



RPS Planning & Development

Brockhill East, Enfield, Redditch

Ecological Appraisal

July 2013

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1.0 INTRODUCTION

- 1.1 The following report has been prepared by FPCR Environment & Design Ltd on behalf of RPS Planning & Development. It provides details of an Ecological Appraisal undertaken on a site located north of Redditch, Worcestershire.

Site Context

- 1.2 The survey site is approximately 76ha in size and is located in Enfield, Redditch (central OS grid reference SP 0321 6898). The site lies approximately 1km north of the centre of Redditch, Worcestershire (Figure 1). Habitats within the survey area include cattle-grazed improved grassland, species-poor semi-improved grassland, broadleaved woodland, arable fields, and boundary hedgerows and associated trees. The site lies between a predominantly urban area of Redditch, dominated by industrial units, housing and the wider countryside.

Development Proposals

- 1.3 It is anticipated that development proposals are to comprise residential and commercial properties with associated landscaping, access roads and areas of open space.

2.0 METHODOLOGY

Desk Study

- 2.1 The Multi-Agency Geographic Information for the Countryside (MAGIC)¹ website has been reviewed for the presence of any statutory designated sites of international (Special Conservation Area (SAC), Special Protection Area (SPA) or Ramsar Site), national (Site of Special Scientific Interest SSSI or National Nature Reserve, (NNR)) or local conservation importance (Local Nature Reserve (LNR) within 5km, 2km and 1km of the survey site, respectively.
- 2.2 As part of the appraisal consultation was also undertaken with Worcestershire Biological Records Centre (WBRC) and Worcestershire Badger Society for the presence of non-statutory designated sites of nature conservation importance (Local Wildlife Sites, LWS) and protected / notable species records for within 1km of the survey site.
- 2.3 Further inspection, using colour 1:25,000 OS base maps and aerial photographs from Bing Maps² was also undertaken in order to provide additional context and identify any features of potential importance for nature conservation in the wider landscape.

Field Survey

Habitats

- 2.4 The field survey element was undertaken by appropriately experienced and qualified ecologists on 23rd of July 2013.
- 2.5 Survey methods followed the extended Phase 1 Survey technique as recommended by Natural England³. This involved a systematic walk over of the site to classify the broad habitat types and

¹ www.natureonthemap.naturalengland.org.uk [Assessed 03/06/13]

² www.bing.com/maps [Assessed 03/06/13]

to particularly identify any habitats of principal importance for the conservation of biodiversity as listed within Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act (2006).

- 2.6 Hedgerows were surveyed using the Hedgerow Evaluation and Grading System (HEGS)⁴. This method of assessment includes noting down canopy species composition, associated ground flora and climbers, structure of the hedgerow including height, width and gaps, associated features including number and species of mature trees, banks, ditches and grass verges.
- 2.7 Each hedgerow is given a grade using HEGS with the suffixes \pm and $\pm\pm$ representing the upper and lower limits of each grade respectively. These grades represent a continuum on a scale from 1+ (the highest score and denoting hedges of the greatest nature conservation priority) to 4- (representing the lowest score and hedges of the least nature conservation priority) as follows:
 - Grade 1 . High to very high value
 - Grade 2 . Moderately high to high value
 - Grade 3 . Moderate value
 - Grade 4 . Low value
- 2.8 Hedgerows graded 1 or 2 are considered to be a priority for nature conservation.
- 2.9 The hedgerows were also assessed against the Wildlife and Landscape criteria contained within Statutory Instrument No: 1160 . The Hedgerow Regulations 1997⁵ to determine whether they qualified as ~~Important~~ Hedgerows under the Regulations. This was achieved using a methodology in accordance with both the Regulations and DEFRA guidance.
- 2.10 Mature trees within the site were assessed for their status as veteran trees using DEFRA⁶ and Natural England guidance⁷.

Fauna

- 2.11 Throughout the Extended Phase I survey consideration was given to the actual or potential presence of protected species or notable species, such as those protected under the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2010 or/and listed as Species of Principal Importance in England under the provisions of the NERC Act 2006 and Leicestershire Priority Biodiversity Action Plan (LBAP) Species.
- 2.12 As a result of findings of the desk study and the Extended Phase I Survey, further faunal surveys were undertaken for a number of species / assemblages as identified below.

Badgers

- 2.13 The survey, undertaken during July 2013 concentrated on locating field signs which might indicate a presence of badger *Meles meles* on site, following the methodologies as identified by

³ JNCC, (2010), Handbook for Phase 1 habitat survey - a technique for environmental audit

⁴ Clements, D.K., & Tofts, R.J. (1992). Hedgerow Evaluation and Grading System (HEGS): A methodology for the ecological survey, evaluation and grading of hedgerows.

⁵ DEFRA. (1997). *The Hedgerow Regulations 1997. A Guide to the Law and Good Practice*. London: HMSO

⁶ Rural Development Service. (2006). *Environmental Stewardship-Farm Environment Plan Guidance 009*. Available on line at http://www.naturalengland.gov.uk/Images/fepveterantree_tcm6-6492.pdf

⁷ Natural England. (1999). *Veteran Trees –A Guide to Good Management*. Available online from <http://publications.naturalengland.org.uk/publication/75035>

Harris, Cresswell and Jeffries, 1991. Public open spaces within 30m of the site were also searched where feasible. Evidence searched for included;

- Setts (main, annexe, subsidiary and outlier);
- Latrines;
- Prints and trackways;
- Hairs caught on rough wood and fencing;
- Snuffle holes, scratching posts and general feeding activity.

- 2.14 The identification of snuffle holes, scratching posts or feeding signs on their own are not necessarily conclusive evidence of the presence of badgers. A number of such signs need to be seen in conjunction before they can be said to be conclusive of badger activity.

Great crested newt

Habitat Suitability Index (HSI) Assessment

- 2.15 A number of ponds located within the local area were assessed for their potential to support great crested newts using the Habitat Suitability Index (HSI)⁸ in July 2013. This model has been designed to give an indication of the likely suitability of a pond for breeding great crested newts and can provide useful guidance when assessing ponds and deciding whether detailed surveys need to be carried out.
- 2.16 The model takes into account a range of factors such as geographical location, water quality, shade, size, habitat availability/connectivity, the presence of fish, wildfowl and aquatic macrophytes and provides a score between 0 and 1. In general, water bodies with high HSI scores are more likely to support GCN than those with low scores. However, the system is not sufficiently precise to allow conclusion that any particular water body with a high score will support newts, or that any water body with a low score will not do so.

Bats

Tree Assessment

- 2.17 An assessment of trees located within the site was carried out on the 23th July 2013 to establish their potential to support roosting bats and to enable recommendations with respect to the proposed works. Trees were examined from ground level, with the aid of binoculars for features that could provide suitable roosting opportunities including cracks, cavities, woodpecker / rot holes, fissures or missing limbs, and for evidence of use by roosting bats such as staining or the presence of bat droppings. Dense ivy *Hedera helix* cover was also noted when present as this can obscure the aforementioned features. The number, size and condition of these features were then used to assess the suitability of trees for bat occupation. Table 1 below categorises the potential of trees to support roosting bats.

⁸ Old Oldham, R.S., Keeble, J., Swan, M.J.S and Jeffcote, M. (2000) *Evaluating the suitability of habitat for the great crested newt Triturus cristatus*. Herpetological Journal Vol. 10, pp. 143-155.

Table 1: Classification of Bat Potential in Trees

Roost Potential	Description of Feature
Confirmed roost site	The presence of bats within features or the presence of bat evidence associated with suitable features.
High	Features of particular significance, offering conditions that are uncommon in the local area such as large cavities or multiple woodpecker holes.
Moderate	Features which provide a more secure form of roost for small groups of bats or individuals.
Low	One or two minor opportunities offered to individual bats that are easily replaced elsewhere, including features such as minor branch splits and small sections of loose bark.
None	No access points/potential roost sites.

Reptiles

- 2.18 Habitats were evaluated for their potential to support reptiles following guidance set out within the Herpetofauna Workers Manual, (Gent and Gibson, 1998). Habitats suitable for reptiles included south facing banks and field margins, transitional areas between long and short vegetation, together with other areas which provide basking and sheltering opportunities.

Other

- 2.19 Any sightings, evidence of or suitable habitats for other protected fauna, local BAP or otherwise notable species including breeding birds and invertebrates were recorded during the site visit.

3.0 RESULTS

Desk Study

- 3.1 Locations of statutory and non-statutory designated sites and protected / notable species records (excluding those of a sensitive nature or provided as four figure grid references) referred to in the following section are illustrated on Figure 1: Site Location and Consultation Results Plan.
- 3.2 Data used within this report is from 2010, however WBRC have been consulted (July 2013) and the report will be updated in due course.

Statutory Designated Sites

- 3.3 Hewell Park Lake SSSI and Dagnell End Meadows SSSI were the only statutory designated sites of national importance located approximately 1.16km and 1.18km retrospectively. Hewell Park Lake SSSI lies approximately 1.16km to the west of the site boundary and supports wetland and woodland habitats with extensive areas of marginal habitat. This site supports an important reed warbler population and is notable for its amphibian and reptile assemblage. Dagnell End Meadow SSSI, an ancient permanent pasture lies in the River Arrow valley approximately 1.18km to the east of the site. The meadow is bounded by water courses and is dominated by grasses and meadow herbs, with less common species including spotted orchid, southern marsh orchid, marsh valerian, ladies mantle and tubular water dropwort.
- 3.4 No statutory sites of international or local nature conservation importance are located within 5km or 1km of the site respectively.

Non-Statutory Designated Sites

- 3.5 No non-statutory designated sites of nature conservation importance occur within the site.
- 3.6 WBRC confirmed that there are four non-statutory Local wildlife sites (LWSs) that lie within 1km of the site. Brockhill Wood and Butlers Hill Wood are located adjacent to the site's south-eastern boundary and approximately 80m north of the site respectively and encompass notable areas of ancient natural woodland. The River Arrow LWS lies 250m to the north-east and supports aquatic fauna and flora and its tree-lined banks form habitat corridors. Abbey and Forge Mill Pond LWS, approximately 850m to the east of the site comprises a small group of ponds that support a range of aquatic life with wooded fringe habitats providing valuable nesting habitat for birds.
- 3.7 Arrow Valley Country Park is located approximately 500m east of the site and is comprised public open space and incorporates the 27 acre Arrow Valley Lake, popular for dinghy sailing, fishing and birdwatching.

Amphibians

- 3.8 Four great crested newt *Triturus cristatus* records were provided by WBRC, all of which were recorded during 1996 and 2003. All four records were outside of the site boundary and the closest located approximately 710m north-west of the site within the southern tip of Shortwood Rough Grounds. Two records were also located within the woodland, although at a great distance of 820m and 970m from the site boundary with the final record situated within a residential area 260m south of the site.

- 3.9 Two smooth newt *Lissotriton vulgaris* and one palmate newt *Lissotriton helveticus* were recorded within a 1km radius of the site boundary. The records were again situated to the north-west of the site, clustered to the west of the southern tip of Shortwood Rough Grounds around Shortwood Farm. The smooth newts were found approximately 790m and 900m from the site boundary with the palmate newt at a distance of approximately 880m.
- 3.10 Five common toads *Bufo bufo* and a single common frog *Rana temporaria* records were provided within 1km of the site boundary. Two of the common toad records were located 900m and 970m north-west of the site within the immediate area of Shortwood Farm. The last three records were located within the Enfield area south-west of the site at 180m, 720m and 1km. The record of common frog was approximately 1km to the south-west of the site within a residential garden on Carthorse Lane.

Mammals

- 3.11 Eleven badger records were provided within 1km of the site, the closest of which was 80m south of the site boundary, with a further five located to the south and south-west at 380m, 400m, 420m, 800m and 860m. Three badger records were located to the east approximately 115m, 380m and 635m and a further one record 300m west and 880m north-east.
- 3.12 One otter record exists approximately 430m north/east of the site boundary located along the River Arrow.
- 3.13 Two brown long-eared bat records were situated within 1km of the site, both were to the north-west of the site boundary at 560m and 900m along Brookhill Lane.

Habitats/Flora

Overview

- 3.14 The survey site is approximately 76ha in size and is located in Enfield, Redditch (central OS grid reference SP 0321 6898). The site lies approximately 1km north of the centre of Redditch, Worcestershire (Figure 1). Habitats within the survey area include cattle-grazed improved grassland, species-poor semi-improved grassland, broadleaved woodland, arable fields, boundary hedgerows and associated trees. The site lies between a predominantly urban area of Redditch, dominated by industrial units, housing and the wider countryside.
- 3.15 Habitats within the site are dominated by areas of improved grassland, species-poor semi-improved grassland, arable fields and semi-natural broad-leaved woodland. Hedgerows, fences and ditches enclosed the majority of field compartments and were a mixture of managed and unmanaged hedgerows. A single building was located along the site's northern boundary with associated hardstanding and bare ground. A watercourse dissected the site and nine waterbodies were located within 500m of the site boundary.
- 3.16 The locations of the habitats described below can be found on the Phase 1 Habitat Plan, Figure 2 along with relevant Target Note (TN) locations. Species Lists are provided in Appendix A.

Arable

- 3.17 Arable compartments by their very nature support little semi-natural vegetation and have limited species diversity. These compartments comprised maize *Zea mays* during the survey and

botanical interest restricted to field margins. Field margins width differed throughout the site, but for the most part the margins were 2-5m wide and comprised abundant cocks-foot *Dactylis glomerata* and false-oat grass *Arrhenatherum elatius*, frequent Yorkshire fog *Holcus lanatus*, timothy *Phleum pratense*, meadow foxtail *Alopecurus pratensis* and rough meadow grass *Poa trivialis*. Common nettle *Urtica dioica* dominated the majority of these margins, although hogweed *Heracleum sphondylium*, cleavers *Galium aparine*, scented mayweed *Matricaria recutita* and spear thistle *Cirsium vulgare* were found occasionally throughout. Other species recorded comprise fat hen *Chenopodium album*, curled dock *Rumex crispus*, garlic mustard *Alliaria petiolata*, hedge woundwort *Stachys sylvatica* and oil-seed rape *Brassica napus*.

Improved Grassland

- 3.18 Horse and cattle grazed improved grassland dominated eleven of the compartments within the proposed development site. Species present include dominant perennial rye-grass *Lolium perenne* with occasional Yorkshire fog, crested dog-tail *Cynosurus cristatus*, cocks-foot and timothy. Herb species were scattered and comprised white clover *Trifolium repens* and creeping buttercup *Ranunculus repens*. Some small sections of common nettle and creeping thistle *Cirsium arvense* were restricted to field boundaries and areas ungrazed by cattle.

Species-poor semi-improved grassland

- 3.19 The areas of semi-improved grassland assessed were all broadly similar in species composition and their degree of improvement with grasses dominating and fewer herb species present. These compartments had been unmanaged prior to survey and dominated by Yorkshire fog and false-oat grass with perennial rye-grass, occasional cocks-foot and frequent timothy. Herbs recorded include occasional creeping thistle and cleavers and frequent white clover. Species identified in rare abundance comprise black knapweed *Centaurea nigra*, hairy tare *Vicia hirsuta*, hedge bindweed *Calystegia sepium*, soft rush *Juncus effusus* and red clover *Trifolium pratense*.

Broadleaved woodland

- 3.20 A small woodland (approximately 0.8ha) was located adjacent to the western boundary. This woodland comprised English oak *Quercus robur*, ash *Fraxinus excelsior* and holly *Ilex aquifolium*. Ground flora was dominated by a mixture of common nettle, hogweed *Heracleum sphondylium*, curled dock, nipplewort *Lapsana communis*, broad-leaved dock *Rumex obtusifolius* and creeping thistle. Grass species comprised frequent and occasional wood millet *Milium effusum*, cocks-foot, false oat-grass, sterile brome *Bromus sterilis* and tufted hair-grass *Deschampsia cespitosa*. Other species recorded in much lower abundance include soft rush, meadow buttercup *Ranunculus acris*, wood avens *Geum urbanum*, red campion *Silene dioica*, meadowsweet *Filipendula ulmaria*, bittersweet *Solanum dulcamara*, Spanish bluebell *Hyacinthoides hispanica*, hedge woundwort *Stachys sylvatica*, common mouse-ear *Cerastium fontanum* and locally abundant bracken *Pteridium aquilinum*.
- 3.21 There were four more areas of broadleaved woodland on-site surrounded by improved and arable field compartments. These all held similar species diversity and structure composition and comprised a mixture of English oak, common lime *Tilia × europaea*, field maple *Acer campestre*, ash, hazel *Corylus avellana*, cherry sp *Prunus sp.*, sycamore *Acer pseudoplatanus* and elder *Sambucus nigra*. The understory was dominated by common nettle, ivy, Spanish bluebells,

germander speedwell, dandelion *Taraxacum officinale* agg, lesser burdock *Arctium minus* and cleavers.

Scrub/Tall herbs

- 3.22 Scattered scrub was recorded in association with boundary hedgerows and was dominated by hawthorn *Crataegus monogyna* with stands of tall herbs including common nettle.
- 3.23 A number of small scattered scrub areas dominated by hawthorn were located throughout the site mainly associated with field boundaries and buildings.

Watercourse

- 3.24 A small watercourse, tributary of the River Arrow (W1, figure 2) ran down the site's western boundary turning across the site and exiting on the site's southern point leading into the built-up area of Enfield. Towards the upper section of watercourse and leading through an area of woodland, the banks were steep (approximately 1.5m high) and held little water at the time of survey. The lower section of watercourse was surrounded by improved and species-poor semi-improved fields and comprised similar species to the surrounding habitats. Areas of cattle poaching were present which degraded the watercourse's structure and increases siltation further downstream, decreasing its suitability for invertebrates and other fauna. Little emergent vegetation was present and it was restricted to brooklime *Veronica beccabunga* and soft rush with other species present including great willowherb *Epilobium hirsutum* and reed sweet grass *Glyceria maxima*.

Waterbodies

- 3.25 No waterbodies were identified within the site during the walkover survey.
- 3.26 Examination of the relevant 1:25,000 OS base map for the site and wider local area identified nine waterbodies within 500m of the boundary (Figure 1). The closest of these lay next to the site's eastern boundary and comprised a man-made pond acting as a balancing facility for the neighbouring industrial units (pond 1, figure 1). No emergent or aquatic vegetation was identified during the survey and surrounding habitats comprised scrub, tall herbs and trees (photograph 1).
- 3.27 Two large waterbodies were situated approximately 215m east of the site located within the centre of an improved pasture field. A further 3 waterbodies were situated within/adjacent to Brockhill wood, one waterbody within Butler's Hill wood and two within the built-up area on Enfield adjacent to residential properties. Due to restricted access during the time of survey these ponds were not surveyed.



Photograph 1: Pond P1 located adjacent to the sites eastern boundary

Hedgerows

- 3.28 Hedgerows were present throughout the site forming boundaries associated with roads, arable fields and grasslands. The majority of these had been intensively managed, resulting in a dense rectangular structure, measuring approximately 1-2 or 2-4 metres in height and width. A number of these had also been unmanaged thus having a tall, leggy structure proving less beneficial to wildlife.
- 3.29 Species compositions and HEGS grades are provided in Table 2 below.

Table 2 – Hedgerow Classification Table

Hedge No	Number of Native Woody Species	Mature Std Trees	Associated Features	HEGS Grade
1	Acam, Cmon, Cave, Upro, Pspi	5	>1 Standard, 4+ connections	-2
2	Cmon, Cave, Pspi, Snig, Sali	3	<10% gaps, 4+ connections	-2
3	Cmon, Cave	1	No gaps	3
4	Cmon, Cave, Snig, Pspi	0	-	-4
5	Cmon, Pspi	0	-	-4
6	Cmon	0	Ditch for over 50% of hedge	-4
7	Cmon, Pspi	2	Ditch for over 50% of hedge	-3
8	Cmon, Snig	0	<10% gaps	-4
9	Cmon, Cave, Snig, Fexc, Leyl	2	<10% gaps, 4+ connections	-3
10	Cmon, Cave, Snig, Pspi, Acam	7	>1 Standard, <10% gaps	2+
11	Cmon, Cave, Snig, Qrob	7	>1 Standard, <10% gaps	3+
12	Cmon, Cave, Fexc, Pspi	4	>1 Standard, <10% gaps, 4+ connections	2+
13	Cmon, Pspi	0	<10% gaps, 4+ connections	-3
14	Cmon, Pspi	0	<10% gaps	3+
15	Cmon, Snig	0	<10% gaps	-4
16	Cmon	0	No gaps	4+
17	Cmon	0	<10% gaps	-4
18	Cmon, Cave, Pspi, laqu, Fexc	6	<10% gaps	-3
19	Cmon, Pspi	0	4+ connections	3+

Key to hedgerow species: Cmon *Crataegus monogyna* hawthorn, Fexc *Fraxinus excelsior* ash, Snig *Sambucus nigra* elder, laqu *Ilex aquifolium* holly, Acam *Acer campestre* field maple, Pspi *Prunus spinosa* blackthorn, Cave *Corylus avellana* Hazel, Qrob *Quercus robur* English oak, Leyl *Cupressus x leylandii* leyland cypress

- 3.30 HEGS assessment also indicated that Hedgerows H1, 2, 10 and 12 were of moderately high to high conservation value (HEGS Score -2 and above), mainly due to the number of associated mature and semi-mature standing trees. The remaining hedgerows were identified to be of lower significance to wildlife with a HEGS score of 3+ and below.
- 3.31 No hedgerows were considered ~~important~~ according to the ~~wildlife and landscape~~ criteria of the Hedgerow Regulations 1997.
- 3.32 All hedgerows surveyed were habitats of principal importance under the Natural Environment and Rural Communities (NERC) Act, Section 41 and priority habitat in England. All hedgerows supported greater than 80% native species.

Trees

- 3.33 All trees including hedgerow standards and trees identified as having some potential to support roosting bats are illustrated in Figure 2. Tree species were predominantly ash *Fraxinus excelsior* and oak *Quercus robur*, although species such as cherry sp. and field maple were recorded occasionally.

Fauna

Bats

- 3.34 All bat species and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 (as amended). In summary these make it an offence to damage, destroy or obstruct any place used by bats for breeding and shelter, disturb a bat, or kill, injure or take a bat.
- 3.35 A number of habitats within the site including boundary hedgerows, trees and watercourse all provide ~~edge~~ habitats that are likely to support a number of invertebrates, and therefore represented suitable foraging habitat for bat species. The grasslands, arable fields and woodland habitats found within the site also supplied suitable foraging habitat for bat species. Boundary trees, hedgerows and woodlands provided some connectivity to habitats in the wider landscape that are likely to be suitable for bats, and therefore represented potentially suitable commuting habitat for these species.
- 3.36 Three trees were identified as having potential to support roosting bats which were associated with field boundaries (Figure 2, target note 1, 2 and 3,). These trees supported features such as rot holes, cavities and woodpecker holes.
- 3.37 Two buildings were found within the site, both located along the site's northern boundary. Building B1 was an industrial unit. This building was a metal structure with a brick built base. No roof void or suitable roost sites were identified associated with this building (Photograph 2). The second was a wooden stable block with open structure and no roof voids. Both buildings were assessed as having negligible potential to support roosting bats.



Photograph 2: Building B1 along the sites northern boundary

Birds

- 3.38 The hedgerows, woodland and mature trees all provided suitable nesting habitat for generalist and urban fringe species within the local area. The tall herb vegetation around field boundaries and rough grassland also provided sheltered habitats that were potentially suitable for ground nesting bird species. Fruit and seed-bearing trees associated with the woodlands and hedgerows supplied a potential foraging resource for the local bird population.

Badgers

- 3.39 Three potential subsidiary or outlier setts were identified within the site (Tn4, Tn5 and Tn6, Figure 2) associated with spinney woodlands. Due to the lack of badger evidence (no guard hairs, latrines or runs) and amount of overgrown scrub and tall herb vegetation these setts were not identified as being in active use.
- 3.40 An active badger sett (Tn7, Figure 2) was found on the edge of a woodland spinney within the site. The sett was located in an area of improved grassland that is currently used as cattle pasture. This was a main sett comprising 13 individual sett entrances. At the time of survey, little evidence of badgers was recorded, although prints/hairs at a couple of entrances were noted. A number of rabbit signs were also identified along this area indicating these may also be used by this species.
- 3.41 No other evidence of badgers, including territorial markers or evidence of foraging, were identified within the remaining survey area, although an extensive search was not undertaken. The arable field margins, grassland, woodland, hedgerows and improved habitats represent a potentially suitable foraging resource for badgers. The boundary features, including woodland and hedgerows, also provided potential cover for badgers and connectivity to other areas of suitable habitat within the wider landscape.

Reptiles

- 3.42 Four areas adjacent to the southern boundary and W1 were identified as providing a suitable mosaic of habitats that could potentially allow reptiles to bask adjacent to suitable places of shelter, (more open tussocky grassy areas close to sections of short grassland and a watercourse).
- 3.43 No sightings or evidence of reptiles were found during the preliminary walkover survey.

Great Crested Newts

- 3.44 A HSI assessment found that the waterbody adjacent to the site's eastern boundary (P1) had poor (0.35) potential to support great crested newts due to the lack macrophytes cover and poor quality terrestrial habitat. A further eight waterbodies found within 500m of the site were understood to have better habitats to support this species, although due to restricted access these were not included in the HSI assessment.

Other Protected Species

- 3.45 No evidence of or habitat suitable for other protected species was identified within the survey area.

4.0 DISCUSSION & RECOMMENDATIONS

Site proposals

- 4.1 The development proposals for the site comprise the construction of residential dwelling houses / first school / local centre / commercial units with associated infrastructure and Green Infrastructure (GI).

Designated Sites

- 4.2 Due to the distance and isolation of Hewell Park Lake SSSI and Dagnell End Meadows SSSI from the proposed site, and the reason for their designation, these are not considered a constraint to development.

Non-Statutory Sites

- 4.3 Non-statutory designated sites do not receive statutory protection. These site do receive policy protection (as %Local Sites+), as reflected in the NPPF. The new NPPF retains a commitment to the protection of Local Wildlife Sites which are recognised in the framework as locally designated sites. The policy relating to locally designated sites is found in several paragraphs which provide direction for local authorities to identify, map and protect these sites, which are components of local ecological networks, through planning policies.
- 4.4 Brockhill Wood was the closest LWS being adjacent to the site and a further three designated LWS were identified within 1km of the site boundary (Figure 1). Brockhill Wood and Butler's Hill Wood are both areas of ancient natural woodland. Increased visitor pressure can potentially be detrimental to ground flora through the effects of trampling and soil compaction and these sites may be subject to a minor increase in visitor numbers resulting from proposals. However, due to unknown proposals and available footpaths within the local area it is considered that development of this site would not result in any adverse impacts to the designations. The implementation of a GI package through the proposed development site will ensure any potential effects of the development on these adjacent woodland site are minimised.

Habitats

- 4.5 The degree to which habitats receive consideration within the planning system relies on a number of mechanisms, including:
- Inclusion within specific policy (e.g. veteran trees, ancient woodland and linear habitats in NPPF, or non-statutory site designation),
 - Identification as a habitat of principal importance for biodiversity under Natural Environment and Rural Communities Act (NERC) 2006 and consequently identification as a Priority Habitat within England and the local area.
- 4.6 Under the NPPF development should seek to contribute a net gain in biodiversity with an emphasis on improving ecological networks and linkages where possible.
- 4.7 The site is dominated by improved grassland, arable fields and species-poor semi-improved grassland habitats of low nature conservation value. Consequently, loss of these habitats to development of the site has not been identified as a significant ecological constraint to the

proposed development. The provision of species rich grassland within the GI package will provide adequate compensation for loss of these habitats from the proposed development area.

- 4.8 Hedgerows throughout the site are dominated by native species and are a habitat of principal importance under NERC and a priority habitat in England. The hedgerows are likely to be of value for wildlife generally due to their value as commuting routes and shelter, forage and nesting sites for wildlife, including a number of LBAP and NERC species of principal importance.
- 4.9 The current GI proposals show that the majority of the hedgerows have been retained within the GI package and where retained landscape proposals should aim to provide enhancements by gapping up and long term management. There will however, be some inevitable loss of hedgerows during development of the site but compensation for loss of hedgerows can be provided through the provision of suitable additional native species hedgerow planting within the GI package.
- 4.10 In order to retain the integrity of retained hedgerows and avoid their degradation through individual residential management (i.e. removal of hedgerow sections), a soft-edged approach should be adopted. Where feasible houses should not be built up to the corners and edges of the field compartments, and buffer strips should be created including grassland and rank vegetation a few metres in width that would protect the field boundaries and provide foraging and flyways for bats and birds.
- 4.11 To minimise the potential impact to foraging routes if hedgerows are severed to allow access into and through the site, retained hedgerows around the road in question should be reinforced with native species planting.
- 4.12 Other habitats onsite including broadleaved woodland, scrub, mature trees and a watercourse provide some value to nature conservation. The current masterplan has retained and buffered the water course and areas of woodland. The GI proposals also increase direct green links between the key features. At the detailed design stage further enhancements will be provided to these retained features through the introduction of additional areas of native species planting and long term management.
- 4.13 The creation of wet land features within the balancing facilities will provide further significant gains for biodiversity through increasing the overall habitat diversity that is present within the site.

Protected Species

- 4.14 Principal pieces of legislation protecting wild species are Part 1 of the Wildlife and Countryside Act 1981 (as amended) (WCA) and the Conservation of Habitats and Species Regulations 2010 (as amended). Some species, for example badgers, also have their own protective legislation (Protection of Badger Act 1992). The impact that this legislation has on the Planning system is outlined in ODPM 06/2005 Government Circular: Biodiversity and Geological Conservation . Statutory Obligations and their Impact within the Planning System.
- 4.15 This guidance states that as the presence of protected species is a material consideration in any planning decision, it is essential that the presence or otherwise of protected species, and the extent to which they are affected by proposals is established prior to planning permission being granted. Furthermore, where protected species are present and proposals may result in harm to the species or its habitat, steps should be taken to ensure the long-term protection of the species, such as through attaching appropriate planning conditions for example.

- 4.16 In addition to protected species, there are those that are otherwise of conservation merit, such as species of principal importance for the purpose of conserving biodiversity under the Natural Environment and Rural Communities (NERC) Act 2006 and consequently as priority species in England. These are recognised in the NPPF which advises that when determining planning applications, LPAs should aim to conserve and enhance biodiversity by applying a set of principles including:
- *If significant harm resulting from a development cannot be avoided....., adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
 - *Development proposals where the primary objective is to conserve or enhance biodiversity should be encouraged.*

- 4.17 The implications that various identified species or those that are thought reasonably likely to occur may have for developmental design and programming considerations are outlined below:

Bats

- 4.18 Bats and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended) and by the Conservation of Habitats and Species Regulations 2010 (as amended). In summary this makes it an offence to damage destroy or obstruct any place used by bats for breeding and shelter, disturb a bat, or kill, injure or take a bat. Seven bat species including noctule (but not common pipistrelle) are listed as Species of Principal Importance under the provisions of the NERC Act, 2006.
- 4.19 Two trees located throughout the site were identified as having the potential to support roosting bats. All trees within the site should be retained, provided with a sufficient buffer within proposals and incorporated within the green infrastructure for the site, such that should roosting bats be present they are unlikely to be adversely affected by development proposals. Should development proposals be revised resulting in the loss of any additional tree standards identified as having the potential to support roosting bats, the potential presence of the species would then be considered a statutory constraint and further assessment would be required to ensure that no offence is committed.
- 4.20 The boundary hedgerows offer potential foraging and commuting habitat for bat species and should all be retained within proposals, although due to the size of the site it is assumed that gaps will be created to provide access around the site. It is recommended that proposed hedgerow gaps are mitigated for by the planting of native tree species on either side of the road to create a fly over and reduce impacts to foraging bats. These trees will increase the height of the hedgerow on either side of the road thus escalating the height of which bat fly, thus reducing the chance of collision with motor vehicles.
- 4.21 To further minimise potential effects to the local bat population a sensitive lighting scheme should be used in the proposed development that minimises light spill on to retained corridors and corridors of movement which are provided as part of the development proposals.
- 4.22 To support a detailed planning application further nocturnal surveys will be required through the proposed development site.

Birds

- 4.23 The sites habitats are likely to provide nesting and foraging habitat for farmland bird species that are within the local area. All birds are protected while nesting by the WCA 1981 (as amended). Specially protected Schedule-1 bird species are afforded additional protection from disturbance while nesting. Mitigation is therefore recommended to ensure that any nesting birds are adequately protected during site clearance.
- 4.24 To support a planning application a breeding bird survey will be necessary, but compensation for any potential effect can be provided and overall gain for breeding birds can be provided through the implementation of appropriate green infrastructure. Appropriate measures to minimise potential affects and provide compensation for loss of habitats within the site should include retention of existing hedgerows, the creation of native species woodland planting and the development of areas of species rich grassland.

Great Crested Newts

- 4.25 Great crested newts and their habitats in water and on land are protected under the Wildlife and Countryside Act 1981 (as amended), and by the Conservation of Habitats and Species Regulations 2010. These make it an offence to damage, destroy or obstruct any place used by great crested newts for breeding or shelter, disturb a great crested newt, or kill, injure or take any great crested newt. In addition, great crested newt is listed as a species of principal importance to the conservation of biological diversity under the provisions of the NERC Act 2006.
- 4.26 A single pond (pond 1, figure 1) adjacent to the sites south-eastern boundary was assessed for its suitability for great crested newt. The HSI score of 0.35 suggests that it is of poor suitability for this species. A further eight waterbodies were located within 500m of the site, although these were not given a HSI assessment due to restricted access. Owing to the close proximity of Pond 1, eight waterbodies within the local area and suitable habitat for this species on-site, it is recommended that further assessment is needed to determine the presence/absence of this species and meet the requirements of Natural England⁹.
- 4.27 If the presence of GCN is confirmed adequate mitigation for the species can be incorporated into the development design through the provision of areas of species rich grassland, the implementation of native species woodland and the creation of wetland habitats in balancing facilities. The provision of such features would ensure the favourable conservation status of these species is maintained.

Badgers

- 4.28 Badgers are protected by statute under the Protection of Badgers Act 1992. This legislation makes it an offence to wilfully kill, injure, take possess or cruelly ill-treat a badger, or intentionally or recklessly interfere with a sett. Work that disturbs badgers whilst occupying a sett is illegal without a licence; badgers may be disturbed by work near the sett even if there is no direct interference or damage to the sett.
- 4.29 Evidence of badger using the site was found in the form of an active main sett of 13 entrances. Three potential subsidiary or outlier setts were identified within the site (Tn4, Tn5 and Tn6, Figure 2) associated with spinney woodlands. The arable habitat within the site sown with maize offers

⁹ Natural England Standing Advice Species Sheet. Ref GCN

seasonal foraging to badgers, whilst more optimal permanent foraging habitat is provided in the form of the grassland habitats within the site.

- 4.30 It is likely that any potential affects to the local badger population can be addressed by appropriate links through the proposed development to the wider environment. Retention of existing hedgerows, the provision of areas of grassland and areas of woodland in the overall green infrastructure package will compensate for the loss of foraging which will occur as a result of the proposed development. The implementation of these recommendations within future developments proposed will ensure that significant negative affects to the local badger population are minimised.

Reptiles

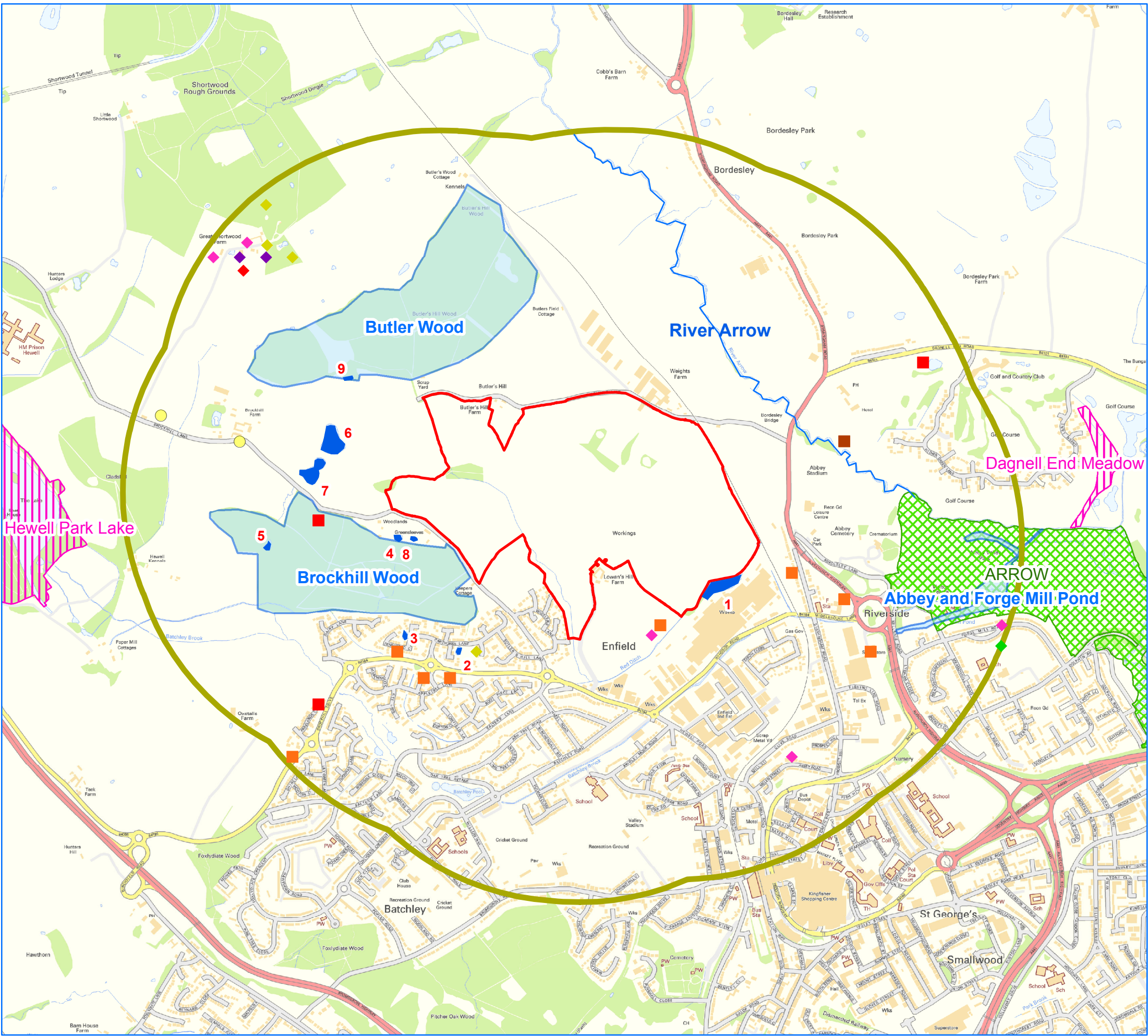
- 4.31 A number of habitats within the site provided suitable breeding and foraging opportunities for reptiles including areas of arable field margins, grasslands, tall herb vegetation and hedgerows.
- 4.32 Common lizard and grass snake are partially protected under the Wildlife and Countryside Act 1981 (as amended) in that it is an offence to intentionally kill or injure the species. In order to ensure that an offence is not committed, it is recommended that a full reptile survey is conducted.
- 4.33 Reptile surveys are recommended to be carried out from March to September. This would involve the placement of suitable refugia (squares of corrugated tin or heavy duty roofing felt) across suitable habitats within the site at a density of 10 / ha. These would be left for a two week period to be in place, after which time they would be checked by a suitably qualified ecologist on seven survey occasions in suitable weather conditions (between 9°C and 18°C, avoiding the hottest part of the day (11am - 4pm) during periods of scattered cloud). If no reptiles were recorded, no further action would be required and this group would not pose any constraint. If present the provision of species rich grassland and the development of wetland features in balancing facilities will compensate for the loss of the habitats within the site.

Biodiversity Enhancements

- 4.34 Landscape proposals for the site should seek to use species of local provenance. Areas of open green space should be utilised for the benefit of wildlife by using wild flower seed mixes from a native source as an alternative to standard rye grass where feasible.
- 4.35 It is recommended that bird boxes are incorporated onto buildings and retained tree standards to provide a variety of additional nesting habitats. The incorporation of bat boxes/tubes/bricks into the design of buildings would also provide roosting habitats for bats. These measures would enhance the biodiversity value of the site as required under NPPF and compensate for any potential losses of existing habitats.
- 4.36 All boundary features should be retained, along with a scheme of native planting which will ensure that the proposals would help maintain and enhance connectivity across the site. These measures will be designed to preserve and enhance existing linkages to areas of adjacent habitat, and ensure connectivity to the wider countryside is maintained and enhanced for local faunal populations, including badgers and bats.
- 4.37 Balancing ponds should be incorporated into the design that will further enhance the site for biodiversity and also contribute towards Worcestershire eutrophic standing water LBAP targets. Once established the creation of these features will provide new and additional shelter and

foraging opportunities for NERC Priority Species present within the local area, including bats as well as increasing the diversity and interest of habitats present.

- 4.38 The balancing ponds should be planted with locally native marginal and aquatic vegetation. Species should include purple loosestrife *Lythrum salicaria*, water mint *Mentha aquatica*, gypsywort *Lycopus europaeus* and water speedwell *Veronica catenata* planted around the edges, tall emergent plants e.g. greater pond sedge *Carex riparia* and floating-leaved plants such as broad-leaved pondweed *Potamogeton natans* within the deeper areas of water. The ponds can be made more visually attractive through the planting of selected species including marsh marigold *Caltha palustris*, water dock *Rumex hydrolapathum* and common water plantain *Alisma plantago-aquatica*.
- 4.39 Implementation of a nature conservation management plan for any retained and newly created habitats will ensure that the optimal benefits for biodiversity are achieved. This conservation plan should span a minimum of 10 years and include details for appropriate management of semi-natural habitats, e.g. hedgerows, retained grassland and ponds. Nature conservation plans should be designed by an appropriately qualified ecologist.



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Legend

- Site Boundary
- Ponds (with reference)
- 1km Buffer
- Country park
- Local Wildlife Sites
- Sites of Special Scientific Interest

Species

- Badger
- Brown Long-Eared Bat
- Common Frog
- Common Toad
- Great Crested Newt
- Hedgehog
- Otter
- Palmate Newt
- Smooth Newt

RPS Planning & Development
Brockhill East, Enfield,
Redditch
SITE LOCATION AND CONSULTATION
RESULTS PLAN

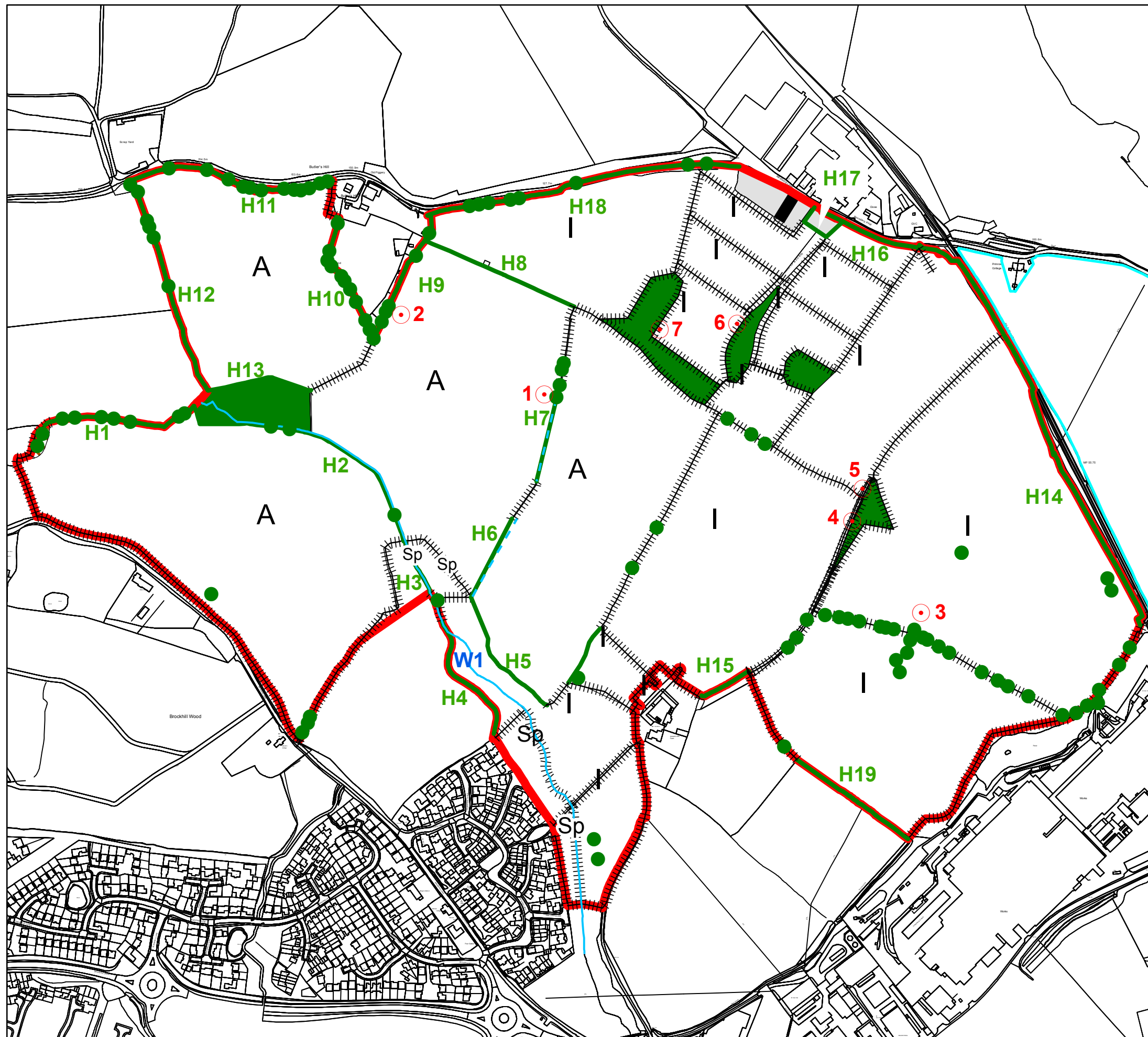
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Figure 1 1755-E-01

Legend

- Site Boundary
- Deciduous trees - scattered
- ⊙ Target note
- Dry ditch
- Fence
- Intact hedge - species-poor
- Running water
- A Arable
- Bare ground
- Broadleaved woodland - semi-natural
- Buildings
- I Improved grassland
- Not accessed land
- Tall herb/ruderal
- Sp Poor semi-improved grassland
- Scrub - dense/continuous
- Scrub - scattered
- Standing water



RPS Planning & Development
Brockhill East, Enfield,
Redditch
fpcr
PHASE 1 HABITAT PLAN

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Figure 2 1755-E-02

APPENDIX A – BOTANICAL SPECIES LIST

Grass and Herb Species

Scientific Name	Common Name
<i>Alopecurus pratensis</i>	Meadow Foxtail
<i>Anisantha sterilis</i>	Barren Brome
<i>Arctium minus</i>	Lesser Burdock
<i>Arrhenatherum elatius</i>	False Oat-grass
<i>Bellis perennis</i>	Daisy
<i>Blechnum spicant</i>	Hard Fern
<i>Brassica napus</i>	Oilseed rape
<i>Centaurea nigra</i>	Common Knapweed
<i>Cerastium fontanum</i>	Common Mouse-ear
<i>Chenopodium album</i> agg.	Fat Hen
<i>Cirsium arvense</i>	Creeping Thistle
<i>Cirsium vulgare</i>	Spear Thistle
<i>Convolvulus arvensis</i>	Field Bindweed
<i>Cynosurus cristatus</i>	Crested Dog's-tail
<i>Dactylis glomerata</i>	Cock's-foot
<i>Deschampsia caespitosa</i>	Tufted Hair-grass
<i>Epilobium montanum</i>	Broad-leaved Willowherb
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Galium aparine</i>	Cleavers
<i>Geum urbanum</i>	Herb Bennet
<i>Glyceria maxima</i>	Reed Sweet-grass
<i>Heracleum sphondylium</i>	Hogweed
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Hyacinthoides hispanica</i>	Spanish Bluebell
<i>Juncus effusus</i>	Soft Rush
<i>Juncus inflexus</i>	Hard Rush
<i>Lapsana communis</i>	Nipplewort
<i>Lolium perenne</i>	Perennial Rye-grass
<i>Matricaria recutita</i>	Scented Mayweed
<i>Mercurialis perennis</i>	Dog's Mercury
<i>Milium effusum</i>	Wood Millet
<i>Phleum pratense</i> sens.lat.	Timothy
<i>Poa trivialis</i>	Rough Meadow-grass
<i>Rubus fruticosus</i> agg.	Bramble
<i>Rumex crispus</i>	Curled Dock
<i>Silene dioica</i>	Red Campion
<i>Solanum dulcamara</i>	Bittersweet
<i>Stachys sylvatica</i>	Hedge Woundwort
<i>Symphytum officinale</i>	Common Comfrey
<i>Trifolium pratense</i>	Red Clover
<i>Trifolium repens</i>	White Clover
<i>Urtica dioica</i>	Common Nettle

Veronica beccabunga

Brooklime

Vicia hirsuta

Hairy tare

Tree and Shrub Species

Scientific Name	Common Name
a planted cherry	Prunus sp.
Ash	Fraxinus excelsior
Blackthorn	Prunus spinosa
Elder	Sambucus nigra
Field Maple	Acer campestre
Hawthorn	Crataegus monogyna
Hazel	Corylus avellana
Holly	Ilex aquifolium
Leyland Cypress	Cupressus x leylandii
Lime	Tilia cordata x platyphyllos (T. x vulgaris)
Sycamore	Acer pseudoplatanus