EXTENDED PHASE 1 HABITAT SURVEY & GREAT CRESTED NEWT PRESENCE/ABSENCE SURVEY

LAND AT SAINSBURY'S, BATH ROAD, MELKSHAM

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SAINSBURY'S SUPERMARKETS LTD

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0.0 EXECUTIVE SUMMARY

Site Location	The site comprises an area of approximately 3.5ha of land located within the centre of Melksham (NGR ST 902 639).
Previous Surveys	No previous ecological surveys are known.
WYGE Survey	WYGE were commissioned by Sainsbury's to undertake an Extended Phase 1 Habitat Survey and great crested newt presence/absence survey in order to map the key habitats and identify potential ecological constraints to development at the site.
Site Overview	The site is dominated by buildings and hardstanding in the north-eastern half of the site with some amenity planting. The south-western half of the site comprises of ephemeral, tall ruderal, broadleaved woodland, scrub, tree line and rough grassland habitats. A pond is present towards the north-western site boundary and the northern boundary of the site is delineated by the River Avon and associated riparian woodland. The closest non-statutory designated wildlife site is the Conigre Mead Local Nature Reserve (LNR), which forms the western site boundary.
Constraints to Survey	The survey was carried out outside of the optimal period for flowering plants and some plant species may not have been recorded.
Evaluation and Constraints	Habitats on site range from negligible to local value for wildlife and habitats immediately adjacent to the site are up to county value. The site has the potential to support a number of protected species which occur in the area. These are listed below. The potential for them to occur on the site is given in parenthesis: Breeding birds (high), foraging/commuting bats (high), roosting bats (moderate), reptiles (high), water voles (low), otters (moderate) and badgers (moderate). The presence of protected species will affect the overall ecological value of the site. No great crested newts were recorded during the presence/absence survey.
Recommendations	Where the proposed works on site will the impact specific habitats, the following further surveys are recommended: ▪ Bat roost assessment & emergence/return survey ▪ Reptile presence/absence ▪ Otter survey

1.0 INTRODUCTION

In March 2008, WYG was commissioned by Sainsbury's to undertake an Extended Phase 1 Habitat Survey of land at Sainsbury's, Bath Road, within Melksham town centre. The assessment comprised:

- A review of readily available databases
- Site-specific ecological information gained from statutory and non-statutory consultation
- A field survey including an extended Phase 1 habitat survey and
- Great crested newt presence/absence survey

The consultation provided the ecological context for the main field survey. The Extended Phase I Habitat Survey was carried out in March 2008 by WYG Senior Ecologist Nancy Davies. The great crested newt presence/absence surveys were conducted between March and May 2008.

This report presents the findings of the consultation and field survey, highlights any constraints to development and recommends further studies, where appropriate.

1.1 Site Description

The site comprises approximately 3.5ha of land located within the centre of Melksham (NGR ST 902 639; refer to Sketch 1). In the north-eastern half of the site, the site is dominated by buildings and hardstanding with some amenity planting. The south-western half of the site is comprised of ephemeral vegetation, tall ruderals, broadleaved woodland, scrub, a tree line and rough grassland habitats. A pond is present towards the north-western site boundary. The northern boundary of the site is delineated by the River Avon and associated riparian woodland.

The site lies within the conurbation of Melksham. The A3102 runs along the eastern boundary with the River Avon forming the northern boundary to the site. A cemetery, residential housing with gardens and commercial buildings form the southern site boundary, whilst the western site boundary is bordered by Conigre Mead Local Nature Reserve (LNR).

2.0 METHODOLOGY

2.1 Desktop Study

The Multi-Agency Geographical Information for the Countryside (MAGIC) website was consulted for information on statutory and non-statutory site designations in the area.

The National Biodiversity Network (NBN) website was also consulted for information on records of protected and notable species in the area.

The Local Biodiversity Action Plan (LBAP), the *Wiltshire Biodiversity Action Plan,* was consulted for information on priority habitats and species for conservation in the area.

2.2 Consultation

The Wiltshire and Swindon Biological Records Centre (WSBRC) were asked to provide records of rare and protected species, and designated and non-designated sites within 2km (4km for bats). West Wiltshire District Council were contacted to ascertain whether there are any Tree Preservation Orders (TPOs) on site and the Environment Agency (EA) were contacted with respect to important river corridor habitats and records of any aquatic/semi-aquatic, protected species on site or within 2km.

2.3 Field Survey

Extended Phase I Habitat Survey

The site was walked by a WYGE ecologist on 13 March 2008. All habitats within the study area were assigned to one of the categories defined by the Joint Nature Conservation Committee (JNCC) in *Handbook for Phase 1 habitat survey* (2003). These habitat types were then mapped. Target notes were used to indicate the locations of particular features. Where possible, the survey was extended to include a list of dominant plant species for each habitat type and to record signs of protected species. However, the survey was undertaken outside of the optimal season for surveying plants.

Each habitat type was then assessed for its potential to support rare and protected species. The assessment was based on the ecologist's understanding of the requirements of such species gained from academic literature and personal experience.

Great crested newt presence/absence survey

A great crested newt survey was carried out within the water bodies on site and within Conigre Mead LNR between March and May 2008 and followed great crested newt survey guidelines (Froglife, 2001; English Nature, 2001; Gent & Gibson, 2003).

Bottle-trapping

Bottle-trapping was carried out over four nights. A record was made of the minimum overnight temperature and traps were only set when the temperature was above 5^{o}C. Traps constructed from 2 litre plastic bottles were secured around the pond's margins at a density of approximately one bottle every two metres, where possible. Bottles were angled to allow for an exchange of air. The

designs followed those given in Gent and Gibson (2003). Traps were set in the evening and retrieved the following morning. Any newts found were identified, counted and recorded before being released.

Torch searches

A search of the ponds was conducted by torch light at night. All accessible stretches of the banks of the ponds were walked slowly. Approximately 2m sections of the ponds were surveyed at any one time using a high-powered torch (500,000 candlepower), which was shone into each pond concentrating on the fringes to check for great crested newts. When the surveyor was satisfied that the pond section had been adequately inspected, they moved to the next 2m section. Newts were identified to species and sex (where possible) and total counts made.

Egg searches

During the collection of the bottle-traps, submerged aquatic vegetation was searched for evidence of wrapped great crested newt eggs. The search was undertaken where suitable vegetation was accessible, for several minutes, in the vicinity of the trap locations. Care was taken not to damage marginal vegetation. In the event of great crested newt eggs being reliably identified, the egg search was terminated.

Personnel

All surveys were undertaken by experienced staff of WYGE, working under a Science, Education and Conservation Licence (Licence number: 20081884) issued by Natural England to Senior Ecologist, Nancy Davies.

3.0 RESULTS

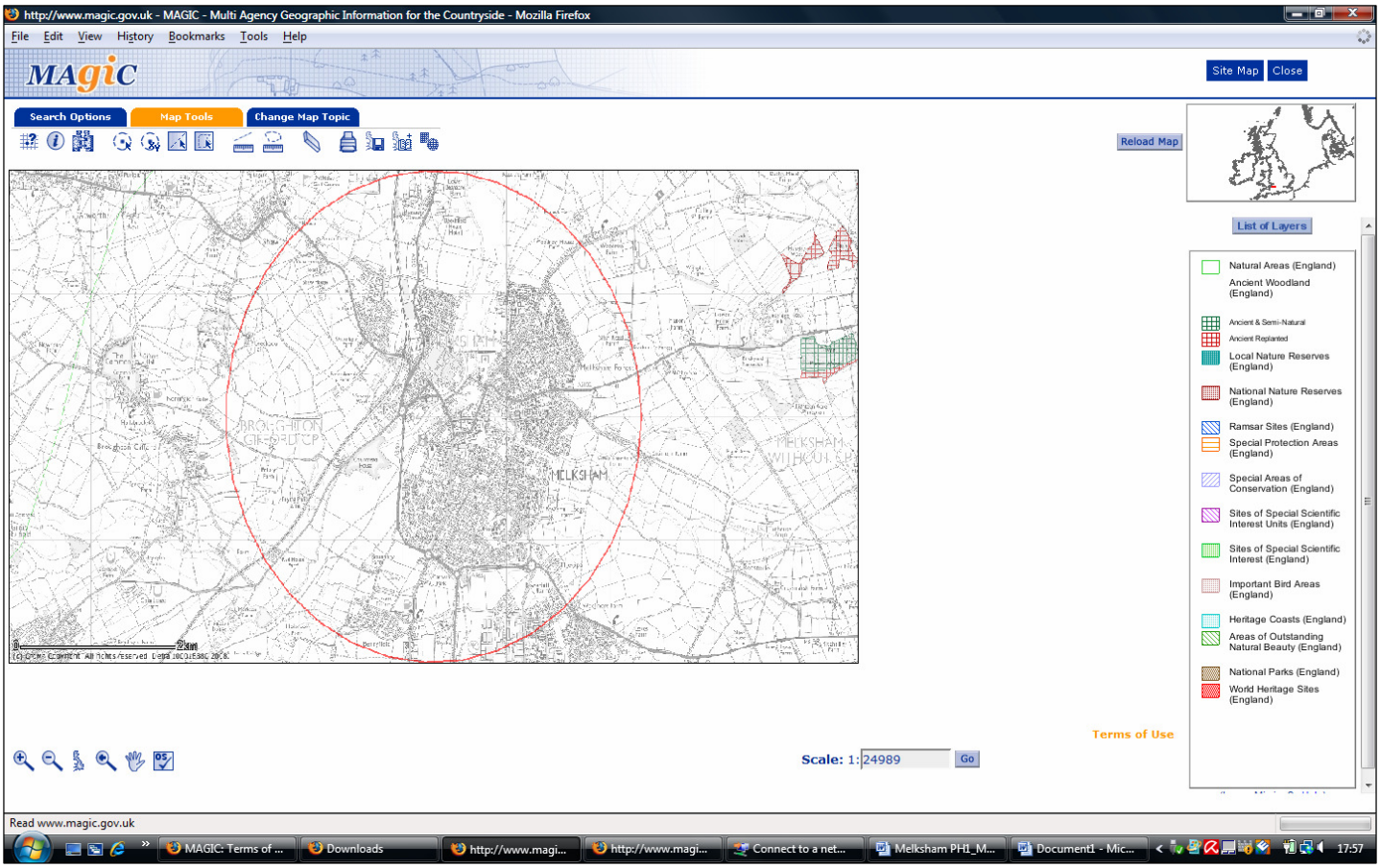
3.1 Desktop Study

Within the UK Biodiversity Action Plan (BAP) priorities are set for safeguarding nationally and locally important wildlife. Local Biodiversity Action Plans (LBAPs) ensure that national plans are translated into effective action at the local level by establishing actions and targets for the characteristic species and habitats of each local area. *The Wiltshire Biodiversity Action Plan* identifies priority habitats and species for Wiltshire. Those potentially relevant to the site are:

Rivers, stream and associated habitats
Standing open water
Bats

The MAGIC website revealed that there are no statutory sites within 2km of the site boundary (refer to Figure 1 below).

Figure 1. The MAGIC map illustrates there are no statutory sites within 2km of the site boundary



The National Biodiversity Network (NBN) gateway confirmed the following protected and notable species exist within the 10km squares ST86 and ST96:

Bechstein's (*Myotis bechsteinii*), Brandt's (*Myotis brandtii*), brown long-eared (*Plecotus auritus*), whiskered bat (*Myotis mystacinus*), natterer's (*Myotis nattereri*), common pipistrelle (*Pipistrellus pipistrellus*), and serotine bats (*Eptesicus serotinus*); all of which are UK BAP species have been recorded approximately 3km north-west of the site. In addition to this, Daubenton's bat (*Myotis daubentonii*) have been recorded at a number of locations throughout grid square ST86, the closest of which was along the River Avon, approximately 500m north of the site. Greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe bat (*Rhinolophus hipposideros*) have been recorded at a number of locations in the area, the closest of which is approximately 3.5km north-west of the site.

Records of badger (*Meles meles*) exist within grid square ST86.

There are records of otter (*Lutra lutra*), approximately 3km north-west of the site.

Further to this, water vole (*Arvicola terrestris*) have been recorded at a number of locations within grid square ST86, the closest record is within drains at Broughton Gifford, approximately 1.5km north-west of the site.

There are records of great crested newt (*Triturus cristatus*) within Bradford-on-Avon, approximately 8.5km south-west of the site, and 5.5km north-east of the site. In addition to this, a number of reptile species have been recorded at unspecified locations within grid square ST86 and ST96, including adder (*Vipera berus*), common lizard (*Lacerta vivipara*), grass snake (*Natrix natrix*) and slow worm (*Anguis fragilis*).

Kingfisher (*Alcedo atthis*) and red kite (*Falco columbarius*); Wildlife and Countryside Act Schedule 1 bird species, and white-clawed crayfish (*Austropotamobius pallipes*) have been recorded within a drain, approximately 10km north-west of the site.

3.2 Consultation

WSBRC informed WYG that the proposed development site does not lie within any statutory or non-statutory designated sites. There are however two designated sites within 2km of the site and these include Conigre Mead LNR, which is a Wiltshire Wildlife Trust (WWT) reserve and Norrington Common.

Conigre Mead LNR lies on the western site boundary and is comprised of a grassy meadow habitat with wildflower-rich grassland, an ancient willow tree and a series of ponds. A variety of Schedule 1 birds utilise the site, including kingfisher (*Alcedo atthis*), redwing (*Turdus iliacus*) and fieldfare (*Turdus pilaris*). Grass snake have been recorded within Conigre Mead LNR, along with a variety of Red List Birds of Conservation Concern (BoCC); linnet (*Carduelis cannabina*), lesser-spotted woodpecker (*Dendrocopos minor*), reed bunting (Emberiza schoeniclus), song thrush (*Turdus philomelos*), house sparrow (*Passer domesticus*), and starling (*Sturnus vulgaris*).

Norrington Common, a neutral grassland habitat is situated approximately 2km north-west of the site.

A number of bat species have been recorded within 4km of the study area, these include; Natterer's bat (*Myotis nattereri),* serotine*,* common pipistrelle*,* soprano pipistrelle *(Pipistrellus pygmaeus),* brown long-eared bat*,* greater horseshoe bat and lesser horseshoe bat*.* The closest record is for an unknown bat species recorded approximately 1.5km north-east of the site.

There are a number of records of County Notable plant species within 2km of the site boundary, including pink water-speedwell (*Veronica catenata*), great burnet (*Sanguisorba officinalis*), greater yellow-cress (*Rorippa amphibia*), pale toadflax (*Linaria repens*), and various-leaved water-starwort (*Callitriche platycarpa*).

WSBRC informed WYG that slow worm and viviparous lizard are present within grid square ST9064, whilst hedgehog (*Erinaceus europaeus*) and small blue (*Cupido minimus*), all UK BAP species have been recorded within grid square ST9162. In addition to this, great crested newt has been recorded within a residential garden approximately 1.2km east of the site.

Nationally rare dragonfly; *Libellula* species and water vole have been recorded on the River Avon, approximately 500m northeast of the site.

WSBRC informed that there are a number of badger records within 2km of the site.

Wiltshire Badger Group confirmed that there were no records for badger within a 2km radius of the site.

West Wiltshire District Council informed that there are no TPOs on site; neither does the site lie within a Conservation Area.

The Environment Agency informed that an otter holt had been created on the banks of the River Avon, on the northern site boundary; however the Environment Agency are unsure as to whether it is being used. A stand of Japanese knotweed (*Fallopia japonica*) is present on site, adjacent to the bridge.

3.3 Field Survey

3.3.1 Extended Phase I Habitat Survey

Detailed Description of Site: Habitats

The study area comprises the following habitats on site, listed in order of extent, and adjacent habitats (see Sketch 2 for locations);

- Buildings and hardstanding
- Semi-improved grassland
- Ephemeral vegetation
- Riparian embankment
- Amenity planting
- Broadleaved woodland
- Scrub
- Pond
- Standard trees
- Adjacent habitats

Buildings and hardstanding
The north-eastern half of the site is largely dominated by buildings and hardstanding. The hardstanding is used as a car park for Sainsbury's store, a forecourt for the petrol filling station and access roads. These areas are frequently disturbed by the public.

There are two modern buildings on site. Building 1 is a one-storey, flat-roofed structure, operating as a petrol filling station. Building 2 is an open plan supermarket, with a flat-roof. Both structures are well maintained with no obvious access points suitable for roosting bats. The buildings are isolated from surrounding vegetation by hard standing and are also well lit (refer to Plate 1), which further limits the use of these structures by roosting bats. It should however be noted that an intensive bat roost assessment was not carried out.

Plate 1- Sainsbury's store with amenity planting around the borders of the hardstanding.

Semi-improved grassland

An area of semi-improved grassland, which is largely rank and interspersed with herbs, is situated within the flood storage zone in the south-western half of the site. Grasses include perennial rye-grass (*Lolium perenne*), cocks-foot (*Dactylis glomerata*), Yorkshire-fog (*Holcus lanatus*) and creeping bent (*Agrostis stolonifera*).

Herbs include ribwort plantain *(Plantago lanceolata)*, common nettle (*Urtica dioica*), herb robert, cleavers (*Galium aparine*), wound-wort sp. (*Stachys* sp.), figwort sp. (*Scrophularia* sp.), white dead-nettle (*Lamium album*) and there is an abundance of moss. Towards the footpaths, the grassland is shorter in structure (refer to Plates 2 and 3) and is dominated by wood dock (*Rumex sanguineus*) and daisy (*Bellis perennis*) with limited species diversity.

Within the grassland are patches of small areas of woodland, scrub and a number of scattered standard trees, including crack willow (*Salix fragilis*), willow sp. (*Salix* sp.) and field maple (*Acer campestre*). In addition, a pond is situated towards the northern boundary of the grassland. This mosaic of habitats could provide nest sites for birds and suitable foraging and refuge for reptiles, amphibians and badgers.

Plate 2-Tall ruderal grassland with secondary

Plate 3-The rough grassland has a tussocky,

woodland to the left of the photo. unmanaged structure.

Ephemeral vegetation

Situated between the car park to the east and a tree line of poplars (*Populus* sp.) to the west, is an area of ephemeral vegetation. This habitat is largely unmanaged and as a result is heavily dominated by herbaceous plants including ribwort plantain (*Plantago lanceolata*), bristly oxtongue, lesser celandine (Ranunculus ficaria) and creeping buttercup (*Ranunculus repens*). Taller stands of ruderals and grasses including common ragwort (*Senecio jacobaea),* white dead-nettle, wood dock, cleavers, tufted hair-grass and common nettle are also present in this area.

The ephemeral vegetation is likely to support a number of species of invertebrates and could act as a foraging area for reptiles, bats and other small mammals.

Riparian embankment

Situated along the northern site boundary is a riparian embankment, approximately 5m in width (refer to Plate 4). The silty banks support a number of herbs including lesser celandine, common nettle, burdock, wood dock and hemlock (*Conium maculatum*) with mature alder and willow trees comprising the canopy.

The embankment of this habitat has the potential to support reptiles, such as grass snake. In addition, otter could use the habitat as a corridor route and the artificial holt could potentially serve as a refuge for this species. It is possible that bats could roost in a number of the mature trees along the embankment and that this linear feature is used as a commuting corridor and foraging route.

Plate 4-The riparian embankment along the northern site boundary.

Amenity planting

Amenity planting is prominent around the north-eastern half of the site, particularly in the area surrounding the Sainsbury's store and buffering the River Avon from the car park. These borders are well managed with woodchip at the base of the shrubs.

The well maintained borders are composed predominantly of ornamental species including box (*Buxus sempervirens*), cotoneaster (*Cotoneaster sp.*), viburnum (*Viburnum sp.)* and snowberry (*Symphoricarpos albus laevigatus*).

A narrow stretch of amenity grassland is present between the shrub borders and the riparian embankment of the River Avon. The amenity grassland is dominated by perennial rye-grass with herbaceous species of ribwort plantain, daisy, clover sp. (*Trifolium* sp.) and yarrow (*Achillea millefolium*).

The amenity planting presents suitable nesting and foraging opportunities for a variety of common bird species.

Broadleaved Woodland

An area of secondary woodland is situated within the flood storage area and along the south-western boundary of the site (Plate 2). The woodland comprises a thin stand of young broadleaved species including field maple, ash (*Fraxinus excelsior*), willow (*Salix* sp.), elder (*Sambucus nigra*), hazel (*Corylus avellana*) and silver birch (*Betula pendula*). The understorey and ground flora consists of rose (*Rosa* sp.), ivy (*Hedera helix*), herb robert (*Geranium robertianum*), lesser celendine, cleavers, burdock (*Arctium* sp.) and snowdrops (*Galanthus nivalis*). Dead wood and rocks were present within the woodland and could provide a refuge for reptiles, which may potentially be present on site.

A stone wall delineates part of the western boundary of the woodland (TN1). A number of crevices were noted in the structure, which could provide suitable roosting opportunities for bats and gaps towards the base of the wall have the potential to act as a hibernacula to reptiles and amphibians.

The broadleaved woodland provides suitable habitat for a variety of wildlife, including grey squirrel (*Sciurus carolinensis*) and wood mouse (*Apodemus sylvaticus*), signs of which were recorded on site during the survey. In addition, the woodland could also provide foraging and nesting opportunities for a variety of birds, including those noted during the survey; robin (*Erithacus rubecula*), blackbird (*Turdus merula*), collared dove (*Streptopelia decaocto*), magpie (*Pica pica*) and long-tailed tit (*Aegithalos caudatus*).

Scrub

The scrub is predominantly situated towards the south-western boundary of the site, adjacent to the flood storage area and is dominated by stands of bramble (*Rubus fruticosus* agg.), hawthorn (*Crataegus monogyna*) and common nettle with a herb layer comprising cleavers, elder, willowherb species (*Epilobium* sp.), teasel (*Dipsacus fullonum*), ivy, bristly oxtongue (*Picris echioides*) and selfheal (*Prunella vulgaris*).

The scrub is likely to support a variety of breeding birds and may act as a hibernacula for reptiles and amphibians on site.

Pond

There is one pond on site situated within the flood storage area, whilst three additional ponds are situated in the adjacent habitat within Conigre Mead LNR, on the western site boundary.

The pond on site (P1) is approximately 15m long, 8m wide and an average of 0.75m deep. It is bounded by a number of young willows along most of its length (refer to Plate 5). The water within the pond was turbid at the time of survey with reedmace sp. (*Typha* sp.) encroaching. The banks of the pond comprise yellow flag (*Iris pseudacorus*), marsh marigold (*Caltha palustris*), meadow sweet (*Filipendula ulmaria*) and tufted hair-grass (*Deschampsia cespitosa*).

The pond could provide a habitat for a number of freshwater invertebrates, and foraging and nesting opportunities for coot (*Fulica atra*), moorhen (*Gallinula chloropus*) and mallard (*Anas platyrhynchos*). The pond on site and those within the adjacent habitat were assessed for their potential to support great crested newts and the survey results from the presence/absence are detailed below in section 3.3.2.

Plate 5 - Willow trees border the edge of pond 1 (P1).

Standard trees

A number of standard trees are present within the south-western half of the site. The characteristics of each of the trees was assessed for their potential to support roosting bats and the results are summarised in Table 3.3.1. Trees with characteristics such as cracked bark, arboreal ivy and dead limbs with suitable cavities (i.e. woodpecker and rot holes) for roosting bats were given a value of 'High'.

A tree line largely dominated by a young stand of poplar (refer to Plate 6) with an understorey of hawthorn, elder, bramble, common nettle, lesser celandine and cleavers separates the ephemeral vegetation from the rough grassland to the south-west. The poplars have straight, clean stems and trunks, offering no obvious roosting opportunities for bats.

Plate 6 - The tree line of poplar

Table 3.3.1. A summary of the tree characteristics and bat roosting potential for standard trees on site.

Tree Number	Name	Characteristics	Bat roosting potential
T1	Crack willow	Splits in branch, cracked bark, holes in wood and dead limbs	High
T2	Willow	Small multi-stemmed tree with no obvious bat roosting features such as cracked bark and ivy.	Low
T3	Crack willow	Small tree with some cracks in the bark and dead wood.	Low / medium
T4	Willow	Small tree and multi-stemmed with one small hole present.	Low
T5 –T9	Willow	Straight, clean limbs with no obvious features to support roosting bats.	Negligible
T10	Field maple	Smooth, thick branches with no obvious bat roosting features present.	Negligible

Adjacent habitats

Conigre Mead LNR forms the western site boundary and supports a number of habitats, including three ponds and grassland (refer to Plate 7). The ponds within the reserve were also surveyed during the great crested newt presence/absence survey.

Plate 7- Conigre Mead LNR nature board summarises the wildlife present in the reserve.

Pond 2 is approximately 20m long, 20m wide and contains multiple inlets. The edges of the pond are vegetated with yellow flag, water-starwort, watermint (*Mentha aquatica*), fool's watercress (*Apium nodiflorum*) and marsh-marigold. The water was approximately 1m in depth and largely covered in floating fairy moss (*Azolla filiculoides*) and duckweed (refer to Plate 8). Willow trees and hawthorn scrub are present around the margins and provide partial shade to the pond (refer to Plate 9).

Pond 3 is approximately 10m by 3.5m and contained slightly turbid water to a depth of approximately 0.4m at the time of survey. The waterbody was littered with significant leaf debris. The low banks were vegetated with willowherbs, whilst on top of the bank, willow trees and hawthorn scrub cast a considerable amount of shade over the pond.

Pond 4 is approximately 5m long and 2.5m wide and is heavily encroached with reedmace, soft rush (*Juncus effusus*) and hard rush (*Juncus inflexus*) at the margins. Emergent and floating aquatic species included duckweed (*Lemna* sp.), water-starwort sp. (*Callitriche* sp.) and watermint towards the edges. At the time of survey the water was clear and unshaded, and was approximately 0.2m deep.

All three ponds within the nature reserve provide limited foraging and nesting opportunities for a variety of waterbirds, including kingfisher, little egret, and pochard (refer to section 3.2).

Plate 8- Pond 2 contained semi-turbid water with large amounts of aquatic vegetation around the periphery of the pond.

Plate 9 - A mature willow on the bank of pond 2 provides partial shade over the pond.

Adjacent to the south-western boundary of the site is a cemetery with a dry-stone wall around the boundary, which contains a number of crevices and voids (TN1). These voids could act as a potential roost sites for bats and provide hibernacula for reptiles and amphibians.

The River Avon flows adjacent to the northern site boundary (refer to Plate 10), and it is possible that bats and otter use the river as a corridor and for foraging habitat. Waterbirds are likely to nest along the embankments.

The southern site boundary consists of a mixture of land use, including residential properties with gardens, a cemetery and commercial buildings. The residential gardens are likely to support invertebrates and consequently could act as a foraging area for birds and bats. Gardens usually contain a range of wildlife friendly shrubs, rockeries, water features and compost heaps which could support reptiles, amphibians and breeding birds.

Plate 10 – The River Avon to the right of the photo.

Detailed Description of Site: Protected Species Potential
In this section, the 'potential' for the site to support any one species is based purely on the *existence of habitat that may be theoretically appropriate* for the animal concerned. It is important to note that the terms 'moderate' or 'high' do not refer to *likelihood* of animals being present, but merely to the *capacity* of that habitat, in its own right and in the absence of other factors, to support such animals.

Bats
A number of bat species have been recorded foraging and roosting within 4km, and these species may use the site. In addition there are a number of mature trees scattered around the site, including around the pond, within the rough grassland, within the broadleaved woodland and within the LNR adjacent to the site. These trees provide potential roosting opportunities to bats, including cavities, cracked bark and deadwood. The habitats on site have **moderate** value to roosting bats.

It is likely that the site provides considerable foraging and commuting habitat for local species of bat, in particular the structurally diverse rough grassland, the treeline of poplar, standard trees and the water bodies (pond and River Avon corridor) as they are likely to yield relatively high numbers of invertebrate prey. Therefore the site has **high** value to foraging/commuting bats.

Great crested newt
The pond on site offers a suitable habitat for breeding amphibians including great crested newts, whilst the ponds within the adjacent habitat to the west of the site, also appear suitable for great crested newts, due to the dimensions of the ponds, the water quality and the presence of suitable vegetation for egg-laying. In addition, there are records of great crested newts within 2km of the site.

The rough grassland, scrub and broadleaved woodland offer suitable terrestrial habitats for foraging, dispersal and refuge and therefore the site appeared to have **high** value to great crested newts. However, results from the great crested newt survey (refer to section 3.3.2 below) found that whilst a number of amphibians are present on site, great crested newts are not.

Reptiles
The site comprises a matrix of suitable terrestrial and aquatic habitats which could provide feeding, basking and hibernating opportunities for common species of reptile, such as grass snake and slow worm. Furthermore, the site is linked to similar suitable habitat to the west and south of the site, which together provides an uninterrupted corridor, which encourages migration and colonisation by local reptiles known to be present within 2km of the site. The site has **high** value to reptiles.

Breeding birds
The Amber List BoCC, dunnock was recorded on site and may use the habitats present for foraging and breeding. In addition a number of Red and Amber List BoCC birds are known to occur in the area and they could potentially use the site

for foraging and nesting, particularly the broadleaved woodland, scrub, treeline and amenity planting habitats.

In particular the adjacent LNR offers habitat to a variety of Red List BoCC which may also use the site for foraging and nesting. The site has **high** value to breeding birds.

Badgers
Numerous badger records are present within 2km of the site. The broadleaved woodland, rough grassland and scrub may provide habitats for badgers to forage, however no definitive signs of badger (setts, latrines, foraging signs) were noted on site. A number of mammal paths were present on site, however these may be attributable to badger or other mammals such as fox or domestic cat. The site has **moderate** value to badgers.

Water voles
The River Avon adjacent to the site offers limited potential for water voles. Water levels vary considerably, which would negatively impact burrow construction and the watercourse has a strong flow, which may impede colonization. In addition, the embankment habitat is largely shaded and limited in marginal vegetation on which water voles feed. Whilst there are records of water vole within 2km of the site, it is likely that roads, conurbations and fast flowing stretches of the River Avon may act as barriers to dispersal to the habitats on site. The site has **low** value to water vole.

Otter
The River Avon offers a potential commuting route for otter, with records of the species within 3km of the site. In addition, the Environment Agency have created an artificial otter holt within the river bank on the northern site boundary. No signs of otter were noted along the embankment on site during the survey however the River Avon corridor as a whole has **moderate-high** value to otter.

Other fauna
Bumble bees (*Bombus sp*) were noted on site and it is likely that the site supports a variety of invertebrates within the rough grassland and scrub. In addition, frogspawn was noted within the ponds of the nature reserve indicating that the waterbodies are suitable for breeding amphibians. The site has **moderate** value to other fauna.

3.3.2 Great crested newt presence/absence survey

No great crested newts were recorded in the four ponds during the survey. Details of the survey results are provided in Table 2 below.

Table 2. Results of the great crested newt presence/absence

Pond	Visit 1	Temp: 11.7°C	Visit 2	Temp: 7°C	Visit 3	Temp: 9.7°C	Visit 4	Temp: 8.4°C
	02/04/08 – 03/04/08		15/04/08 – 16/04/08		23/04/08 – 24/04/08		30/04/08 – 01/05/08	
	Torching	Bottles	Torching	Bottles	Torching	Bottles	Torching	Bottles
1	11CT;	1mSN	8mSN;	1mSN;	n/a	1mSN; 1CT	4mSN;	1fSN;

	13CF; frogspawn		5fSN; tadpoles; stickleback	1fSN; 3-spined stickleback		tadpoles; 1 GS obs.	13fSN; tadpoles	tadpoles; 3-spined stickleback
1a	2CT; 6CF	0	Dried out					
2	1CF; 1CT	tadpoles	1CF; tadpoles	tadpoles; 3-spined stickleback	n/a	1mSN; tadpoles; 3-spined stickleback	0	tadpoles; 3-spined stickleback
3	2CF; 1GS obs.; 3-spined stickleback	0	0	1CF	n/a	0	0	0
4	1CF	3mSN	0	9mSN; 6fSN	n/a	1CF	7mSN; 2fSN	7mSN; 3fSN

Key
CT *Common toad*
CF *Common frog*
SN *Smooth newt*
GS *Grass snake*
m *Male*
f *Female*
n/a *Not applicable – torches were not available*
obs. *Observed*

All ponds were found to support breeding amphibians, including common frog, common toad and smooth newt. In addition, an adult grass snake was observed in two of the ponds (P1 on site and P3 off site).

With the exception of pond P1a, which dried out after the first site visit, all four ponds provide suitable aquatic habitat for amphibians with submerged vegetation for egg-laying and presence of aquatic invertebrate prey. Predators of amphibians including waterfowl (mallards) were noted on pond P2, which possible limits the presence of amphibians. In addition, the presence of stickleback, which also predate amphibians and their young, could further limit the value of the waterbodies to amphibians.

Terrestrial habitat, including the woodland, scrub, grassland and associated features, in the vicinity of the ponds provides suitable refuge, foraging and hibernating opportunities for amphibians.

4.0 NATURE CONSERVATION EVALUATION

4.1 Preliminary Evaluation Methodology

At this stage, absence of faunal data limits evaluation of the site's nature conservation importance which would need to be updated following additional surveys (see section 6.0). The nature conservation value was assessed with reference to a range of guidelines including:

- The UK BAP (from www.ukbap.org.uk);
- The Nature of Devon: Devon Biodiversity Action Plan; and
- Criteria based on Ratcliffe (1977); and
- Criteria based on the guidelines for ecological impact assessment developed

by the Institute of Ecology and Environmental Management (IEEM, 2006).

Each habitat and species is assigned to one of the six categories that have been defined by the Institute of Ecology and Environmental Management (IEEM, 2006). These categories represent the geographical importance of the receptor. The categories are;

- International value
- National value
- Regional value
- County value
- District value
- Local value
- Within the zone of influence only

4.2 Designated Sites

There are no statutory designated sites within the site boundary; the closest site is Conigre Mead LNR located adjacent to the western site boundary. Conigre Mead LNR is of **local value**.

4.3 Habitats

The nature conservation importance of the various habitats within the site are evaluated below.

Buildings & hardstanding
The buildings and hardstanding dominate the eastern half of the site. The buildings are all modern, with limited gaps between the fascia boards and roofs, and there are no apparent cracks in walls or within the roofs, suitable for roosting bats. In addition, the buildings are largely isolated from surrounding habitat by hardstanding, which limits connectivity to bats. There maybe some limited opportunities for nesting birds on the buildings, however no evidence was noted during the survey. The buildings and hardstanding are of **negligible value**.

Semi-improved grassland
The semi-improved grassland is generally structurally diverse, providing suitable habitat for invertebrates, birds, mammals and reptiles, species of which were noted on site during the survey. Grassland potentially provides suitable terrestrial habitat to amphibians. This type of unmanaged habitat is likely to be limited in the immediate area although its extent is regional. Semi-improved grassland is of value **within the zone of influence only**.

Ephemeral vegetation
The ephemeral vegetation could support a range of invertebrates and common reptiles. This habitat is common and widespread in the UK and whilst it provides potential resources for wildlife, it is easily recreated and therefore of value **within the zone of influence** only.

Riparian embankment
The riparian embankment and associated tree line may provide suitable habitat for reptiles and breeding birds. It is possible that otters and bats use this linear features as a wildlife corridor for foraging and dispersal. In addition, standard

trees along the embankment potentially provide roosting opportunities to bats. This fringing aquatic embankment adds to the diversity of habitats on site and is likely to supports a range of species. Rivers (and associated habitats) are an important habitat within the Wiltshire LBAP. The riparian embankment is considered to be of **local** value.

Amenity planting

Amenity planting is present around most of the car park hardstanding and Sainsbury's store. Some areas of vegetation within the amenity planting may provide limited foraging or nesting opportunities to birds, however the incidental disturbance in the immediate supermarket environment may limit the value of these areas to some breeding birds. The amenity planting is of value **within the zone of influence only**.

Broadleaved woodland

The area of broadleaved woodland may offer structures that could be used as hibernacula for reptiles and amphibians and nesting sites for breeding birds. It could also provide local wildlife with connectivity across the site. However, the small size of this habitat and its immature status limits its value, therefore is of value **within the zone of influence only**.

Scrub

The scrub is predominantly situated adjacent to the broadleaved woodland, encroaching into the tall ruderal and rough grassland. The scrub is likely to provide nesting sites for breeding birds, in particular Amber list BoCC such as dunnock, which have been recorded on site. In addition the scrub is likely to support foraging birds and small mammals, and provide areas which could be used as hibernacula by reptiles and amphibians. However, scrub is a prominent habitat throughout the UK and therefore is of value **within the zone of influence only**.

Pond

Whilst no great crested newts were recorded using the pond on site, it was found to support a number of amphibian species and grass snake. The water body adds to the diversity of habitats on site and supports a range of species. Standing open water is also an important habitat within the Wiltshire LBAP. The pond is considered to be of **local** value.

Standard trees

Standard trees on site provide a suitable habitat for breeding birds and a number of trees have features which are potentially suitable to roosting bats. In addition, invertebrates present on the trees may provide a food source for foraging birds and bats. The standard trees on site are of **local** value.

The stand of young poplar is of limited value to wildlife. Whilst it may offer screening to habitats to the south, it is unlikely to provide permanent refuge to wildlife and as such is of value **within the zone of influence only.**

Adjacent habitats

The habitats present within the vicinity of the site offer some value to wildlife. The mosaic of habitats potentially support a variety of protected and notable species including bats, reptiles and amphibians, water vole, otter, badger and

breeding birds. Connectivity onto the site from these adjacent habitats is largely unconstrained. The River Avon is of **county** value and is a noted habitat within the LBAP, whilst Conigre Mead LNR is of **local** value and the cemetery and residential gardens are of **value within the zone of influence only**.

4.4 Species

The nature conservation importance of the great crested newts, which were the subject of protected species surveys, is evaluated below,

Great crested newts

No great crested newts were found on site or immediately off site during the surveys in 2008. Three common species of amphibian were recorded and their population is of **value within the zone of influence only**.

4.5 Conclusions

The habitats and species on site range from **negligible** to **local value** to wildlife based on the Extended Phase 1 survey and great crested newt presence/absence survey. The presence or absence of other protected species could change these values. Further surveys are required to investigate whether or not any of such species are present (see section 6.0)

5.0 CONSTRAINTS AND LEGISLATIVE CONTEXT

5.1 Legislation

a) Bats

All British bat species are listed in Schedule 5 of the Wildlife and Countryside Act (WCA), 1981 (as amended), and under Regulation 39 of the Conservation (Natural Habitats &c.) Regulations, 1994 (as amended). This makes it an offence to:

- intentionally kill, injure or capture any bat;
- deliberately disturb bats in a way likely to significantly affect:
  - i. The ability of any significant group of bats to survive, breed, or rear or nurture their young; or
  - ii. The local distribution or abundance of the bats
- intentionally or recklessly damage, destroy or obstruct the access to the place of shelter or protection;
- damage or destroy a bats breeding site or resting place; and
- be in possession of, transport, sell or exchange, or offer to sell or exchange any bat

This legislation applies to all life stages.

Consequently, attention should be given to dealing with the modification or development of an area if aspects of it are deemed important to bats such as flight corridors and foraging areas.

Furthermore, in terms of national conservation policy, seven of the sixteen breeding British species of bat (soprano pipistrelle, barbastelle, Bechstein's, noctule, brown long-eared, lesser- and greater- horseshoe bats) have been listed on the UK Biodiversity Action Plan (BAP) and are covered by Species Action Plans (SAPs), which highlight the importance of certain habitats to species, details of the threats they face and propose measures to aid in the reduction of population declines.

b) Reptiles

Species of reptile may use the grassland, pond, riparian embankment and scrub fringes to bask, forage and refuge.

All native reptiles are protected in Britain under the Wildlife and Countryside Act 1981 and its subsequent amendments. It is an offence to intentionally or recklessly kill, injure or sell (or advertise to sell) any of the six native species.

The site offers suitable foraging, basking and hibernation areas for common reptiles and if they are found to be present prior to any development commencing, reptiles will need to be removed. Dependent on reptile numbers, it will be necessary to actively remove them to a suitable receptor area or to discourage them from using the site through strategic management of the habitats, so to avoid the risk of injuring/killing a reptile.

d) Birds

All birds, their nests and eggs are protected by the Wildlife and Countryside Act 1981 (as amended), Part 1. It is thus an offence to intentionally:

- Kill, injure or take any wild bird.
- Take, damage or destroy the nest of any wild bird while it is in use or being built.
- Take or destroy the egg of any wild bird.
- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

As such, if any trees or scrub are to be removed as part of the development proposals, it will be necessary to ensure that breeding birds are not nesting in those particular structures prior to vegetation clearance.

e) Otter

Otters could potentially use the River Avon adjacent to the site, and there has been an artificial otter holt created on the bank of the River Avon, on the northern site boundary.

Otters are listed on: Annexes II and IV of the EC Habitats Directive, Appendix II of the Berne Convention; Annex II of the European Communities Council Directive and Appendix I of the Convention on International Trade in Endangered Species (CITES)
They are protected by:

- Schedule 5 and 6 of the Wildlife and Countryside Act 1981 (as amended).
- Section 9 of the 1981 Act and under Regulation 39 of the Conservation (Natural Habitats &c.) (Amendment) Regulations 2007.

Under this legislation it is an offence to deliberately kill, capture, damage/destroy breeding sites, disturb or sell otter. No trade of any otter, including any recognisable part or derivative is permitted. Under Annex II of the European Communities Council Directive, where otter is regarded of community interest, its conservation may require the designation of Special Areas of Conservation (SACs).

As such, the proposed development may cause disturbance to any otter that may be using the holt, therefore it will be necessary to conduct an otter survey to establish whether this species should be considered a constraint to the development. If their presence is confirmed a licence will need to be sought and mitigation measures would need to be adopted to ensure that the legislation is not contravened.

5.2 Constraints to Development

Should subsequent surveys (see below) demonstrate that protected animals are present, these could serve as a constraint to development, the nature of which will depend on the species, their abundance, location

and structures they are occupying. All protected species that use the site need to be considered in the construction method statement and development plan, for example through timing of works to avoid the sensitive periods of the animals' lifecycle or providing compensatory habitats.

Restrictions, such as timing of works, may be imposed by Natural England/ local wildlife trust in order to maintain the favourable status of the adjacent designated sites. Prior to works commencing, Natural England/local wildlife trust should be consulted to ensure that the features of special interest of the designated sites are protected throughout construction and operational phases.

6.0 RECOMMENDATIONS FOR FURTHER SURVEYS

Before works commence, it is recommended that the following surveys are carried out in order to ascertain the ecological value of the site, especially in relation to protected species, and consequently the potential impacts of the development. It should be noted that some surveys can only be undertaken at certain times of the year and an approximate timetable (schedule of works) is provided below in Table 6.1.

It is recommended that vegetation clearance is carried out outside the bird breeding season. In general the bird breeding season is from mid-March to the end of August. If vegetation is scheduled to be removed within the bird breeding-season, an ecologist should be present to oversee vegetation clearance to ensure that no structures supporting nests are disturbed or destroyed. In the event that an active nest is found on site, the surrounding vegetation must be left *in situ* until any young birds have fledged.

The following targeted surveys are required to fully assess the ecological impacts of the development and develop appropriate mitigation:

Bat Emergence/ Return and Activity Survey
If trees are to be felled, a bat emergence/return survey is recommended for those trees identified as having moderate or high potential to support roosting bats. If trees along the riparian embankment are to be felled, a daytime assessment of their bat roosting potential will be required in advance of the bat activity surveys.

An evening bat emergence and dawn swarming survey using bat detectors to identify bats leaving or returning to those trees assessed as being suitable for roosting bats. The site should then be walked and detectors used to identify any foraging/commuting habitat.

Reptile Presence/ Absence Survey
A reptile presence/absence survey should be conducted to establish the extent of the grass snake population on site and their distribution. This survey would also aim to identify whether other species of reptile use the site. Refuges will be laid out in areas deemed suitable for reptiles and left for a period of at least seven days. A minimum of seven subsequent visits to the site will be required to ascertain the presence/absence of reptiles.

Otter Survey

It is important to determine whether otter are using the artificial holt on the bank of the River Avon, adjacent to the site as the proposed development is likely to cause disturbance. The banks of the River Avon up to 5m from the water's edge and for the length of the development boundary, including an additional 100m either side of the site should be examined, where possible, to identify signs of activity including food remains, pathways, slides, otter spraint, and evidence of feeding and footprints.

Table 6.1. Recommended periods for protected species surveys (Source: CIRIA)

Survey	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bat Emergence/ Return Survey												
Reptile												
Otter	**Vegetation cover and weather conditions may limit when survey can be undertaken**											

Key

	Unsuitable period for surveying
	Sub-optimal time to survey
	Optimal time to survey (best practice)

7.0 CONSTRAINTS TO SURVEY

The survey was conducted outside of the optimum season for botanical surveys and some flowering plants may not have been recorded. However, this is unlikely to have influenced the values assigned to each habitat.

This report records wildlife found during the survey and anecdotal evidence of sightings. It does not record any plants or animals that may appear at other times of the year and not evident at the time of the visit. Some species that might use the site or be apparent at other times of the year, or only in certain years, would not have been detected.

The behaviour of animals can be unpredictable and may not conform to the standard patterns reported in the scientific literature. For these reasons this report cannot predict with absolute certainty that animals will occur in apparently suitable locations or habitats or that they will not occur in locations or habitats that appear unsuitable.

DOCUMENTS CONSULTED

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- Joint Nature Conservation Committee (2004). *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*. JNCC, Peterborough.
- Ratcliffe, D. A. (ed.) (1977). *A Nature Conservation Review*. Cambridge University Press, Cambridge.
- Rose, F (1981) *The Wild Flower Key*, Frederick Warne.

APPENDIX A- REPORT CONDITIONS

C1 - REPORT CONDITIONS

EXTENDED PHASE 1 HABITAT SURVEY LAND AT SAINSBURY'S, BATH ROAD, MELKSHAM

This report is produced solely for the benefit of Sainsbury's Supermarkets Ltd and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to WYG. In time improved practices, fresh information or amended legislation may necessitate a re-assessment. Opinions and information provided in this report are on the basis of WYG using due skill and care in the preparation of the report.

This report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times..

This report is limited to those aspects reported on, within the scope and limits agreed with the client under our appointment. It is necessarily restricted and no liability is accepted for any other aspect. It is based on the information sources indicated in the report. Some of the opinions are based on unconfirmed data and information and are presented as the best obtained within the scope for this report.

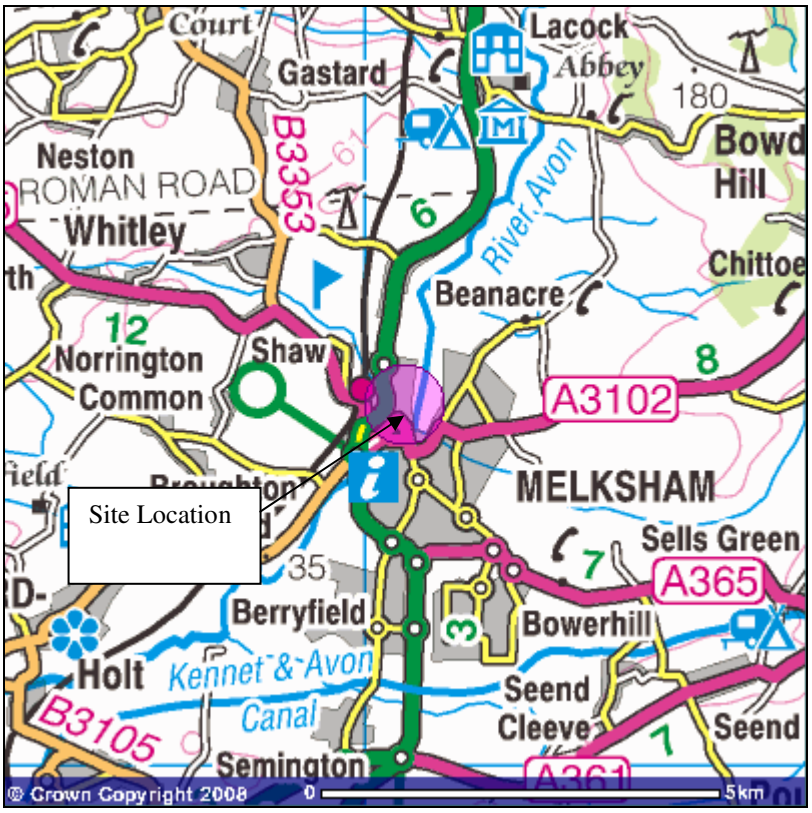
Reliance has been placed on the documents and information supplied to WYGE by others but no independent verification of these has been made and no warranty is given on them. No liability is accepted or warranty given in relation to the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report.

Whilst skill and care have been used, no investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather related conditions.

Although care is taken to select monitoring and survey periods that are typical of the environmental conditions being measured, within the overall reporting programme constraints, measured conditions may not be fully representative of the actual conditions. Any predictive or modelling work, undertaken as part of the commission will be subject to limitations including the representativeness of data used by the model and the assumptions inherent within the approach used. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions.

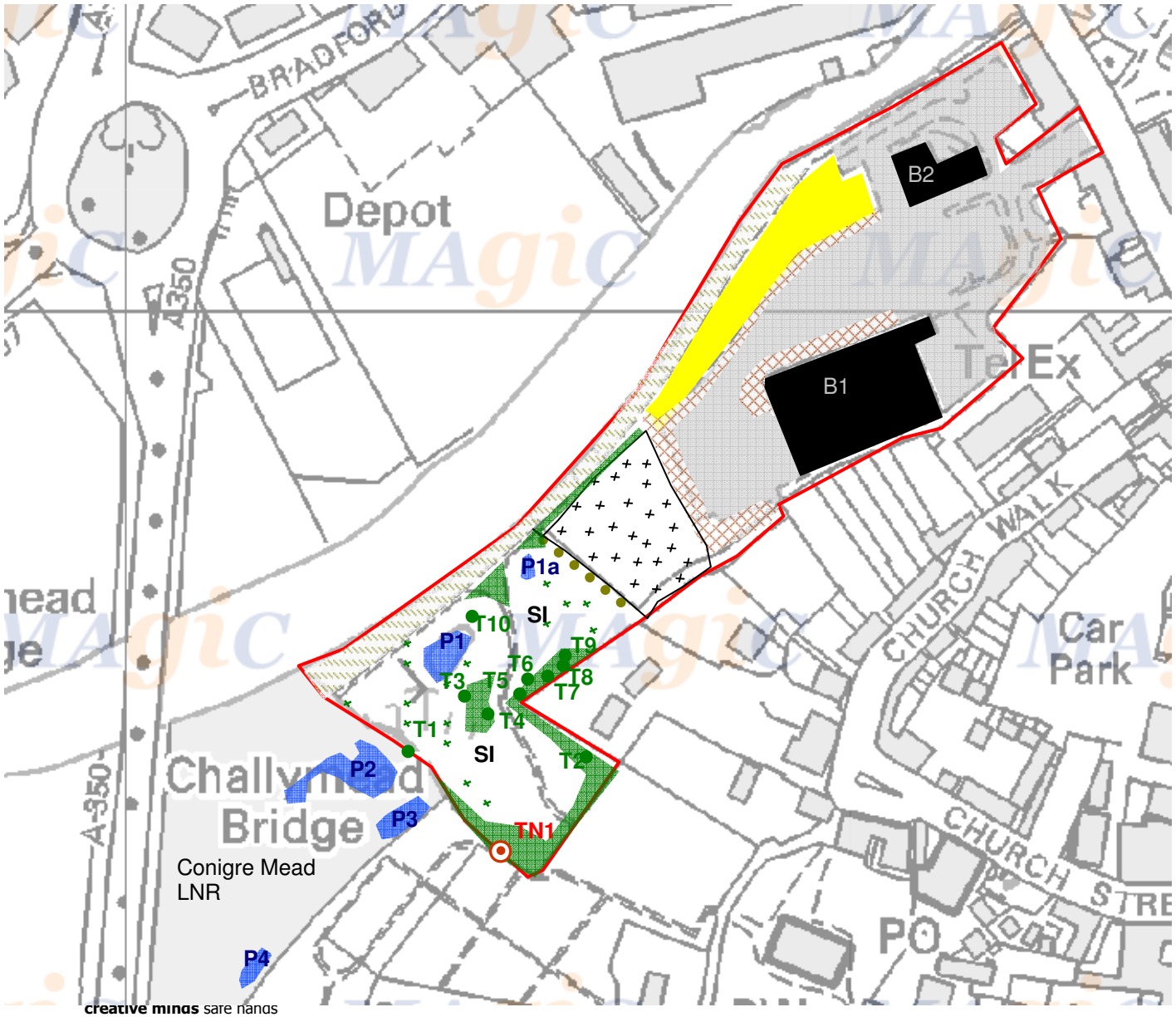
The potential influence of our assessment and report on other aspects of any development or future planning requires evaluation by other involved parties.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors



WYG Brigantine House, 27-31 Cumberland Street, Bristol, BS2 8NL	Document Title: Sketch 1: Site Location Plan		Project: Bath Road, Melksham
	Project Number: A038950	Client: Sainsbury's	Date: 11/6/08

Sketch 2. Phase 1 Habitat Survey Results



KEY

- Site boundary
- Hard standing
- Ornamental planting
- Building
- P1 Pond
- Amenity grassland
- T1 Standard tree
- Tree line
- Scattered scrub
- Ephemeral vegetation
- Riparian vegetation
- Broadleaved woodland
- SI Semi-improved grassland
- Target note