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Bat roost assessment of woodland areas and trees for proposed new prison, bowling club, and boiler house on land adjacent to HMP Garth and HMP Wymott, Leyland

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Non-technical summary

Introduction

CGO Ecology Ltd was instructed by Mace Ltd, on behalf of the Ministry of Justice, to assess bat roost potential, and carry out aerial inspection surveys of potential bat roosts, of trees and woodland at HMPs Garth and Wymott, Leyland, Lancashire. The Ministry of Justice proposes a development as part of its New Prisons Programme on land centred on (SD 502 205). The Local Planning Authority (LPA) is Chorley Council.

Methodology

Haycock and Jay Associates Ltd and Gritstone Ecology Ltd undertook the surveys as subconsultants for CGO Ecology Ltd. Karl Harrison MCIEEM and Will Steele ACIEEM conducted ground-level Preliminary Roost Assessment (PRA) of trees and woodland in May and July 2021, to search for bat roosts and potential. In July 2021, Stewart Bradshaw and safety assistant Chris Ryan carried out aerial (climbed) inspections of 32 trees identified as having bat roost suitability. All surveyors are bat-licensed, and followed standard guidance.

Results

No bat roosts were identified, and all trees were graded as having negligible bat roost potential.

Conclusions, mitigation and enhancement recommendations

The woodland and trees within the proposed development red line do not currently support bat roosts. No bat mitigation is required in relation to tree roosts. As an enhancement, 20 batboxes will be provided in retained trees, representing a significant gain in roost availability for bats.

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1. Introduction

1.1. Background

CGO Ecology Ltd (CGO) was instructed by Mace Ltd, on behalf of the Ministry of Justice (MoJ), to conduct bat Potential Roost Assessment (PRA) surveys, and carry out aerial inspection surveys of woodland and trees at HMPs Garth and Wymott, Leyland, Lancashire. The MoJ proposes a new prison, boiler house, and bowling club as part of its New Prisons Programme on land centred on (SD 502 205). The Local Planning Authority (LPA) is Chorley Council.

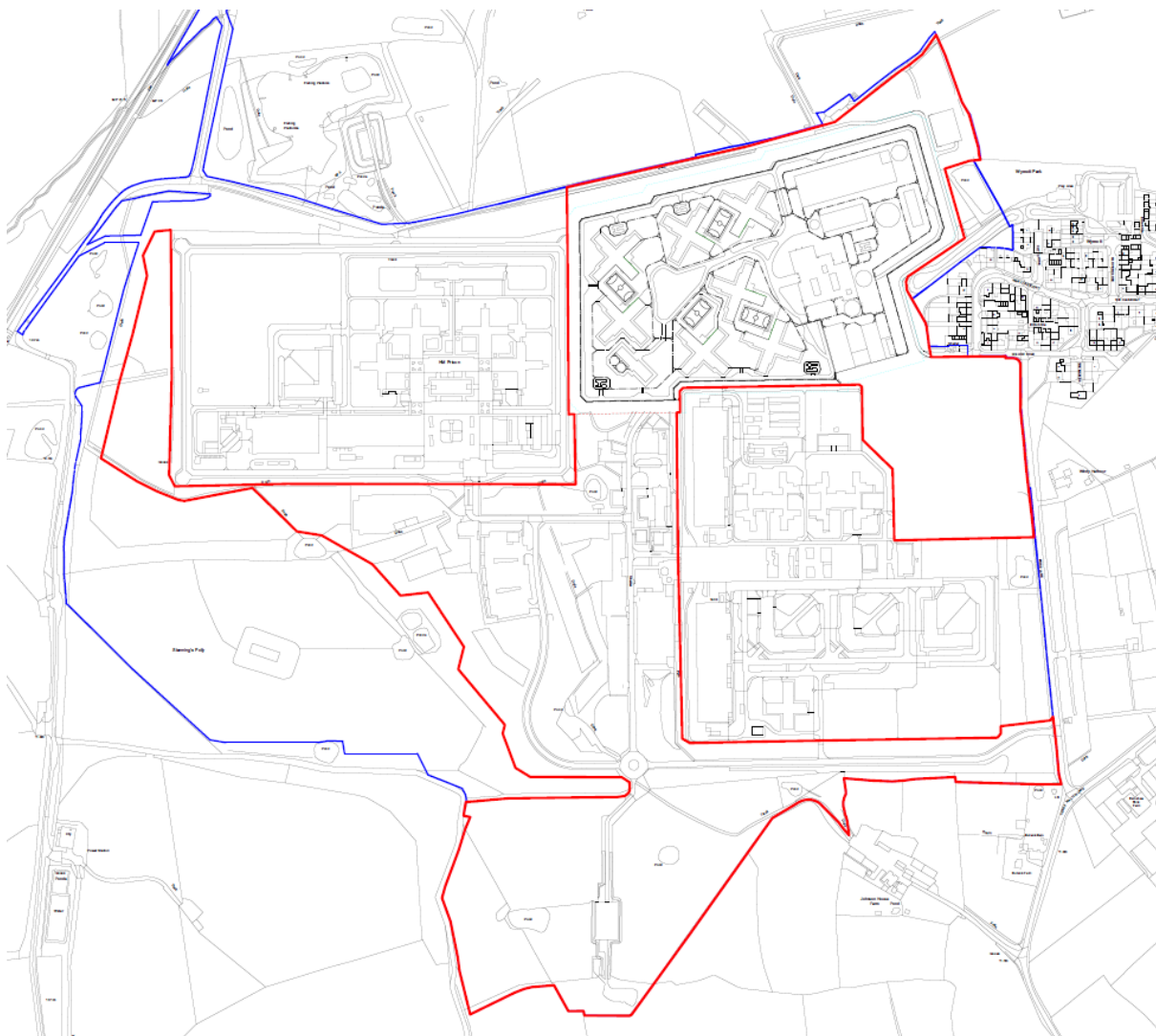


Figure 1 – Development site boundary (red line) and MoJ ownership boundary (blue line).

All UK bats and their roosts are protected by the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations 2017 (as amended). Bats may roost in crevices in building roofs, loft voids, and other built features, or in trees and other natural cavities.

Nocturnal (dusk emergence, dawn re-entry) bat roost surveys of 11 buildings and one tree were reported by Harrison & Gleed-Owen (2021). The current report deals with assessment of woodland areas and two trees not covered by that report. A Preliminary Ecological Appraisal (PEA) was conducted by Ramboll (Molesworth, 2020) and CGO (Gleed-Owen, 2021a), and an Ecological Impact Assessment (EclA) was conducted by CGO (Gleed-Owen, 2021b).

Natural England has issued 16 European Protected Species (EPS) mitigation licences within 5km. Eight of these were for bats, the nearest being 400m south for common pipistrelle (*Pipistrellus pipistrellus*). The others are for common pipistrelle and/or brown long-eared bat (*Plecotus auritus*), with one also including Brandt's bat (*Myotis brandtii*) 4.3km north.

The surrounding area is intensively farmed for a mixture of livestock and arable crops, but there are significant areas of woodland and other land uses. A large area of woodland lies to the southwest of the site, extending around the west and north of HMP Garth. There are major urban areas to the northeast (Leyland and Preston), and a network of minor roads, railway lines, villages, hamlets, and farms in all directions.

1.3. Proposed works

The proposed development is a hybrid planning application seeking: Outline planning permission (with all matters reserved except for access, parking and landscaping) for a new prison (up to 74,531.71m²) within a secure perimeter fence following demolition of existing buildings and structures and together with associated engineering works; Outline planning permission for a replacement boiler house (with all matters reserved except for access); and Full planning permission for a replacement bowling green and club house.

2. Methodology

2.1. Preliminary Roost Assessment

On 26th May 2021 and 12-13th July 2021, HJA conducted bat Preliminary Roost Assessment (PRA) of woodland areas identified as having bat roost potential. The main area to the north and east of the existing boiler house had not been identified in the Ramboll (Molesworth, 2020) PEA. Two other areas to the east of the proposed new prison were identified as needing further survey in the CGO (Gleed-Owen, 2021) PEA. The personnel were: Karl Harrison MCIEEM (Natural England CL18 bat licence 2017-32750-CLS-CLS) on 12-13th July 2021, and Will Steele ACIEEM (CL17 bat licence 2019-43393-CLS-CLS) on 26th May 2021.

The PRA inspections were carried out from ground level during daylight hours and in accordance with standard methodology (Collins, 2016). The surveys were aided by a powerful torch (Cluson Clulite Clubman, 1,000,000 candle power).

Cavities, cracks, and crevices which may offer potential emergence points or suitable roosting features for bats were identified and, where accessible, were also searched. In addition, the inspection recorded any evidence of use by bats, including feeding remains, claw marks, staining from urine and fur, droppings or bats themselves.

During the PRA, features at the buildings and trees with opportunity for roosting were recorded and categorised according to their level of suitability, from negligible to high (cf. Collins, 2016). Suitability was determined by factors including type, size, and locations of features; site context, local environmental conditions, and proximity to suitable bat foraging habitat. The PRA was conducted in line with published Covid-19 advice (BCT, 2020; CIEEM, 2020; IUCN, 2020).

2.2. Aerial inspection

Aerial inspections were conducted by subconsultant GE. Trees T2 (TN30) and T13 (TN15) were climbed on 15th July 2021. A total of 30 trees were also climbed in woodland centred on SD 50312 20935 from 27-30th July 2021. The climbers were by Stewart Bradshaw (CS38 Tree Climbing & Aerial Rescue, Natural England CL18 bat licence 2015-15615-CLS-CLS) and safety assistant Chris Ryan (CS38 Tree Climbing & Aerial Rescue).

Climbed inspections followed standard guidance (Collins, 2021) and safety considerations. They involved a ground-level inspection initially, using binoculars and high-power Clulite torch. Where Potential Roost Features (PRFs) were identified, a climbed inspection was carried out, using ladders, or roped access, and an endoscope. The surveys were in line with accepted guidance (Mitchell-Jones, 2004; Mitchell-Jones & McLeish, 2004).

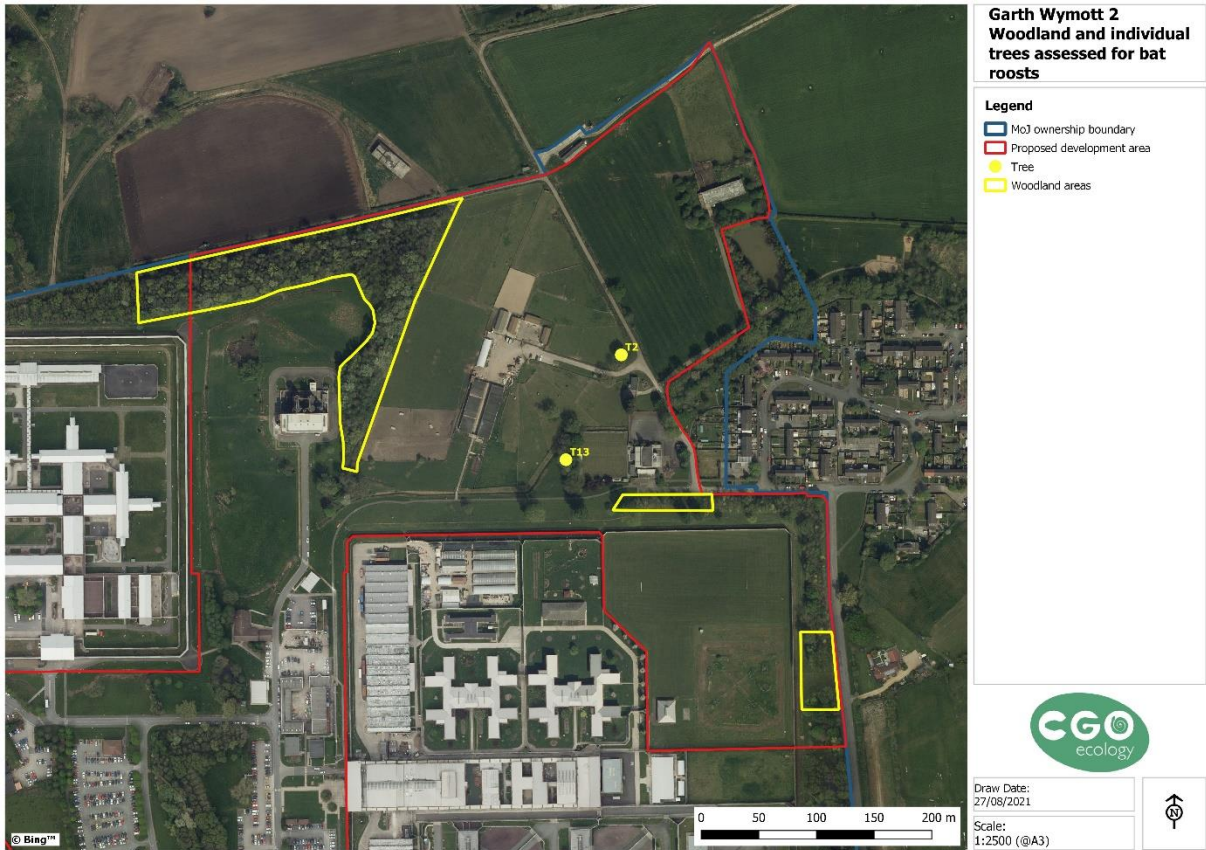


Figure 3 – Woodland and individual trees subjected to ground-level bat PRA.

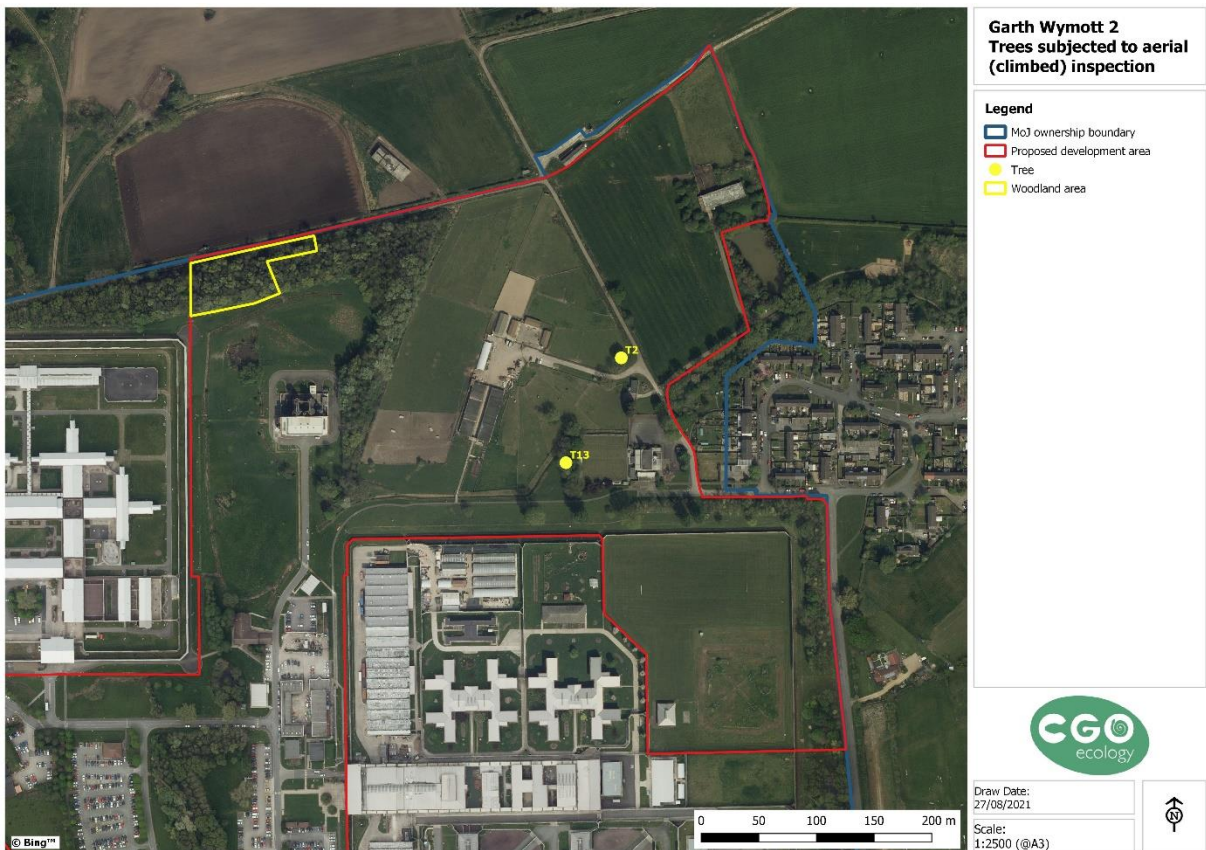


Figure 4 – Woodland and trees subjected to aerial inspection for bat roosts.

The inspections searched for the following types of bat evidence in trees: obvious holes, cavities and splits; dark staining caused by urine on the tree below a hole; staining around a hole caused by the natural oils in bats' fur; scratch marks around the hole made by bats' claws; droppings below a hole; odour of bats; noise (squeaking or chittering) coming from a hole, especially on a hot day or at dusk.

The following equipment was used, or available for use, during the surveys: Clulite CB2 1,000,000 candlepower torch; Ridgid SeeSnake CA-300 digital endoscope with 0.9m cable reach, 17mm and 6mm imaging heads; digital camera with 50x zoom; 8x25 close-focusing binoculars; 4m telescopic ladders; bat-handling gloves; sample tubes for DNA analysis.

2.3. Limitations

As the woodland has a dense understory, trees could not be fully inspected from the ground. Therefore, trees with PRFs and/or ambiguous features were climbed to allow a fuller inspection, and overcome the limitations of ground-based surveys.

It should be noted that bats often produce little or no evidence of their occupation. However, on balance, the results allow confident conclusions without the need for further survey.

3. Results

3.1. Preliminary Roost Assessment

The ground-level PRA of trees identified the need for climbed inspection of trees T2 and T13, and the woodland area north and northeast of the existing boiler house. In particular, the western part of this woodland was identified as having many trees with PRFs or ambiguity from ground level. A summary of the PRA results for this area is presented in Appendix 1.

3.2. Aerial inspection

No bat roosts or evidence of bat occupation were found, and all trees were graded as having negligible bat roost potential.

4. Baseline Ecological Conditions

The ground-based PRA and climbed aerial inspections have shown that no bat roosts exist in trees within the red line area of the proposed new prison, bowling club, and boiler house.

5. Impact Assessment

No bat roosts in trees will be affected by the proposed development.

6. Mitigation

No mitigation is required.

7. Residual effects and enhancements

The development will have no residual effects on bat roosts in trees. As an enhancement, at least 20 tree-mounted batboxes will be installed in retained trees on site, to provide a significant net gain in roost availability for bats.

8. References

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9. Appendices

Appendix 1 - PRA results from woodland north of existing boiler house

Appendix 2 - Photographs from aerial inspections

Appendix 1 – PRA results from woodland north of existing boiler house

Surveyor: Will Steele, HJA, 26th May 2021.

Grid Reference	Description	Potential Roost Features	Further survey required
SD5024820922	Six trees with dense ivy coverage	No features were identified. However, dense ivy coverage prevented the inspection of the trees beyond 5m above ground.	Climbed inspection
SD5026220907	Mature multi-stem willow	The largest stem has a series of small tear outs, ~9m high. These appear shallow but cannot confirm whether a cavity is present from ground level.	Climbed inspection
SD5024820918	Four trees with dense ivy coverage (Photo ref 14:11:21)	No features were identified. However, dense ivy coverage prevented inspection of the trees.	Climbed inspection
SD5025420917	Ash with a forked stem ~2.5m high and dense ivy coverage (Photo ref 14:17:03)	No features were identified. However, dense ivy coverage prevented the inspection of the tree.	Climbed inspection
SD5026220923	Tree with a forked stem ~6m high (Photo ref 14:44:14)	The eastern fork is partially collapsed leaving torn and damaged wood which may provide crevices.	Climbed inspection
SD5027720932	Tree with dense ivy coverage (Photo ref 14:58:14)	No features were identified. However, dense ivy coverage prevented the inspection of the tree.	Climbed inspection
SD5028320937	Standing deadwood ~4m tall. (Photo ref 15:05:41)	Woodpecker hole, ~2.5m high, south side. Woodpecker hole, ~3m high, north side. The woodpecker holes do not continue upwards into a cavity but may continue downwards or further back providing roosting opportunities.	Stepladder and endoscope.
SD5027620924 to SD5026320924	Six trees with dense ivy coverage (Photo ref 15:12:38)	No features were identified. However, dense ivy coverage prevented the inspection of the trees.	Climbed inspection
SD5027420903	Aspen with partially collapsed western branch, ~6m high (Photo ref 15:24:35)	Partially collapsed western branch, ~6m high forms split wood which may provide a shallow crevice suitable for roosting bats, although this is unlikely to form a deep cavity.	Climbed inspection

Grid Reference	Description	Potential Roost Features	Further survey required
SD5027620917	Mature aspen (Photo ref 15:35:43)	The western fork has a small weld/union on the east side of the branch, ~11m high. This feature appears swollen and may have rot or damage present. From the ground level, it is not possible to see whether an opening is present allowing access to a cavity.	Climbed inspection
SD5028720920	Tree with dense ivy coverage (Photo ref 15:43:47)	No features were identified. However, dense ivy coverage prevented the inspection of the tree.	Climbed inspection
SD5027820909	Mature tree with partially collapsed branch (Photo ref 16:18:32)	At ~9m high a partially collapsed branch is damaged with split wood. The feature appears shallow but cannot be fully inspected.	Climbed inspection
SD5028720911	Aspen with major collapsed branch (Photo ref 16:21:22)	Collapsed branch on the south side of the tree leaves exposed and damaged wood which may provide crevices.	Climbed or MEWP inspection
SD5030320928	Multi-stem ash (Photo ref 17:03:45)	~11m high, the north side of the northern stem, above a fork, a small tear out is present. The feature appears to be 5x20cm. From ground-level it is not possible to see if it enters into a cavity.	Climbed inspection
SD5028520927	Mature aspen (Photo ref 17:18:02)	~16m high on the north side of the main stem a tear out with exposed wood is present. From ground-level it was not possible to confirm whether a cavity occurs or if the feature is healed.	Climbed inspection
SD5029120918	Mature aspen (Photo ref 17:41:03)	~5.5m high on a southern branch there is a partially healed hazard beam, forming a sheltered cavity which may extend further into the tree. The opening is ~30x10cm. Damaged branches are also visible higher on the tree. Split wood may provide some crevices features. However, these cannot be clearly inspected from ground-level.	Climbed inspection

Appendix 2 – Photographs from aerial inspections

Surveyor/photographer: Stewart Bradshaw (Gritstone Ecology), July 2021.



Plate 1 – Woodland north of existing boiler house, subjected to aerial inspection. Looking north.



Plate 2 – Woodland north of existing boiler house. Dense undergrowth of saplings preventing full ground-level inspection, and therefore requiring aerial inspection.



Plate 3 – Woodland north of existing boiler house. Trees with ivy cover were climbed and inspected to check for hidden features.



Plate 4 – Woodland north of existing boiler house. Trees with minor splits and cracks in bark were inspected in detail.



Plate 5 – Tree T13. Ash tree on west side of small copse of trees adjacent bowling green and amenity grassland. Pruning wounds, snapped and dead limbs in the crown and tear outs on lead stems. Negligible.



Plate 6 – Tree T13. Tear out at 2m on east side of main stem with 1m x 30cm of bared heartwood with no suitable cavity. Negligible.



Plate 7 – Tree T13. Tear out at 8m on east side of main stem with 1m exposed heartwood with no suitable cavity. Negligible.



Plate 8 – Tree T2. Split in main stem from base to 1m with 20cm wide strip of exposed heartwood. Rot hole in top right side if feature has 30cm of upward travel in 10cm diameter dry tapering cavity. Filled with cobwebs. Negligible.



Plate 9 – Tree T2. Tear out at 5m on top of diagonal limb in the north side of the crown. Exposed and rotting heartwood 1m x 20cm with no suitable cavity. Negligible.



Plate 10 - Tree T2. Tear out on inside of diagonal lead stem at 5m in the west side of the crown. 1m x 20cm of bared heartwood with minor cavity at top of feature with 5cm upward travel. The feature is packed with slugs. No gaps around callus rolls. Negligible.



Plate 11 - Tree T2. Pruning injuries at various heights throughout the crown were checked, none have suitable features for roosting bats. Negligible.