



Park Avenue, Mossley Hill, Liverpool Ecological Assessment

Report Ref: 4612.004

Version 3.0

December 2014

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SUMMARY

1. TEP was commissioned in June 2014 by Redrow Homes to undertake an ecological appraisal of Park Avenue, Mossley Hill, Liverpool, in order to inform proposals for residential development.

Protected Sites

2. The Mersey Estuary Site of Special Scientific Interest (SSSI), Mersey Estuary Special Protection Area (SPA) and Mersey Estuary Ramsar site are located 1.6km to the south-west of the site. Otterspool Park and Gorge Local Wildlife Site (LWS) is located 800m south of the site. These protected areas will not be affected by the development of the site due to their distance and intervening development.
3. Sefton Park LWS is adjacent to the site, being separated by Mossley Hill Drive. There is the potential for indirect effects on the LWS from pollution incidents, surface water run-off, windblown dust and rubbish. Control measures can be implemented via a Construction Environmental Management Plan (CEMP) to prevent these effects occurring.

Habitats

4. The site comprises two parcels of land dominated by managed amenity grassland of low ecological value, surrounded by lines of mature trees. The trees are predominantly London plane *Platanus acerifolia*, horse chestnut *Aesculus hippocastanum* and common lime *Tilia x europaea* and are the main ecological features of the site. Merseyside Biobank advises that they are included in the woodland UK BAP priority habitat, which is now classified as a S41 habitat of principal importance under the NERC Act 2006. The understorey is grassland and trampled earth, and there is no ground-flora typical of ancient or mature woodland.
5. It is recommended that the majority of trees be retained within the proposals and should be protected during construction using fencing to prevent encroachment by machinery or storage of materials within the root protection area (RPA). Any trees which are removed should be replaced by a suitable planting scheme.
6. Due to the presence of invasive species (Himalayan balsam *Impatiens glandulifera*, Japanese knotweed *Fallopia japonica* and rhododendron *Rhododendron ponticum*) within 1km of the site, it is recommended that a Biosecurity Control Plan is implemented during construction to reduce the risk of introducing or spreading non-native invasive species.

Protected Species

7. Bat surveys were carried out in summer 2014, including ground-based assessment, aerial inspection, dusk emergence and pre-dawn re-entry surveys for potential bat roosts; and transect surveys for foraging and commuting activity, all in accordance with Bat Conservation Trust guidelines (BCT, 2012).
8. No roosts were recorded. Five trees (T12, T64, T66, T103, T104) have features with potential for bat roosts. T66 would be lost to facilitate the development. This loss should be mitigated by the provision of three bat boxes on retained trees.
9. Prior to the removal of T66 or the management of any other tree with bat roost potential, if more than 12 months from the 2014 survey has elapsed, additional surveys will be required to determine current roost status. If no bat roost is recorded, the tree can be removed or managed using 'reasonable avoidance measures'

(RAMs) under the supervision of a licenced ecologist. If bats are found, then a licence from Natural England will be required.

10. Moderate levels of bat activity, mainly by common pipistrelle *Pipistrellus pipistrellus* bats, have been recorded using the tree lines for commuting and foraging activity during the bat activity surveys. It is unlikely that loss of the grassland area within the site would significantly affect foraging opportunities for bats. It is recommended that a sensitive lighting scheme, both temporary (during construction) and permanent (post-development) is designed that reduces light levels in the vicinity of the trees by using low pressure sodium lamps or LEDs and directing light downwards. The lighting strategy should aim to maximise dark areas at tree canopy level.
11. The trees provide potential nesting habitat for birds. Small numbers of common species were recorded during the breeding bird surveys, none of which were ground nesting species. It is recommended that all vegetation removal and pruning work should be undertaken outside the bird nesting season (March to August inclusive) to avoid committing an offence under the *Wildlife and Countryside Act 1981* (as amended).

Biodiversity Enhancement

12. Enhancement measures for bats and birds can be achieved by the incorporation of bat and bird boxes on buildings and retained trees, and the use of wildlife gardens within the development. The use of bulbs, shrubs and climbers with nectar-rich flowers, flowering through spring, summer and early autumn would assist in maintaining local pollinators, in line with recommendations in the National Pollinator Strategy.

1.0 INTRODUCTION

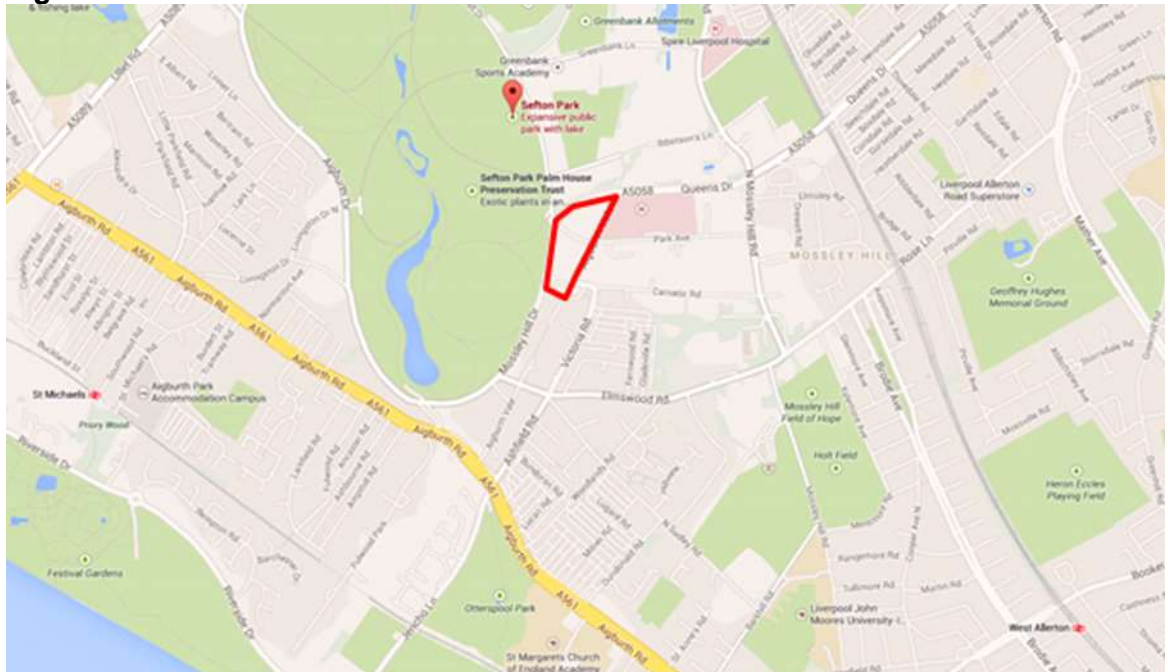
1.1 TEP was commissioned in June 2014 by Redrow Homes to undertake an ecological appraisal of the site known as Park Avenue, Mossley Hill, Liverpool. This assessment is to inform a planning application for a high quality residential development of 36 units with associated parking and landscaping on the site. This report has the following objectives:

- To describe the existing vegetation and give an overview of the habitats present on the site;
- To identify whether there are any features of conservation value such as legally protected species or habitats of biodiversity importance;
- To advise of further surveys or mitigation requirements that might be needed prior to development of the site; and
- To outline opportunities for biodiversity enhancement within the site proposals.

2.0 SITE DESCRIPTION

2.1 The site is located to the south-east of Sefton Park, Liverpool. It is bounded by Mossley Hill Drive to the west, Queen's Drive to the north, Aigburth Vale to the east and Carnatic Road to the south. It is bisected by Park Avenue. The central grid reference is SJ 381 874. The site comprises managed grassland surrounded by mature trees. Its location and surrounding area are shown in Figure 1.

Figure 1: Site location and environs



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3.0 METHODS

Desktop Survey

- 3.1 Information including historic species records and protected sites within a 1km radius of the site was requested/gathered from the sources listed in Table 1. A search within a 5km radius of the site has been undertaken for internationally protected sites.

Table 1: Ecological information and consultations

CONSULTEE/SOURCE OF INFORMATION	NATURE OF INFORMATION
Where's the Path	Satellite & OS imagery
Magic Map	Statutory designated sites Habitats of principal importance as defined in Section 41 of (hereafter 'S41') of the Natural Environment and Rural Communities Act 2006 (NERC Act 2006)
Merseyside Biobank	Non-statutory Local Wildlife Sites (LWSs) Habitats and species listed in the North Merseyside Biodiversity Action Plan (LBAP) Statutorily protected species records S41/LBAP species of principal importance records
Liverpool City Council Unitary Development Plan (adopted November 2002)	Relevant policies and planning guidance

Habitat survey

- 3.2 An Extended Phase 1 habitat survey was undertaken by TEP botanist Val Gateley (Field Identification Skills Certificate (FISC) Level 5) on 22nd June 2014, in order to record habitats present and assess their nature conservation value (such as those listed in S41). The survey was carried out in accordance with the Phase 1 habitat survey methods (JNCC 2010) and the Guidelines for Baseline Ecological Assessment (IEA 1995).
- 3.3 The habitats present were also assessed for their potential to support statutorily protected species, S41 species of principal importance, and those included in the LBAP. Sightings and field signs of these species were recorded.

Limitations

- 3.4 The survey was undertaken within the optimum period for Phase 1 habitat surveys. The grassland has recently been mown, but due to the relative lack of diversity, longer length areas left in marginal regions and the enhanced skill level of the surveyor this was not considered to be a limitation.

Bat survey

- 3.5 Due to the mature trees surrounding the site, an assessment of these trees for their potential to support bats with regards to roosting, foraging and commuting has been undertaken.

Bat roost surveys

- 3.6 A ground-based tree survey was carried out on 3rd July 2014 by licensed bat ecologist John Crowder (Licence Number: WML CL18 CLS 620). The survey comprised viewing each tree from the ground, using binoculars where appropriate, looking for field signs and bat roosting potential. Signs such as tree cracks, fissures and cavities, deadwood and loose bark, droppings, staining and grease marks around crevices, and noises such as scratching and squeaking were noted.

- 3.7 The following features in trees can potentially provide roosting opportunities for bats:

- Old woodpecker holes;
- Splits or rot holes in trunk, bough or large branches;
- Holes formed by two boughs or branches growing in contact;
- Loose or lifting bark;
- A covering of dense latticed creeper, usually ivy (*Hedera helix*).

The Criteria for roost assessment is listed in Table 2 and based upon the Bat Conservation Trust (BCT) 'Bat Surveys: Good Practice Guidelines' (2012).

Table 2: Tree roost assessment criteria

Confirmed	A tree where positive signs are found; e.g. emerging bats, droppings found or pre-emergence sounds heard;
Category 1*	Potential to support larger roosts and is situated in or near good foraging habitat or near a good commuting route leading to such habitat;
Category 1	A tree that has definite features of potential for roosting bats, supporting fewer suitable features than Category 1* trees (above) or with potential for use by single bats but are less than ideal in some way, for example, may have cluttered access;
Category 2	A tree that has no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features that may have limited potential to support bats
Category 3	A tree that has no potential to support roosting bats.

- 3.8 Following the results of the initial daytime inspection of the trees for bat roosting potential, 11 trees were identified as requiring an aerial inspection to further assess their suitability to support roosting bats. This was undertaken on 8th July by licensed bat ecologist John Crowder with support from appropriately qualified tree climbers.

- 3.9 Following the aerial survey, five trees were identified as having the potential to support roosting bats and were classed as Category 1 or 1*. Trees were identified by using the numbering system adopted in the Arboricultural Impact Assessment (TEP Report Ref: 4612.001). These trees were subject to three pre-dawn re-entry surveys to assess their use by roosting bats. The surveys were undertaken on 30th July, 27th August and 3rd September 2014 and were led by experienced bat surveyors.

Bat activity survey

- 3.10 Three evening bat activity transect surveys were undertaken at the site to assess its use by commuting and foraging bats on 25th June, 16th July and 6th August 2014. The surveys were undertaken by two surveyors, led by licensed bat ecologist John Crowder and comprised the surveyors walking a transect route equipped with heterodyne detectors and anabat recorders. Along the transect a series of 3 minute observation stopping points were made, to assess usage of different parts of the site and focusing on the areas highlighted in the daytime assessment as having the greatest bat potential. The frequency of bat passes encountered during these stops was recorded and mapped according to the time, species and observations made (feeding, flight path etc.). Bat contacts were also mapped in the same way along the transect between the stopping points.

Limitations

- 3.11 Ground based bat roost surveys are best carried out during the winter period when trees are not in leaf and features can be easily seen. The ground based survey was carried out during the summer, when leaves did obscure visibility of features in some cases. The trees where features were obscured were subject to aerial surveys to ensure a full and accurate assessment of the tree was undertaken.
- 3.12 All bat surveys were undertaken in suitable weather conditions, within the optimum time period of May – August for the activity surveys and into early September for the pre-dawn re-entry surveys. Therefore there are no limitations to these surveys.

Breeding Bird Survey

- 3.13 A breeding bird survey at the site was carried out by TEP ornithologist Mike Walker on 23rd June and 16th July 2014. The survey was undertaken in accordance with the BTO methods for Breeding Bird Survey (BBS) transect method, supplemented by the mapping of birds seen or heard using the BTO Common Bird Census techniques.

Limitations

- 3.14 The survey was undertaken late in the bird breeding season. However, a benefit of late season surveys is that fledglings can be observed which confirms breeding in the survey location. Due to the lack of a wide range of suitable breeding habitats for birds, it is considered that this late survey does not affect the assessment of the site with respect to breeding birds.

4.0 RESULTS

Desktop Survey

- 4.1 A summary of the results of the desktop study are set out in Table 3. Species records from the last 10 years are included in this assessment. Further details, including maps, are presented in Appendix 1.

Table 3: Desktop study results

Source	Protected/important species records, protected sites and S42 species and habitats within 1km of the site	Approximate distance from site	Direction from site
Magic Map	<u>Designated sites</u> Mersey Estuary SPA Mersey Estuary Ramsar site Mersey Estuary SSSI <u>UK BAP (S41) Habitat</u> Deciduous woodland Woodpasture and Parkland <u>Other</u> National Inventory of woodland and trees	1.6km 1.6km 1.6km 10m 100m 100m	SW SW SW North, west West SW
Merseyside Biobank	<u>Local Wildlife Sites</u> Sefton Park LWS Otterspool Park and Gorge LWS (formerly Otterspool Gorge LWS) <u>BAP (S41) habitats</u> All woodland Ponds Lakes	10m 800m Within site and within 1km 100m 500m	West and north South N, S, E, W NW West
Merseyside Biobank	<u>Protected plants</u> Bluebell <i>Hyacinthoides non-scripta</i> ^{2, 6} <u>Invasive plants</u> Himalayan balsam Japanese knotweed Rhododendron <u>Protected fauna</u> Common pipistrelle bat <i>Pipistrellus pipistrellus</i> ^{1, 2, 4, 6} Pipstrelle species <i>Pipistrellus</i> sp. ^{1, 2, 4, 6} Noctule bat <i>Nyctalus noctula</i> ^{1, 2, 4, 6} Myotis bat <i>Myotis</i> sp. ^{1, 2, 4, 6} Hedgehog <i>Erinaceus europaeus</i> ⁴ Dragonfly assemblage (10 species) ⁶	Majority recorded within Sefton Park to the west of the site, and all within 1km	Mainly to the west of the site, some to the north and south

¹ European Protected Species (Conservation of Habitats and Species Regulations 2010)

² Wildlife and Countryside Act 1981 (as amended)

³ Protection of Badgers Act 1992

⁴ S41 NERC Act 2006

⁵ Birds of Conservation Concern **Amber** & **Red** listed species

⁶ North Merseyside Biodiversity Action Plan

- 4.2 While the desktop study has returned many species records for this area, it should be noted that these records are not comprehensive and the lack of a record does not indicate the absence of a protected species within the search area.
- 4.3 The Mersey Estuary SPA supports internationally important overwintering populations of the regularly occurring Annex 1 species, golden plover *Pluvialis apricaria*, regularly occurring migratory bird species: pintail *Anas acuta*; teal *Anas crecca*; dunlin *Calidris alpina alpina*; shelduck *Tadorna tadorna*; and redshank *Tringa tetanus*, internationally important passage populations of: ringed plover *Charadrius hiaticula*; and redshank *Tringa tetanus*, and an internationally important assemblage of at least 20,000 waterfowl (wildfowl and waders).
- 4.4 The qualifying interest features of the Ramsar site overlap with those of the SPA for internationally important numbers of overwintering waterfowl, species or populations occurring at levels of international importance (including pintail, teal and dunlin in winter and shelduck, redshank and black-tailed godwit *Limosa limosa islandica* in spring and autumn).
- 4.5 The Mersey Estuary SSSI comprises sand and mud flats and also an area of reclaimed marshland, saltmarshes, brackish marshes and boulder clay cliffs with freshwater seepages. Throughout the winter, the estuary supports large numbers of wildfowl and waders. It is also a valuable staging post for passage migrants in the spring and autumn.
- 4.6 Sefton Park LWS comprises a formal park dominated by amenity grassland but with a large diversity of other habitats including woodland, scrub, parkland trees and grassland with relaxed management. The River Jordan and another small stream within the park support interesting marginal and aquatic plants.
- 4.7 Otterspool Park and Gorge LWS formerly just Otterspool Gorge LWS comprises a range of deciduous woodland, exposed sandstone habitats and pond habitat within a deep sandstone gorge. Otterspool Park comprises formal parkland with relaxed management, a disused railway embankment and disused allotments which all provide a range of habitats including woodland, scrub and grassland all of which support a diverse range of flora and fauna

Habitat Survey

- 4.8 The results of the extended Phase 1 habitat survey are illustrated on Drawing G4612.003. The target notes are presented in Appendix 2.
- 4.9 The following habitats are present within, or adjacent to the site and are listed with the most dominant habitat first:
- Amenity grassland;
 - Scattered broad-leaved trees; and
 - Bare ground.
- 4.10 The majority of the site comprises amenity grassland (see Plate 1). At the time of the survey, the grass had just been mown within the two parcels of land which comprise the site. A 2 – 3m strip of unmown grass has been left around the perimeter of each parcel. The dominant grass species is Yorkshire fog *Holcus lanatus* with abundant Perennial ryegrass *Lolium perenne* and frequent cock's-foot *Dactylis glomerata*. Herbaceous species include occasional daisy *Bellis perennis*,

wood avens *Geum urbanum*, creeping buttercup *Ranunculus repens* and dandelion *Taraxacum officinale* agg.

- 4.11 The two parcels of land are lined with avenues of large mature trees, with a total of 110 being present on the site (see Plate 1). The dominant species include London plane, horse chestnut and common lime. Occasional ash *Fraxinus excelsior*, small-leaved lime *T. cordata* and Caucasian lime *T. x euchlora* are also present. Further detail on the trees surrounding the site is presented in the Arboricultural Assessment report (TEP Ref: 4612.001).
- 4.12 There are occasional patches of bare ground beneath some trees. There is no true woodland ground flora.
- 4.13 The grassland has relatively low floristic diversity and would currently not be considered as a flower-rich meadow in relation to the definitions alluded to in the National Pollinator Strategy (Defra, 2014).

Plate 1: View of Park Avenue, Mossley Hill site



Invasive and protected plant species

- 4.14 No invasive non-native species and no protected plant species were recorded within the site boundary during the survey.

Connectivity with the wider landscape

- 4.15 The site lies on the south-eastern edge of Sefton Park and has good connectivity to the north and west with the grassland and parkland tree habitats of the Park. There is also some connectivity to the east via the trees and gardens of the residential properties in this area. Weak links south to Otterspool Park and Gorge LWS are also present in the form of trees and gardens along Aigburth Vale.

Fauna

Bats

- 4.16 Following the ground based and aerial surveys, five trees (T12, T64, T66, T103, T104) were identified as having features suitable for supporting roosting bats and were classified as Category 1/1*. The locations of these trees are shown on the

Phase 1 habitat map (Drawing G4612.003). No bats were recorded roosting in these trees during the pre-dawn re-entry surveys. However foraging activity, mainly by common pipistrelle bats, was observed along the tree lines and at the tops of the tree canopies. Details of the pre-dawn re-entry surveys are presented in the Bat Survey Technical Report in Appendix 3.

- 4.17 The Bat Survey Technical Report in Appendix 3 also provides detailed results and analysis of the bat activity surveys. In summary, moderate levels of bat activity were recorded within the site, with slightly higher levels of activity recorded in the southern parcel of land (see Drawings G4612.013 to G4612.015). This activity comprised high levels of common pipistrelle contacts with only a small number of contacts from noctule, a myotis species and soprano pipistrelle bats. Bats were most commonly recorded in association with the tree lines rather than the more open amenity grassland areas.

Birds

- 4.18 Full details of the breeding bird survey are presented in Appendix 4. In summary, 11 common and widespread species of bird were recorded during the breeding bird surveys (see Drawings G4612.001 and G4612.004). These were blackbird, blue tit, carrion crow, chaffinch, coal tit, dunnock, goldfinch, great tit, magpie, wood pigeon and wren.

- 4.19 Dunnock was the only species which is classed as a species of principal importance due to its inclusion on Section 41 of the Natural Environment and Rural Communities Act 2006. It is also classed as an 'Amber' bird of conservation concern.

- 4.20 Blue tit, which nests in cavities in trees, was the only species confirmed as breeding on the site, while all others were categorised as possible breeders within the site.

Amphibians

- 4.21 No waterbodies are present within the site or within 250m of the site. The lake within Sefton Park and the water feature within Greenbank Park are within 500m of the site. The habitats within the site are of low suitability for supporting amphibians. The roads which surround the two parcels of land, particularly Mossley Hill Drive and Queen's Drive, are considered to act as a barrier to movement by amphibians. No signs of amphibians were recorded during the Phase 1 habitat survey and no records of great crested newt or other amphibians were returned in the desktop study.

Badger

- 4.22 No records of badger were returned in the desktop study and no signs of badger were recorded during the Phase 1 habitat survey.

Otter and water vole

- 4.23 No records of water vole or otter were returned in the desktop study. No waterbodies are present on site or within the vicinity and therefore no signs of these species were recorded during the Phase 1 habitat survey.

Reptiles

- 4.24 No records of reptile were returned in the desktop study. No signs of reptiles were recorded during the Phase 1 habitat survey. The habitats on site are of low suitability for reptiles providing very limited opportunities for refuge.

Invertebrates

- 4.25 The grassland and trees on the site provide limited opportunities for invertebrates, including saproxylic (dead bark) species or pollinators prioritised in the National Pollinator Strategy (i.e. honeybees, bumblebees, butterflies, moths and hoverflies). Common blue damselfly *Enallagma cyathigerum* was recorded during the Phase 1 habitat survey, probably associated with wetlands in nearby Sefton Park.

5.0 ASSESSMENT AND CONCLUSIONS

- 5.1 The development proposals indicate that the majority of the central grassland areas will be developed. Of the 110 trees on site, 27 must be removed to facilitate the development proposals; eighteen of these are moderate value, six are high value and three are low value. These trees will be removed to create access points into the new development and to provide adequate stand-off from final structures (Arboricultural Impact Assessment (TEP Report Ref: 4612.001)). The Landscape Planting Plan (Drawings D4612.017 – D4612.021) indicates that approximately 65 trees will be planted as part of the proposed landscape design, along with areas of ornamental planting and hedgerows. Wildflower meadow and bulb planting will also be included within the amenity grassland areas around the periphery of the site.

Designated sites

- 5.2 There are no internationally designated sites or SSSIs within 1km of the site. The Mersey Estuary SSSI/ SPA/ Ramsar site is located 1.6km to the south-west of the site and is separated by existing residential areas and road infrastructure. It is considered that development of the Park Avenue site would not have a detrimental effect on these protected areas.
- 5.3 There are two LWSs within 1km of the site: Sefton Park LWS; and Otterspool Park and Gorge LWS. Otterspool Park and Gorge LWS is separated from the site by 800m of residential areas and road infrastructure. It is considered that this LWS will not be affected by the development of the site due to the separation distance and existing development in between.
- 5.4 Sefton Park LWS is adjacent to the site, being separated by Mossley Hill Drive. There is the potential for indirect effects on the site from pollution incidents, surface water run-off, windblown dust and rubbish.

Habitats

- 5.5 The amenity grassland, which forms the bulk of the site, is considered to be of low ecological value due to the current management regime, which leads to low structural diversity. This grassland does provide limited opportunities for invertebrates and for foraging by birds, but overall it has relatively low floristic diversity and would currently not be considered as a flower-rich meadow in relation to the definitions alluded to in the National Pollinator Strategy (Defra, 2014).
- 5.6 Although, the majority of grassland would be lost as a result of the development proposals, the enhancement of remaining areas of grassland by the inclusion of shade tolerant wildflower and bulb plantings within the proposals will promote herbaceous diversity and pollinator opportunities.
- 5.7 The key ecological features of the site are the mature trees, which surround it. Merseyside Biobank information includes these trees within the woodland UK BAP priority habitat. The UK BAP is no longer active, but this habitat type is a S41 habitat of principal importance under the NERC Act 2006. Large, mature trees of this kind are of value within themselves and also for the range of other wildlife they can support including bats, breeding birds, saproxylic (dead bark) invertebrates and fungi. In respect of ground flora, however, it should be noted that the lines of trees do not have a shrub understorey, nor is there any ground flora typical of ancient or long-established woodland.

- 5.8 The majority of these trees will be retained within the proposals for the site. This will maintain a wildlife corridor around the development site and links with the surrounding area. Retention of these trees will also ensure the continued provision of habitat for nesting and foraging birds, foraging, commuting and roosting bats and a range of invertebrates. The loss of 27 trees will be offset by the planting of approximately 65 trees, leading to an increase in tree cover in the long term. The new tree plantings will comprise, native and ornamental varieties which will provide nectar, seed and berry foraging opportunities for invertebrates and birds.
- 5.9 The inclusion of beech *Fagus sylvatica* hedgerow boundary features within the proposed development will add to the structural diversity of the site, creating additional habitats for refuge, foraging and commuting for a range of wildlife.

Invasive Species

- 5.10 No Schedule 9 invasive species have been recorded within the site. However, Himalayan balsam, Japanese knotweed and rhododendron are known to be present within 1km of the site. It is an offence to cause the spread of these species in the wild. Section 14(2) of the Wildlife and Countryside Act 1981 states that "*if any person plants or otherwise causes to grow in the wild any plant which is included in Part 2 of Schedule 9, he shall be guilty of an offence*".
- 5.11 While there will be no implications with regard to the control and removal of these species from the development site, there is the potential for these species to be brought into the site from the surrounding area, or spread around the surrounding area by the movement of construction machinery.

Connectivity with the wider Landscape

- 5.12 Connectivity with the wider area will be maintained due to the retention of the existing mature trees which surround the site

Fauna

Bats

- 5.13 Of the five trees identified as having potential to support bats (T12, T64, T66, T103, T104), only one, T66 will be removed to facilitate the development. No bats were recorded roosting in these trees during the 2014 surveys. However, bats frequently move between roost sites, particularly tree roosts, and therefore the removal of T66 and any other remedial works will need to be timed to minimise disturbance to bats. Additional surveys would be required prior to removal or management of any trees if works are to take place more than 12 months from the 2014 surveys, with the possibility that a licence from Natural England would be required prior to any works taking place if roosting bats are found to be present.
- 5.14 The trees surrounding the site are used by moderate numbers of bats for commuting and foraging activities. The proposed retention of the majority of trees will maintain these foraging and commuting opportunities for bats. It is unlikely that loss of the grassland area within the site would significantly affect the foraging opportunities for bats.
- 5.15 Sensitive lighting within the design and construction of the site will need to be implemented in order to ensure that roosting, commuting and foraging bats are not significantly affected by the development.

Birds

- 5.16 The site provides limited nesting habitat for a small number of bird species in the form of the mature trees which surround the site. As the majority of these trees will be retained in the site proposals, and additional trees and hedgerows will be planted, there will be limited loss of potential nesting habitat in the short term, but an overall gain in the long term. No ground nesting birds were recorded during the survey.
- 5.17 A small number of trees will require removal and some trees may require pruning to facilitate the development. All nesting birds are protected under the *Wildlife and Countryside Act 1981* (as amended). There is no provision under the licensing system for disturbance or destruction of nests to facilitate development, and there would be potential implications for the timing of any potential vegetation clearance works with regard to nesting birds.

Amphibians

- 5.18 There are no waterbodies within the site, and the terrestrial habitats are of low suitability for great crested newts and other amphibians. In addition, the roads which surround the site are considered to act as a barrier to movement for amphibians. Therefore it is considered that there are no implications for the development of the site with respect to great crested newts and other amphibians.

Badger

- 5.19 There are no records of badger from within 1km of the site or signs recorded from within the site. It is considered that there are no implications for the development of the site with respect to badger.

Otter and water vole

- 5.20 There are no waterbodies within the site or the vicinity which could support water vole or otter. Therefore, it is considered that there are no implications for the development of the site regarding water voles or otters.

Reptiles

- 5.21 There are no records of reptile from within 1km of the site. The grassland within the site has low structural diversity and has very low habitat suitability for reptiles. It is considered that reptiles will not be present on the site and therefore there are no implications for development with respect to this group of animals.

Invertebrates

- 5.22 There are no invertebrate records from within 1km of the site. The habitats on site provide limited opportunities for invertebrates, with few being recorded during other surveys of the site. The management regime of the grassland further limits the species likely to be present on the site. Therefore there are no implications for development with respect to invertebrates.

6.0 RECOMMENDATIONS

Designated sites

- 6.1 In order to reduce the potential for indirect effects on Sefton Park LWS from pollution incidents, surface water run-off, windblown dust and rubbish, it is recommended that control measures are implemented via a Construction Environmental Management Plan (CEMP). These could include the use of drip trays, bunds around fuel supplies, netting, wheel brushing and damping down.

Habitats

Trees

- 6.2 The trees and hedgerows to be planted within the scheme will comprise native species, or species with known wildlife value where possible. This will ensure that opportunities for a range of wildlife, particularly invertebrates, birds and bats are maximised.
- 6.3 Trees that are to be retained will be protected using fencing to prevent encroachment by machinery or storage of materials within the root protection area (RPA). Further details are presented in the Arboricultural Impact Assessment (TEP Report Ref: 4612.001).

Invasive Species

- 6.4 Due to the presence of Himalayan balsam, Japanese knotweed and rhododendron within 1km of the site, it is recommended that a Biosecurity Control Plan is implemented during the construction period to reduce the risk of introducing or spreading non-native invasive species.

Fauna

Bats

- 6.5 One tree with the potential to support roosting bats, T66, will be removed to facilitate the development. Remedial pruning works may be required to the other four trees (T12, T64, T103, T104) which have the potential to support roosting bats. Although no bats were recorded during the 2014 surveys, if more than 12 months has elapsed since the 2014 surveys before any works are planned, then additional surveys will be required to determine roosting status.
- 6.6 If no bat roost is recorded, the tree in question can be removed or managed using 'reasonable avoidance measures' (RAMs) under the supervision of a licenced ecologist. Appropriate RAMs in this instance are considered to be the use of a soft-felling technique, lowering limbs to the ground and cushioning them when they reach the ground. The tree should be felled or managed as soon as is reasonably possible following the end of the survey.
- 6.7 In the event that bats are found within the tree, either as a result of the survey or during the sensitive felling/ management of the tree, works should cease and the advice of the bat ecologist should be sought immediately. A licence from Natural England would be required before felling/ management could proceed. The mitigation scheme would depend on the numbers and species of bat present.
- 6.8 The loss of roost potential in T66 should be mitigated by the provision of three bat boxes on one of the retained trees. Boxes should be installed at a ratio of one hibernation to two maternity boxes. Samples are illustrated at Appendix 5.

- 6.9 The most valuable area for foraging and commuting bats is along the tree lines which surround the site, the majority of which will be retained within the development proposals.
- 6.10 In order to maintain the integrity of foraging and commuting routes around the site, it is recommended that a sensitive lighting scheme, both temporary (during construction) and permanent (post-development) is designed that reduces light levels in the vicinity of the trees. Lighting should be directed downwards and preferably restricted to selected areas by fitting hoods, which direct the light below the horizontal plane.
- 6.11 Illumination of the canopies of the retained mature trees should be avoided, with a buffer zone created around the trees of at least 1.5 times the canopy diameter to minimise disturbance. Lamp sources that do not emit UV light (peaking higher than 550nm) are optimum as they are less likely to displace insect abundance and affect foraging habitat, e.g. low pressure sodium or LEDs. If this is not possible then UV filters should be fitted to the chosen light source.

Birds

- 6.12 The trees surrounding the site offer limited potential nesting habitat for birds. All wild UK nesting birds, their nests and eggs are protected under the *Wildlife and Countryside Act 1981* (as amended). It is an offence to intentionally or recklessly, damage or destroy nests and all vegetation work should be undertaken outside the bird nesting season (March to August inclusive).
- 6.13 If tree removal or pruning works are not possible outside of the nesting season, a suitably qualified ecologist should check for nesting birds a maximum of 24 hours in advance of any site clearance works. If nesting birds are present, a buffer zone will need to be set up around any nest until young have fledged. The size of the buffer zone will depend on the species recorded. The ecologist will regularly monitor the nest and advise the contractors when works can proceed.
- 6.14 The loss of 27 trees to facilitate the development may lead to the short-term loss of nesting opportunities for a range of common and widespread bird species. This can be mitigated by the installation of a range bird boxes on the retained trees, samples of which are included in Appendix 6.

Enhancement Opportunities

- 6.15 The remaining areas of managed grassland around the periphery of the development will be enhanced by the incorporation of shade tolerant native wildflower and bulb plantings. These plantings, in combination with the wildlife friendly ornamental herbaceous and shrub plantings will ensure an almost permanent supply of nectar and pollen throughout the year (a key aim of the new National Pollinator Strategy) which will encourage a diverse invertebrate fauna to develop, which in turn will provide increased food supplies for birds, bats and other wildlife.
- 6.16 Green trellising using ivy, honeysuckle or other scented and berry producing climbers could also be installed on buildings, boundary walls and fences within the new build to provide additional foraging and year-round sheltering opportunities for insects, birds and bats.

7.0 REFERENCES & FURTHER READING

BAT CONSERVATION TRUST 2nd Edition (2012). *Bat Survey: Good Practice Guidelines*. The Bat Conservation Trust, London

DEFRA (2014). *The National Pollinator Strategy: for bees and other pollinators in England*.

HUTSON, A. M. (1993). *Action plan for conservation of bats in the United Kingdom*. The Bat Conservation Trust, London.

JOINT NATURE CONSERVATION COMMITTEE (2010). *Phase 1 Habitat Survey*. JNCC. Peterborough

OFFICE OF THE DEPUTY PRIME MINISTER (2005). *Government Circular: Geological and Biological Conservation – Statutory obligations and their implications within the planning system*. ODPM circular 06/2005, DEFRA circular 01/2005

APPENDIX 1

Desktop Study

Desk Based Ecology Assessment

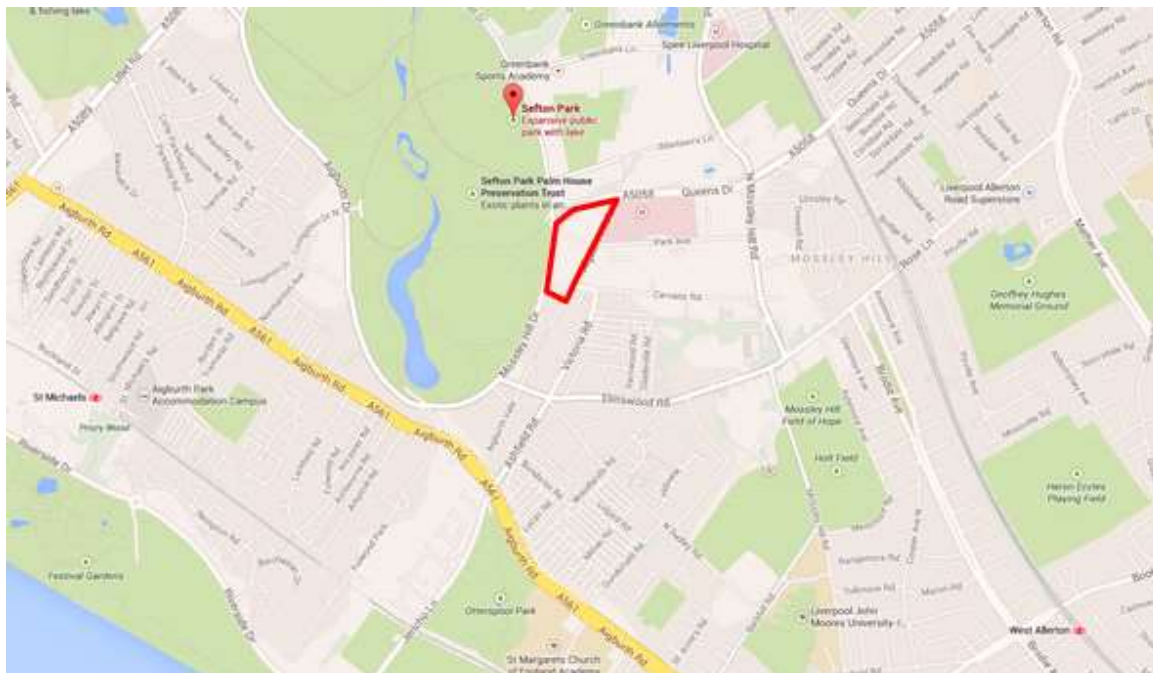
**Park Avenue, Mossley Hill
Liverpool**

Approximate Central Grid Reference: SJ 381 874

Contents

- **Site location plan**
- **Extract from local plan**
- **Extracts of relevant planning policies**
- **Local site designations**
- **Local species records**
- **National site designations**
- **Habitat inventory records**
- **Wildlife site citations**

Site location plan



Contains Ordnance Survey data © Crown copyright and database right 2014

Extract of Liverpool City Council Unitary Development Plan (adopted Nov 2002) saved policies and supporting key



LIVERPOOL UNITARY DEVELOPMENT PLAN PROPOSALS MAP MODIFIED DEPOSIT DRAFT

NOTE: The numbers in brackets refer to the main Plan policy that will apply in the designations below. A number of other City-wide policies are applicable, including the Plan's General Policies.

- PRIMARILY RESIDENTIAL AREA (H4)
- SITE FOR HOUSING DEVELOPMENT (H1)
- ESTATE ACTION AREA (H2)
- HOUSING RENEWAL AREA (H2)
- HOUSING ACTION TRUST (HAT) (H2)
- VACANT DWELLINGS INITIATIVE (H2)
- PRIMARILY INDUSTRIAL AREAS (E1)
- SITE FOR INDUSTRIAL / BUSINESS DEVELOPMENT (E1)
- MAIN OFFICE AREA (E2)
- SITE FOR OFFICE DEVELOPMENT (E2)
- CITY CENTRE (S1, S3), LONDON ROAD (S4) AND DISTRICT CENTRES (S5, S6, S7)
- CORE OF MAIN RETAIL AREA
- PARADISE STREET DEVELOPMENT AREA (PSDA) BOUNDARY
- PSDA PRINCIPAL DEVELOPMENT AREA (RETAIL)
- SITE FOR NEW DISTRICT CENTRE DEVELOPMENTS (S6)
- LOCAL CENTRE (S6)
- RETAIL WAREHOUSE PARK (S11)

- SHOPPING PARK (S10)
- PORT (E3)
- AIRPORT (E4)
- MIXED USE AREA (E6)
- SITE FOR VARIOUS TYPES OF DEVELOPMENT (E6)
- GREEN SPACE (OE11, OE12)
- PROPOSED PARK (OE12)
- HISTORIC PARK (HD13)
- CONSERVATION AREA (HD7 to HD14)
- PROPOSED EXTENSION OR PROPOSED NEW CONSERVATION AREA (HD7)
- PROPOSED DELETION FROM CONSERVATION AREA (HD7 to HD13)
- ANCIENT MONUMENT (HD16)
- REGIONALLY IMPORTANT GEOLOGICAL / GEOMORPHOLOGICAL SITE (RIGS) (OE5)
- SITE OF NATURE CONSERVATION VALUE (OE5, OE6)
- LOCAL NATURE RESERVE (OE7)
- POTENTIAL LOCAL NATURE RESERVE (OE7)
- NEW COUNTRYSIDE AREA (OE8)
- GREENBELT (OE1, OE2)
- GREENWEDGE (OE9)

- DEVELOPED COASTAL ZONE (OE4)
- UNDEVELOPED COASTAL ZONE (OE4)
- SITE OF SPECIAL SCIENTIFIC INTEREST, SPECIAL PROTECTION AREA, RAMSAR SITE AND SITE OF NATURE CONSERVATION VALUE (OE5, OE6)
- PRIMARY AND STRATEGIC ROUTE NETWORK (S8)
- NEW ROAD SCHEME (T10)
- RAILWAY - MERSEYRAIL AND MAINLINE ROUTES (OE14)
- ENVIRONMENTAL IMPROVEMENT CORRIDOR (OE15)
- KEY RECREATIONAL ROUTE (OE17)
- NEW BUS FACILITIES (T1)
- PROPOSED RAILWAY STATION (T2)
- POSSIBLE RAILWAY STATION (T2)
- EXISTING SPORTS/RECREATION CENTRE (CB)
- PROPOSED SPORTS CENTRE (CB)
- EXISTING SWIMMING POOL (CB)
- NOTIFIABLE (HAZARDOUS) INSTALLATION (EP10)
- HIGH PRESSURE GAS PIPELINE (EP10)

Extracts of relevant planning policies and supplementary planning guidance

GEN 2

The Plan aims to protect and enhance a network of open space throughout the City, with emphasis placed on the following:

- i. protecting the City's strategic open land (Green Belt and Green Wedges) from inappropriate development;
- ii. protecting areas of intrinsic landscape value;
- iii. protecting ecologically important sites in the City;
- iv. protecting the City's undeveloped coastal zone;
- v. enhancing open areas with potential for the development of countryside environments and pursuing opportunities to fulfil this potential;
- vi. protecting open space for recreational use and maintaining the standards of provision set out in the Plan, whilst recognising that the nature of recreational activity may change;
- vii. designating a hierarchy of public open space to ensure that there is a convenient and accessible network of quality open space for all residents of the City;
- viii. protecting and enhancing the recreational, ecological and amenity value of green space in the City;
- ix. encouraging community involvement and promoting educational opportunities in the protection and management of the open environment in the City;
- x. protecting and improving linear recreation routes through the City; and
- xi. protecting and enhancing the landscape, heritage and wildlife value of the water courses in the City.

OE3

The City Council will protect and improve the open character, landscape, recreational and ecological quality of the Green Wedges at Calderstones / Woolton and Otterspool by:

- i. not granting planning permission for proposals for new development that would affect the predominantly open character of the Green Wedges or reduce the physical separation between existing built up areas;
- ii. requiring that, where new built development is permitted (including conversion or extension), such development:
 - has regard to the openness of the Green Wedge and the purposes of including land within it;
 - should be in accordance with the criteria set down in policy HD18 and, in particular, uses materials and built forms sympathetic to the character of the area;
 - retains existing vegetation and special site features where appropriate; and
 - provides and maintains a high standard of landscaping
- iii. retaining its own land in predominantly open use and supporting proposals which would:
 - enhance tree cover by the retention of existing trees and replacement of older trees where necessary;
 - enhance the recreational role of the Green Wedges; or
 - offer uses and activities which accord with their open character, particularly those that secure the continued use of sports grounds surplus to the owner's requirements, for open space purposes.

PROTECTION OF NATURE CONSERVATION SITES AND FEATURES

OES

1. The City Council will seek to protect the nature conservation interest of open land and the water environment in the City by not permitting development which would:
 - i. destroy, fragment or adversely affect directly or indirectly a designated or proposed Special Protection Area (SPA), Ramsar site, or Site of Specific Scientific Interest (SSSI), unless the City Council is satisfied that there is no alternative solution and there are imperative reasons of overriding public interest;
 - ii. destroy, fragment or adversely affect directly or indirectly a Site of Nature Conservation Value as identified by the City Council unless it can be clearly demonstrated that there are reasons for the proposal including benefits to the community, which outweigh the need to safeguard the substantive nature conservation value of the site;
 - iii. destroy, fragment or adversely affect, directly or indirectly, a Regionally Important Geological /Geomorphological Site (RIGS) unless it can be demonstrated that the benefits of the proposal to the community outweigh the need to safeguard the geological value of the site;
 - iv. have an adverse affect on legally protected wildlife species; or
 - v. destroy, fragment or adversely affect, indirectly or directly, sites with known conservation value in a neighbouring authority area.
2. In assessing criteria ii to iv full account will be taken of proposed mitigation measures.

DEVELOPMENT AND NATURE CONSERVATION

OE6

In the circumstances where development is permitted on or adjacent to any sites covered by policy OE5, which in the case of the Mersey Estuary will be subject to the most rigorous examination, the City Council will seek to minimise potential damage by:

- i. requiring developers to undertake a site investigation to identify the nature conservation interest of the site;
- ii. requiring developers to set out proposals for the protection and management of the nature conservation value of the site; and
- iii. considering the use of conditions and/or planning obligations to safeguard the nature conservation interest and/or provide compensatory measures for any nature conservation interest damaged or destroyed during the development process.

HABITAT CREATION AND ENHANCEMENT

OE7

1. The City Council will seek to enhance the nature conservation interest of open land and water courses in the City by:

- i. supporting and initiating proposals for habitat creation and enhancement particularly within Sites of Nature Conservation Value and those other sites which, although do not meet the criteria required to be designated as an SNCV, are considered to be of value for nature conservation;
- ii. supporting proposals which strengthen and enhance wildlife corridors in the City;
- iii. managing its own land, and particularly the City's parks, in a manner more positively beneficial to wildlife and encouraging other landowners to do the same where appropriate;
- iv. encouraging the reopening of culverted water courses where opportunities arise and supporting the Alt 2000 initiative;
- v. encouraging developers to undertake landscaping in an ecologically sensitive manner; and
- vi. encouraging and supporting community groups, schools and other organisations to work in partnership with the City Council on habitat creation and enhancement initiatives.

2. In addition to the designation of Mull Wood Local Nature Reserve at Croxteth Park, the City Council will seek to designate further Local Nature Reserves (LNRs) in the City and secure appropriate management regimes with initial consideration being given to:

Mill Wood

Otterspool Gorge

Childwall Woods and Fields

Land adjacent to Garston Gas Works

Hillfoot Road and Simpsons Pavilion

Melrose Cutting

Mersey Estuary

Croxteth Country Park (extension to existing Local Nature Reserve)

THE MERSEY FOREST

OE10

The City Council will seek to implement the Mersey Forest Plan in order to complement the aims of urban regeneration and to achieve the following objectives:

- i. the enhancement of the landscape and amenity interest of the Green Belt, Green Wedges, New Countryside Areas and other open spaces in the City;
- ii. the provision of recreational open space in a woodland setting;
- iii. the protection and enhancement of the existing nature conservation interest and the creation of wildlife habitats; and
- iv. the promotion of educational opportunities.

PROTECTION OF GREEN SPACE

OE11

Planning permission will not be granted for built development on part or all of any green space unless the proposed development can be accommodated without material harm to:

- i. the recreational function of the green space, unless:
the development is ancillary to the use of the site for active or passive outdoor recreation and enhances its value for these activities;
the site does not lie in an area of open space deficiency or its development would not create an area of open space deficiency;

a replacement facility of at least equal quality and suitable size is provided at an appropriate location to ensure that an area of open space deficiency would not otherwise be created ;
in the case of green space in educational use, the development is specifically required for educational purposes and that suitable and convenient alternative recreational facilities are available.

ii. the visual amenity value of the green space in terms of:

important vistas into and across the site;

key frontages which are visible from a main road;

important trees and landscape features, and

the character of the site within the surrounding area; or its importance as open land in an otherwise closely developed area;

iii. its relationship to adjoining green spaces, particularly whether the development might destroy a valuable link between areas of green spaces; and

iv. any known nature conservation value as identified in policy OE5.

ENHANCEMENT OF GREEN SPACE

OE12

The City Council will seek to enhance the overall stock of publicly accessible green space by:

i. improving the quality and management of existing parks, playing fields, golf courses and cemeteries;

iii. pursuing opportunities for new recreational provision in areas of local open space deficiency as identified in this Plan, particularly on green spaces surplus to the City Council requirements for other purposes; and

iii. providing new parks as identified on the Proposals Map.

ENVIRONMENTAL IMPROVEMENT CORRIDORS

OE15

1. The following have been designated as Environmental Improvement Corridors:

North East Corridor (A59/A580)

Eastern Corridor (A504 7/A57/A5049/B5178)

Riverside Corridor South (A5036/A562/A561)

Riverside Corridor North (A565/A5036/A5038)

City Orbital Corridor (A5058)

all Northern Line railway routes

all City Line and Inter City railway routes

Leeds and Liverpool Canal

2. Within the road corridors, initial priority will be given to the following routes:

A59/A580 (Byrom Street/Scotland

Road/Walton Lane/Walton Hall Avenue/East

Lancashire Road)

A5047 (Edge Lane/Edge Lane Drive)

A562/A561 (Parliament Street/St James

Place/Park Road/Aigburth Road/St Mary's

Road/Speke Road/Speke Boulevard)

A565 (Great Howard Street/Derby Road)

3. The City Council will enhance the appearance of Environmental Improvement Corridors in the City by:

1. requiring development proposals to retain existing landscape and wildlife features and contribute to the overall aim of improving the environment of the corridor by:

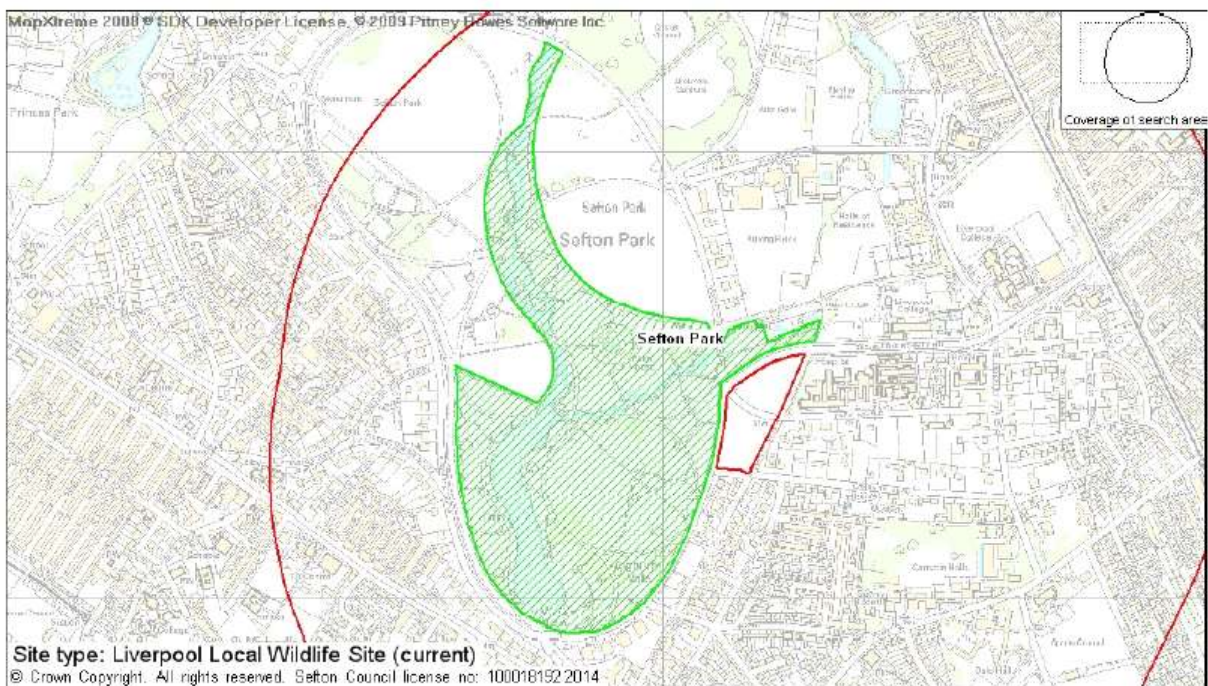
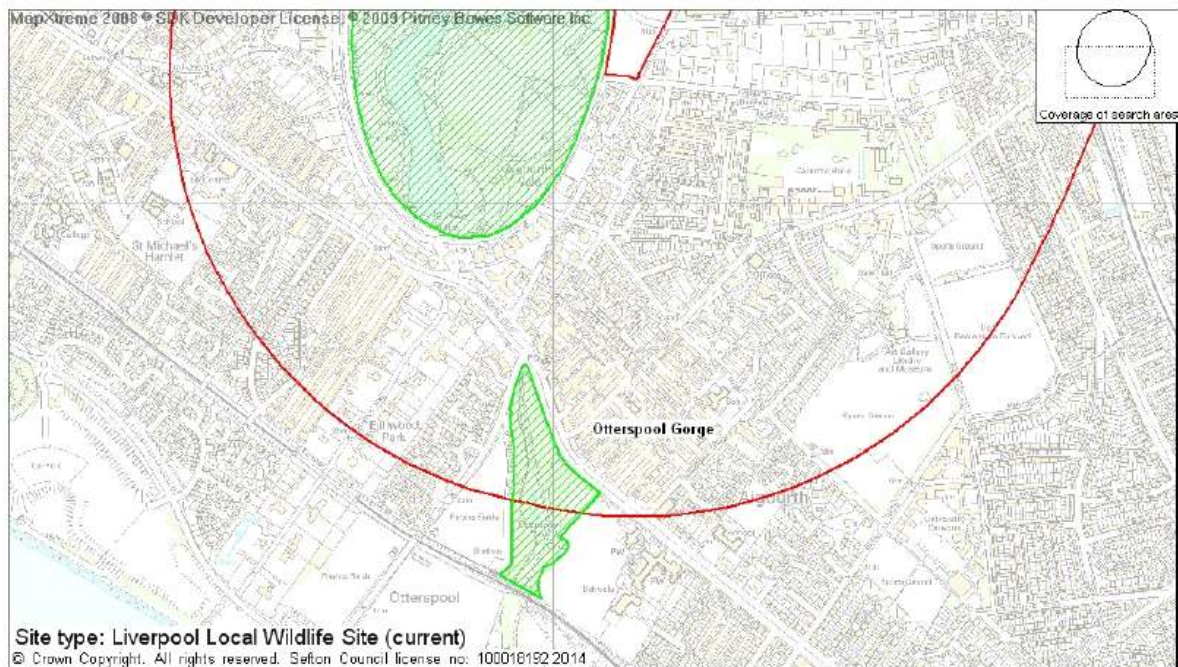
incorporating a high standard of landscaping and boundary treatment within the site; and

paying particular attention to screening, structures and buildings adjacent to the road, railway or canal.

ii. carrying out environmental improvements to vacant and derelict land within its ownership in accordance with policy EP1 and landscaping schemes along the corridor generally; and

iii. refusing advertisement consent for, or issuing discontinuance notices against hoardings, signs and other advertisements which by reason of their size and situation detract from the visual amenity of the corridor.

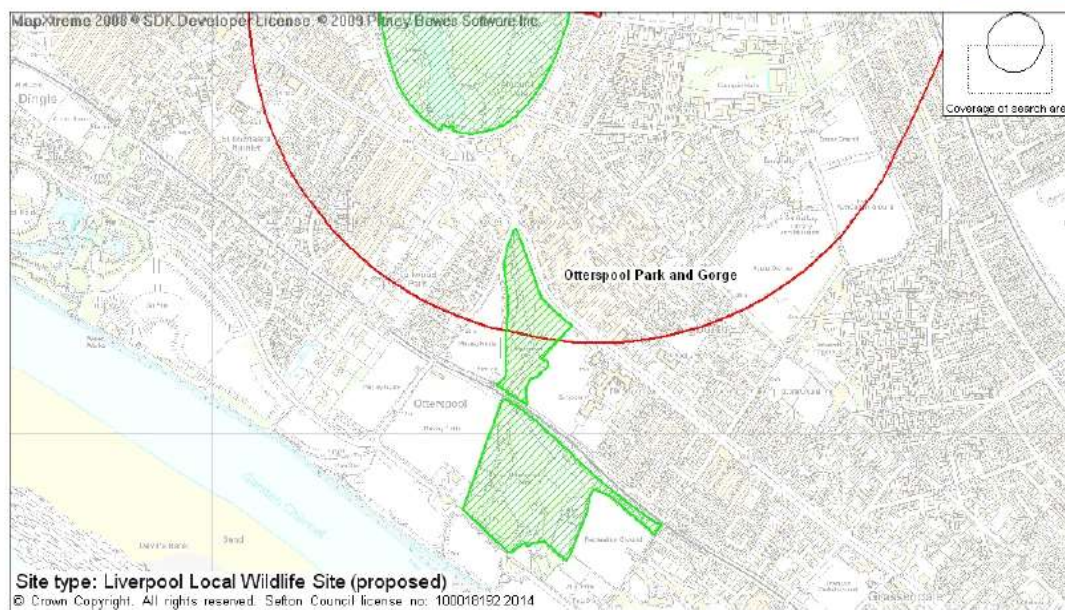
Maps provided by Merseyside BioBank of site designations within 1km





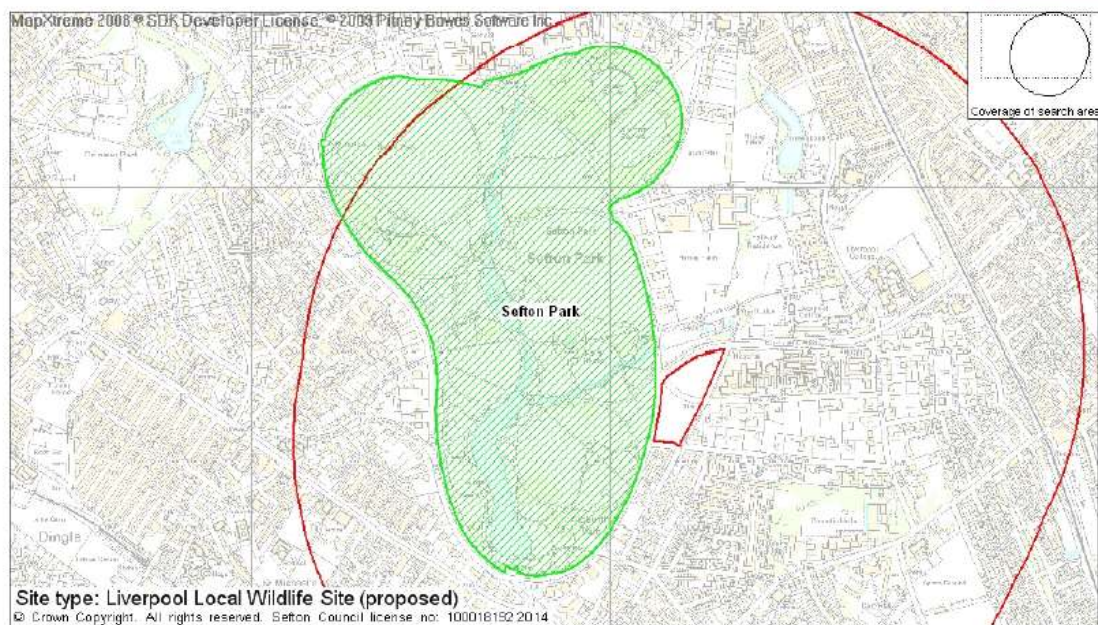
The Local Biodiversity Records Centre
for North Merseyside

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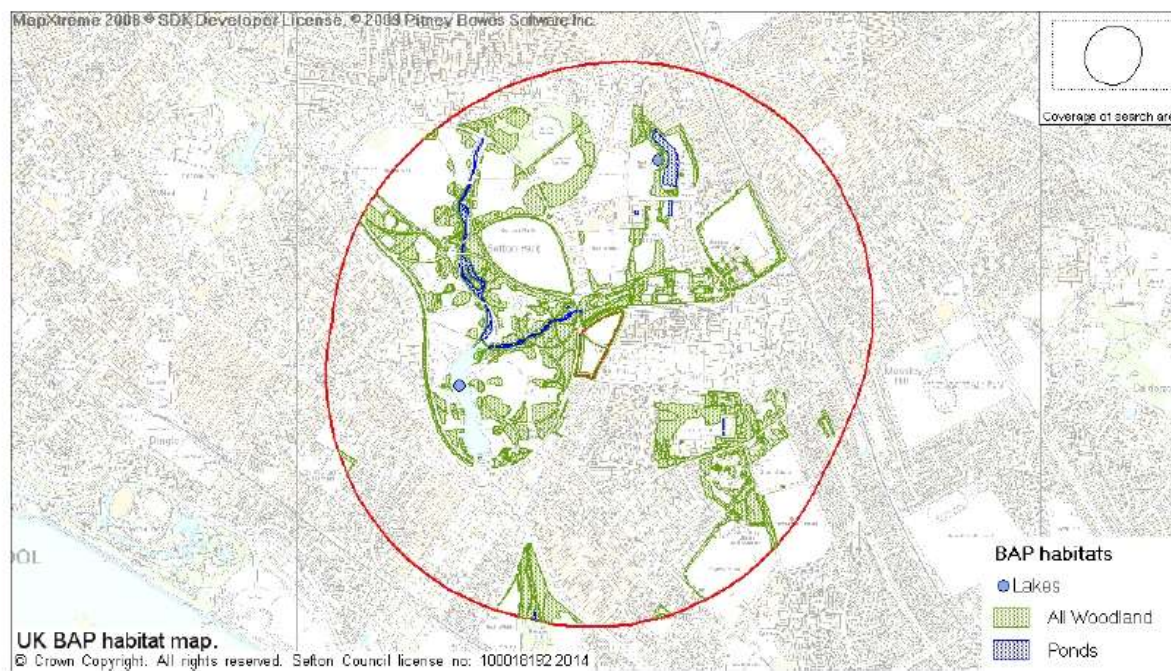


Maps provided by Merseyside BioBank of BAP and Phase 1 Habitat within 1km



*The Local Biodiversity Records Centre
for North Merseyside*

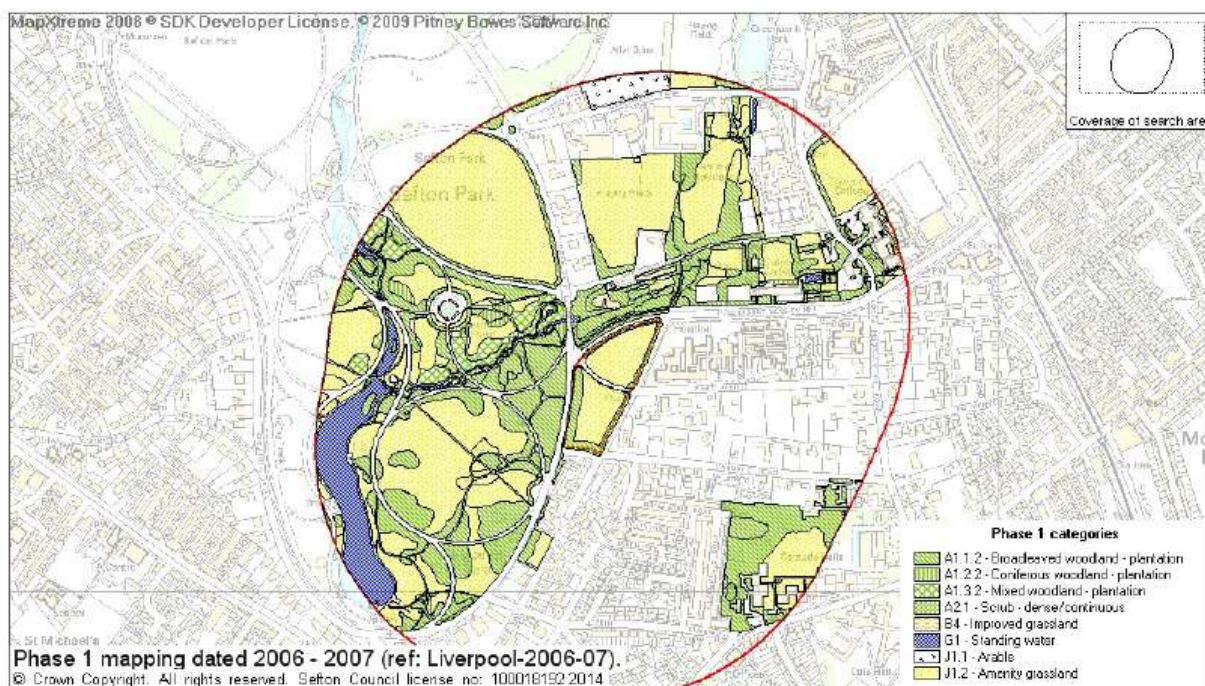
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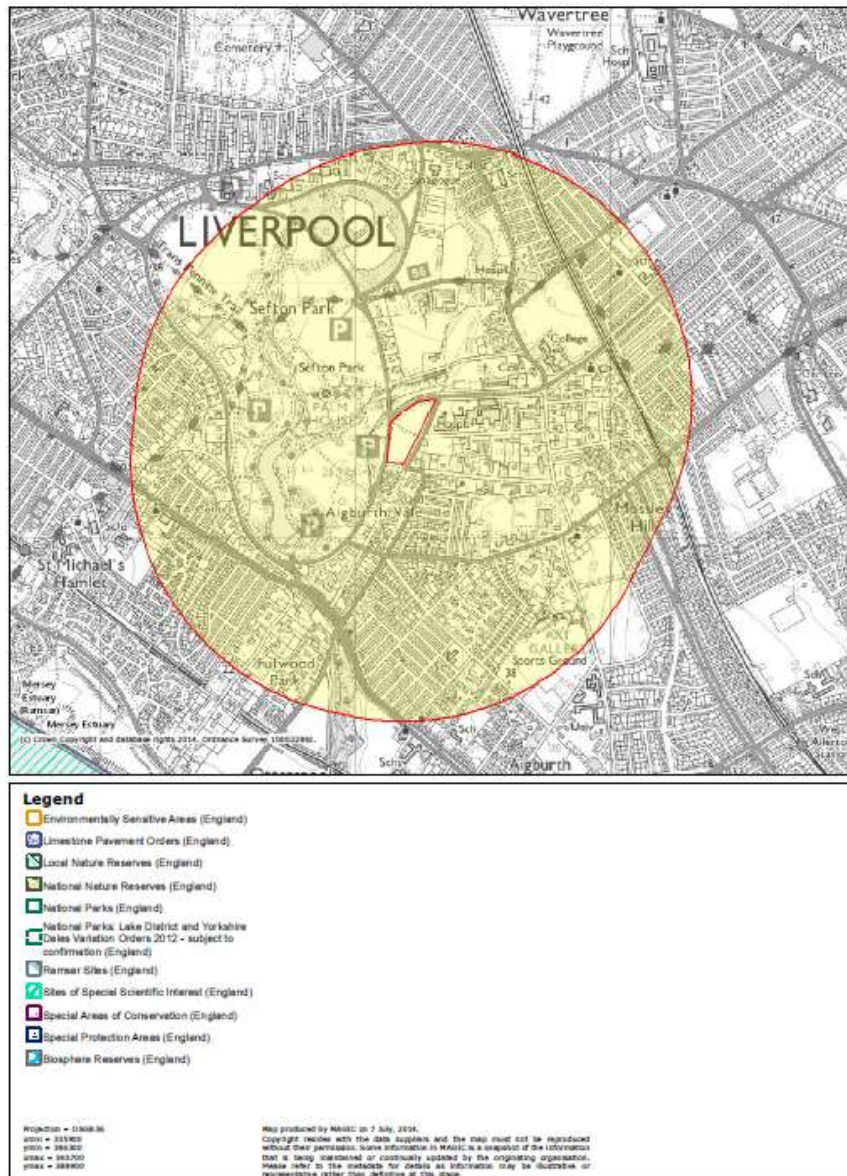
Extract of species data provided by Merseyside BioBank within 1km

GridRef	Location Name	Common Name	Scientific Name	Group	Abundance, breeding status etc	Date
SJ38778668	Sudley House, Mossley Hill Road, Aigburth,	Common Frog	<i>Rana temporaria</i>	amphibian	30 Count of Larvae	08/04/2012
SJ38748666	Sudley House, Mossley Hill Road, Aigburth	Bluebell	<i>Hyacinthoides non-scripta</i>	flowering plant	local Count of Flowering	08/04/2012
SJ377875	SEFTON PARK	Indian Balsam	<i>Impatiens glandulifera</i>	flowering plant		05/10/2006
SJ37878792	Sefton Park, Liverpool	Indian Balsam	<i>Impatiens glandulifera</i>	flowering plant	Occasional Count of DAFOR	19/05/2011
SJ38198756	Aigburth Vale, Liverpool	Indian Balsam	<i>Impatiens glandulifera</i>	flowering plant	Abundant Count of DAFOR	19/05/2011
SJ37568740	Sefton Park, Liverpool	Japanese Knotweed	<i>Fallopia japonica</i>	flowering plant	Occasional Count of DAFOR	19/05/2011
SJ37608736	Sefton Park, Liverpool	Japanese Knotweed	<i>Fallopia japonica</i>	flowering plant	Occasional Count of DAFOR	19/05/2011
SJ377875	SEFTON PARK	Japanese Knotweed	<i>Fallopia japonica</i>	flowering plant		05/10/2006
SJ38098756	Aigburth Vale, Liverpool	Japanese Knotweed	<i>Fallopia japonica</i>	flowering plant	Occasional Count of DAFOR	19/05/2011
SJ38198756	Aigburth Vale, Liverpool	Japanese Knotweed	<i>Fallopia japonica</i>	flowering plant	Occasional Count of DAFOR	19/05/2011
SJ377875	SEFTON PARK	Rhododendron	<i>Rhododendron ponticum</i>	flowering plant		05/10/2006
SJ37738770	Sefton Park, Liverpool	Three-cornered Garlic	<i>Allium triquetrum</i>	flowering plant	1 Count	19/05/2011
SJ3788	Sefton Park	Banded Demoiselle	<i>Calopteryx splendens</i>	insect - dragonfly (Odonata)	1 Count of Total	11/07/2009
SJ3788	Sefton Park	Banded Demoiselle	<i>Calopteryx splendens</i>	insect - dragonfly (Odonata)	1 Count of Total; 1 Count of Male	12/07/2009
SJ3787	Sefton Park	Black-tailed Skimmer	<i>Orthetrum cancellatum</i>	insect - dragonfly (Odonata)	2 Count of Total	22/06/2011
SJ3787	South end lake, Sefton Park	Black-tailed Skimmer	<i>Orthetrum cancellatum</i>	insect - dragonfly (Odonata)	1 Count of Total	26/06/2010
SJ37878721	Aigburth Vale, Liverpool	Black-tailed Skimmer	<i>Orthetrum cancellatum</i>	insect - dragonfly (Odonata)	1 Count	19/05/2011
SJ37948705	Aigburth Vale, Liverpool	Black-tailed Skimmer	<i>Orthetrum cancellatum</i>	insect - dragonfly (Odonata)	1 Count	19/05/2011
SJ3788	Sefton Park	Blue-tailed Damselfly	<i>Ischnura elegans</i>	insect - dragonfly (Odonata)	Present Count of Total	03/07/2009
SJ3788	Sefton Park	Blue-tailed Damselfly	<i>Ischnura elegans</i>	insect - dragonfly (Odonata)	1 Count of Copulating Pair; 2 Count of Tot	11/07/2009
SJ3788	Sefton Park	Blue-tailed Damselfly	<i>Ischnura elegans</i>	insect - dragonfly (Odonata)	Present Count of Total	13/08/2008
SJ3788	Sefton Park	Blue-tailed Damselfly	<i>Ischnura elegans</i>	insect - dragonfly (Odonata)	Present Count of Total	23/06/2010
SJ3788	Sefton Park	Blue-tailed Damselfly	<i>Ischnura elegans</i>	insect - dragonfly (Odonata)	2 Count of Total	25/06/2009
SJ3788	Sefton Park	Blue-tailed Damselfly	<i>Ischnura elegans</i>	insect - dragonfly (Odonata)	2 Count of Total	27/07/2009
SJ3788	Sefton Park	Blue-tailed Damselfly	<i>Ischnura elegans</i>	insect - dragonfly (Odonata)	1 Count of Total	28/06/2011
SJ3788	Sefton Park	Blue-tailed Damselfly	<i>Ischnura elegans</i>	insect - dragonfly (Odonata)	2 Count of Total	28/07/2010
SJ3788	Sefton Park	Broad-bodied Chaser	<i>Libellula depressa</i>	insect - dragonfly (Odonata)	1 Count of Total	25/06/2009
SJ376871	Sefton Park lake, South Lancashire	Brown Hawker	<i>Aeshna grandis</i>	insect - dragonfly (Odonata)	6 Count	10/09/2013
SJ3787	Sefton Park	Brown Hawker	<i>Aeshna grandis</i>	insect - dragonfly (Odonata)	1 Count of Total	11/08/2007
SJ3787	Sefton Park	Brown Hawker	<i>Aeshna grandis</i>	insect - dragonfly (Odonata)	1 Count of Total	31/07/2009
SJ3788	Sefton Park	Brown Hawker	<i>Aeshna grandis</i>	insect - dragonfly (Odonata)	2 Count of Total	05/08/2007
SJ3788	Sefton Park	Brown Hawker	<i>Aeshna grandis</i>	insect - dragonfly (Odonata)	1 Count of Total	05/08/2009
SJ3788	Sefton Park	Brown Hawker	<i>Aeshna grandis</i>	insect - dragonfly (Odonata)	1 Count of Total	06/08/2009
SJ3788	Sefton Park	Brown Hawker	<i>Aeshna grandis</i>	insect - dragonfly (Odonata)	1 Count of Total	20/08/2011
SJ3788	Sefton Park	Brown Hawker	<i>Aeshna grandis</i>	insect - dragonfly (Odonata)	1 Count of Total	25/08/2011
SJ3887	Ibbotson's Lane, Mossley Hill	Brown Hawker	<i>Aeshna grandis</i>	insect - dragonfly (Odonata)	1 Count of Total	02/08/2009
SJ37538743	Sefton Park, Liverpool	Common Blue Damselfly	<i>Enallagma cyathigerum</i>	insect - dragonfly (Odonata)	1 Count	19/05/2011
SJ376871	Sefton Park lake, South Lancashire	Common Blue Damselfly	<i>Enallagma cyathigerum</i>	insect - dragonfly (Odonata)	2 Count	10/09/2013
SJ37718733	Sefton Park, Liverpool	Common Blue Damselfly	<i>Enallagma cyathigerum</i>	insect - dragonfly (Odonata)	1 Count	19/05/2011
SJ37788715	Aigburth Vale, Liverpool	Common Blue Damselfly	<i>Enallagma cyathigerum</i>	insect - dragonfly (Odonata)	1 Count	19/05/2011
SJ37838704	Aigburth Vale, Liverpool	Common Blue Damselfly	<i>Enallagma cyathigerum</i>	insect - dragonfly (Odonata)	3 Count	19/05/2011
SJ37878721	Aigburth Vale, Liverpool	Common Blue Damselfly	<i>Enallagma cyathigerum</i>	insect - dragonfly (Odonata)	1 Count	19/05/2011
SJ3788	South end lake, Sefton Park	Common Blue Damselfly	<i>Enallagma cyathigerum</i>	insect - dragonfly (Odonata)	3 Count of Total	26/06/2010
SJ37938707	Aigburth Vale, Liverpool	Common Blue Damselfly	<i>Enallagma cyathigerum</i>	insect - dragonfly (Odonata)	1 Count	19/05/2011
SJ3786	Tramway Road, Aigburth	Common Darter	<i>Sympetrum striolatum</i>	insect - dragonfly (Odonata)	1 Count of Total	28/07/2011
SJ3786	Jericho Lane	Common Darter	<i>Sympetrum striolatum</i>	insect - dragonfly (Odonata)	1 Count of Total	29/09/2011
SJ3787	Sefton Park	Common Darter	<i>Sympetrum striolatum</i>	insect - dragonfly (Odonata)	1 Count of Total	05/10/2010
SJ3787	Sefton Park	Common Darter	<i>Sympetrum striolatum</i>	insect - dragonfly (Odonata)	Present Count of Total	08/08/2008
SJ3787	Sefton Park	Common Darter	<i>Sympetrum striolatum</i>	insect - dragonfly (Odonata)	1 Count of Total	09/09/2009
SJ3788	Sefton Park	Common Darter	<i>Sympetrum striolatum</i>	insect - dragonfly (Odonata)	Present Count of Total	05/08/2007
SJ3788	Sefton Park	Common Darter	<i>Sympetrum striolatum</i>	insect - dragonfly (Odonata)	Present Count of Total	16/08/2010
SJ3788	Sefton Park	Common Darter	<i>Sympetrum striolatum</i>	insect - dragonfly (Odonata)	1 Count of Total	18/09/2011
SJ3788	Sefton Park	Common Darter	<i>Sympetrum striolatum</i>	insect - dragonfly (Odonata)	7 Count of Total; Several Count of Copula	23/09/2008
SJ3788	Sefton Park	Common Darter	<i>Sympetrum striolatum</i>	insect - dragonfly (Odonata)	1 Count of Total	30/08/2010
SJ3788	Sefton Park	Common Darter	<i>Sympetrum striolatum</i>	insect - dragonfly (Odonata)	2 Count of Total	31/07/2007
SJ3788	Sefton Park	Emperor Dragonfly	<i>Anax imperator</i>	insect - dragonfly (Odonata)	1 Count of Female; 1 Count of Male; 2 Co	23/06/2010
SJ3788	Sefton Park	Emperor Dragonfly	<i>Anax imperator</i>	insect - dragonfly (Odonata)	1 Count of Total	27/07/2009
SJ3787	Sefton Park	Migrant Hawker	<i>Aeshna mixta</i>	insect - dragonfly (Odonata)	1 Count of Total	26/08/2008
SJ3787	Sefton Park	Migrant Hawker	<i>Aeshna mixta</i>	insect - dragonfly (Odonata)	1 Count of Total	27/08/2008

SJ3787	Sefton Park	Migrant Hawker	Aeshna mixta	insect - dragonfly (Odonata)	1 Count of Total	28/08/2011
SJ3787	Sefton Park	Southern Hawker	Aeshna cyanea	insect - dragonfly (Odonata)	1 Count of Total	11/08/2007
SJ3787	Sefton Park	Southern Hawker	Aeshna cyanea	insect - dragonfly (Odonata)	1 Count of Total	25/06/2009
SJ3787	Sefton Park	Southern Hawker	Aeshna cyanea	insect - dragonfly (Odonata)	1 Count of Total	29/07/2009
SJ3788	Sefton Park	Southern Hawker	Aeshna cyanea	insect - dragonfly (Odonata)	1 Count of Total	05/08/2007
SJ3788	Sefton Park	Southern Hawker	Aeshna cyanea	insect - dragonfly (Odonata)	1 Count of Total	23/08/2008
SJ3788	Sefton Park	Southern Hawker	Aeshna cyanea	insect - dragonfly (Odonata)	1 Count of Total	30/08/2010
SJ376877	Sefton Park, Liverpool	Common Pipistrelle	Pipistrellus pipistrellus	terrestrial mammal	4 Count	08/05/2010
SJ377874	Sefton Park, Liverpool	Common Pipistrelle	Pipistrellus pipistrellus	terrestrial mammal	3 Count	08/05/2010
SJ3787	Sefton Park, Liverpool	Common Pipistrelle	Pipistrellus pipistrellus	terrestrial mammal	1 Count	07/05/2010
SJ380875	Sefton Park, Liverpool	Common Pipistrelle	Pipistrellus pipistrellus	terrestrial mammal	1 Count	08/05/2010
SJ37678777	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count	19/05/2011
SJ376876	Palm House, Sefton Park	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count of Present	23/01/2011
SJ37688785	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count	19/05/2011
SJ37708785	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count	19/05/2011
SJ37748789	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count	19/05/2011
SJ377874	Sefton Park, South Lancashire	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	Present Count	02/01/2012
SJ37798757	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count	19/05/2011
SJ3786	Otterspool Park, South Lancashire	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count of Present	12/02/2010
SJ3786	Otterspool Park, South Lancashire	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count of Present	14/04/2006
SJ3787	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	12 Count	01/04/2010
SJ3787	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	19 Count	02/04/2010
SJ3787	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	8 Count	03/04/2010
SJ3787	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	6 Count	04/04/2010
SJ3787	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	2 Count	08/05/2010
SJ3787	Sefton Park, South Lancashire	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count of Present	10/03/2010
SJ3787	Sefton Park, South Lancashire	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count of Present	31/03/2008
SJ3788	Site name protected	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal		04/04/2008
SJ3788	Site name protected	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal		22/05/2008
SJ3788	Site name protected	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal		22/05/2008
SJ37898750	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count	19/05/2011
SJ37928742	Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count	19/05/2011
SJ37978713	Aigburth Vale, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count	19/05/2011
SJ38018730	Aigburth Vale, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count	19/05/2011
SJ38048727	Aigburth Vale, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count	19/05/2011
SJ385881	Greenbank park., South Lancashire	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	3 Count	30/11/2011
SJ387878	Mossley Hill / Sefton Park, Liverpool	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	1 Count	10/02/2007
SJ38818677	Sudley House, Mossley Hill Road, Aigburth	Eastern Grey Squirrel	Sciurus carolinensis	terrestrial mammal	4 Count of Adult	08/04/2012
SJ3787	Sefton Park	Noctule Bat	Nyctalus noctula	terrestrial mammal	1 Count	01/06/2009
SJ3787	Sefton Park	Noctule Bat	Nyctalus noctula	terrestrial mammal		11/08/2010
SJ3787	sefton park	Noctule Bat	Nyctalus noctula	terrestrial mammal	4 Count of in flight	11/09/2007
SJ3787	Sefton Park	Noctule Bat	Nyctalus noctula	terrestrial mammal	4 Count	11/09/2007
SJ3787	sefton park	Noctule Bat	Nyctalus noctula	terrestrial mammal	5 Count of in flight	30/08/2007
SJ3787	Sefton Park	Noctule Bat	Nyctalus noctula	terrestrial mammal	5 Count	30/08/2007
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	12 Count	01/06/2009
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal		01/08/2010
SJ3787	sefton park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	7 Count of in flight	08/08/2007
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	7 Count	08/08/2007
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal		11/08/2010
SJ3787	sefton park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	11 Count of in flight	11/09/2007
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	11 Count	11/09/2007
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal		14/06/2010
SJ3787	sefton park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	15 Count of in flight	15/07/2007
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	15 Count	15/07/2007
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal		21/08/2010
SJ3787	sefton park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	6 Count of in flight	27/09/2007
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	6 Count	27/09/2007
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal		30/06/2010
SJ3787	sefton park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	6 Count of in flight	30/07/2007
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	6 Count	30/07/2007
SJ3787	sefton park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	4 Count of in flight	30/08/2007
SJ3787	Sefton Park	Pipistrelle Bat species	Pipistrellus	terrestrial mammal	4 Count	30/08/2007
SJ3787	Sefton Park	Unidentified Bat	Myotis	terrestrial mammal	9 Count	01/06/2009
SJ3787	Sefton Park	Unidentified Bat	Myotis	terrestrial mammal		01/08/2010
SJ3787	sefton park	Unidentified Bat	Myotis	terrestrial mammal	10 Count of in flight	08/08/2007
SJ3787	Sefton Park	Unidentified Bat	Myotis	terrestrial mammal	10 Count	08/08/2007
SJ3787	Sefton Park	Unidentified Bat	Myotis	terrestrial mammal		11/08/2010
SJ3787	Sefton Park	Unidentified Bat	Myotis	terrestrial mammal	8 Count	11/09/2007
SJ3787	sefton park	Unidentified Bat	Myotis	terrestrial mammal	8 Count of in flight	11/09/2007
SJ3787	Sefton Park	Unidentified Bat	Myotis	terrestrial mammal		14/06/2010

SJ3787	Sefton Park	Unidentified Bat	Myotis	terrestrial mammal	9 Count	15/07/2007
SJ3787	sefton park	Unidentified Bat	Myotis	terrestrial mammal	9 Count of in flight	15/07/2007
SJ3787	Sefton Park	Unidentified Bat	Myotis	terrestrial mammal		21/08/2010
SJ3787	Sefton Park	Unidentified Bat	Myotis	terrestrial mammal	4 Count	27/09/2007
SJ3787	sefton park	Unidentified Bat	Myotis	terrestrial mammal	4 Count of in flight	27/09/2007
SJ3787	Sefton Park	Unidentified Bat	Myotis	terrestrial mammal	18 Count	30/07/2007
SJ3787	sefton park	Unidentified Bat	Myotis	terrestrial mammal	18 Count of in flight	30/07/2007
SJ3787	sefton park	Unidentified Bat	Myotis	terrestrial mammal	7 Count of in flight	30/08/2007
SJ3787	Sefton Park	Unidentified Bat	Myotis	terrestrial mammal	7 Count	30/08/2007
SJ3786	No site name available	West European Hedgehog	Erinaceus europaeus	terrestrial mammal		2006
SJ3788	No site name available	West European Hedgehog	Erinaceus europaeus	terrestrial mammal		2005
SJ3886	No site name available	West European Hedgehog	Erinaceus europaeus	terrestrial mammal		2005
SJ3887	No site name available	West European Hedgehog	Erinaceus europaeus	terrestrial mammal		2005
SJ3986	No site name available	West European Hedgehog	Erinaceus europaeus	terrestrial mammal		2005
SJ3987	No site name available	West European Hedgehog	Erinaceus europaeus	terrestrial mammal		2006

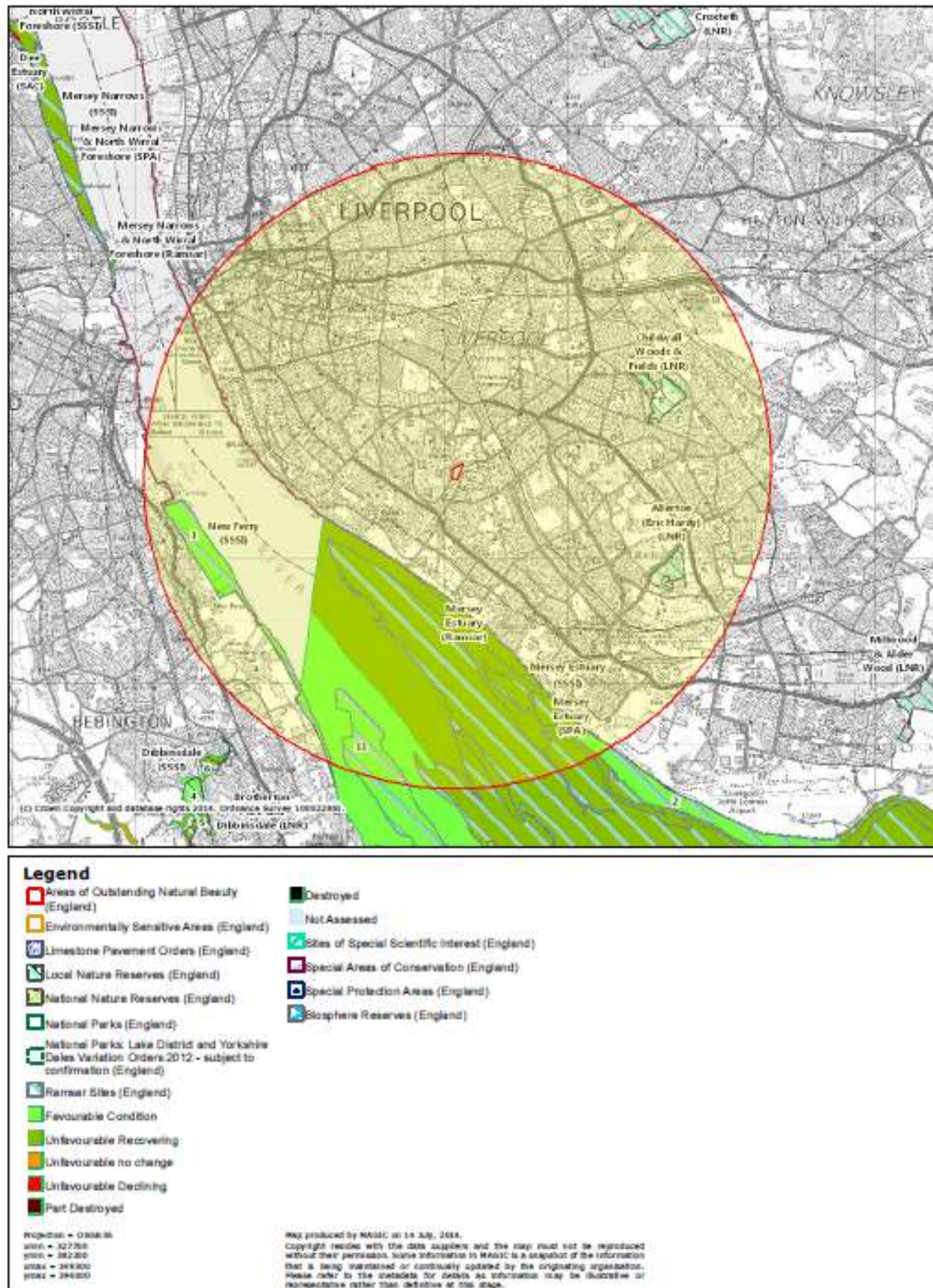
Magic Map 1km search zone for designated wildlife sites - Map



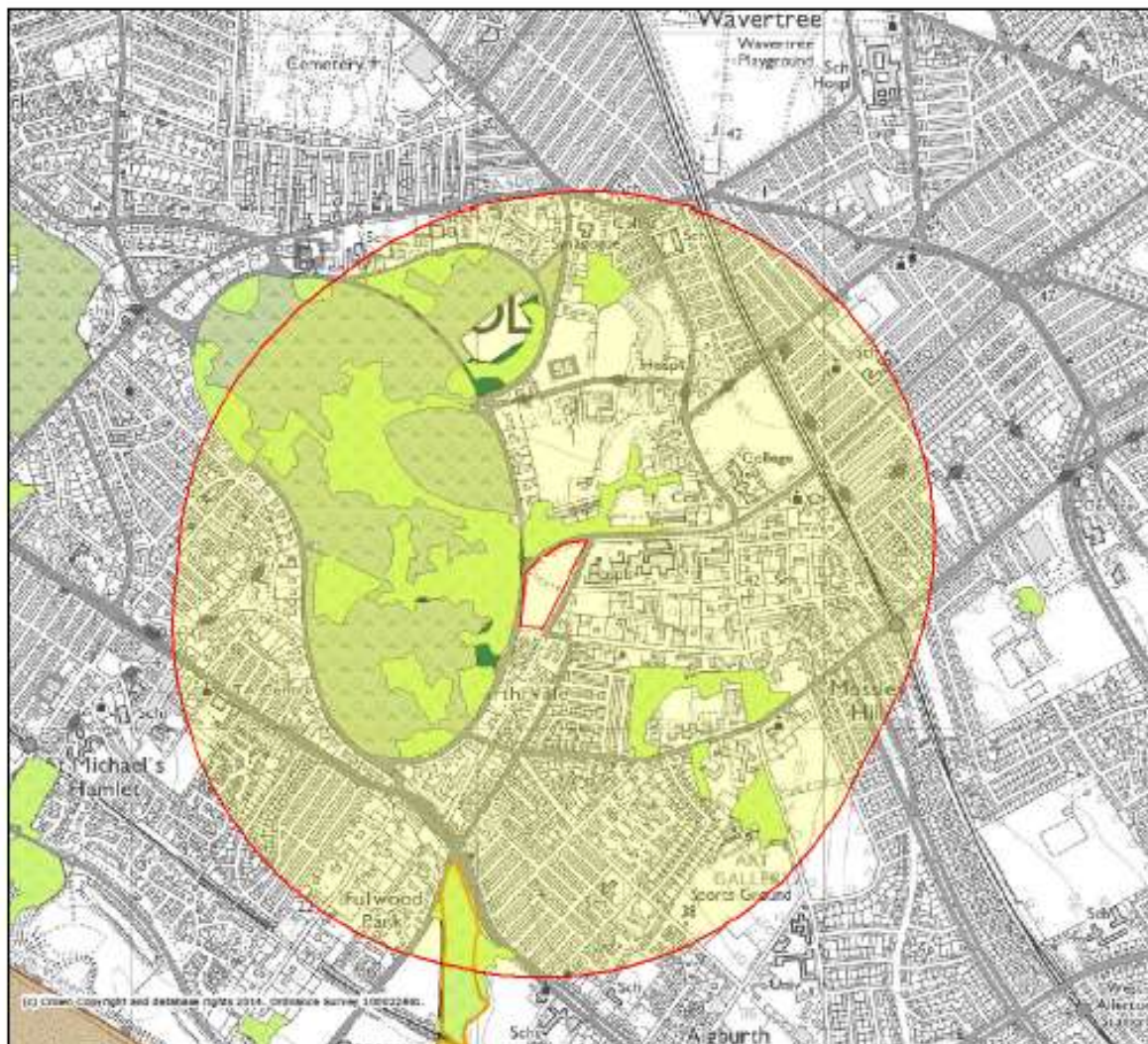
Magic Map 1km search zone for designated wildlife sites - Report

No designated sites within area.

Magic Map 5km search zone for designated wildlife sites - Map



Magic Map 1km search zone for habitat inventory data



<input checked="" type="checkbox"/> Habitats	<input checked="" type="checkbox"/> Saline Lagoons (Wales)
<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Seagrass (Wales)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Lowland Calcareous Grassland BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Nationally Important Intertidal Habitats (Wales)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Lowland Dry Acid Grassland BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Intertidal Substrate Foreshore (England and Scotland)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Lowland Meadows BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Intertidal Substrate (Wales)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Undetermined Grassland BAP Priority Habitat (England)	<input checked="" type="checkbox"/> Wetland
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Upland Calcareous Grassland BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Blanket Bog BAP Priority Habitat (England)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Upland Hay Meadow BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Fens BAP Priority Habitat (England)
<input checked="" type="checkbox"/> Heathland	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Lowland Raised Bog BAP Priority Habitat (England)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Lowland Heathland BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Reedbed BAP Priority Habitat (England)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Upland Heathland BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Purple Moor Grass and Rush Pasture BAP Priority Habitat (England)
<input checked="" type="checkbox"/> Inland Rock	<input checked="" type="checkbox"/> Woodland
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Limestone Pavements BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Ancient Woodland (England)
<input checked="" type="checkbox"/> Marine and Coastal	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Ancient and Semi-Natural Woodland
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Coastal Sand Dune BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Ancient Replanted Woodland
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Sand Dunes (Wales)	<input checked="" type="checkbox"/> Traditional Orchard BAP Priority Habitat (England)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Coastal Vegetated Shingle BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Traditional Orchard BAP Priority Habitat (England) - points
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Coastal and Floodplain Grazing Marsh BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Traditional Orchard BAP Priority Habitat (England)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Maritime Cliffs and Slopes BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Forestry Commission Legal Boundary (England)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Mudflat BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Deciduous Woodland BAP Priority Habitat (England)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Saltmarsh (Wales)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> National Inventory of Woodland and Trees (England)
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Saline Lagoons BAP Priority Habitat (England)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Woodpasture and Parkland BAP Priority Habitat (England)

Wildlife Site Citations

Site name: Otterspool Park and Gorge

Site area: 22.92ha

National grid reference: SJ378856 & SJ379863

Date of designation: 1995

District: Liverpool

Date of last revision: March 2010

Local Wildlife Site number: 17

Citation:

Otterspool Gorge supports a relatively high diversity of habitats centred upon a deep sandstone gorge. Its woodlands are classified as ancient but are currently dominated by secondary and plantation Beech and Sycamore with a variety of other canopy species including several exotics. The understorey is dominated in parts by rhododendron but also contains Hawthorn and Holly. The ground flora is variable in quality but includes Royal and Lady Fern, native Bluebell, Foxglove, Remote Sedge, Great Wood-rush, Dog's Mercury, Wood Avens and Wood Sorrel. Several areas of sandstone exposure occur.

A shaded pond supports marginal vegetation including Flag Iris, Celery-leaved Buttercup, Bogbean and Water-plantain.

Otterspool Park is made up of three distinct sub-sections: a) parkland to the south of Otterspool Gorge; b) disused railway embankment and c) disused allotments.

a) Formal parkland whose management has been relaxed, allowing natural regeneration and colonisation. Areas of plantation woodland dominated by Sycamore show some regeneration and development of understorey but the ground flora is sparse although Bluebell is locally abundant. The remainder of the site is dominated by amenity grasslands. The site extends to the banks of the River Mersey, allowing some interchange of wintering birds with the Mersey Estuary.

b) A mosaic of woodland, scrub and grassland habitats within the railway cutting and embankments supporting a good diversity of plants such as Wavy Hair-grass, Orange Hawkweed, Common and Tufted Vetch and Hairy Tare.

c) Overgrown allotments with a patchwork of small habitats including tall herb, scrub, a stand of Grey Poplar, Common Reed swamp and marshy grassland supporting a good diversity of typical species including Common Fleabane, Meadow Vetchling and less common ones such as Marsh Cudweed.

A wide variety of common butterfly species breeds throughout the site which also supports a good diversity of breeding birds, including Bullfinch, Tawny Owl, Nuthatch and Treecreeper.

Appraisal:

Guideline		Comment
HABITATS		
H1	Rarity	1 BAP Priority habitat, 1 regionally important habitat
H2	Diversity	11 habitats recorded
H3	Nearness	--
H4	Isolation	--
PLANTS		
Sp1	Rarity	2 regionally important species; 16 locally rare species.
Sp2	Diversity	A total of 49 plant species was recorded in the gorge during 2006-2007 and 114 in 1995. The park was not surveyed in 2006-2007 but 99 species were recorded there in 1995.
Sp3	Naturalness	More than 80% of the plants are native to the city. Colonisation has been aided by man and the site has been physically altered.
Sp4	Nationally rare	--
ANIMALS		
General		
Sp5	Rare/priority	--
Birds		
B1	Non-breeding population	--
B2	Breeding population	--
B3	Regionally rare/scarce	--
B4	Breeding assemblage	--
B5	Assemblage breeding, wintering, passage	Guideline met. Supports 34 breeding species associated with habitat mosaics.
Dragonflies		
Od1	Breeding	--
Od2	Regionally rare/scarce	--

Butterflies		
Bf1	Regionally rare/scarce	--
Bf2	Breeding assemblage	
Amphibians		
A1	Rarity	--
A2	Exceptional population	--
Reptiles		
R1	Population of native species	--
R2	Exceptional population	--
Bats		
Bat1	Roost	--
Bat2	Assemblage	--
Mammals		
M1	Breeding	--

SUMMARY: The combination of these factors has led to this site being identified as a Local Wildlife Site.

NOTE: Validated data from 1995 to 2008 have been used in this assessment. Other data may become available to support this designation.

Status of features of nature conservation importance

HABITATS

1 Priority BAP habitat

Mixed deciduous woodland

1 Regionally important habitat

Mixed deciduous woodland

PLANTS

2 regionally important species

Bluebell *Hyacinthoides non-scripta*

Tutsan *Hypericum androsaemum*

16 locally rare species

Bogbean *Menyanthes trifoliata*

Broom *Cytisus scoparius*

False-brome *Brachypodium sylvaticum*

Giant Fescue *Festuca gigantea*

Great Wood-rush *Luzula sylvatica*

Hoary Ragwort *Senecio erucifolius*

Marsh Cudweed *Gnaphalium uliginosum*

Pendulous Sedge *Carex pendula*

Royal Fern *Osmunda regalis*

Smooth Hawk's-beard *Crepis capillaris*

Three-nerved Sandwort *Moehringia trinervia*

Tutsan *Hypericum androsaemum*

Water-plantain *Alisma plantago-aquatica*

Water Starwort *Callitriche stagnalis*

Wavy Hair-grass *Deschampsia flexuosa*

Wood-sorrel *Oxalis acetosella*

Site name: Sefton Park
Site area: 94.35ha
Date of designation: 1995
Date of last revision: March 2010
National grid reference: SJ377875
District: Liverpool
Local Wildlife Site number: 10

Citation:

A formal park dominated by amenity grassland but with a large diversity of other habitats including areas of scrub, plantation woodland, parkland trees and grassland where management has been relaxed in recent years and semi-natural vegetation has developed. Much landscape and habitat improvement work is currently being carried out.

The watercourse ('River Jordan') which runs into the main lake from the north supports a number of interesting marginal and aquatic plants. The stream to the east is less diverse floristically but regularly supports scarce wintering bird species, including Kingfisher, and breeding frogs. The dell where it enters the park contains several very old trees, including deadwood, and beyond this is an area of species-rich grassland. Daubenton's Bats are seen regularly feeding over the waterbodies with Pipistrelle and Noctule bats throughout the park.

In comparison with its habitats, plant diversity is relatively low, reflecting the intensive management of much of the site, but two patches of semi-improved grassland below the Palm House support a wider range of typical flowering plants including Autumn Hawkbit and Common and Sheep's Sorrel. A wide range of grassland and other butterflies, including Orange Tip, breeds (in increasing numbers where grassland management has been relaxed), and the site supports a diversity of breeding birds, including Great Crested Grebe at its only Liverpool site, Mute Swan and Grey Wagtail.

Appraisal:

Guideline		Comment
HABITATS		
H1	Rarity	
H2	Diversity	12 habitats recorded
H3	Nearness	--
H4	Isolation	--
PLANTS		
Sp1	Rarity	1 regionally important species; 8 locally rare species.
Sp2	Diversity	A total of 70 plant species was recorded during 2006-2007 but more than 100 are known.
Sp3	Naturalness	65% of the plants are native to the city. Colonisation has been aided by man and the site has been physically altered.
Sp4	Nationally rare	--
ANIMALS		
General		
Sp5	Rare/priority	--
Birds		
B1	Non-breeding population	--
B2	Breeding population	--
B3	Regionally rare/scarce	--
B4	Breeding assemblage	--
B5	Assemblage breeding, wintering, passage	Guideline met. Supports 36 breeding species associated with habitat mosaics.
Dragonflies		
Od1	Breeding	--
Od2	Regionally rare/scarce	--
Butterflies		
Bf1	Regionally rare/scarce	--
Bf2	Breeding assemblage	Guideline met. Supports 11 breeding species.
Amphibians		
A1	Rarity	--
A2	Exceptional population	--
Reptiles		
R1	Population of native species	--

R1	Exceptional population	--
Bats		
Bat1	Roost	--
Bat2	Assemblage	--
Mammals		
M1	Breeding	--

SUMMARY: The combination of these factors has led to this site being identified as a Local Wildlife Site.

NOTE: Validated data from 1995 to 2008 have been used in this assessment. Other data may become available to support this designation.

Status of features of nature conservation importance

PLANTS

1 regionally important species

Bluebell *Hyacinthoides non-scripta*

8 locally rare species

Broom *Cytisus scoparius*

Pendulous Sedge *Carex pendula*

Rigid Hornwort *Ceratophyllum demersum*

Royal Fern *Osmunda regalis*

Sheep's Sorrel *Rumex acetosella*

Wild Angelica *Angelica sylvestris*

Winter Cress *Barbarea vulgaris*

Yellow Water-lily *Nuphar lutea*

APPENDIX 2

Target Notes Report

Target Note 1¹

Two fields of amenity grassland bordered by mature trees. The grassland had been recently mown at the time of survey, apart from a band of 3-4m of unmown grass around the periphery. Some slightly bare areas were present where trees have shaded the grassland. Some bluebell seed heads (not likely to be the native variety) were noted occasionally in these shaded areas.

<i>Holcus lanatus</i>	Yorkshire-fog	D
<i>Lolium perenne</i>	Ryegrass	A
<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Agrostis stolonifera</i>	Creeping Bent	O
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	O
<i>Arrhenatherum elatius</i>	False Oat-grass	O
<i>Bellis perennis</i>	Daisy	O
<i>Cerastium fontanum</i>	Common Mouse-ear	O
<i>Festuca rubra</i>	Red Fescue	O
<i>Geum urbanum</i>	Wood Avens	O
<i>Hyacinthoides x massartiana</i>	Hybrid Bluebell	O
<i>Plantago lanceolata</i>	Ribwort Plantain	O
<i>Plantago major</i>	Greater Plantain	O
<i>Poa annua</i>	Annual Meadow-grass	O
<i>Poa trivialis</i>	Rough Meadow-grass	O
<i>Ranunculus repens</i>	Creeping Buttercup	O
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
<i>Senecio jacobaea</i>	Ragwort	O
<i>Taraxacum officinale</i> agg.	Dandelion	O
<i>Achillea millefolium</i>	Yarrow	R
<i>Aegopodium podagraria</i>	Ground-elder	R
<i>Cardamine hirsuta</i>	Hairy Bitter-cress	R
<i>Cirsium vulgare</i>	Spear Thistle	R
<i>Epilobium</i> sp.	Willowherb species	R
<i>Heracleum sphondylium</i>	Hogweed	R
<i>Hypochaeris radicata</i>	Common Cat's-ear	R
<i>Lapsana communis</i>	Nipplewort	R
<i>Rumex acetosa</i>	Common Sorrel	R
<i>Sisymbrium officinale</i>	Hedge Mustard	R
<i>Sonchus asper</i>	Prickly Sow-thistle	R
<i>Stellaria media</i>	Chickweed	R
<i>Urtica dioica</i>	Nettle	R

Target Note 2

Lines of mostly mature broad-leaved trees border the amenity grassland fields. The lime trees along Park Avenue in the centre of the site are notably younger than the trees along the site boundary.

<i>Aesculus hippocastanum</i>	Horse-chestnut	A
<i>Platanus x hispanica</i>	London Plane	A
<i>Tilia x europaea</i>	Common Lime	A
<i>Acer pseudoplatanus</i>	Sycamore	O
<i>Fraxinus excelsior</i>	Ash	O

¹ KEY - D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

APPENDIX 3

Bat Survey Technical Report



**PARK AVENUE, MOSSLEY HILL
LIVERPOOL
BAT ACTIVITY RECORD 2014**

1.0 GENERAL DETAILS

Site Name	Park Avenue, Mossley Hill		
Job Number	4612	Doc. Ref	4612.007
Site Location	Sefton		
Survey Location	Liverpool		
Date(s)	<u>Static surveys</u> Visit 1 – 30/07/14 (Dawn) Visit 2 – 27/08/14 (Dawn) Visit 3 – 03/09/14 (Dawn) <u>Transect surveys</u> Visit 1 – 25/06/14 (Dusk) Visit 2 – 16/07/14 (Dusk) Visit 3 - 06/08/14 (Dusk)		
Constraints	<p>Surveys were undertaken during the optimum period between May and August/ early September.</p> <p>Weather conditions such as wind and rain can deter bats. All surveys conducted were in optimal conditions for surveys.</p> <p>Bat activity indices and representations do not represent the number of bats on site but an indication or sample of their abundance and activity levels. Bat detectors have limitations in the likelihood of acoustically detecting all bat species present. Due to the variation in bat calls, some species are less likely to be detected due to low amplitude, e.g. brown long eared. Brown long eared bats are relatively common in the geographical area of the site and therefore lack of recorded brown long eared bat calls does not preclude absence on site.</p>		

Methods	<p><u>Static surveys</u> Pre-dawn re-entry surveys commence 120 minutes before sunrise and finish at sunrise. Three pre-dawn re-entry surveys were undertaken to ascertain if bats are roosting within the five trees identified as Category 1 or 1* by the previous daytime ground-based and aerial surveys. One surveyor was stationed at each tree.</p> <p>Heterodyne bat detectors (Bat Box III) and frequency division detectors (Anabat) were used on the surveys.</p> <p>Surveyors recorded the location, time and species of any bat contacts and a description of flight direction (if seen) and notable behaviour (e.g. foraging, roosting, and social calling).</p> <p><u>Transect surveys</u> Three walking transects of the Park Avenue, Mossley Hill site were undertaken between late June and early August to sample bat activity during the peak summer season. Two surveyors each with heterodyne (Magenta and Peterson), and frequency division (Anabat) recorders walked the transect route and the number of bat passes was counted for three minutes at each designated transect stop. Bat passes were recorded for the route sections in-between stops (walks). Standardised methods of measuring and recording weather parameters were used e.g. cloud cover in oktas and wind on the Beaufort scale. The transect direction was reversed on the third visit.</p> <p>All surveys were undertaken in accordance with the Bat Conservation Trust (BCT) 'Bat Surveys: Good Practice Guidelines' (2012)</p> <p>Echolocation calls were analysed using AnalookW 4.1d software by Graham Roberts, trained to Analook Analysis Level 2</p>
Surveyors	<p><u>Static surveys</u> Tim Rogers, David Monk, Linda Swankie, Kerry Stead, Mike Penny, Anthony Carr, Mike Brown & Ian Holland</p> <p><u>Transects</u> John Crowder (Licence Number: WML CL18 CLS 620), Ian Holland</p>
Drawing Ref(s):	<p>G4612.013 Bat Activity Transect Visit 1 G4612.014 Bat Activity Transect Visit 2 G4612.015 Bat Activity Transect Visit 3</p>

2.0 PRE-EXISTING DATA

Date	Survey	Findings
Data from Merseyside Biobank indicates that common pipistrelle, pipistrelle species, noctule and a myotis species of bat have all been recorded within 1km of the site, mainly from within Sefton Park.		
03/07/14	Ground-based tree	Following the ground based survey 11 trees were identified

	assessment	as requiring an aerial inspection to further assess their suitability to support roosting bats.
08/07/14	Aerial survey of 11 trees	Five trees (T12, T64, T66, T103, T104) were identified as having features suitable for supporting roosting bats and were classified as Category 1/1*

3.0 ROOST SURVEYS

3.1 Bat roost potential within site

Trees	The site comprises two parcels of amenity grassland which are surrounded by mature trees. There are five trees with bat roost potential.
Buildings	There are no buildings present within the site boundary.

3.2 Ground based tree assessment

Ref	Description and Value	Features
T12	London plane	Holes and cracks in upper main trunk
T64	Horse chestnut	Lifted bark over main trunk and crown of tree
T66	Horse chestnut	Lifted bark over main trunk and crown of tree
T103	Silver lime	Cracks in upper main trunk and limbs
T104	Silver lime	Cracks in upper main trunk and limbs

3.3 Pre-dawn tree roost survey

Species

Pp: Common pipistrelle Pg: Soprano Pipistrelle

Comment /Behaviour R: Data analysed from recording

H: bat heard

S: bat seen

F: bat foraging

C: bat social call heard

Visit 1 T12

WORK T12										
Ref/Type		T12			Date/Visit		30/07/14		Visit 1	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat			
Surveyor		Ian Holland								
Brief Description		London plane within mature tree line. Tree line acts as boundary between road and amenity grassland.								
Start	03:24	Air Temp	15.6°C	Cloud	8/8	Wind	4/12	Rain	Dry	
Finish	05:24	Air Temp	9.5°C	Cloud	8/8	Wind	4/12	Rain	Dry	
Re-Entry		Species	N/A			No bats seen re-entering T12				
Primary corridor:		Tree line								

Foraging (if noted)	Species	Pp – Single contact		
First Bat:	03:15		Species	Pp
Contacts	Ref:	Time	Species	Comments
	1	03:15	Pp	R
	1	03:30	Pg	R
	1	04:22	Pp	S/H
	2	04:27	Pp	S/H/F
Last Bat	04:27		Species	Pp

Visit 1 T64

Ref/Type		T64			Date/Visit		30/07/14	Visit 1	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat		
Surveyor		KR							
Brief Description		Horse chestnut within mature tree line. Tree line acts as boundary between road and amenity grassland.							
Start	03:24	Air Temp	15.6°C	Cloud	8/8	Wind	4/12	Rain	Dry
Finish	05:24	Air Temp	9.5°C	Cloud	8/8	Wind	4/12	Rain	Dry
Emergence		Species	N/A		No bats seen re-entering T64				
Primary corridor:		Tree line							
Foraging (if noted)		Species	Pp – 1 contact						
First Bat:		04:04			Species		Pp		
Contacts		Ref:	Time	Species		Comments			
		1	04:04	Pp		H/F			
		2	04:46	Pp		H			
Last Bat		04:46			Species		Pp		

Visit 1 T66

Ref/Type		T66			Date/Visit		30/07/14	Visit 1	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat		
Surveyor		LS							
Brief Description		Horse chestnut within mature tree line. Tree line acts as boundary between road and amenity grassland.							
Start	03:24	Air Temp	15.6°C	Cloud	8/8	Wind	4/12	Rain	Dry
Finish	05:24	Air Temp	9.5°C	Cloud	8/8	Wind	4/12	Rain	Dry
Emergence		Species	N/A		No bats seen re-entering T66				
Primary corridor:		Tree line							

Foraging (if noted)	Species	Pp		
First Bat:	03:38	Species		Pp
Contacts	Ref:	Time	Species	Comments
	1	03:38	Pp	H
	1	03:48	Pp	H
	1	03:49	Pp	H
	1	03:50	Pp	H
	1	03:52	Pp	H
	1	03:53	Pp	H
	1	03:55	Pp	H
	1	03:56	Pp	H
	1	03:58	Pp	H
	1	03:59	Pp	H
	1	04:03	Pp	H/F
	1	04:07	Pp	H
	1	04:12	Pp	H
	1	04:46	Pp	H - Faint
Last Bat	04:46	Species		Pp

Visit 1 T103

Ref/Type		T103			Date/Visit		30/07/14		Visit 1	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat			
Surveyor		Mike Walker								
Brief Description		Silver lime within mature tree line. Tree line acts as boundary between road and amenity grassland.								
Start	03:24	Air Temp	15.6°C	Cloud	8/8	Wind	4/12	Rain	Dry	
Finish	05:24	Air Temp	9.5°C	Cloud	8/8	Wind	4/12	Rain	Dry	
First Bat:		04:20			Species		Pp			
Re-Entry		Species	N/A		No bats seen re-entering T103					
Primary corridor:		Tree line								
Foraging (if noted)		Species	Pp							
First Bat:		04:20			Species		Pp			
Contacts		Ref:	Time	Species		Comments				
		1	04:20	Pp		H				
		1	04:22	Pp		H				
		1	04:31	Pp		H				
		1	04:33	Pp		H				

	1	04:42	Pp	H
	1	04:45	Pp	H/F
	1	04:47	Pp	H/F
	1	04:51	Pp	H/S
	1	04:53	Pp	H/S
	1	05:02	Pp	H/S
Last Bat	05:02		Species	Pp

Visit 1 T104

Ref/Type		T104			Date/Visit		30/07/14	Visit 1	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat		
Surveyor		Mike Brown							
Brief Description		Silver lime tree within mature tree line. Tree line acts as boundary between road and amenity grassland							
Start	03:24	Air Temp	15.6°C	Cloud	8/8	Wind	4/12	Rain	Dry
Finish	05:24	Air Temp	9.5°C	Cloud	8/8	Wind	4/12	Rain	Dry
Emergence		Species	N/A		No bats seen re-entering T104				
Primary corridor:		Tree line							
Foraging (if noted)		Species	Pp						
First Bat:		03:34			Species		Pp		
Contacts	Ref:	Time	Species		Comments				
	1	03:34	Pp		H				
	2	03:48	Pp		H				
	3	03:52	Pp		H				
	4	04:02	Pp		H				
	5	04:10	Pp		H				
	6	04:29	Pp		H				
	7	04:30	Pp		H				
	8	04:33	Pp		H				
	9	04:36	Pp		H				
	10	04:52	Pp		H				
	11	04:52	Pp		H				
Last Bat		04:52			Species		Pp		

Visit 2 T12

Ref/Type	T12			Date/Visit	27/08/14	Visit 2
Survey Type	Dawn re-entry survey			Bat detectors used	Bat box Anabat	

Surveyor		David Monk							
Brief Description		London plane within mature tree line. Tree line acts as boundary between road and amenity grassland.							
Start	04:12	Air Temp	10°C	Cloud	0/8	Wind	0/12	Rain	Dry
Finish	06:05	Air Temp	10°C	Cloud	0/8	Wind	0/12	Rain	Dry
Emergence		Species	N/A			No bats seen re-entering T12			
Primary corridor:		Tree line							
Foraging (if noted)		Species	N/A						
First Bat:		N/A			Species		N/A		
Contacts		Ref:	Time	Species		Comments			
						No contacts			
Last Bat		N/A			Species		N/A		

Visit 2 T64

Ref/Type		T64			Date/Visit		27/08/14	Visit 2	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat		
Surveyor		KR							
Brief Description		Horse chestnut within mature tree line. Tree line acts as boundary between road and amenity grassland.							
Start	04:12	Air Temp	10°C	Cloud	0/8	Wind	0/12	Rain	Dry
Finish	06:05	Air Temp	10°C	Cloud	0/8	Wind	0/12	Rain	Dry
Emergence		Species	N/A		No bats seen re-entering T64				
Primary corridor:		Tree line							
Foraging (if noted)		Species	N/A						
First Bat:		N/A			Species		N/A		
Contacts		Ref:	Time	Species		Comments			
						No contacts			
Last Bat		N/A			Species		N/A		

Visit 2 T66

Ref/Type		T66			Date/Visit		27/08/14	Visit 2	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat		
Surveyor		LS							
Brief Description		Horse chestnut within mature tree line. Tree line acts as boundary between road and amenity grassland.							
Start	04:12	Air Temp	8.5°C	Cloud	0/8	Wind	0/12	Rain	Dry
Finish	06:12	Air Temp	7.7°C	Cloud	0/8	Wind	0/12	Rain	Dry

Emergence	Species	N/A		No bats seen re-entering T66	
Primary corridor:	Tree line				
Foraging (if noted)	Species	N/A			
First Bat:	N/A			Species	N/A
Contacts	Ref:	Time	Species	Comments	
				No contacts	
Last Bat	N/A			Species	N/A

Visit 2 T103

WORK 2 1700

Ref/Type		T103			Date/Visit		27/08/14	Visit 2	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat		
Surveyor		Tim Rogers							
Brief Description		Silver lime within mature tree line. Tree line acts as boundary between road and amenity grassland.							
Start	04:12	Air Temp	10°C	Cloud	0/8	Wind	0/12	Rain	Dry
Finish	06:05	Air Temp	10°C	Cloud	0/8	Wind	0/12	Rain	Dry
Emergence		Species	N/A		No bats seen re-entering T103				
Primary corridor:		Tree line							
Foraging (if noted)		Species	N/A						
First Bat:		N/A			Species		N/A		
Contacts		Ref:	Time	Species		Comments			
						No contacts			
Last Bat		N/A			Species		N/A		

Visit 2 T104

Work 2 T104									
Ref/Type		T104			Date/Visit		27/08/14	Visit 2	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat		
Surveyor		Mike Penny							
Brief Description		Silver lime within mature tree line. Tree line acts as boundary between road and amenity grassland.							
Start	04:12	Air Temp	10°C	Cloud	0/8	Wind	0/12	Rain	Dry
Finish	06:12	Air Temp	10°C	Cloud	0/8	Wind	0/12	Rain	Dry
Emergence		Species	N/A		No bats seen re-entering T104				
Primary corridor:		Tree line							
Foraging (if noted)		Species	N/A						
First Bat:		N/A			Species		N/A		

Contacts	Ref:	Time	Species	Comments
				No contacts
Last Bat	N/A		Species	N/A

Visit 3 T12

Ref/Type		T12			Date/Visit		03/09/14		Visit 3	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat			
Surveyor		MB								
Brief Description		London plane within mature tree line. Tree line acts as boundary between road and amenity grassland.								
Start	04:07	Air Temp	14°C	Cloud	8/8	Wind	0/12	Rain	Dry	
Finish	06:24	Air Temp	14°C	Cloud	8/8	Wind	0/12	Rain	Dry	
Emergence		Species	N/A			No bats seen re-entering T12				
Primary corridor:		Tree line								
Foraging (if noted)		Species	N/A							
First Bat:		N/A			Species		N/A			
Contacts		Ref:	Time	Species		Comments				
						No contacts				
Last Bat		N/A			Species		N/A			

Visit 3 T64

Ref/Type		T64			Date/Visit		03/09/14		Visit 3	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat			
Surveyor		KR								
Brief Description		Horse chestnut within mature tree line. Tree line acts as boundary between road and amenity grassland.								
Start	04:12	Air Temp	14°C	Cloud	8/8	Wind	0/12	Rain	Dry	
Finish	06:24	Air Temp	14°C	Cloud	8/8	Wind	0/12	Rain	Dry	
Emergence		Species	N/A		No bats seen re-entering T66					
Primary corridor:		Tree line								
Foraging (if noted)		Species	N/A							
First Bat:		N/A			Species		N/A			
Contacts		Ref:	Time	Species		Comments				
						No contacts				
Last Bat		N/A			Species		N/A			

Visit 3 T66

Ref/Type		T66			Date/Visit		03/09/14	Visit 3	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat		
Surveyor		MN							
Brief Description		Horse chestnut within mature tree line. Tree line acts as boundary between road and amenity grassland.							
Start	04:12	Air Temp	14°C	Cloud	8/8	Wind	0/12	Rain	Dry
Finish	06:24	Air Temp	14°C	Cloud	8/8	Wind	0/12	Rain	Dry
Emergence		Species	N/A		No bats seen re-entering T66				
Primary corridor:		Tree line							
Foraging (if noted)		Species	N/A						
First Bat:		N/A			Species		N/A		
Contacts		Ref:	Time	Species		Comments			
						No contacts			
Last Bat		N/A			Species		N/A		

Visit 3 T103

Next 5 T103

Ref/Type		T103		Date/Visit		03/09/14		Visit 3	
Survey Type		Dawn re-entry survey		Bat detectors used		Bat box Anabat			
Surveyor		Mike Penny							
Brief Description		Silver Lime within mature tree line. Tree line acts as boundary between road and amenity grassland.							
Start	04:24	Air Temp	16°C	Cloud	0/8	Wind	0/12	Rain	Dry
Finish	06:24	Air Temp	16°C	Cloud	0/8	Wind	0/12	Rain	Dry
Emergence		Species	N/A		No bats seen re-entering T103				
Primary corridor:		Tree line							
Foraging (if noted)		Species	Pp		Some foraging noted around tree				
First Bat:		04:32			Species		Pp		
Contacts	Ref:	Time	Species		Comments				
		04:20	Pp		H/F				
		04:26	Pp		H				
		04:33	Pp		H				
		04:53	Pp		H				
		05:09	Pp		H/F				
		05:32	Pp		H/F				
		05:45	Pp		H/F/S High up in canopy				
		05:55	Pp		H/S				

		06:00	Pp	H/F/S
Last Bat	05:44		Species	Pp

Visit 3 T104

Ref/Type		T104			Date/Visit		03/09/14	Visit 3	
Survey Type		Dawn re-entry survey			Bat detectors used		Bat box Anabat		
Surveyor		Anthony Carr							
Brief Description		Silver lime within mature tree line. Tree line acts as boundary between road and amenity grassland.							
Start	04:12	Air Temp	14°C	Cloud	0/8	Wind	0/12	Rain	Dry
Finish	06:24	Air Temp	14°C	Cloud	0/8	Wind	0/12	Rain	Dry
Emergence		Species	N/A			No bats seen re-entering T104			
Primary corridor:		Tree line							
Foraging (if noted)		Species	N/A						
First Bat:		04:32			Species		Pp		
Contacts		Ref:	Time	Species		Comments			
			04:32	Pp		Heard only			
			04:39	Pp		Heard only			
			04:40	Pp		Heard only			
			05:09	Pp		Heard only			
			05:44	Pp		Heard only			
Last Bat		05:44			Species		Pp		

4.0 ACTIVITY SURVEYS

4.1 Transect routes

Route Ref	Description of Habitats
1	The site comprises two parcels of amenity grassland (Parcel A and Parcel B on the activity transect drawings), both of which are lined with avenues of large mature trees. The dominant species include London plane, horse chestnut and common lime.

4.2 Transect results

Key:

Species

Pp: Common pipistrelle Pg: Soprano Pipistrelle Pa: Brown Long-Eared
My: Myotis species Nn: Noctule

Visit 1 transect

Date:	25/06/14	Transect:	1	# Walks:	16 Looped	# Stops:	16 Looped	Direction	c/wise
Start:	21:24	Air Temp	19°C	Cloud	8/8	Wind	1/12	Rain	Dry
Finish:	23:49	Air Temp	19°C	Cloud	7/8	Wind	1/12	Rain	Dry
Time of first bat:	21:24	Species			Nn	Surveyors:	John Crowder, Ian Holland		
Time of last bat:	23:33	Species			Nn	Detectors:	Anabat Magenta		
Total number of contacts by species during survey		Total number of bats per hour during visit 1 north		Comment / Behaviour					
Pp	Nn								
83	3	35.6		<ul style="list-style-type: none">There was a high level of activity throughout the site recorded during this visit.3 contacts of noctule bats were observed at stops S13 & S15. These stops are located in parcel A at the northern most point of the site.The majority of bat contacts were common pipistrelle.Foraging contacts were recorded throughout the site along the tree lines and within the grassland.There was no discernible pattern of bat flight during the visit.Bats were observed in flight across all areas of the site.					

Visit 2 transect

Date:	16/07/14	Transect:	1	# Walks:	16 Looped	# Stops:	16 Looped	Direction	c/wise
Start:	21:10	Air Temp	19°C	Cloud	1/8	Wind	1/12	Rain	Dry
Finish:	23:31	Air Temp	17°C	Cloud	4/8	Wind	2/12	Rain	Dry
Time of first bat:	21:44	Species			Pp	Surveyors:	John Crowder Ian Holland		
Time of last bat:	23:28	Species			Pp	Detectors:	Peterson Anabat		
Total number of contacts by species during survey		Total number of bats per hour during visit 1 north		Comment / Behaviour					
Pp									
12		5.1 bph		<ul style="list-style-type: none">• Low activity observed during this survey• The only species recorded was common pipistrelle• Low foraging activity was recorded.• Bats were keeping to single stop locations during this visit with the exception of walks W10, W11 & W15.					

Visit 3 transect

Date:	06/08/14	Transect:	1	# Walks:	16 Looped	# Stops:	16 Looped	Direction	Reverse
Start:	20:45	Air Temp	20°C	Cloud	7/8	Wind	1/12	Rain	Dry
Finish:	23:04	Air Temp	19°C	Cloud	7/8	Wind	1/12	Rain	Dry
Time of first bat:		20:59	Species		Pp	Surveyors:	John Crowder Ian Holland		
Time of last bat:		22:47	Species		Pp	Detectors:	Peterson Anabat		
Total number of contacts by species during survey			Total number of bats per hour during visit 1 north		Comment / Behaviour				
Pp	Pg	My							
91	11	3	45.3		<ul style="list-style-type: none">There was a high level of activity recorded during this survey mostly in parcel B.A high level of common pipistrelles were observed throughout the site.A medium label of activity of soprano pipistrelles were observed in the southern area of parcel B1 single contact and 1 multiple contact of a myotid species were recorded at the southern end of parcel B.There was no discernible pattern of bat flight during the visit.Bats were observed in flight across all areas of the site.				

4.2 Combined transect results

Figure 1: Spatial variation in overall bat activity relating to parcel number

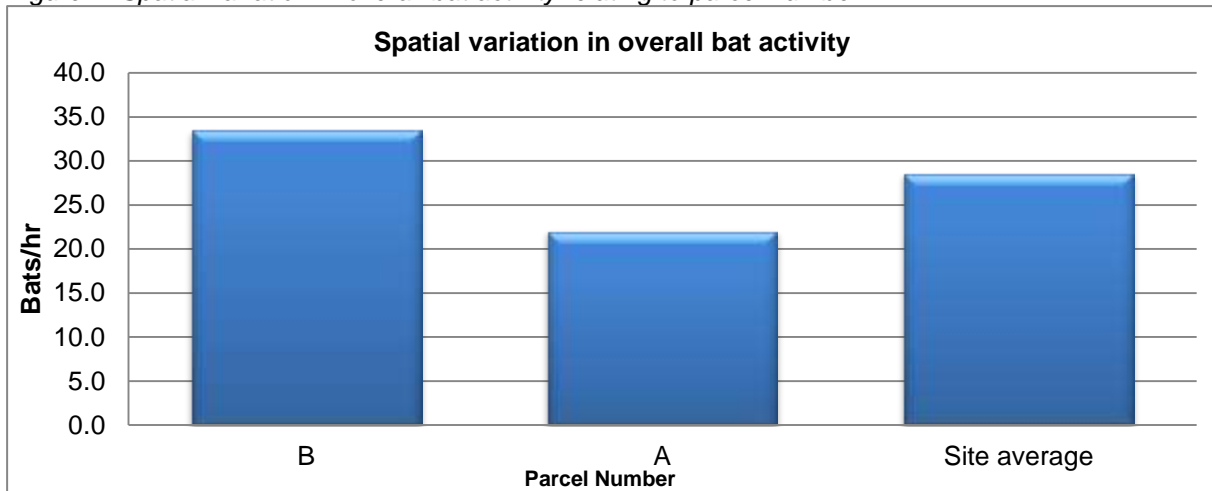


Figure 2: Spatial variation in overall bat activity relating to habitat type

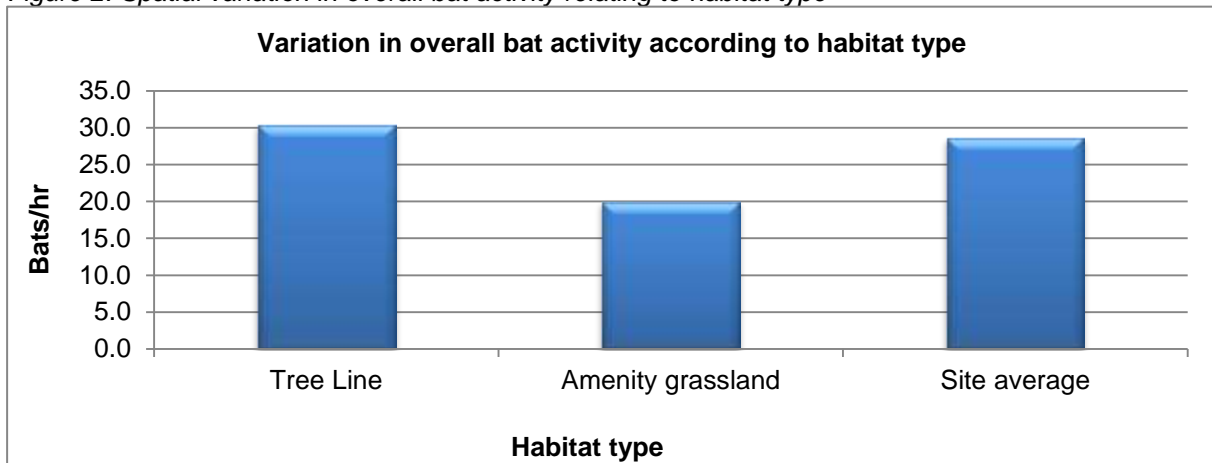


Figure 3: Overall bat activity by species relating to parcel number

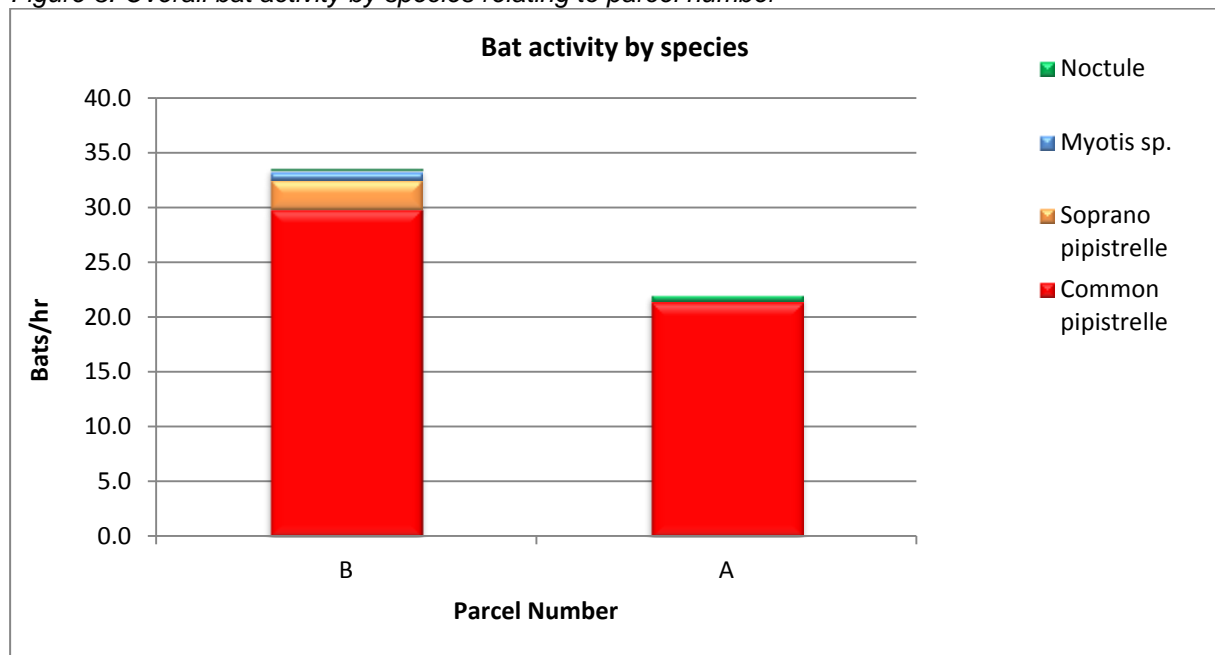
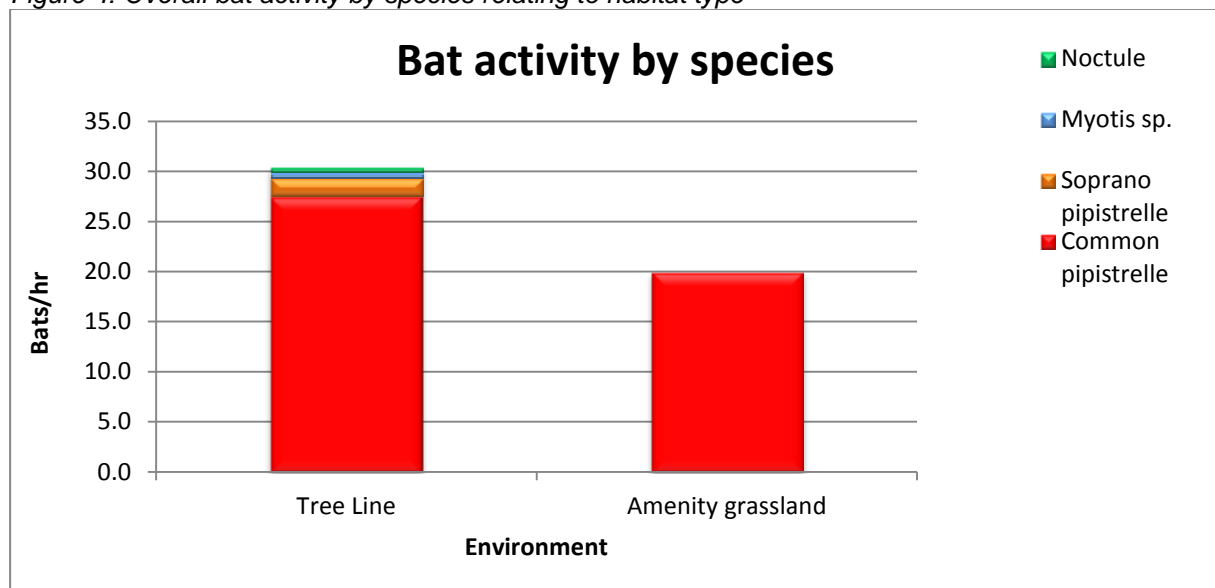


Figure 4: Overall bat activity by species relating to habitat type



5.0 EVALUATION

5.1 Potential tree roost evaluations

- No bats were seen entering any tree during the three pre-dawn re-entry survey visits.
- Foraging were observed and recorded along tree lines and at the tops of the canopy

5.2 Transect activity transect evaluations

- The transect routes had multiple contacts with a range of species. Mostly high levels of common pipistrelles with low levels of contacts from noctule, myotis & soprano pipistrelle species were observed.
- The overall bat index for this site (all visits, parcels A & B) is 28.7 bats per hour. This gives the site a moderate level of bat activity.
- The overall bats per hour for the tree line is 30.4.
- There are some specific areas of the site that would be classed as a high level activity. The south west corner of the site and stops S10, 11 & 12 which is between the bottom of parcel A and the top of parcel B
- Both parcels A and B have a moderate level of activity but parcel B has the highest level by a small amount with 33.6 bats per hour.
- The tree lines were used mostly by bats in comparison to pasture. The tree lines also have the greater diversity of species.

6.0 IMPLICATIONS

Current survey results show that there are no active bat roosts in the trees that were surveyed¹.

Current survey results show that the site is used by a moderate number of bat species for foraging and commuting. The bat species identified were common pipistrelle, soprano pipistrelle, a myotis species and noctule bats, which are relatively common species in this geographical area.

All tree lines on the site have moderate value to bats for commuting and foraging, while the grassland areas are used less often.

¹Emergence and pre-dawn re-entry surveys are valid for a period of one year, if the target date for works extends over one year repeat surveys will be required to provide an update.

7.0 MITIGATION

Roosting

Deliberate bat roosting provision should be incorporated into new builds, providing both roosting space and access points. Common pipistrelle bats were identified in the area and as such slight modifications to the design of the new buildings can provide roosting opportunities. Small gaps (15 to 20mm) in size between the brickwork and any weather boarding (e.g. soffit box or fascia board) or under roof tiles can provide access points. These features can attract different species of crevice dwelling bats

Bat bricks or tubes can be incorporated into the brickwork of new buildings which provide an enclosed roosting space. Bat boxes should be made from a thermally stable material such as woodcrete, brick or untreated timber. Orientation, height and position should be considered when erecting bat boxes to influence a successful uptake. Externally sited bat boxes can be incorporated into the design as an enhancement feature.

Noctule bats were also recorded within the site and generally this species will roost in trees using features such as woodpecker holes and/or crevices and cavities. Trees with bat roosting potential are identified on the Phase 1 Habitat map (G4612.001) and all but one of these trees (T66) are to be retained. The loss of roost potential in T66 should be mitigated by the provision of three bat boxes on one of the retained trees. Boxes should be installed at a ratio of one hibernation to two maternity boxes. Proposals should ensure that external lighting will not impact on these trees and ideally a buffer zone should be created around the trees of at least 1.5 times the canopy diameter of the tree to minimise disturbance.

If future detailed proposals include the removal or management of any bat potential trees and more than 12 months has elapsed since the 2014 surveys, then further surveys will be required prior to works.

If no bat roost is recorded, the tree can be removed or managed using 'reasonable avoidance measures' (RAMs) under the supervision of a licenced ecologist. Appropriate RAMs in this instance are considered to be the use of a soft-felling technique, lowering limbs to the ground and cushioning them when they reach the ground. The tree should be felled or managed as soon as is reasonably possible following the end of the survey.

In the event that bats are found within the tree, either as a result of the survey or during the sensitive felling/ management of the tree, works should cease and the advice of the bat ecologist should be sought immediately. A licence from Natural England would be required before felling/ management could proceed. The mitigation scheme would depend on the numbers and species of bat present.

Foraging

Planting proposals should incorporate wildlife friendly plant species to encourage insect diversity. Suggested plant species lists can be found in Gunnell et al (2012). Residential gardens create considerable habitat for bats and should be spatially arranged to maximise the foraging patch and reduce isolation between habitats.

Commuting and Landscape Connectivity

External lighting along the tree-lines should be avoided, so that these linking corridors are unlit. If lighting is unavoidable then a sensitive lighting scheme will be required to reduce the potential impact of lighting on bats. Light spill should be minimised with the use of light spill accessories and lamp design (e.g. column height). Light levels should be as low and directional as possible. Lamp sources that do not emit UV light (peaking higher than 550nm) are optimum as they are less likely to displace insect abundance and affect foraging habitat, e.g. low pressure sodium or LEDs.

APPENDIX 4

Breeding Bird Survey Technical Report

BREEDING BIRD SURVEY RECORD



General Details:

Site Name	Park Avenue, Mossley Hill, Liverpool		
Job Number	4612	Doc. Ref	4612.003
Central NGR	SJ 381 874		
Site Location	Sefton Park, Liverpool		
Date(s)	23/06/14 and 16.07/14		
Surveyor(s)	Dr Mike Walker, MCIEEM (both Visit 1 and Visit 2)		
Weather	1 st visit –Sunny with light breeze, dry. 2 nd visit – Sunny with light breeze, dry.		
Seasonal Constraints	Timing of survey visits is within the latter half of the period recommended for breeding bird surveys within BTO guidelines for Common Bird Census methodology (CBC).		
Methods	Two morning visits to site using transect method, recording all bird activity based on BTO Breeding Bird Survey and Common Bird Census methods.		
Drawing Ref(s):	Visit 1: G4612.001; Visit 2: G4612.004		

Existing Data:

Desktop Records were last updated 2014			
Source			
BTO website (Birdtrack)	<p>A total of 19 bird species of conservation concern have been recorded within the tetrad containing the site including a 1km buffer within the last 5 years. These include the following Section 41 or red listed BoCC species:</p> <ul style="list-style-type: none"> • Dunlin • Curlew • Herring gull • Starling • Song thrush • Dunnock • House sparrow <p>The following amber listed BoCC species were also recorded:</p> <ul style="list-style-type: none"> • Mallard • Tufted duck • Little grebe • Great crested grebe • Black-headed gull • Lesser black-backed gull • House martin • Swallow • Swift • Willow warbler • Mistle thrush • Grey wagtail 		

Breeding Bird Survey Record

Habitat Description:

The site comprises two parcels of land on the south-east boundary of Sefton Park. The parcels comprise managed amenity grassland surrounded by large mature trees.

Survey Results:

Visit 1	Date	23/06/13	Start time	05:45	End time	06:45
Visit 2	Date	16/07/14	Start time	06:00	End time	06:45

Species	Visit 1 -number recorded	Visit 2 -number recorded	Breeding on site?	Conservation status
B - Blackbird	3	3	Po	-
BT - Blue tit	5	4	C	-
C - Carrion Crow	3	9	Po	-
CH - Chaffinch	3	1	Po	-
CT - Coal tit	0	1	Po	-
D - Dunnock	0	1	Po	S41, A
GO - Goldfinch	0	1	Po	
GT - Great tit	1	0	Po	-
MG - Magpie	4	4	Po	-
WP - Wood pigeon	3	4	Po	-
WR - Wren	2	1	Po	-
TOTAL SPECIES	8	10		

Key: C = Confirmed; Pr = Probable; Po = Possible; N = Not; S41 = Section 41, NERC; A = Amber-listed BoCC species.

Additional Notes:

Drawings

- The locations of all birds recorded during the breeding bird survey are illustrated on Drawings G4612.001 (Visit 1) and G4612.004 (Visit 2).

Summary:

Desktop records indicate that common bird species associated with gardens and woodlands have been recorded within the site and wider area within the last 5 years. These include Section 41 and red listed BoCC species such as song thrush, starling and house sparrow.

A couple of wading birds, including curlew and dunlin have also been recorded, however these are highly likely to be associated with the River Mersey, the edge of which was included within the wider desktop search area.

A number of waterbirds and birds associated with water such as mallard, tufted duck, little grebe, great crested grebe and grey wagtail were recorded within the desktop search. These are likely to be associated with water bodies within Sefton Park. There are no water bodies within the site and therefore these species are highly unlikely to occur within the site.

During the breeding bird survey, a small number of common bird species were recorded within the site. The bird species recorded are all associated with gardens,

Breeding Bird Survey Record

parks and woodland. It is possible that small numbers of all 11 of these bird species breed within the trees surrounding the site. A pair of blue tit was confirmed to breed in mature trees at the site perimeter. A family of carrion crow were recorded adjacent to the site at Mossley Hill Drive. It is possible that these crows had nested within trees on the perimeter of the site.

No BoCC species were recorded within the site, however one BoCC species, dunnock, was recorded adjacent to the site within the adjacent Sefton parkland area during the second breeding bird survey visit. Dunnock are a Section 41 and amber-listed BoCC species. It is possible that a single pair of dunnock could breed within the site, however this is unlikely as there are no areas of favourable nesting habitat for dunnock within the site such as dense scrub, hedgerows or low cover.

APPENDIX 5

Examples of Habitat Enhancement Measures for Bats from the Bat Conservation Trust

BAT BOXES FOR SITING ON TREES

Schwegler 2F Bat Box

A popular general purpose box attractive to the smaller British bats. A simple design with a narrow entrance slit on the front.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Diameter 16cm
Height 33cm



Schwegler 2F-DFP Bat Box

A general purpose box attractive to the smaller British bats, with a roughened wooden panel inside the box which simulates a crevice.

This box is favoured by Daubenton's bat and Nathusius' pipistrelle.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Diameter 16cm
Height 33cm



Schwegler 2FN Bat Box

A larger box with both a wide access slit at the base and an access hole on the underside. Suitable for the larger British bat species. Particularly successful in attracting noctule and Bechstein's bats.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Diameter 16cm
Height 36cm



Schwegler 1FD Bat Box

A large general purpose bat box, with two roughened wood panels inside the box which simulate crevices.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Diameter 16cm, Height 36cm



Schwegler 1FW Hibernation Box

This large box is designed to provide a protected environment, particularly through the cold winter months when bats hibernate. It has three internal wooden panels imitating crevices. *Supplied with special fixing brackets. It is important to fit this heavy box very securely if mounting above the ground, and to site it well away from public areas.*

Woodcrete (75% wood sawdust, concrete and clay mixture)
Diameter 38cm, Height 50cm, Weight 30kg



Schwegler 1FS Bat Box

Schwegler woodcrete boxes have the highest rates of occupation of all box types. The 75% wood sawdust, concrete and clay mixture allows natural respiration, stable temperature, and durability. They are extremely long lasting and rot- and predator-proof.

The 1FS is a larger capacity general purpose bat box with more insulation than most boxes for a more stable temperature in the winter.

Wooden block hanger and 'tree-friendly' aluminium nails included.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Diameter: 28cm Height: 44cm Weight: 10kg



APPENDIX 6

Examples of Habitat Enhancement Measures for Birds

BIRD BOX SPECIFICATIONS

BOXES TO FIT FENCES, WALLS AND TREES

Schwegler 1B Bird Box, natural brown

The 1B appeals to a wide range of species, and is the official nest box of National Nest Box Week. The box can be nailed to the trunk of a tree, or hung from a branch. Schwegler boxes can be expected to last 25 years or more without maintenance.

Woodcrete, 23cm high x 16cm diameter.

With standard 32mm diameter entrance hole



Schwegler 2H Open Fronted Nest Box

This box is attractive to this box is attractive to robins, pied wagtails, spotted flycatcher, wrens and black redstarts. Best sited on the walls of buildings with the entrance on one side. Schwegler boxes have the highest occupation rates of all box types. They are carefully designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting. They can be expected to last 25 years or more without maintenance.

A02015 Schwegler 2H Open Fronted Nest Box



Schwegler Roundhouse Wren Box 1ZA - Autumn Red

Well insulated and mimics natural nest sites

This nest box provides the enclosed, round space preferred by wrens for nesting. They will line the nest with moss, feathers and fur. The 1ZA is made from long-lasting, breathable Schwegler Woodcrete and provides excellent protection from nest predators. It not only houses wrens when bringing up their young but also provides a sheltered place where they can roost in the winter. Strong hanging cable included to site the nest amongst shrubbery.

Code: 002096D



Gable Nest Box

A substantial wooden bird box with a gable roof and 28mm entrance hole. Made of 15mm thick softwood, external dimensions 14.5cm x 14.5cm x 26cm high (to top of gable). Suitable for the smaller garden birds.

A03008 Gable Nest Box



Wooden Bird Box

A simple wooden bird box with sloping roof, suitable for the smaller garden birds. Made from substantial 2cm thick softwood. 14cm w x 18cm d x 26cm h (backplate 33.5cm h). The standard model has a 32mm diameter entrance hole attractive to a wide range of smaller garden birds.

A03004 Wooden Bird Box



DRAWINGS



Key

Site Boundary

Target notes (TN1 & TN2)

Scattered broad-leaved trees

Broad-leaved tree with bat potential (T12, T64, T66, T103 & T104)

A

A

Amenity grassland


Bare ground

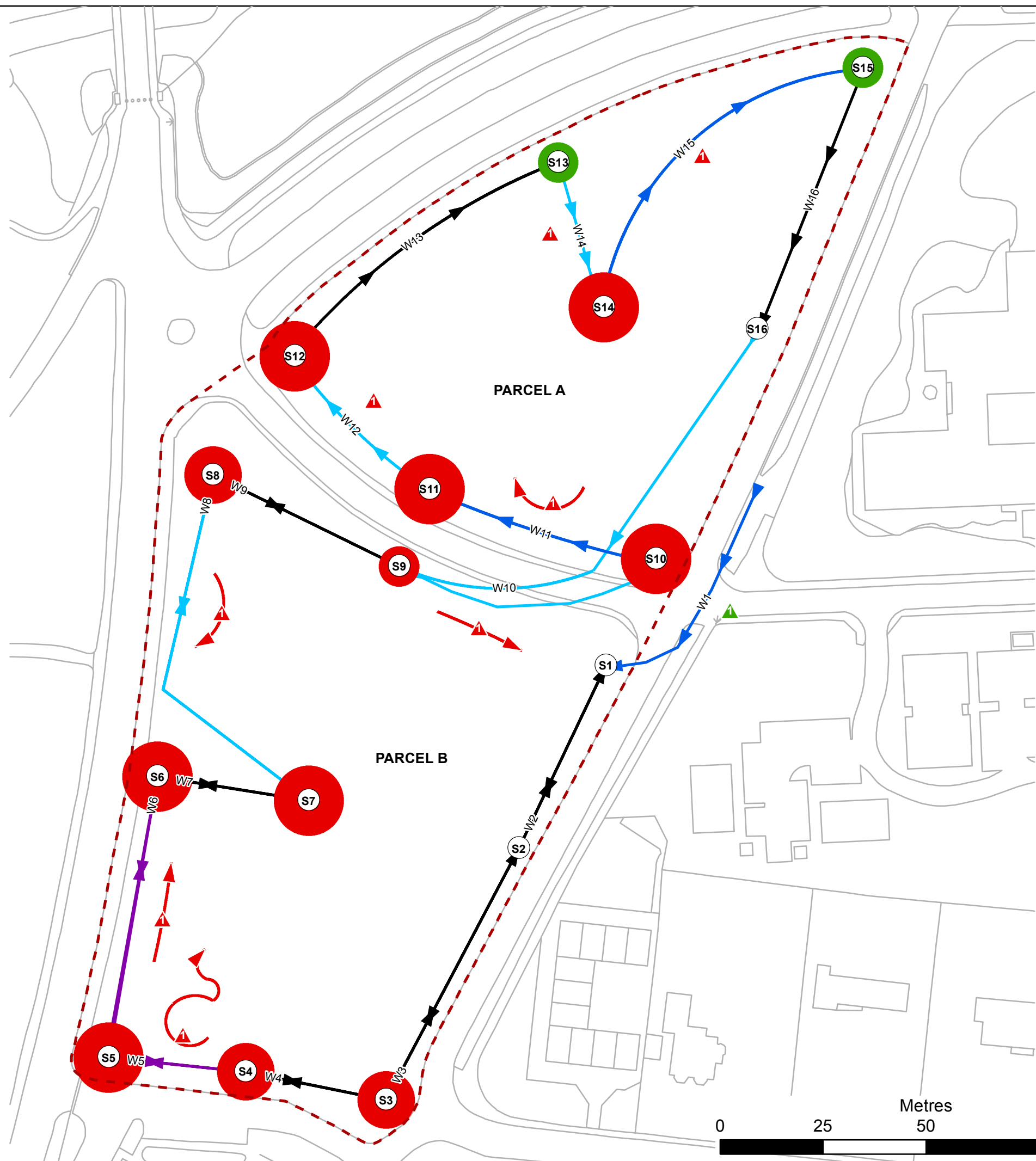
Hardstanding

Species codes:

Ah - Horse chestnut
Ph - London plane
Til - European lime

Base map supplied by client

A	Site Name Alteration	JS	ACP	21/10/14
Rev	Description	Dwn	Appvd	Date
		<p>Genesis Centre Birchwood Science Park Warrington WA3 7BH Tel 01925 844004 Fax 01925 844002 email tep@tep.uk.com</p>		
Project:				
Park Avenue, Mossley Hill				
Title:				
Phase 1 Habitat Survey				
Map No:				
G4612.003A				
Scale:			Date:	
1:1,000 @ A3			21/10/14	
Drawn:		Checked:		Approved:
JS		ACP		ACP



Key

Transect stops:
Pie charts show percentage of bat species recorded during stop interval

- S# Stop reference
- No bat activity
 - Low levels of activity
1 to 25 bat contacts/hour
 - Medium levels of activity
26 to 50 bat contacts/hour
 - High levels of activity
over 51 bat contacts/hour

Transect walks:
Showing levels of bat activity recorded during walk interval

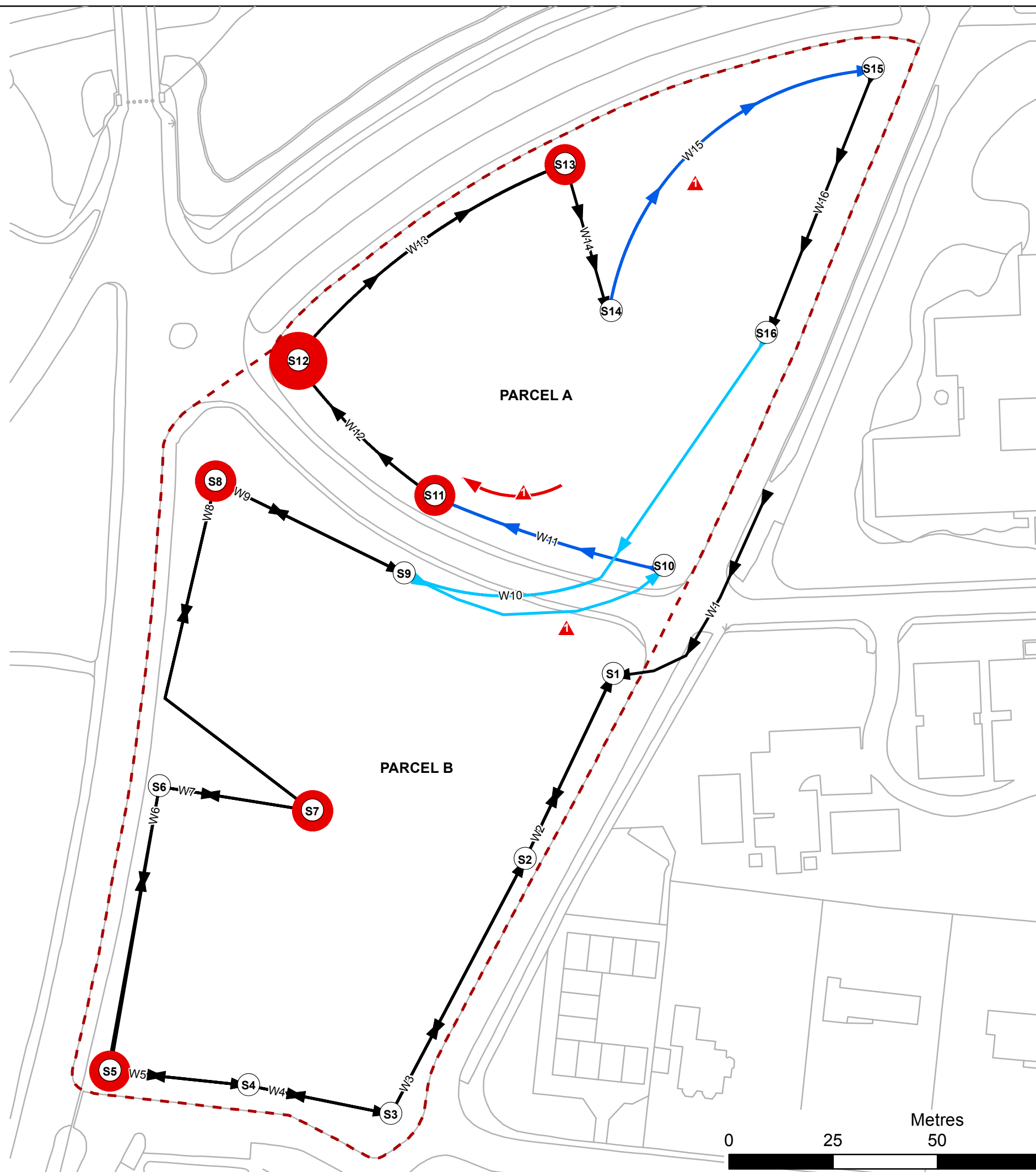
- No bat activity
- Low level of activity
1 to 15 bat contacts/hour
- Medium level of activity
16 to 50 bat contacts/hour
- High levels of activity
over 51 bat contacts/hour
- Number of bats & flight direction
(colour indicates species)

Bat species identification

- Common pipistrelle
- Noctule
- Site Boundary



Rev	Description	Dwn	Appvd	Date
<div><div><div><div></div><div></div><div></div></div><div>TEP</div></div><div>Genesis Centre Birchwood Science Park Warrington WA3 7BH Tel 01925 844004 Fax 01925 844002 email tep@tep.uk.com</div></div>				
Project: Park Avenue, Mossley Hill				
Title: Bat transect survey Visit 1 - Dusk 25/06/14				
Map No.		G4612.013		
Scale:		1:1,000 @ A3		Date: 21/10/2014
Drawn:	GAR	Checked:	JC	Approved: AP



Key

Transect stops:
Pie charts show percentage of bat species recorded during stop interval

- S# Stop reference
- No bat activity
 - Low levels of activity
1 to 25 bat contacts/hour
 - Medium levels of activity
26 to 50 bat contacts/hour


Transect walks:
Showing levels of bat activity recorded during walk interval

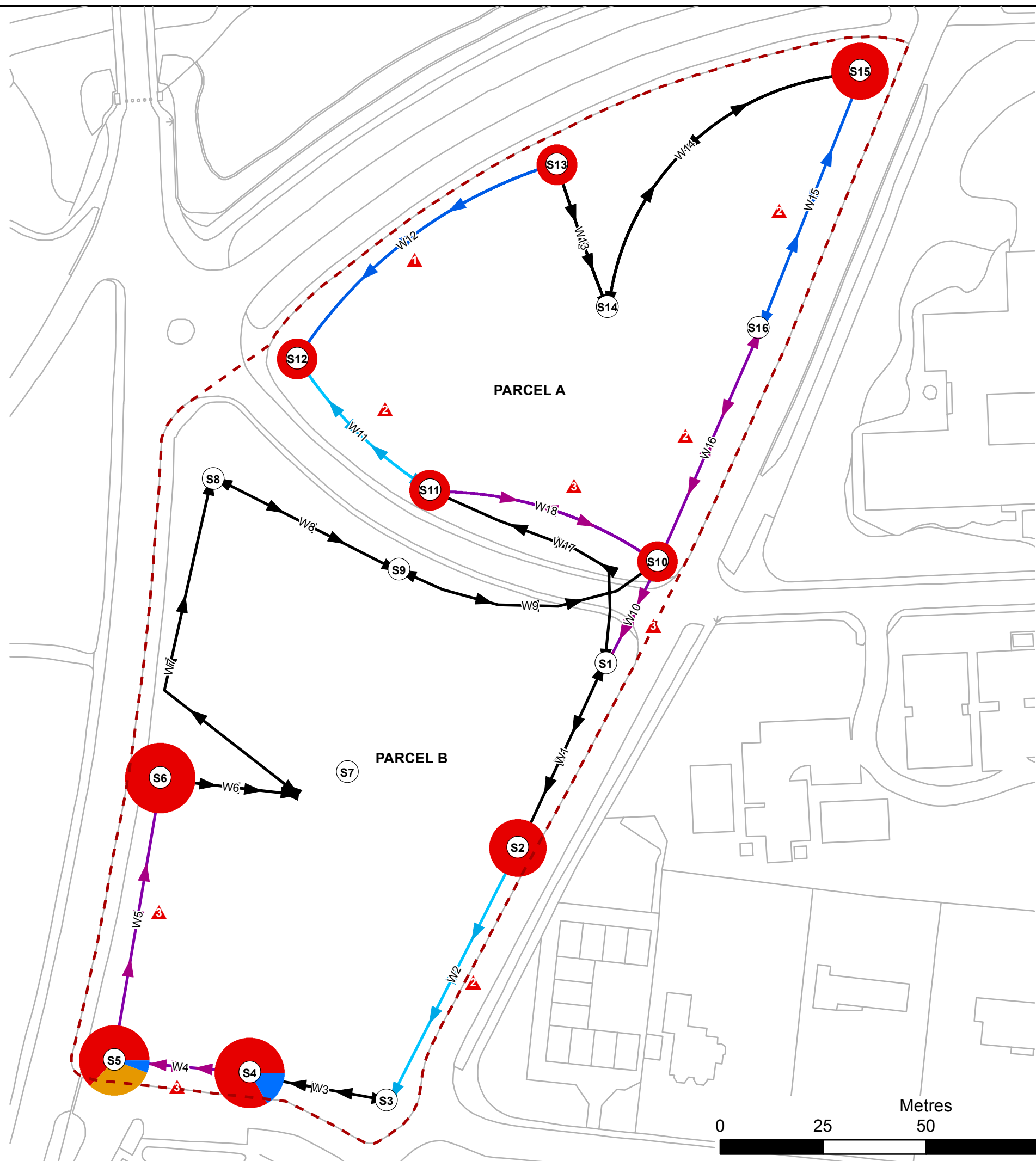
- No bat activity
- Low level of activity
1 to 15 bat contacts/hour
- Medium level of activity
16 to 50 bat contacts/hour
- Number of bats & flight direction
(colour indicates species)

Bat species identification

- Common pipistrelle
- Site Boundary



Rev	Description	Dwn	Appvd	Date
 <div>Genesis Centre Birchwood Science Park Warrington WA3 7BH Tel 01925 844004 Fax 01925 844002 email tep@tep.uk.com</div>				
Project: Park Avenue, Mossley Hill				
Title: Bat transect survey Visit 2 - Dusk 16/07/14				
Map No. G4612.014				
Scale: 1:1,000 @ A3			Date: 21/10/2014	
Drawn: GAR		Checked: JC		Approved: AP



Key

Transect stops:

Pie charts show percentage of bat species recorded during stop interval

S#

Stop reference

No bat activity

Low level of activity
01 to 25 bat contacts/hour

Medium level of activity
26 to 50 bat contacts/hour

High level of activity
over 51 bat contacts/hour

Transect walks:

Showing levels of bat activity recorded during walk interval

No bat activity

Low level of activity
01 to 25 bat contacts/hour

Medium level of activity
26 to 50 bat contacts/hour

High levels of activity
over 51 bat contacts/hour

Number of bats & flight direction
(colour indicates species)


Bat species identification

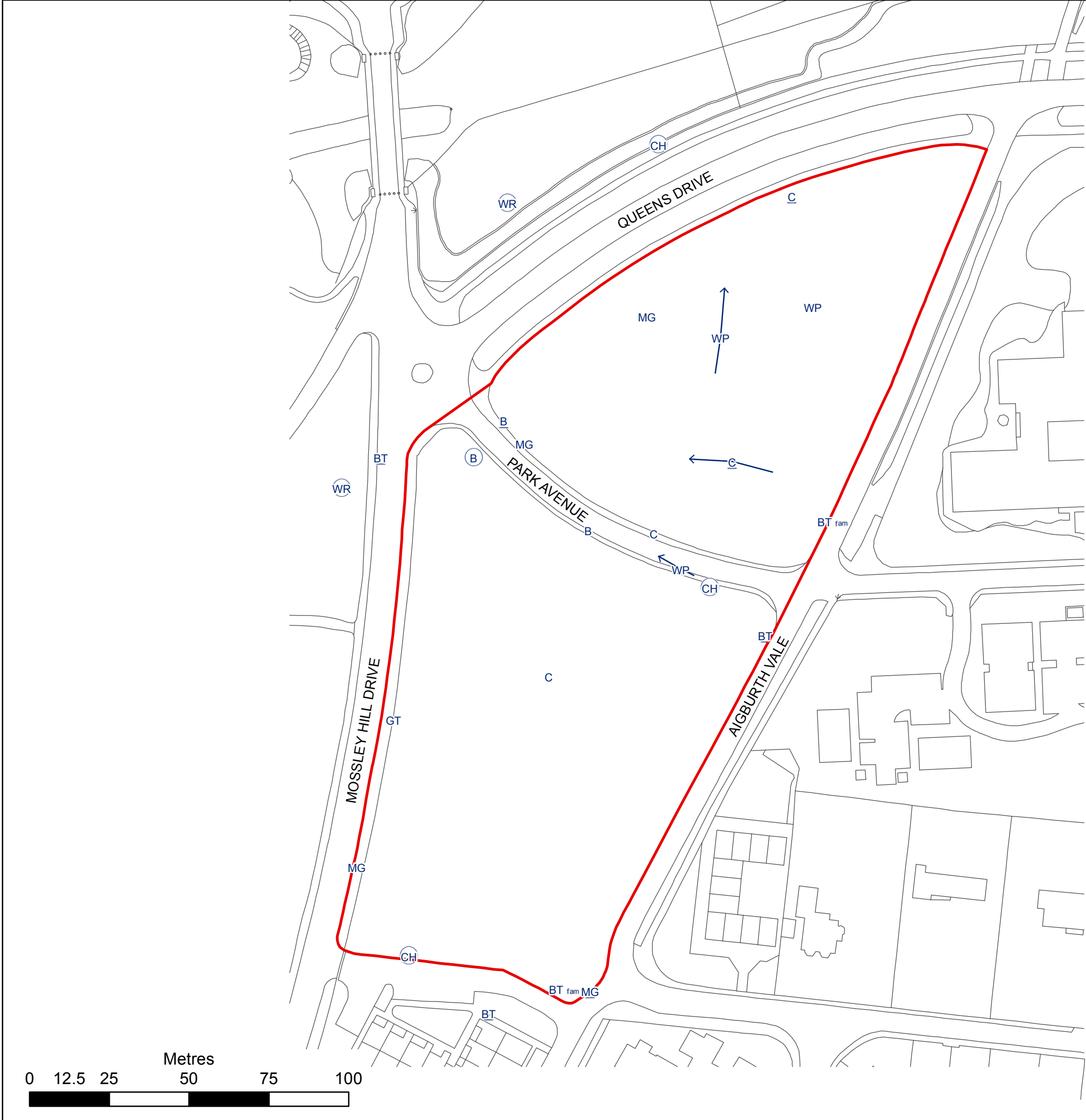
Pip pip - Common pipistrelle

Pip pyg - Soprano pipistrelle

Myo sp - Myotis species

Site Boundary

Rev	Description	Dwn	Appvd	Date
		Genesis Centre Birchwood Science Park Warrington WA3 7BH Tel 01925 844004 Fax 01925 844002 email tep@tep.uk.com		
Project: Park Avenue, Mossley Hill				
Title: Bat transect survey Visit 3 - Dusk 06/08/14				
Map No.		G4612.015		
Scale: 1:1,000 @ A3			Date: 21/10/2014	
Drawn: GAR		Checked: JC		Approved: AP




Key

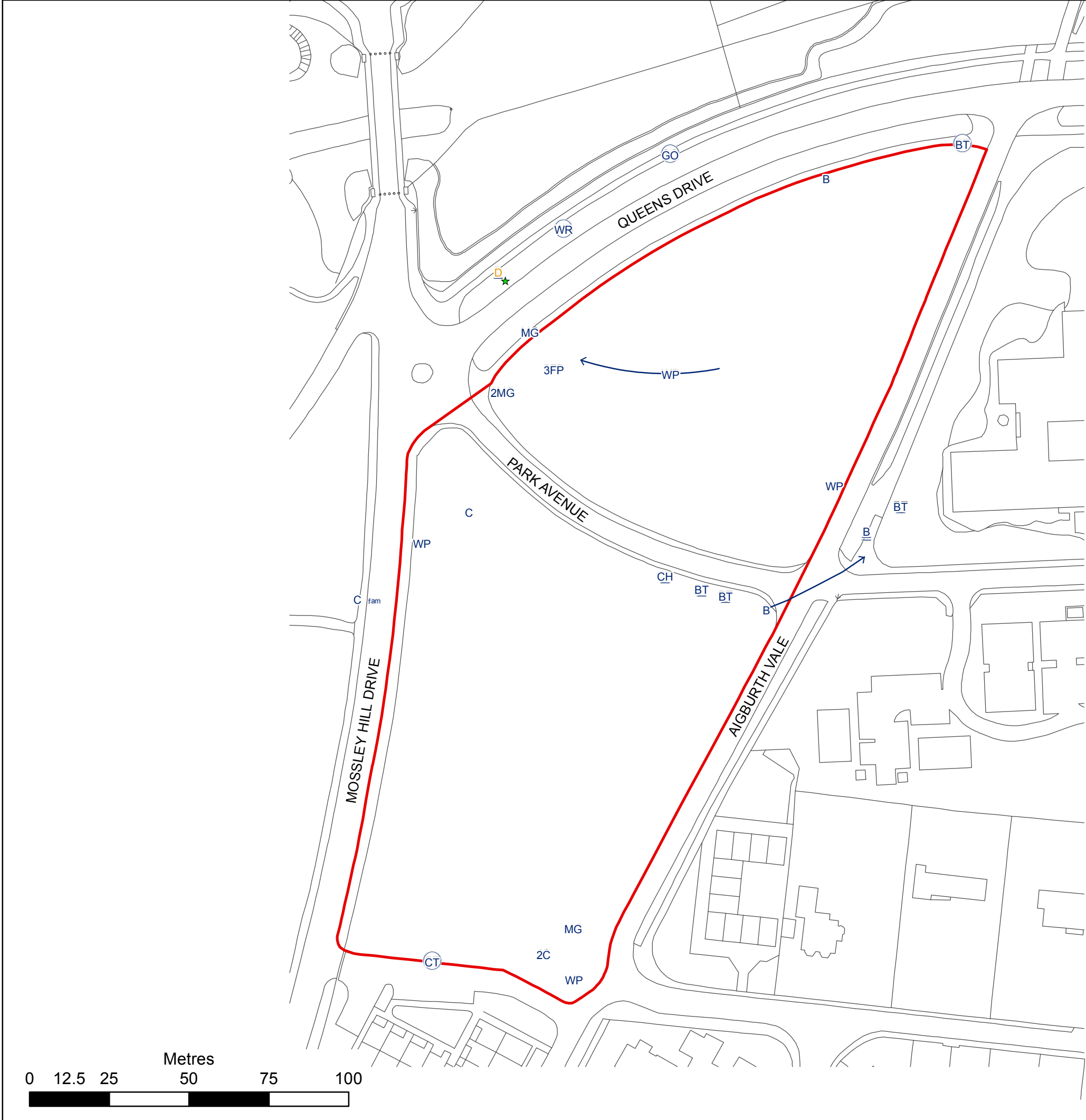
- Site Boundary
- Calling
- Singing
- Family
- Directional flight line

Base map supplied by client



Rev	Description	Dwn	Appvd	Date
		Genesis Centre Birchwood Science Park Warrington WA3 7BH Tel 01925 844004 Fax 01925 844002 email tep@tep.uk.com		
Project: Park Avenue, Mossley Hill				
Title: Breeding Bird Survey Visit 1 23 rd June 2014				
Map No.		G4612.001		
Scale: 1:1,250 @ A3			Date: 21/10/14	
Drawn: CM		Checked: VG		Approved: AP

- B Blackbird
- BT Blue Tit
- C Carrion Crow
- CH Chaffinch
- GT Great Tit
- MG Magpie
- WP Wood Pigeon
- WR Wren



Key

- Site Boundary
- Alarm call
- Calling
- Singing
- Family
- Directional flight line
- Section 41 Species
- Amber List Species

- B Blackbird
- BT Blue Tit
- C Carrion Crow
- CH Chaffinch
- CT Coal Tit
- D Dunnock
- FP Feral Pigeon
- GO Goldfinch
- MG Magpie
- WP Wood Pigeon
- WR Wren

Base map supplied by client

Rev	Description	Dwn	Appvd	Date
		Genesis Centre Birchwood Science Park Warrington WA3 7BH Tel 01925 844004 Fax 01925 844002 email tep@tep.uk.com		
Project: Park Avenue, Mossley Hill				
Title: Breeding Bird Survey Visit 2 16 th July 2014				
Map No. G4612.004				
Scale: 1:1,250 @ A3			Date: 21/10/14	
Drawn: CM		Checked: MW		Approved: AP