



CENTRE 67 – 67 RHOSDDU ROAD

POTENTIAL ROOST FEATURE (PRF) INSPECTION

DATE	ECOLOGIST	APPROVED	VERSION	COMMENTS
14/07/2020	Rhian Hughes	Keymar Wake	V1	Original
21/07/2020	Rhian Hughes		V2	Changes made following feedback from Marches Ecology

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1.0 Introduction

- 1.1 Enfys Ecology Ltd were commissioned by Marches Ecology to carry out a potential roost feature (PRF) inspection of two trees which had been identified as part of the potential roost assessment (PRA) of the site, as offering potential roosting opportunities for bats, grid reference SJ33265 51121 and SJ33252 51110.
- 1.2 The proposed works are to demolish the existing building which is located approximately 5.5m to the north from the closest tree which was inspected (tree 1) and 9m to the north west of tree 2.
- 1.3 A Preliminary Roost Assessment was carried out by Tyrer Ecological Consultants Ltd on behalf of Marches ecology on Monday 16th March 2020 with emergence surveys carried out in June 2020 (Marches Ecology, 2020). The trees inspected are identified in figure 1, taken from Marches Ecology, 2020.
- 1.4 On 9th July 2020, Enfys Ecology Ltd carried out a PRF inspection of the trees, which are in close proximity to the building that is due to be demolished, and were identified in Marches Ecology 2020 as requiring further investigation. The aim of this survey was to inspect the features identified, and any other features, and classify the roost potential depending on the results.

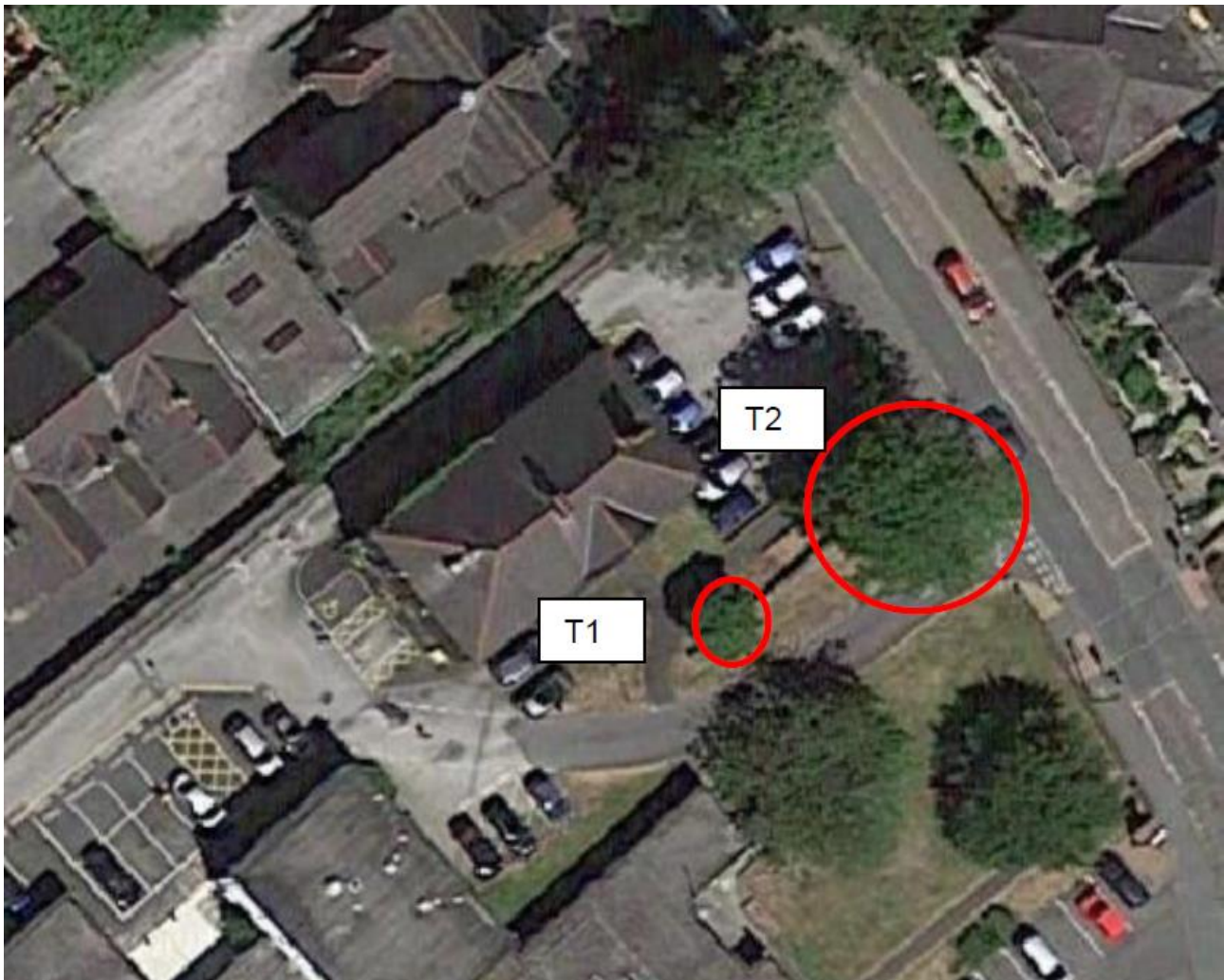


FIGURE 1.1 LOCATION OF TREES INSPECTED FOR PRA (MARCHES ECOLOGY, 2020)

2.0 Methodology

- 2.1 On 9th July 2020 a preliminary roost feature inspection was undertaken by Rhian Hughes (NRW bat licence S087351-1) and Tony Medcalf (NRW bat licence S0825611-1) using tree climbing equipment where required.
- 2.2 The trees to be inspected were T1 and T2 as identified in figure 1.1, both of these were horse chestnut (*Aesculus hippocastanum*). They were both to be climbed and inspected, to assess in more detail, their likely suitability for bats and to look for evidence of bats such as live or dead bats, droppings, staining or odour. The roost potential of each tree was then classified if appropriate using the guidelines for assessing the potential suitability of trees as detailed in Table 2.1 below (adapted from Collins, 2016).
- 2.3 An endoscope was used if it was not possible to inspect a hole or cavity fully.

TABLE 2.1 GUIDELINES FOR ASSESSING THE POTENTIAL SUITABILITY OF TREES FOR BATS (ADAPTED FROM COLLINS, 2016)

Suitability	Description Roosting Habitats
Negligible	Negligible features likely to be used by roosting bats.
Low	A tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost features 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 or hibernation).
Moderate	A tree with one or more potential roost features 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.
High	A tree with one or more potential roost sites that are obviously suitable for use by larger number of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

- 2.4 The survey was carried out following the guidelines set by the Bat Conservation Trust, 'Bat Surveys – Good Practice Guidelines, Collins, 2016'.

3.0 Survey Results

- 3.1 T1 could only be inspected up to the height of the feature identified in the original preliminary roost assessment survey (approximately 2.5m), as just above this there were two chicks of what appeared to be wood pigeon.
- 3.2 T2 was climbed and all features investigated – there was a total of five potential features in this tree.
- 3.3 Table 3.1 below, summarises the results of the PRF inspection. The table gives a description of the PRFs and the result of the climbed inspection.

Tree number	Species		Preliminary Roost Feature Inspection	
T1	Horse chestnut		One rot hole was inspected on the south west of the tree, this was at approximately 2.5 m in height. This rot hole was not deep and did not provide any roosting opportunities for bats. The tree could not be investigated any further due to the presence of chicks above the identified feature. It is possible there was another feature above the identified feature, however this could not be determined.	

2	Horse chestnut		There were five different features in this tree which were inspected. Three of these were small knot holes on the north of the tree – these were at between 3 – 4 m in height. None of these provided any roost opportunities.	
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2	Horse chestnut		The fourth feature was a split in the trunk – this was on the south side. This again offered no potential for roosting bats. The fifth feature (picture on the right) was a large knot hole or potentially a pruning wound again on the south side of the tree. This feature was approximately 6 inches wide and over 18 inches deep - approximately 12-14 inches horizontally into the branch stub/trunk and then another 4 inches up that could be inspected; the wound continued past this but it was not possible to view with the endoscope. The feature was smooth suggesting possible use by bats.	
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TABLE 3.1 RESULTS OF PRELIMINARY ROOST FEATURE INSPECTION

4.0 Conclusions and further work

Bats

- 4.1 Tree number 1 (T1) offered negligible roosting potential in the identified feature, however, it is possible that further potential was present which could not be inspected due to the presence of chicks in the tree.
- 4.2 Tree number 2 (T2) offered moderate potential for bats as there was a feature present which could be used by bats, the feature was smooth. No bat droppings were observed.
- 4.3 Even though T2 has potential for bats to roost, the tree is located further away from the building and the feature is on the south/south-western side of the tree; it is not felt that any further surveys are needed as disturbance would be reduced by facing away from the demolition. The site is in an urban area with frequent noise and disturbance, therefore if bats do use the feature, it is likely that they are accustomed to noise and disturbance - there was constant human activity during the whole period of the survey.
- 4.4 Any further features present on T1 were also located on the south/south western side of the tree which could not be inspected thoroughly, and again away from the works.
- 4.5 Following the PRF inspection no further surveys are required and the demolition can take place, however, mitigation in the form of lighting is required to reduce potential disturbance (4.6 and 4.7). A low level barrier should be installed around the trees (such as netlon or rope) to protect them during the works, ideally this fence off the root protection zone as defined by an arboriculturist, however most of the surrounding environment is hard standing.
- 4.6 Mitigation should be put in place to minimise any disturbance to these features, this should include lighting and also avoiding works within an hour of sunset or sunrise.
- 4.7 *General Lighting Guidance*
 - There must be no lights focused on the two individual trees adjacent to the building, or any other trees surrounding the site.
 - Any lights installed along pathways should be placed as far apart as possible to minimise the illuminated area, this lighting should be baffled in order to prevent light going upwards.
 - Works will only be carried out during day light hours and no artificial lighting will be used to work after sunset or before sunrise.

- The times during which the lighting is on should be limited to provide some dark periods during the night. Ideally the lighting should be motion activated in order to provide maximum darkness when not needed as well as providing safe lighting conditions of pedestrians when required.

The following luminaire specifications are provided by Bat Conservation Trust and Institute of Lighting Professionals (2018) and must be incorporated into the lighting plan for any future proposal at the site.

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should always be mounted on the horizontal, ie no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

Birds

- 4.8 The trees provide suitable habitat to support nesting birds (as identified by the presence of chicks). If the work is to take place within nesting bird season (March - August inclusive) a check must first be undertaken by a suitably qualified ecologist to ensure no nesting birds are present – if nesting birds are present, it will have to be assessed if the works will cause disturbance (depending on location within the tree) and a buffer zone appropriate to species and conservation status may need to be applied around the tree.

5.0 References and useful Information Sources

Bat Tree Habitat Key (2018) A Guide to identification and assessment for tree-care and ecology professionals. Pelagic Publishing

Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1

Marches Ecology (2020). *Proposed Demolition of Centre 67, 67 Rhosddu Road – Bat Survey and Bird Assessment*