecological surveyors. The terms L = Locally and V = Very were additionally used to describe the plant species distributions with greater precision.

2.2.5 Stands of vegetation and habitats were described and evaluated using the National Vegetation Classification (NVC). The NVC provides a systematic and comprehensive analysis of British vegetation and is a reliable framework for nature conservation and land-use planning.

2.2.6 Habitats within the site were assessed in accordance with the UK Habitats Classification / UKHab (Butcher, et al., 2020). The UKHab has been designed to function at two scales: fine scale (25m^2 or 5 metres length) and large scale (400m^2 or 20 metres length). It has been considered for the purposes of this survey that the fine scale of 25m^2 or 5 metres length is appropriate.

2.2.7 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and species which are indicators of important and uncommon plant communities. Plant nomenclature follows *New Flora of the British Isles 3rd Edition* (Stace, 2010).

2.2.8 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), including Japanese Knotweed (*Fallopia japonica*), Indian Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).

2.3 Animal Life

Badger

2.3.1 The survey area for badger covered the site (as annotated on **Figure 2**) and extended to accessible land within a radius of 50 metres from the site boundary. Private gardens / land were excluded from the survey.

2.3.2 The survey was conducted in accordance with guidance presented within *Badgers and Development* (Natural England, 2007) and *Badgers: surveys and mitigation for development projects* (Natural England, 2015).

2.3.3 The following signs of badger activity were searched for:

a. Sett entrances, e.g. entrances that are normally 25 to 35cm in diameter and shaped like a 'D' on its side;

b. Large spoil heaps outside sett entrances;

c. Bedding outside sett entrances;

d. Badger footprints;

e. Badger paths;

f. Latrines;

g. Badger hairs on fences or bushes;

h. Scratching posts; and

i. Signs of digging for food.

2.3.4 Habitats within and surrounding the site were assessed in terms of their suitability for use by foraging and sheltering badger in accordance with their known habitat preferences as detailed in current guidance and *Badger* (Roper, 2010).

Bat Species

Habitat Assessment for Commuting / Foraging Bats

2.3.5 Habitats within and adjacent to the site were assessed for their value and suitability for commuting and foraging bats in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn),* (Collins, J. (ed), 2016). Reference has been made to the categories and descriptions / examples, presented at **Table 2.1**, below.

Table 2.1: Consideration of Suitability of Foraging and Commuting Habitat for Bats

Suitability	Commuting Habitat	Foraging Habitat
Negligible	Negligible habitat features on site likely to be used by commuting bats.	Negligible habitat features on site likely to be used by foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat.	Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree or patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.	Habitat that is linked to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape and is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Habitats close to and connected to known roosts.	High-quality habitat that is well-connected to the wider landscape and is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Habitats close to and connected to known roosts.

Daylight Survey

Survey Personnel

2.3.6 The site was assessed for its suitability to support roosting bats by Brian Robinson, Natural England Class Survey Licence WML CL18 (Bat Survey Level 2), Registration Number 2015-13161-CLS-CLS.

2.3.7 The surveyor's qualifications and experience meet the criteria as defined in the *Technical Guidance Series Competencies for Species Survey: Bats* (CIEEM, 2013).

Buildings

2.3.8 The surveys were carried out in accordance with standard methodology including the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004), the *Bat Workers' Manual 3rd Edition* (Mitchell-Jones & Mcleish, 2004) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016).

2.3.9 An inspection of the external surfaces, walls and roofs of the buildings was carried out to find potential bat roosting habitat or accesses into internal areas where roosts may be present. Searches for evidence of bat presence in the form of droppings, urine stains, feeding signs, grease marks and other evidence were also carried out.

2.3.10 The internal survey involved an examination of the accessible internal areas (including roof voids) to find roosting bats or evidence of past use of the buildings by bats such as droppings and prey remains.

2.3.11 A list of equipment used is detailed at **Table 2.2**, below:

Table 2.2: Survey Equipment used during Daylight Bat Survey

Ladders
LED Lenser P14 torch
Panasonic DMC- FT1 digital camera
8x20 binoculars
Ridgid Micro Inspection Camera Borescope CA-100

2.3.12 The suitability of each building has been assessed in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn),* (Collins, J. (ed), 2016), taking into account any presence of gaps suitable for access by bats, features suitable for use by roosting bats within the building (including crevice dwelling species and species which can roost in the open in roof voids), and the suitability of the surrounding habitats for use by foraging and commuting bats.

Bird Species

2.3.13 Bird species observed and heard during the survey were recorded.

2.3.14 Habitats throughout the site and in the immediate surrounding area were assessed for their value to roosting, feeding and nesting birds, as indicated by the amount of shelter, feeding value, woody vegetation structure and species diversity of tree and shrub species in the site.

2.3.15 The presence of any sign of barn owl within the buildings was searched for during the internal inspection conducted on 20th January 2022. Both buildings were searched for pellets, faecal splashes and feathers which may indicate use by roosting or nesting barn owl in accordance with *The Barn Owl Conservation Handbook* (Barn Owl Trust, 2012) and *Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment. Developing Best Practice in Survey and Reporting* (Shawyer, 2011).

Reptile Species

2.3.16 The site and its surroundings were assessed in terms of their suitability for use by reptile species using the important characteristics for reptiles outlined in the draft document '*Reptile Mitigation Guidelines*' (Natural England, 2011), and the *Reptile Habitat Management Handbook* (Edgar, et al., 2010). These habitat characteristics are outlined in **Table 2.3**, below.

Table 2.3: Important Habitat Characteristics for Reptiles

1. Location (in relation to species range)	7. Connectivity to nearby good quality habitat
2. Vegetation Structure	8. Prey abundance
3. Insolation	9. Refuge opportunity
4. Aspect	10. Hibernation habitat potential
5. Topography	11. Disturbance regime
6. Surface geology	12. Egg-laying site potential

Other Wildlife

2.3.17 Evidence of other wildlife (including Priority Species) observed whilst on site (but for which specific surveys were not made) was recorded and has been included in this report where it is considered of relevance to the planning application.

2.4 Survey and Reporting Limitations

2.4.1 The survey was completed when plant species may be in a dormant state; the surveyor is experienced in identifying plant species from their vegetative characteristics however, and a reliable assessment of the habitats present was possible.

2.4.2 The survey was completed outside the bat active season, when any field signs of bats may have weathered from the external elevations of the building. Daylight bat inspections can be completed at any time of year, however and it is considered that a reliable assessment of the suitability of the buildings for use by roosting bats has been possible.

2.4.3 A full inspection of the roof void at the original, two-storey section of Building 1 (the former Griffin Public House) was not possible due to health and safety concerns; the dilapidated building has suffered extensive water ingress in this area and the void was not considered safe to enter. This access constraint has been taken into account when assessing the requirement for further surveys at the building.

2.4.4 All measurements within this report are approximate only, and have been either measured (using QField) or estimated whilst on site or calculated using mapping software (QGIS) or internet-based mapping services such as MAGiC and Google Earth.

2.5 Evaluation Methods

2.5.1 The habitats, vegetation and animal life were evaluated with reference to standard nature conservation criteria as described in *A Nature Conservation Review* (Ratcliffe, 1977) and *Guidelines for the Selection of Biological SSSIs* (Bainbridge, et al., 2013). These are size (extent), diversity, naturalness, rarity, fragility, typicality, recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal.

2.5.2 Habitats have been assessed to determine whether they meet those described in *UK Biodiversity Action Plan: Priority Habitat Descriptions* (Maddock, A (ed), 2008); these lists are used to help draw up the statutory lists of Priority Habitats, as required under Section 41 of the *Natural Environment and Rural Communities* (NERC) *Act 2006*. Where suitable, the ecological value of the habitats present has been assessed using the terms outlined in *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).

2.5.3 Government advice on wildlife, as set out in the *National Planning Policy Framework* (Ministry of Housing, Communities and Local Government, 2021) and associated government circulars has been taken into consideration. Legislation relating to protected species, such as those listed under Schedules 1, 5, 6 and 8 of the *Wildlife and Countryside Act 1981* (as amended) and *The Conservation of Habitats and Species Regulations 2017*, is referenced where applicable, and any impacts to protected species are evaluated in accordance with current guidance.

2.5.4 The presence of any Priority Species, as listed under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006* is noted, and habitats are assessed in terms of their suitability and value for these species. The presence of habitats and / or species listed by the Cumbria Biodiversity Action Plan has been taken into account in the evaluation of the site.

3.0 SURVEY RESULTS

3.1 Desktop Study and Data Search

Designated Sites for Nature Conservation

Statutory Designated Sites for Nature Conservation and SSSI Impact Risk Zones

3.1.1 The site is not and does not form part of any statutory designated site for nature conservation.

3.1.2 The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone for the overlapping River Eden (Ennerdale Water to Keelde Confluence) SSSI and River Eden SAC, located 1.9 kilometres to the south-east of the site. This section of the river is designated for its outstanding populations of the freshwater pearl mussel (*Margaritifera margaritifera*)*; c*ollectively, this is the largest known population of this species in England, the only population showing recent recruitment, and the third largest population in Britain.

3.1.3 The SSSI Impact Risk Zone requires the Local Planning Authority to consult with Natural England on likely risks from the following development categories (Ordnance Survey, 2022):

a. Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.

b. Planning applications for quarries, including: new proposals, Review of Minerals Permissions, extensions, variations to conditions etc. Oil and gas exploration / extraction.

c. Large non-residential developments outside existing settlements / urban areas where footprint exceeds 1 hectare.

d. Any residential development of 100 or more houses outside existing settlements / urban areas.

e. Any industrial / agricultural development that could cause air pollution, including industrial processes, livestock and poultry units with a floorspace greater than 500m^2, slurry lagoons and digestate stores greater than 200m^2 and manure stores greater than 250 tonnes.

f. General combustion processes with a greater than 20 megawatt energy input, including energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis / gasification, anaerobic digestion, sewage treatment works and other incineration / combustion.

g. Landfill, including inert landfill, non-hazardous landfill and hazardous landfill.

h. Any composting proposal with more than 75000 tonnes maximum annual operational throughput, including open windrow composting, in-vessel composting, anaerobic digestion and other waste management.

i. Any discharge of water or liquid waste of more than 5m^3 per day to ground (i.e. to seep away) or to surface water, such as a beck or stream.

j. Large infrastructure such as warehousing / industry where the total net additional gross internal floorspace following development is 1,000m^2 or more.

3.1.4 The proposals do not match any of the development categories which would require further consultation with Natural England.

Non-statutory Designated Sites for Nature Conservation

3.1.5 The site is not and does not form part of any non-statutory designated site for nature conservation.

3.1.6 County Wildlife Sites (CWS), Sites of Invertebrate Significance (SIS), Local Geological Sites (LGS) and Ancient Woodland (AW) areas are present within 2 kilometres of the site. The names and locational data (in relation to the site) of these non-statutory designated sites for nature conservation are summarised at **Table 3.1** below.

Table 3.1: Non-Statutory Designated Sites for Nature Conservation Present within 2 Kilometres of the Site

Site Name	Distance and Direction from the Site
Yeat House Quarry CWS	650 metres to the south-east
Rheda South Park CWS	880 metres to the south-west
Dub Beck CWS, SIS and AW	1080 metres to the north-west
Parkside Pond CWS	1550 metres to the south
Birkhouse Pond CWS	1800 metres to the south
Windergill Mine LGS	1840 metres to the east
Weddicar Hall SIS	1870 metres to the west

3.1.7 The presence of the above non-statutory sites is considered further at **Section 4.2**.

Priority Habitats Inventory

3.1.8 The Priority Habitats Inventory[2] was checked via MAGiC map. No Priority Habitats are reported for the site.

Protected and Notable Species

3.1.9 CBDC hold no records of protected and notable species for the site.

3.1.10 Records of protected and notable species for a 2 kilometre radius of the site are summarised at **Table 3.2** below. Distance calculations (i.e. from the record to the site) are only provided for records which have been provided with the locational accuracy of a six figure Ordnance Survey grid reference or higher.

Table 3.2: Records of Protected Species Within a 2 Kilometre Radius of the Site

Taxon Group	Species Name and Designations[1] and Notes
Amphibians	Common toad (*Bufo bufo*): WCAs5, PS & LBAP. 9 records, dated between 1992 and 2017. The closest record is 965 metres to the south of the site, and from 1996.
	Common frog (*Rana temporaria*): WCAs5. 4 records, dated between 1998 and 2017. The closest record is 1535 metres to the west of the site, and from 2009.
Birds – WCAs1 Species	Sensitive_species_h: WCAs1 , PS & LBAP. 8 records, dated between 2000 and 2010. The closest record is to the south of the site
	Sensitive_species_t: WCAs1 & LBAP. 35 records, dated between 1997 and 2013. The closest record is 1435 metres to the west of the site, and from 1998.
	Greylag goose (*Anser anser*): WCAs1. 11 records, dated between 1999 and 2010. The closest record is to the south of the site.
	Redwing (*Turdus iliacus*): WCAs1. 8 records, dated between 2008 and 2010. The closest record is to the south of the site.
	Sensitive_species_d: WCAs1. 4 records, dated between 2007 and 2011. The closest record is to the south of the site.
	Sensitive_species_i: WCAs1. 2 records, dated 1997 and 2010. The closest record is to the south of the site.
	Sensitive_species_l: WCAs1. 2 records, dated 2008 and 2009. The closest record is to the south of the site.
	Sensitive_species_n: WCAs1. 12 records, dated between 1997 and 2011. The closest record is to the south of the site.
	Sensitive_species_w: WCAs1. 18 records, dated between 2007 and 2010. The closest record is to the south of the site.
	Sensitive_species_y: WCAs1. 2 records, both from 2007. The closest record is 1985 metres to the south-east of the site.
Birds – PS and LBAP Species	**PS & LBAP** Cuckoo (*Cuculus canorus*), spotted flycatcher (*Muscicapa striata*), grey partridge (*Perdix perdix*), lapwing (*Vanellus vanellus*), curlew (*Numenius arquata*), skylark (*Alauda arvensis*), yellowhammer (*Emberiza citrinella*), reed bunting (*Emberiza schoeniclus*), lesser redpoll (*Acanthis cabaret*), grasshopper warbler (*Locustella naevia*), tree pipit (*Anthus trivialis*), house sparrow (*Passer domesticus*), tree sparrow (*Passer montanus*), ring ouzel (*Turdus torquatus*), linnet (*Linaria cannabina*), bullfinch (*Pyrrhula pyrrhula*), dunnock (*Prunella modularis*), starling (*Sturnus vulgaris*) and song thrush (*Turdus philomelos*). **PS Only** Herring gull (*Larus argentatus*).
Bony fish (*Actinopterygii*)	Atlantic salmon (*Salmo salar*): PS & LBAP. 1 record from 1998, located 1230 metres to the north-west of the site.
Invertebrates – Butterflies	**PS & LBAP** Wall (*Lasiommata megera*), dingy skipper (*Erynnis tages*), small heath (*Coenonympha pamphilus*) and grayling (*Hipparchia semele*).
Invertebrates - Moths	**PS & LBAP**

[2] A spatial dataset that describes the geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance.

Taxon Group	Species Name and Designations[1] and Notes
	Cinnabar (*Tyria jacobaeae*), latticed heath (*Chiasmia clathrata*), small phoenix (*Ecliptopera silaceata*), dark-barred twin-spot carpet (*Xanthorhoe ferrugata*), garden tiger (*Arctia caja*), dot moth (*Melanchra persicariae*), small square-spot (*Diarsia rubi*) and rosy rustic (*Hydraecia micacea*).
Reptiles	Slow-worm (*Anguis fragilis*): WCAs5, PS & LBAP. 1 record from 1997, located 1525 metres to the west of the site.
Terrestrial Mammals	Bat (Order *Chiroptera*): EPS, WCAs5, PS & LBAP. 3 records, dated between 2001 and 2016. The closest record is 80 metres to the north of the site, and from 2006.
	Brown long-eared bat (*Plecotus auritus*): EPS, WCAs5, PS & LBAP. 1 record from 1996, located to the south-east of the site.
	Eurasian otter (*Lutra lutra*): EPS, WCAs5, PS & LBAP. 10 records, dated between 2002 and 2017. The closest record is 1585 metres to the north of the site, and from 2005.
	Noctule bat (*Nyctalus noctula*): EPS, WCAs5, PS & LBAP. 1 record from 2011, located 860 metres to the south-west of the site.
	Pipistrelle bat species (*Pipistrellus* sp.): EPS, WCAs5 & LBAP. 5 records, dated between 1987 and 2004. The closest record is 180 metres to the north of the site, and from 2004.
	Soprano pipistrelle (*Pipistrellus pygmaeus*): EPS, WCAs5, PS & LBAP. 2 records, dated 2011 and 2015. The closest record is 860 metres to the south-west of the site, and from 2011.
	Common pipistrelle (*Pipistrellus pipistrellus*): EPS, WCAs5 & LBAP. 3 records, dated between 2002 and 2011. The closest record is 80 metres to the north of the site, and from 2002.
	Eurasian red squirrel (*Sciurus vulgaris*): WCAs5, PS & LBAP. 66 records, dated between 1995 and 2019. The closest record is 355 metres to the north-east of the site, and from 2006.
	Brown hare (*Lepus europaeus*): PS & LBAP. 3 records, dated between 1998 and 2007. The closest record is to the south-west of the site; an accurate estimation of distance of the record to the site cannot be made due to the locational data being less than a six figure grid reference
	Polecat (*Mustela putorius*): PS & LBAP. 2 records, both from 2013. The closest record is to the west of the site; an accurate estimation of distance of the record to the site cannot be made due to the locational data being less than a six figure grid reference
	West European hedgehog (*Erinaceus europaeus*): PS & LBAP. 6 records, dated between 2007 and 2012. The closest record is 1030 metres to the south of the site, and from 2012.
	Eurasian badger (*Meles meles*): PBA. 3 records, dated between 1992 and 2018. The closest record is over 1500 metres from the site boundary.
[1]Key to Designation Codes: EPS = European Protected Species under the *Conservation of Habitats and Species Regulations 2017.* WCAs1 = Species receives full protection under Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended). WCAs5 = Species receives full protection under Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended). PBA = Protection of Badger Act 1992 PS = Priority Species listed under Section 41 of the NERC Act 2006 LBAP = Species listed on the Cumbria Biodiversity Action Plan	

3.1.11 The presence of these protected and notable species within the wider area has been taken into account throughout this report.

3.2 Vegetation and Habitats

General Description

3.2.1 The approximately 0.25 hectare site is located near the centre of the village of Frizington and comprises two buildings surrounded by hard standing with small areas of unmanaged grassland and scrub to the west and north of Building 1 (the former Griffin Public House).

3.2.2 The northern site boundary is partially defined by fencing and partially defined where Building 2 (the existing SPAR retail outlet) adjoins terraced housing to its north. Further houses and gardens are located beyond the northern site boundary. The eastern site boundary is defined by Main Street, beyond which lies a row of housing and retail outlets. The south-western site boundary is defined by Mill Street, beyond which lies housing. The north-western site boundary is located within an area of unmanaged scrub at its southern end, and within an area of hard standing at its northern end. A residential dwelling and garden are located beyond the north-western site boundary beyond its western end, and further hard standing, residential dwellings and gardens are located beyond the north-western site boundary at its eastern end.

3.2.3 A Phase 1 Habitat Survey map is appended at **Figure 2**, and can be referred to for all habitat descriptions. Photographs are appended at **Section 8.2**.

Buildings and Hard Standing

3.2.4 An area of locally abundant Ivy (*Hedera helix*) is present at the western elevation of Building 1, otherwise no significant assemblage of plants are associated with Buildings 1 or 2, which are described in detail in relation to their suitability for use by roosting bats at **Section 3.3** below. The buildings are described by the UKHab as u1b5 buildings.

3.2.5 Refer to **Photo 1**. The hard standing within the site is composed from compacted stone and asphalt and is largely devoid of vegetation. The scattered ruderal herbs colonising the margins of the hard standing are characterised by occasional Annual Meadow-grass (*Poa annua*), Dandelion (*Taraxacum officinale* agg.) and Shepherd's-purse (*Capsella bursa-pastoris*) and rare Broad-leaved Willowherb (*Epilobium montanum*), Butterfly-bush (*Buddleja davidii*), Common Mouse-ear (*Cerastium fontanum*), Smooth Sow-thistle (*Sonchus oleraceus*) and Wavy Bitter-cress (*Cardamine flexuosa*).

3.2.6 The vegetation is not typical of any NVC community and is described by the UKHab as u1b6 other developed land with the following secondary codes: 17 ruderal / ephemeral.

Unmanaged Scrub and Grassland

3.2.7 Refer to **Photo 2**. An area of unmanaged scrub is present at the north-western boundary of the site, and grassland is present at the western corner of the site and to the north of Building 1.

3.2.8 The scrub is characterised by frequent and locally abundant Bramble (*Rubus fruticosus* agg.), locally abundant Dogwood (*Cornus sanguinea*), Garden Privet (*Ligustrum ovalifolium*) and Ivy and locally frequent Goat Willow (*Salix caprea*), Yorkshire-fog (*Holcus lanatus*), Creeping Bent (*Agrostis stolonifera*) and Creeping Buttercup (*Ranunculus repens*) and very locally frequent Broad-leaved Dock (*Rumex obtusifolius*) and Red Fescue (*Festuca rubra*). A plant species list is appended at **Table 8.1**.

3.2.9 The vegetation is not typical of but holds characteristics of a *W24 Bramble – Yorkshire-fog* underscrub (Rodwell, 1991) of the NVC. The habitat is described by the UKHab as h3h mixed scrub with the following secondary codes: 77 neglected (unmanaged for 3 to 10 years).

3.2.10 The grassland appears infrequently mown and is characterised by frequent and locally abundant Cock's-foot (*Dactylis glomerata*), occasional and locally frequent Creeping Buttercup and Yorkshire-fog, occasional Common Ragwort (*Senecio jacobaea*), Dandelion and Ribwort Plantain (*Plantago lanceolata*), locally frequent Perennial Rye-grass (*Lolium perenne*), Red Fescue, Bramble and False Oat-grass (*Arrhenatherum elatius*) and very locally frequent Rosebay Willowherb (*Chamerion angustifolium*). A plant species list is appended at **Table 8.2**.

3.2.11 The grassland holds characteristics of an *MG7 Perennial Rye-grass* ley grassland (Rodwell, 1992) which in areas is in a state of succession toward an *MG1 False Oat-grass* grassland (Rodwell, 1992) due to lack of regular management. The habitat is described by the UKHab as g3c other neutral grassland with the following secondary codes: 16 tall herb and 76 recent management (i.e. within 3 years).

Invasive Plant Species

3.2.12 As illustrated on **Figure 2, a** stand of Montbretia (*Crocosmia x crocosmiiflora*) was detected to the north of Building 1. This species is listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended); it is an offence to spread or cause its spread in the wild. This is considered further at **Section 4.3** below.

3.3 Animal Life

Badger

3.3.1 No badger or signs of badger were detected within the site or within the accessible 50 metres around the site. The presence of badger is reasonably discounted.

Bat Species

Habitat Assessment for Commuting and Foraging Bats

3.3.2 The buildings and hard standing within the site provide habitat of negligible suitability for use by foraging and commuting bats, as they are unlikely to provide a diversity of invertebrate prey and are artificially lit.

3.3.3 The unmanaged grassland and scrub will provide habitat suitable for use by foraging bats however it is small in size, and will only form part of a wider foraging area for bat species.

3.3.4 The site is surrounded on all sides by built development but is located within a wider area (refer to **Figure 1**) characterised by open fields, parkland, areas of woodland and water courses.

3.3.5 The habitats within the site are assessed to be of low suitability for use by foraging and commuting bats, however it is recognised that it is located within a wider landscape which provides an abundance and diversity of habitats suitable for use by foraging and commuting bats.

3.3.6 This has been taken into account when assessing the suitability of the buildings for use by roosting bats below.

Daylight Survey: Buildings

Building 1: Former Griffin Public house

3.3.7 Refer to **Photos 3** to **14**. Building 1 is a detached former public house which is disused and has become derelict. The building supports a two-storey section at its eastern end (constructed in the 1800s), with a more recent single-storey extension at its western end. A two storey extension of the building linking the single-storey western end of the building to the upper floor of the two-storey section of the building is present at the northern elevation of the building (refer to **Photo 6**). This section of the building supports a single-pitch roof of slate.

3.3.8 The two-storey section of the building is constructed from solid mortared brick walls which support an external render and supports a pitched roof of slate. Timber fascias are present at the northern and southern elevations. Gaps suitable for access by bats are present at missing mortar at the gable ends and behind the timber fascias. ERAP (Consultant Ecologists) Ltd are aware of instances where crevice dwelling species such as common pipistrelle (*Pipistrellus pipistrellus*) have formed roosts behind large signs such as those present at the former public house.

3.3.9 No bats or signs of bats were detected at the ground and upper floor of the former public house; these areas are well-lit as a consequence of the windows present. No bats or signs of bats were detected at the cellar, and no locations where bats could gain access to the cellar were evident. The two-storey section of the building supports a single roof void (roof void 1, refer to **Photo 11**); the void could not be accessed directly due to health and safety concerns (water ingress at the dilapidated roof has weakened the structure, and is was considered unsafe to view directly). The void was examined from the void hatch, and is 1.5 metres from floor to ridge line. Traditional timber trusses, purlins and rafters support the roofing slates, which are lined with bitumastic roofing felt. Fibreglass insulation is present at the floor of the void.

3.3.10 The single-storey extension at the western end of the building is constructed from walls of mortared brick and supports a pitched roof of concrete tiles. Gaps suitable for access by bats are present at the eaves.

3.3.11 The single-storey extension is also dilapidated due to rainwater ingress. No bats or signs of bats were detected at the single-storey extension of the building.

3.3.12 The ground-floor rooms are well-lit and do not support features suitable for use by either crevice dwelling species or species known to roost in the open in voids, such as brown long-eared bats (*Plecotus auritus*). This section of the building supports two roof voids; roof void 2 (refer to **Photo 12**) is located at the southern end of the extension and is 3 metres from ridge to floor. Traditional timber purlins and rafters support the concrete tiles, which are lined by timber battens and partially boarded (the whole roof was previously boarded, however this has degraded over time). No insulation is present on the floor.

3.3.13 Roof void 3 (**Photos 13** and **14**) is located at the northern end of the extension, and is narrower than roof void 2, occupying only half of the width of the building beneath. The void is approximately 2.5 metres in height, and cluttered with stored items. Traditional timber purlins support the concrete tiles, which are lined with bitumastic roofing felt. No insulation is present at the floor of the void, which is partially boarded.

3.3.14 Gaps suitable for access by bats are present at the exterior of the building, and the roof voids and external features of the building provide suitable habitat for crevice dwelling species, and species which are known to roost in the open in voids. The building is located within habitats of low suitability for use by foraging and commuting bats, however it is noted that the wider area supports habitats more favourable for a variety of foraging and commuting bat species.

3.3.15 Overall the building is assessed to be of 'moderate' suitability for use by roosting bats. Further surveys will be required to determine the presence or absence of roosting bats. Due to the access constraints encountered it is recommended that additional activity surveys are completed to compensate for this survey limitation; a total of three activity surveys are recommended to determine the presence or absence of roosting bats at Building 1.

3.3.16 This is considered further at **Section 4.4** below.

Building 2

3.3.17 Refer to **Photos 15** to **19**. Building 2 is a detached single-storey retail outlet with a single-storey flat-roofed extension at its southern end and a pitched roof at its northern end.

3.3.18 The building is constructed from walls of mortared blockwork which support an external render. The pitched roof is constructed from corrugated metal sheeting and the flat roof is composed of bitumastic roofing felt.

3.3.19 Externally the building is well-sealed at its eastern and southern elevations. Gaps suitable for access by bats are present behind the fascias at the western elevation.

3.3.20 Internally the building supports a single roof void under the pitched roof; the void is separated from the retail outlet at the ground floor via suspended ceiling tiles. The void, which was estimated to be at least 7 metres from the ridgeline to the floor of the void, was searched via looking through lifted suspended ceiling tiles.

3.3.21 The corrugated metal sheet roofing is unlined and supported by metal trusses and purlins with timber rafters. No insulation is present.

3.3.22 No bats or signs of bats were detected at the building. Overall, and taking into account the suitability of the habitats within and surrounding the site for foraging and commuting bats, the building is assessed to be of 'low' suitability for use by roosting bats. A single further survey will be required to determine the presence or absence of roosting bats.

3.3.23 This is considered further at **Section 4.4** below.

Summary of Results

3.3.24 A summary of the survey results presented above is provided at **Table 3.3** below. The results are evaluated at **Section 4.4** below.

Table 3.3: Summary of Bat Survey Results

Building Ref	Suitability for Use by Roosting Bats	Requirement for Further Survey
Building 1	Moderate	At least 3 surveys are required to determine presence / absence (including additional survey due to access constraints.
Building 2	Low	At least 1 survey is required to determine presence / absence.

Bird Species

3.3.25 Birds detected within and flying over the site in January 2022 are listed in **Table 3.4**, below.

Table 3.4: Bird species Detected on 20th January 2022

Scientific Name	Common Name	BOCC Status[1]
Cyanistes caeruleus	Blue tit	Green
Erithacus rubecula	Robin	Green
Larus argentatus	**Herring gull**	**Red**
Passer domesticus	**House sparrow**	**Red**
Sturnus vulgaris	**Starling**	**Red**
Troglodytes troglodytes	Wren	Green
[1]BOCC: Birds of Conservation Concern (Stanbury, et al., 2021). Priority Species are presented in **bold**.		

3.3.26 The shrubs and buildings are all suitable for use by nesting passerine (i.e. perching) species, including those detected within the site during the survey. This is considered further at **Section 4.4**, below.

3.3.27 No sign of nesting barn owl was detected during the internal inspection of the buildings, and it is considered that no suitable gaps for access by barn owl are present at either building. The presence of roosting or nesting barn owl is reasonably discounted.

Reptiles

3.3.28 The habitats within the site provide poor quality habitat for sheltering, basking and hibernating reptiles. The species-poor habitats within the site are reasonably unlikely to support a large populations or a variety of invertebrate prey. The hard standing and buildings are unsuitable for use by foraging or sheltering reptiles and the grassland and scrub is limited in its extent and isolated from any further suitable habitats in the wider area. The site is not adjacent or linked to any areas of favourable habitat for reptile species. The presence of reptiles within the site is reasonably discounted.

Other Wildlife

3.3.29 The grassland and scrub at the western end of the site may provide suitable habitat for foraging and sheltering hedgehog (*Erinaceus europaeus*), a Priority Species, although it is considered that the areas is too small to provide 'core' or 'important' habitat for this species. The potential presence of hedgehog is considered further at **Section 4.4** below.

4.0 EVALUATION AND ASSESSMENT

4.1 Introduction and Description of Proposals

4.1.1 In accordance with *SPAR Store Post Office and PFS Frizington: Site Plan & Street Elevations DWG. No 16 REV No. P2* (Harry Walters & Livesey Ltd, 2022) it is proposed to demolish Building 1 and renovate and extend Building 2. A canopy-roof covered refuelling station will be installed at the southern end of the site and landscape planting installed at the south-western half of the site boundary.

4.1.2 **Section 4.2** provides an assessment of any impacts of the proposed development on the designated sites for nature conservation present in the wider area. The ecological value of habitats within the site is evaluated at **Section 4.3**, and protected and notable species are considered at **Section 4.4**.

4.2 Designated Sites for Nature Conservation

4.2.1 It is considered that the site is sufficiently small and distant from all designated sites for nature conservation that the proposed development will have no impact upon them.

4.3 Vegetation and Habitats

4.3.1 Only common and widespread plant species were found. None of the habitats present are representative of semi-natural habitat. The NVC communities present are typical of the geographical area and conditions present. No Priority Habitats are present.

4.3.2 None of the habitats within the site are considered to hold any importance in terms of their geographical context[3].

4.3.3 The proposals have the potential to impact upon off-site habitats associated with the garden habitats to the north-west of the site during the construction phase of the development. Measures to ensure protection of the garden habitats adjacent to the site are recommended at **Section 5.3**.

4.3.4 Montbretia, an invasive species listed under Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), has been detected within the site. It is considered that the proposals present an opportunity for the eradication of this species as part of the proposed development. Further guidance is presented at **Section 5.4** of this report.

4.4 Protected Species and Other Wildlife

4.4.1 Buildings 1 and 2 are considered to be of 'moderate' and 'low' suitability for use by roosting bats respectively. Further surveys are required to determine the presence or absence of roosting bats. The scope and timing of these surveys are presented at **Section 5.2**.

4.4.2 Other than the surveys required to determine the presence or absence of roosting bats, it is not considered that any other surveys are required to determine the presence or absence of other protected species at the site.

4.4.3 Unsuitable use of lighting at the site has the potential to impact upon the suitability of habitats within the wider area for foraging and commuting bats. Measures to ensure habitats within the site and wider area are not adversely impacted by lighting are presented at **Section 5.3**.

4.4.4 The scrub and buildings provide suitable nesting habitat for passerine birds (including house sparrow, a Priority Species). Measures to ensure nesting birds are not impacted during the construction phase of the proposed development are presented at **Section 5.3**. Recommendations for enhancements for nesting birds are considered at **Section 5.5** of this report.

4.4.5 The unmanaged scrub is suitable for foraging and sheltering hedgehog; measures for the protection of hedgehog (and other wildlife) during the construction phase of the proposed development are presented at **Section 5.3**.

[3] Using the terms presented at Section 4.7 of *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018), i.e. International and European, National, Regional, Local Authority-wide area, River Basin District, Estuarine system / Coastal cell or Local. The term 'site' value is additionally used to highlight ecological features considered to be of importance in the context of the wider site habitats, but which are of negligible value in the context of the local area.

5.0 RECOMMENDATIONS AND ECOLOGICAL ENHANCEMENT

5.1 Introduction

5.1.1 These recommendations aim to ensure that the development is implemented in accordance with relevant wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF), local planning policy and best practice.

5.1.2 In accordance with Chapter 15, paragraph 180(d) of the NPPF:

'opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate'.

5.1.3 Where possible, opportunities to enhance the ecological interest and habitat connectivity and seek biodiversity gain through appropriate landscape planting and habitat creation have been identified.

5.1.4 All recommendations are appropriate to the geographical area, the habitats in the wider area, the wildlife present in the local area (and likely to use the site post-construction) and take into consideration the end use of the site as a refuelling station and retail outlet.

5.2 Further Surveys

5.2.1 The further surveys required at the site are outlined at **Table 5.1**, below.

Table 5.1: Further Surveys Required for Bats at Buildings 1 and 2

Survey type	Survey Timings and Frequency[1]
Dusk emergence survey / dawn re-entry survey	**Building 1:** Three surveys required to reliably determine absence. Two surveys may be sufficient if roosting bats are detected and sufficient information has been gained to determine the species present, type of roost present, and the impacts of the proposed development on the roost. **Building 2:** One survey, covering the western elevation of the building, is required to reliably determine absence. **Both Buildings:** The surveys must be completed in the bat active season, i.e. between mid-May and September, with at least two of the surveys between May and August. It is recommended at least one survey is completed in the bat maternity season, i.e. between mid-June and mid-August. Dusk emergence surveys must commence at least 15 minutes before sunset and last until between 1.5 and 2 hours after sunset. Dawn re-entry surveys must commence between 1.5 and 2 hours before sunrise and last until 5 minutes after sunrise. Repeat surveys must be spaced at least 2 weeks apart.
[1] in accordance with Table 7.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016)	

5.3 Protection of Existing Vegetation and Wildlife

Protection of Adjacent Gardens During Works

5.3.1 During the construction phase, temporary protective demarcation fencing will be used to protect the adjacent habitats to the north-west of the site. The fencing must extend outside the canopy of the retained vegetation and must remain in position until all areas have been developed to ensure protection is provided throughout the construction phase.

5.3.2 The fencing will be in accordance with BS5837:2012 *Trees in Relation to Design, Demolition and Construction: Recommendations* (BSI, 2012).

Consideration of Lighting

5.3.3 Paragraph 185(c) in Chapter 15 (conserving and enhancing the natural environment) of the NPPF states that development should:

'limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.'

Construction Phase

5.3.4 Any lighting to be used at the site during construction should be directional and screened where possible, this specification should be included within a Construction Environment Management Plan (CEMP), or similar.

Development Lighting Design

5.3.5 The lighting scheme to be implemented at the developed site must involve the use of appropriate products and screening, where necessary, to ensure no excessive artificial lighting shines over the proposed areas of ecological enhancement and any landscape planting, as lighting overspill may deter use by wildlife such as foraging bats.

5.3.6 The lighting scheme will be designed with reference to current guidance, namely:

a. *Guidance Note 8: Bats and Artificial Lighting in the UK* (Institution of Lighting Professionals & Bat Conservation Trust, 2018); and

b. *Bats and lighting: Overview of current evidence and mitigation guidance* (Stone, 2014).

Protection of Nesting Birds

5.3.7 All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended) while they are breeding. It is advised that any works such as vegetation clearance that will affect habitats suitable for use by nesting birds are scheduled to commence outside the bird nesting season. Commencement of works in the nesting season must be informed by a pre-works nesting bird survey, carried out by a suitably experienced ecologist. The bird breeding season typically extends between March to August inclusive (Natural England, 2015).

5.3.8 If breeding birds are detected the ecologist will issue guidance in relation to the protection of the nesting birds in conjunction with the scheduled works. This may involve cordoning off an area of the site until the young birds have fledged.

Protection of Hedgehog

5.3.9 The following Reasonable Avoidance Measures (RAMs) Method Statement will be completed during the construction phase of the proposed development:

a. All site personnel must be made aware of this RAMs;

b. Prior to any soil strip, vegetation will be strimmed to a height of no less than 0.15 metre and all arising removed;

c. During construction, any holes, trenches or other pits which wildlife could fall into will be covered overnight, or have sloped banks or ramps to allow escape;

d. If any wildlife species (such as hedgehog) is detected, it must be carefully picked up, placed in a clean bucket and moved to an area of suitable habitat beyond the development area.

5.4 Invasive Plant Species

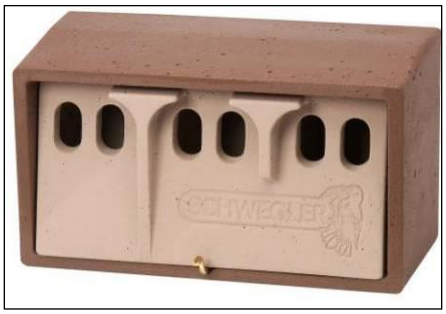
5.4.1 It is an offence under the *Wildlife and Countryside Act 1981* (as amended) to cause the spread of Montbretia in the wild. It is concluded that the preparation of an Invasive Species Management Plan is not necessary in this case and the Montbretia is grubbed out by the roots during site clearance and disposed of either by burying on site or removal to a suitable tip.

5.5 Enhancements for Wildlife

Birds

5.5.1 House sparrows are associated with suburban areas. Monitoring suggests a severe decline in the UK house sparrow population, estimated as halving in rural areas, and dropping by 60% in towns and cities since the mid-1970's (RSPB, 2018).

5.5.2 If a suitable location can be found at the redeveloped site, the installation of one house sparrow terrace nest box is recommended at the renovated Building 2. The boxes will not be positioned over windows or doorways where droppings may become a nuisance. RSPB advice states that boxes should ideally be sited facing north to east, to avoid exposure to direct sunlight, which may cause overheating of chicks in the nest. An example of a suitable house sparrow bird box is given below at **Insert 1**:



Insert 1: Schwegler 1SP House Sparrow Nesting Terrace

5.5.3 Such bird boxes are available from the NHBS (www.nhbs.com) or Wild Care (www.wildcare.co.uk). ERAP (Consultant Ecologists) Ltd will advise on the siting of bird boxes.

Landscape Planting

Ornamental Shrubs and Woody Planting

5.5.4 It is recommended that the landscape planting within the site is composed from native species and species known to be of value for the attraction of wildlife.

5.5.5 It is recommended that trees which support blossom and fruit which will attract insects are incorporated into the landscape planting. Suitable species are presented at **Table 5.2**, below.

Table 5.2: Suitable Native Species for Tree and Shrub Planting

Scientific Name	Common Name	Scientific Name	Common Name
Acer campestre	Field Maple	*Prunus spinosa*	Blackthorn
Corylus avellana	Hazel	*Rosa arvensis*	Field Rose
Crataegus monogyna	Hawthorn	*Rosa canina*	Dog-rose
Ilex aquifolium	Holly	*Sambucus nigra*	Elder
Malus sylvestris	Crab Apple	*Sorbus aucuparia*	Rowan
Prunus avium	Wild Cherry	*Ulmus glabra*	Wych Elm
Prunus padus	Bird Cherry	*Viburnum opulus*	Guelder Rose

5.5.6 The understorey and ground cover planting design should be prepared to optimise the attraction of invertebrates such as feeding bumblebees and butterflies. Where possible the use of native species should be maximised but where necessary non-native species known to be attractive to invertebrates should be used.

5.5.7 Planting schemes that include flowering species such as *Viburnum, Ceanothus, Hebe*, *Lavandula*, *Lonicera, Potentilla, Rosmarinus* and *Vinca* can maximise opportunities for feeding invertebrates and for the attraction of foraging bats and birds.

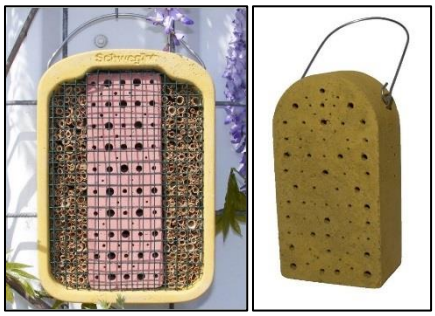
5.5.8 For further plants suitable for the attraction of pollinators please refer to the *Perfect for Pollinators Plant List* (Royal Horticultural Society, 2012). It is recommended that the selection of plant species at the site ensures that a variety of flowering species are available throughout the year.

Wildflower Grassland

5.5.9 It is recommended that a suitable native species wildflower mix is seeded at the verge located at the south-western site boundary and appropriately managed in the long-term to ensure its plant species diversity. Species mixes as provided by Emorsgate Seeds (https://wildseed.co.uk/) or Landlife Wildflowers (https://www.wildflower.co.uk/) are appropriate.

Insect Boxes

5.5.10 Insect boxes such as those presented at **Insert 2**, below, can provide suitable nesting habitat for solitary bees associated with suburban and urban areas such as the red mason-bee (*Osmia bicornis*), mining bee species (*Andrena* sp.) and other pollinating invertebrates.



Insert 2: Bee hotels

5.5.11 Such bee hotels are available from the NHBS (www.nhbs.com) and Wild Care Shop (www.wildcareshop.com).

5.5.12 It is recommended that one insect box is sited on an existing feature such as fence post or wall. Boxes should ideally be sited around waist or chest height. Boxes should be placed facing south and in a sunny position, near an abundance of flowers and shrubs.

6.0 CONCLUSION

6.1 Further surveys are required to determine the presence or absence of roosting bats at the site. Otherwise this ecological assessment has demonstrated that the proposed redevelopment at the site is feasible and acceptable in accordance with ecological considerations and the National Planning Policy Framework.

6.2 It is possible to implement reasonable actions for the protection and long-term conservation of fauna such as commuting / foraging bats associated with the site.

6.3 Development at the site will provide an opportunity to secure ecological enhancement for fauna typically associated with residential areas such as pollinating insects and foraging birds.

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8.0 APPENDIX: TABLES, PHOTOGRAPHS AND FIGURES

8.1 Plant Species Lists

Table 8.1: Plant Species List for Scrub

Scientific Name	Common Name	DAFOR[1]	% Cover
Woody Species			
Acer campestre	Field Maple	R	<1%
Cornus sanguinea	Dogwood	LA	5%
Ligustrum ovalifolium	Garden Privet	LA	5%
Salix caprea	Goat Willow	LF	5%
Herb Species			
Agrostis stolonifera	Creeping Bent	LF	<1%
Dactylis glomerata	Cock's-foot	LF	10%
Festuca rubra	Red Fescue	VLF	<1%
Hedera helix	Ivy	LA	30%
Heracleum sphondylium	Hogweed	R	<1%
Holcus lanatus	Yorkshire-fog	LF	10%
Plantago lanceolata	Ribwort Plantain	O	<1%
Ranunculus repens	Creeping Buttercup	LF	<1%
Rubus fruticosus agg.	Bramble	F/LA	60%
Rumex obtusifolius	Broad-leaved Dock	VLF	<1%
Taraxacum officinale agg.	Dandelion	R	<1%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

Table 8.2: Plant Species List for Grassland

Scientific Name	Common Name	DAFOR[1]	% Cover
Arrhenatherum elatius	False Oat-grass	LF	20%
Chamerion angustifolium	Rosebay Willowherb	VLF	<1%
Crocosmia x crocosmiiflora	Montbretia	R	<1%
Dactylis glomerata	Cock's-foot	F/LA	40%
Festuca rubra	Red Fescue	LF	5%
Heracleum sphondylium	Hogweed	R	<1%
Holcus lanatus	Yorkshire-fog	O/LF	20%
Lolium perenne	Perennial Rye-grass	LF	5%
Plantago lanceolata	Ribwort Plantain	O	<1%
Ranunculus repens	Creeping Buttercup	O/LF	5%
Rubus fruticosus agg.	Bramble	LF	10%
Senecio jacobaea	Common Ragwort	O	<1%
Taraxacum officinale agg.	Dandelion	O	<1%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

8.2 Photographs

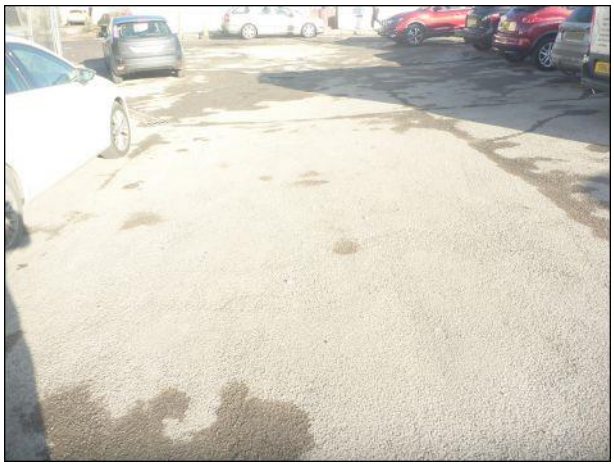

Photo 1: Hard standing within the site

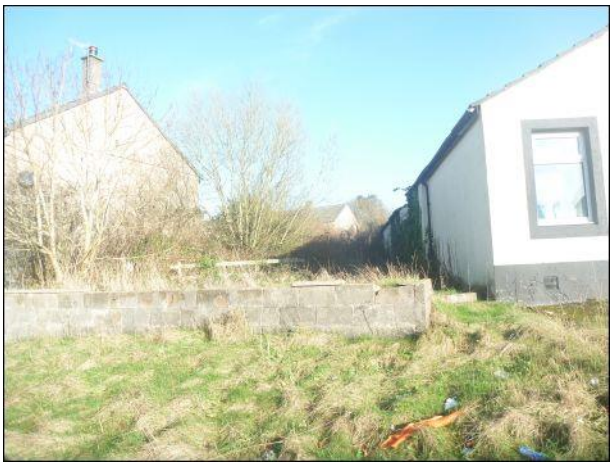

Photo 2: Unmanaged grassland and scrub

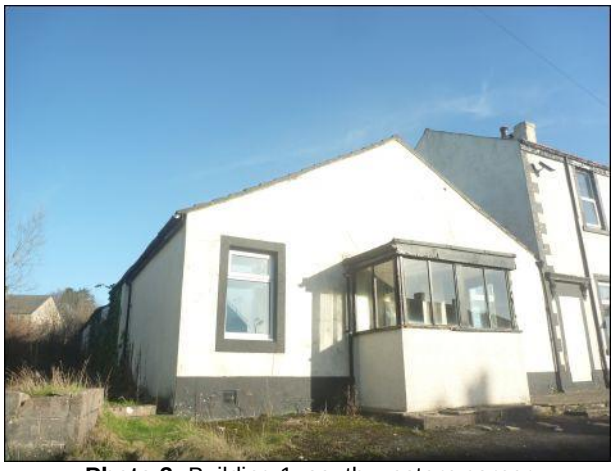

Photo 3: Building 1, south-western corner

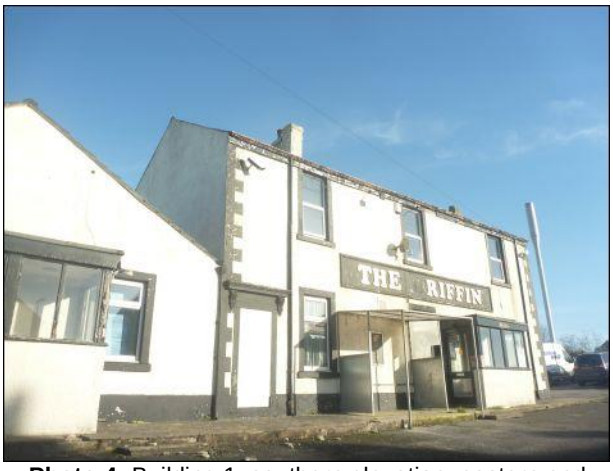

Photo 4: Building 1, southern elevation, eastern end

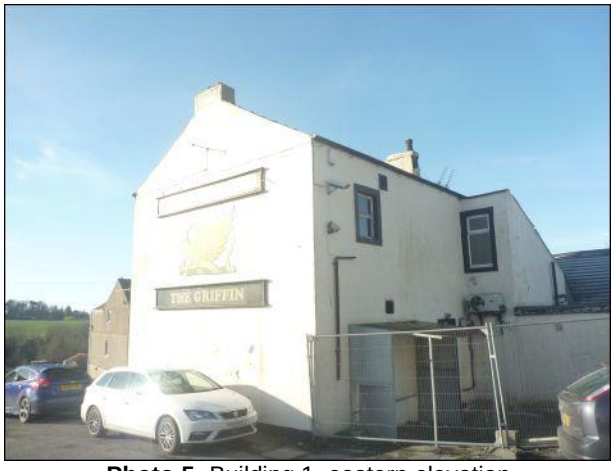

Photo 5: Building 1, eastern elevation

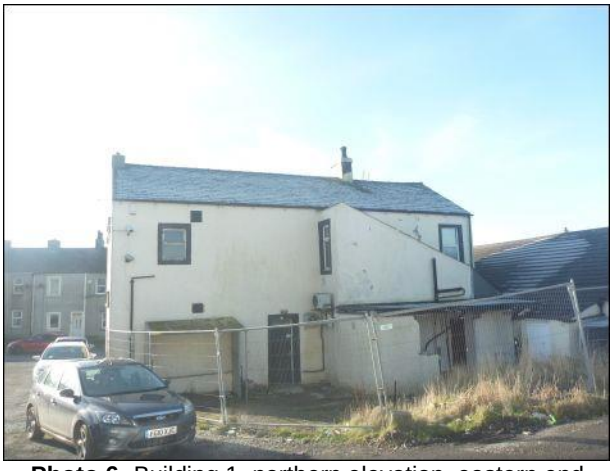

Photo 6: Building 1, northern elevation, eastern end

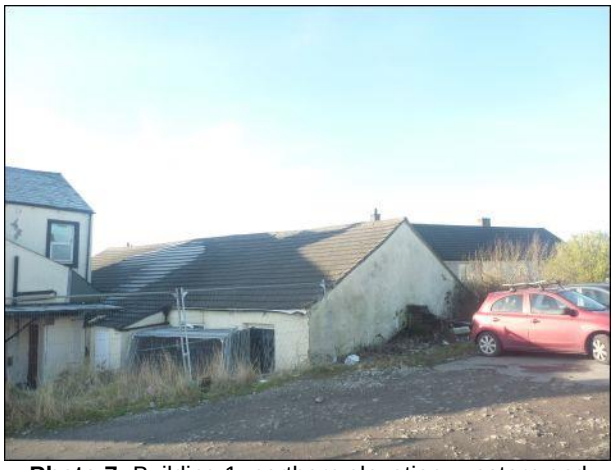

Photo 7: Building 1, northern elevation, western end

Photo 8: Building 1, western elevation

Photo 9: Building 1, room on upper floor

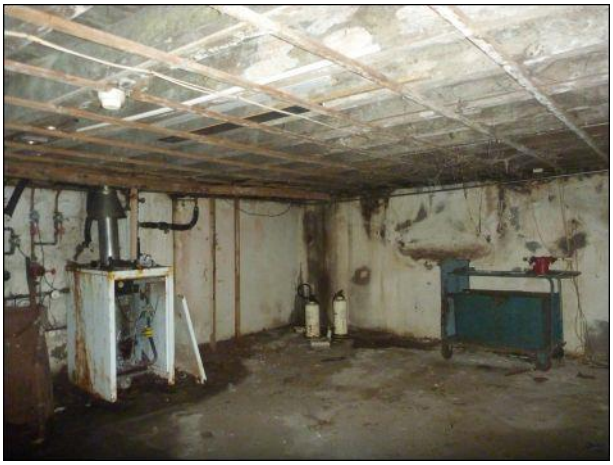

Photo 10: Building 1, cellar

Photo 11: Building 1: roof void 1, over two-storey section

Photo 12: Building 1, roof void 2, over western single-story extension (southern end)

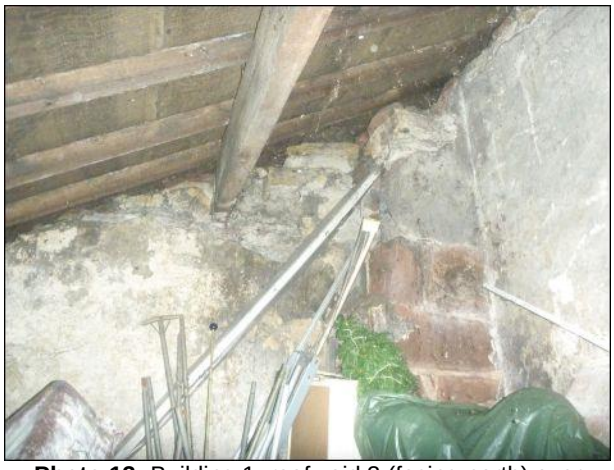

Photo 13: Building 1, roof void 3 (facing north) over western single-storey elevation, northern end

Photo 14: Building 1, Roof void 3 (facing south) over western single-storey elevation, northern end

Photo 15: Building 2, southern elevation

Photo 16: Building 2, eastern elevation (southern end)

Photo 17: Building 2, eastern elevation (northern end)

Photo 18: Building 2, western elevation

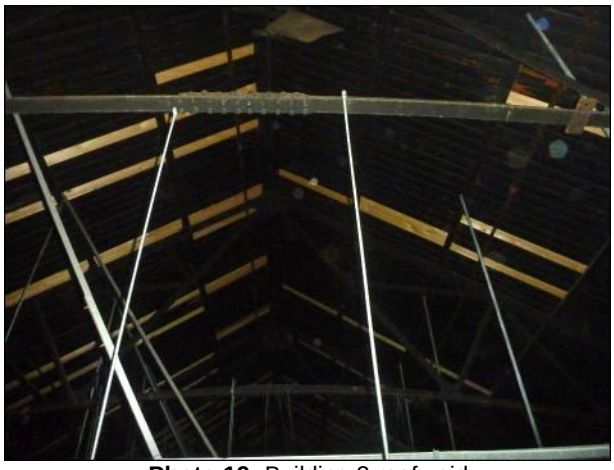

Photo 19: Building 2 roof void

8.3 Figures

Figure 1: Aerial Image of the Site and its Surroundings

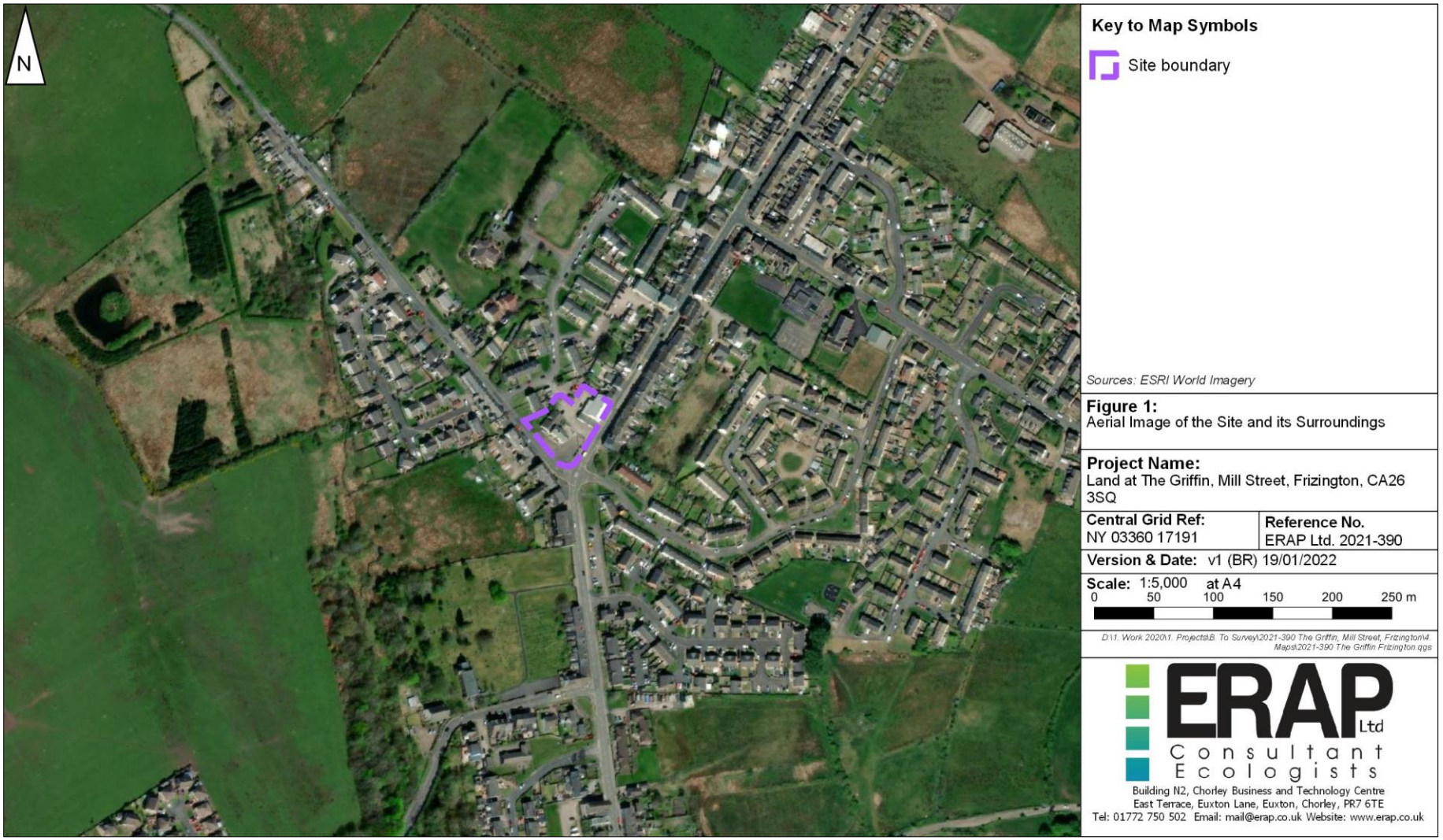

Figure 2: Phase 1 Habitat and Vegetation Map