

LAND OFF 2, VALE ROAD, NORTHFLEET, GRAVESEND, KENT, DA11 8BZ

Phase 1 Habitats Survey (extended)



View over the eastern part of the site looking south

By

[REDACTED] of Wildlife Matters

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on behalf of:



Dated 16 September 2016

1.0 Executive Summary

- There are no statutory designations affecting the site.
- The nearest Ramsar site is 4.3km away.
- The nearest SPA is 4.3km away.
- The nearest SAC is 8km away.
- The nearest Sites of Special Scientific Interest (SSSI) is 1.8km away.
- The site is adjacent to a green corridor (railway line).
- The site is adjacent to a Country Park.
- The site is essentially one large hard-standing forecourt.
- No Schedule 1 Birds were recorded on site. (these might have included Barn Owl, Merlin and Hobby).
- Initial surveys indicated no evidence of Schedule 5 protected animal species was found on site (this includes common lizards, adders, newts, toad, GCN, bats).
- No BAP species of bird (or other organism) was recorded on site. No Corn Buntings were recorded.
- The site is of low nature conservation importance.
- The site is species-poor in biodiversity and there would be no loss of habitat with the development.
- Enhancement recommendations are made.

2.0 Instructions

2.1 Wildlife Matters was instructed by Planning Potential on 17 August 2016 to carry out a Phase 1 Ecology Report (extended) for the site.

2.2 The proposal is for redevelopment for a mixed use scheme (major development) by applicant Orbit Property. Consideration of the proposal was assessed by Gravesham Borough Council (GBC) by way of a Pre-App (Ref. PRE20160373) on 13 July 2016. Three ecological issues were raised by GBC, that

- a) *'there appears to be no analysis of the characteristics of the site'* (re. 'landscaping and trees and amenity') and

- b) *'need for ecology/biodiversity survey'* – protected species and reptiles.
- c) GBC also advised contacting Natural England on issues relating to proximity to an EU protected site. On this issue GBC have considered their obligation under the EU law regarding ameliorating conservation issues pertaining to EU sites by asking the Applicant to contribute a tariff of £223.58 per dwelling or a total of £22,805.16.

2.3 Of relevance for assessing potential ecological impact the scheme is mainly for 102 dwellings, with parking for 111 spaces as well as cycle spaces. As the Pre-App says *'The density on that site was apparently 273 habitable rooms per hectare. The density as proposed is 294 habitable rooms per hectare.'*

3.0 Site Visits

3.1 The site visit was made on 6 September 2016 when the weather was 19°C, 5/8 oktas of cloud cover with a 2 knot wind (Beaufort scale) from the west, i.e. within limits to investigate habitats, flora and fauna.

4.0 Location of site

4.1 The site is located in Northfleet in northwest Kent, situated about 0.9km south of the Thames Estuary at Ordnance Survey location TQ627736 in Post Code DA11 8BZ. It is south of the main part of Northfleet, west of Perry Street and north of Wombwell Park.

5.0 Description of site

5.1 The site (0.98 ha; 2.42 acres) comprises a roughly trapezoid-shaped piece of land, all parts of which are used for a variety of commercial uses involving vehicles.

5.2 The site is brownfield with commercial use comprising car repairs, MOT test centre, car parts, van hire, coach works and skip hire. There is one main single storey workshop building with an attached two storey office, as well as a range of smaller buildings and 'portacabins'. There is also a 15m tall telecommunication mast within the site.

5.3 The south curtilage is adjacent to the North Kent railway line which is in a deep cutting about 7m below the site. The railway line is thus out of view when looking south whilst in the site. To the south of the railway line is the Northfleet Urban Country Park which has been established on 'Former Workings'. The proposed development site is itself established on a former chalk quarry.

5.4 To the north, west and east of the site is urban housing with a school to the west. The Pre-App describes it thus: *'The surrounding area is characterised by low rise principally two to three storey development, the only exception being the 14 storey block of flats at Carl Ekman House at the junction of Shepherd Street with Tooley Street, to the north west of the site, which sits rather uncomfortably with the general scale and massing of development locally.'*

5.5 Within the site there are

- No ponds on site
- No streams on site
- No rivers on site
- No hedgerows within the site
- No trees within the body of the site

5.6 The ecological significance of a site without ponds is that it rules out the possibility of breeding amphibians (newts, frogs, toads). Amphibians do not breed in running water.

Legal and permitted rights of access

5.7 There are no legal rights of access across the site in the form of Public Footpaths or Bridleways.

5.8 The Northfleet Urban County Park is open to the general public close-by to the south; in the words of the publicity of the park it says *'Northfleet Urban Country Park is approximately 9 hectares in size, and consists mainly of areas of grassland, with scrub and broadleaf woodland scattered throughout. A relaxed and informal site, it is currently used extensively by dog walkers.'*¹

5.9 Enjoyment of the countryside by people is one of the aims of Natural England, so it is important to embrace and incorporate the use that people have of the countryside, as well as comfortably fitting in their usage of the countryside that will not detract from their enjoyment. With enhancements (see later) the enjoyment of the countryside will be much improved for people continuing to access the site.

6.0 Methodology

6.1 The following lists the various methodologies employed to check for flora and fauna on site at this level of Phase 1 Habitats Survey.

¹ <http://explorekent.org/activities/northfleet-urban-country-park/>

Flora

6.2 Angiosperms were surveyed by sector over the site. Their specific names are according to Dony et al., 1986 with verification to species level with Rose, 1981. Abundance was scored according to the DAFOR scale, where D =dominant, A= Abundant, F = Frequent, O = Occasional and R = rare. Grasses and Ferns were verified in, and are according to Fitter & Fitter, 1984. Grasses were also verified in Hubbard, 1976, Thomas & Davies, 1965

Fauna

6.3 Birds were assessed visually and with binoculars. Characteristic signs of birds were checked for, such as song thrush anvils, predatory remains, owl pellets (both inside buildings and outside). Characteristic bird song was listened for. Nests and feathers were also sought. Bird names are according to Fitter et al.,1972.

6.4 Reptile methodology was to check for suitable habitats on site. This involved looking for good basking spots on logs, on ant hills, on wooden palings, in fact anywhere that warms up fast in the sun and provides suitable sites for Common Lizards (*Zootoca vivipara*). Checks were made for long grass, grass tussocks, compost heaps and adjacent light woodland in which slow worms (*Anguis fragilis*) could be found. So far as the grass snakes (*Natrix natrix*) and adders (*Vipera berus*) were concerned suitable hot grassy sites were sought. All reptile species are protected by UK and EU law (Technical Appendix WM01).

6.5 Amphibian methodology for newts, frogs, toads was to look out for their aquatic breeding places (ponds, water-filled ditches with no water movement including all ephemeral water bodies, lakes) as well as their terrestrial habitats such as light woodland and hedges.

6.6 Bats were checked for by looking for likely places for roosting and entry points. Their characteristic droppings were sought on the ground where they might be roosting or feeding, such as in large trees or buildings if present. All bats in the UK are protected (Technical Appendix WM02).

6.7 Badgers were checked for by looking for 1) typical spoil heaps (old ones grassed-over) or new ones recently excavated, 2) large holes (as opposed to the smaller ones created by rabbits), 3) the characteristic smell of badgers emanating from within if badgers present, 4) the typical, well-worn runs (uni-directional) through vegetation or over ground, 5) their claw marks on mud, excavated rocks or on tree bark, 6) their black and white hairs caught on wire and / or bramble thorns, 7) their typical latrine areas, whilst being wary of the less uniform tracks of foxes, their untidy setts, their abandonment of old food items, and rusty-coloured hairs on wire and brambles. Further information on badgers is at Technical Appendix WM03).

6.8 Hazel Dormouse methodology was checked according to criteria in *The Dormouse Conservation Handbook* (Technical Appendix WM04).

6.9 Water Vole methodology was to survey for any of the following six characteristics: Burrows (4-8cm wide burrows), 'Lawns' (of well-grazed vegetation around burrow entrances), Droppings (8-12mm long by 4-5mm wide), Characteristic footprints in mud, Feeding stations by the water's edge (looking for neat piles of nibbled vegetation) and Latrines (in regular spots on boundaries and close to burrows).

6.10 Mammal names are according to Van Den Brink, 1967.

6.11 Species found on site were checked against those listed in the Red Data Books (Batten et al., 1990, Bratton, 199, Collar & Andrew, 1988, Lucas et al 1978, Perring & Farrell, 1983, Shirt, 1987, Wells et al. 1983, World Conservation Monitoring Centre, 1990).

6.12 Invertebrates were identified from various sources including Feltwell, 1984.

6.13 Freshwater crayfish, *Austropotamobius pallipes*, which is the UK's only native crayfish which is UK protected, were checked by looking for the individuals in moving freshwater (if present) and for discarded pieces of carapaces, legs and claws discarded by avian predators.

6.14 Bumblebees were identified from Feltwell, 2006.

6.15 The National Biodiversity Network (NBN) (<http://data.nbn.org.uk/>) is the clearing house for most of the biological data in the UK. It now holds 70 million records of flora and fauna species in the UK which is all in the public domain. However, none of it can be used for commercial purposes, so for copyright reasons this consultant is not permitted to refer to any of the data in this unique database.

7.0 RESULTS AND DISCUSSION

7.1 The following main UK and EU protected species have been evaluated as being potential ecological constraints:

Table WM01 UK and EU protected species

Species	UK protected	EU protected
Badger	yes	
Bats (all species)	yes	EU protected
Brown Hare	yes	
Common Toad	yes	
European Hedgehog	yes	
Hazel Dormouse	yes	EU protected
Nesting birds (general)	yes	
Slow Worm	yes	
Viviparous Lizard	yes	
Grass snake	yes	
Great-crested Newt (GCN)	yes	EU protected

Palmate and Common newt	yes	
Native Freshwater Crayfish	yes	
Otter	yes	EU protected
Water vole	yes	

NB. Six species (highlighted in light blue) are dependent upon aquatic habitats

7.2 The following report includes details of their potential presence or absence, and where appropriate further details of surveys or mitigation required.

7.3 There are no natural or semi-natural habitats on site, only a man-made habitat – mostly a large forecourt containing a variety of businesses associated with the motor trade.

7.4 There are several buildings on site associated with storage and repair of vehicles. There are however no trees in the main body of the site (only a few along the curtilage with Vale Road) and no water bodies on site; all of which have implications for wildlife – that many groups of organisms would not be present as they rely on water for breeding and feeding.

7.5 The lack of still waterbodies on site (e.g. ponds) rules out the potential for GCN breeding on site.

7.6 A Phase 1 Habitats Map is shown in Technical Appendix WM05.

7.7 The range of habitats on site are shown in the following Table WM02 listing the different Habitat Type Classifications according to the Joint Nature Conservation Council's (JNCC).²

Table WM02 Habitat Classification according to JNCC (1990)

Habitat Description	Classification under JNCC
Buildings	J 3.6
Hard-standing of concrete	J 3.6
Scrub	A2
Spoil	I 2.2
Walls	J 3.6

7.8 Of the habitat types mentioned above, most of the site is 'hard-standing of concrete'. The southern curtilage which abuts the railway cutting is made up of scrub that bleeds into the cutting where it is apparent there has been no recent management along the railway line embankments. There are two areas where 'spoil' has been deposited (no Japanese knotweed was seen). The only wall is the one facing Vale Road.

² 'Handbook for Phase 1 habitat survey, A technique for environmental audit.' NCC, 1990.

8.0 Results: Wildlife

8.1 Nearly 50 taxa of wildlife were found on site (Technical Appendix WM06).

Wildflowers and Trees

8.2 Thirty-six species of angiosperms (flowering plants) were recorded on site.

8.3 None of the species recorded are protected species, and most of them are typical and widespread species that might be expected in such a habitat as this site.

8.4 Four species of tree were noted, including Italian poplar and sycamore along the Vale Road curtilage and hawthorn and damson on the south curtilage with the railway cutting.

8.5 There are a number of introduced plants which included sycamore (from central Europe), annual mercury and buddleia.

8.6 Buddleia is listed on the 'London's 'Invasive Species Initiative' as an 'invasive species': Buddleia is often regarded as good for encouraging insects to gardens, especially butterflies (thus its other name of 'Butterfly Bush') but it is an introduced (neophyte) species (from China) and it does tend to oust other native species where it grows, thus it has an overall negative effect on biodiversity than a positive one

8.7 It is customary to have target notes for a Phase I Habitats Survey. As this site is mostly hard-standing target notes have not been made as it would indicate concrete or tarmac or shingle with no vegetation over most the site. The north curtilage abuts the urban environment with no hedgerow. The west curtilage has a wire fence that is completely covered by Old Man's Beard or wild clematis that is rampant here (indicating a chalky soil). The south curtilage is similar to the west curtilage but there are small pockets of privet, hawthorn, damson, wild rose and ivy suggesting there might have been a hedgerow. The east curtilage abutting Vale Road has a row of sycamore that appears to have grown up naturally and not planted.

8.8 There was no evidence of the introduced and invasive Japanese Knotweed *Reynoutria japonica* recorded. This was a surprise as the site deals with the movement of materials in and out of the site on a daily basis.

8.9 There was no evidence of the introduced and invasive Giant Hogweed *Heracleum mantegazzianum* recorded.

9.0 Fauna

Mammals

9.1 There was plenty of evidence to demonstrate the presence of fox on site, from scent, faeces and footprints in the soil.

Mammals: Badger *Meles meles*

9.2 A thorough check of the boundaries for the signs of badgers, viz. badger holes, excavated materials (of greater or lesser extent), trails, hairs on barbed wire, latrines, foraging areas, pieces of hair following tussles, proved negative.

Mammals: Bats

9.3 All the buildings were subjected to an external and internal check where it was safe to do so.

9.4 None of the buildings on site were residential, which has meant that they were all constructed simply to keep the rain out and to allow maximum working space below. Roofing materials tended to be single corrugated sheets with no boarding below, thus no potential for bat roosting. Cavity walls and lofts were generally absent. There were no wells or cellars known on site where bats might roost. Several 'portacabins' were on site.

9.5 Flat roofs were typical of the office buildings. Here water ingress had resulted in all ceiling and roofing materials having been removed as much as possible. The buildings were generally smelling damp which is not good habitat for bats (bats prefer dry roost sites). The adjacent residential buildings offer greater potential for bats than any of the buildings on site.

9.6 With regard to trees potentially harbouring bat roosts, there were no trees within the main body of the site, just a few sycamores along the curtilage with Vale Road and a few small trees along the south curtilage, none of which appeared to be old enough to have cracks and crevices.

9.7 No evidence of bats was recorded on site, either as dead bats, or droppings, or smudge marks on buildings.

9.8 With 9ha of Country Park immediately to the south, and a linear 'green' corridor in the form of the railway cutting, the habitat presented by the park and railway line offer good potential as foraging and commuting areas for bats, compared to the proposal site.

9.9 Bats also use hedgerows and wood edges as commuting and foraging routes and will continue to do so.

9.10 Bats are often likely to be present in all areas where there are hedgerows, shaws and woodlands. However the poor quality of the

proposal site to produce insects that bats would feed upon would mean that bats would have no incentive to spend time foraging over the site.

9.11 The Bat Conservation Trust (BCT) has been consulted by this consultant and acknowledge there are three areas of concern about bats and any development regarding i) potential loss of feeding habitats, ii) loss of flight lines, and iii) loss of connectivity with the natural landscape. Addressing these three points:

1. Loss of feeding habitats: the site is species-poor and bats would feed elsewhere at the current time. Therefore there would be no loss of feeding areas.
2. Loss of flight lines: bats commute and forage along cuttings, wood edges and hedgerows, not usually across sites such as this. Therefore there would be no loss of feeding areas.
3. Loss of connectivity: the development will not break any existing green corridor. The commuting and foraging routes of bats around the area is not expected to be compromised, but would be improved. In fact the enhancements seeks to make new connections.

9.12 Overall, no evidence of bats on site was found, and, for the reasons explained above, it is not thought likely that they are present.

Mammals: Hedgehog *Erinaceus europaeus* BAP

9.13 There was no evidence of hedgehog on site in the form of characteristic faeces.

Mammals: Otter *Lutra lutra* BAP

9.14 No evidence of otter was recorded on site as there was no water.

Mammals: Red Squirrel *Sciurus vulgaris* BAP

9.15 No evidence of Red Squirrel was recorded on site.

Mammals: Brown Hare *Lepus europaeus* BAP

9.16 The habitat is not optimal on site for hare, and for that reason no evidence of brown hare was recorded on site.

Mammals: Hazel Dormouse *Muscardinus avellanarius*

9.17 No evidence of Hazel Dormouse was recorded, since the major elements of its habitat were absent, i.e. no light woodland, and an abundance of hazel, *Corylus avellana*. According to the checklist of criteria in *Conservation Handbook*, the site lacked the necessary habitat structure, viz: a lack of 'linked canopies' (there are no woodlands on site), no 'newly-cut coppice woodlands', no 'coppice

stools and brushwood' and no 'woodlands as small as 2ha. Furthermore, field surveys did not reveal any winter or summer nests. There were no discarded hazel nuts to check for characteristic dormouse teeth marks.

Mammals: Water Vole *Arvicola terrestris*

9.18 No evidence of Water vole was recorded on site as there was no suitable habitat on site.

Herptiles (Reptiles and Amphibians)

Reptiles

9.19 The Pre-App had drawn attention to the potential for reptiles.

9.20 The site did not contain any grassy habitat that might have provided habitat for reptiles. Most of the site is hard-standing. The site did not have suitable habitat for reptiles (grass snakes, slow worms, common lizards, adders) and no evidence of reptiles was seen.

9.21 The lack of long grass and light woodland or scrub were the main elements missing from site that precluded the presence of reptiles. Domestic cat was seen on site; these predate reptiles and are typical of urban environments.

9.22 Several items lying on the ground such as tyres, wood, plastics etc were turned over to see if any reptiles might be below, but none were found.

9.23 The weather was suitable for reptiles to be out sunning themselves on the ground, on posts and machinery, but none were seen. Particular attention was focused along the south curtilage adjacent to the railway cutting, but the cutting itself was so overgrown that there were no open, close-cropped 'warm' places where reptiles might bask, and none were thus seen.

9.24 The adjacent Country Park is not flagged up on the internet as possessing reptiles (or amphibians) only that it was used for dog-walkers. Reptiles may, of course, be present in the Park but the unmanaged and overgrown nature of the railway cutting means that the line would act as a barrier to any movement into the site as there is no optimal open ground.

Amphibians

9.25 There are no suitable water bodies on site in which amphibians might breed, i.e. there are no permanent ponds, ephemeral ponds, ditches or backwaters that might support amphibians.

9.26 There are no suitable terrestrial habitats (scrub and light woodland) on site that might be locations for newts when they are not breeding.

Amphibians: Great crested newts (GCN)

9.27 The site itself has no suitable terrestrial or breeding habitats for GCNs. There are no hedgerows, woodlands or water bodies that would fulfil their habitat requirements.

9.28 A survey of water bodies around the proposed development site up to 500m distant was not undertaken.

9.29 An inspection of the Ordnance Survey map of the area (1:25,000 scale) shows no small ponds either within a 500m radius or 1000m radius, save for the very large Blue Circle lake to the west of the site. In other words no waterbodies were seen in Northfleet, Perry Street, Wombwell Park and Springfield. There are no waterbodies within 300m of the site that could support a breeding population of GCNs. Having waterbodies within 250m of a site would normally flag up the possibility of GCNs being capable of being present and existing as a metapopulation dispersed amongst several ponds. Such a scenario does not occur around this site.

9.30 On the basis of the above, it is concluded that GCNs are unlikely to be in the immediate area of the site, or on site.

Birds

9.31 Just three species of bird were recorded on site, all very common and widespread species (Technical Appendix WM06).

9.32 There were no 'Schedule 1 Birds' present. These might have included Fieldfare, *Turdus pilaris*, Redwing, *Turdus iliacus* (both winter migrant species) and Barn Owl, *Tyto alba*.

9.33 The site is within a Corn Bunting location according to magic.gov.uk. Technical Appendix WM05). The site does not have any agricultural habitat present and it was no surprise to note no Corn Buntings present.

Invertebrates

9.34 A small range of invertebrates were found on site, none protected. These included five species of butterfly.

10.0 Adjacency to sensitive ecological sites

10.1 Adjacency to important international sites (SPAs, SACs, Ramsars, WHSs) is an important planning matter, and Natural England will sometimes regard being up to 15-20km from such an international site as being grounds for further assessment of potential risk.

10.2 The various reasons for this concern is the potential effect of the impact of people on these protected areas (i.e. visits in cars, and

by dogs to these protected area), and the potential effect of the increased use of water by the new residents of the proposed housing that might have on groundwaters of these international sites. Some Ramsar sites are wetland that are regulated by, and dependent upon the aquifer. 15km to 20km can be regarded as 'nearby' by Natural England.

10.3 Natural England introduced 'Impact Risk Zones' (IRZ) in October 2014 as a way for local planning authorities to assess the proximity to Sites of Special Scientific Interest (SSSI). These IRZs are now shown on www.magic.gov.uk. This is shown on the website maps as a series of concentric circles emanating out from the SSSI at regular intervals. The further away from an SSSI theoretically the less environmental impact is likely. A screen shot for this site is at Technical Appendix WM05.

10.4 The following table (Table WM03) lists the proximity of the various UK and EU protected sites.

Table WM03 showing statutory sites and proximity to site

STATUTORY DESIGNATIONS*	DISTANCE FROM SITE (approx.. km)	DIRECTION
EU LAW		
SAC		
North Downs Woodlands (SAC)	8	SE
SPA		
Thames Estuary and Marshes Special Protection Area (SPA)	4.3	E
RAMSAR		
Thames Estuary & Marshes (Ramsar)	4.3	E
UK LAW		
SSSI		
Bakers Hole (SSSI)	1.8	NW
Darenth Wood (SSSI)	4.5	SW
South Thames Estuary and Marshes (SSSI)	5.3	E
Shorne and Ashenbank Woods (SSSI)	5.3	SE
NNR		
Swanscombe Skull Site (LNR)	3	NW
COUNTRY PARKS		
Northfleet Urban Country Park	Adjacent	S

*source is www.magic.gov.uk (accessed 2016)

10.5 Natural England (NE) advisor Sean Hanna was contacted for 'general ecological advice' by email on 12 September 2016, on the recommendation of the Pre-App. **Comments are awaited.**

11.0 Addressing Natural England's (NE) four 'purposes' including 'Sustainability'

11.1 NE often state that in their letters:

*'Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is **conserved, enhanced, and managed** for the benefit of present and future generations, thereby contributing to **sustainable development.**' (our bold).*

11.2 Conserved? The area will be conserved. No trees will be lost from within the site, and no hedgerows will be lost. The structure of the countryside in which the proposed development is proposed will remain as is. Thus, with no significant impact, the site will be conserved, in fact with the enhancements, it will be improved.

11.3 The proposed construction site is not located in 'the natural environment'; it is located within a commercial site covered with hard-standing.

11.4 Enhanced? There are a range of enhancements proposed to enhance the site. The landscaping will provide foraging areas for honeybees, solitary bees and bumblebees.

11.5 Managed? The site will be managed in an appropriate manner to conserve and enhance the natural history of the area.

11.6 Sustainable development?

The site will be managed in a sustainable way with good outcomes for habitats, flora and fauna, and biodiversity considerations.

11.7 So, to address the 'purposes' of NE, has the applicant fulfilled its purpose to the satisfaction of NE; the answers and reasons are set out in Table WM04.

Table WM04 How NE's purposes have been fulfilled.

Purpose	How it has been achieved	Has it been achieved?
Conserved?	Green corridors respected	Yes
Enhanced?	Several enhancements proposed	Yes
Managed?	Management Plan	Yes
Sustainable development?	Fully sustainable	Yes

12.0 Summary of wildlife importance

12.1 On the basis of the above field observations it is concluded that the site is of low nature conservation importance.

13.0 Recommendations

13.1 The Pre-App stated that *'There appears to be no analysis of the characteristics of the site.'*

13.2 Following a site visit it can be stated that the characteristics of the site are that it is essentially a busy vehicular forecourt with no vegetation except some marginal sycamore and many adventive wildflowers.

13.3 In other words it does not have any natural vegetation, or semi-natural habitats and it is devoid of any kind of ecological interest and no protected species.

13.4 The site therefore has much potential for enhancement. The aim of the enhancements outlined below reflects the way the site can be transformed from a species-poor site to a species-rich site, producing some ecological gain.

13.5 With regard to improving the habitat for bats, there are four enhancements:

- first, bat boxes will be fitted,
- second, designers will seek to find residential lighting that is downward-facing in order not to disrupt the movements of bats,
- third, the landscape measures proposed for the site (see particularly Technical Appendix WM07) will see the planting of many trees and shrubs that will produce insects (bat's prey items) that will become available to bats in the short and long term, and

13.6 With regard to improving the natural ecological structure of the site, there is an aspiration to plant up the curtilages with chalk-loving trees and shrubs (of local provenance) such as dogwood and privet with the addition of Field maple – Old man's beard will come in by itself as it is dominant around the site.

13.7 There may also be an opportunity to integrate a natural water feature into the development, perhaps in the southwest corner. This would promote biodiversity. Furthermore, a green or brown roof on one or more of the blocks would soften the built environment and help to promote wildlife in the area as a whole.

13.8 With regard to continuity of habitat and linkage with neighbouring habitats, it is appreciated that the site is adjacent to a linear habitat or green corridor (the sunken railway line) and the large country park to the south, and that there is an aspiration to have a link between the site (via the 'neighbourhood space or park') to the country park via a pedestrian bridge.

14.0 Outcomes

14.1 Inspection of the proposed site layout plans (Technical Appendix WM07) demonstrates that many landscape features have been proposed to maintain the existing biodiversity and augment it.

14.2 A range of enhancements are proposed (Technical Appendix WM08), the result of which will improve biodiversity across the site and benefit the community by linking up green corridors.

14.3 The enhancements will, collectively, feed into the aspirations of the 'B-Lines' initiative, promoted by Buglife-The Invertebrate Conservation Trust and the gardens of the resultant houses will also assist local biodiversity the (Technical Appendix WM09).

14.4 As the site is of low nature conservation importance these enhancements, if conditioned by the LPA, are opportunities to increase the biodiversity of the site

Technical Appendix WM01

Reptiles and the law

Common Lizards – Grass snake – Adders - Slow worms



These reptiles are all now Biodiversity Action Plan (BAP) species

The Law

Common lizards, grass snakes, adders and slow worms are protected under the **Wildlife and Countryside Act 1981 (as amended)** as Schedule 5 species, 'in respect of section 9 (5) only', where it is unlawful to sell 'any live or dead animal, or any part of, or anything derived from, such an animal.' or 'publishes or causes to be published any advertisement likely to be understood as conveying that he buys or sells, or intends to buy or sell, any of those things' shall be guilty of an offence. They are also protected under part of Schedule 5 Section 9(1) against 'intentionally' killing or injuring any wild animal on the list³; These animals are also protected via the **Countryside and Rights of Way Act 2000** (CRoW, 2000) against any 'reckless' behaviour that might endanger the life of these reptiles.

"Q: Do I need a licence to survey for common lizards, adders, grass snakes and slow worms?"

A. A licence is not required to disturb, handle or move them" .. though it is strongly recommended that you seek advice from Natural England's Regional Team if you propose to translocated (move) them. ⁴ "For adder, grass snake, slow-worm and common lizard you do not need a licence to capture or disturb them or to damage their habitats." ⁵

Survey work – only if present.

Although reptiles '*should not normally removed from a development site before a planning application is made*' the developer should ensure that every reasonable effort to safeguard these animals is put in place. A site survey should be carried out to establish to size and status of the population and to put it into a local and regional context. Natural England 'expects high standards to be maintained in all mitigation.'

Mitigation

Mitigation methods are determined by the results of the survey work and how large the population is. It will also have as its aim to enhance the habitat for reptiles, whilst moving the animals temporarily out of the way to a safe area whilst ensuring that the impacts of the development will be minimal. It is prudent to prepare a *Method Statement* (that can also be part of a planning application) so that the above matters are explained. A suitably-sized area for reptiles to be re-located to, on site, will have to be identified, such as a Public Open Space (POS). It should also have suitable feeding areas for reptiles, and suitable underground hibernation sites (hibernacula). It should not also be full of reptiles such that any new reptiles introduced would exceed the 'carrying capacity' of the release area and be out-competed for food. If reptiles are not present in the proposed receptor area the reason should be sought, and the habitat made suitable if not.

Work to be carried out:

1. Erect plastic fence (dug into the ground) around area to hold the reptiles (the Receptor site) .
2. Erect plastic fence around area to be cleared of reptiles (the Donor site). A large field can be divided into separate areas; when one area is declared free of reptile construction can start. Where reptiles are around the periphery of a site (often the case, next to compost heaps of houses), the central area can be destructively searched (allow one month).
3. Put out a variety of devices to 'catch' reptile (tin trays, carpets etc). Allow 3 months to clear each area. Five negative results from all traps on suitable days declares the area free.

Timing:

Allow 4 months for all work to be completed, from March (the earliest for starting when the reptiles come out of hibernation). NB. October cannot always be relied upon to find reptiles, as the onset of cold weather puts the animals into hibernation. Similarly March can be cold.

J	F	M	A	M	J	J	A	S	O	N	D
Scrub clearance	Scrub clearance	mitigation	mitigation	mitigation	mitigation	mitigation	mitigation	mitigation	mitigation	Scrub clearance	Scrub clearance
Reptiles in hibernation	Reptiles in hibernation	Too cold??			Last period to start	Last period to start			Too cold??	Reptiles in hibernation	Reptiles in hibernation
No surveys	No surveys	Surveying	Surveying	Surveying	Surveying	Surveying ? too hot	Surveying ? too hot	Surveying	Surveying		

³ Gent, T. & Gibson, S. 1998. Herpetofauna Workers Manual, 1998. JNCC.

⁴ Natural England, [Species Licensing](#), on-line, accessed 4 Sept 2007

⁵ English Nature, [Reptiles: guidelines for developers](#). English Nature 2004 – downloaded from their website accessed 24.8.07).

Technical Appendix WM02
Bat legislation in UK and EU

UK and EU law protects all 17 species of bats in England and Wales. Applicable legislation includes the:

1. Wildlife and Countryside Act 1981 (as amended)
 2. The Countryside and Rights of Way Act 2000 (Crow)
 3. The Conservation (Natural Habitats, &c.) Regulations 1994 (known as the Habitats Directive)
- The Habitats Directive implements the EU Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora.

All bats are European Protected Species (EPS) to which both EU and UK law is applicable.

Under these regulations it is an offence

- to intentionally kill, injure or take a bat.
- to intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection. This includes a bat roost, whether it is currently occupied or not.
- to intentionally or recklessly to disturb a bat while it is occupying a structure or place that it uses for shelter or protection.
- to offer or expose for sale, or possess or transport for the purposes of sale, any live or dead bat, any part of a bat, or anything derived from a bat. It is also an offence to publish or offer for sale or buy bats or anything derived from bats.

In summary all bats and where they live (= roost) (even if bats are not physically there) are protected. i.e. a house with bat droppings, or evidence of bats, but no bats actually present, is protected. It would be unlawful to demolish a house with such a bat roost. It would then be necessary to get a professional opinion as to whether the droppings were historic or recent.

It is not an offence:

- to look after a disabled or injured bat so long as it was not disabled unlawfully by that person.
- to humanely kill a seriously disabled bat, so long as that person did not disable it unlawfully.

Surveying for bats and variable factors

Bats hibernate so they can only be properly surveyed by observation between early Easter and late autumn. Winter months surveys of buildings (external and internal) can be carried out to determine likely potential for bats, or presence of bats. Method Statement can also be prepared. Even if bats are not present evidence such as bat droppings and smudge marks on tiles can be found during winter months. Bats swap between summer roosts (often in buildings, culverts..) and winter hibernation roosts (often in trees, or caves etc). A building (derelict or occupied) can readily become a temporary summer roost for bats (a 'maternity roost') between spring and autumn. Emergence surveys for bats can be done at dusk and dawn. For a building with a higher potential then three surveys would be necessary. For a building known to have bats then the size of the bat population will have to be determined before a Licence is applied for, and up to six surveys will be necessary depending on weather. Bat population numbers in some summer roosts can vary on a daily / weekly basis. This will have an effect on survey results. Bats can move into buildings that have previously been found to have no evidence of bats.

If bats are found on a development site (buildings or trees)

A Licence would have to be sought from Natural England / DEFRA (Department of Environment, Food and Rural Affairs) for any disturbance to the roost. Alternatives to closure should be sought to keep the roost on site. Licences are only granted after Planning Permission is granted, and only after any Section 106 agreement has been signed off. Licences are never granted before these two documents have been obtained.

Enhancements to development sites, e.g.:

Bat boxes can be erected on buildings or the large trees.
Cellars can be sealed off except for grilles for bats to enter.
Native trees and shrubs in Public Open Space as food source.

Surveying without a licence

The Bat Workers' Manual (2004) states in Para 1.4 that much work can be carried out by without a licence; a licence is only required if deliberate disturbance of bats is likely, i.e. if bats are known to be present before surveying

Bibliography

Bat Workers' Manual. 2004. 3rd edition. Joint Nature Conservation Committee.

Technical Appendix WM03

Badger legislation in England



Badgers are protected by the **Badgers Act 1973**, **Badger Act 1991** and **Protection of Badger Act 1992 (as amended)**, Schedule 7 of the **Wildlife & Countryside Act 1981** and the **Wildlife & Countryside (Amendment) Act 1985**.

Earlier Advice: English Nature (now Natural England), the government body which oversees UK and European Community law where applicable, issued **Guidelines for developers** (English Nature, 1996, 1997), and are responsible for issuing licences under section 10 (1) (d) of the Protection of Badgers Act 1992 to permit interference with a badger sett, in the course of development (which includes building and construction work). Any work that disturbs badgers is illegal without a licence. Under these earlier advice the use of: *'very heavy machinery within 30 metres of any entrance to an active sett, and lighter machinery (particularly used for any digging operation) within 20 metres, or light work such as hand digging operation) within 20 metres, or light work such as hand digging or scrub clearance within 10 metres, all require a licence'* (English Nature 1996).

Recent Advice: Natural England have produced further guidance that assist in defining 'disturbance' that has now moved back from their 10, 20, 30m distance advice (**'Interpretation of 'Disturbance' in relation to badgers occupying a sett'**). They have also produced **'Badgers and Development, A guide to Best Practice and Licensing.'** (Version 12/11) and **'Standing Advice Species Sheet: Badgers'**; all of which are available on line.

Although a lot of badger law was originally drafted as a direct response to badger-baiting (especially **The Badgers Act and Badgers (Further Protection) Act 1991**), it is clear that the law as it stands is directly applicable to anyone who interferes with badgers or their setts, in whatever manner. **The Badgers Act 1973** and its amendments to the 1981 and 1985 Acts refers to the animals themselves regarding taking, injuring or killing of badgers.

The Badgers Act 1991 gives the badger sett protection, and adds to the 1973 Act the following; if any person shall interfere with a badger sett by doing any of the following things, they shall be guilty of an offence, that is to say:

- a) *damaging a badger sett or any part thereof*
- b) *destroying a badger sett ;*
- c) *obstructing access to or any entrance of a badger sett*
- d) *causing a dog to enter a badger sett: or*
- e) *disturbing a badger when it is occupying a badger sett:*

According to the Badgers Act 1973 with its amendments of 1981 and 1985, licences can be issued to interfere with badgers and their setts for the following purposes: *the purpose of any development as defined in section 55(1) of the **Town and Country Planning Act 1990**, for any agricultural or forestry operation, iii) for the purposes of any operation (whether by virtue of the **Land Drainage Act 1976** or otherwise), iv) for preservation or archaeological investigation under section 1 of the **Ancient Monuments and Archaeological Areas Act 1979**, or v) for the purposes of controlling foxes.*

Field surveys should determine the status of any badger setts on or adjacent to a site and this field information should be used to inform a mitigation strategy to avoid any 'knowingly or recklessly' causing any disturbance or injury to badgers whilst works are in progress.

Technical Appendix WM04

The Hazel Dormouse - Conservation of an EPS species (*Muscardinus avellanarius*)



EU Law

Bern Convention, Appendix 3. & The Conservation (Natural Habitats &c) Regulations ('The Habitats Regulation') 1992 - Dormice as European Protected Species (EPS)

UK Legislation

Wildlife and Countryside Act 1981, Schedule 5, and as amended in 1988.

Conservation (Natural Habitats &c) Regulations 1994.

Hedgerow Regulations 1997.

Biodiversity protection

The Convention on Biological Diversity (The Rio Convention).

Countryside and Rights of Way Act 2000 (Section 74) - having regard to conserving biodiversity

Occurrence

Dormice used to be widespread over most of England and Wales but have now retracted to the south-east and south-west England, East Anglia (but not Norfolk), central England, Wales, but are entirely absent from Scotland. It has become extinct in about half of its former range.

Habitats used by Hazel Dormice

Good habitat for dormice is often provided by what may be considered young growth stands: areas of scrub, early coppice re growth, or young coppice re growth, or young naturally regenerated broadleaved stands. Such early successional woodland is often species-rich (Conservation Handbook p. 31).

1. Linked canopies (p. 15 in Conservation Handbook). The following are good habitats :
2. Newly-cut coppice woodlands
3. Ivy left on trees
4. Coppice stools and brushwood (as hibernation locations)
5. Woods down to 2ha in size

'Dormice need a diverse woodland with a good variety of fruiting trees and shrubs and an abundance of aerial pathways. Hazel is particularly important food resource during the autumn when the dormice are fattening for hibernation and the species has long been associated with hazel.' (Species Conservation Handbook).

Checks and Tests for Hazel Dormouse

'The Dormouse Conservation Handbook' has four checks and tests for hazel dormice:

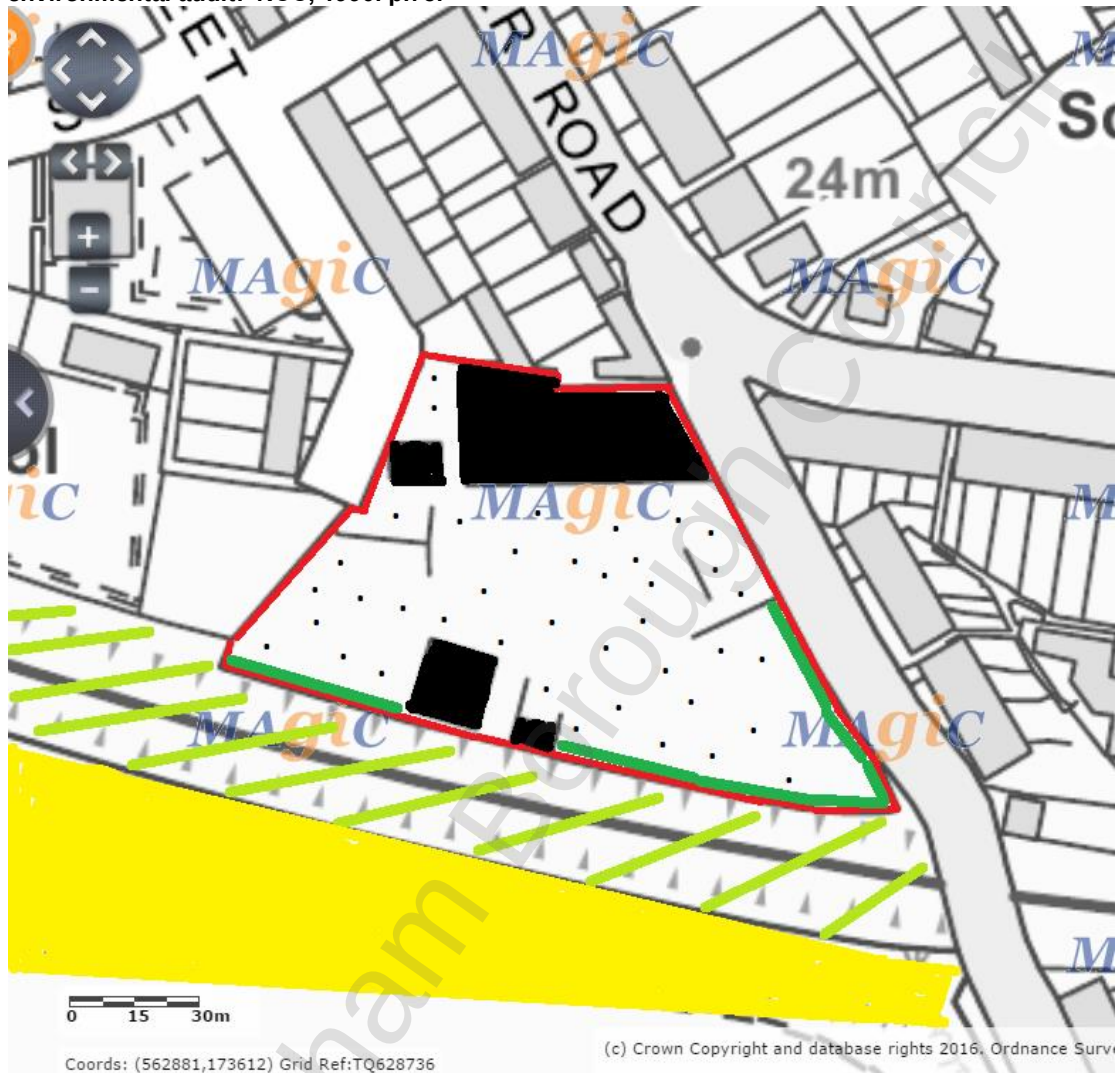
1. Check whether the site falls within or close to the known range of dormice.
2. Check for the existence of dormouse records with the local biological records centre or on the National Biodiversity Network (NBN).
3. Check with the site owner to see if they know whether dormice are present.
4. Hazel nut examination ('the best way to establish dormice presence..' p.23)
Examine 10 x 10m square around heavily fruiting hazel; 80% chance of finding dormice present if x 3 such areas are checked for typical gnawed hazel nuts. Collect 100 hazel nuts and examine them ('an alternative way of achieving an adequate sampling intensity (p23).
5. How many of the 20 plant species useful to dormice present on site?

References

- Bright, P., Morris, P., & Mitchell-Jones, T., 2006. *The dormouse conservation handbook*. English Nature, Peterborough.
- Mitchell-Jones, 1994. Dormice and Commercial Coppice Restoration. In: *Species Conservation Handbook*. English Nature, Peterborough.
- Natural England, 2007. *Dormouse: European Protected Species*. Natural England Species Information Note SIN005.
- Natural England, 2007. *Dormouse: European Protected Species*. Natural England Species Information Note SIN005.

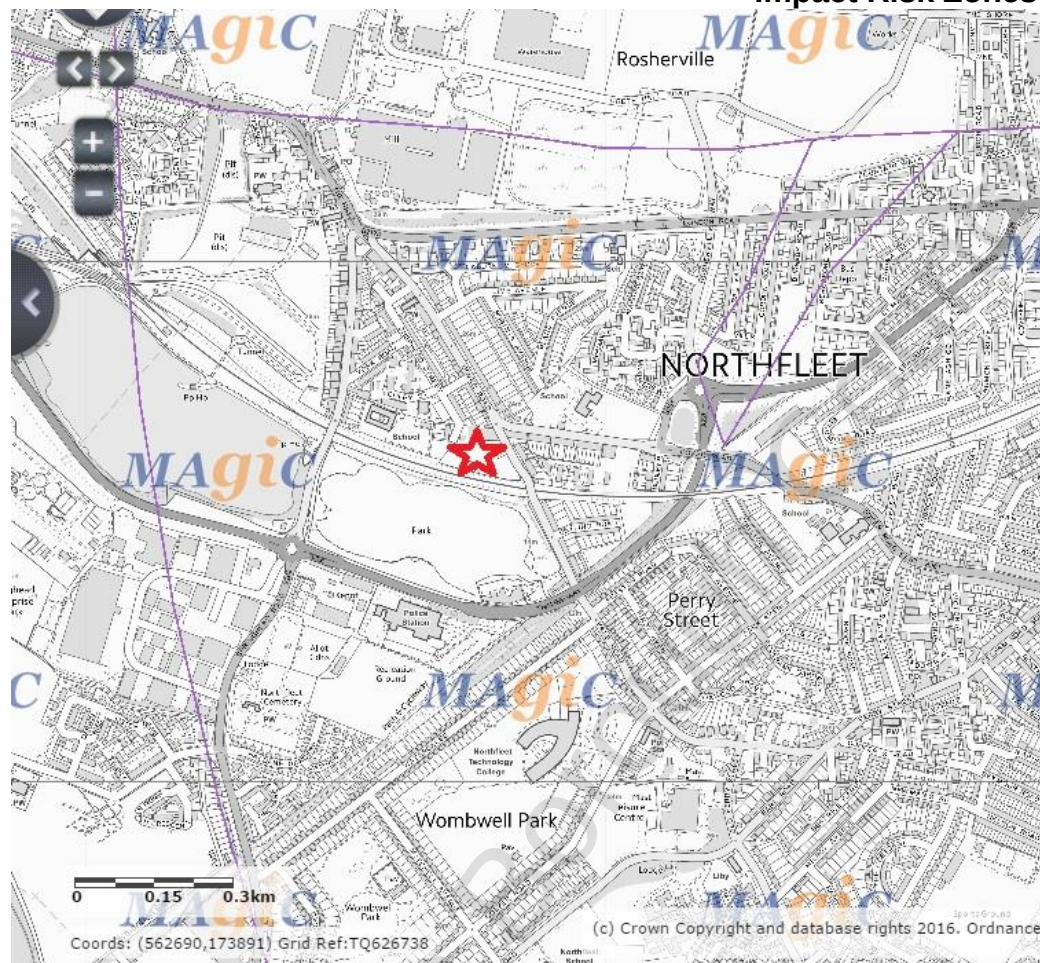
Technical Appendix WM05

Phase 1 Habitat Survey, as approved by the Nature Conservancy Council (then became English Nature, now Natural England). From 'Handbook for Phase 1 habitat survey, A technique for environmental audit.' NCC, 1990. p.78.

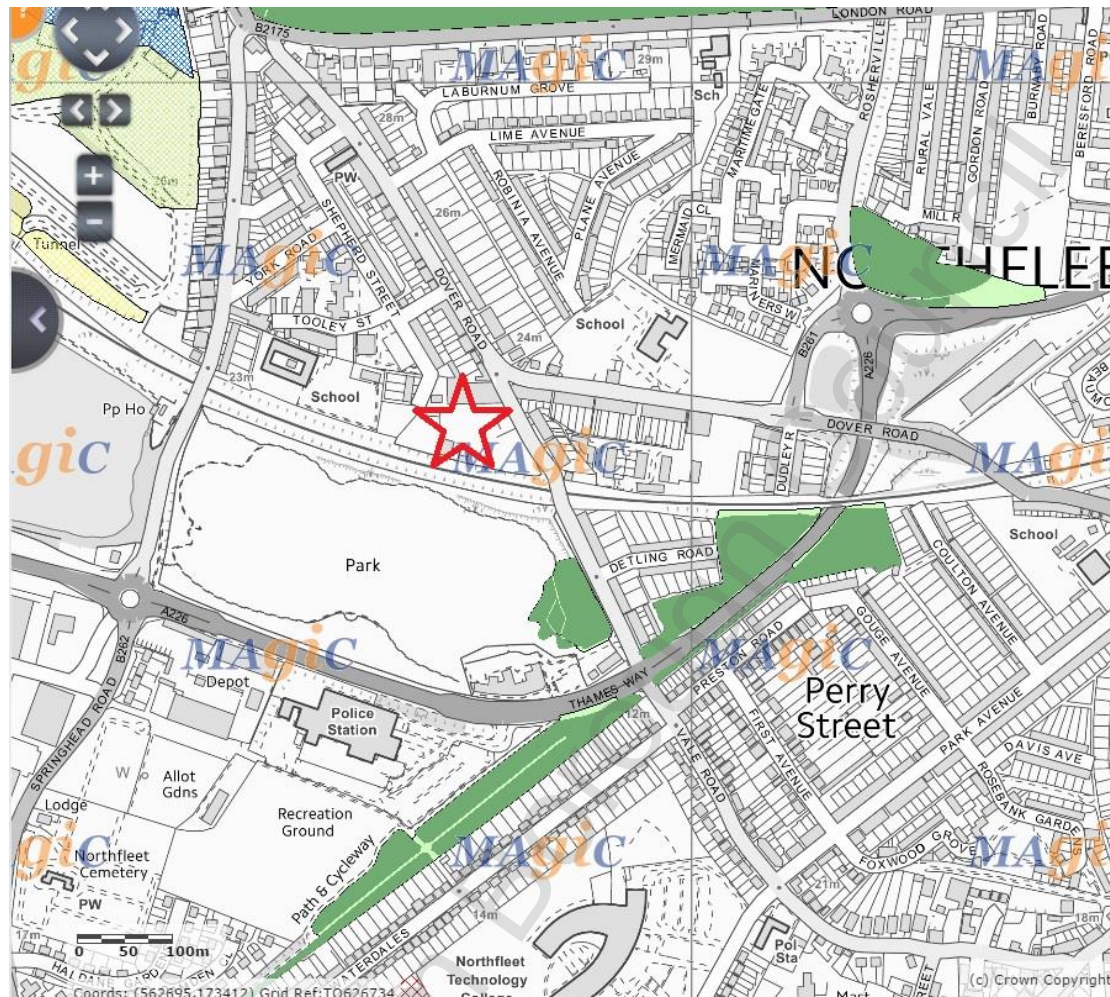


Wildlife Matters Consultancy Unit, 	 N
Reference	Red Line Proposed Development Area
Scale	As shown
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077. Screen shot taken from www.magic.gov.uk by with permission from MAGIC support 6.4.13 Alexandra Hajok
File name	Phase 1 Habitats Map
Key	Red line = Curtilage of development area Black = Buildings Green = trees and scrub (mostly Old Man's beard) Green (hatched) = Railway Line, Linear habitat Yellow = Amenity = Country Park Black dots = hard-standing

Technical Appendix WM05, continued... Impact Risk Zones (IRZ)

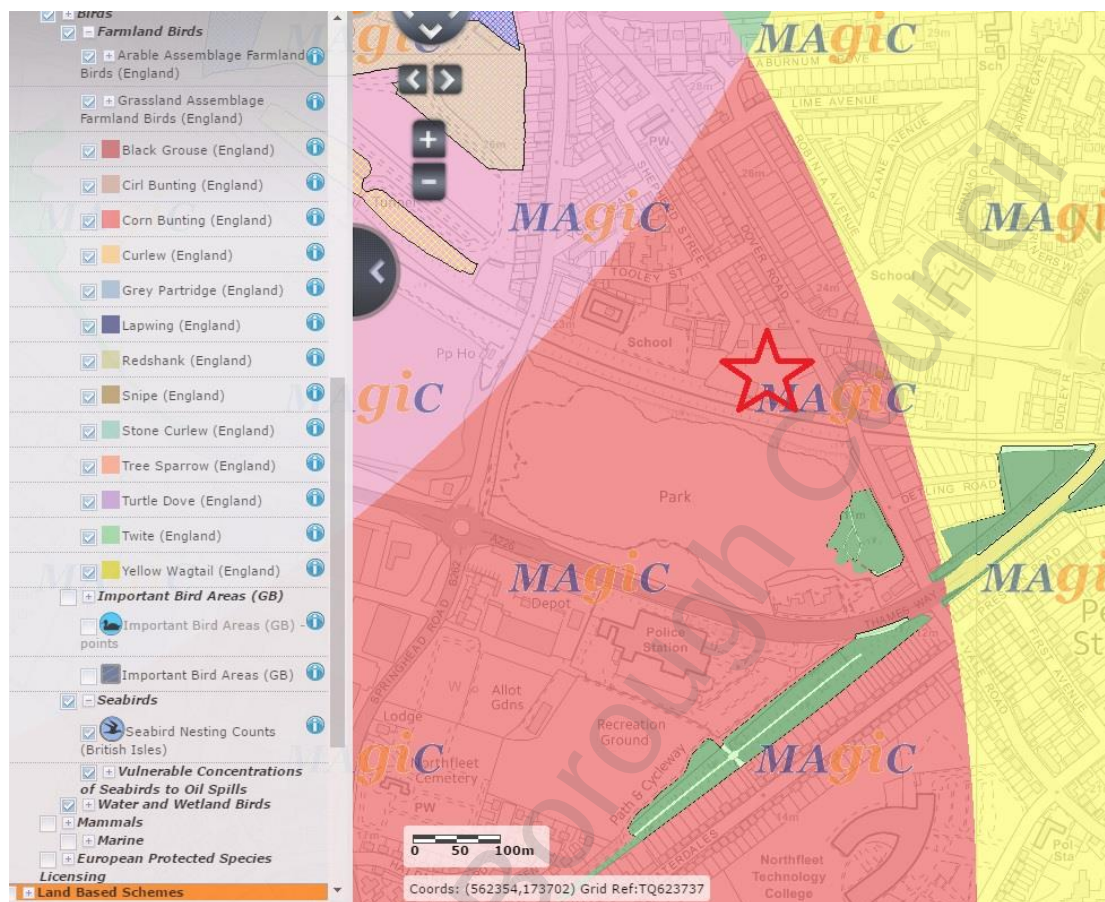


Wildlife Matters Consultancy Unit	
Reference	Impact Risk Zones (IRZ)
Scale	As shown
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077. Screen shot taken from www.magic.gov.uk by with permission from MAGIC support 6.4.13 Alexandra Hajok
File name	Phase 1 Habitats Map
Key	Red star: proposed site Concentric rings: distances from SSSIs

**Technical Appendix WM05, continued...
Biodiversity Action Plan (BAP) habitats**

Wildlife Matters Consultancy Unit, 	
Reference	BAP habitats
Scale	As shown
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077. Screen shot taken from www.magic.gov.uk by with permission from MAGIC support 6.4.13 Alexandra Hajok
File name	Phase 1 Habitats Map
Key	Red star: proposed site Green: woodland BAP habitats

Technical Appendix WM05, continued... Biodiversity Action Plan (BAP) Bird species



Wildlife Matters Consultancy Unit, 	 N
Reference	Bird Species to be alert to
Scale	As shown
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077. Screen shot taken from www.magic.gov.uk by with permission from MAGIC support 6.4.13 Alexandra Hajok
Key	Red star = Site Pale red = Corn Bunting area

Technical Appendix WM05, continued...
Photographs of habitats on and around the site



The exterior of the MOT workshop which opens onto Vale Road



The interior showing the un-boarded roof

Technical Appendix WM05, continued...
Photographs of habitats on and around the site



Backrooms of the MOT workshop showing un-boarded roof (above and below)



Technical Appendix WM05, continued...
Photographs of habitats on and around the site



The flat-topped office buildings



An older part of the buildings with chimney and corrugated hipped roof

Technical Appendix WM05, continued...
Photographs of habitats on and around the site



Interior, upstairs of the office buildings, which were stripped because of water entry (above and below); the high humidity is not conducive to bat roosting.



Technical Appendix WM05, continued...
Photographs of habitats on and around the site



Corrugated workshop building



Wood and brick storage unit – with no signs of bats

Technical Appendix WM05, continued...
Photographs of habitats on and around the site



**Storage unit in west of site showing curtilage and adjacent properties
(the curtilage is covered in old man's beard)**



Technical Appendix WM05, continued...
Photographs of habitats on and around the site



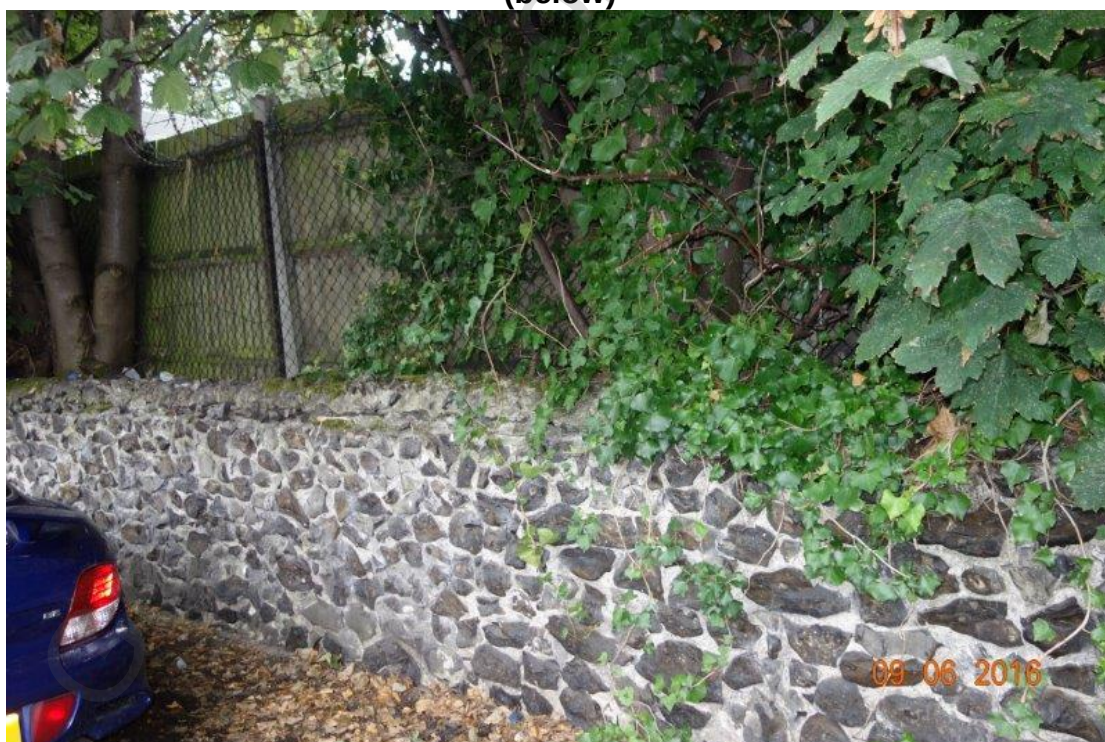
Van and lorry hire yard – neat and tidy with no vegetation



Technical Appendix WM05, continued...
Photographs of habitats on and around the site



The east curtilage has a row of sycamore trees adjacent to a flint wall (below)



Technical Appendix WM05, continued...
Photographs of habitats on and around the site



The site is mostly bare hard-standing (above), with thin-skinned workshop buildings that are damp and not conducive for bat roosting.



Technical Appendix WM05, continued...
Photographs of habitats on and around the site



The site is the north (right) of the sunken railway line (looking west)



The close proximity of dry roosting habitat potential for bats – in the form of residential buildings along Vale Road is likely to be exploited by bats if they are present in the area. Looking from the MOT office upstairs down Vale Road.

Technical Appendix WM06 Flora and Fauna recorded on site

Table 1 Angiosperms (Flowering Plants) recorded from site

DAFOR is a way of indicating abundance, for instance D is for Dominant, A Abundant, F Frequent, O Occasional and R is for Rare. Rare does not mean the species is rare, i.e. endangered; it just means it is rare on site (for instance there might only be a single dandelion on site, therefore it is noted as Rare).

SPECIFIC NAME	COMMON NAME	Tree	DAFOR RATING	NOTES Ornamental and introduced plants (that contribute little for biodiversity are shown in green)
<i>Catapodium rigidum</i>	Hard Poa or Fern Grass		R	
<i>Acer pseudoplatanus</i>	Sycamore	T	O	Introduced species
<i>Agrimonia eupatoria</i>	Hemp Agrimony		O	
<i>Brassica nigra</i>	Mustard, Hedge		O	
<i>Buddleia davidii</i>	Buddleia		F	An Invasive Species (London's Invasive Species Initiative) Introduced
<i>Cirsium vulgare</i>	Thistle, Spear		R	
<i>Clematis vitalba</i>	Old Man's beard		F	
<i>Convolvulus arvensis</i>	Bindweed, Field		R	
<i>Crataegus monogyna</i>	Hawthorn	T	R	
<i>Epilobium arvense</i>	Willowherb		O	
<i>Euphorbia peplus</i>	Spurge, Petty		O	
<i>Gallium aparine</i>	Cleavers		O	
<i>Hedera helix</i>	Ivy		F	
<i>Hordeum murinum</i>	Grass, wall barley		R	
<i>Lactuca serriola</i>	Lettuce, Prickly		O	
<i>Lamium album</i>	Deadnettle, white		R	
<i>Lapsana communis</i>	Nipplewort		R	
<i>Ligustrum sp.</i>	Privet		R	
<i>Linaria purpurea</i>	Toadflax, Purple		R	
<i>Linaria vulgaris</i>	Toadflax, Common		R	
<i>Lolium perenne</i>	Grass, Rye		O	
<i>Mercurialis annua</i>	Mercury, Annual		O	Introduced species
<i>Parietaria diffusa</i>	Pellitory on the wall		O	
<i>Picris echinoides</i>	Ox-tongue, Bristly		O	
<i>Poa annua</i>	Grass, Meadow		F	
<i>Populus hybrid</i>	Poplar, Italian	T	R	
<i>Prunus sp. var.</i>	Damson	T	R	
<i>Ranunculus repens</i>	Buttercup, Common		O	
<i>Rosa sp.</i>	Rose		R	
<i>Rubus complex</i>	Blackberry		O	
<i>Rumex sp.</i>	Dock		O	
<i>Taraxacum</i> , microspecies	Dandelion (microspecies)		O	
<i>Thelycrania (Cornus) sanguinea</i>	Dogwood		R	
<i>Trifolium repens</i>	Clover, white		R	
<i>Urtica dioica</i>	Nettle		O	
<i>Veronica sp.</i>	Speedwell		R	

Technical Appendix WM06, continued.... Flora and Fauna recorded on site

Table 2 Birds recorded from site

KEY

Royal Society for the Protection of Birds (RSPB)'s Lists:

Red List	Species that are Globally Threatened, for which there is high conservation concern. The designation is according to the criteria of the IUCN (International Union for the Conservation of Nature). Represents a population decline in the UK during 1800-1995 with 50% decline over last 25 years.
Amber List	Species showing a moderate decline in the UK over the last 25 years. (from: Royal Society for the Protection of Birds, 1996. <i>Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man</i> . Royal Society for the Protection of Birds, leaflet.). Often a rare breeder with 1-300 pairs in the UK, or rare non-breeder with less than 900 pairs.
Green List	Species that occur regularly in the UK but do not qualify under any of the above criteria.

WCA 1981 Wildlife & Countryside Act 1981 (as amended)

Scientific Name	Common Name	W&CA, 1981	RSPB	Notes
<i>Columba livia</i>	Dove, rock, feral pigeon		Green	
<i>Corvus monedula</i>	Jackdaw		Green	
<i>Larus ridibundus</i>	Gull, Black-headed		Amber	

Table 3 Mammals recorded from site

CLASS MAMMALIA (Mammals)

Latin / Specific Name	Common English Name	Biodiversity Action Plan (BAP) species	Observations
<i>Vulpes vulpes</i>	Fox		

Table 4 Invertebrates recorded from site

CLASS INSECTA

ORDER ORTHOPTERA (GRASSHOPPERS AND CRICKETS)

Latin / Specific Name	Common English Name	Observations
<i>Chorthippus parallelus</i>	Meadow grasshopper	

CLASS INSECTA

ORDER LEPIDOPTERA (BUTTERFLIES and MOTHS)

Latin / Specific Name	Common English Name	Observations
<i>Celastina argiolus</i>	Holly Blue butterfly	
<i>Pieris brassicae</i>	Large white butterfly	
<i>Pieris rapae</i>	Small White Butterfly	
<i>Polygonia c-album</i>	Comma	
<i>Vanessa atalanta</i>	Red Admiral	

OTHER ARTHROPODS

CLASS MOLLUSCA (Slugs and Snails)

Latin / Specific Name	Common English Name	Observations
<i>Cepaea nemoralis</i>	Snail, Brown Ringed	
<i>Helix aspersa</i>	Snail, Common Garden	

OTHER ARTHROPODS

CLASS ARACHNIDA (Spiders and mites)

Latin / Specific Name	Common English Name	Observations
<i>Araneus diadematus</i>	Garden Spider	One only seen

Technical Appendix WM07
The proposed site plan

Wildlife Matters Consultancy Unit, 	 N
Reference	The proposal plan
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077
	STARC-ARCHITECTS

Technical Appendix WM08 Enhancements – Wildlife Boxes and homes



Typical examples of bird and bat boxes



LEFT above: Tree sparrow terrace for gregarious house sparrows
RIGHT above Owl Box



Insect boxes



Hedgehog home Hedgehogs (BAP) need to be encouraged.

Technical Appendix WM08, continued...**Stag beetles (*Lucanus cervus*) BAP species****Lesser Stag Beetle (*Dorcus parallelipedes*)**

Stag beetles (above left) are up to 70mm long – the UK's largest terrestrial beetle
Lesser Stag Beetle (*Dorcus parallelipedes*) Above right

Protection: Now a Biodiversity Action Plan (BAP) species.
Becoming rarer in the London area

Stag beetles are typically found in areas where there are large trees and decaying timber. The numbers of stag beetles have been declining in recent years through loss of habitat. Adult may be seen between May and August, but their larvae burrow in decaying old timbers for up to five years.

What are BAPS?

Species designated as Biodiversity Action Plan species – there are nearly 400 of them.

The Law

Stag beetles are afforded some protection in the UK via the Countryside and Rights of Way Act 2000 (CRoW, 2000). There are moves to get them on the WCA 1981 – the Wildlife & Countryside Act 1981. They are also on Annex II of the EC Habitats Directive. (Three SACs – Special Areas of Conservation – have been designated around them). Biodiversity is also addressed as one of Natural England's 'general purposes' under the Natural Environment and Rural Communities Act 2006 (NERC, 2006). BAPs are also increasingly protected through local policies. So they have both local and national UK, and EU protection.

Applicability of the law

In the UK the CRoW 2000 Act states that 'a listing authority' take 'due regard' of living organisms (para 74 (1) and (2), i.e. of any BAP species. Under EU law BAP species are more strongly protected via the Habitats Directive which is increasingly being more applied to sites. Under 2 (1) of NERC, 2006 one of Natural England's purposes is to '(a) promoting nature conservation and protecting biodiversity.'

Various initiatives are in place for the conservation of the stag beetle. The 'Urban Biodiversity Action Plan for Surrey' (2002) includes the stag beetle in its list of key biodiversity species. There is also a Stag Beetle Action Plan published for the London Area, which states by way of mitigation that 'appropriate management, including the retention of dead wood, for all sites where the beetle is known to occur' should take place.

Why are they protected?

Stag beetle populations have been declining in recent years and they are now rare, in Europe too. This is probably because their habitat has been declining. They breed in old and rotting timbers, often associated with oak trees, woodland, old stumps and hedgerows. The reduction in vegetation with mature trees is likely to have adversely affected their populations.

As the stag beetle larvae feed on old wood for 3-5 years before maturity, the loss of any old timbers from their habitat is likely to have a significant effect on their populations that would be more difficult to recover than a species with an annual turn-over or recruitment.

Technical Appendix WM08, continued...**Typical actions that can be taken in the long-term:**

- retain all old healthy trees on site
- protect all hedgerows and trees with Heras fences during development
- brief the Site Manager (and site workers) about these beetles
- remove dangerous dead timbers from trees (where these are a Health and safety issue only) and make log-piles within the hedgerow, as enhancement for the beetles.

Benefits of such actions

- Fulfils Local Agenda 21 and sustainability targets
- Biodiversity is maintained and enhanced

Enhancements recommended

1. Build a log pile. Gather up fallen timbers and pile them up in a corner or under an existing tree. Or, if tree surgery is required on site, then stack the new timbers up and let them decay over the next few years producing a good habitat for many species of wood-boring beetle include stag beetles.



2. Bury a Bucket of Wood Three steps: i) make holes in the bottom and side of an ordinary bucket, ii) fill the bucket with one quarter soil and the rest woodchips or broken pieces of wood and bark, and iii) dig hole and place bucket with rim flush with surface.



3. Leave a tree stump to rot down naturally.



All photographs © John Feltwell / Wildlife Matters

Technical Appendix WM09 Outcomes

B-Lines

'Putting rivers of bees, flowers and wildlife back into the countryside'
(Buglife – The Invertebrate Conservation Trust)

What are B-Lines?

Strips of wildlife habitat which link existing wildlife areas together to create a network of wildflower-rich lines across the countryside. This is an initiative from *Buglife -The Invertebrate Conservation Trust*, which is pioneering work in Yorkshire, but is being rolled out nationwide.

It is promoted to support pollinating insects (bees, bumblebees, butterflies, true flies etc) that are rapidly declining in Britain at the present time. One in three mouthfuls of food depends on pollinators. The benefits of insect pollinators to the British Economy are valued at £400 million annually.



How B-Lines might look in the UK (From Buglife 2011 leaflet)

How Developers can help?

Developers already assist in regeneration of sites by planting native tree and shrub species. This helps to augment the biodiversity potential of any site, particularly if sites are adjacent to existing green corridors, such as streams, rivers, canals, railways verges, or road verges. In many cases 'soft' buffers are required by bodies such as the Environment Agency (to allow for flood control) so these areas can be planted up with wildflower seed mixes.

The National Planning Policy Framework (NPPF) of March 2012 (in England) seeks to *promote.... ecological networks... wildlife corridors and stepping stones that connect them....*

How Local Planning Authorities (LPAs) can help?

LPAs can recognise the existing green corridors in their area and avoid being developed and plan to add to them via the planning process. Town and country sites can help to connect the gaps between existing broken corridors with strips of wildflower planting.

Typical Planting mix

Common Knapweed, *Centaurea nigra*, Corn Marigold, *Chrysanthemum segetum*, Cow Parsley, *Anthriscus sylvestris*, Meadow Sweet, *Filipendula ulmaria*, Ragged Robin, *Lychnis flos-cuculi*, Sanicle, *Sanicula europaea*,

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Technical Appendix WM09, continued.... Outcomes

Garden Biodiversity



@John Feltwell

There are 3.8 million garden plots in London, covering 37,900 ha. Of this 22,000 ha is covered with vegetation (Smith, 2011). Thousands of species are found in towns and cities.

The London Wildlife Trust believes that gardens represent an important biodiversity element in the urban environment. In *'Making London Wild'* – their strategic vision for the capital (LWT, 2005), they show an aerial photograph of at least 150 urban gardens with the implication that gardens strongly contribute to biodiversity.

GIGL (Greenspace Information for Greater London) – steered by the Environment Agency and seven other conservation groups including the London Wildlife Trust - promote wildlife in garden.

Gardens as part of Buffers - key work in Leicester is typical nationwide

Leicester is a leading city with conservation initiatives, especially with regard to the usefulness of gardens as buffers.

"Gardens comprise around a third of all the green space within Leicester. Although artificial, the extraordinary variety of structure and planting provides many opportunities for wildlife....Gardens designed specifically to attract wildlife, and particularly those managed without pesticides, are therefore crucial in maintaining and enhancing biodiversity in Leicester"....and in relation to their Biodiversity Enhancement Sites' (BES). "can add value to existing ecological sites by creating a buffer zone around them to take pressure off vulnerable areas and by linking sites together (wildlife corridors)." (our underlining)

The UK is signatory to the Rio Convention and via UK law via Circular 01/2005, all with commitments to biodiversity enhancement.

Facts:

- Residential zones can account for more than 60% of urban land (BUGS, 2006).
- 2200 species of flora and fauna recorded in a Leicester garden, managed sympathetically for wildlife (BUGS, 2006). A study 35 yrs ago in a 741 sq m garden
- One third of Leicester's green space is gardens (Leicester Council, 2006).
- 15 million gardens in the UK, covering 270,000 ha (greater than all the NNRs in the UK). Kerry Law, RHS (2006). Also Press Release from English Nature May 2003, and also in Leaflet *'Gardens and Biodiversity'* (English Nature, 2006).

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Acronyms

BAP	Biodiversity Action Plan
CCMGWA	Convention on Conservation of Migratory Species of Wild Animals (Bonn, 1980)
CNHR	Conservation (Natural Habitats &c) Regulations, 1994
CRoW	Countryside and Rights of Way Act, 2000
EN	English Nature (formerly Nature Conservancy Council)
EU	European Union
EUROBATS	Agreement on the Conservation of Bats in Europe
GCN	Great Crested Newt
HAP	Habitat Action Plan
JNCC	Joint Nature Conservation Committee.
LNR	Local Nature Reserve
MAGIC	Multi-Agency Geographic Information for the Countryside
NBN	National Biodiversity Network
NNR	National Nature Reserve
Ramsar	An international wetland site; a place in Iran where the wetland conference was held
RDB	Red Data Book
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SNCI	Site of Nature Conservation Importance
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WCA	Wildlife and Countryside Act 1981
WHS	World Heritage Site

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