

Denny to Wishaw Network Upgrade

Environmental Impact Assessment Report

Volume 3 Appendices

*Appendix 8.9 Bat Survey Results - Upgraded
Overhead Lines*

May 2026



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Volume 3, Appendix 8.9 Bat Survey Results -
Upgraded Overhead Lines



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Table of Contents

- 1.1 Introduction 1
- 1.2 Methodology 1
- 1.3 Baseline Conditions 5
- 9.1 Summary 7
- Annex I Potential Roost Assessment and Ground Level Tree
Assessment Survey Results 8**

Appendix 8.9

1.1 Introduction

This Technical Appendix accompanies Chapter 8 Biodiversity of the EIA Report (Volume 1). It describes in detail the desk study and field survey carried out to establish the baseline conditions within the zone of influence (Zol) of the Uprated Overhead Lines with respect to bats. (The bat survey results relating to the New Build Overhead Line, along with the CB Route Removal and AA Route Undergrounding are presented separately in Volume 2, Appendix 8.02, the results resulting to the Cumbernauld substation are presented in Volume 2, Appendix 8.13 (no other substations had features suitable for bats))

This appendix is supported by the Figure 8.6: Potential Roost Assessment and Ground Level Tree Assessment Survey Results, located within Volume 2: Figures.

For the purposes of this appendix, the term ‘Site’ is used collectively to refer to all areas where works relating to the Uprated Overhead Lines are occurring.

Information on the relevant legislation and planning policy relevant to bats, encountered within this appendix can be found in Chapter 8 Biodiversity.

1.2 Methodology

For details of desk study methods and Zol used refer to Chapter 8 Biodiversity.

Field Survey

All bat surveys relating to this report were conducted between 29 July 2025 and 24 November 2025.

Daytime Bat Walkover

Daytime Bat Walkover (DBW) was carried out in accordance with guidelines published by the Bat Conservation Trust (BCT)¹ and covered suitable habitat within the Zol (a 50m buffer of compound areas and 10m buffer of all other works). The DBW assessed the habitats present for suitability for roosting, commuting, and foraging bats, with reference to connectivity to the wider landscape. The general suitability of the habitat within the Site (and Zol) was classified according to the definitions provided by the BCT¹(see Table 1 below).

Table 1. Bat commuting / foraging suitability categories (adapted from Collins (2023)¹)

Suitability	Description of foraging and commuting habitats
None	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e no habitats that provide continuous lines of shade/protection for flight-lines, or generate shelter/insect population available for foraging bats.
Negligible	No obvious habitats features on site likely to be used as flight-paths or by foraging bats; however, a small element of

¹ Collins, J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition)*. Bat Conservation Trust, London. <https://www.bats.org.uk/resources/guidance-for-professionals/bat-surveys-for-professional-ecologists-good-practice-guidelines-4th-edition>

Suitability	Description of foraging and commuting habitats
	uncertainty remains in order to account for non-standard bat behaviour.
Low	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream but isolated i.e. not very well connected to the surrounding landscape by other habitats. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Preliminary Roost Assessment and Ground Level Tree Assessment Survey

A Preliminary Roost Assessment (PRA) of structures and a Ground Level Tree Assessment (GLTA) was also carried out at 50m from the compounds and up to 10m from all other works, where access was possible and safe.

Potential Roost Features (PRFs) searched for included suitable holes, cracks or splits in trees, and any possible ingress points to buildings. Where such features existed, searches were made for evidence of bat use such as droppings, staining, foraging remains, auditory evidence and the presence of live or dead bats. Following Collins (2023)¹, buildings and trees were assigned a suitability category based on the presence of PRF, as set out in Tables 2 and 3, respectively.

All identified PRFs were categorised based on basic ground-level assessment only, without the use of specialist equipment such as mirrors, torches, or endoscopes; or ladders or climbing equipment. Consequently, the suitability classifications assigned at this stage are indicative only.

Table 2. Bat habitat suitability categories (adapted from Collins, 2023) ¹⁾

Suitability	Description of roosting habitats (in structures)
None	No habitats on Site likely to be used by any roosting bats at any time of 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 year. However, these potential roost sites do not provide enough space, shelter, protection, 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).

Table 3. Bat Categories of potential suitability of PRFs in trees (adapted from Collins, 2023) ¹⁾

Tree suitability	Description of roosting habitats
FAR	Further assessment required to establish if PRFs are present in the tree.
PRF-I	Tree has a PRF which is only suitable for individual or very small numbers of bats; either due to their size or lack of suitable surrounding habitat.
PRF-M	Tree has a PRF which is suitable for multiple bats and may be used by a maternity colony.

Limitations

Given the scale of the survey area, a GLTA was considered a proportionate approach at this stage. As this method relies on indicative data, further detailed inspections, potentially involving internal cavity checks will be required to inform licensing requirements and mitigation strategy prior to the commencement of works. Tree removal for the Upgrading is anticipated to be minimal as works will follow the current operational corridor, for which the wayleave is maintained. For access tracks and visibility splays, as set out in the embedded mitigation measures, micro sighting will be undertaken to minimise the removal of trees. Given this it was not considered proportionate to undertake aerial surveys of all of the trees identified within the GLTA survey buffer. The assessment has accounted for the absence of aerial inspections and emergence surveys, through following the precautionary principle, which has assessed the worst case scenario with respect to the type of roost which could be lost and the species which could be present.

Access was not possible for areas of private dwellings, including farmhouses and residential gardens. However, these areas comprise a small fraction of the Site and the habitats present are assumed to be typical of managed residential and agricultural grounds. As such, they are not expected to significantly contribute to or alter the overall habitat suitability of the Site. Therefore, this is not considered a significant limitation.

While the majority of the Site was accessible, certain areas could not be fully surveyed due to health and safety constraints, such as impenetrable vegetation or unsafe terrain. These data gaps are localized and are not considered to significantly undermine the overall assessment, as explained in Table 4, the locations are detailed within this table.

Table 4. Survey Limitations and Areas of Restricted Access

Survey Target	General Location (OSGR)	Description of Limitation and Ecological Implications
ZG Line		
GLTA	NS 83643 82687	Sinking hazard / unsafe substrate prevented GLTA of several trees. The trees are at more than 30m from the ZG007 compound; no impacts are anticipated.
XX and XR Line		
GLTA	NS 76208 68225	Woodland GLTA incomplete due to an active construction site. Mature trees along the track were previously assessed during surveys for the New Build Overhead Line; remaining willow / birch are unlikely to support significant features due to visibly apparent insufficient trunk diameter.

1.3 Baseline Conditions

Desk Study

There are no nature conservation sites designated for bats within the desk study search distances.

The National Biodiversity Network (NBN) Atlas returned 561 records of bats within 1km of the Site. Of these 316 were common pipistrelle *Pipistrellus pipistrellus*, 178 were soprano pipistrelle *Pipistrellus pygmaeus*, 19 were Daubenton's bat *Myotis daubentonii*, four were unidentified *Myotis* sp., three brown long-eared bat *Plecotus auritus*, two were Leisler's bat *Nyctalus leisleri*, two were Natterer's bat *Myotis nattereri*, and 37 were unidentified bats. Geographically, bats were recorded the full length of the uprating lines but concentrated in nine areas. Records were provided as 1km or 2km grid squares, and so exact locations of sightings are not discernible. On the ZG line, bats were located in farmland just northeast of Denny, and between Bonnybridge and the River Carron. On the XX line, records were located in Chapelhall, Airdrie, Glenmavis, Glenboig and Gartloch. On the XR line, records were in Wishaw and around Newarthill.

TWIC data search also returned 23 records of bats, of which there are ten records of soprano pipistrelle, five records of common pipistrelle, four records of an unidentified pipistrelle bat, one records of Daubenton's bat and three of unidentified bats, all located south, east and north of the ZG Route.

Bats are also listed as key priority species in the Falkirk Council² and North Lanarkshire Council³ Biodiversity Action Plans. Falkirk Council has listed soprano pipistrelle and North Lanarkshire Council has listed common pipistrelle bat, soprano pipistrelle, nathusius pipistrelle, Natterer's bat, noctule bat *Nyctalus noctule*, Daubenton's bat, whiskered bat *Myotis mystacinus* and brown long-eared bat.

Field Survey

Daytime Bat Walkover

Habitats across the ZG route consist of a mosaic of suitability levels. The southern section is particularly valuable, especially near the River Carron, where the lowland mixed deciduous woodland and the river provide high-quality roosting, foraging, and commuting opportunities. The northern and central sections are characterized as Moderate suitability; while sections of the north are coniferous plantation, with wide clearings and scattered edge-line broadleaved trees offer both roosting potential and flight corridors, and the degraded bog and scattered ponds offer foraging resources due to concentration of insects around water. In contrast, the central areas consist primarily of intensively managed arable land and cattle fields. These are generally lower in quality, though mature tree lines at field boundaries maintain essential roosting opportunities and connectivity.

² A Biodiversity Action Plan for the Falkirk Council Area (2019), Falkirk Council
<https://fcwebsites.blob.core.windows.net/www/media/cc12cee9-df25-46f7-9f8b-8ec2e2287edf/Second%20Nature%20-%20A%20Biodiversity%20Action%20Plan%20for%20the%20Falkirk%20Council%20Area.pdf>

³ North Lanarkshire Council Biodiversity Action Plan 2023-2027, North Lanarkshire Council
<https://www.northlanarkshire.gov.uk/sites/default/files/2023-04/Biodiversity%20action%20plan%202023-2027%20%28Accessible%29.pdf>

The XX route features a varied landscape with several areas assigned High suitability, including the woodlands surrounding Woodend Loch, Heatherbell Linne, and the North Calder Water. These areas provide a complex structure for foraging, commuting, and roosting. These high-value blocks are interspersed with expanses of intensively managed agricultural land and cattle fields. Due to the lack of mature features, these open agricultural areas offer minimal roosting potential and are consequently assigned Low suitability.

Within the XR route, the areas of High suitability are concentrated around the South Calder Water and Greenhead Moss Community Nature Park, both of which provide roosting, foraging and commuting opportunities. Areas of Moderate suitability are found where small patches of broadleaved woodland are situated within cattle fields; these are linked by hedgerows or tree lines that provide necessary shelter and flight-routes. The remainder of the route is composed of Low suitability habitats, primarily intensively managed arable fields that lack the structural diversity required by bats.

Preliminary Roost Assessment and Ground Level Tree Assessment Survey

Within the surveyed area, the PRA survey identified two other features (cliffs) within the XX Route survey area. Both of those were classified as having 'Moderate' suitability for roosting bats.

The GLTA survey identified a total of 97 trees comprising 36 trees within the Zol of the ZG line, 40 trees within the Zol of the XX line, and 21 trees within the Zol of the XR line. Of those, there are 41 PRF-M trees, 44 PRF-I trees and five FAR trees across all the ZG, XX and XR Routes collectively.

Within the ZG Route, the majority of trees with potential roost features are concentrated along River Carron and along existing tracks and roads. Within the XX Route, the trees with PRFs are concentrated towards Airdrie Gold Club and along North Calder Water and within the XR Route there is a higher concentration of PRF trees around Allanton.

Within the ZG Route, there are three FAR trees (ZG.BT.29, ZG.BT.32 and ZG.BT.33) for which there was a limited visibility from the ground. Within the XX Route there is a single tree (XX.BT.05) which could not be assessed further due to the location of a watercourse, preventing safe inspection. Within the XR Route, there is a line of several semi-mature trees that could not be categorised from the ground.

Detailed information for these specific features is provided in Table 5 below, in Annex I. All trees or structures are also illustrated on Volume 2, Figure 8.6. Potential Roost Assessment and Ground Level Tree Assessment Survey.

1.4 Summary

The desk study returned 584 records of bats, comprising 561 records from the NBN Atlas and 23 from TWIC. These records included common pipistrelle, soprano pipistrelle, Daubenton's bat, brown long-eared bat, Natterer's bat, and Leisler's bat.

Habitat suitability across the Site is varied, ranging from High to Low. High suitability areas are generally associated with broadleaved woodlands and riparian corridors adjacent to large rivers. In contrast, Low suitability areas are primarily characterized by extensive agricultural land.

In total, 97 trees and other features were identified and were subject to GLTA. Of these, 95 are trees and two are cliffs. Of the 95 trees, 49 were identified as PRF-M trees, 43 as PRF-I trees and five as FAR trees across all the ZG, XX and XR Routes collectively. PRF trees were mostly concentrated along watercourses, waterbodies, field edges and road verges. The cliff has both been classified as having Moderate suitability for roosting bats.

Annex I Potential Roost Assessment and Ground Level Tree Assessment Survey Results

Table A.1 below provides detailed information on all trees surveyed within the Study Area.

Table A.1 Potential Roost Assessment and Ground Level Tree Assessment Survey Results

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
ZG Line					
ZG.BT.01	Mature oak	PRF-I	Single southeast-pointing branch at around 10m off the ground with crevice at base. Additionally dead and broken south- and northeast-pointing branches with potential for roosting. Also, a broken northwest-facing branch at around 13m off the ground with roosting potential. Limited visibility from the ground.	NS 83076 83592	Located 8.45m southwest of the proposed access track.
ZG.BT.02	Mature ash	PRF-M	Single east-facing tear-out on a south-pointing branch. Hole extends into a hollow cavity. Branch diameter is around 25cm. Hole entrance is slightly cluttered but only by leaves and still reasonably accessible. Also, a broken and hollow northeast-pointing branch with a hole which is upwards-facing and might be	NS 83092 83584	Located 7.09m southwest of the proposed access track.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			exposed to precipitation but still offers some shelter. Rot within the trunk towards both east and west side of the trunk, associated crevices and possible cavities.		
ZG.BT.03	Mature beech	PRF-M	Single, large hole in the trunk at around 2.5m off the ground, facing southwest. Additional northeast-facing knothole at around 4m off the ground.	NS 83636 83249	Located 8.36m east of the proposed access track.
ZG.BT.04	Semi-mature oak	PRF-M	Single area of south-facing butt rot up to 2m, resulting in exposed heartwood that appears to have crevices behind it which extend up into trunk.	NS 83633 83231	Located 8.39m east of the proposed access track.
ZG.BT.05	Dead tree	PRF-M	Single south-facing hole in the trunk at around 1.5m off the ground which extends up into hollow trunk.	NS 83632 83215	Located 9.24m east of the proposed access track.
ZG.BT.06	Oak	PRF-M	Single south-facing knothole in trunk at around 2m off the ground. Hole possibly extends into hollow trunk.	NS 83628 83186	Located 8.47m east of the proposed access track.
ZG.BT.07	Mature beech	PRF-M	Large west-facing knothole at around 2.5m, which faces slightly upwards but could still extend up into trunk.	NS 83626 83170	Located 8.3m east of the proposed access track.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
ZG.BT.08	Mature lime	PRF-M	Single west-facing hole on the trunk at around 4 m off the ground, which extends upwards into hollow cavity. Additional west-facing crevices near base of the trunk where tree is rotting but are very cluttered with twigs.	NS 83590 82911	Located 4.06m north of the proposed access track.
ZG.BT.09	Mature lime	PRF-M	Hollow area in the trunk at around 1m off the ground, with multiple entrance holes, the largest one of which is 40cm x 15cm (H x W). The hollow faces east, and extends deep into the tree, at around 1m.	NS 83603 82904	Located 1.28m north of the proposed access track.
ZG.BT.10	Mature beech	PRF-M	Single south-facing tear-out at around 2m off the ground where large limb has been removed. Limited visibility from the ground due to gorse hedge but may extend into hollow limb. Additional south-facing rotten feature at around 3m off the ground. Also, a northwest-facing tear-out on branch at around 7m off the ground. Feature is around 40cm long and with 4cm diameter with top cover and clear drop zone.	NS 83575 82902	Located 7.07m south of the proposed access track.
ZG.BT.11	Mature beech	PRF-I	Single northeast-facing tear-out on trunk at around 4m off the ground, facing northeast. Entrance size is with around	NS 83591 82900	Located 5.88m south of the proposed access track.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			3cm diameter. Also, multiple dead branches visible further up the tree, therefore high potential for more features but limited visibility from ground. Also, an additional tear-out at base of east-facing branch at around 14m of the ground that extends into branch.		
ZG.BT.12	Semi-mature oak	PRF-I	Single south-facing pruning cut on main trunk at around 6m with rot around edges of exposed heartwood. Very cluttered entrance with branches and leaves. Limited visibility from the ground. Also, a south-facing tear-out on main trunk below other feature at around 4.5m off the ground.	NS 83598 82897	Located 6.86m south of the proposed access track.
ZG.BT.13	Mature beech	PRF-I	Single east-facing tear-out on trunk at around 3m off the ground. Hole size is around 6cm across. Feature could extend westwards but limited visibility from the ground. Also, multiple dead areas and pruning cuts.	NS 83606 82895	Located 6.34m south of the proposed access track.
ZG.BT.14	Mature beech	PRF-M	Single east-facing tear-out at around 3m off the ground that could potentially extend but limited visibility from the ground. Also, several other holes	NS 83647 82885	Located 6.76m south of the proposed access track.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			comprising a single north-facing hole around 4m off the ground, a northeast-facing hole, a single east-facing hole on south-pointing branch at around 6m off the ground and a single west-facing hole within a south-facing branch at around 5m off the ground.		
ZG.BT.15	Semi-mature downy birch	PRF-I	Single hazard beam (around 30cm long) located on a west-pointing branch, at around 4m off the ground. The crevice formed is relatively open and could accommodate only a single individual.	NS 83619 82718	Located 39.21m northeast of the ZG007 compound area and 4.74m east of the proposed access track.
ZG.BT.16	Mature birch	PRF-I	Single rotten tear-out at around 0.2m off the ground. Feature is relatively damp but extends upwards where it is sheltered from precipitation.	NS 83619 82674	Located 19.89m of the ZG007 compound area.
ZG.BT.17	Mature goat willow	PRF-I	Single tear-out (around 1m x 6cm (H x W)). Hole does not extend into branches but offers potential for a shelter for a single individual. Entrance is clear of clutter.	NS 83617 82669	Located 19.85m of the ZG07 compound area
ZG.BT.18	English oak	PRF-M	Single east-facing butt-rot that is approximately 40cm x 10cm (H x W) which extends upwards into tree. Additional	NS 83932 81917	Located 9.57m east of the proposed access track.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			east-facing hole that does not extend up but forms a small cavity.		
ZG.BT.19	Mature sycamore	PRF-M	Hollow east-facing trunk that extends up as far as visible. Entrance to the feature at the base of the tree and is around 20cm x 30cm (H x W).	NS 83932 81915	Located 9.29m east of the proposed access track.
ZG.BT.20	Mature oak	PRF-I	Dead south-pointing branch at around 20m off the ground but cannot fully assess due to leaf clutter but potential for crevice suitable for a single individual. Also, a tear-out at base of dead branch, facing northeast, no feature seen but may be something upon aerial inspection.	NS 83921 81909	Located 3.17m west of the proposed access track.
ZG.BT.21	Sycamore	PRF-I	A single, downward-facing hole on a branch which extends southwest. The hole is around 30cm x 3cm (H x W). Entrance to the hole is cluttered. Two other similar features (different sizes), but less likely to extend. Limited visibility from the ground.	NS 83860 81905	Located 45.93m north of the ZG010 compound area.
ZG.BT.22	Mature oak	PRF-M	Damage on underside of south-pointing branch at around 8m off the ground that extends into hollow cavity, providing space for multiple individuals. Also, a single crack on the underside of a	NS 83921 81896	Located 41.24m north of the ZG010 compound area and 3.19m west of the proposed access track.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			southeast-pointing branch at around 20m off the ground. Limited visibility from the ground. Also damage on northwest-pointing branch at around 10m off the ground. Feature is very exposed but has potential for a cavity at the end.		
ZG.BT.23	Dead oak	PRF-I	Single area of rot on the northeast side of a north-pointing branch at around 8m off the ground. Entrance is cluttered. Limited visibility from the ground.	NS 83938 81895	Located 50.63m northeast of the ZG010 compound area.
ZG.BT.24	Acer sp.	PRF-M	Several features comprising a single west-facing woodpecker hole on a dead branch at around 10 m off the ground. Hole does not appear to extend far into branch. Also, a knothole at bottom of joint of east-pointing branch at around 9m off the ground. Additionally, two northeast-facing pruning cuts at around 11m and 12m off the ground.	NS 83821 81888	Located 43.13m of the ZG010 compound area.
ZG.BT.25	English oak	PRF-M	A single northeast-hole on southeast-pointing branch, extending into large hollow cavity. Some shelter towards the trunk, otherwise the hole is exposed to precipitation. Hole is free of clutter.	NS 83826 81879	Located 33.46m northwest of the ZG010 compound area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
ZG.BT.26	Mature oak	PRF-I	A single knothole on a branch that faces south, around 20m off the ground. Hole entrance is approximately 5cm x 5cm (H x W). Also, multiple damaged branches on the south side of the tree that could potentially provide shelter for an individual.	NS 83623 81591	Located 7.25m northeast of the proposed access track.
ZG.BT.27	Mature sycamore	PRF-M	Northeast-facing butt rot that extends up into trunk at around 1.5m off the ground but narrows down significantly. Another hole on a west-pointing branch at around 3.5m off the ground, however exposed to precipitation. Also, a cavity in damaged northwest-pointing broken branch at around 2m off the ground. Cavity does not extend and is damp.	NS 83861 81577	Within the ZG011 compound area and within the proposed area of the scaffolding.
ZG.BT.28	Mature sycamore	PRF-I	A single north-facing knothole at around 3m off the ground. The entry to the hole is approximately 3cm x 3cm (H x W). Additional north-facing knothole at around 6m off the ground. Entrance is around 2cm x 2cm (H x W).	NS 83873 81573	Within the ZG011 compound area and within the proposed area of the scaffolding.
ZG.BT.29	Mature birch	FAR	Limited visibility from the ground.	NS 83906 81574	Within the ZG011 compound area and within the proposed area of the scaffolding.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
ZG.BT.30	Mature ash	FAR	Limited visibility from the ground.	NS 83911 81571	Within the ZG011 compound area and within the proposed area of the scaffolding.
ZG.BT.31	Mature alder	PRF-I	A single southwest-facing knothole on an east-facing branch, around 2m off the ground. The hole is approximately 2cm x 5cm (H x W) and extends around 3cm into the branch.	NS 83946 81571	Located 35.14m of the ZG011 compound area.
ZG.BT.32	Mature lime	FAR	Mature tree cluttered with leaf litter at the time of survey. Potentially suitable roosting features exist.	NS 83899 81562	Within the ZG011 compound area and 5.75m of the scaffolding area.
ZG.BT.33	Mature English oak	PRF-M	Single southwest-facing tear-out on south-pointing branch at around 10m off the ground. Hole does not appear to extend into branch from the ground assessment. Additional east-facing pruning cut on south-pointing branch at around 12m off the ground.	NS 83902 81553	Within the ZG011 compound area.
ZG.BT.34	Mature ash	PRF-I	Peeling bark under a cut, south-pointing branch at around 5m off the ground.	NS 83914 81549	Located 3.55m east of the ZG011 compound area.
ZG.BT.35	Standing deadwood	PRF-I	A single southwest-facing hole at around 2m off the ground. Hole extends into small hollow cavity with space for a single individual. Additional rot at base of	NS 83809 81252	Located 41.32m west of the ZG012 compound area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			southwest aspect with overhanging outer heartwood resulting in lifted bark.		
ZG.BT.36	Mature oak	PRF-I	Single north-facing tear-out at around 30cm to 50cm off the ground. Feature extends upwards into narrow hollow in trunk. Additional northeast-facing pruning cut at around 4 m off the ground. Extension unclear from the ground inspection.	NS 83809 81251	Located 40.8m west of the ZG012 compound area.
XX Line					
XX.BF.01	Cliff	Moderate	Exposed cliff with numerous narrow crevices along. A single vertical crevice at around 1.5m off the ground. Hole is approximately 30cm long and 1.5cm wide and extends back around 0.2m.	NS 78090 66468	Located 31.23m north of the XX030 compound area.
XX.BF.02	Cliff	Moderate	A deep crevice between rocks in a sheer drop. The crevice extends deep into the rock beyond view and may host many individuals. The cavity entrance is around 2m tall and 10cm wide and is roughly the same width throughout but narrowing in height further along. Exit is cluttered by hawthorn but there is a relatively clear flight out.	NS 78023 66442	Located 41.04m west of the XX030 compound area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
XX.BT.01	Mature oak	PRF-I	A single southwest-facing knothole on a branch, located around 6m off the ground. Hole entrance is free of clutter. Limited visibility of extension from the ground.	NS 70465 66977	Located 41.55m west of the XX001B compound area and 13.2m west of the XX001B - XX001 pulling area.
XX.BT.02	Mature oak	PRF-M	A single hole on the trunk of an oak that does not extend up into trunk. Sheltered from precipitation and entrance is free of clutter. A single bird nest inside.	NS 70512 66957	Located 16.63m south of the XX001B compound area.
XX.BT.03	Mature oak	PRF-M	A single area of butt rot on the trunk, facing north. Hole extends up into trunk from around 1m off the ground.	NS 70531 66950	Located 23.51m south of the XX001B compound area.
XX.BT.04	Broadleaved tree	PRF-I	Single south-facing oval hole on tree trunk at around 1 m off the ground. Hole entrance is approximately 10cm x 5cm (H x W) and extends up into trunk but only a few cm.	NS 75781 68332	Within the proposed area of the XX020(X) compound.
XX.BT.05	Broadleaved tree	FAR	Multi-stemmed tree with several south-facing holes on each trunk, located around 1m off the ground. Extension unknown due to limited access by the water.	NS 75786 68324	Located 2.24m east of the XX020(X) compound area.
XX.BT.06	Standing deadwood	PRF-I	Multiple small rotten holes and cracks across tree trunk and branches. None	NS 75799 68316	Located 17.56m east of the XX020(X) compound area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			appears to extend but could provide shelter for a single individual.		
XX.BT.07	Mature beech	PRF-I	Single cracked and rotted northeast-facing branch at around 2m off the ground. Entrance hole is approximately 8cm x 7cm (H x W) and appears to extend into hollow branch. Hole potentially leads to an opening at top aspect of the branch but limited visibility from the ground.	NS 76164 68350	Located 3.94m east of the proposed access track.
XX.BT.08	Beech	PRF-M	An east-facing hole leading to large cavity in dead trunk. Hole is located around 1.9m off the ground. Additional north-facing hole at around 2.3m off the ground, which extends up and the entrance is free of clutter.	NS 75961 67877	Located 5.15m southwest of the proposed access track.
XX.BT.09	Dead beech	PRF-M	Single, south-facing tear-out at around 1.2m off the ground. Feature does not extend upwards but extends downwards to large cavity with top cover. Trunk likely hollow and rotted.	NS 76024 67843	Located 2.63m north of the proposed access track.
XX.BT.10	Mature beech	PRF-I	Single southeast-facing knothole at around 6m off the ground. Limited visibility from the ground.	NS 76038 67825	Located 4.92m southwest of the proposed access track.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
XX.BT.11	Mature oak	PRF-I	Several holes along trunk, located at around 2.5m, 5m and 5.5m off the ground, all facing either north or west. Limited visibility from the ground whether they extend sideways and then upward. All appear to be approximately 6cm x 4cm (H x W).	NS 76237 67678	Located 50.34m west of the XX023 compound area.
XX.BT.12	Mature oak	PRF-I	Snapped south-facing trunk at around 2.5m off the ground, resulting in several crevices in between snapped heartwood. None of the crevices appear to extend but could provide shelter for a single individual.	NS 76245 67674	Located 40.96m west of the XX023 compound area and 10.5m southwest of the proposed access track.
XX.BT.13	Standing deadwood	PRF-I	Large areas of peeling bark and crevices on all sides of the trunk and branches.	NS 76238 67665	Located 47.67m west of the XX023 compound area.
XX.BT.14	Mature rowan	PRF-M	Single area of butt rot at around 1 m off the ground. Additional several holes, one is north-facing at around 1.5m off the ground and is approximately 20cm x 10cm (H x W), one facing southwest, around 6.5m off the ground which is approximately 5cm x 3cm (H x W) and one facing east that is around 6m off the ground and is approximately 3cm x 3cm (H x W).	NS 76253 67656	Located 34.53m west of the XX023 compound area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
XX.BT.15	Mature oak	PRF-I	Single area southeast-facing area of butt rot that contains small cracks and crevices. Damage starts at base and continues up to 1.5m off the ground.	NS 76259 67652	Located 31.06m west of the compound area
XX.BT.16	Mature sycamore	PRF-I	Multiple knotholes on all sides of the trunk and on the branches that are all similar size and shape ranging from 3 to 15cm wide. None of the holes appears to extend up into heartwood but could provide shelter for a single individual.	NS 76267 67651	Located 24.8m west of the XX023 compound area.
XX.BT.17	Standing deadwood	PRF-I	Multiple areas of loose or peeling bark and a single woodpecker hole, facing south, towards the top of the tree. Limited visibility from the ground.	NS 76335 67649	Within the proposed area of the XX023 compound.
XX.BT.18	Mature beech	PRF-M	Mature beech.	NS 76344 67644	Located 5.86m south of the XX023 compound area.
XX.BT.19	Mature ash	PRF-M	A single west-facing tear-out on trunk from around 0.5 m to around 1.7 m off the ground that extends up into trunk but narrows down. Cavity that extends is approximately 7cm x 5cm (H x W).	NS 76282 67639	Located 22.45m west of the XX023 compound area.
XX.BT.20	Mature beech	PRF-M	Single area of north-facing butt rot that extends from base up to around 0.5m off	NS 76346 67631	Located 17.16m south of the XX023 compound area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			the ground and then further into a hollow trunk for at least another 1m.		
XX.BT.21	Mature sycamore	PRF-I	Single south-facing knothole that is approximately 10cm x 6cm (H x W). Hole could potentially extend into limb but limited visibility from the ground. Additional six or more knotholes further up into the tree that are of similar shape and varying sizes but limited visibility due to foliage.	NS 76289 67593	Located 48.16m southwest of the XX023 compound area.
XX.BT.22	Mature elm	PRF-I	Single east-facing area of exposed heartwood at the base of the trunk that extends upward around 1.75m off the ground. This area includes multiple smaller cracks and crevices. Additional dead and decaying southeast-pointing branch which resulted in small cavity that could fit an individual.	NS 77500 66987	Located 10.75m east of the visibility splays area.
XX.BT.23	Grey willow	PRF-I	A single hazard-beam on a west-pointing branch at around 1m off the ground. Feature is around 1m long but mostly exposed to precipitation.	NS 78304 66218	Located 50.9m northwest of the XX031 compound area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
XX.BT.24	Mature beech	PRF-M	Single southwest-facing tear-out located around 1.2m off the ground. Hole extends upwards into hollow cavity in trunk.	NS 78501 65933	Located 0.21m north of the proposed access track.
XX.BT.25	Mature beech	PRF-I	Single area of east-facing butt rot at the base of the tree. Hole is approximately 20cm x 7cm (H x W). The cavity extends around 5–6cm into the tree.	NS 78499 65930	Located 3.37m south of the proposed access track.
XX.BT.26	Mature beech	PRF-I	A single north-facing tear-out. The entrance to the cavity formed is 4cm x 4cm (H x W) and extends into tree for around 10cm.	NS 78507 65929	Located 0.38m south of the proposed access track.
XX.BT.27	Mature beech	PRF-M	Single tear-out which is approximately 15cm x 50cm (H x W), located around 1.2m off the ground. Hole extends into trunk but narrows down significantly.	NS 78514 65928	Located 2.45m north of the proposed access track.
XX.BT.28	Semi-mature beech	PRF-M	Single west-facing wound, approximately 30cm x 45cm (H x W) entrance size, which is around 0.5m off the ground. The wound extends upwards and into the trunk, with approximately 5cm diameter.	NS 78557 65891	Located 6.6m south of the proposed access track.
XX.BT.29	Mature oak	PRF-I	Multiple snapped or lopped branches that have cracks and crevices that could provide shelter for a single individual.	NS 78851 65775	Located 12.06m south of the XX033 compound area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
XX.BT.30	Mature beech	PRF-M	Single area of south-facing butt rot that extends from the base of the tree up to around 1.5m off the ground. Hole further extends upwards into hollow trunk.	NS 78940 65836	Located 38.41m of the XX033 compound area and 1.92m north of the proposed access track.
XX.BT.31	Semi-mature beech	PRF-M	Single northwest-facing wound at around 4m off the ground. Wound is around 1.5m long and has section of exposed heartwood. No large obvious opening, but some lifted panels and many crevices.	NS 78945 65834	Located 43.23m of the XX033 compound area and 2.76m south of the proposed access track.
XX.BT.32	Mature beech	PRF-M	Single hole on the southern trunk which has area of exposed heartwood starting at around 2.5m off the ground and extending up to around 1.5m up. Additional smaller hole on the northern trunk at around 4m off the ground. Hole has exposed heartwood and is around 0.6m tall. Hole extends up as far as can see.	NS 78950 65835	Located 48.31m of the XX033 compound area and 4.07m south of the proposed access track.
XX.BT.33	Mature beech	PRF-M	Single area of butt rot, facing southwest and starting from the base of the trunk up to 1.5m off the ground. Hole further extends up into trunk.	NS 78962 65841	Located 3.91m south of the proposed access track.
XX.BT.34	Mature ash	PRF-M	Single south-facing hole that is approximately 5cm x 5cm (H x W), located 2m off the ground. The hole extends into a	NS 79139 65917	Located 3.11m north of the proposed access track.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			hollow trunk upwards. Hole possibly connects to hole 2.5m above it.		
XX.BT.35	Dead ash	PRF-I	Single area of lifted bark on the northeast side of the trunk, located around 1m off the ground. Another northeast-facing knothole located around 6m off the ground. Knothole is approximately 3cm x 3cm (H x W) in size and might extend, but limited visibility from the ground.	NS 79129 65913	Located 3.66m north of the proposed access track.
XX.BT.36	Standing deadwood	PRF-M	Area of south-facing wounds on a sheared branch, around 4m off the ground. At largest wounds are 10cm x 3cm (H x W) and possibly extend. Entrance is free of clutter.	NS 79113 65899	Located 2.45m south of the proposed access track.
XX.BT.37	English oak	PRF-M	Single east-facing wound that starts at the base of tree and extends around 1m off the ground and is approximately 5cm wide. Wound extends into cavity in trunk which is around 6cm x 6cm (H x W). Another woodpecker hole around 1.5m above.	NS 79099 65901	Located 5.37m north of the proposed access track.
XX.BT.38	Dead ash	PRF-M	A single east-facing wound, approximately 4cm x 5cm (H x W), located on a west-facing branch at around 8m off the ground.	NS 79119 65894	Located 9.91m south of the proposed access track.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			The wound extends into the branch at least slightly. Additional east-facing knothole which is approximately 3cm x 3cm and is located around 7m off the ground. Hole does not extend up into the tree.		
XX.BT.39	Dead ash	PRF-M	Single northwest-facing hole on trunk, located around 10 m off the ground. Hole is approximately 15cm x 10cm (H x W) and may extend into the trunk. Entrance has some degree of clutter but not fully obstructed. Additional tear-out on a west-facing branch. Tear-out results in a cavity that extends east and slightly downward into the tree.	NS 79107 65890	Located 7.69m south of the proposed access track.
XX.BT.40	Mature beech	PRF-M	Single south-facing wound located around 4m off the ground. Feature extends up into tree but limited visibility from the ground to determine depth of the extent.	NS 79085 65874	Located 10.45m south of the proposed access track.
XR Line					
XR.BT.01	Mature beech	PRF-I	Single area of butt rot from the base of the trunk to around 1m off the ground, extending in a cavity upwards in rotten	NS 82038 59623	Located 3.24m north of the visibility splays area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			trunk. Cavity is east-facing and no clutter at the entrance.		
XR.BT.02	Dead beech	PRF-I	Single north-facing split in trunk at around 9m off the ground. Limited visibility from the ground to determine extent.	NS 82097 59590	Located 7.33m east of the visibility splays area.
XR.BT.03	Mature beech	PRF-M	Single area of butt rot, facing east. Butt rot extends from the base of the trunk to around 2m off the ground and then further into a cavity as far as can be seen.	NS 82832 59870	Located 23.65m north of the XR016 compound area and 1.88m east of the visibility splays area.
XR.BT.04	Dead birch	PRF-M	Extensive damage on all faces of tree trunk including lifted bark, cracks and woodpecker holes. Largest feature is an east-facing woodpecker hole which is approximately 10cm diameter and is located at 3m off the ground.	NS 82900 59803	Located 11.53m east of the XR016 compound area.
XR.BT.05	Mature birch	PRF-M	Single south-facing area of butt rot at the base of the trunk that extends to around 1m off the ground and then into a cavity of unknown size. Entrance is slightly cluttered by young growth.	NS 84304 58025	Located 30.26m northwest of the XR023 compound area.
XR.BT.06	Standing deadwood	PRF-M	A single, large, west-facing shearing crack along the majority of the trunk from base to around 10m off the ground. Crack is	NS 84287 57983	Located 42.89m west of the XR023 compound area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			likely not suitable except in top portion where it forms a small cavity. The cavity possibly extends upwards into trunk but limited visibility from the ground.		
XR.BT.07	Mature beech	PRF-M	A single south-facing wound at around 7m off the ground. Wound entrance is around 25cm x 40cm (H x W) and it further extends upwards into cavity which connects to another wound. Cavity is sheltered from precipitation.	NS 84308 57972	Located 26.87m west of the XR023 compound area.
XR.BT.08	Mature sycamore	PRF-M	A single, large southwest-facing wound at around 1.5m off the ground that extends in a cavity upwards into the trunk. Wound entrance is approximately 60cm x 20cm (H x W), while the cavity is around 10cm x 10 cm (H x W). Cavity extends at least 25cm into the trunk. Another wound on a branch at around 5m off the ground.	NS 84409 57982	Located 20.43m east of the XR023 compound area.
XR.BT.09	Standing deadwood	PRF-I	A single south-facing knothole at approximately 15m off the ground. Hole entrance is approximately 3cm across. Limited visibility from the ground. Additionally, multiple areas of lifted bark	NS 84495 57951	Located 5.99m of south the visibility splay area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			on the stem that could shelter an individual.		
XR.BT.10	Mature beech	PRF-M	West-facing butt rot at the base of the tree which leads into a cavity that extends as far as can be seen. The area of butt rot is around 1m x 0.3m (H x W) and has smaller holes on it that lead into cavity within trunk.	NS 84143 57834	Located 0.92m east of the visibility splay.
XR.BT.11	Mature beech	PRF-M	A single, east-facing snapped branch that possibly leads to a hollow within the trunk at around 9m off the ground. Entrance is approximately 10cm x 15cm (H x W). Also, two other snapped branches, one east-facing at around 5m off the ground and one south-facing at around 10m off the ground.	NS 84283 57470	Located 6.48m east of the visibility splay area.
XR.BT.12	Dead beech	PRF-M	Multiple east-facing woodpecker holes at around 8 m off the ground, likely leading to hollow trunk cavity. Also, a single north-facing crack at around 6m off the ground and south-facing lifted bark.	NS 84642 57415	Located 7.57m south of the XR025 compound area and 2.98m south of the proposed access track.
XR.BT.13	Mature beech	PRF-I	Single southeast-facing tear-out at around 12m off the ground. No extension	NS 84626 57398	Located 30.37m south of the XR025 compound area.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			observed but likely enough to shelter a single individual.		
XR.BT.14	Partially-dead beech	PRF-I	A single southwest-facing knothole and a woodpecker hole, both at around 6m off the ground.	NS 84620 57391	Located 39.42m south of the XR025 compound area.
XR.BT.15	Dead beech	PRF-I	Multiple woodpecker holes and surface damage on the trunk. None of the holes appears to extend but could shelter an individual bat.	NS 84621 57379	Located 48.25m south of the XR025 compound area.
XR.BT.16	Dead beech	PRF-M	Single west-facing tear-out at around 1.2m off the ground. Tear-out leads to a large rotten cavity in the trunk, which is approximately 8cm across. The cavity extends upwards, facing east at around 3.5m off the ground. Cavity might be open and exposed to precipitation at the top but limited visibility from the ground.	NS 84795 56879	Located 23.7m east of the XR027 compound area.
XR.BT.17	Mature beech	PRF-I	Single crack in a northeast-facing branch at around 5m of the ground. Extension of hole is unclear from the ground.	NS 84570 55871	Located 2.95m south of the visibility splays area.
XR.BT.18	Mature beech	PRF-I	West-facing butt rot which extends upwards into trunk from around 0.5m off	NS 84371 55377	Within the proposed area of the compound.

Feature Reference	Description	Indicative Suitability	Feature Description	Location (OSGR)	Relationship to the Project
			the ground. Entrance is free of clutter and is sheltered from precipitation.		
XR.BT.19	Mature birch	PRF-M	Single northeast-facing knothole leading to a partially hollow trunk at around 1.7m off the ground. Additional east-facing knothole at 1.4m off the ground.	NS 84019 55237	Located 34.78m northwest of the XR033 compound area.
XR.BT.20	Dead semi-mature ash	PRF-I	A single cavity at the top of a tear-out on the trunk at around 8m off the ground. Cavity is possibly extending but limited visibility from the ground. Entrance to the hole is around 5cm x 2cm (H x W).	NS 81540 54423	Located 42.15m northeast of the XR042 compound area.
XX.BT.21	Broadleaved trees	FAR	Semi-mature trees with potential features for roosting bats.	NS 80393 53543	Located 41.59m of the XR045 compound area.