

Angmering Sports Hub
Decoy Drive
Angmering
Litthehampton
BN16 4DN
West Sussex

Ground Level Tree Assessment

Report ref.: R2769_GLTA_a

Report Quality Control Information	
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1 EXECUTIVE SUMMARY

- 1.1.1** John Wenman Ecological Consultancy LLP was instructed by Mace to undertake a Ground Level Tree Assessment for bats (GLTA) at Palmer Road Recreation Ground in Angmering, West Sussex. The GLTA was commissioned to accompany a planning application for the creation of a sports hub at the Recreation Ground and adjoining land.
- 1.1.2** The aim of the GLTA is to determine if the trees on site have potential bat roosting features, and therefore, if the tree removal to facilitate the proposed development could lead to the loss of bat roosts and therefore to establish whether further survey and/or mitigation would be required.
- 1.1.3** Tree groups **G4** and **G12** as well as individual trees **T15, T16, T17, T18, 19, and T20** possessed PRFs in the form of thick stemmed ivy that forms an intertwined woody layer with a nebulous web of crevices along their trunks, suitable only for opportunistic use by individual bats. The ivy is considered to have low potential suitability as a transitory roost for individual bats such as the locally recorded common pipistrelle and soprano pipistrelle. As such, these groups and trees have been categorised as PRF-I. Due to the roost switching behaviour exhibited by tree-roosting bats and the quick decay of evidence inside such PRFs, it is appropriate to view the ivy as part of an available roosting resource that will likely be used at one time or another by bats.
- 1.1.4** In the absence of precautionary mitigation measures, there is a low risk that the felling of trees and subsequent removal of ivy could cause disturbance, injury and/or death of any bats in occupancy during the works and high risk of disturbing nesting birds if present at the time of works. The proposed felling of trees within **G12** along the northern application site boundary will result in the reduction of the available tree roosting resource for bats in the local vicinity.
- 1.1.5** In line with the Bat Survey Guidelines (Collins 2023), no further surveys are required and a precautionary method of working during the removal of trees within **G12** is recommended – refer to recommendations in **Section 7**.
- 1.1.6** To prevent the reduction in the roosting resource following the proposed development, woodcrete bat boxes such as Schwegler 2FN Bat Boxes (or functional equivalents) should be fixed onto mature trees on the application site – refer to recommendations in **Section 7**.

2 INTRODUCTION

2.1 Project Background

2.1.1 John Wenman Ecological Consultancy LLP was instructed by Mace to undertake a Ground Level Tree Assessment for bats (GLTA) at the Palmer Road Recreation Ground in Angmering, West Sussex.

2.1.2 The GLTA was commissioned to accompany a full planning application for the construction of a sports hub.

2.1.3 The report uses background information from the following pre-existing reports:

- Arboricultural Report (Arbtech; July 2024).

2.2 Site Location and Context

2.2.1 The recreation ground is a 4.0 ha plot of land – comprising a pavilion building and sports pitches and parking - on the northwestern side of Decoy Drive in Angmering, Littlehampton, West Sussex (OS grid reference: TQ 06597 05097).

2.2.2 The recreation ground is situated within a suburban area with houses and their gardens along Decoy Drive and Arundel Road to the south and east respectively. Agricultural land is situated along the western boundary with parcels of mixed priority woodland approximately 270 metres northeast and 370 metres north of the pavilion.

2.3 Report Objectives

2.3.1 The aim of the GLTA is to determine the potential bat roosting resource of the trees on site, particularly those to be removed to facilitate the proposed development, and establish whether further survey and/or mitigation would be required.

3 LEGISLATIVE AND POLICY BACKGROUND

3.1 Relevant Legislation

3.1.1 In England and Wales, all bat species found in the wild are fully protected under the Wildlife & Countryside Act 1981 (as amended) (WCA) and Conservation of Habitats and Species Regulations 2017 (as amended); the regulations are commonly referred to as the Habitat Regulations and hereafter referred to as such. The Habitat Regulations refer to European Protected Species (EPS) and all species of bats in the United Kingdom (UK) are EPS. Although the UK left the European Union on the 31st January 2020 and is therefore no longer tied to European legislation, the Habitat Regulations have been retained in their current format.

3.1.2 The legal framework underpinned by the WCA and Habitat Regulations makes these specific actions an offence as follows:

- Deliberately kill, injure, capture or take a wild bat;
- Deliberately, intentionally or recklessly disturb bats; in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, to rear or nurture their young, to hibernate or migrate, or to significantly affect local distribution or abundance;
- Damage or destroy a place used by a bat for breeding or resting; and
- Intentionally or recklessly obstruct access to any place used by a bat for shelter or protection.

3.2 Planning Policy

3.2.1 The biodiversity duty imposed through the Environment Act 2021 states that Local Planning Authorities (LPAs) must consider what action they can take to conserve and enhance biodiversity in England. Government planning policy, such as the ODPM Circular 06/2005, requires LPAs to account for the conservation of protected species when considering and determining planning applications.

3.2.2 The ODPM Circular 06/2005 states that *‘the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.’* This policy means that in instances where there is a reasonable likelihood of bats being present and affected by a development, surveys must be undertaken to inform a mitigation strategy to be agreed prior to granting planning permission.

3.3 Mitigation Licensing

3.3.1 The government's statutory nature conservation body, Natural England, is responsible for issuing European Protected Species (EPS) mitigation licences that would permit activities that would otherwise lead to an infringement of the Habitat Regulations. An EPS mitigation licence can be issued if the following three tests derived from Regulation 55 have been satisfied:

- (2)(e) – the derogation is 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.'*
- (9)(a) – there is *'no satisfactory alternative'* to the derogation; and
- (9)(b) – *'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.'*

3.3.2 LPAs have a statutory duty under Regulation 7(3)(e) of the Habitat Regulations to consider and determine whether these three tests are likely to be satisfied by planning proposals affecting EPS before granting planning permission. If an EPS mitigation licence is necessary, a licence can be sought once all the necessary planning consents have been granted. Natural England aims to issue a decision on licence applications within 30 working days of submission.

3.3.3 Baseline survey information supporting EPS mitigation licence applications must be up-to-date and have been completed within the current or most recent optimal season. A suitably experienced ecologist will be required to undertake a site walkover/check within three months prior to application/registration submission to confirm that conditions have not changed since the most recent survey.

4 SURVEY METHODOLOGY

4.1 Ground Level Tree Assessment

Survey Details

- 4.1.1** A detailed inspection of the trees to be removed to facilitate the development was undertaken on the 17th September 2024 by Meghan Porter - registered under Natural England Bat Survey Class Licence CL17 (Registration no. 2023-11300-CL17-BAT) - and assistant ecologist Jake Morgan (a qualifying member of CIEEM) - in accordance with good practice guidance (Collins 2023). The equipment used during the inspection comprised binoculars, a high-power (1 million candlepower) LED torch, a headtorch, ladder and PPE (facemask, gloves etc.). The inspection involved a systematic search around all parts of the trees for potential roost features (PRFs) during daylight hours and an investigation of all accessible PRFs for evidence of bat presence with a high powered torch.

Types of PRFs

- 4.1.2** The types of PRFs that can be exploited by bats (Andrews 2018) include:
- PRFs formed by disease and decay such as woodpecker holes, squirrel holes, knot holes, pruning cuts, tear-outs, wounds, cankers, compression forks and butt-rotts;
 - PRFs formed by damage such as lighting strikes, hazard beams, subsidence cracks, shearing cracks, transverse snaps, welds, lifting bark, desiccation fissures and frost cracks; and
 - PRFs formed by association such as fluting and ivy.

Signs of Bats

- 4.1.3** The only conclusive evidence of a bat roost in a tree is the presence of actual bats (live or dead) or their droppings. However, it is important to note that bat droppings are less likely to persist in tree roosts compared to roosts in buildings so their absence inside a PRF does not necessarily equate to evidence of bat absence. Other signs of bats inside PRFs include:
- Bat fly puparia (pupal cases);
 - Odour (ammonia-type smell);
 - Staining below or inside an entrance;

- Smoothing of an entrance; and
- Audible squeaking at dusk or in warm weather.

4.1.4 These signs are not conclusive in isolation or combination because they can be caused by other animals (i.e. birds and squirrels) or because of wet rot in the case of staining. However, it should be noted that bat roosts can exist in trees and exhibit no signs externally.

PRF Categorisation

4.1.5 The trees have been assessed for their suitability to possess bat roosts using the categories detailed in **Table 1** below:

Table 1. Categories for suitability of tree for roosting bats (Source: Collins 2023).

Suitability	Description
None	There are no PRFs present in the tree or it is highly unlikely that any PRFs are present.
FAR	Further assessment is required to establish whether PRFs are present in the tree.
PRF	A tree with at least one PRF where further assessment is required to determine the potential suitability of the tree for roosting bats.
PRF-I	A PRF that is only suitable for individual bats or very small numbers of bats either due to its size or the lack of suitable surrounding habitats.
PRF-M	A PRF that is suitable for multiple bats and could therefore be used by a maternity colony.

Survey Limitations and Validity

- 4.1.6** There were no significant survey limitations because the GLTA was carried out when it was considered possible to see all PRFs from ground level. The GLTA was carried out in dry and calm weather.
- 4.1.7** This report contains information regarding a mobile species so it will likely be valid for less than 12 months (CIEEM 2019).

5 SURVEY RESULTS


5.1 Ground Level Tree Assessment

Overview

- 5.1.1** The findings from the ground level tree assessment and potential roost feature (PRF) inspections carried out for the trees on site (as detailed in the Arboricultural Survey (Arbtech; July 3rd 2024) are detailed in **Tables 2 – 35** with photographs (**Photographs 1-28**), as follows:

Survey Findings


Table 2. Ground Level Tree Assessment findings for group G01.

Tree ref.:	G01	Species:	Horse chestnut and white poplar	
Age:	Young	DBH*:	~100mm	
				Photograph 1.

PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	PRF photographs
N/A	-	-	-	-	None	-

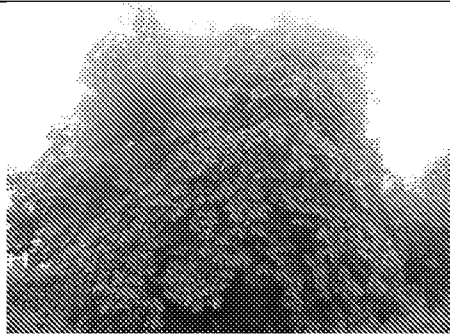
*DBH = Diameter at Breast Height

Table 3. Ground Level Tree Assessment findings for group G02.

Tree ref.:	G02		Species:	White poplar, silver birch and hawthorn		
Age:	Mature		DBH*:	~550mm		
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
N/A	-	-	-	-	None	-



*DBH = Diameter at Breast Height

Table 4. Ground Level Tree Assessment findings for group G03.

Tree ref.:	G03	Species:	Elm and blackthorn			
Age:	Semi-Mature	DBH*:	~100mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	<i>Photograph 3.</i>
N/A	-	-	-	-	None	

*DBH = Diameter at Breast Height

Table 5. Ground Level Tree Assessment findings for group G04.


Tree ref.:	G04		Species:	Ash, oak and wild cherry		
Age:	Early-Mature		DBH*:	~150mm		
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
1	Trunk	Dense Ivy	E	~8m	PRF-I – Ivy cover inspected and seen to have low potential suitability for roosting bats / no signs of bat presence	

Photograph 4.

Photograph 5.


*DBH = Diameter at Breast Height

Table 6. Ground Level Tree Assessment findings for group G05.

Tree ref.:	G05	Species:	Common ash			
Age:	Young	DBH*:	~100mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	<i>Photograph 6.</i>
N/A	-	-	-	-	None	



*DBH = Diameter at Breast Height

Table 7. Ground Level Tree Assessment findings for group G06.

Tree ref.:	G05		Species:	Common ash and cherry		
Age:	Young		DBH*:	~100mm		
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
N/A	-	-	-	-	None	-

*DBH = Diameter at Breast Height

Table 8. Ground Level Tree Assessment findings for group G07.

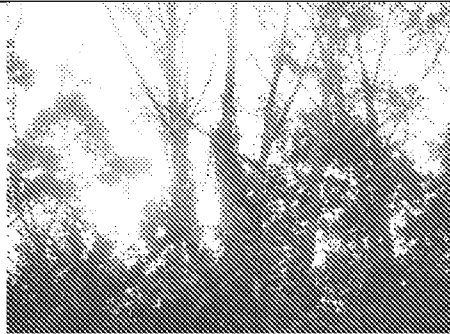
Tree ref.:	G07		Species:	Common ash, oak, cherry, Norway maple, blackthorn and elm		
Age:	Early-mature		DBH*:	~250mm		
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
1	Trunk	Knot Hole	W	~8m	PRF-I – ~5cm x 10cm cavity inspected and considered to have low potential suitability for roosting bats / no signs of bat roost presence.	

Photograph 8.

Photograph 9.


*DBH = Diameter at Breast Height

Table 9. Ground Level Tree Assessment findings for group G08.

Tree ref.:	G08	Species:	Common ash			
Age:	Semi-mature	DBH*:	~160mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	<i>Photograph 10.</i>
N/A	-	-	-	-	None	


*DBH = Diameter at Breast Height

Table 10. Ground Level Tree Assessment findings for group G09.

Tree ref.:	G09	Species:	Oak and wild cherry			
Age:	Early-mature	DBH*:	~400mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
N/A	-	-	-	-	None	-


*DBH = Diameter at Breast Height

Table 11. Ground Level Tree Assessment findings for group G10.

Tree ref.:	G10	Species:	Aspen			
Age:	Early-mature	DBH*:	~450mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	<i>Photograph 12.</i>
N/A	-	-	-	-	None	


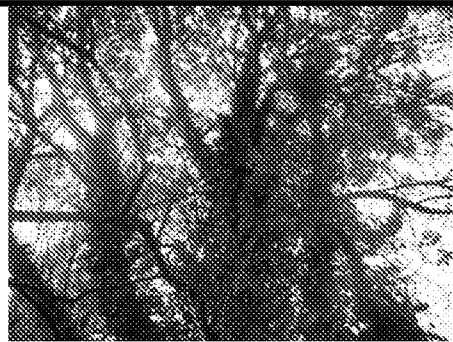
*DBH = Diameter at Breast Height

Table 12. Ground Level Tree Assessment findings for group G11.

Tree ref.:	G11	Species:	Common alder			
Age:	Young	DBH*:	~230mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
N/A	-	-	-	-	None	-


*DBH = Diameter at Breast Height

Table 13. Ground Level Tree Assessment findings for group G12.

Tree ref.:	G12		Species:	Common ash		
Age:	Semi-mature		DBH*:	~200mm		
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
1	Trunk	Dense Ivy	S	~5m	PRF-I – Ivy cover inspected and seen to have low potential suitability for roosting bats / no signs of bat presence	 <p>Photograph 15.</p>

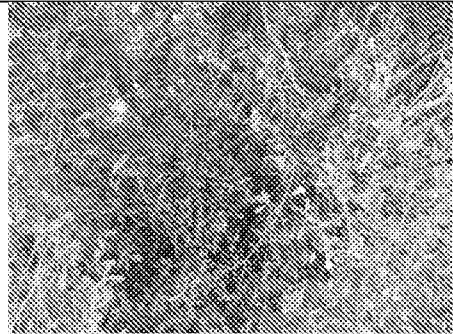
*DBH = Diameter at Breast Height

Table 14. Ground Level Tree Assessment findings for group G13.

Tree ref.:	G13	Species:	White poplar, ash, sycamore, goat willow, lime and cherry			
Age:	Over-mature	DBH*:	~300mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	<i>Photograph 16.</i>
N/A	-	-	-	-	None	


*DBH = Diameter at Breast Height

Table 15. Ground Level Tree Assessment findings for group G14.

Tree ref.:	G14	Species:	Poplar, field maple, ash and cherry			
Age:	Mature	DBH*:	~420mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	Photograph 17.
N/A	-	-	-	-	None	

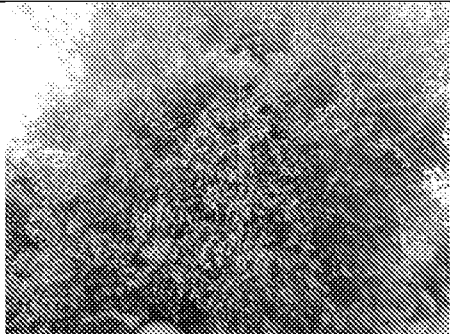
*DBH = Diameter at Breast Height

Table 16. Ground Level Tree Assessment findings for group G15.

Tree ref.:	G15	Species:	White poplar			
Age:	Early-mature	DBH*:	~400mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	<i>Photograph 18.</i>
N/A	-	-	-	-	None	


*DBH = Diameter at Breast Height

Table 17. Ground Level Tree Assessment findings for group G16.

Tree ref.:	G16	Species:	Cherry laurel and hawthorn			 <i>Photograph 19.</i>
Age:	Mature	DBH*:	~200mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
N/A	-	-	-	-	None	-


*DBH = Diameter at Breast Height

Table 18. Ground Level Tree Assessment findings for trees 1 – 3.

Tree ref.:	T1, T2, T3		Species:	Common horse chestnut		
Age:	Young & Semi-mature		DBH*:	~200mm - ~310mm		
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	<i>Photograph 20.</i>
N/A	-	-	-	-	None	

*DBH = Diameter at Breast Height

Table 19. Ground Level Tree Assessment findings for trees 4 – 7.

Tree ref.:	T4, T5, T6, T7		Species:	Common oak and holm oak		 <i>Photograph 21.</i>
Age:	Semi-mature		DBH*:	~200mm - ~310mm		
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
N/A	-	-	-	-	None	-

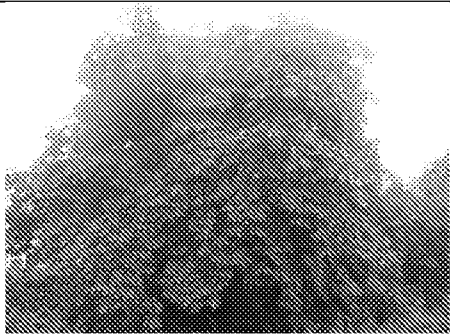
*DBH = Diameter at Breast Height

Table 20. Ground Level Tree Assessment findings for tree 8.

Tree ref.:	T8	Species:	Crab apple			
Age:	Semi-mature	DBH*:	~200mm - ~310mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
N/A	-	-	-	-	None	-

*DBH = Diameter at Breast Height

Table 21. Ground Level Tree Assessment findings for trees 9 – 10.

Tree ref.:	T9 - T10		Species:	Common horse chestnut and English elm		 <i>Photograph 22.</i>
Age:	Early-mature & Young		DBH*:	~536mm & ~100mm		
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
N/A	-	-	-	-	None	-

*DBH = Diameter at Breast Height

Table 22. Ground Level Tree Assessment findings for tree 11.

Tree ref.:	T11	Species:	Common horse chestnut			-
Age:	Early-mature	DBH*:	~600mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	-
N/A	-	-	-	-	None	


*DBH = Diameter at Breast Height

Table 23. Ground Level Tree Assessment findings for tree 12.

Tree ref.:	T12	Species:	Wild cherry			
Age:	Mature	DBH*:	~295mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
N/A	-	-	-	-	None	-

*DBH = Diameter at Breast Height

Table 24. Ground Level Tree Assessment findings for tree 13.

Tree ref.:	T13		Species:	Unknown – dead standing		
Age:	Semi-mature		DBH*:	~140mm		
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
N/A	-	-	-	-	None	-



*DBH = Diameter at Breast Height

Table 25. Ground Level Tree Assessment findings for tree 14.

Tree ref.:	T14	Species:	Norway Maple			-
Age:	Young	DBH*:	~190mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	-
N/A	-	-	-	-	None	

*DBH = Diameter at Breast Height

Table 26. Ground Level Tree Assessment findings for trees 15 - 20.


Tree ref.:	T15, T16, T17, T18, T19, T20		Species:	Lombardy poplar & common oak		
Age:	Mature & Semi-mature		DBH*:	~240mm - ~750mm		
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
1	Trunk	Dense ivy	S	~2 - 7m	PRF-I – Ivy cover inspected and seen to have low potential suitability for roosting bats / no signs of bat presence	

Photograph 24.

Photograph 25.

*DBH = Diameter at Breast Height

Table 27. Ground Level Tree Assessment findings for tree 21.

Tree ref.:	T21	Species:	Silver birch			
Age:	Mature	DBH*:	~260mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	<i>Photograph 26.</i>
N/A	-	-	-	-	None	


*DBH = Diameter at Breast Height

Table 28. Ground Level Tree Assessment findings for trees 22 – 25.

Tree ref.:	T22, T23, T24 & T25	Species:	Common hawthorn, silver birch, cabbage tree and Chinese privet			-
Age:	Mature & Early-mature	DBH*:	~310 – 360mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	-
N/A	-	-	-	-	None	


*DBH = Diameter at Breast Height

Table 29. Ground Level Tree Assessment findings for tree 26.

Tree ref.:	T26	Species:	Holly			
Age:	Early-mature	DBH*:	~358mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	<i>Photograph 27.</i>
N/A	-	-	-	-	None	

*DBH = Diameter at Breast Height

Table 30. Ground Level Tree Assessment findings for trees 27 & 28.

Tree ref.:	T27 & T28		Species:	Butterfly bush & Cabbage Tree		
Age:	Mature & Early-mature		DBH*:	~196mm & ~200mm		
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	<i>Photograph 28.</i>
N/A	-	-	-	-	None	

*DBH = Diameter at Breast Height

Table 31. Ground Level Tree Assessment findings for tree 29.

Tree ref.:	T29	Species:	Common Ash			-
Age:	Early-mature	DBH*:	~310mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	-
N/A	-	-	-	-	None	

*DBH = Diameter at Breast Height

Table 32. Ground Level Tree Assessment findings for tree 30.

Tree ref.:	T30	Species:	Dead standing tree			-
Age:	Semi-mature	DBH*:	~140mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	
N/A	-	-	-	-	None	-

*DBH = Diameter at Breast Height

Table 33. Ground Level Tree Assessment findings for tree 31.

Tree ref.:	T31	Species:	Pittosporum			-
Age:	Early-mature	DBH*:	~110mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	-
N/A	-	-	-	-	None	

*DBH = Diameter at Breast Height

Table 34. Ground Level Tree Assessment findings for tree 32.

Tree ref.:	T32	Species:	Common lilac			-
Age:	Early-mature	DBH*:	~269mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	-
N/A	-	-	-	-	None	

*DBH = Diameter at Breast Height

Table 35. Ground Level Tree Assessment findings for tree 33.

Tree ref.:	T33	Species:	Crab apple	-		
Age:	Early-mature	DBH*:	~220mm			
PRF ref.	PRF location	PRF type	PRF direction	PRF height	PRF suitability / signs	-
N/A	-	-	-	-	None	

*DBH = Diameter at Breast

6 DISCUSSION

6.1 Assessment of Roosting Resource

6.1.1 Tree groups **G4** and **G12** comprised common ash (*Fraxinus excelsior*), oak (*Quercus robur*) and cherry (*Prunus* sp.) (**Photographs 4 & 14**) with thick stemmed ivy that forms an intertwined woody layer with a web of crevices along their trunks, resembling PRF Is with low potential suitability for roosting bats (**Photographs 5 & 15**). In addition, the line of Lombardy poplar (*Populus nigra "Italica"*) and common oak (*Quercus robur*) along the northern boundary were also covered by dense ivy that provided limited PRF's with low potential suitability for roosting bats (**T15 – 20; Photographs 24 & 25**). An oak (*Quercus robur*) situated on the western boundary within tree group **G07** also possessed a PRF-I in the form of a 5cm – 10cm knot hole that has low potential suitability for roosting bats (**Photographs 8 & 9**).

6.1.2 The dense ivy resembles PRFs suitable only for opportunistic use by individual bats. Andrews (2018) notes that "*The use of ivy by roosting bats is still imperfectly understood*" and that "*photographic evidence comprises two encounters*" one of which including a transitory roost of "*three common pipistrelle bats (P. pipistrellus) that were sheltering in a dense table of dead low-diameter ivy stems on a woodland tree*". Andrews (2018) continues to explain that the presence of a roost within ivy is therefore highly unlikely. Taking this into account, the ivy cover is considered to have low potential suitability as a transitory roost for individual bats, such as the locally recorded common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) – and so ivy covered trees have been categorised as PRF-Is. Due to the roost switching behaviour exhibited by tree-roosting bats and the quick decay of evidence inside such PRFs, it is appropriate to view the ivy growing up the tree trunks as part of an available roosting resource that will likely be used at one time or another by bats.

6.1.3 All other tree groups and individual trees surveyed lacked PRFs and so are of negligible bat roost potential.

6.2 Impact Assessment

Overview

6.2.1 The removal of part of the tree line along the northern boundary of the sports ground to facilitate the proposed development has been assessed in accordance with the mitigation hierarchy during the felling works and post development, as follows:

Felling Works

- 6.2.1** In the absence of precautionary measures, the removal of the trees within **G12** could lead to the disturbance, injury or death of any bats in occupancy at the time of the felling works.

Post Development

- 6.2.2** The removal of the trees within **G12** will result in the reduction of the available roosting resource for bats on the application site.

7 RECOMMENDATIONS

7.1 Roost Resource Approach

Precautionary Working Method Statement

7.1.1 Following the categorisation of trees within **G12** with PRF-Is a precautionary method of working during their removal is recommended to mitigate for the potential use of the PRFs in the future by roosting bats. This approach will ensure that the felling works will not 'deliberately' or 'intentionally/recklessly' disturb, injure or kill any bats that may be in occupancy at the time. The precautionary measures to be adopted include:

- A toolbox talk delivered to the arborists before the felling works by a suitably licensed ecologist detailing how bats use trees, legal protections, working methods (i.e. section-felling), potential roost features, actions to be taken if a bat is found and personal safety procedures;
- An updated potential roost feature (PRF) inspection immediately before the felling works by a suitably licensed ecologist; and
- A section-felling approach, taking care when exposing PRFs e.g. stripping of ivy cover before felling, under the direct supervision of a suitably licensed ecologist.

7.1.2 If these precautionary measures are adhered to, the removal of trees within **G12** are considered highly unlikely to contravene legislation protecting bats. Therefore, a European Protected Species mitigation licence would not be required to allow these works to go ahead lawfully.

Compensation

7.1.3 Due to the roost switching behaviour exhibited by tree-roosting bats and the quick decay of evidence inside PRFs, it is arguable that all trees with suitable PRFs should be considered part of an available roosting resource that will be used at one time or another by bats. To prevent the reduction in the roosting resource following the proposed development, woodcrete bat boxes such as the Schwegler 2FN Bat Box (or a functional equivalent) should be erected on retained trees on site .

8 REFERENCES

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