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Client: Lovell

Project: Novartis Phase 1 & 2

Report: Bat Hibernation Report

QUALITY ASSURANCE

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1.0 EXECUTIVE SUMMARY

Greengage Environmental Ltd (Greengage) was commissioned to undertake a bat hibernation survey by Lovell of a site known Novartis Phase 1 & 2 in Horsham, West Sussex to establish the presence/likely absence of hibernating bats within the building on site, hereafter referred to as 'the former Novartis building'.

This document is a report of this survey and has been produced to inform a planning application for the site which seeks the retention and change of use of the former Novartis building, and erection of multiple residential units with associated infrastructure.

The initial Preliminary Ecological Appraisal (PEA) of the site was undertaken in November 2024. A Preliminary Roost Assessment (PRA)[1] was undertaken by Greengage in February 2025 which involved a detailed systematic internal and external inspection of the building's suitability to support bats, following guidance from the Bat Conservation Trust (BCT)[2]. During the PRA, previously un-accessed areas of the building were assessed, this includes the facades in central courtyard area and the internal building itself. Potential Roosting Features (PRFs) were found across the former Novartis building, which include missing mortar under the concrete eaves and holes in brickwork. Due to several access/egress points from smashed windows into the building and a number of other features, the building was assessed overall with moderate suitability for summer roosting bats.

The building was also assessed to provide high suitability for hibernating bats, with the basement of the building providing cool, humid and stable temperatures and dark conditions.

No bats or signs of bats were recorded during the PRA survey.

Given the results of the PRA[1], Greengage undertook a hibernation survey of the former Novartis building. The survey comprised two internal inspections of the former Novartis building, with one on 12th February and one on 17th March, to search for presence of hibernating bats. These inspections did not find any hibernating bats, however two bat droppings were found on the top floor where Static 3 (HO3) was deployed.

The internal inspections were supplemented with data collected by deploying four static detectors in the building between 12th February - 31st March 2025, with the exception of Static 2 (HO2) which was deployed until 7th April 2025 due to a flooding in the basement.

The static detectors recorded common pipistrelle *Pipistrellus pipistrellus* on Static 1 (HO1) on 7th March and Static 3 (HO3) on 10th March, and brown long-eared *Plecotus auritus* and possibly myotis *Myotis sp.* on Static 2 (HO2) on 20th March. As the common pipistrelle calls on Static 3 (HO3) were limited and the upper floors were open spaces with multiple open and smashed windows, they are assumed to be a result of bats passing by the building rather than emerging from it. The common pipistrelle calls on Static 1 (HO1) in the basement were also limited, with only two calls being picked up on one night approximately an hour apart, and therefore these are assumed to have been picked up from external activity.

Although brown long-eared and possibly myotis calls were only picked up on 20th March, due to the quantity and timing of calls recorded (in line with brown long-eared emergence times), the presence of a brown long-eared and possibly myotis hibernation roost, in the basement area where HO2 was situated, cannot be ruled out.

Proposals would result in the refurbishment of the building and therefore destruction of the suspected hibernation roost. All bats are protected by UK legislation, and therefore a European Protected Species Mitigation (EPSM) bat licence from Natural England will be required for these works. Mitigation measures are to be agreed with the contractors and full detail will be enclosed within the Natural England bat mitigation license documentation; however these will likely include:

- Timing of work to avoid hibernation season;
- Pre-works inspection of the basement; and
- Provision of compensatory roost space in the form of a hibernation bat box.

Given the limitations associated with this survey and the long-term project time scales, it is recommended that updated hibernation survey is completed ahead of the EPSM licence application, within the survey season immediately prior to the application submission.

Further mitigation and enhancement recommendations also include implementation of a 'bat sensitive' lighting strategy following guidance from BCT and the Institute of Lighting Professionals (ILP)[3], designed to minimise disturbance to the commuting routes, and augmented wildlife-friendly planting which aim to result in an increase in value for bats across the site.

The data collected during the hibernation survey is considered valid for 18 months in accordance Chartered Institute of Ecology and Environmental Management (CIEEM) guidance[4] and an updated hibernation 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 was commissioned to undertake a bat hibernation survey by Lovell of a site known Novartis Phase 1 & 2 in Horsham, West Sussex to establish the presence/likely absence of hibernating bats within the building on site, hereafter referred to as 'the former Novartis building'.

This document is a report of this survey and has been produced to inform a planning application for the site which seeks the retention and change of use of the former Novartis building, and erection of multiple residential units with associated infrastructure.

2.1 AIMS OF SURVEY

The hibernation survey aimed to:

- Determine if bats utilise the former Novartis building as hibernation roosts; and
- Determine the intensity of bat activity temporally to help estimate bat diversity and relative abundance, and measure relative importance of the site for local populations during the winter.

By using a collation of existing data for the area to support the survey, it is possible to determine the presence/likely-absence of hibernating bats within the building. This information can then be used to determine the form and extent of any mitigation, compensation or enhancement that may be appropriate.

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, (the former Novartis building), located adjacent to the site's eastern boundary which contains a courtyard with a pond. 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 BACKGROUND

Existing ecological survey data from the site, collected between 2015 and 2024, is summarised below.

Preliminary Ecological Appraisal 2015 - 2018

An initial Preliminary Ecological Appraisal (PEA) was undertaken by Hampshire County Council in 2015 and updated in 2018/2019[5]. This surveyed included the wider Novartis site, incorporating what is now known as Novartis Phase 1&2 (the site) and Novartis Phase 3 (an area of land to the east of the site). The site was found to comprise developed land; sealed surface (hard standing), three buildings (the former Novartis building and two gatehouses), a courtyard, introduced shrub, semi-improved grassland, scrub, bare ground and trees. The site was assessed to have suitability to support roosting, commuting and foraging bats, badger *Meles meles*, small mammals, reptiles, common amphibians, breeding birds and invertebrates. Additionally the presence of Invasive Non-Native Species (INNS) was confirmed. Further surveys were recommended for a range of species, including bats.

Bat Surveys 2018

Two dusk (emergence) and one dawn (return) bat survey were undertaken in 2018 by Hampshire County Council on two buildings formally known as the gatehouses (which have since been demolished) and the former Novartis building. No bats were observed emerging from or returning to roost in any of the buildings and bats were, therefore, confirmed likely absent. During these surveys, low to moderate levels of bat activity were recorded, which mainly pertained to common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus*, with sightings and calls also recorded for brown long-eared bat *Plectous auritis*, noctule *Nyctalus noctula* and Myotis species.

Tree climbing surveys were also conducted with suitability identified for four trees on the site, and no bat presence recorded.

Preliminary Ecological Appraisal and Bat Surveys 2022

An updated PEA, reptile surveys and bat surveys were undertaken in 2022[6] by Ecology & Habitat Management Ltd. The site was found to support a building (the former Novartis building), hard standing/bare ground, semi-improved grassland, mixed scattered trees, scrub, tall ruderal and a courtyard.

One dusk emergence survey was conducted in August 2022, no bats were observed emerging from the former Novartis building, confirming likely absence of roosting bats. During the bat activity surveys, a moderate level of activity was recorded from common pipistrelle *Pipistrellus pipistrellus*, soprano

pipistrelle *Pipistrellus pygmaeus*, serotine *Eptesicus serotinus* and noctule *Nyctalus noctula* with the majority of activity recorded in the southwest of the site around the treelines.

Preliminary Ecological Appraisal (PEA) 2024 and Preliminary Roost Assessment (PRA) 2025

PEA 2024

Due to the time lapsed since the previous surveys, an updated PEA[7] was undertaken by Greengage on 5th November 2024.

During the PEA the site was found to comprise developed land; sealed surface, a building (the 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 moderate suitability for use by commuting and foraging bats and summer roosting bats. External Potential Roosting Features (PRFs) were noted on the former Novartis building, which comprised gaps in mortar under the concrete eaves and a gap between the metal parapet and wall. The building was assessed initially with low suitability for roosting bats.

PRA 2025

As a result of the PEA, further survey in the form of a PRA[1] incorporating the internal areas and courtyard of the former Novartis building was recommended. This full internal and external assessment of the former Novartis building took place on 5th February 2025.

The building was upgraded from low to moderate suitability following the full PRA.

Due to the PRFs present and suitable surrounding foraging and commuting habitat, the ground-level and upper floors of the former Novartis building were determined to have low suitability to support hibernating bats. However, given the presence of the basement, which is known as 'classic' hibernation roost location and was considered likely to remain cool and damp throughout the winter months, the building was allocated high suitability to support hibernating bats overall.

Given the assessment of high suitability to support hibernating bats, further survey in accordance with Bat Conservation Trust (BCT) Guidance[2], was recommended, taking the form of two detailed internal inspections of the structure, accompanied by the deployment of static bat detectors, to collect data on any bat movements during the warmer winter nights when bats may awaken from torpor to forage.

Desk Based Assessment

As part of the PEA[7] undertaken by Greengage in November 2024, biological records were analysed to identify any records of bat species in the local area. Records were obtained from Sussex Biodiversity Record Centre (SxBRC).

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

- Common pipistrelle;
- Soprano pipistrelle;

- Serotine;
- Natterer's bat *Myotis nattereri;*
- Leisler's *Nyctalus leislerii;*
- Noctule;
- Nathusius' Pipistrelle *Pipistrellus nathusii;*
- Brown long eared;
- Daubenton's *Myotis daubentonii;*
- Unidentified pipistrelle bat species *Pipistrellus spp;*
- Unidentified bat species *Chiroptera spp*; and
- Whiskered *Myotis mystacinus.*

An assessment of the local area using aerial photography and available maps and biological data was also undertaken.

3.0 METHODOLOGY

3.1 HIBERNATION SURVEY

Internal Inspections

Greengage undertook two internal inspections of the former Novartis building on 12th February 2025 and again on 17th March 2025.

Greengage surveyed the former Novartis building using torches and an endoscope. Suitable PRFs such as gaps and crevices identified were subject to endoscope inspection where possible.

The weather conditions during both inspections were cool with some cloud. During the inspections external temperatures ranged from 4°C - 7°C.

Overnight temperatures prior to a hibernation inspection should be at 5°C or less to facilitate bats to maintain torpor. Overnight temperatures prior to the survey in February were between 3-4°C and in March they were between 5-6°C.

Automated Static Monitoring

In addition to the daytime internal inspections, four SongMeter (SM)4 static bat detectors were deployed within the former Novartis building during February - March 2025 (excluding Static 2 (HO2) which stayed out until 7th April 2025 due to a flooding in the basement) to continuously record calls of any bats present and allow for a general assessment of the species composition of bats potentially using the building for hibernation.

Two statics were deployed on the basement level: one by a linear shaft located centrally (HO2). Another static was deployed at the base of one of the facility shafts on the eastern aspect of the building (HO1), with ingress points nearby which could be utilised by bats in the form of broken and jammed windows.

On the top floor a third static (HO3) was deployed at the top of one of the facility shafts on the western aspect of the building.

An area on the top floor located centrally could not be surveyed during the internal inspections, due to the presence of nesting birds, and therefore it was decided that the final static (HO4) would be deployed there to allow data to be collected for the area.

The static locations and dates of data collection and battery changes are shown below. Static 2 (H02) was collected at a later date to the other statics at it was inaccessible during the initial collection due to the basement being flooded. The statics were set to record continuously throughout these deployment periods:

- Static 1 (HO1) (Basement - Northern stairwell)
    - 12th February - 26th February
    - 26th February - 17th March

- 17th March - 31st March
- Static 2 (HO2) (Basement - Central)
  - 12th February - 26th February
  - 26th February - 17th March
  - 17th March - 7th April
- Static 3 (HO3) (Top floor - Clocktower)
  - 12th February - 26th February
  - 26th February - 17th March
  - 17th March - 31st March
- Static 4 (HO4) (Top floor - Southern stairwell)
  - 12th February - 26th February
  - 26th February - 17th March
  - 17th March - 31st March

The data collected by the static detectors were analysed in-office using specialist computer software (Kaleidoscope). The analysed data was reviewed to determine the type and number of species recorded and at what time/ frequency through the hibernation season.

Weather data was tracked over the period of deployment using the OpenWeatherMap[8] to account for any variation in activity levels as a result of weather conditions.

3.2 SURVEYORS

BCT guidance outlines the different levels of competency to undertake professional bat work which aligns with CIEEM definitions[9] .

Callum Parradine BSc (Hons) ACIEEM, who undertook the hibernation survey, is an Ecological Consultant with over seven years' experience in the delivery of ecological surveys and assessment across a range of UK sectors. He currently holds a Level 1 & Level 2 Class Licence for surveying bats (2023-11311-CL18-BAT); a Level 1 Class Licence for GCN and is a certified tree climber. He provides ecological services for a wide range of protected species however he specialises in advanced bat survey techniques such as aerial tree climbed inspections, soft strips under licence, radio tracking and trapping

The hibernation survey was assisted by Ben Newbery, who has an undergraduate degree in Zoology (BSc Int) and an MSc in Biodiversity and Conservation, with over two years' experience in ecological survey and assessment. Ben's experience spans PEAs, Biodiversity Net Gain (BNG) and bat-surveying, with botanical identification being a particular interest.

Isobel Novak, who undertook the static analysis and wrote this report, has a degree in Biology (BSc Hons), an MSc in Conservation, and is a Qualifying member of CIEEM with over three years' experience in ecological surveying and assessment. She also holds a Great Crested Newt Level 1 Class

Licence. 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.

Jess Cole, who reviewed this report, has a BSc degree in Ecology (Hons) and is an Associate member of CIEEM. Jess holds a Natural England Great Crested Newt Licence and has over seven years' experience in ecological survey and assessment.

Alexandra Wadia, who verified this report, has a BSc (Hons) in Biology, and a MSc in Ecology & Environmental Management, and is a Full member of CIEEM. Alexandra holds a Natural England Great Crested Newt Licence and has over nine years' experience in ecological survey, assessment and reporting.

This report was written by Isobel Novak, reviewed by Jess Cole and verified by Alexandra Wadia 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

The data collected during the hibernation survey is considered valid for 18 months and the static data is considered valid for 24 months in accordance with Chartered Institute of Ecology and Environmental Management (CIEEM) guidance[4] 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.

Hibernation

Internal Inspection

The hibernation surveys took place in February and March after an evening of after an evening of suitable temperature (5°C or less) (temperatures were between 3-4°C on 12th February and between 5-6°C on 17th March). Although temperatures were suitable, these checks deviated from BCT guidance, which recommends two inspections during peak hibernation months (one in January and one in February), however, due to the lower temperatures experienced, this is not considered a significant constraint.

Nesting birds prevented access to a room on the top floor that appeared to hold suitability for hibernating bats. A static detector (HO4) was therefore deployed here to collect data as a precautionary measure, and therefore this is not considered a significant constraint.

The natural limitations of physical searches should be taken into account, including not being able to survey the entirety of every cavity wall on the former Novartis building or the underground structure due to their extent.

Automated Static Detector

Static monitoring deviated from guidance from BCT, as monitoring periods took place between February - March instead of December - March. BCT guidance recommends two weeks of recording per month between November - March, however Greengage were not commissioned until January 2025, and therefore continuous recording between February-March was undertaken to compensate. In addition, Static 4 (HO4) failed for the collection period of 12th-26th February 2025.This is a constraint, though it is considered unlikely that significant activity/a significant roost which would change the recommendations of this report was missed given the remaining data which was collected.

It is important to consider that bat registrations may naturally vary night on night relative to weather conditions and conditions such as temperature, moon irradiance levels etc. Many of the nights of monitoring were mild (above 5°C), and therefore, may not allow for an accurate assessment on the sites' importance as a hibernation site. However, given the extended monitoring period undertaken, this factor is considered to be a robust proxy measure of relative importance for bats at the site.

Static 2 (HO2) recorded for one extra week as it could not initially be collected due the basement being flooded, however as no calls were recorded during this time, the results have not been impacted.

Presence/Likely Absence Analysis

The effectiveness of any presence/likely-absence analysis requires that all species, including elusive or rarer species, be recorded, and correctly identified in post-collection analysis. As such, the following considerations should be made:

- Average number of registrations for common pipistrelle and the soprano pipistrelle may be over/underestimated as echolocation of these species often tends to overlap, especially around the 50kHz.
- Social calls are difficult to identify to genus level, and therefore these have remained marked as 'Social Call'.

Brown long-eared bats are very common and widespread throughout Great Britain but are difficult to record as their calls are low volume which means that they need to be flying in close proximity to the microphone of the detector to be recorded.

4.0 RESULTS

4.1 HIBERNATION SURVEY

12th February 2025

Upon initial inspection, limited hibernation suitability was identified on the upper floors of the former Novartis building due to high levels of light ingress, however, minor suitability for hibernation was found within the shafts and cavity walls, and access points were identified in the form of smashed windows.

A few exposed cavity walls were present on the second and third floors and were endoscoped, however most of these were not in close proximity to any ingress points into the building and thus considered unlikely to be utilised.

On the top floor on the western aspect of the building, a few small bat droppings, which appeared to belong to small species such as pipistrelle, were recorded near the entrance to the shaft opposite an open window. Due to the low number of droppings and locality to the window, it was deemed highly likely that it was from an opportunistic bat inspecting or feeding in the building and not evidence of roosting.

Three additional areas on the top floor were identified, one of which was dark and located centrally, and on initial inspection appeared suitable for hibernation due to the visual conditions, however this could not be accessed due to the presence of nesting birds. Two additional rooms, accessed using a staircase via the second floor followed by a ladder, were assessed, and were subsequently found to be unsuitable for hibernating bats due to the high ingress of light from large windows and lack of holes and crevices.

The condition of the basement did not differ to the internal PRA survey completed on 5th February[1].

No hibernating bats or evidence of hibernating bats were found during the survey.

17th March 2025

All floors were re-visited to assess for hibernating bats and to record any changes within the building since the previous survey. Whilst surveying the floors, numerous new windows and doors were found to be smashed creating new ingress points for bat to utilise and enter the building. However, no new evidence of roosting was recorded on any of the floors, nor were any roosting bats identified.

During the previous inspection, a chick in a bird nest was preventing access to a room at the top of the main building which appeared to have suitable hibernation areas. During this site visit, it was found that the chick had fledged, however an adult pigeon was seen incubating 2 new eggs on the nest. A quick survey of the top room was undertaken to avoid disturbing the nest, which revealed no clear area that could be used for roosting, however a couple of ingress points through the brickwork were identified which could allow bats access to the area. No evidence of hibernating bats was recorded.

The condition of the basement did not differ to the internal PRA survey completed on 5th February[1].

No hibernating bats or evidence of hibernating bats were found during the survey.

Static Survey

A summary of the total number of species registrations detected across February - April 2025 is shown in Table 4.1 below.

No bats were detected on any of the statics during deployment period 12th February - 26th February.

No bats were detected at any point during the deployment duration for Static 4 (HO4).

The species recorded during each month are displayed in Table 4.1 below.

Table 4.1 Species present per month and number of call registrations per species

Month	Species Recorded			
	Common pipistrelle	Brown long eared	Myotis sp.	Social calls
February	0	0	0	0
March	3	8	14	3
April	0	0	0	0

All calls for each static were recorded during a single night as follows:

- Static 1 (HO1) - 7th March
- Static 2 (HO2) - 20th March
- Static 3 (HO3) - 10th March
- Static 4 (HO4 - N/A no recordings

The most common registrations were brown long eared on 20th March at Static 2 (HO2), and other calls from this date were analysed as possibly belonging to myotis also. During the time period of 20:01:12 (approximately 1 hour 47 minutes after sunset) and 20:29:05 (approximately 2 hours 15 minutes after sunset) there were eight occurrences of brown long-eared calls and 14 occurrences of possible myotis. The temperature during this time was slightly raised in comparison to sunset temperatures in March at 12.1°C with no rainfall, no cloud and a wind speed of 6.9 mph, which could indicate bats waking up from torpor within the building.

Due to the quantity of calls recorded, it cannot be ruled out that the basement area where Static 2 (HO2) was situated supports a hibernation roost for small numbers of brown long-eared bat and possibly myotis.

There were a total of three common pipistrelle calls during the monitoring period. All recordings were picked up after sunset.

A common pipistrelle was recorded at 06:04:33 on 10th March at Static 3 (HO3), 22 minutes before sunrise, with a temperature of 8.9°C, no rainfall, 8 oktas cloud and a wind speed of 4.6 mph, which, again, are conditions suitable to wake bats from torpor.

Two bat calls from common pipistrelle were picked up at 18:34:22 and 19:03:43 on 7th March on Static 1 (HO1). The temperature during this time was slightly raised in comparison to sunset temperatures in March 12.7°C, no rainfall, no cloud and a wind speed of 4.6 mph, which, again, are conditions suitable to wake bats from torpor. However due to these being single calls, it can be assumed that these were passes.

5.0 RECOMMENDATIONS AND CONCLUSIONS

5.1 SUMMARY OF HIBERNATION SURVEY

No hibernating bats were found during the two inspections. However, the static detectors recorded common pipistrelles, brown long-eared and possibly myotis bats on three different dates on warmer nights in March. Although this was the only period in which bat calls are picked up on Static 2 (HO2), due to the quantity of calls recorded, it cannot be ruled out that the basement area where Static 2 (HO2) was situated supports a hibernation roost of small number of brown long-eared and possibly myotis bats.

The development proposals include the refurbishment of the existing building on site where hibernating bats have been deemed likely-present, with the basement becoming an artificially lit underground basement.

All UK bat species are protected by UK legislation (see full context at Appendix A), 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.

A bat licence from Natural England is required to undertake works that would otherwise result in an offence.

A Natural England European Protected Species Mitigation (EPSM) license will therefore be required in this instance given the proposed destruction of the roost. Mitigation actions will be required, secured through this licence, to minimise the direct impact upon individual bats with compensatory roost space, compensatory foraging resources and a sensitive lighting scheme provided, ensuring the conservation status of bats at the site is not impacted.

5.2 POTENTIAL IMPACTS IN THE ABSENCE OF MITIGATION AND COMPENSATION

Initial Impacts

In the absence of mitigation, refurbishment of the former Novartis building may directly stand to impact bats through crushing, entombment and disturbance.

Long Term Impacts

Without consideration, proposals will see the loss of the opportunities for hibernating bats.

5.3 MITIGATION AND COMPENSATION FOR LOSS OF ROOST

EPSM

Further details relating to the proposed mitigation approach should be agreed with contractors and detailed within the EPSM licence documentation. However, high-level detail of what the required mitigation and compensation measures may include are given below.

The application should include a Method Statement and Licence Application Form and a Reasoned Statement. The Reasoned Statement must address the three derogation tests set out in the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 required to secure a successful bat Licence:

In determining whether or not to grant a licence, Natural England must apply the requirements of Regulation 535 of the Regulations and, in particular, the three tests set out in sub-paragraphs (2)(e), (9)(a) and (9)(b)6

(1) Regulation 53(2)(e) states: a licence can be granted for the purposes of "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment".

(2) Regulation 53(9)(a) states: the appropriate authority shall not grant a licence unless they are satisfied "that there is no satisfactory alternative".

(3) Regulation 53(9)(b) states: the appropriate authority shall not grant a licence unless they are satisfied "that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range."

With respect to planning, it is recommended that further details relating to the mitigation approach are secured through condition.

A detailed application has not been produced at this time; however, mitigation and compensation actions have been considered and are provided below, roughly following the format of Natural England's Method Statement Template.

Status of Species roosting on site

Following the static monitoring, brown long-eared and possibly myotis hibernation roost supporting a low numbers of individuals is suspected to be present at the site.

Brown long eared hibernation roosts are of low conservation interest in the context of this site. For the possible myotis calls, these could be assumed to be to either natterers, Daubenton's or whiskered based on the biological records for the area. Small hibernation roosts of these species are also considered to be of low conservation status.

Therefore, all potential impacts stand to result in a low scale (site level) of impact upon local conservation status as per table 3.2 of the Bat Mitigation Guidelines[10].

Proposed Mitigation Strategy

Actions taken at the site should follow the mitigation hierarchy:

- Proposals should first avoid impacts through design and approach;
- If not possible then proposals should seek to minimise impacts;
- Next, proposals should incorporate on-site compensatory actions; and
- Failing this, proposals should provide off site compensation for unavoidable residual impacts (offsetting).

Actions for this scheme will therefore first seek to mitigate impacts directly through avoidance (e.g. through changing designs or specifying timing) then compensate for unavoidable impacts (e.g. through provision of alternative roosting space where it is not possible to directly mitigate through avoidance) before seeking to provide enhancements.

The structure is not in a suitable structural condition to be fully retained in its current condition and delivery of the required housing quota would require partial demolition and partial refurbishment of this structure. As such it will not be possible to retain the existing roost (avoiding impacts), which is the preferred option detailed in the Bat Mitigation Guidelines[10]. Mitigation actions will therefore be required during construction works and compensatory roost spaces must be provided within the newly refurbished building.

The overall objectives of the actions outlined below are to minimise disruption to bats during works and to provide new roosting sites through incorporation of bat boxes, thus avoiding impacts on existing bat individuals and increasing the value of the site for local bat populations.

Timing

As set out in the Bat Mitigation Guidelines[10], the most common and effective way of avoiding disturbance of a roost is to complete works outside of the time or season when bats are likely to be using the roost. This varies between species and roost types.

Regarding the likely-present hibernation roost at the former Novartis building, observations suggest these are likely to be used as hibernation roosts by brown long-eared and possibly myotis bats during the Winter season. Accordingly, works that will affect the roost should ideally be undertaken outside of this season with the shoulder months (April and October) being the preferable months.

The hibernation season is considered a highly sensitive period for bats. Accordingly, refurbishment works should ideally be undertaken outside of this season.

Prior to Commencement of Works

Compensatory Roosting Opportunities

At least four 2F Schwegler Bat Box [11](General Purpose) or similar should be erected on retained mature trees as near to the former Novartis Building as possible. As a precaution at least one hibernation box

(e.g the 1FW Schwegler Bat Hibernation Box[12]) will be installed, to ensure bats have an alternative space to hibernate should long-term compensation not be in place by the winter.

These boxes should be placed approximately 5m from ground level facing between south and west in locations (with the exception of the hibernation box which should be north facing) close to the existing roost locations. Exact locations would be specified by the appointed ecologist.

Plate 5.1 2F Schwegler Bat Box (General Purpose)[11] (left) and 1FW Schwegler Bat Hibernation Box[12] (below) for hibernation (right).

Role of the Ecological Clerk of Works

Prior to any work commencing, on-site workers should be briefed by the ecologist named on the licence or an accredited agent under the permission of the ecologist named on the licence in an Ecological Clerk of Works (ECoW) role which should include delivering a 'toolbox talk' on the mitigation strategy and legislation relating to bats.

The ECoW should undertake a detailed internal inspection and endoscope survey of the Former Novartis Building where possible immediately prior to the works taking place.

The ECoW should be present during sensitive activities (i.e. works around the identified roosts) and if bats are encountered during any works, a licenced bat handler should capture the bat with thin gloved hands or a hand net, place the bat in a drawn-string cloth bag and then place into one of the bat boxes hung on adjacent trees (see above). The licence holder should also be contacted.

Injured bats should be immediately taken into care. Details of a local well experienced 'bat hospital' should be known by the bat handler and provided to site managers.

Like-for-like Compensatory Roosting Opportunities

The opportunity to retain a portion of the basement as is with access for bats installed was explored with the applicant, however, this was not deemed possible under the current design.

The proposal includes the demolition of sections of the Former Novartis Building and the retention and refurbishment of other areas. It is recommended that at least four mounted bat boxes suitable for hibernation are installed on the building, as close to the existing roost locations as possible. Exact locations would be specified by the appointed ecologist. These boxes should be placed approximately 5m from ground level facing north.

Examples of appropriate boxes are included in Plate 5.2 below.

Plate 5.2 1WQ Schwegler Summer & Winter Bat Roost[13] (left) and 1WI Schwegler Summer and Winter Bat Box[14] (right).

5.4 FURTHER SURVEY

Given the limitations associated with this survey and the long-term project time scales, it is recommended that an updated hibernation survey is completed in line with BCT guidelines[2] (between November - March) ahead of the EPSM licence application. This should take place within the survey season immediately prior to the licence application submission.

5.5 ENHANCEMENT

Lighting

Bats are a highly photosensitive species. Alterations to lighting levels on site as a result of the development proposals may stand to negatively impact their established flight paths and foraging grounds on site.

Therefore, the below bullet points provide high level recommendations for the design of wildlife friendly lighting on site. These are based guidance provided by BCT and the Institute of Lighting Professionals (ILP)[3]:

- Do not increase lighting levels above the current level on site and reduce where possible;
- Use of low-UV warm-white LED bulbs (< 2,700k) with directional, downward facing and shielded lights which point away from green features such as trees, hedgerows and areas of soft landscaping;
- External lights should be subject to curfew controls where possible with lights on movement sensors to reduce light pollution when not needed;
- Green infrastructure should remain unlit, particularly between April and October, inclusive; and
- Use of buffer planting to block light spillage into valuable areas e.g. grasslands and hedgerows.

It is recommended that any new lighting design is modelled (to create a lighting contour plan) to estimate spill levels. This should then be reviewed and approved by an Suitably Qualified Ecologist (SQE).

Wildlife Friendly Landscaping

It is important that any suitable foraging habitat on site is retained or replaced, and, where possible, enhanced, to prevent net loss in bat foraging habitat. Vegetation clearance, particularly of trees, shrubs and scrub, should also be kept to a minimum to protect the commuting routes provided by these green corridors.

Floral diversity should be encouraged in the new landscaping, to encourage a richer assemblage of invertebrate prey. This can be achieved through:

- Use of biodiverse living roofs;
- Creation of areas of wildflower meadow where possible instead of blanket use of lawn (species poor grass seed mixtures);
- Creation of vertical planting through use of trellis and climbing plants;
- Provision of shrub and herbaceous planting utilising native species and species from the Royal Horticultural Society (RHS) Plants for Pollinators list[15];
- Native tree and hedgerow planting;
- Use of Sustainable Urban Drainage Systems (SuDS) and swales; and

- Provision of invertebrate habitat features such as loggeries, and insect hotels.

Bat Boxes

The wider site offers many opportunities to provide bat boxes, to enhance roosting opportunities available to the local bat population, namely the many mature trees on site which would be ideal for hanging bat boxes.

Plate 5.3 below gives examples of suitable tree mounted and integrated boxes for summer and winter roosting. These should be positioned approximately 5m from ground level facing between south and west.

Plate 5.3 Suitable bat boxes- 2F Schwegler Bat Box (General Purpose)[16] for summer roosting (top left), 1FW Schwegler Bat Hibernation Box[17] (top right) for hibernation, Habibat 003[18] form summer roosting (bottom left) and Vivara Pro UK Build-in WoodStone® Bat Box[19] (bottom right).

6.0 SUMMARY AND CONCLUSION

Greengage was commissioned to undertake a bat hibernation survey by Lovell of a site known Novartis Phase 1 & 2 in Horsham, West Sussex to establish the presence/likely absence of hibernating bats within the building on site, hereafter referred to as 'the former Novartis building'.

Given the results of the PRA[1] that took place on 5th February 2025, Greengage undertook hibernation surveys of the former Novartis building. The survey deviated from BCT guidance and comprised two internal inspections of the former Novartis building during peak hibernation months, one on 12th February and one on 17th March, to search for presence of hibernating bats. These inspections did not find any hibernating bats. There were however two bat droppings found on the top floor where Static 3 (HO3) was deployed.

The internal inspections were supplemented with data collected by deploying four static detectors in the buildings between 12th February - 31st March, with the exception of Static 2 (HO2) which stayed out until 7th April due to a flood in the basement.

The static detectors located within the former Novartis building recorded common pipistrelle on Static 1 (HO1) and Static 3 (HO3), and brown long-eared and possibly myotis (HO2). As the common pipistrelle calls on Static 3 (HO3) were limited and the upper floors were open spaces with multiple open and smashed windows, they are therefore assumed to be a result of bats passing by the building rather than emerging from it. The common pipistrelle calls on Static 1 (HO1) in the basement were also limited, with only two calls being picked up on one night approximately an hour apart, and therefore these are assumed to have been picked up from external activity.

Although brown long-eared and possibly myotis calls were only picked up on 20th March, due to the quantity of calls recorded, the presence of a brown long-eared and possibly myotis hibernation roost, in the basement area where Static 2 (HO2) was situated, cannot be ruled out.

Proposals would result in the refurbishment of the building and therefore destruction of the suspected roost. All bats are protected by UK legislation, and therefore an EPSM licence from Natural England will be required for these works. Mitigation measures are to be agreed with the contractors and full detail will be enclosed within the Natural England bat mitigation license documentation.

Given the limitations associated with this survey and the long-term project time scales, it is recommended that updated hibernation survey (November - March) is completed ahead of the EPSM licence application, within the survey season immediately prior to the application submission.

Further mitigation and enhancement recommendations also include implementation of a ‘bat sensitive’ lighting strategy following guidance from BCT and the ILP[3], designed to minimise disturbance to the commuting routes and augmented wildlife-friendly planting which aim to result in an increase in value for bats across the site.

The data collected during the hibernation survey is considered valid for 18 months in accordance CIEEM guidance[4] and an updated hibernation survey will be required if the works have not started within this timeframe or should site conditions change significantly during this time.

APPENDIX A 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)[20] 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[21], 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[22], 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[23] 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.

Horsham District Planning Framework[24]

Policy 24. Strategic Policy: Environmental Protection

The high quality of the district's environment will be protected through the planning process and the provision of local guidance documents. Taking into account any relevant Planning Guidance Documents, developments will be expected to minimise exposure to and the emission of pollutants including noise, odour, air and light pollution and ensure that they:

1. Address land contamination by promoting the appropriate re-use of sites and requiring the delivery of appropriate remediation;
2. Are appropriate to their location, taking account of ground conditions and land instability;
3. Maintain or improve the environmental quality of any watercourses, groundwater and drinking water supplies, and prevents contaminated run-off to surface water sewers;
4. Minimise the air pollution and greenhouse gas emissions in order to protect human health and the environment;
5. Contribute to the implementation of local Air Quality Action Plans and do not conflict with its objectives;
6. Maintain or reduce the number of people exposed to poor air quality including odour. Consideration should be given to development that will result in new public exposure, particularly where vulnerable people (e.g. the elderly, care homes or schools) would be exposed to the areas of poor air quality; and
7. Ensure that the cumulative impact of all relevant committed developments is appropriately assessed.

Policy 25. Strategic Policy: The Natural Environment and Landscape Character

The Natural Environment and landscape character of the District, including the landscape, landform and development pattern, together with protected landscapes and habitats will be protected against inappropriate development. The Council will support development proposals which:

8. Protects, conserves and enhances the landscape and townscape character, taking into account areas identified as being of landscape importance, the individual settlement characteristics, and maintains settlement separation.
9. Maintain and enhances the Green Infrastructure Network and addresses any identified deficiencies in the District.

10. Maintains and enhances the existing network of geological sites and biodiversity, including safeguarding existing designated sites and species, and ensures no net loss of wider biodiversity and provides net gains in biodiversity where possible.
11. Conserve and where possible enhance the setting of the South Downs National Park.

Policy 31. Green Infrastructure and Biodiversity

12. Development will be supported where it can demonstrate that it maintains or enhances the existing network of green infrastructure. Proposals that would result in the loss of existing green infrastructure will be resisted unless it can be demonstrated that new opportunities will be provided that mitigates or compensates for this loss, and ensures that the ecosystem services of the area are retained.
13. Development proposals will be required to contribute to the enhancement of existing biodiversity, and should create and manage new habitats where appropriate. The Council will support new development which retains and /or enhances significant features of nature conservation on development sites. The Council will also support development which makes a positive contribution to biodiversity through the creation of green spaces, and linkages between habitats to create local and regional ecological networks.
14. Where felling of protected trees is necessary, replacement planting with a suitable species will be required.
15. a. Particular consideration will be given to the hierarchy of sites and habitats in the district as follows:
    i. Special Protection Area (SPA) and Special Areas of Conservation (SAC)
    ii. Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs)
    iii. Sites of Nature Conservation Importance (SNCIs), Local Nature Reserves (LNRs) and any areas of Ancient woodland, local geodiversity or other irreplaceable habitats not already identified in i & ii above.

    b. Where development is anticipated to have a direct or indirect adverse impact on sites or features for biodiversity, development will be refused unless it can be demonstrated that:
    i. The reason for the development clearly outweighs the need to protect the value of the site; and,
    ii. That appropriate mitigation and compensation measures are provided.
16. Any development with the potential to impact Arun Valley SPA or the Mens SAC will be subject to a HRA to determine the need for an Appropriate Assessment. In addition, development will be required to be in accordance with the necessary mitigation measures for development set out in the HRA of this plan.

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