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Client: Lovell Homes

Project: Novartis Phase 1 & 2

Report: PRF Inspection Survey

QUALITY ASSURANCE

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CONTENTS

Tables

Figures

1.0 EXECUTIVE SUMMARY

Greengage Environmental Ltd (Greengage) was commissioned by Lovell Homes to undertake a Potential Roost Feature (PRF) inspection survey for the Novartis Phase 1 & 2 project in Horsham, West Sussex, hereafter referred to as the site.

This document is a report of the survey and has been produced to inform a planning application for the site. It is understood that the proposals include the removal of nine trees on site (T1 - T9), identified for removal due to health and safety concerns.

The PRF inspection survey followed on from a Ground Level Tree Assessment (GLTA) of T1 - T9 undertaken by Greengage in November 2024, which categorised PRF's on five trees (T1, T3, T4, T5 and T6) as Further Assessment Required (FAR), as they could not be fully inspected from the ground. Four trees (T1, T2, T4, and T6) also had PRFs that were categorised as PRF-I, i.e. PRFs were suitable for use by individual bats. Three trees (T7, T8 and T9) were categorised as having 'Negligible' suitability to support roosting bats and were subsequently scoped out of requiring further assessment i.e. PRF inspection survey.

The subsequent PRF inspection survey in January 2025 downgraded T1 and T2 to 'None' along with confirming T5 as 'None'. T3 was categorised as PRF-I, along with T4 and T6 remaining as PRF-I.

As T3, T4 and T6 have PRF-I's, their removal without mitigation has the potential to contravene legislation pertaining to roosting bats. No further survey is considered necessary, however these trees should be sectionally felled, under the supervision of a suitably experienced Natural England Level 2 Class licenced bat ecologist or accredited agent. Similarly, directly prior to section felling, the tree should be inspected by the ecologist from height, each section then cut carefully avoiding the cross-cutting through the PRF-I and the trunk section lowered to the ground where the ecologist can inspect any features for bats or signs of bats. In the unlikely event a bat is encountered, further actions would become applicable. See section 5.2 of the report for full details.

T1, T2 and T5 have been categorised as 'None' and therefore their removal can proceed lawfully without need for formal mitigation.

However, due to the transitional nature of roosting bats, a PRF can become occupied at any time. Should a bat be unexpectedly encountered, works should stop and an ecologist should be contacted.

The PRFs observed were small, shallow crevices that were exposed to the sunlight, wind and rain and would not provide the required thermal stability (cool and humid conditions) for winter hibernating bats. As such, with no evidence of hibernation suitability identified during the PRF inspection, hibernating bats have been ruled out as likely-absent.

In accordance with planning policy and good practice, measures to mitigate for foraging/commuting bats and enhance the site for both roosting and foraging bats are recommended. These measures include:

- Retention of foraging/commuting habitat and compensatory planting where habitat is lost;

- Provision of a minimum of three integrated bat boxes into the fabric of new buildings, suitable for summer roosting; and
- Wildlife friendly habitat creation to enhance the site as a foraging and commuting resource, including provision of biodiverse roofs and planting of treelines and hedgerows, where possible.

If the enhancement measures are implemented this will likely result in the development providing long term positive impacts for bats at a local scale.

The data collected during the PRF inspection survey is considered valid for 24 months in accordance Chartered Institute of Ecology and Environmental Management (CIEEM) guidance[1] and an updated survey will be required if the works have not started within this timeframe or should site conditions change significantly during this time.

2.0 INTRODUCTION

Greengage Environmental Limited (Greengage) was commissioned by Lovell to undertake a Potential Roost Feature (PRF) inspection survey Lovell Homes of an area of land known as Novartis Phase 1 & 2 in Horsham, West Sussex, hereafter referred to as 'the site'.

This document is a report of the survey and has been produced to inform a planning application for the site. It is understood that the proposals include the removal of nine trees on site, identified for removal due to health and safety concerns.

2.1 AIMS OF SURVEY

The purpose of the survey was to undertake a PRF inspection survey (via aerial tree climb) to inspect and assess the PRFs in detail to accurately and confidently categorise the PRF's level of suitability for roosting bats, to determine the presence/likely absence of bats at the time of survey and/or to identify the need for further survey or mitigation.

2.2 SITE DESCRIPTION

The site extends to approximately 2.63 hectares (ha) and is centred on National Grid Reference TQ 17809 31816, OS Co-ordinates 517809, 131816.

The site comprised primarily of developed land; sealed surface, with one large existing building, hereafter referred to as "the former Novartis building", located adjacent the site's eastern boundary which contains an inaccessible courtyard where a pond is known to be located. Two large patches of sparsely vegetated urban land were located towards the centre of the site, both of which were which boarded by large patches of bramble scrub. Multiple areas of other neutral grassland were located throughout the site, positioned around the centre of the site, and in the northeast and southwest corners of the site. Two patches of willow scrub were located adjacent to the western site boundary, with an area of modified grassland located towards the northwest corner. At the entrance to the site along the western boundary, a small patch of other woodland; mixed was present to the south, with bramble scrub to the north bordered by another native hedgerow. Individual trees were located through the site, with the highest density located along the northern boundary of the site.

The site is located in the centre of Horsham and therefore situated in an urban setting, primarily surrounded by residential buildings and gardens. Parsonage Road and Wimblehurst Road run along the northern and western boundaries of the site respectively, with a railway line adjacent the southern boundary, with an additional railway line located in close proximity to the east of the site.

Fragmented priority woodland is present throughout Horsham with the closest situated in Horsham Park approximately 480 metres (m) south of the site boundary. Warnham Local Nature Reserve (LNR) is located approximately 665 m northwest of the site boundary, with a golf course located directly south of the LNR. Large areas of ancient woodland can be found within the wider area, with the closest located in approximately 850m north of the site boundary. Multiple parcels of different priority

habitats are located within 2km of the site boundary. These include woodland pasture and parks, good quality semi-improved grassland (non-priority), ancient replacement woodland, and lowland meadows.

2.3 ECOLOGICAL CONTEXT

Ecological Appraisal - 2018/2019

An initial Ecological Appraisal by Hampshire County Council originally produced in 2015 and updated in 2018/2019[2] surveyed across the whole Novartis site, incorporating what is now known as Novartis Phase 1&2 and Novartis Phase 3, hereafter referred to as the 'wider site'. Two dusk (emergence) and one dawn (return) bat survey were performed in 2018 on two buildings formally known as the gatehouses, which have since been demolished. During these surveys, low to moderate levels of bat activity were recorded, which mainly pertained to common pipistrelle and soprano pipistrelle, with sightings and calls also recorded for brown long-eared bat, noctule and Myotis species. A singular dusk emergence survey was performed on the former Novartis building in 2019, which is still present on the site. No emergences by bats from the former Novartis building were recorded, with only one recording pertaining to activity of a singular common pipistrelle. Aerial tree climb surveys were also conducted with suitability identified for four trees on the site, with no bat presence recorded.

Preliminary Ecological Appraisal (PEA) and Ground Level Tree Assessment (GLTA) - 2024

As an update to the above, a PEA[3] and a Ground Level Tree Assessment (GLTA) were undertaken by Greengage on 5th November 2024 in appropriate weather conditions. The site was found to still comprise developed land; sealed surface, with the single former Novartis building, a pond (non-priority), sparsely vegetated urban land, bramble scrub, other neutral grassland, willow scrub, modified grassland, other woodland; mixed, native hedgerow and individual trees. The habitats had suitability for use by commuting and foraging bats.

Nine trees on site were surveyed during the GLTA to search for the presence of PRFs and assign a category to them based on the assessed level of suitability that it may have to support roosting bats. Where a feature was identified but it was not possible to confirm a definite ingress/egress point these were classified as Further Assessment Required (FAR). A PRF-I is a feature which "is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats". A PRF-M is defined as having suitability for "multiple bats and may therefore be used as a maternity colony". Feature reference codes are referred to when discussing multiple PRF's on a single tree i.e. 'Feature 1' to be referred to as 'F001', 'Feature 2' is 'F002' and so forth in numerical order. The feature references restart at F001 per individual tree..

One tree (T2) was identified to have PRF-I suitability which comprised a small callus roll. Five trees (T1, T3, T4, T5 and T6) were identified as Further Assessment Required (FAR) as the features were not able to be fully inspected from the ground (T1, knot/rot holes on the southeast aspect; T3, callus roll on the northwest aspect and pruning wound on the south-east aspect; T4, woodpecker hole on the southeast aspect and flaking bark on the northern aspect; T5 Callus roll on the crown with an eastern aspect, a

woodpecker hole on the southeast aspect and upwards facing split branch on the southeast aspect; and T6, a callus roll on the south-west aspect and two woodpecker holes on the eastern south-eastern aspects). Three trees (T7, T8 and T9) were identified to have PRFs but of Negligible suitability and were subsequently scoped out of requiring further assessment i.e. PRF inspection survey.

Desk Study

As part of the PEA that was undertaken by Greengage in November 2024 (see below), biological records were analysed to determine the records of bat species in the local area. Records were obtained from Sussex Biodiversity Record Centre (SxBRC).

A total of 167 records for the following bat species were identified within 2km of the site:

- Common pipistrelle *Pipistrellus pipistrellus*;
- Soprano pipistrelle *Pipistrellus pygmaeus*;
- Serotine *Eptesicus serotinus*;
- Natterer's bat *Myotis nattereri*;
- Leisler's *Nyctalus leislerii*;
- Noctule *Nyctalus noctula*;
- Nathusius' Pipistrelle *Pipistrellus nathusii*;
- Brown long eared *Plecotus auritus*;
- Daubenton's *Myotis daubentonii*;
- Unidentified pipistrelle bat species *Pipistrellus spp*;
- Unidentified bat species *Chiroptera spp*; and
- Whiskered *Myotis mystacinus*.

3.0 METHODOLOGY

3.1 PRFINSPECTION SURVEY

The PRF inspection of six trees was carried out on 6th January 2025 in cold, windy and wet conditions, with temperatures ranging from 4 to 6°C.

The survey was undertaken by two surveyors with 'Tree Climbing & Aerial Rescue (CS38)' qualifications in accordance with best practice survey guidance[4]. One surveyor climbed the tree whilst the other surveyor acted as a safety second and remained on the ground ready to undertake aerial rescue if necessary. One of the surveyors holds a Natural England level 2 bat licence (CL18), enabling them to use an endoscope to inspect the PRFs.

Each surveyor was equipped with a full tree climbing kit with an in date Lifting Operations and Lifting Equipment Regulations (LOLER) inspection certificate.

Where PRFs were accessible by ladder, this methodology was utilised rather than rope access.

Each PRF was carefully inspected at its entrance point, and, where possible, internally with an endoscope. The surveyors made note of the dimensions and conditions of the feature, as well as any evidence of bats, including droppings, staining and/or bats themselves.

The aim of the assessment was to determine the features as PRF-I's or PRF-M's, in accordance with the BCT guidance[6] categories detailed earlier.

Upon detailed inspection, if a PRF was neither PRF-I or PRF-M e.g. it was confirmed to be unsuitable due to being shallower than expected from ground level viewing, or subject to extensive water ingress etc, the PRF was downgraded to 'None' and scoped out.

The potential suitability level of the PRF/tree for use by hibernating bats was also considered during the PFR inspection survey. The BCT guidance does not include specific categories/category descriptions in relation to hibernation suitability and trees. Therefore, the hibernation suitability of the trees has been based on the suitability for structures categories as a 'best fit' alternative and are therefore allocated from a scale of none, negligible, low, moderate and high as outlined in Table 3.1 below.

Table 3.1 Assessing the Potential Hibernation Suitability for Roosting Bats

Potential Suitability	Description of Roosting Habitat in Structures
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection,

Potential Suitability	Description of Roosting Habitat in Structures
	appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.

However, the BCT guidance does also make reference that PRF-I's are generally accepted to equate to 'Low' suitability, while PRF-M's are generally equated to 'Moderate to High' hibernation suitability.

3.2 SURVEYORS/COMPETENCIES

The PRF inspection survey was undertaken by Luke Measey and Vincenzo De Iacovo.

Luke Measey, Senior Consultant, has an undergraduate degree in Ecology and Environmental Management BSc (Hons). He holds a Natural England Level 1 Class Survey Licence for Great Crested Newt, Natural England Level 1 Class Survey Licence for bats and is a certified tree climber. Luke is a full Chartered Institute of Ecology and Environmental Management (CIEEM) member and has over six years' experience in ecological survey and assessment.

Vincenzo De Iacovo has a Foundation degree in Arboriculture (FdSc) and an undergraduate degree in Ecology and Biogeography (BSc Hons). Vincenzo has over 25 years experience working in the arboricultural industry with both experience in the public and commercial sector and is a professional member of the Arboricultural Association. Vincenzo also has 13 years working in the commercial ecological commercial sector, specialising in bats and reptiles.

Isobel Novak, Graduate Consultant, has a degree in Biology (BSc Hons), an MSc in Conservation, and is a Qualifying member of CIEEM with three seasons' experience in ecological surveying and assessment. Her experience includes bat activity and emergence/re-entry, great crested newt eDNA, translocation and population, and Ecological Clerk of Works. Isobel also undertakes data analysis and assists in developing strategies and protocols for efficient data management.

Helen Hinchliffe, Principal Consultant, has an undergraduate degree in Physical Geography (BSc Hons), is a full member of CIEEM, holds a Natural England Great Crested Newt licence and has over 17 years experience as a professional ecological consultant.

This report was written by Isobel Novak, reviewed by Luke Measey and verified by Helen Hinchliffe who confirms in writing (see the QA sheet at the front of this report) that the report is in line with the following:

- Represents sound industry practice;
- Reports and recommends correctly, truthfully and objectively;
- Is appropriate given the local site conditions and scope of works proposed; and
- Avoids invalid, biased and exaggerated statements.

3.3 LIMITATIONS AND COMMENTARY ON METHODOLOGY

General

The data collected during the PRF inspection survey is considered valid for 24months provided site conditions remain consistent in accordance with CIEEM guidance[5] and an updated survey will be required if the works have not started within this timeframe or should site conditions change significantly during this time.

PRF Inspection

Evidence of bats can be weathered away or bats could roost in inaccessible cracks and crevices, leaving little or no external evidence, therefore endoscopes were used to try and minimize the chances of missing roosts.

4.0 RESULTS

4.1 PRF INSPECTION

During the PRF Inspection, the following PRF-I's: T1 (F001), T2 (F001) and T6 (F001 and F003) were downgraded from PRF-I to 'Negligible', the feature noted on T4 (F001) was confirmed as PRF-I during the visit, and features identified as FAR on T3 (F001) and T6 (F004) were confirmed as PRF-I. All other features recorded as FAR during the GLTA were downgraded to a suitability of 'None', with the exception of F002 on T4 which was downgraded to 'Negligible'. Photographs of these features can be found in Appendix B.

The PRFs were small, shallow crevices that were exposed to the elements (sunlight, wind and rain) and would not provide the required thermal stability (cool and humid conditions) for hibernating bats and were therefore assessed with a hibernation suitability of 'None'. Hibernating bats have been scoped out as as likely-absent.

No bats or conclusive evidence of bat presence were identified in relation to any of the PRFs during the PRF inspection survey.

Table 4.1 below summarises the findings of the PRF inspections with results shown on Figure A.1.

Table 4.1 Summary Results of the PRF Inspection

PRF ID	Orientation and Height	Dimensions	Description and Internal Conditions	Evidence of Bats	Roost suitability at GLTA (PRF-I, PRF-M etc.))	Roost suitability (confirmed/ downgraded PRF-I, PRF-M etc.))	Hibernation Suitability	Further Surveys Required
T1 - Atlas Cedar (what3words (w3w) location: Think.Shares.Send)								
F001	6m southeast	N/A	Large open and exposed cavity present within the main trunk, exposed	No	PRF-I	Downgraded - None	No	No

PRF ID	Orientation and Height	Dimensions	Description and Internal Conditions	Evidence of Bats	Roost suitability at GLTA (PRF-I, PRF-M etc.))	Roost suitability (confirmed/ downgraded PRF-I, PRF-M etc.))	Hibernation Suitability	Further Surveys Required
			to the elements and illuminated from daylight. Bird nesting material present. No suitability for bats.					
F002	11m west	N/A	Goes straight to heartwood, no cavity space present.	No	FAR	Downgraded - None	No	No
T2 - Atlas Cedar (what3words (w3w) location: Muddy.Frost.Drop)								
F001	10m southeast	N/A	No cavity space present.	No	PRF-I	Downgraded - None	No	No
F002	13m northwest	N/A	Tearout wound, no cavity space present.	No	N/A	None	No	No
T3 - Atlas Cedar (what3words(w3w) location: Natively.Match.Tribune)								
F001	10m northeast	N/A	Small cavity present, wet and damp internally with detritus at the base	No	FAR	PRF-I: Has potential to hold a small number of individuals.	No	No

PRF ID	Orientation and Height	Dimensions	Description and Internal Conditions	Evidence of Bats	Roost suitability at GLTA (PRF-I, PRF-M etc.))	Roost suitability (confirmed/ downgraded PRF-I, PRF-M etc.))	Hibernation Suitability	Further Surveys Required
			of the PRF. Slugs present. Two small chambers on the south-east and north-west sides of the cavity. Exposed and drafty.					
F002	4.5m southeast	N/A	No cavity space present.	No	FAR	Downgraded - None	No	No
T4 - Atlas Cedar (what3words (w3w) location: Reef.Weedy.Metals)								
F001	8m north	N/A	No cavity space present. Intact heartwood from where limb has been removed.	No	PRF-I	PRF-I: Likely to be too exposed, could only support low numbers of individuals.	No	No
F002	8m southeast	N/A	Small open cavity exposed to the elements and illuminated - 4cm round hole that extends in 3cm and	No	FAR	Downgraded - Negligible	No	No

PRF ID	Orientation and Height	Dimensions	Description and Internal Conditions	Evidence of Bats	Roost suitability at GLTA (PRF-I, PRF-M etc.))	Roost suitability (confirmed/ downgraded PRF-I, PRF-M etc.))	Hibernation Suitability	Further Surveys Required
			cone shaped apex. Rough internally.					
T5 - Atlas Cedar (what3words (w3w) location: Porch.Point.Beam)								
F001	10m southeast	4cm round, 3cm depth	No cavity space present.	No	FAR	Downgraded - None	No	No
F002	13m east	N/A	No cavity space present.	No	FAR	Downgraded - None	No	No
F003	10m southeast	N/A	No cavity space present.	No	FAR	Downgraded - None	No	No
T6 - Atlas Cedar (what3words (w3w) location: Folds.Look.Thing)								
F001	11m southwest	N/A	No cavity space present.	No	PRF-I	Downgraded - None	No	No
F002	10m southeast	N/A	No cavity space present.	No	FAR	Downgraded - None	No	No
F003	9m east	N/A	No cavity space present.	No	PRF-I	Downgraded - None	No	No
F004	8m east	10cm width, 2cm height, 10cm depth	Split limb that has previously been pruned. Exposed to elements and light.	No	N/A	PRF-I: Likely to provide suitability for low numbers of bats in an	No	No

PRF ID	Orientation and Height	Dimensions	Description and Internal Conditions	Evidence of Bats	Roost suitability at GLTA (PRF-I, PRF-M etc.))	Roost suitability (confirmed/ downgraded PRF-I, PRF-M etc.))	Hibernation Suitability	Further Surveys Required
			Approximately 10cm wide, 2cm height, 10cm depth. Was dry internally and no competitors present. Rough and pointed apex.			opportunistic basis, transitional/night roost.		

5.0 MITIGATION AND RECOMMENDATIONS

5.1 SUMMARY

The development proposals include the removal of trees T1-T9 for health and safety reasons as a result of the proposed development.

As T3, T4 and T6 were confirmed to hold PRF-I's, their removal without mitigation has the potential to contravene legislation pertaining to roosting bats. Addressing BCT guidelines[6] to "Provide appropriate compensation for all PRF-I's in advance of impacts and a Precautionary Working Method Statement (PWMS) for works", mitigation actions will be required. This will be appropriate to minimise potential impacts upon local bat populations with compensatory roost space and compensatory foraging resources implemented at the site, to ensure the conservation status of bats at the site is not impacted.

All UK bat species are protected by UK legislation (see full context at Appendix C), under which it is an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time); and
- Intentionally or recklessly obstruct access to a bat roost.

The appropriate mitigation measures are discussed below in Section 5.2.

As T1, T2 and T5 were downgraded to 'None' i.e. no suitability, no formal mitigation is required for their removal which can proceed lawfully with immediate effect. This also applies for T7, T8 and T9.

However, due to the transitional nature of roosting bats, a PRF can become occupied at any time. Should a bat be unexpectedly encountered, works should stop and an ecologist should be contacted.

5.2 MITIGATION FOR PRF-I TREES

In accordance with the CIEEM Bat Mitigation Guidelines[6] all trees suitable for roosting bats with PRF-I features and that have had likely-absence confirmed i.e. no evidence of use was encountered during the PRF inspection survey, should be sectionally felled, under the supervision of a suitably experienced Natural England Level 2 Class licenced bat ecologist or accredited agent. The tree should be inspected by the ecologist from height directly before felling, with each section then cut carefully avoiding the cross-cutting through the PRF-I and the trunk section lowered to the ground where the ecologist can inspect any features for bats or signs of bats. If a bat is identified in a section of a felled tree, that section should be propped up against the tree, as close as possible to where the roost was identified, and the bat allowed to leave of its own accord. A record should be taken of any bat roosts identified during the works. Any remaining sections that are unable to be fully inspected should be left with the PRFs facing upwards overnight in case any bats remain inside. Should a bat be discovered within the tree, the works to that tree must cease and a Natural England European Protected Species Mitigation (EPSM) licence be applied for.

5.3 ENHANCEMENT

In addition to the above best practice mitigation, the following enhancement measures are also recommended due to the suitability for bats at the site.

Retention of Foraging/Commuting Habitat

To minimise impacts upon local bat populations identified at/near the site during desk study of the PEA, compensatory areas of wildlife-friendly landscaping should include night scented species which will attract moths and other night flying insects that provide prey for bats. Plant species selection should follow BCT Landscape and urban design for bats and biodiversity[7], examples of suitable species are outlined in Table 5.1 below.

Bat boxes

Most species of bats will use bat boxes at various times of year but in particular they are favoured by pipistrelles, Leisler's, noctule, brown long eared and Myotis species[8].

It is recommended that a minimum of three bat boxes are incorporated into the proposed development. These should be installed on site, either integrated into new proposed structures, mounted on the existing building, or mounted on retained mature trees.

Bat boxes with a southwest to southeast orientation will aim to provide suitability for summer roosting bats, and installation with a northern aspect will provide suitability for hibernating bats, and as such will provide suitability for roosting bats throughout the year. Bat boxes should be placed away from doors, windows and street lighting, ideally at 3-5m from ground level, with the entrance free from obstruction. The behaviour of bats varies between species however, generally they will use a number of different roosts of varying climate conditions. Therefore, it is advisable to integrate several boxes with varying locations and aspects across the site.

Bat boxes such as cavity and crevice boxes should be included within the landscaping plans which provide suitability for natterer's noctule, nathusius, brown long-eared bat and daubentons which were identified within the desk study.

Greengage do not endorse specific products, but the products shown in Figure 5.1 or similar would be suitable.

Given the findings of the survey, and the nature of the proposed works, the scheme is considered to have a positive impact on bats using the site and the surrounding area.

Figure 5.1 Integrated Habibat Bat Box 003 - Blended Facing[9] (top left); Vivara Pro low profile woodstone bat box[10] suitable for mounting on buildings (top right); 2F Schwegler bat box[11] suitable for tree mounting (bottom left)

Wildlife friendly habitat creation

By increasing the diversity of habitats on site the scheme will be increasing the diversity of bat invertebrate prey species. The following habitat types should be considered for incorporation into the landscaping plans:

- Provision of extensive, substrate based biodiverse roofs on all available flat roof spaces. This consist of a low-nutrient substrate with an average depth of between 150-200 millimetres (mm) and should be seeded and plug planted with at least 30 wildflower species of known value to wildlife. These should be further enhanced through provision of log piles, stony piles, sand mounds and water trays. Extensive biodiverse roofs are compatible with photovoltaic (PV) arrays;
- Wildlife friendly landscaping across the site. Areas of communal grassland should incorporate wildflower turf or sown with a wildflower mix which provide higher provision of wildflowers and

nectar sources for invertebrate prey. Introduced shrub should include native shrubs or perennials with known value to wildlife such as those listed on the Royal Horticulture Society (RHS) Plants for pollinators[12]; and

- Tree lines and hedges planted to create linear features for commuting and should include a diverse mix of native species such as those listed within Table 5.1 below.

Table 5.1 Suitable Species for Attracting Bat Invertebrate Prey

Common Name	Scientific Name
Shrub	
Hazel	*Corylus sp*
Hawthorn	*Crataegus monogyna*
Willow species	*Salix sp*
Hebe species	*Hebe sp*
Lavender	*Lavandula sp*
Blackthorn	*Prunus spinosa*
Dog rose	*Rosa canina*
Guelder rose	*Viburnum opulus*
Herbaceous	
Yarrow	*Achillea millefolium*
Bugle	*Ajuga reptans*
Kidney vetch	*Anthyllis vulneraria*
Cuckoo flower	*Cardamine pratensis*
Knapweed	*Centaurea sp*
Red Valerian	*Centranthus ruber*
Sweet rocket	*Hesperis matronalis*
Birds-foot trefoil	*Lotus corniculatus*
Ornamental tobacco	*Nicotiana sylvestris*
Night-scented stock	*Matthiola longipetala*
Evening primrose	*Oenothera biennis*
Marjoram	*Origanum majorana*
Red campion	*Silene dioica*
Wild carrot	*Daucus carota*
Climbers	
Honeysuckle	*Lonicera periclymenum*

Common Name	Scientific Name
Jasmine	*Jasminum officinale*
Ivy	*Hedera helix*
Trees	
Oak	*Quercus sp*
Ash	*Fraxinus excelsior*
Silver birch	*Betula pendula*
Field maple	*Acer campestre*
Elder	*Sambucus nigra*

The development presents the opportunity to benefit a range of taxa through incorporation of ecological features and provision of new habitats that would encourage species to the site. Assuming appropriate mitigation and compensation actions are followed, alongside enhancements described above it should be possible to deliver an increase in value for local bat populations.

6.0 SUMMARY AND CONCLUSION

Greengage was commissioned by Lovell Homes to undertake a Potential Roost Feature (PRF) inspection survey for the site to inspect and assess the PRFs in six trees in order to establish the presence/likely absence of roosting bats at the time of the survey and determine whether there is a need for further survey and mitigation.

The PRF inspection survey discounted T1, T2, T5, T6, T7, T8 and T9 from requiring specific mitigation in relation to bats.

F002 on T4 was downgraded to 'Negligible', however due to the presence of a PRF-I this tree will still require mitigation. In addition, T3 and T6 were categorised as PRF-I.

The removal of T3, T4 and T6 without mitigation has the potential to contravene legislation pertaining to roosting bats. These trees should be sectionally felled, under the supervision of a suitably experienced Natural England Level 2 Class licenced bat ecologist or accredited agent. The tree should be inspected by the ecologist from height directly before felling, each section then cut carefully avoiding the cross-cutting through the PRF-I and the section lowered to the ground where the ecologist can inspect any features for bats or signs of bats. If a bat is unexpectedly encountered during the sectional felling, further actions will apply. Full details provided in section 5.2 above.

The PRFs observed were small, shallow crevices that were exposed to the elements and would not provide the required thermal stability (cool and humid conditions) for winter hibernating bats. As such, no evidence of hibernation suitability was identified during the visit, and therefore hibernating bats have been scoped out as likely-absent.

However, due to the transitional nature of roosting bats, a PRF can become occupied at any time. Should a bat be unexpectedly encountered, works should stop and an ecologist should be contacted.

In accordance with planning policy and good practice, measures to mitigate for foraging bats and enhance the site for both roosting and foraging bats are recommended. Measures include retention of existing foraging/commuting habitat e.g. lines of trees, provision of integrated bat boxes suitable for summer roosting into the fabric of new buildings or attached to retained trees, and wildlife friendly habitat creation to enhance the site as a foraging and commuting resource.

Enhancement measures for bats have been recommended to increase the biodiversity value of the proposed redevelopment and include provision of bat boxes and wildlife friendly habitat creation to provide roosting opportunities and further foraging resources. Assuming these enhancements are followed, the development will result in value for local bat populations.

APPENDIX A SURVEY RESULTS

Figure A.1 PRF inspection results

NOVARTIS PHASE 1 & 2, HORSHAM

Key

Site boundary

PRF inspection results

PRF-I

Negligible

Title: Figure A.1 PRF inspection results

Drawn by: IN
Date: 04/02/2025

Reviewed by: LM
Date: 04/02/2025

Project number: 552979
Sources: Google Satellite Imagery, ESRI World Topo

Greengage

APPENDIX B SITE PHOTOGRAPHS

Plate B.1 T1, F001

Plate B.2 T1, F002

Plate B.3 T2, F001

Plate B.4 T2, F002

Plate B.5 T3, F001

Plate B.6 T3, F002

Plate B.7 T4, F001

Plate B.8 T4, F002

Plate B.9 T5, F001

Plate B.10 T5, F002

Plate B.11 T5, F003

Plate B.12 T6, F001

Plate B.13 T6, F002

Plate B.14 T6, F004

APPENDIX C LEGISLATION AND POLICY

A.1 LEGISLATION

All UK bats and their roosts are protected by law. Since the first legislation was introduced in 1981, which gave strong legal protection to all bat species and their roosts in England, Scotland and Wales, additional legislation and amendments have been implemented throughout the UK.

Six of the 18 British species of bat have Biodiversity Action Plans (BAPs) assigned to them, which highlights the importance of specific habitats to species, details of the threats they face and proposes measures to aid in the reduction of population declines.

The Wildlife & Countryside Act 1981 (WCA)[13] was the first legislation to provide protection for all bats and their roosts in England, Scotland and Wales (earlier legislation gave protection to horseshoe bats only.)

All eighteen British bat species are listed in Schedule 5 of the Wildlife and Countryside Act, 1981 and under Annexe IV of the Habitats Directive[14], 1992 as a European protected species. They are therefore fully protected under Section 9 of the 1981 Act and under Regulation 43 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[15], which transposes the Habitats Directive into UK law. Consequently, it is an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat; and
- Intentionally or recklessly obstruct access to a bat roost.

This legislation applies to all bat life stages.

The implications of the above in relation to the proposals are that where it is necessary during construction to remove trees, buildings or structures in which bats roost, it must first be determined that work is compulsory and if so, appropriate licenses must be obtained from Natural England. Additionally, although habitats that are important for bats are not legally protected, care should be taken when dealing with the modification or development of an area if aspects of it are deemed important to bats such as flight corridors and foraging areas.

A.2 PLANNING POLICY

National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) 2024[16] sets out the Government's planning policies for England, including how plans and decisions are expected to apply a presumption in favour of sustainable development. Chapter 15 of the NPPF focuses on conservation and enhancement of the

natural environment, stating plans should 'identify and pursue opportunities for securing measurable net gains for biodiversity'.

It goes on to state: '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'. Alongside this, it acknowledges that planning should be refused where irreplaceable habitats such as ancient woodland are lost.

West Sussex Planning Policy[17]

Climate Change Resilience

No formal environmental strategy is included however key points within this document include increasing access to nature, prioritising natural flood solutions and increasing opportunities for BNG to promote the following:

- Green tourism;
- Natural capital investment funding when available
- Sustainable businesses
- Sustainable business growth
- Green innovation amongst business

Local

Horsham District Local Plan 2023 – 2040 (Draft)[18] Strategic Policy 17: Green Infrastructure and Biodiversity

- A key element of Green Infrastructure is retaining a rich biodiversity network. The nature of the habitats and species found across the District is very varied. Key features include the network of woodland habitats, which is particularly dense in the north of the District, hedgerows and the flood plains of the Arun and the Adur. The south-west of the District provides an important feeding ground for the internationally important Barbastelle bats within the habitats functionally linked to The Mens SAC and Ebernoe Common SAC.
- In the case of The Mens SAC and Ebernoe Common SAC, development must not impact on bat flight paths in the District. A 'bat sustenance zone' has been identified and is shown on the Policies Map. Within this area, it may be necessary for compensatory measures such as hedgerow enhancement to be undertaken prior to the commencement of any development. Regard will also be given to the Sussex Bat Protocol developed by Natural England and the South Downs National Park. In accordance with Natural England's advice regard is to be given to both a 6.5km and a 12km zone around both SACs. These zones are shown on the Policies Map.
- The 6.5km depicts the Sussex Bat SACs 'key conservation area' in which all impacts must be considered because habitats within this zone are considered critical for sustaining the populations of bats within the SACS. The 12km encompasses the Sussex Bat SACs 'wider conservation area' which is the full extent of the range of foraging areas required by the bats.

- Specifically, proposals for the development of greenfield sites within 12km of either the Mens SAC and / or Ebernoe Common SAC must evaluate whether there is a potential for the loss of suitable foraging habitat and / or the severance of commuting flightlines, such as mature treelines, hedgerows and watercourses. If so, such features must be preserved or compensated for, unless bat surveys demonstrate that they are not used by barbastelle bats and they are not of biodiversity importance. Care must also be taken through development design to ensure that such features are not subject to unacceptable levels of artificial lighting.
- An appropriate buffer around woodland will be required, this will be at least 15m around Ancient Woodland or greater in accordance with good practice, and consideration should be given to the potential for protected species, such as bats.

Policy 32: Conversion of Agricultural and Rural Buildings to Commercial, Community and Residential Uses

- Applicants will need to properly assess the potential impact of any proposal on biodiversity. Rural buildings may, for example, contain bat roosts or nest habitats for protected species such as barn owls. It might be necessary to undertake an ecological investigation and implement suitable mitigation as well as biodiversity enhancements/net gain in accordance with the Council's biodiversity policies.

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