

**TUSCANY, OAK GLADE, NORTHWOOD,
HA6 2TY**

**PRELIMINARY BAT ROOST
ASSESSMENT**

A Report to: Juttla Architects

Report No: RT-MME-152842-02

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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

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The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, it may be necessary to undertake an updated survey to allow any changes in the status of bats on site to be assessed, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

In July 2020, Juttla Architects commissioned Middlemarch Environmental Ltd to undertake a Preliminary Bat Roost Assessment at Tuscany, Oak Glade, Northwood, HA6 2TY to inform a planning application associated with the demolition of the existing property and construction of a new six-bedroom detached dwelling. This report details the findings of the assessment undertaken on 18th July 2020.

The residential building presented a series of high potential roosting features capable of supporting large numbers of roosting bats. Features included access points under roof tiles, under lead flashing at the chimney and dormer joints, between edge tiles and mortar on the southern elevation gable and small areas of damaged brickwork. Extensive opportunities for bats to access spaces behind hanging tiles were noted across the structure. No evidence of bats was recorded during the external inspection however, as the majority of the features were noted at height, a detailed inspection of all areas could not be carried out. Due to restrictions relating to Covid-19 pandemic, an internal assessment was not undertaken. Consequently, the loft and roof spaces were not inspected for evidence of bat usage.

The building was categorised as having high bat roosting potential considering the nature of the features recorded and connectivity of the site to high value commuting and foraging habitat in the immediate landscape (woodland). The summerhouse to the rear of the site was inspected in detail and considered to offer negligible bat roosting potential. The rear garden area contained a parcel of semi-natural broadleaved woodland habitat, managed as amenity garden space. Within this parcel 7 no. mature trees were identified as supporting high bat roosting potential features. A further 7 no. trees across the site were classified as having low potential to support roosting bats, being of a suitable size and age but with no features noted during the ground level assessment.

The main building is to be demolished and has been assessed as having high bat roosting potential. As such, potential adverse impacts include destruction of a roost, direct harm and disturbance to roosting bats. Should any of the trees identified as having high bat roosting potential require removal/ pruning, potential adverse impacts include destruction of a roost, direct harm and disturbance to roosting bats. Redevelopment of the site is likely to result in changes in landscaping and a small encroachment into the existing garden areas, unlikely to be significant beyond the site level. The following recommendations have therefore been made:

R1 Tuscany

The building has been identified as having high potential to support roosting bats. Bat Surveys: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016) recommends that for buildings with high bat roosting potential at least three dusk emergence and/or dawn re-entry surveys should be undertaken during the bat emergence/re-entry survey season to determine the presence/absence of roosting bats within the buildings. The bat emergence/re-entry survey season extends from May to September. At least two of the surveys should be undertaken during the peak season for emergence/re-entry surveys between May and August and one of the three surveys should be a dawn re-entry survey. If a roost is discovered during these surveys, a Natural England licence application may be required.

R2 Trees 17, 29, 37, 40, 50, 51 and 54

Trees 17, 29, 37, 40, 50, 51 and 54 have been identified as having high potential to support roosting bats. Should the trees be impacted by the proposed works, including through direct felling, pruning and indirect noise, dust and vibration, further works are required to determine the presence/absence of roosting bats. There are two possible survey options available to the client: the trees can be subject to dusk emergence and dawn re-entry surveys or the trees can be subject to a Preliminary Roost Feature Inspection Survey using tree climbing equipment to access features that were inaccessible during this survey. If a roost is discovered during these surveys, a Natural England licence application may be required.

R3 Summerhouse and Remaining Trees

The Summerhouse was fully inspected and no bat roost was identified. The structure had no potential for roosting bats. Trees 1, 2, 16, 18, 20, 30, 41 and 68 were considered to have low potential for roosting bats. Remaining trees were considered to have negligible potential for roosting bats. The survey data obtained for the site is valid for 12 months from the survey date. It is recommended that a 'soft felling' approach is used for all required works to the above trees.

R4 Lighting

Bats are likely to use trees for foraging and commuting. Therefore, in line with paragraph 180 of the National Planning Policy Framework, the development should aim to limit the impact of light pollution on bats through the careful use of lighting.

R5 Habitat Enhancement

In line with the National Planning Policy Framework, the development should enhance the site for bats. Bat boxes should be installed integral to the new build to provide replacement roosting habitat. The planting of native species which attract night flying insects is recommended.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In July 2020, Juttla Architects commissioned Middlemarch Environmental Ltd to undertake a Preliminary Bat Roost Assessment at Tuscany, Oak Glade, Northwood, HA6 2TY. This assessment is required to inform a planning application associated with the demolition of the existing property and construction of a new six-bedroom detached dwelling.

To fulfil the above brief to assess the potential for the existing buildings and trees on site to support roosting bats, a Preliminary Bat Roost Assessment was undertaken on 18th July 2020.

All UK bat species are European protected species and they are capable of being material considerations in the planning process. A summary of the legislation protecting bats is included within Appendix 1. This section also provides some brief information on the ecology of British bat species.

1.2 SITE DESCRIPTION AND CONTEXT

The site under consideration is a rectangular parcel of residential land of approximately 0.2 ha containing a detached house and residential gardens. The study area is located within Northwood, London Borough of Hillingdon, centered at Ordnance Survey Grid Reference TQ 08029 90624. The topography of the study area sloped west to east.

At the time of the survey, the study area comprised residential property consisting of a front drive bordered by amenity planting and scattered trees. The building on site was a detached two storey structure with a multi-hipped roof and a smaller pitched gable on the front elevation. A sloped roofed single-storey extension with a flat roofed dormer protruded from the northern elevation. The rear of the property comprised hardstanding and a parcel of amenity lawn fringed by shrub beds and scattered trees. The rear garden area transitioned into semi-natural broadleaved woodland habitat, managed as amenity garden space. A timber summerhouse was recorded within the rear of the plot.

The site is forms part of a network of residential properties and gardens located 150 m to the north of a large complex of woodland comprising Copse Wood, Park Wood, Mad Bess Wood and Bayhurst Wood which together form Ruislip Woods Ancient Semi-Natural Woodland (ASNW) and Site of Special Scientific Interest (SSSI).

1.3 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

Document Name / Drawing Number	Author
Arboricultural Impact Assessment / TH 2440	Trevor Heaps - Arboricultural Consultancy Ltd.

Table 1.1: Documentation Provided by Client

2. METHODOLOGY

2.1 FIELD SURVEY

In line with the specifications detailed in Bat Mitigation Guidelines (English Nature, 2004) and Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), a Preliminary Bat Roost Assessment of the building and trees was conducted during daylight hours. A visual assessment was undertaken to determine the presence of any Potential Roost Features (PRFs), together with a general appraisal of the suitability of the site for foraging and commuting. Table 2.1 provides examples of PRFs. Any accessible PRFs were inspected using binoculars, a torch and endoscope for evidence of possible bat presence. The building was surveyed externally and internally.

For reasons of health and safety, the survey was only undertaken in areas accessible from 3.5 m ladders.

Based on the PRF's present, the survey area was assessed using the suitability classes detailed within Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), as detailed in Table 2.2. Trees with features present that are suitable to support roosting bats (high and moderate suitability) are discussed more fully in the report.

A summary of the trees within the survey area without suitable features to support roosting bats (low and negligible suitability) is provided within the report. Due to their negligible potential to support roosting bats, the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) recommend no further survey work is required for these tree classes.

Example of Potential Roost Features	
Buildings	
<u>Externally</u>	
• Access through window panes, doors and walls; • behind peeling paintwork or lifted rendering; • behind hanging tiles; • weatherboarding; • eaves; • soffit boxes; • fascias; • lead flashing; • gaps under felt (even including those of flat roofs); • under tiles/slates; • existing bat and bird boxes; and, • any gaps in brickwork or stonework permitting access into access to cavity- or rubble-filled walls.	
<u>Internally</u>	
• behind wooden panelling; • in lintels above doors and windows; • behind window shutters and curtains; • behind pictures, posters, furniture, peeling paintwork; • peeling wallpaper, lifted plaster and boarded-up windows; • inside cupboards and in chimneys accessible from fireplaces. • within attic voids: • the top of gable end or dividing walls; • the top of chimney breasts; • ridge and hip beams and other roof beams; • mortise and tenon joints; • all beams (free-hanging bats); • the junction of roof timbers, especially where ridge and hip beams meet; • behind purlins; • between tiles and the roof lining; and, • under flat felt roofs.	
Trees	
• Bat, bird and dormouse boxes on trees; • Cankers (caused by localized bark death) in which cavities have developed; • Compression forks with included bark, forming potential cavities; • Cracks/splits in stems or branches (both vertical and horizontal); • Crossing stems or branches with suitable space between for roosting; • Ivy stems with diameters in excess of 50 mm with suitable roosting space behind (or where a roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk); • Man-made holes (e.g. cavities that have developed from flush cuts); • Natural holes (e.g. knot holes) arising from naturally shed branches, or cavities created by branches tearing out from parent stems; • Other hollows or cavities, including rot holes and butt rots; • Partially detached or loose, platy bark; • Woodpecker holes; or, • Other features that offer a place of shelter.	

Table 2.1: Potential Roost Features (Adapted from Collins 2016 and BSI 2015)

Suitability	Description
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. A tree 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.
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 – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed). A tree 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 – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. 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 or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Negligible	Negligible habitat features on site likely to be used by roosting bats.

Table 2.2: Classification of Buildings and Trees with Bat Potential (Adapted from Collins, 2016)

3. SURVEY RESULTS

3.1 INTRODUCTION

The Preliminary Bat Roost Assessment was conducted on 8th July 2020 by Will Rees (Ecological Consultant).

Weather conditions were recorded and are presented in Table 3.1.

Parameter	Conditions
Temperature (°C)	15
Cloud Cover (%)	100
Precipitation	Light Rain
Wind Speed (Beaufort)	F1

Table 3.1: Weather Conditions During the Preliminary Bat Roost Assessment

3.2 CONSTRAINTS

Due to the Covid-19 pandemic, in March 2020, UK governments advised that unnecessary travel and contact with others should be restricted. In response to these restrictions, on 31st March 2020, the Chartered Institute for Ecology and Environmental Management (CIEEM) released a revised document titled 'Advice on Covid-19 and Undertaking Site-Based Ecological Work', to provide guidance to ecologists. In accordance with guidance, the Preliminary Bat Roost Assessment was conducted externally only as the building was in active use at the time of the survey.

3.3 SURVEY RESULTS – BUILDINGS

3.3.1 Tuscany

External Assessment

The main building on site was a detached brick built two storey structure with a multi-hipped roof and a smaller pitched gable on the front elevation (Plate 3.1). A sloped roofed single-storey extension with a flat roofed dormer protruded from the northern elevation (Plate 3.2). Two brick chimneys extended from the northern and southern rooflines.



Plate 3.1: Western Aspect



Plate 3.2: Eastern Aspect

Clay roof tiles and were largely intact on the main structure however, warped tiles were noted along the south-western corner of the hipped roof and more prominently along the pitched gable roof and single storey extension sloped roof (Plates 3.3, 3.4 and 3.5). Damage was also noted to a ridge tile on the pitched gable and slipped tiles were noted on the northern elevation sloped roof and the porch roof (Plate 3.6). Mortar along the edge of the gable end was in poor repair and a near continuous crack was found to lead under the

edge tiles of the gable (Plate 3.7). Lead flashing was lifted around the flat roofed dormer and chimneys, presenting gaps beneath for fauna to access crevices between the joints (Plate 3.8).



Plate 3.3: Lifted Tiles on Main Roof



Plate 3.4: Lifted Tiles on the Pitched Gable and Damaged Ridge Tile



Plate 3.5: Lifted Tiles on Sloped Roof



Plate 3.6: Slipped Tiles



Plate 3.7: Damaged Mortar on Gable



Plate 3.8: Lifted Flashing around Chimney

Low level features, including tiles on the porch, were inspected in detail with no evidence of bat usage noted. Remaining features were recorded at height and therefore a detailed inspection could not be carried out. Evidence of an active wasp nest was noted under the northern elevation sloped roof tiles.

Soffit boxes were generally intact and in good repair throughout. A small area of repaired soffit was noted on the southern elevation which appeared to be well sealed from ground level. Hanging tiles were present on the upper level brickwork of the main structure and around the dormer. Tiles were generally lifted and warped. Slipped tiles were also noted, prominently on the south-west corner of the building (Plate 3.9) and the edge tiles of the dormer were open (Plate 3.10). These features present favourable access points to crevices between tiles and larger areas between tiles and the underlying frame.



Plate 3.9: Damaged Hanging Tile



Plate 3.10: Open Hanging Tile Edge

Brickwork was generally in good repair throughout, including on the chimneys and around the windows and doors. A small area of damaged mortar was noted at the top of the western elevation gable, which may provide access into the wall cavity or connect to the loft space (Plate 3.11). Where vents were present, these were too narrow to be used by bats (Plate 3.12).



Plate 3.11: Damaged Mortar on Gable Brickwork



Plate 3.12: Vents – Unsuitable for Bats

No evidence of roosting bats, e.g. droppings, urine staining, feeding remains or scratch marks was recorded during the external assessment. However, it was not possible to inspect the majority of feature recorded at height for evidence of bats, including lifted, missing and warped roof tiles, the roof voids themselves, damaged mortar on the gable and areas behind hanging tiles.

As such it was not possible to establish if bats had used these features to enter a roost location at the time of surveying.

3.3.2 Summerhouse

A modern timber summerhouse was located within the rear of the property (Plate 3.13). The structure had a pitched felt shingled roof and timber walls. The structure was in good repair throughout, presenting no potential roosting features of value to bats. The outer porch's smooth timber construction makes it generally unsuitable for use as a feeding perch for bats. No evidence of bats was noted during the external assessment of the structure.



Plate 3.13: Summerhouse

3.4 SURVEY RESULTS – TREES

3.4.1 Trees with High Potential to Support Roosting Bats

At the time of the survey, the study area comprised residential property consisting of a front drive bordered by amenity planting and scattered trees. The rear garden area transitioned into semi-natural broadleaved woodland habitat, managed as amenity garden space. Species present in the survey were common oak *Quercus robur*, hornbeam *Carpinus betulus*, ash *Fraxinus excelsior*, Lawson's cypress *Chamaecyparis lawsoniana*, Scots pine *Pinus sylvestris* and field maple *Acer campestre*.

The trees considered to have potential for use by roosting bats are further described in Table 3.2.

Tree No.	Species	Description	BCT Suitability Class	Plate No.
T17	Oak	A mature oak 15 m in height and 1 m Diameter at Breast Height (DBH). Features noted included a snapped limb on the northern aspect at 10 m and snagged limb adjacent.	High	3.14 and 3.23
T29	Oak	A mature oak 13 m in height and 0.75 m in DBH. Deadwood noted in upper vertical limbs with fissures that may lead into an internal cavity.	High	3.15
T37	Hornbeam	A mature hornbeam 12 m height and 0.5 m in DBH. The tree had a basal cavity extending up from the tree base, likely resulting from a lightning strike.	High	3.16 and 3.24
T50	Oak	A mature oak 12 m in height and 0.75 m in DBH. A woodpecker hole was noted at 10 m on the main trunk.	High	3.17 and 3.21
T51	Hornbeam	A mature two stemmed hornbeam 10 m in height and 1 m in DBH. A snapped limb with a wound at the base was noted on a fork point at 6 m.	High	3.18 and 3.25
T54	Hornbeam	A mature hornbeam 12 m in height and 1 m in DBH. The tree had a basal cavity and fissure up main stem both of which may extend into suitable cavity for use by bats.	High	3.19
T40	Oak	A mature oak 12 m in height and 0.75 m in DBH. A woodpecker hole was noted at 6 m on the northern aspect.	High	3.20

Table 3.2: Summary of Trees with High/Moderate Suitability for Bats Within the Survey Area



Plate 3.14: T17



Plate 3.15: T29

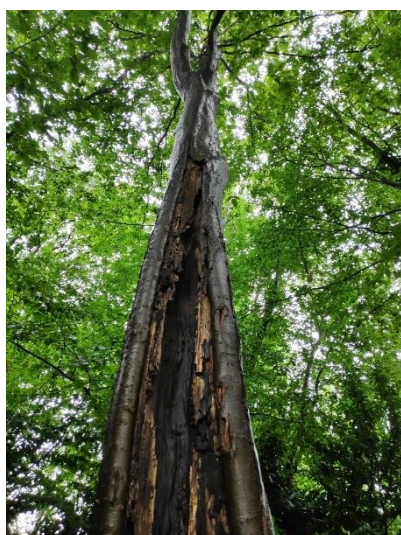


Plate 3.16: T37



Plate 3.17: T50



Plate 3.18: T51

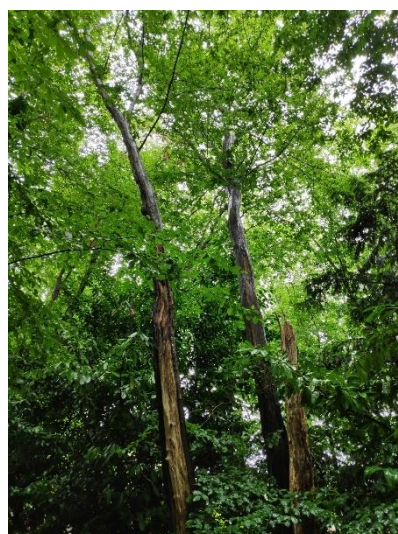


Plate 3.19: T54



Plate 3.20: T40



Plate 3.21: Woodpecker Hole



Plate 3.22: Deadwood with Potential Cavity



Plate 3.23: Snagged Limbs

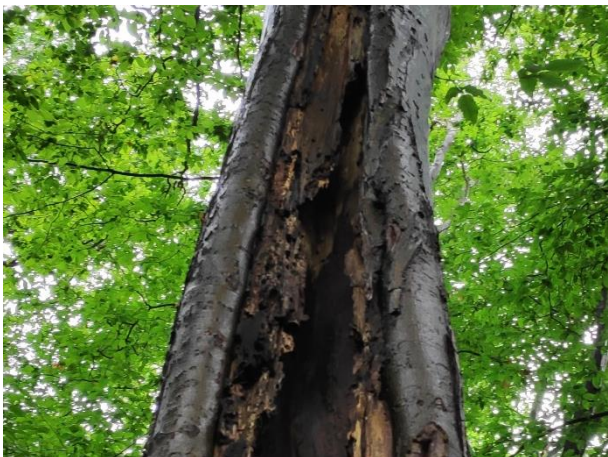


Plate 3.24: Basal Cavity



Plate 3.25: Snapped Limb with Wound at Base

3.4.2 Trees with Low or Negligible Potential to Support Roosting Bats

In addition to the trees noted above, 5 no. trees within the rear garden and 2 no within the front garden were considered to be of sufficient size and age to support potential roosting features, but none were recorded from ground level. Remaining trees offered negligible potential to support roosting bats.

Plates 3.26 and 3.27 provide examples of the trees.



Plate 3.26: T68 – Low Potential Ash with no Visible Features



Plate 3.27: Coppiced Hornbeam – Negligible Bat Roosting Potential

3.5 SITE AND SURROUNDING HABITATS

The site contained suitable foraging and commuting habitat in the form of mature woodland trees with amenity grassland beneath, introduced shrub beds and a larger area of open shortly mown amenity grassland.

The wider landscape was dominated by residential houses with large gardens, a significant number of which contained mature trees. School grounds, recreational parks and a small military base were also present in the wider area.

The site forms part of a network of residential properties and gardens located 150 m to the north of a large complex of woodland comprising Copse Wood, Park Wood, Mad Bess Wood and Bayhurst Wood which together form Ruislip Woods ASNW and SSSI.

Overall, the site and immediate surroundings offers moderate value foraging and commuting habitat for bats, and has good connectivity to high value habitat within the wider landscape in the form of woodland.

4. DISCUSSION AND CONCLUSIONS

4.1 SUMMARY OF PROPOSALS

This assessment is required to inform a planning application associated with the demolition of the existing property and construction of a new six-bedroom detached dwelling.

4.2 ASSESSMENT OF BUILDINGS

The residential building supports a series of high potential roosting features capable of supporting large numbers of roosting bats. Features included access points under roof tiles, under lead flashing at the chimney and dormer joints, between edge tiles and mortar on the southern elevation gable and small areas of damaged brickwork. Extensive opportunities for bats to access spaces behind hanging tiles were noted across the structure.

No evidence of bats was recorded during the external inspection however, as the majority of the features were noted at height, a detailed inspection of all areas could not be carried out. Due to restrictions relating to Covid-19 pandemic, an internal assessment was not undertaken. Consequently, the loft and roof spaces were not inspected for evidence of bat usage.

The building was therefore categorised as having high bat roosting potential considering the nature of the features recorded and connectivity of the site to high value commuting and foraging habitat in the immediate landscape (woodland).

The summerhouse to the rear of the site was inspected in detail and considered to offer negligible bat roosting potential.

4.3 ASSESSMENT OF TREES

The rear garden area contained a parcel of semi-natural broadleaved woodland habitat, managed as amenity garden space. Within this parcel 7 no. mature trees were identified as supporting high bat roosting potential features.

A further 7 no. trees across the site were classified as having low potential to support roosting bats, being of a suitable size and age but with no features noted during the ground level assessment.

4.4 POTENTIAL IMPACTS ON BATS

The main building is to be demolished and has been assessed as having high bat roosting potential. As such, potential adverse impacts include destruction of a roost, direct harm and disturbance to roosting bats.

Should any of the trees identified as having high bat roosting potential within Section 3 require removal/pruning, potential adverse impacts include destruction of a roost, direct harm and disturbance to roosting bats.

Redevelopment of the site is likely to result in changes in landscaping and a small encroachment into the existing garden areas. This may have a temporary impact upon foraging and commuting and foraging habitat. Due to the abundance of suitable foraging habitat in the surrounding environment, adverse impacts as a result of habitat loss are not considered likely to be significant beyond the site level and can be mitigated for with appropriate native replacement planting; a recommendation to this effect has been provided within Section 5.

Adverse impacts associated with changes in site lighting during demolition, construction and operational phases may however, adversely impact bat usage of the site and immediate environment due to spill. A recommendation has therefore been made within Section 5 regarding sensitive lighting of the site.

5. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

R1 Tuscany

The building has been identified as having high potential to support roosting bats. Bat Surveys: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016) recommends that for buildings with high bat roosting potential at least three dusk emergence and/or dawn re-entry surveys should be undertaken during the bat emergence/re-entry survey season to determine the presence/absence of roosting bats within the buildings. The bat emergence/re-entry survey season extends from May to September. At least two of the surveys should be undertaken during the peak season for emergence/re-entry surveys between May and August and one of the three surveys should be a dawn re-entry survey. If a roost is discovered during these surveys, a Natural England licence application may be required.

R2 Trees 17, 29, 37, 40, 50, 51 and 54

Trees 17, 29, 37, 40, 50, 51 and 54 have been identified as having high potential to support roosting bats. Should the trees be impacted by the proposed works, including through direct felling, pruning and indirect noise, dust and vibration, further works are required to determine the presence/absence of roosting bats.

There are two possible survey options available to the client: the trees can be subject to dusk emergence and dawn re-entry surveys or the trees can be subject to a Preliminary Roost Feature Inspection Survey using tree climbing equipment to access features that were inaccessible during this survey; both options are detailed further below. If a roost is discovered during these surveys, a Natural England licence application may be required.

Option 1: Dusk Emergence and Dawn Re-Entry Surveys

Bat Survey: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016) recommends that for trees with high bat roosting potential at least three dusk emergence and/or dawn re-entry surveys be undertaken during the bat activity season to determine the presence/absence of roosting bats within the trees. The bat activity season extends from May to September. At least one of the surveys should be a dawn re-entry survey, and at least two of the surveys should be undertaken between mid-May and August.

Option 2: Preliminary Roost Feature Inspection Survey

Where safe to do so, trees will be climbed utilising tree climbing equipment. Any PRF will be internally searched using a torch and endoscope. If the feature on further inspection is found to be unsuitable for bats, then the status of the tree will be downgraded to low or negligible bat potential. If a roost is identified, if PRF extend beyond the reach of an endoscope, or if the PRF shows any signs of use by fauna, dusk emergence and dawn re-entry surveys will be required (as detailed in Option 1). If any trees are considered unsafe to climb, or cannot be fully inspected for safety reasons, then they should be subject to dusk emergence and dawn re-entry surveys, as detailed in Option 1.

R3 Summerhouse and Remaining Trees

The Summerhouse was fully inspected and no bat roost was identified. The structure had no potential for roosting bats. The survey data obtained for the site is valid for 12 months from the survey date. If development works to the surveyed structure have not commenced within this timeframe it will be essential to update the survey effort to establish if suitable features have developed and if bats have colonised the structure in the interim. In the unlikely event that a bat is found during demolition works all works must immediately cease and a suitably qualified ecologist should be contacted.

Trees 1, 2, 16, 18, 20, 30, 41 and 68 were considered to have low potential for roosting bats. Remaining trees were considered to have negligible potential for roosting bats. The survey data obtained for the site is valid for 12 months from the survey date. If proposed site works have not

commenced within this timeframe it will be essential to update the survey effort to establish if the trees have developed features that could be used by roosting bats in the interim.

It is recommended that a 'soft felling' approach is used for all required works to the above trees. In the unlikely event that a bat is found during works to the trees all works must immediately cease and a suitably qualified ecologist should be contacted.

R4 Lighting

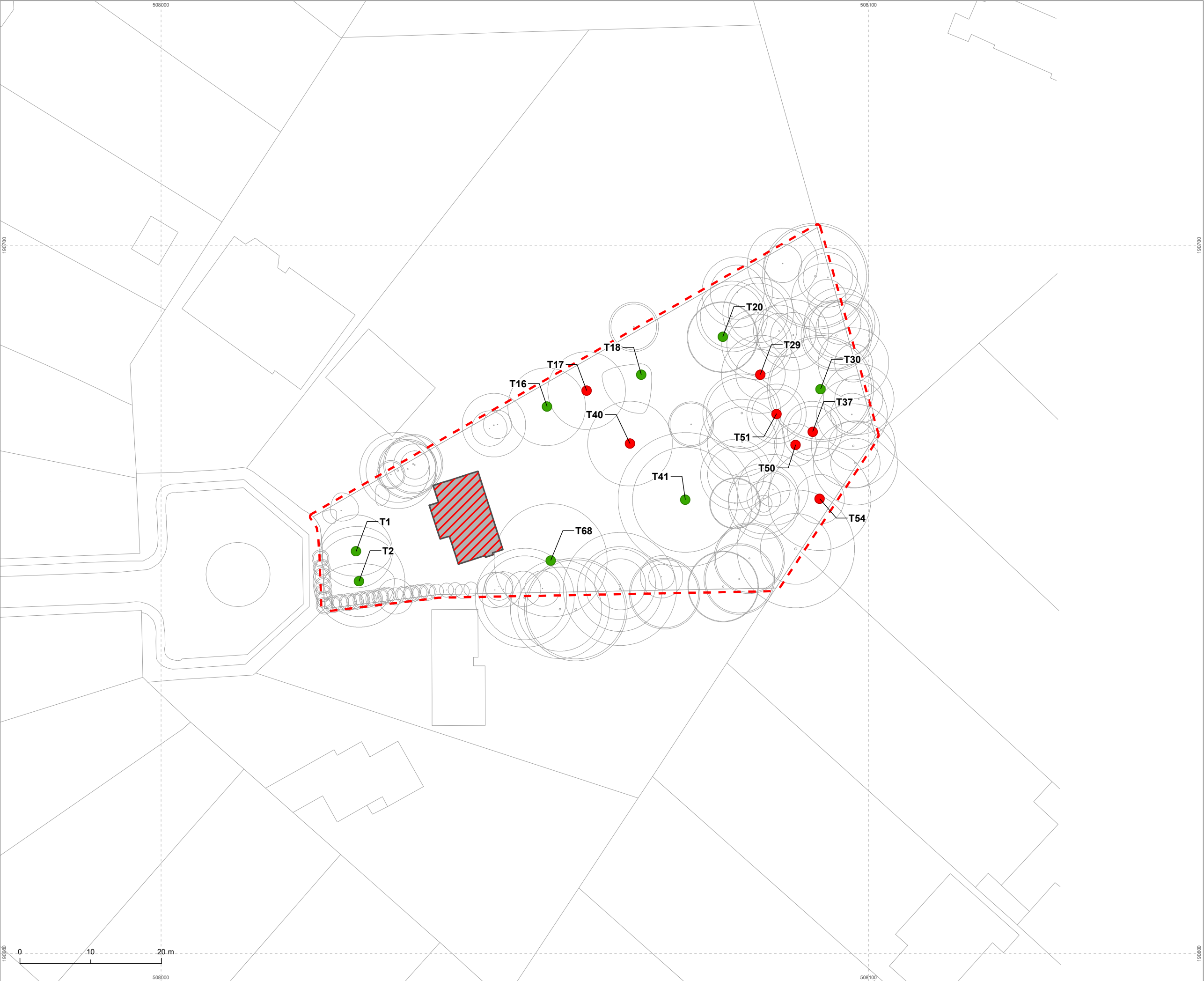
Bats are likely to use trees for foraging and commuting. Therefore, in line with paragraph 180 of the National Planning Policy Framework, the development should aim to limit the impact of light pollution on bats through the careful use of lighting in critical areas only and at a low level with minimum spillage. Any lighting, either temporary or permanent, along the site boundaries should be kept to a minimum and directed away from the boundary features to maintain dark areas and corridors. A lighting strategy should be designed and implemented on site to avoid impacting bat usage of the site and wider area. The strategy should be designed in accordance with the principles of 'Landscape and urban design for bats and biodiversity' and 'Bats and artificial lighting in the UK' as published by the Bat Conservation Trust (Gunnell *et al*, 2012 and Miles *et al*, 2018 respectively). Materials used under lights, such as floor surfaces, should be materials that have a minimum reflective quality to prevent light reflecting upwards into the sky. This will ensure that bats using the site and surrounding area to roost/forage/commute are not affected by illumination.

R5 Habitat Enhancement

In line with the National Planning Policy Framework, the development should aim to enhance the site for bats. Bat boxes should be installed to provide roosting habitat for species such as pipistrelle. In general, bats seek warm places and for this reason boxes should be located where they will receive full/partial sun, although installing boxes in a variety of orientations will provide a range of climatic conditions. Position boxes at least 3 m above ground to prevent disturbance from people and/or predators. The planting of native species which attract night flying insects is encouraged as this will be of value to foraging bats, for example: goldenrod *Solidago virgaurea*, honeysuckle *Lonicera periclymenum* and fleabane *Pulicaria dysenterica*. Pond creation where feasible is also highly encouraged.

6. DRAWINGS

Preliminary Bat Roost Assessment - Drawing C152842-02-01



C152842-02-01

Legend

Site boundary

Tree surveyed with high bat roosting potential

Tree surveyed with low bat roosting potential

High bat roosting potential

Building surveyed

Project

Tuscany, Oak Glade, Northwood

Drawing

Preliminary Roost Assessment

Client

Juttla Architects

Drawing Number

C152842-02-01

Revision

00

Scale @ A3

1:500

Date

October 2020

Approved By

WR

Drawn By

GT

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The Conservation of Habitats and Species Regulations 2017.

APPENDIX 1

LEGISLATION

Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, or *obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CROW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

The following bat species are Species of Principal Importance for Nature Conservation in England: barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*.

The reader should refer to the original legislation for the definitive interpretation.

ECOLOGY

At present, 18 species of bats are known to live within the United Kingdom, of which 17 species are confirmed as breeding. All UK bat species are classed as insectivorous, feeding on a variety of invertebrates including midges, mosquitoes, lacewings, moths, beetles and small spiders.

Bats will roost within a variety of different roosting locations, included houses, farm buildings, churches, bridges, walls, trees, culverts, caves and tunnels. At different times of the year the bats roosting requirements alter and they can have different roosting locations for maternity roosts, mating roosts and hibernation roosts. Certain bat species will also change roosts throughout the bat activity season with the bat colony using the site to roost for a few days, abandoning the roost and then returning a few days or weeks later. This change can be for a variety of reasons including climatic conditions and prey availability. Bats are known live for several years and if the climatic conditions are unfavourable at a particular roost, they may abandon it for a number of years, before returning when conditions change. Due to the matriarchal nature of bat colonies, the locations of these roosts can be passed down through the generations.

Bats usually start to come out of hibernation in March and early April (weather dependent), when they start to forage and replenish the body weight lost during the hibernation period. The female bats then start to congregate together in maternity roosts prior to giving birth and a single baby is born in June or July. The female then works hard to feed her young so that they can become independent and of a sufficient weight to survive the winter before the weather gets too cold and invertebrate activity reduces. Males generally live solitary lives, or in small groups with other males, although in some species the males can be found living with the females all year. The mating season begins in the autumn. During the winter bats hibernate in safe locations which provide relatively constant conditions, although they may venture outside to forage on warmer winter nights.