
Kirkby Valley Golf Club

Protected Species Report (Bats): Trees

Compiled by Ecology Services Ltd.

on behalf of

L32 Trading Ltd

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(updated August 2020 and August 2021)



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1.0 Introduction

- 1.1 Ecology Services Limited was commissioned by L32 Trading Ltd. in May 2019 to undertake a Preliminary Roost Assessment (PRA) of trees at Kirkby Valley Golf Club and adjacent land off Ingoe Ln, Liverpool, L32 4SS, hereinafter referred to as 'the development site'. The centre of the development site is located by National Grid Reference (NGR) 339520, 398030. The development site forms part of a wider planning application site. This report focusses on the proposed development site in the south of the wider planning application site. The location and ownership boundary of the wider site is shown on Figure 1 and the Proposed Masterplan covering the development site, on Figure 2.
- 1.2 Recommendations made following the 2019 PRA included the requirement for further Potential Roost Feature (PRF) surveys of eight trees to be undertaken.
- 1.3 Owing to time delays and minor changes to the proposed site layout, an updated PRA survey was undertaken in August 2020. This included checks of all the trees originally surveyed in 2019, including the eight trees subject to PRF surveys and also a new area of trees (Tree Group 11) that are potentially affected by the changes to the scheme for the inclusion of a new maintenance building.
- 1.4 Recommendations made following the 2020 PRA include the requirement for further Potential Roost Feature (PRF) surveys of Trees 3 and 7 plus a new tree group (Tree Group 11) to be undertaken.
- 1.5 The results of the 2019 and 2020 PRA and PRF surveys are provided within this report.

Site Description

- 1.6 The development site is located partly on Kirby Valley Golf Club and partly to the west of the River Alt on an area of disused land containing unmanaged grassland, hedgerows and scrub with scattered trees. The site is bounded by Valley Road to the south, Aintree Lane to the west and Ingoe Lane to the east. The wider Kirkby Valley Golf Course lies to the north.

Proposals

- 1.7 Four parcels of land within the site, collectively referred to as the 'wider site', are proposed for (re)development including:
 - Comprehensive engineering / reconfiguration / and other improvement works across the entire golf course including the erection of a footbridge over the River Alt (to provide improved access around the course).
 - New and improved irrigation / drainage works, extensive tree and shrub planting, and ecological mitigation measures across the course.
 - Retention, repair, refurbishment, alteration and extension of the existing clubhouse and its change of use to form a golf-related / grounds maintenance training academy (existing access and car park retained / unchanged).
 - The erection of a new 2 storey Clubhouse; provision of an adventure golf course and practice putting green; and provision of a golf driving range with an associated 2 storey building and external lighting and safety netting.
 - A new greenkeeper's compound with associated welfare facilities / equipment storage and maintenance and security fencing.
 - 6 synthetic outdoor 5-a-side football pitches, 5 synthetic outdoor tennis courts, 1 external bowling green with associated timber players' hut plus associated lighting and means of enclosure.

- Car and cycle parking spaces to serve all of the above facilities with two new vehicular accesses created onto Valley Road.
- Formation of a new gated access via Aintree Lane for the use of construction traffic and (upon completion of development works) for the sole use of course operatives for the purposes of course management / maintenance. Two lakes are also proposed to assist with course irrigation and ecological mitigation at the site.

Background and survey objectives

- 1.8 This report focusses on the development site in the south of the wider site as shown on Figure 2.
- 1.9 It is not anticipated that there will be significant loss of trees as a result of the comprehensive engineering / reconfiguration / new and improved irrigation / drainage works and other improvement works across the wider golf course. Any trees affected within the wider golf course will be subject to appropriate survey, assessment and mitigation/compensation for roosting bats. If a bat roost/s is/are located during the survey work, work at the site could be delayed until such time that a Natural England Licence is applied for and granted to legally permit work to commence which would affect bats or their roost.
- 1.10 The aim of the preliminary roost assessment was to:
- Undertake a visual inspection of the site to establish baseline conditions;
 - Complete an assessment to ascertain if potential or evidence of use existed for bat species; and
 - Determine if there are requirements for further and/or more detailed surveys.
- 1.11 Subsequent to the findings of the Preliminary Roost Assessment, further Potential Roost Feature (PRF) surveys were recommended of trees identified as potentially being affected by the proposals. The aim of the PRF survey was to:
- Undertake a further aerial visual inspection of the noted trees with the aid of a tree climber to access the PRFs previously identified;
 - Complete an assessment to ascertain if evidence of use existed for bat species or if bats were present; and
 - Determine if the PRFs can be reclassified and if there are requirements for further surveys and/or mitigation.
- 1.12 The purpose of this report is to state the survey methodologies, present the results of the surveys, evaluate the findings, assess the impacts of the proposals and make recommendations concerning the protection of bat species that may be present at this site. Where possible the report will aim to provide sufficient information to allow a local authority to assess fully the potential impacts of the proposed development on roosting bats.

2.0 Planning Policy and Legislation

- 2.1 This section provides a brief overview of planning policy and legislation relevant to bats in the UK. Further information is provided in Appendix 1.

Planning Policy

- 2.2 The National Planning Policy Framework (NPPF, 2021) places a clear responsibility on Local Planning Authorities (LPAs) to contribute to conserving and enhancing the natural and local environment. LPAs should promote the conservation, restoration and enhancement of priority

habitats, ecological networks and the protection and recovery of priority species (e.g. Species of Principal importance, Local Biodiversity Action Plan species); and identify and pursue opportunities for securing measurable net gains for biodiversity. In accordance with the NPPF, local planning policy and guidance, development proposals should provide integrated improvement for the biodiversity at the site and seek to maintain and enhance opportunities for bats.

- 2.3 Protected species within the UK, such as bats, are a 'material consideration' in the determination of a planning application. Therefore, an LPA is unlikely to determine an application until all relevant information relating to protected species or habitats is submitted to fully inform the application. Relevant information includes adequate surveys and, where required, mitigation strategies, which will need to be submitted to inform a planning application.
- 2.4 The local planning authority (LPA) has a duty to ensure that protected and priority species (e.g. Species of Principal Importance, Biodiversity Action Plan species) are fully considered in a planning decision. Therefore, up to date survey information and, where required, mitigation strategies adequate to assess the impacts of the proposals and to demonstrate that opportunities for species using the site can be maintained, must be provided in support of a planning application.

Legislation

- 2.5 All bats and their roosts receive strict protection under the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats & Species Regulations 2017 (as amended)¹, which implements the EC Habitats Directive in the UK. In brief, this legislation makes it an offence to: kill, injure or capture a bat; to destroy, damage or obstruct access to a bat roost; or to disturb a bat occupying a roost. A Local Authority is a 'competent authority' within the context of Regulation 7 of the Conservation of Habitats & Species Regulations 2017 (as amended) when dealing with planning applications where a European Protected Species (EPS) (all bat species) may be affected. Therefore, planning decisions should only be made when European Protected Species and their habitats are fully taken into account.,
- 2.6 Where proposed works are likely to contravene the legislation protecting bats, a Natural England licence must be applied for, and approved, before works can proceed.
- 2.7 Section 40 of the Natural Environmental and Rural Communities (NERC) Act 2006 places a statutory duty on public authorities, in exercising their functions, to conserve biodiversity in England. Species of Principal Importance for the conservation of biodiversity in England, identified by the Secretary of State in consultation with Natural England, are listed Section 41 of the NERC Act. The Local Planning Authority and government bodies (e.g. Natural England) will expect the overall design of the development to have regard for the conservation of these species. Seven bat species are listed as 'Species of Principal Importance' under Section 41 of the Natural Environmental and Rural Communities (NERC) Act 2006:
- Noctule (*Nyctalus noctula*)
 - Soprano pipistrelle (*Pipistrellus pygmaeus*)
 - Lesser horseshoe (*Rhinolophus hipposideros*)
 - Greater horseshoe (*Rhinolophus ferrumequinum*)

¹ As amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 which continue the same provision for European protected species, licensing requirements and protected areas after Brexit.

- Barbastelle (*Barbastella barbastellus*)
- Bechstein's (*Myotis bechsteinii*)
- Brown long-eared (*Plecotus auritus*)

3.0 Methodology

Desktop Study

- 3.1 Ecological data and records searches were undertaken by contacting the sources listed in Table 1.

Table 1: Ecological Desktop Study Sources

Source of information	Information supplied
North Merseyside Local Biodiversity Action Plan (NMBAP)	Identification of LBAP species and habitats known to occur in the region.
Natural Environment and Rural Communities (NERC) Act 2006	Review of Habitats/Species of Principal Importance known to occur in the region.
Multi Agency Geographical Information for the Countryside (MAGIC)	Statutory protected sites designated for their bat interest within 5km of the site. Records of bat roosts relating to Natural England EPS licences within 2km of the site.
Merseyside Biobank	Non-statutory protected sites designated for their bat interest and any records of bats within 2km of the site.

- 3.2 The data search with Merseyside Biobank was undertaken on 15th January 2021.

Preliminary Roost Assessment Survey

- 3.3 The preliminary roost assessment for trees followed the below methodology, which is based on the methods set out in the Bat Conservation Trust's 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (2016). Each tree was categorised according to its level of suitability and any evidence of roosting bats found during the inspection (see Appendix 2).
- 3.4 A ground level inspection of trees was undertaken to search for any potential roosting features and evidence of roosting bats. Signs surveyed for included droppings, dead bats, feeding remains (beetle, moth and butterfly remains), urine staining and grease marks around crevices and down walls, and any noises such as scratching and audible bat calls. An Explorer Premium 8803AL (9mm) endoscope and a ladder were used to check accessible features. A Clulite Long Ranger LED Pistol Light (1200 lumens) and close focusing binoculars were used to better assess any features of interest not accessible. High resolution photographs were taken for later review.
- 3.5 During the survey the surrounding area was assessed in relation to suitable habitat that may be of value to bats.

Trees

- 3.6 The optimum time to investigate trees for bat roosting potential is between November to April, when trees are not in leaf and potential roosting features such as crevices can be more easily seen. Evidence of a bat roost is best determined when bats are active although preliminary roost assessments may be conducted outside of this period and, as with the surveys of

buildings/structures, inspections can provide conclusive results where all roosting features are accessible and can be exhaustively searched.

Personnel

- 3.7 The PRA inspection surveys in 2019 and 2020 were undertaken by Senior Consultant Ecologist Mr. S. Booth who holds a Bat Class Licence Level 2 (Registration number 2016-27296-CLS-CLS).

Timing

- 3.8 The PRA inspection survey was conducted on the 30th and 31st of July 2019 and the 1st of August 2019. The updated PRA survey was undertaken 11th, 12th and 13th of August 2020.
- 3.9 The 2019 and 2020 PRA surveys were conducted at a time when bats are fully active, towards the end of the maternity season. Maternity colonies will be dispersing or have already dispersed as their focus turns to the mating season and the beginning of building up fat reserves. Evidence of bat occupation is likely to be detected, should they be present at the site.

Potential Roost Feature (PRF) Survey

- 3.10 Trees assessed as having moderate or high potential to support roosting bats during the 2019 and 2020 PRAs and which were identified as to be potentially affected by the proposals, were subject to further more detailed potential roost feature (PRF) surveys. Fully trained arborists climbed the trees noted with bat roosting potential (Trees 1 through to 9) in 2019 to search for bats and/or evidence of bat activity such as droppings, feeding remains (e.g. beetle, moth and butterfly remains), urine staining and grease marks around potential roosting features. Following the 2020 PRA, Trees 3 and 7 were re-climbed along with trees noted with bat roosting potential in the new area of trees (Tree Group 11) that are potentially affected by the changes to the scheme for the inclusion of a new maintenance building. A Clulite Long Ranger LED Pistol Light (1200 lumens), safety harnesses and tree climbing ropes and an Explorer Premium 8803AL (9mm) endoscope, which is able to record images, were used to aid access to and further assess potential roosting features.

Personnel

- 3.11 The 2019 and 2020 PRF surveys were undertaken by qualified arborist Mr. N. Murray, who is a fully qualified tree surgeon, under the supervision of Mr. S. Booth who holds a Bat Class Licence Level 2 (Registration number 2016-27296-CLS-CLS).

Timing

- 3.12 The PRF surveys were conducted on the 20th / 22nd of August 2019 and the 25th August 2020 when the trees were climbed and their features examined further to see if their potential could be re-classified.
- 3.13 The 2019 and 2020 PRF surveys were conducted at a time when bats are fully active, towards the end of the maternity season. Maternity colonies will be dispersing or have already dispersed as their focus turns to the mating season and the beginning of building up fat reserves. Evidence of bat occupation is likely to be detected, should they be present at the site.

Roost Status

- 3.14 If evidence of a bat roost is recorded during the surveys, the status of the roost is evaluated based on its function. This requires sufficient survey effort to determine the species and numbers of roosting bats present, the time of year that the roost is used and characteristics

of the roost itself. The Bat Conservation Trust's 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' details types of bat roosts which may be defined in several ways, as below:

- Day roost – where individual bats or small groups of males, rest or shelter in the day.
- Night roost – where bats rest or shelter in the night but are rarely found during the day.
- Feeding roost – where individual or few bat/s rest or feed during the night.
- Transitional/occasional roost – used for short periods of time by few or occasionally small groups of bats on waking or prior to the hibernation period.
- Swarming site – large numbers of males and females gather during late summer to autumn.
- Mating sites – where mating takes place from late summer and through winter.
- Maternity roost – where females give birth and raise their young.
- Hibernation roost - where bats may be found during winter. To have a constant cool temperature with high humidity.
- Satellite roost – an alternative roost used by individual to small numbers of breeding females over the breeding season. Usually close to main nursery colony.

- 3.15 Roost selection is often closely correlated with presence of suitable foraging habitat within a reasonable commuting distance from the roost. Different roost sites are used throughout the active season which is most dependent upon roost microclimate and abundance of invertebrate prey nearby. Weather conditions can also affect the ability of bats to successfully forage. All British bats are insectivorous.

Constraints

- 3.16 The PRA of trees was carried out during a sub-optimal time of year when dense foliage can obscure potential roosting features from ground level. A precautionary approach to assessing the trees was therefore employed during the PRA and when the further PRF tree inspections were carried out on trees considered likely to contain suitable roosting features.

4.0 Results and Evaluation

Desktop Study

National Status

- 4.1 There are 18 species of bat that are native to the United Kingdom. Little is known about the status of most species although the available evidence suggests a general decline in populations nationally (Harris, S. et al. 1995). The commonest species of bats are the pipistrelle family (*Pipistrellus* sp.), although these are also estimated to have declined in numbers by 70% between 1978 and 1993.

Regional Status

- 4.2 The north west of England appears to be a stronghold for Whiskered and Brandt's, both of which are reasonably rare in southern England.

Local Status

- 4.3 The North Merseyside Local Biodiversity Action Plan (LBAP) lists eight bat species recognised as being resident in North Merseyside (refer to Appendix 4) as local priority species.

Designated Sites

- 4.4 There are no statutory or non-statutory protected sites designated on the basis of their interest for bats that are located within the vicinity of the site and which could be adversely affected by the proposed development of the site.

Records Data Search

- 4.5 The data search identified 239 records of bats within approximately 2km of the site including records of common pipistrelle, soprano pipistrelle, *Nathusius' pipistrelle*, noctule, *Nyctalus noctula*, Natterer's bat, brown long-eared and unidentified bat species. The nearest records to the site were common pipistrelle and soprano pipistrelle bats recorded just to the east of the M57/A506 motorway junction, approximately 500m east of the site. The majority of other records provided by Merseyside Biobank pertain to a waste water treatment works located approximately 1.5km south-west of the site.
- 4.6 One record of a European Protected Species mitigation licence for bats was identified from the MAGIC database within 2km of the site. This relates to a common pipistrelle roost located approximately 1.4km south of the site and is dated from 2010.

Preliminary Roost Assessment

Habitat Assessment

- 4.7 The eastern area of the site are dominated by amenity grassland with stands of scattered trees, plantation woodland and occasional rough grassland, scrub, ponds and ditches. The western area of the site comprises three fields of unmanaged rough grassland with scattered trees, tall ruderal vegetation, wet grassland and hedgerows along the field boundaries. The River Alt runs south to north through the centre of the site and a railway corridor borders to the north.
- 4.8 The River Alt corridor, woodland strips around the golf course and hedgerows provide good links to other habitats in the wider surrounds, including extensive areas of riverside grassland to the south of Valley Road and woodland habitats along the railway corridor on the north-western boundary of the site. Movement is, however, likely to be restricted to the east of the site by the M57 motorway.
- 4.9 Overall, habitats within the immediate and wider surrounds of the site are considered of **moderate** to **high** value for foraging and commuting bats. Where suitable habitats are present in close proximity to structures and trees with suitable roosting features, then there is generally an increased use of these as roost sites due to a higher abundance of food and better access to food sources.

Trees

- 4.10 A description of the trees can be found in the Table 2 below and overleaf. Photographs of trees are provided in Appendix 5.

Table 2: Description of Trees.

Tree 1
Description:
A mature willow sp. (standing deadwood) located within the golf course that is partially leaning against a common beech.
2019 Roost potential signs:
Two hazard beams are present at 7m and 10m with lateral splits.

The tree was considered to hold low potential for roosting bats.
2019 PRF survey results:
The tree was climbed, subject to a thorough examination and the features identified within the PRA were found not to recede to a depth that would be suitable to support roosting bats. The tree's potential to support roosting bats has therefore been reclassified as having negligible potential.
2020 Roost potential signs:
The two hazard beams previously identified have been removed. Some minor areas of new delaminating bark were observed, although they are considered unlikely to provide suitable shelter for roosting bats. The tree was considered to hold negligible potential for roosting bats.
Tree 2
Description:
A poplar sp. (<i>Populus sp.</i>) located within rough grassland that is part of a copse of mature tall trees.
2019 Roost potential signs:
At approximately 16m on the north side, there is a scar at a junction where the main trunk splits. The potential feature has darkening of the wood in the centre and appears as a large cavity from the ground. The tree was considered to hold moderate potential for roosting bats.
2019 PRF survey results:
The tree was climbed, subject to a thorough examination and the feature identified within the PRA was found not to recede to form a useable cavity. The tree's potential to support roosting bats has therefore been reclassified as having negligible potential.
2020 Roost potential signs:
There were no changes to the condition of this feature. The tree is considered to have negligible potential for roosting bats.
Tree 3
Description:
A poplar sp. located within rough grassland that is part of a copse of mature tall trees.
2019 Roost potential signs:
There is a horizontal branch at 14m on the south side of the tree, which has a lateral split, although daylight can be seen through part of the split. The tree was considered to hold low potential for roosting bats.
2019 PRF survey results:
The tree was climbed and subject to a thorough examination. The feature was found to have small areas offering potential places for bats within the deeper areas of the split but these were minor and suitable for occasional use only. No evidence of past or present use was found during the endoscope survey. The tree's potential to support roosting bats remains as low potential for roosting bats.
2020 Roost potential signs:
There were no changes to the condition of this feature which remained as low potential for roosting bats.

2020 PRF survey results:
The tree was climbed and subject to a thorough examination. No evidence of past or present use was found during the endoscope survey, which fully explored the feature. The tree's potential to support roosting bats remains as having low potential for roosting bats.
Tree 4
Description:
A large, multi-stemmed mature crack willow (<i>Salix fragilis</i>) on the eastern bank of the River Alt. During the PRA, there were parts of the tree that could not be viewed from the ground level inspection owing to the access restrictions imposed by the river.
2019 Roost potential signs:
None identified during the initial survey but as a precautionary measure, an aerial inspection was advised.
2019 PRF survey results:
The tree was climbed and subject to a thorough examination and no roosting features were found. The tree is of negligible value to roosting bats.
2020 Roost potential signs:
Full access to the tree was blocked by site maintenance materials, therefore the tree was viewed from the nearby bank and appeared to be in the same condition as the 2019 survey. The tree is still considered to be of negligible value to roosting bats.
Tree 5
Description:
A mature leaning poplar sp. with decaying heartwood among other mature trees of this type.
2019 Roost potential signs:
There is a woodpecker hole located on the western side of the tree at 2m, this is the only feature. The tree is considered to hold moderate potential for roosting bats.
2019 PRF survey results:
The tree was subject to a thorough examination. The hole recedes into a cavity with a depth of 45cm where it was rotten at its base. The tree's potential to support roosting bats remains moderate .
2020 Roost potential signs:
The woodpecker hole located on the western side of the tree at 2m was still present. A new split and subsequent cavity have also developed at 2m as a result the tree leaning over further. The woodpecker hole and the new features were fully endoscoped during the ground level inspection. No evidence of past or present use by bats was found. The tree's potential to support roosting bats remains moderate for roosting bats. The feature has, however, been subject to an exhaustive search by endoscope on two consecutive years with no evidence of past or present use by bats.
Tree 6
Description:
A mature poplar sp. adjacent to Tree 7, which is located by the side of a pathway among other mature trees.
2019 Roost potential signs:
The tree has been damaged by an adjacent fallen tree and has a broken, missing limb at 3m on the south side. The tree was considered to hold low - moderate potential for roosting bats.

2019 PRF survey results:
The tree was climbed and subject to a thorough examination. The feature was found to be liable to wind and rain and did not recede to any depth. No evidence of past or present use was found during the endoscope survey, which fully explored the feature. The tree's potential to support roosting bats has therefore been reclassified as having negligible potential for roosting bats.
2020 Roost potential signs:
There were no changes to the condition of the feature. The tree is considered to have negligible potential for roosting bats.
Tree 7
Description:
A mature poplar sp. which is located by the side of a pathway among other mature trees.
2019 Roost potential signs:
The tree has been damaged by an adjacent fallen tree and has a hazard beam at 3m on the south side. The tree was considered to hold moderate potential for roosting bats.
2019 PRF survey results:
The tree was climbed and subject to a thorough examination. The feature was found to have small areas offering potential places for bats within the deeper areas of the split but these were minor and suitable for occasional use only. No evidence of past or present use was found during the endoscope survey, which fully explored. The tree's potential to support roosting bats has therefore been reclassified as having low potential for roosting bats.
2020 Roost potential signs:
There were no changes to the condition of this feature which was considered to have low potential for roosting bats.
2020 PRF survey results:
The tree was climbed and subject to a thorough examination. No evidence of past or present use was found during the endoscope survey, which fully explored the feature. Following two PRF inspections of the tree, both in August and with no evidence found (droppings, grease marks or staining of timber), the tree's potential to support roosting bats remains as low .
Tree 8
Description:
A mature sycamore (<i>Acer pseudoplatanus</i>) within a group of trees and scrub in an area of rubble and waste on the northern boundary. The tree is located within a very cluttered area.
2019 Roost potential signs:
The tree is likely to have been damaged by vehicles historically, which have been used to dump the rubble in the vicinity of the tree. This has left numerous scars that have healed forming deep clefts as the tree has matured. The tree was considered to hold low potential for roosting bats, which also takes into account the tree is located in a cluttered environment with obstructed flight lines to the features.
2019 PRF survey results:
The tree was climbed and the features were all examined by endoscope with no evidence of past or present use found. The tree's potential to support roosting bats remains as having low potential for roosting bats.
2020 Roost potential signs:
During the 2020 survey the tree was found to be in a similar condition to 2019 however it was noted that some limbs with previous potential were no longer present. Following two PRF inspections of

the tree, both in August and with no evidence found (droppings, grease marks or staining of timber), the tree is considered to have low potential for roosting bats.
Tree 9
Description:
A mature goat willow (<i>Salix caprea</i>) within a group of trees and scrub in an area of rubble and waste on the northern boundary. The tree is located within a very cluttered area.
2019 Roost potential signs:
The tree contains a small number of crevices and areas where woodpeckers have been feeding which has resulted in hollowing of one branch at 3m, but they are not sufficiently deep enough to provide ideal roost conditions. The tree is also located in a cluttered environment with obstructed flight lines to the features. The tree was considered to hold low potential for roosting bats.
2019 PRF survey results:
The tree was climbed and the features were all examined by endoscope with no evidence of past or present use found.. The tree's potential to support roosting bats has therefore been reclassified as having low potential for roosting bats.
2020 Roost potential signs:
There were no changes to the condition of the tree and no new features. Following two PRF inspections of the tree, both in August and with no evidence found (droppings, grease marks or staining of timber), the tree is considered to have low potential for roosting bats.
Tree Group 10
Description:
A line of standing deadwood in the form of semi-mature trees (approximately 30) located along Aintree Lane on the boundary of the site.
2019 Roost potential signs:
The majority of trees contain bark that is delaminating and in places, may be sufficiently large enough to provide cavities behind suitable for occasional roosting purposes. The features however are highly unlikely to provide a stable thermal environment for long term use. Aintree Lane is also lit by street lamps, which deters some species of bats that favour trees. The trees are considered to hold negligible - low potential for roosting bats.
2020 Roost potential signs:
There were no changes to the condition of the trees. The trees are considered to have negligible - low potential for roosting bats.
Tree Group 11
Description:
A group of mature white willow (<i>Populus alba</i>) trees located on the edge of a woodland strip, adjacent to the golf course. All the trees were of a similar age and considered to be at the climax height of approximately 20m.
2020 Roost potential signs:
The trees have varying degrees of damage as a result of vehicle strikes and also wind damage, which has resulted in wound healing and also broken/snapped off limbs. One of the trees was noted to have at least two woodpecker holes at approximately 10 and 12m. This tree is located on the eastern side of the group with the holes on the east side of the tree facing the adjacent woodland. The trees are considered to hold moderate potential for roosting bats.

2020 PRF survey results:

The trees with damaged parts and snapped off limbs had their features checked and none were found to provide any cavities suitable to support roosting bats. Of the two woodpecker holes, only one was found to recede into a nesting chamber of approximately 30cm. The lower of the two holes did not have any downward or upward facing cavities beyond the entrance hole. The higher woodpecker nest chamber was checked fully by endoscope with no evidence of past or present use by bats found.

The feature is considered to hold **moderate** potential for roosting bats.

Summary and Evaluation

- 4.11 Following the 2019 PRA survey, Trees 1 to 4 and 6 to 9 required further PRF surveys with regards to roosting bats due to the PRA ground level survey not being able to fully explore areas noted as having potential for roosting bats. Following the PRF inspections, all but one tree (Tree 5) was considered to have negligible or low bat roost potential and therefore no further bat surveys were required.
- 4.12 Following the 2020 PRA survey, Trees 3, 7 and a new tree group (Tree Group 11) required further PRF surveys with regards to roosting bats due to the PRA ground level survey not being able to fully explore areas noted as having potential for roosting bats. Following the PRF inspections, all but Tree 5 and Tree Group 11 (moderate potential) were considered to have negligible or low bat roost potential and therefore no further bat surveys were required. Tree 5 has been subject to two PRF inspections of the tree in consecutive years, both in August and with no evidence found (droppings, grease marks or staining of timber).
- 4.13 Overall, habitats within the immediate and wider surrounds of the site are considered of **moderate** to **high** value for foraging and commuting bats.
- 4.14 During the 2019 and 2020 PRA and PRF surveys, no evidence of past or present use of any of the trees by bats was found.
- 4.15 All other trees within the survey area as noted on Figure 3 had no suitable potential roosting features and therefore **negligible** potential to support roosting bats.

5.0 Impacts and Recommendations

- 5.1 The majority of the trees/tree groups assessed will be lost to the development with the exception of Tree 1.
- 5.2 All but Tree 5 and Tree Group 11 were considered to have negligible or low bat roost potential and therefore no further bat surveys were required.
- 5.3 Precautionary measures should be adopted during felling or pruning works for trees with low bat roost potential (Trees 3, 7, 8 and 9). This should take the form of either a pre-development aerial inspection or felling of potential roosting features using soft-felling section techniques under the supervision of a suitably qualified ecologist.
- 5.4 Tree 5 has been subject to two PRF inspections of the tree in consecutive years, both in August and with no evidence found (droppings, grease marks or staining of timber). It is recommended that a further PRF inspection is undertaken immediately prior to felling. If no evidence of roosting bats is found, felling of potential roosting features using soft-felling

section techniques under the supervision of a suitably qualified ecologist is recommended. Where possible, sections of the limb(s) with PRFs should be strapped to an adjacent tree.

- 5.5 Tree Group 10 contains a high number of dead trees that have delaminating bark which provide negligible - low potential for occasional roosting bats during the active season, although no evidence of past or present use by bats was found during the PRA and PRF surveys. It is therefore recommended that if tree removal is required during the active season for bats, then the areas of delaminating bark should be checked by a licenced bat consultant prior to removal. If works can be delayed until bats are in hibernation (November to February), then works to remove the trees would be permissible without an ecologist being present.
- 5.6 Tree Group 11 should be subject to a further PRF inspection immediately prior to felling. If no evidence of roosting bats is found, felling of potential roosting features using soft-felling section techniques under the supervision of a suitably qualified ecologist is recommended. Where possible, sections of the limb(s) with PRFs should be strapped to an adjacent tree.
- 5.7 If at any time a bat or evidence of bats is found or suspected, all works must cease immediately and advice should be sought from either Natural England or the acting Consultant. If a bat roost is found then the works would be delayed until such a time adequate survey data is obtained that is sufficient to support a Natural England licence that will derogate from legal protection afforded to roosting bats.
- 5.8 As bats are mobile creatures and can form new roosts at any time, if works are not started within one year of this report then it may be necessary to repeat certain surveys.
- 5.9 Extensive native tree and shrub planting is proposed as part of the development on a ratio of 1:4 trees and shrubs planted for every tree lost, including trees with no/negligible bat roost potential. A total of 829 new trees and 220 new native shrubs will be planted including 71 extra heavy standards and 96 heavy standards.
- 5.10 As best practice, opportunities for bat species by way of bat boxes should be incorporated within the proposed development and on retained trees to ensure that the long-term status of bat species in the local area is maintained. Appendix 2 details a range of bat boxes suitable for a range of species and purposes suitable for use on trees and / or buildings.
- 5.11 It is not anticipated that there will be significant loss of trees as a result of the comprehensive engineering / reconfiguration / new and improved irrigation / drainage works and other improvement works across the wider golf course. Works in the wider golf course should seek to retain as much of the existing tree and scrub cover as possible. Where tree loss is unavoidable, compensatory tree planting must be provided on a minimum like for like basis with two trees planted for any mature tree lost. Compensatory tree planting should include large standards to reduce the time required for the trees to reach maturity.
- 5.12 If any additional trees to be affected in the wider golf course must first be subject to a Preliminary Roost Assessment for bats and any necessary further surveys undertaken to determine the presence or absence of bats. If a bat roost/s is/are located during the survey work, work at the site could be delayed until such time that a Natural England Licence is applied for and granted to legally permit work to commence which would affect bats or their roost.

Safeguards and Enhancement measures

- 5.13 If at any time a bat/s or evidence of bat/s is/are suspected or found, all works must cease immediately and advice should be sought from either Natural England or the acting consultant. If a bat roost is found then the works would be delayed until such a time adequate survey data is obtained that is sufficient to support a Natural England licence that will derogate from legal protection afforded to roosting bats.
- 5.14 Provision of a range of bat boxes in excess of those required to compensate loss of potential roosting features in trees would provide ecological enhancement. Further recommendations to enhance foraging and commuting habitat for bats within the development site and across the wider golf course are discussed in the Bat Transect & Automated Survey Report (ESL, 2021).

Other: Breeding Birds

- 5.15 The site also contains suitable breeding bird habitat and numerous corvid nests were found on a number of tall trees, particularly on Lombardy poplars (*Populus nigra* 'Italica').
- 5.16 The Wildlife and Countryside Act (WCA) 1981 (as amended) states that all wild birds are protected at all times against killing or injury. Under the WCA, it is an offence to kill, injure or take any wild bird, to take damage or destroy the nest of any wild bird, or to take or destroy the egg of any wild bird. It is good practice to carry out any works outside of the breeding bird season that might affect nests and result in an offence being committed. The breeding bird season is generally considered to be between March to August inclusive.
- 5.17 If suitable breeding bird habitat is affected during the breeding bird season, then an assessment by an Ecologist for breeding birds should be undertaken prior to works. If breeding birds are found, it is likely that works will have to be delayed until breeding has ceased.
- 5.18 It is good practice to remove all affected breeding bird habitat during the winter months prior to works starting to prevent delays.

6.0 Conclusion

- 6.1 To conclude, this report details the findings of the 2019 and 2020 PRA and PRF surveys of trees that have been undertaken at this site.
- 6.2 All completed surveys have been undertaken by suitably experienced surveyors at the appropriate time of year and in line with current guidance. No evidence of roosting bats was observed.
- 6.3 Precautionary measures should be adopted during felling or pruning works for trees with low bat roost potential. Further PRF inspections of Tree 5 and Tree Group 11 are recommended immediately prior to felling with potential roosting features removed using soft-felling section techniques under the supervision of a suitably qualified ecologist.
- 6.4 Further supervision works by a licenced bat consultant will be required of Tree Group 10, unless they can be removed during the bat hibernation period.
- 6.5 The majority of the trees/tree groups assessed will be lost to the development with the exception of Tree 1. Extensive native tree planting is proposed as part of the development which will compensate the loss of potential roost features in the long term. A bat box scheme

is recommended to compensate interim loss of potential roost features and to provide biodiversity enhancement.

- 6.6 It is not anticipated that there will be significant loss of trees within the wider golf course. It is recommended that works in the wider golf course should seek to retain as much of the existing tree and scrub cover as possible. Where tree loss is unavoidable, further bat surveys will be required and compensatory tree planting must be provided on a minimum like for like basis with two trees planted for any mature tree lost. If a bat roost/s is/are located during the survey work, work at the site could be delayed until such time that a Natural England Licence is applied for and granted to legally permit work to commence which would affect bats or their roost.

7.0 References

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The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

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Figure 1:
Location Plan

A diagram showing a circle with a vertical line segment inside it. The line segment is positioned such that it is tangent to the top of the circle. Above the line segment, the letter 'N' is written.

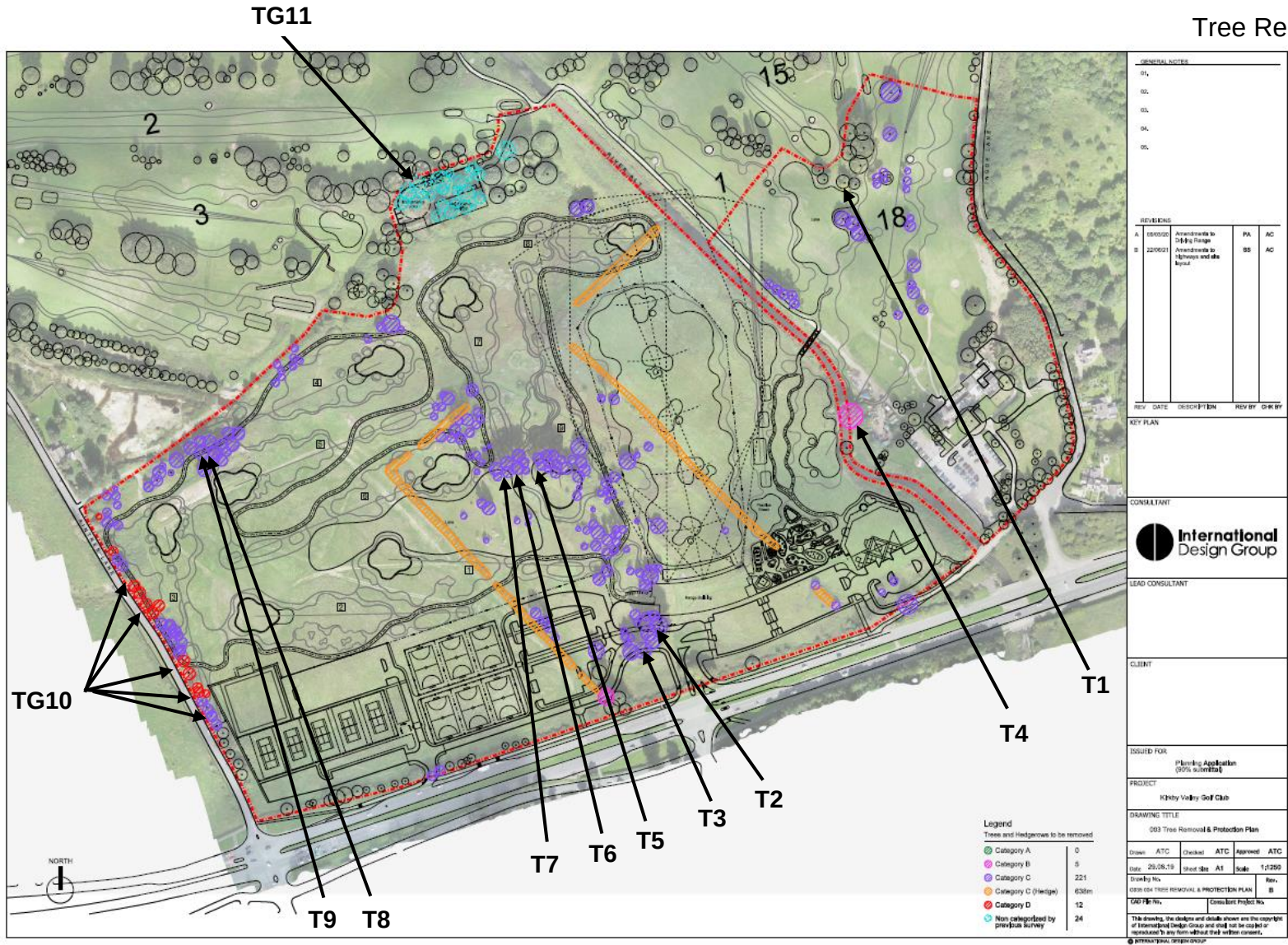
CLIENT / PROJECT
MAGHULL DEVELOPMENTS LTD
KIRKBY GOLF CLUB - VALLEY ROAD
KIRKBY

DRAWING TITLE
SITE LOCATION PLAN

LONDON
19 BEDFORD ROW
LONDON WC1R 4EB
T. 020 7600 6666 E. london@rgp.juk.com

Figure 2:
Proposed Masterplan

Figure 3:
Tree Removal Plan



Appendix 1: **Planning Policy and Legislation**

Disclaimer: Appendix 1 is a guide to legislation and procedure relating to biodiversity in England. It is general guidance and it does not give specific advice in relation to any site, species or project. It represents Ecology Services Ltd interpretation of legislation and procedure as at September 2020. Readers should note that legislation and procedure changes continually and is interpreted on a case-specific basis. Nothing in Appendix 1 should be construed as an offer of advice or legal opinion.

Planning context

National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF, 2019) places a clear responsibility on Local Planning Authorities (LPA) to contribute to conserving and enhancing the natural and local environment. LPAs should promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species (e.g. Species of Principal importance, Biodiversity Action Plan species); and identify and pursue opportunities for securing measurable net gains for biodiversity. The Office of the Deputy Prime Minister (ODPM) Circular 06/2005 provides administrative guidance on the application of the law in relation to planning and nature conservation.

A Local Planning Authority (LPA) has a duty to ensure that protected species and habitats within the UK are a 'material consideration' in the determination of a planning application. Therefore, an LPA is unlikely to determine an application until all relevant information relating to protected species or habitats is submitted to fully inform the application. Relevant information includes adequate surveys and, where required, mitigation strategies, which will need to be submitted in support of a planning application.

Statutory protection afforded UK bats

The Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, also known as the Habitats Directive, lists all UK bat species on Annex IV which places an obligation on all member states to implement strict protection for these species. This legislation is transposed into UK law through the Conservation of Habitats & Species Regulations 2017 (as amended), which makes it an offence to:

- deliberately kill, injure or capture a wild bat;
- deliberately disturb* a bat;
- damage or destroy a breeding site or resting place of a bat.

*Disturbance, as defined by the Conservation of Habitats & Species Regulations 2017 (as amended), is that 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.
- affect significantly the local distribution or abundance of the species to which they belong.

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 continue the same provision for European protected species, licensing requirements and protected areas after Brexit.

All UK bats and their roosts are afforded further protection through their inclusion on Schedule 5 of the Wildlife & Countryside Act 1981 (as amended), which makes it an offence to:

- intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection;
- intentionally or recklessly obstruct access to a structure or place which a bat uses for shelter or protection.

Four bat species (greater horseshoe, lesser horseshoe, Bechstein's and barbastelle) are listed under Annex II of the EC Habitats Directive which requires member states to designate sites of particularly high importance for the conservation of these species as Special Areas of Conservation (SAC) ('Natura 2000' sites).

When dealing with planning applications where a European Protected Species (EPS) (all UK bats) may be affected, a Local Authority is a 'competent authority' within the meaning of regulation 7 of the Conservation of Habitats & Species Regulations 2017 (as amended). The local authority must therefore exercise their functions under the provisions made within the 2017 Regulations (as amended), and planning decisions should only be made when European Protected Species and their habitats are fully taken into account.

Licensing of works affecting roosting bats

Where a bat roost is likely to be affected by development then a licence to derogate from the legal protection would be required. Licence applications are processed and issued by Natural England and can only be applied for once planning permission (if required) has been granted.

Natural England may grant a licence for the purposes specified in paragraph 55 of the Regulations. The purposes are:

- 55(2)(e) preserving public health or safety or other imperative reason of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment.
- 55(2)(f) preventing the spread of disease.

Natural England must not grant a licence under paragraph 55 unless it is satisfied that:

- 55(9)(a) there is no satisfactory alternative; and
- 55(9)(b) the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable status in their natural range.

In December 2016, Natural England introduced four policies for European Protected Species licensing. The policies seek to achieve better outcomes for EPS and reduce unnecessary costs, delays and uncertainty that were inherent in the current system. In brief, the four policies are:

- **Policy 1** - Greater flexibility when excluding and relocating European Protected Species (EPS) from development sites;
- **Policy 2** - Greater flexibility in the location of newly created habitats that compensate for habitats that will be lost;
- **Policy 3** - Allowing EPS to have access to temporary habitats that will be developed at a later date; and
- **Policy 4** - Appropriate and relevant surveys where the impacts of development can be confidently predicted.

Policy 1 allows compensation for EPS impacts to be delivered without the need to relocate or exclude populations where: exclusion or relocation measures are not necessary to maintain the conservation status of the local population; the avoid-mitigate-compensate hierarchy is followed; and

compensation provides greater benefits to the local population than would exclusion and/or relocation.

Policy 2 allows for the provision of off-site compensation measures where the licensing tests are met, the avoid-mitigate-compensate hierarchy is followed, there are good reasons for maximising development on the site of EPS impacts and where an off-site solution provides greater benefit to the local population than an on-site solution.

Policy 3 relates to developments, such as mineral extraction, which temporarily create habitat which is likely to attract EPS and enables works to proceed without the exclusion of EPS where the conservation status of the local population would not be detrimentally affected. On completion of development such sites must contribute to the conservation status of the local population as much as or more than the land use which preceded development. The measures to achieve this should be set out in a management plan and secured by a legal agreement.

Under **Policy 4** Natural England may accept a lower than standard survey effort where: the costs or delays associated with carrying out standard survey requirements would be disproportionate to the additional certainty that it would bring; the ecological impacts of development can be predicted with sufficient certainty; and mitigation or compensation will ensure that the licensed activity does not detrimentally affect the conservation status of the local population of any EPS.

Natural Environmental and Rural Communities (NERC) Act 2006

Section 40 of the Natural Environmental and Rural Communities (NERC) Act 2006 places a statutory duty on public authorities, in exercising their functions, to conserve biodiversity in England. Species of Principal Importance for the conservation of biodiversity in England, as identified by the Secretary of State in consultation with Natural England, are listed Section 41 of the NERC Act. The Local Planning Authority and government bodies (e.g. Natural England) will expect the overall design of the development to have regard for the conservation of these species. Section 41 of the NERC Act lists seven bat species as Species of Principal Importance (refer to Section 2).

Appendix 2:**Guidelines for assessing habitat suitability for bats****Table 4.1.** Guidelines for assessing the potential suitability of proposed development sites for bats based on the presence of habitat features within the landscape, to be applied using professional judgement (Taken from the Bat Conservation Trust Bat Surveys for Professional Ecologists: Good Practice Guidelines, 2016).

Suitability	Description	
	Roosting habitats	Commuting & foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
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 conditions¹ 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 hibernation²). A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential³.	Habitat that could be used by small numbers of commuting bats such as gappy hedgerow or un-vegetated 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) of a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ¹ 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).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back to gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland and water.
High	A structure or 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 ¹ and surrounding habitat.	Continuous, high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats 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 broad-leaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.
¹For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance. ²Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten <i>et al.</i>, 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments. ³This system of categorisation aligns with BS8596:2015 Surveying for bats in trees and woodland (BSI, 2015).		

Appendix 3:

Population statuses of bats species in North Merseyside

National Status

There are 18 species of bat that are native to the United Kingdom.

The latest Review of the Conservation Status of British Mammals (2018) has shown that where change could be assessed with reasonable confidence there have been increases in the geographical range and population status of two species of UK bat (greater and lesser horseshoe bat) and decrease in the geographical range of one species (grey long-eared bat). Increases in population were also identified in the following species: Bechstein's, Daubenton's, Natterers, Serotine and brown long-eared although it is noted that the reliability of the results is poor. Population data was not available for; Alcatraz, whiskered, Brandts, Leisler's, noctule, Barbastelle and Nathusius pipistrelle.

Population estimates were given for common and soprano pipistrelle however they could not be reliably compared to the results from Harris et al. (1995) as the two species had not been identified as separate species at the time of that survey. *Pipistrellus* spp. remain the commonest species of bat in the UK despite their decline.

The State of Bats 2017 report produced by the Bat Conservation Trust used results from multiple survey types (hibernation, roost, waterway and field) of the National Bat Monitoring Programme (NBMP) to compile population trends between 1999, 2001 or 2002 to 2016. The report identified statistically significant (95% accuracy) population increase in Great Britain in the following species; greater horseshoe (hibernation and roost surveys), lesser horseshoe (hibernation and roost surveys), Daubenton's (hibernation surveys), Natterers (hibernation surveys), common pipistrelle (field surveys), soprano pipistrelle (field surveys). Significant decreases in population in Great Britain were identified in common pipistrelle (roost surveys), soprano pipistrelle (roost surveys) and brown long-eared (roost surveys).

These trends reflect relatively recent changes to bat populations since the 1990s. It is generally considered that prior to this there were significant historical declines in bat populations dating back to at least the start of the 20th century, although evidence is fragmented and few data were collected in a systematic way.

Local Status

Eight bat species are listed as being resident in North Merseyside; these are as follows:

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Brown long-eared (*Plecotus auritus*)
- Whiskered (*Myotis mystacinus*)
- Brandt's (*Myotis brandtii*)
- Natterer's (*Myotis nattereri*)
- Daubenton's (*Myotis daubentonii*)
- Noctule (*Nyctalus noctula*)

Nine native species of bat have been recorded in North Merseyside, which include the above list with the addition of Nathusius pipistrelle (*Pipistrellus nathusii*), which have been trapped and ringed at Knowsley Safari Park and identified on bat detectors in some Liverpool parks including Newsham Park.

In addition to this, an individual record of the non-native Savi's Pipistrelle (*Pipistrellus savii*) was recorded which is thought to have arrived in the UK on a ship bound for Liverpool.

Populations of bats in many parts of North Merseyside are comparable in size and importance to some of the best areas in the country and the size and changes are believed to mirror national trends.

Pipistrelle bats occur in all four of the Merseyside districts and are widely distributed in North Merseyside, being the most encountered bats roosting within built structures and foraging in urban areas.

Brown long-eared and noctule are found throughout North Merseyside but are less common.

The distribution of Daubenton's, which feed predominately over water, are localised with records from Sefton, Liverpool and St Helens.

Whiskered/Brandt's and Natterer's are rare locally, with whiskered being recorded in Sefton and St. Helens and Natterer's only recorded in St. Helens so far.

Swarming activity has only been identified in one area in North Merseyside; Rainford of up to seven species (four species of *Myotis*, *Pipistrellus pipistrellus*, *Pipistrellus pygmaeus* and *Plecotus auritus*) (White, Ed.) *et. al.*, 2017).

Appendix 4:
Site Photographs



Tree 1



Tree 1 example feature 2019 (not present 2020)



Tree 2



Tree 2 feature



Tree 3 feature



Tree 4



Tree 5 and features



Tree 6 and feature



Tree 7 and feature



Tree 8



Tree 9



Tree group 10



Tree Group 10 showing bark lifting



Tree Group 10 showing bark lifting which has mostly fallen off now and are bare trees.



Tree Group 11 and climber – 2 x woodpecker holes noted

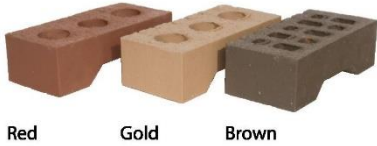
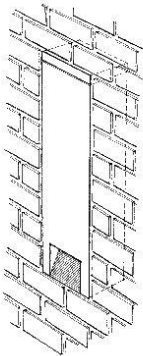
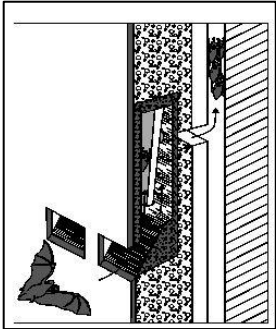
Appendix 5: Artificial bat roost provision

The below artificial bat roost provision could be incorporated at the site. If the types listed are not available then similar types can be selected providing that they are confirmed by the manufacturer as providing a similar roost purpose. Bat boxes should ideally be constructed out of durable materials other than raw timber to prevent damage by predators and ensure long term availability.

Location

All bat boxes should be sited as high as possible being a minimum of 3 - 4 meters above the ground, ideally 4 meters and above where safe installation is possible. Locations to avoid are above high traffic areas such as footpaths, driveways, patios and decked areas, away from windows and doorways, boilers and chimney outlets, artificially lit places and areas cluttered by trees.

Boxes Ideally Suited to Trees	
Hibernation Bat Box: During the hibernation period bats need constant cool temperatures. Therefore, the hibernation box shall be located on the northern aspect of mature trees, away from direct sunlight. Ideally within woodland areas and not on individual scattered trees, throughout the site. Bat Hibernation Box – ideal for use on mature trees, the box is very heavy and will require a good firm fixing to make sure it is safe. Dimensions: 500 x 380 (diameter) mm.	Schwegler 1FW Bat Hibernation Boxes 
Maternity Bat Box: to provide suitable maternity roosting habitat on site. During the maternity period bats require warm temperatures to raise young. The maternity bat box should, therefore, be positioned where it is unshaded for most of the day, ideally with a southerly or westerly aspect. The internal space is suitable to support groups of smaller female bats assembling for maternity purposes. Dimensions: 360 x 160 (diameter) mm. Ideal for trees.	Schwegler 1FD Maternity Bat Box 
General Purpose Bat Box: These provide roosting opportunities for many bat species, in particular pipistrelle and noctule species. General bat boxes should be sited on trees in groups of three, located on the south westerly, southerly and south easterly aspects to provide various temperatures and conditions. General bat boxes should be positioned in places where they are unshaded for most of the day. General Purpose Bat Boxes can be located together, ideally on trees. Dimensions: 330 x 160 (diameter) mm.	Schwegler 2F General Purpose Bat Box 

Hibernation Bark Box: Bark boxes are a new breed of boxes tailored to those sites where boxes need to blend in and remain unseen. This box is suitable for hibernating bats and boasts an insulated chamber with bat sized cone shaped crevices. There is a light internal finish to facilitate detection of droppings or rub marks. The top loop makes initial attachment to the tree easier – with two further attachment points for 6" nails for security.	
Boxes Ideally Suited to Buildings (can be used for all roost types)	
The bat brick is a standard sized brick, shaped especially to allow bats to access the cavity of a house. They can be incorporated during both new build or renovation projects. (A cavity chamber may need to be constructed to maintain an area free of insulating material where bats can roost). The bricks are available in three standard colours - Red, Golden and Brown. Dimensions: Height: 60mm, Width: 215mm and Depth: 100mm.	Bat Bricks  Red Gold Brown
The bat tube 1FR is designed to be installed on the external walls of buildings, either flush or beneath a rendered surface. This makes it ideal for situations where you wish the box to be discrete as only the entrance hole will be visible. It can also be painted to match your building with an air permeable paint if desired. The bat tube 1FR is specifically designed to meet the characteristic behavioral requirements of the types of bats that inhabit buildings. It has an integrated wooden panel onto which bats can cling and a ridged entrance slope which makes it easy for them to enter and leave the box safely. The design maintains excellent climatic conditions inside providing bats with a safe and stable environment in which to roost and it requires no maintenance because droppings fall out of the entrance ramp. For bat tubes that allow bats to enter the cavity, use the bat tube 2FR.	Schwegler Bat tube 1FR  Schwegler Bat tube 2FR 
The Enclosed Bat Box 'C' from Ibstock is designed for the pipistrelle bat. It is ideal for new builds as it can be integrated directly into the brickwork to produce a discrete but attractive home for bats. The inside of the box is designed to create several roosting zones which are ideal for crevice dwelling bats such as the pipistrelle. The bottom entrance means that no maintenance is required as droppings will simply fall out the bottom. This Ibstock Bat Box C is available in two sizes and three colours. Choose from smooth red, smooth blue or smooth cream brick. The box has an attractive bat motive on the front and is both durable and fully frost resistant. Dimensions: Two sizes - Small Box – 215mm x 215mm, Large Box – 215mm x 290mm.	The Enclosed Bat Box 'C' 

Year-Round use - This highly sophisticated Bat Roost is designed for the safe hibernation of bats in winter as well as for roosting, forming of colonies and raising of young during summer. The layered structure of the bat roost materials means that the 1WQ has excellent insulating properties whilst guaranteeing air convection and permeability. The interior of the 1WQ provides a selection of surface textures and areas with different hanging depths making it easy for different bat species to find their ideal position throughout the year. The entrance area is also purposely designed to allow the bats good grip during their approach and entry. This is particularly important for juvenile and inexperienced bats. Dimensions: Height: 580, Width: 380 and Depth 120mm	1FQ Schwegler Bat Roost (For External Walls) 
All-purpose Bat box, Stretcher bond brick fronted These bat boxes are best positioned in sunlit clusters and ideally facing a variety of aspects as bats will move around a building as the seasons change. This product makes an ideal bat house for most of the UK's bat species, including Pipistrelles, who will use it for roosting, hibernating and (in maternity roosts) bringing up their young. The entrance hole and internal design can be tailored to suit different species of bat. The box is self-cleaning thanks to an internal tilt board at the base; this works by diverting droppings out of the entrance hole. The back of each box is lined with wood; in front of this sits a removable untreated sawn timber baffle board which divides the main area into two, giving extra roosting space.	From Bird Brick Houses 

Legal

Please note that once bats have formed a roost within a bat box then the bat box is subject to all relevant protection and legislation and further advice should be sought if the bat box is to be affected or disturbed.

The above bat provisions can be obtained from the following sources:

<https://www.nhbs.com/>

<https://www.wildcare.co.uk/>

<https://www.barkboxes.co.uk/>

<https://www.birdbrickhouses.co.uk/>

<https://www.ibstockbrick.co.uk/kevington/eco-products/>