A BAT ASSESSMENT OF SELECTED TREES AT **CAMBERWELL OLD CEMETERY AND CAMBERWELL NEW CEMETERY**

Commissioned by:

Harrison Design Development Ltd

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EXECUTIVE SUMMARY

- A Bat Assessment of selected trees at the Camberwell Old & New Cemeteries was undertaken during Summer 2011, for the client: Harrison Design Development Ltd.
- 2. This bat assessment was required due to the planned tree works at the stated two sites. This study would therefore investigate bat roost potential of selected trees on the works schedule to be worked on this autumn/winter.
- No bat roost evidence was found in any trees or groups of trees searched during this current assessment. The majority of trees were graded as either of Low or No bat roost potential.
- 4. It is important though that the small number of Moderate and High graded trees identified in this assessment should be subject to a follow-up bat emergence survey during September 2011.
- 5. There is no reason why those trees found to have Low or Negligible bat roost potential cannot be worked on now, up to end of February, as long as all precautions are strictly followed.
- 6. It is also recommended that a precautionary approach be taken when undertaking any pollarding, coppicing, felling, ivy stripping, deadwood removal and pruning on any moderate to high quality trees, after the bat emergence survey has been done. And therefore assuming no bat roosts are present in these trees.
- 7. Best practice guidelines for tree contractors are therefore included in the Recommendations section of this report, and must be read before such works can begin.

1. INTRODUCTION

- A Bat Assessment of selected trees at the Camberwell Old & New Cemeteries was undertaken during Summer 2011, for the client: Harrison Design Development Ltd.
- This bat assessment was required due to the planned tree works at the stated two sites. This study would therefore investigate bat roost potential of selected trees on the works schedule to be worked on this autumn/winter.
- The main method used for this bat assessment, as well as the full results (in Appendix 2 at end of report) and the best practice based recommendations proposed can be found within this report.
- Both this bat assessment and report were undertaken and compiled by Mr Andrew S. Waller, Consultant Ecologist, ASW Ecology, with the kind help from an assistant.
- Mr Andrew S. Waller has been a Consultant Ecologist since 1997, has very extensive experience and knowledge of protected wildlife species/issues including bats, for which he is fully licensed to survey throughout England by Natural England. He is also a full member of the Institute of Ecology and Environmental Management (IEEM).

2. METHODOLOGY

2.1 Bat assessment method

- A daytime bat assessment of selected trees at the Camberwelll Old & New Cemeteries was undertaken August and early September 2011 by an experienced licensed bat consultant.
- Areas E, F and H were surveyed at Camberwell Old Cemetery, and Areas D1/D2 also surveyed at Camberwell New Cemetery.
- Trees were searched by two surveyors using a ladder, binoculars and an endoscope for actual bat presence, bat evidence such as droppings and for investigating cavity size in trees where present.
- Gradings would help rate the quality of the total niches on each tree for bat roost opportunities, and followed that stated in the Bat Conservation Trust Bat Survey Guidelines (2007) and by ArborEcology (2006). Hence, the same gradings are used here for standardisation for this assessment.

2.2 Constraints to bat assessment of trees

- The June to August period is critical to bats since this is when maternity roosts are present and young bats will be born. Significant roosts can be present within suitable niches within trees, and can be obvious during bat emergence surveys and daytime assessments.
- The above should be noted for awareness, considering that it was not possible to do any daytime bat surveying during June or July, but most was done in August 2011. This was due to the timing of the contract and the requirement for large scale maps of the two sites.
- As always though, without taking into account surveys at other times of the year, this study can only provide a "snapshot" of the presence of bats at the sites during the time of the assessment visits.

3. SURVEY RESULTS

3.1 Bat assessment of trees

Please see Table 1 in Appendix 2 for the full tree assessment results – at the end of this report.

- In summary though, there was only a very small proportion of trees present of Moderate or High bat roost potential e.g. 2 x High graded trees and 4 x Moderate graded trees/tree group, within the tree works schedule for this autumn and winter.
- No confirmed bat roosts were found during this daytime bat survey.
- The vast majority of trees were of low or having no bat roost potential at all. This is discussed in the next chapter of this report.

4. CONCLUSIONS

4.1 Significance of bat assessment results

- From these tree assessment results, it is clear that the majority of trees to be worked on at the two cemetery sites have mainly Low or no bat roost potential. A small number of trees to be worked on had Moderate or High potential bat roost potential. There were no Confirmed Bat Roosts found.
- It is also clear that targeted follow-up bat survey work must now be undertaken urgently on selected trees, as stated in the next chapter, before any tree works can begin (other than at Area E).
- Strict precautions must apply to working on High and Moderate graded trees however, especially as there will be a higher risk of finding a hidden bat roost due to the niches present.
- There is no reason why those trees found to have Low or Negligible bat roost potential cannot be worked on now, up to end of February, as long as all precautions are strictly followed.

4.2 Potential impacts of tree works

- <u>In the absence of any mitigation measures</u>, the following impacts from the proposed tree works at the two sites on bats would be currently predicted as:
- The tree related works proposed at the two cemetery sites could adversely impact on bats if no follow-up survey or the recommended precautions were used during the works by tree surgeons, since an unexpected new bat tree roost could always be present.
- Without any caution during the works or adhering to current best practice guidelines, bats can be injured or killed accidentally, and roosts damaged or destroyed. Impact magnitude predicted: Moderate to High (in regards to the trees graded as having Moderate or High potential at the two cemetery sites)

4.3 Legal protection of bats in the UK (Simplified current summary only of the legislation – please see other texts for full details)

THE LEGAL PROTECTION OF BATS IN ENGLAND AND WALES

Introduction

All species of bats in England and Wales are protected by law. Their legal protection derives from two sources:

 the strict species protection provisions of the EU Habitats Directive as implemented in England and Wales by Part 3 of the Conservation of Habitats and Species Regulations 2010 (the "2010 Regulations"); and Part 1 of the Wildlife and Countryside Act 1981 (as amended).

Conservation of Habitats and Species Regulations 2010 ("2010 Regulations")

The 2010 Regulations came into force on 1 April 2010. They replace the previously applicable regulations (Conservation (Natural Habitats, &c) Regulations 1994) in relation to England and Wales. The 2010 Regulations are the principal means by which the EU Habitats Directive is transposed in England and Wales.

The Regulations contain a number of Parts but Part 3 sets out the protection to be afforded to "European Protected Species" ("EPS"), which includes all species of British bats. The list also includes other species which are rare on a European scale, such as great crested newts, otters and dormice.

Under Part 3 of the 2010 Regulations both bats themselves and their "breeding sites and resting places" (most commonly their roosts) are protected.

Part 3 provides that it is a criminal offence to do the following (note that this is not an exhaustive list of all offences but rather a list of offences which will be of most relevance to developers):

- a. to damage or destroy a breeding site or resting place of a bat (Reg 41(1)(d));
- b. to deliberately capture, injure or kill any bat (Reg 41(1)(a));
- c. to deliberately disturb bats [note, wherever they are occurring] (Reg 41(1)(b)), in particular:
 - i. any disturbance of bats which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young (Reg 41(2)(a)(i)); or
 - ii. any disturbance of bats which is likely to impair their ability to hibernate or migrate (Reg 41(2)(a)(ii)); or
 - iii. any disturbance of bats which is likely to affect significantly the local distribution or abundance of the species to which they belong (Reg 41(2)(b));
- d. to have in one's possession or to control or to transport or to sell or exchange or offer to sell or exchange any live or dead bat or part of a bat which has been taken from the wild; or any part of, or anything derived from, a bat or any part of a bat (Reg 41(3) and (4)); and
- e. to attempt any of the above (Reg 116(1)).

The maximum penalty that can be imposed for the above offences is (as at May 2010) a fine of up to £5,000, and/or up to six months imprisonment. The offences can be committed by individuals or by bodies corporate. Where a body corporate has committed the offence, the directors or officers of the company may also be prosecuted if the offence has been committed with their consent or connivance, or is attributable to their neglect (Reg 124).

Wildlife and Countryside Act 1981 ("WCA 1981")

The WCA 1981 protects a wide range of animals, plants and habitats in the UK. All British bat species are afforded protection under Part 1 of the WCA 1981, in addition to the protection they have under the 2010 Regulations.

As regards England and Wales the following offences apply to protect bats under the W&CA 1981:

- a. to intentionally or recklessly disturb any bat while it is occupying a structure of place which it uses for shelter or protection (s9(4)(b) WCA 1981);
- b. to intentionally or recklessly obstruct access to any structure or place which any bat uses for shelter or protection (s9(4)(c) WCA 1981);
- c. attempting either of the above (s18(1) WCA 1981).

The maximum penalty that can be imposed for the above offences is (as at May 2010) a fine of up to £5,000, and/or up to six months imprisonment. The offences can be committed by individuals or by bodies corporate. Where a body corporate has committed the offence, the directors or officers of that company may also be prosecuted if the offence has been committed with their consent or connivance or is attributable to their neglect (s69(1) WCA 1981).

5. RECOMMENDATIONS

5.1 Bat emergence surveying of selected trees

- A bat emergence survey now needs to be undertaken at the Moderate and High graded trees, whilst bats are still very active. Up to three bat survey visits at night will be needed per tree or group of trees, so to adhere to current best practice guidelines by BCT for surveying bats.
- Bat detectors would be used to find and identify any bats within these selected trees, and to investigate if any hidden roosts are present. Night binoculars would be used to search for any late emerging bats from the trees too.

5.2 Timing of works on trees – FOR REFERENCE ONLY AS A BAT EMERGENCE SURVEY NEEDS TO BE UNDERTAKEN FIRST AS STATED ABOVE

- The aim is normally for all works at a site not to be undertaken during the main bat breeding season (June to August) or ideally during the main bat hibernation period (November to March), when bats are vulnerable. September and October are therefore suitable months for trees works.
- However, if trees with low or no bat potential are to be worked on during November to February, then this could be permitted as long as all precautions listed below such as a bat watch brief are employed. Minor works on moderate or high graded trees would have to be discussed in detail with the bat consultant beforehand, and the risk of such works stated clearly, as this is not an ideal situation.
- Nesting birds must also not be impacted upon either by such works during the spring e.g. works finish by late February, so therefore some flexibility will be required especially in the autumn and winter.

5.3 Best practice regarding works on trees – FOR CLIENT AND TREE CONTRACTORS TO READ

During all tree related works at both sites, great care is needed in regards to the pollarding, coppicing, felling and any pruning on the existing trees. Best practice guidelines will always need to be followed at all times without exception, so to comply with current bat related legislation.

- A licensed bat consultant should be allowed to re-check any specific trees with moderate to high quality niches (if this is the case), to be pollarded/coppiced/felled/pruned prior or on the day of the tree works and before the works actually begin. This would allow he or she to examine the interior of features such as woodpecker holes, rot holes, splits, fissures, cracks and behind large loose bark plates for hidden bats.
- It is recommended that a precautionary approach be taken when undertaking any pollarding, coppicing, felling, ivy stripping, deadwood removal and pruning on any moderate to high quality trees. Contractors

undertaking work on the trees should undertake a climbing inspection and look for bats and their field signs such as black streaks below a hole, crack or split in the tree; droppings in the entrance of any hole or crack; urine stains; smooth edged entrance holes with dark fur staining as well as actual scratch marks on entrance holes. A toolbox talk by the bat ecologist should be undertaken with the tree surgeons before the tree works begin.

- A licensed bat consultant should be present on-site during any pollarding/felling/pruning/coppicing of the moderate and high graded trees. They should also be present during any particularly sensitive tree related works.
- The tree contractors should avoid cutting through any cavities in a trunk section or in a tree branch, and instead cut well above and below the cavity.
- Wherever possible, branches and trunk sections with any cavities or splits, as well as dense ivy covered trees should be lowered carefully to the ground, so to avoid injuring or killing any hidden bats. These trees should then be left for 24 hours and most certainly overnight, so any potentially hidden bats can leave.
- Bark plates, especially large sized plates, on any trees which have bat roost
 potential should be removed by hand where this is possible. This will allow the
 inspection for any bats hiding behind these plates. This is especially important in
 regards to some rare bat species in the UK which do show a preference for
 roosting behind large bark plates.
- Trees with low to moderate ivy cover can have the ivy stripped by hand if time allows this. This may not be possible with large trees with substantial ivy cover.
- Any new cavities or crevices behind stripped ivy cover will need to be checked and assessed for bat presence.
- Where any moderate graded trees have to be felled, then Schwegler Woodcrete bat boxes should be installed on nearby trees as compensation. Up to three suitable bat boxes can be installed at height per tree or one per tree is fine too. Bat boxes can face N, SE, SW, and should be clutter free plus away from any artificial light sources. If bat box models that are maintenance free are chosen, this would be ideal and do not need cleaning out. Advice can be given on this aspect and the bat boxes that could be chosen.
- If there is ever any future evidence that there are tree based bat roosts in any of the trees to be felled or managed at the two sites, then a Bats European Protected Species (EPS) Licence in respect to "development" will be required to avoid triggering various offences. So if bats or bat evidence are found during any tree check by tree surgeons, then work should stop immediately, and a licensed bat consultant urgently sought.

6. REFERENCES

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- (3) Bat Conservation Trust (2007) Bat Surveys Good Practice Guidelines. Bat Conservation Trust, London.
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- (5) Entwistle, A.C. et al (2001) Habitat Management for Bats. JNCC, UK.
- (6) Fure, A. (2006) Bats and lighting. The London Naturalist. Number 85. LNHS, London.
- (7) Mitchell-Jones, A.J. (2004) Bat Mitigation Guidelines. English Nature.
- (8) Mitchell-Jones, A.J. and McLeish, A.P. (2004) The Bat Workers' Manual. 3rd Ed. JNCC.

APPENDIX 1 - PHOTOGRAPHS A-F

Note: all tree numbers correspond to those stated in Table 1 within Appendix 2



Photograph A

A very small number of trees had woodpecker holes, and these can have important cavities for roosting bats, especially if upwards orientated. This tree was at Camberwell New Cemetery



Photograph B

Some trees had moderate ivy cover, which can provide shelter for roosting bats, but denser ivy stands are preferred. This tree was in the tree group at Camberwell New Cemetery



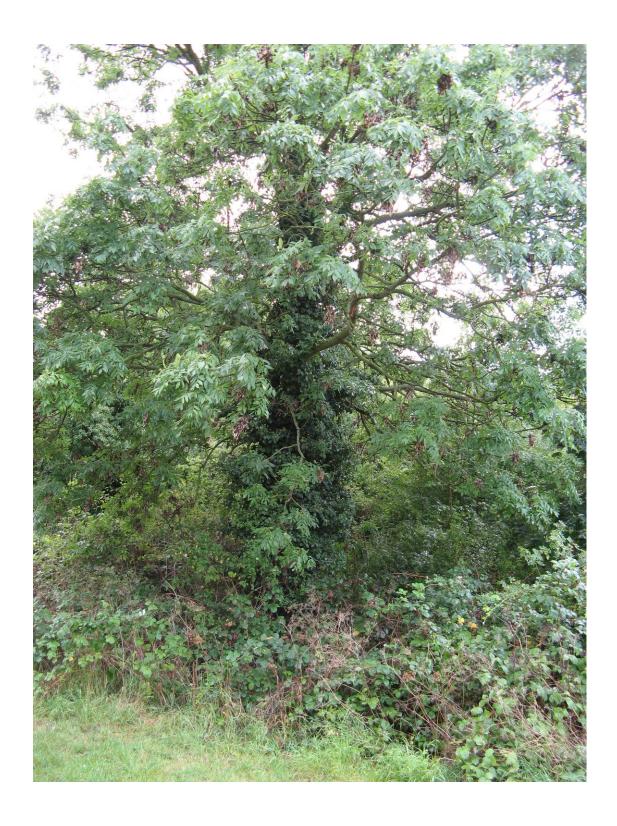
Photograph C

This very interesting tree probably has a large cavity within the trunk and two woodpecker holes can be seen, which can be used by roosting bats



Photograph D

Many trees that were surveyed at the two cemeteries were of low bat roost potential or had none at all. Although the left hand stem in this photograph has moderate bat roost potential in this group



Photograph E

This high graded tree has dense ivy cover which provides very good shelter for bats, and may have niches behind the ivy too



Photograph F

Within Area E at Camberwell Old Cemetery, the block of trees surveyed had low or no bat roost potential, and therefore only general bat awareness by tree contractors was needed during work there

Appendix 2 – Table 1: Bat assessment results of trees at both Camberwell Old & New Cemeteries - 2011

Grading Scale in regards to overall value of tree to roosting bats: N - None, L - Low, M - Moderate, H - High, CR - Confirmed Bat Roost

Note: All tree tag numbers refer to those on maps provided

Site 1: Camberwell Old Cemetery

Area E

Tree Number	Tree Species	Features present for potential roosting bats	Value to bats	Action needed
T1	Bay tree	None	N	Follow best practice during works
T2	Group of trees and shrubs	None	N	Follow best practice during works
Т3	Group of three trees inc small oak and bay tree	One minor bark plate only	N	Follow best practice during works
T4	Oak (Tag No: 0561)	Minor ivy cover only	N	Follow best practice during works
T5	Oak (Tag No: 0562)	Minor ivy cover only	N	Follow best practice during works
T6	High stump (conifer)	Some ivy cover but too sparse	N	Follow best practice during works
T7	Plane tree	Has moderate ivy cover but too sparse and some minor crevices	L	Follow best practice during works
Т8	Small sapling, small ash trees and a small maple	None	N	Follow best practice during works
Т9	Oak	Minor ivy cover and no obvious holes in tree	L	Follow best practice

seen from ground level	during works
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Area F

Tree Number	Tree Species	Features present for potential roosting bats	Value to bats	Action needed
0594	Hawthorn	Shallow crevice only and also an old bird nest present	N	Follow best practice during works
0597	Silver birch	None	N	Follow best practice during works
0598	Silver birch	None	N	Follow best practice during works
0611	Cypress	None	N	Follow best practice during works
0613	Unknown tree species	None	N	Follow best practice during works
0614	Unknown tree species	None	N	Follow best practice during works
0615	Ash	Two shallow holes only	N	Follow best practice during works
0616	Ash	Woodpecker hole about 30ft up tree and cavity, plus another small hole, bark plates and deadwood crevices	М	Do bat emergence survey of this tree
0617	Ash	None	N	Follow best practice during works
0618	Ash	One small hole in a side branch base	L	Follow best practice during works
0619	Ash	None	N	Follow best practice during works

0620	Ash	None	N	Follow best practice during works
0668	Unknown tree species	None	N	Follow best practice during works

Area H

Tree Number	Tree Species	Features present for potential roosting bats	Value to bats	Action needed
Not known (next to 0649)	Sycamore	Light ivy cover present	L	Follow best practice during works
0649	Sycamore	Shallow knot hole only	N	Follow best practice during works
0651	Sycamore	Two shallow knot holes	N	Follow best practice during works
0652	Sycamore	None	N	Follow best practice during works
0653	Maple	One shallow hole in trunk	L	Follow best practice during works
0656	Sycamore	Shallow hole in base only	N	Follow best practice during works
0659	Plane	None	N	Follow best practice during works
0660	Plane	None	N	Follow best practice during works
0661	Sycamore	Moderate ivy cover noted	L/M	Do bat emergence survey of this tree

0662	Maple	None	N	Follow best practice during works
0663	Ash	Light ivy cover only	L	Follow best practice during works
0667	Ash	Dense ivy present on trunk	Н	Do bat emergence survey of this tree

Site 2: Camberwell New Cemetery

Area D1

Tree Number	Tree Species	Features present for potential roosting bats	Value to bats	Action needed
0501	Poplar	None	N	Follow best practice during works
0502	Poplar	A small woodpecker hole is present and minor bark plates too	М	Do bat emergence survey of this tree
0503	Oak	None	N	Follow best practice during works
0504	Poplar	None	N	Follow best practice during works
0505	Poplar	None	N	Follow best practice during works
0506	Poplar	None	N	Follow best practice during works
0507	Poplar	None	N	Follow best practice during works
0514	Oak	None	N	Follow best

				practice during works
0515	Poplar	Minor bark plates and possible crevice only	L	Follow best practice during works
Tree Group (hatched area in woodland)	Mixed species present	Many trees in this small wooded area have minor ivy cover only or too sparse for bats, but a small number have moderate ivy cover so could be used by bats in theory	М	Do bat emergence survey of this highest quality trees with most ivy cover

Area D2

Tree Number	Tree Species	Features present for potential roosting bats	Value to bats	Action needed
0535	Ash like tree	None	N	Follow best practice during works
Shrub (adjacent to above)	Unknown shrub	None	N	Follow best practice during works
0536 (two adjacent ash like trees)	2 x ash like trees	None, bird nest in one tree	N	Follow best practice during works
0537	Ash like tree	None	N	Follow best practice during works
0538	Unknown tree species	Side crevices but have webs inside	L	Follow best practice during works
0539	Ash	One woodpecker hole (10cm+ deep) with small holes above, so large cavity inside this tree	Н	Do bat emergence survey of this tree
0540	Silver birch	None	N	Follow best practice during works
0541	Silver birch	None	N	Follow best

				practice during works
0543	Ash like tree	None	N	Follow best practice during works
0544	Ash	None	N	Follow best practice during works
0545	Ash	None	N	Follow best practice during works
0546	Oak	None	N	Follow best practice during works
0547	Ash	None. Two old dreys in tree	N	Follow best practice during works
0548	Ash	None	N	Follow best practice during works
0549	Unknown tree species	None	N	Follow best practice during works