PRELIMINARY ECOLOGICAL APPRAISAL

Land at Hilton Park

ECO01118 Hilton Park Preliminary Ecological Appraisal
2
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1 INTRODUCTION

1.1 Purpose and Scope of This Report

1.1.1 RPS was commissioned by Nurton Developments to undertake an Ecological Appraisal of a site known as Hilton park. The site is located approximately 3km north of Wolverhampton in the county of Staffordshire.

1.1.2 The Ecological Appraisal was carried out as part of an assessment of the feasibility of developing the site for employment use through the South Staffordshire Local Plan Review. The Ecological Appraisal comprised the following elements:

- a desk-study identifying sites designated for nature conservation and relevant records of protected species and other species that could present a constraint;
- a Phase 1 habitat survey to identify, describe and map on-site habitats and to assess their ecological value; and,
- an assessment of the potential for habitats within the site to support protected species or other species that could be a constraint to development.

1.1.3 The aim of the survey was to update the findings of the previous Ecological Appraisal (RPS, 2014).

1.1.4 This report presents the revised and updated findings of the Ecological Appraisal. Habitats within the site are described with reference to the accompanying Habitats Plan. The report describes the ecological value of on-site habitats and their potential to support protected species or other species of nature conservation interest which could be a constraint on development.

1.1.5 The route corridor of the proposed M54 J1 to M6 J11 link road divides the proposed development site into two areas. A series of Phase 2 species surveys conducted for the M6/M54 link road for Highways England in 2018 have been formally submitted for planning. Reference to survey findings relevant to the proposed development is made in the evaluation section of the report.

1.1.6 The evaluation section of the report has been prepared with reference to the Illustrative Masterplan (Figure 1). The potential effects on habitats and species are summarised in the context of the outline development proposals.

1.1.7 The report identifies where further species surveys would be required prior to a formal planning submission to define the status of species and inform mitigation design.

1.2 Site Description

1.2.1 The site comprises an area of land bounded by the M6 motorway to the east, Hilton Lane to the south and the A 460 to the west. The survey area is centred approximately on The National Grid Reference Coordinates SJ954060.

1.2.2 The site is approximately 75ha and is broadly divided into a western and eastern area on either side of the route corridor of the proposed M54 J1 to M6 J11 link road.

1.2.3 The site comprises a mix of arable and pasture fields bounded by hedgerows and with a few isolated mature trees. There are several large fishing ponds and some smaller field ponds within the site. The site includes Brookfield Farm in the western development area which incorporates small commercial / industrial units and Yells farm in the eastern development area

1.2.4 The landscape around the site comprises arable and pasture fields with several small settlements and commercial premises. Further afield, the conurbation of Wolverhampton, Walsall and Bloxwich lies approximately 3km south (to the urban edge), with Cannock and Great Wyrley 1.5km east and north.

1.3 Development Proposals

1.3.1 The concept masterplan comprises a series of development platforms which would be created through cut and fill to establish development plots. Proposed development uses are warehousing, industrial units, offices, a pub and a hotel with associated car parking.

1.3.2 The embanked sides of the development platforms will have an average gradient of 1:3 and will be green space within the final development.

1.3.3 Basins and swales forming part of the sustainable drainage scheme will be created on the platforms with some areas of naturalistic green space alongside amenity soft landscaping,

1.3.4 The route corridor of the proposed M6/M54 link road (due to constructed between 2021 and 2024) bisects the site approximately north to south with the development area divided into development platforms to a north-western and south-eastern development parcels which will be connected by a new bridge constructed over the link road.

1.4 Legislation and Policy

1.4.1 Relevant legislation, policy guidance and both Local and National Biodiversity Action Plans (BAPs) are referred to throughout this report where appropriate. Their context and application are explained in the relevant sections of this report.

1.4.2 The relevant articles of legislation and policy include:

- The National Planning Policy Framework (NPPF, 2019);
- ODPM Circular 06/2005 (retained as Technical Guidance on NPPF 2019);
- The Conservation of Habitats and Species Regulations 2017;
- The Wildlife and Countryside Act 1981 (as amended);
- The Protection of Badgers Act 1992;
- The Countryside and Rights of Way Act 2000;
- The Hedgerow Regulations 1997;
- The Natural Environment and Rural Communities Act 2006;

1.4.3 A summary of legislation relevant to protected or other species identified as potential constraints in this report is provided in Appendix A.

2 METHODS

2.1 Desk Study

2.1.1 Biological records within a 2 km radius of the site were requested from Staffordshire Ecological Record (http://www.staffs-ecology.org.uk). The record request was limited to protected species recorded within the last ten years, and non-statutory sites of nature conservation interest such as Sites of Importance for Nature Conservation (SINCs) and Local Wildlife Sites (LWSs).

2.1.2 Information on statutory designated nature conservation sites including Sites of Special Scientific Interest (SSSIs), Special Protection Areas (SPAs), Special Area of Conservation (SACs) and National Nature Reserves (NNRs) was obtained from the Multi Agency Geographical Information for the Countryside 'MAGIC' website (https://magic.defra.gov.uk).

2.1.3 A 1:25,000 OS map was used to identify nearby features such as ponds or green corridors that could provide habitat or connectivity to other areas.

2.2 Site Walkover and Protected Species Audit

2.2.1 The Preliminary Ecological Appraisal and preparation of this report have been undertaken in accordance with relevant guidance including: The Handbook for Phase I Habitat Survey (JNCC, 2010), the Guidelines for Preliminary Ecological Appraisal (CIEEM 2017), and BS42020:2013 Biodiversity Code of Practice for Planning and Development (BSI, 2013).

2.2.2 The site walkover survey was undertaken on 5th May 2020 by Paul Turner MCIEEM. During the survey, habitats within the survey area were classified, mapped and described, with respect to their structure and broad floristic composition. The ecological value of adjacent off-site habitats was considered in order to understand the site in its wider ecological context.

2.2.3 The habitats within the site were assessed for their potential to support legally protected or otherwise notable flora and fauna that may be a consideration in the planning process. If encountered, invasive non-native plant species currently listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended in 2010) were noted and mapped. Botanical nomenclature in this report follows that laid out by Stace (2010).

2.2.4 Signs indicating the presence of protected or priority faunal species were noted where they were encountered, including droppings, burrows, tracks and evidence of feeding.

2.2.5 Buildings within the site were described according to their size, age structure and likely use. Based on these factors an estimate was made of the likelihood that the building could possess features such as wall cavities, roof voids etc, which could be used by roosting bats. However, the survey did not include a full external inspection for all features of bat roost potential. Buildings were not accessed internally.

2.3 Limitations

Desk Study

2.3.1 The desk study data is third party controlled data, purchased for the purposes of this report only. RPS cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

Survey

2.3.2 While every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment which is by nature dynamic.

2.3.3 The protected / notable species assessment provides a preliminary view of the likelihood of these species occurring on the site, based on the suitability of the habitat, known distribution of the species in the local area provided in response to our enquiries and any direct evidence on the site.

It should not be taken as providing a full and definitive survey of any protected / notable species group.

Accurate Lifespan of Ecological Data

2.3.4 The majority of ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for up to three years, assuming no significant changes to the site conditions.

3 RESULTS

3.1 Designated Sites

3.1.1 There is one international statutory nature conservation designation within 10km of the site: Cannock Extension Canal Special Area of Conservation.

3.1.2 There is one national statutory designated site for nature conservation value within 2 km of the site: Wyrley and Essington Canal Local Nature Reserve.

3.1.3 There are also six non-statutory sites wholly or partially located within the 2 km search radius of the site boundary.

3.1.4 Each of these designated sites is described in Table 3.1.

Table 3-1: Statutory and Non-statutory Designated sites within 2 km (10km for international sites) of the Hilton Park site

Site name	Type	Approx. area (ha)	Interest Features	Distance from site (km)
Statutory Designated Sites (International)				
Cannock Extension Canal	SAC	5	Terminal branch of the Wyrley and Essington Canal (artificial open water feature) supporting a population of the Annex II species Floating water plantain *Luronium natans.*	5.9km east
Statutory Designated Sites (National)				
Wyrley and Essington Canal	LNR	14.52	A section of canal and bankside habitats including open water, dry canal bed, wet grassland, scrub and woodland. The site supports a variety of bird and invertebrate species including some locally and nationally scarce species.	1.5km east
Non-Statutory Designated Sites				
Brookfield Farm (north-east of), Shareshill	SBI	Information not provided	This site is designated for area of broad leaved semi-natural woodland, marshy grassland and swamp. An area of wet woodland comprising alder and willow carr. There is much dead wood present.	Overlaps the site boundary
The Hag	RBAS	Information not provided	Established woodland with abundant sycamore, with some oak and hawthorn also present. Within the wood is a very steep-sided pond without emergent vegetation but covered in duckweed.	Within the site
Lower Pool	SBI	Information not provided	A large ornamental pool with both emergent and floating vegetation that, since management has been reduced, has developed into an interesting habitat for wildlife. Large trout are present within the pond along with an interesting assemblage of Odonata (dragonflies and damselflies).	Adjoins Hilton Lane beyond the southern boundary
Keeper's Wood, Hilton Park	SBI	Information not provided	Mature mixed deciduous/conifer plantation woodland.	0.6km south
Saresdon Hall Farm (south-east of)	RBAS	Information not provided	An area of oak woodland with a small polluted pond. Much of the wood is densely established with bramble and nettle. Additionally, there is a small pond to the south of the wood supporting glaucous sedge *Carex flacca*, bulrush *Typha latifolia* and broad-leaved pondweed *Potamogeton natans*.	1.0km north
Wyrley and Essington Canal	SBI	Information not provided	A stretch of canal supporting a variety of habitats including standing and open water, dry canal bed, marginal vegetation, grassland and scrub and woodland. The canal has been designated for its	1.5km east

			variety of habitats and its importance as a wildlife corridor.	

Abbreviations used in Table 3.1: LNR: Local Nature Reserve; SBI: Site of Biological Importance; RBAS: Retained Biodiversity Alert Site.

3.2 Species

3.2.1 Records of protected species within 2km of the site from the last 10 years were obtained from Staffordshire Ecological Record are summarised in Table 3.2. Only data with a 6-figure grid reference resolution or higher are provided, since locations given at a lower resolution do not allow accurate calculation of distance to the site boundary.

Table 3-2: Species records from the last 10 years within 2 km of the Hilton Park site.

Common name	Scientific name	Nearest distance from site (km)	Most recent record (year)	Conservation Status
Mammals				
European water vole	*Arvicola amphibius*	0.75	2015	HabsRegs2, WCA5, NERC
Eurasian badger	*Meles meles*	< 2km	2019	PBA
West European hedgehog	*Erinaceus europaeus*	1.40	2015	NERC
Leisler's bat	*Nyctalus leisleri*	0.60	2014	HabsRegs2, WCA5.
Daubenton's bat	*Myotis daubentonii*	0.60	2014	HabsRegs2, WCA5.
Noctule bat	*Nyctalus noctula*	0.80	2014	HabsRegs2, WCA5, NERC
Common pipistrelle	*Pipistrellus pipistrellus*	0.80	2015	HabsRegs2, WCA5.
Pipistrelle bat	*Pipistrellus sp.*	0.80	2015	HabsRegs2, WCA5.
Unidentified bat	*Chiropter sp.*	0.80	2012	HabsRegs2, WCA5.
Unidentified Myotis bat	*Myotis sp.*	1.75	2015	HabsRegs2, WCA5.
Soprano pipistrelle	*Pipistrellus pygmaeus*	0.60	2014	HabsRegs2, WCA5, NERC
Brown long-eared bat	*Plecotus aurita*	0.60	2014	HabsRegs2, WCA5, NERC
Polecat	*Mustela putorius*	< 2km	2015	NERC
Birds				
Kingfisher	*Alcedo atthis*	< 2km	2018	WCA1i, Amber
Pintail	*Anas acuta*	< 2km	2012	Amber
Greylag Goose	*Anser anser*	< 2km	2017	Amber
Golden eye	*Bucephala clangula*	< 2km	2014	Amber
Short-eared owl	*Asio flammeus*	< 2km	2011	Amber
Cetti's warbler	*Cettia cetti*	< 2km	2019	WCA1i
Little ringed plover	*Charadrius dubius*	< 2km	2019	WCA1i
Marsh harrier	*Circus aeruginosus*	< 2km	2017	Amber
Mallard	*Anas platyrhynchos*	< 2km	2018	Amber
Hen harrier	*Circus cyanus*	< 2km	2011	Red, NERC
Quail	*Coturnix coturnix*	< 2km	2010	WCA1i, Amber
Whooper swan	*Cygnus cygnus*	< 2km	2012	WCA1i, Amber
Merlin	*Falco columbarius*	< 2km	2016	Red
Peregrine	*Falco peregrinus*	< 2km	2018	WCA1i,
Hobby	*Falco subbuteo*	< 2km	2016	WCA1i,
Brambling	*Fringilla montifringilla*	< 2km	2011	WCA1i,
Mediterranean gull	*Larus melanocephalus*	< 2km	2010	WCA1i, Amber

Common name	Scientific name	Nearest distance from site (km)	Most recent record (year)	Conservation Status
Common Crossbill	*Loxia curvirostra*	< 2km	2012	WCA1i, Amber
Red kite	*Milvus milvus*	< 2km	2019	WCA1i,
Common tern	*Sterna hirundo*	< 2km	2018	Amber
Green sandpiper	*Tringa ochropus*	< 2km	2012	WCA1i, Amber
Redwing	*Turdus iliacus*	< 2km	2018	WCA1i, Red
Fieldfare	*Turdus pilaris*	< 2km	2019	WCA1i, Red
Barn owl	*Tyto alba*	< 2km	2016	WCA1i,
Lesser redpoll	*Carduelis cabaret*	< 2km	2012	Red
Black headed gull	*Chroicocephalus ridibundus*	< 2km	2018	Amber
Bullfinch	*Pyrrhula pyrrhula*	< 2km	2018	Amber, NERC
Common Gull	*Larus canus*	< 2km	2018	Amber
Common sandpiper	*Actitis hypoleucos*	< 2km	2018	Amber
Corn bunting	*Emberiza calandra*	< 2km	2010	Red, NERC
Cuckoo	*Cuculus canorus*	< 2km	2011	Red, NERC
Curlew	*Numenius arquata*	< 2km	2011	Red, NERC
Dunlin	*Calidris alpina*	< 2km	2012	Amber
Dunnock	*Prunella modularis*	< 2km	2018	Amber, NERC
European greater white-fronted goose	*Anser albifrons subsp. albifrons*	< 2km	2017	Red, NERC
Gadwall	*Anas strepera*	< 2km	2013	Amber
Grasshopper warbler	*Grasshopper Warbler*	< 2km	2010	Red, NERC
Great black-backed gull	*Larus marinus*	< 2km	2011	Amber
Grey partridge	*Perdix perdix*	< 2km	2016	Red, NERC
Greylag Goose	*Anser anser*	< 2km	2016	Amber
Grey wagtail	*Motacilla cinerea*	< 2km	2018	Red
Herring gull	*Larus argentatus*	< 2km	2018	Red, NERC
House martin	*Delichon urbicum*	< 2km	2018	Amber
House sparrow	*Passer domesticus*	< 2km	2018	Red, NERC
Kestrel	*Falco tinnunculus*	< 2km	2018	Amber
Lapwing	*Vanellus vanellus*	< 2km	2013	Red, NERC
Lesser black backed gull	*Larus fuscus*	< 2km	2018	Amber
Lesser spotted woodpecker	*Dendrocopos minor*	< 2km	2011	Red, NERC
Linnet	*Linaria cannabina*	< 2km	2018	Red, NERC
Meadow pipit	*Anthus pratensis*	< 2km	2016	Amber
Mistle thrush	*Turdus viscivorus*	< 2km	2018	Red
Mute swan	*Cygnus olor*	< 2km	2018	Amber
Oystercatcher	*Haematopus ostralegus*	< 2km	2013	Amber
Pied flycatcher	*Ficedula hypoleuca*	< 2km	2010	Red
Pochard	*Aythya ferina*	< 2km	2013	Red
Redstart	*Phoenicurus phoenicurus*	< 2km	2019	Amber
Reed bunting	*Emberiza schoeniclus*	< 2km	20118	Amber, NERC
Shoveler	*Anas clypeata*	< 2km	2016	Amber

Common name	Scientific name	Nearest distance from site (km)	Most recent record (year)	Conservation Status
Skylark	*Alauda arvensis*	< 2km	2018	Red, NERC
Snipe	*Gallinago gallinago*	< 2km	2013	Amber
Song thrush	*Turdus philomelos*	< 2km	2018	Red, NERC
Spotted flycatcher	*Muscicapa striata*	< 2km	2018	Red, NERC
Starling	*Sturnus vulgaris*	< 2km	2018	Red
Swift	*Apus apus*	< 2km	2018	Amber
Stock Dove	*Columba oenas*	< 2km	2018	Amber
Tawny Owl	*Strix aluco*	< 2km	2016	Amber
Teal	*Anas crecca*	< 2km	2016	Amber
Tree sparrow	*Passer montanus*	< 2km	2018	Red, NERC
Whinchat	*Saxicola rubetra*	< 2km	2012	Red
Wigeon	*Anas penelope*	< 2km	2011	Amber
Willow tit	*Poecile montana*	< 2km	2018	Red, NERC
Willow warbler	*Phylloscopus trochilus*	< 2km	2018	Amber
Woodcock	*Scolopax rusticola*	< 2km	2010	Red
Yellow wagtail	*Motacilla flava*	< 2km	2012	Red, NERC
Yellowhammer	*Emberiza citrinella*	< 2km	2019	Red, NERC
Reptiles and Amphibians				
Great Crested Newt	*Triturus cristatus*	0.55	2015	HabsRegs2, WCA5, NERC
Common Toad	*Bufo bufo*	1.60	2015	WCA5 part, NERC
Invertebrates				
Small Heath	*Coenonympha pamphilus*	< 2km	2014	NERC, NT
Dingy Skipper	*Erynnis tages*	< 2km	2015	NERC, VU
Yellow-legged Mining Bee	*Andrena flavipes*	< 2km	2011	NERC
Tawny Mining Bee	*Andrena fulva*	< 2km	2016	NERC, DD
Orange-tailed Mining Bee	*Andrena haemorrhoa*	< 2km	2015	NERC
Small Garden Bumble Bee	*Bombus hortorum*	< 2km	2015	NERC
Tree Bumblebee	*Bombus hypnorum*	< 2km	2016	NERC
Large Red-Tailed Bumble Bee	*Bombus lapidarius*	< 2km	2015	NERC
Common Carder Bee	*Bombus pascuorum*	< 2km	2015	NERC
Early Bumble Bee	*Bombus pratorum*	< 2km	2015	NERC
Buff-Tailed Bumble Bee	*Bombus terrestris*	< 2km	2015	NERC
Yellow-legged Furrow Bee	*Halictus rubicundus*	< 2km	2014	NERC
Bronze Furrow Bee	*Halictus tumulorum*	< 2km	2015	NERC
Bloomed Furrow Bee	*Lasioglossum albipes*	< 2km	2014	NERC
Shaggy Furrow Bee	*Lasioglossum villosulum*	< 2km	2015	NERC
Painted Nomad Bee	*Nomada fucata*	< 2km	2011	NERC
Mournful Wasp	*Pemphredon lugubris*	< 2km	2015	NERC
Geoffroy's Blood Bee	*Sphecodes geoffrellus*	< 2km	2014	NERC
German Wasp	*Vespula germanica*	< 2km	2015	NERC
Figure of Eight	*Diloba caeruleocephala*	< 2km	2017	NERC

Common name	Scientific name	Nearest distance from site (km)	Most recent record (year)	Conservation Status
Small Phoenix	*Ecliptopera silaceata*	< 2km	2017	NERC
September Thorn	*Ennomos erosaria*	< 2km	2017	NERC
Dusky Thorn	*Ennomos fuscantaria*	< 2km	2017	NERC
White Ermine	*Spilosoma lubricipeda*	< 2km	2017	NERC
Buff Ermine	*Spilosoma lutea*	< 2km	2017	NERC
Cinnabar	*Tyria jacobaeae*	< 2km	2017	NERC

Abbreviations used in Table 3.2: WCA1i: Wildlife & Countryside Act Schedule 1, part 1; WCA5: Wildlife & Countryside Act Schedule 5; NERC: Natural Environment & Rural Communities Act Species of Principal Importance; HabDir2, 4, 5: Habitats Directive Annex 2, 4, 5; PBA: Protection of Badgers Act 1992; HabRegs2: The Conservation (Natural Habitats, &) Regulations 2017 (Schedule 2); Birds:Red: Bird Population Status: red; Birds:Amber: Bird Population Status: amber.

3.3 Phase 1 Habitat Survey

3.3.1 The survey results are presented in the form of a map with the habitat types and boundary features marked (Figure 3.2). An explanation of target notes from Figure 3.2 can be found in Appendix B. Photographs can be found in Appendix C.

3.3.2 Descriptions of the habitat types and boundary features are detailed below. Habitat descriptions are defined by broad habitat types (JNCC, 2010). Woodland areas and ponds are labelled on Figure 3.3.

Arable

3.3.3 A large proportion of the site comprised arable fields. At the time of the survey the fields were under cultivation with a cereal crop.

3.3.4 The field margins were narrow strips of rank grassland with a small number of grasses and low diversity of ruderal forbs. Characteristic species included Yorkshire fog *Holcus lanatus*, cock's-foot *Dactylis glomerata*, cow parsley *Anthriscus sylvestris*, hogweed *Heracleum sphondylium*, broad-leaved dock *Rumex obtusifolius* and creeping buttercup *Ranunculus repens*.

Improved Grassland

3.3.5 Improved grassland fields made up a large proportion of the site. The fields in the south-east around Yells Farm were sub-divided into horse grazed paddocks. These appeared to be grazed on rotation with some being more heavily disturbed than others.

3.3.6 The paddocks north of Yells Farm were not currently grazed. These had a closed sward up to 20cm tall, dominated by grasses. There were small variations in composition, but characteristic species were Yorkshire fog perennial ryegrass *Lolium perenne*, sweet vernal-grass *Anthoxanthum odoratum* and soft brome *Bromus hordeaceus*. Forb cover was very low characterised occasional by white clover *Trifolium repens*, ribwort plantain *Plantago lanceolata*, and broad-leaved dock (TN1 and Plate 01).

3.3.7 Improved grassland fields east and west of Yells Farm were grazed by horses at the time of the survey. These fields had a very close-cropped sward with patchy bare ground. Forbs were less evident in these areas due to the heavy disturbance from grazing (Plate 02). The field south of Brookfield's Farm was also grazed by horses at the time of the survey and had a similarly close-cropped sward. (Plate 03).

3.3.8 North of Brookfield's Farm, the improved grassland was dominated by perennial ryegrass. The floristic composition was otherwise distinct from the rest of the site and the grassland appeared to be more recently established. Frequent species included ribwort plantain, Yorkshire fog and creeping cinquefoil *Potentilla reptans* (TN2 and Plate 04).

3.3.9 The large field of improved grassland in the south of the site had a longer sward with no evidence of grazing. The sward was dominated by grasses with very few forbs. The characteristic species were perennial ryegrass, with occasional Yorkshire fog, meadow foxtail *Alopecurus pratensis*, and sweet vernal grass. Very few forb species were present, with occasional white clover the most frequent (TN3 and Plate 05)

Neutral Grassland

3.3.10 Neutral grassland was present on the banks around the Brookfield's Farm fishing lakes. These areas have been sown as part of the landscaping and there has also been some natural regeneration of grassland. This habitat was characterised by frequent Yorkshire fog and perennial ryegrass with occasional sweet vernal grass, and a small assemblage of forbs including white clover, silverweed *Potentilla anserina*, broad-leaved dock, and creeping thistle *Cirsium arvense* (TN4 and Plate 06).

3.3.11 Smaller patches of rank neutral grassland were present in some arable field corners and field margins, and beside buildings around Brookfield's Farm and Yells Farm. These were generally species-poor and characterised by a common grasses and ruderals including Yorkshire fog, common bent *Agrostis capillaris*, cow parsley, broadleaved dock and creeping thistle.

3.3.12 Neutral grassland extends around Pond 5. This area was characterised in 2014 as woodland with abundant mature alder. The alders and a weeping willow trees have since been felled and the timber loosely piled in several locations around the pond. The area now comprises rank grassland with some bramble patches and stared immature trees. The grassland is characterised by Yorkshire fog, perennial ryegrass, common bent, with frequent broadleaved dock. Species occurring infrequently included cock's-foot *Dactylis glomerata* red campion, bluebell and lesser celandine *Ranunculus ficaria* (TN5, and Plate 07).

3.2 The remaining alder stumps around the pond edge have since developed dense regenerative growth up to 1.5m high.

Marshy Grassland

3.3.1 There area of marshy grassland in the northeast of the site falls within the Brookfield Farm (north-east of), Shareshill Site of Biological Interest (SBI).

3.3.2 The marshy grassland contained very few grasses, with a patchy sward dominated variously by meadowsweet *Filipendula ulmaria* (TN6 and Plate 08) and lesser pond sedge *Carex acutiformis* (TN7 and Plate 09). Other, locally frequent species included marsh marigold *Caltha palustris*, jointed rush *Juncus articulatus*, and rosebay willowherb *Chamerion angustifolium*.

3.3.3 A separate small area of marshy grassland adjoins braided section of the central stream. Brooklime *Veronica beccabunga* was abundant with occasional soft rush *Juncus effusus* marsh thistle *Cirsium palustre* and creeping bent *Agrostis capillaris* (TN8 and Plate 10).

Broadleaved Semi-natural Woodland.

Area A – Brookfield Farm SBI

3.3.4 A large area of broadleaf woodland forming part of the Brookfield Farm SBI lies beyond the northern site boundary. A watercourse Latherford Brook flows through this woodland in a north westerly direction. The stream was braided in places creating channels that maintain wet conditions and localised areas of marshy ground. Many dead willows have fallen or are leaning on still living trees and provide a range of fallen and standing deadwood of varying ages that creates a dense understory to the woodland.

3.3.5 The ground flora varied, with localised dense stands cleavers *Gallium aparine*, nettle *Urtica dioica* and creeping buttercup *Ranunculus repens*. Ramsons *Allium ursinum* was locally dominant. Other species noted within this area included occasional red campion *Silene dioica*, wood avens *Geum urbanum*, male fern *Dryopteris filix-mas* and wood dock *Rumex sanguineus.* Tufted hair grass *Deschampsia cespitosa*, and wood millet were occasional while giant fescue *Festuca gigantea* occurred rarely.

3.3.6 The wet woodland areas were characterised by mature common alder *Alnus glutinosa* with areas of goat willow *Salix caprea* and a hybrid shrub willow *Salix* sp (Plate 11). The ground flora included localised stands of meadowsweet with frequent large bitter cress *Cardamine palustris* along with occasional hairy willowherb *Epilobium hirsutum* and reed canary-grass *Phalaris arundinacea*. Lesser pond sedge was locally abundant where the tree canopy was more open along the stream banks along with occasional marsh marigold and fool's watercress *Apium nodiflorum*. Yellow archangel *Lamium galeobdolon* occurred rarely.

Area B - The Hag RBAS

3.3.7 The Hag RBAS is a stand of mature semi-natural broadleaved woodland containing two ponds. The woodland comprised abundant mature and immature sycamore *Acer pseudoplatanus* with frequent mature pedunculate oak *Quercus robur*. Several immature elms *Ulmus* sp. was present close to the large pond with very young suckering growth. Hawthorn *Crataegus monogyna* was frequent in the understorey with occasional holly *Ilex aquifolium*.

3.3.8 The ground flora comprised locally abundant ramsons, bluebells *Hyacinthoides non-scripta*. and dog's mercury *Mercurialis perennis*. In the shadier areas, ivy *Helix hederacea* formed a dense carpet. Other characteristic species were frequent wood millet *Milium effusum* along with occasional wood false-brome *Brachypodium sylvaticum*, bracken *Pteridium aquilinum* and broad buckler fern *Dryopteris dilatata* (Plate 12).

Area C

3.3.9 Semi-natural woodland was present along the route of a now partly disused woodland track called Holly Bush Lane.

3.3.10 The main canopy was a mix of mature pedunculate oak with semi-mature sycamore, alder and one large mature horse chestnut *Aesculus hippocastanum*. Shrub species hawthorn, hazel *Corylus avellana*, elder and holly *Ilex aquifolium* were patchily distributed.

3.3.11 The central track of bare ground was flanked by ground flora characterised by frequent bluebell, dog's mercury, barren brome and bramble *Rubus fruticosus* with other species occurring occasionally including tufted hair-grass *Deschampsia cespitosa* and herb Robert *Geranium robertianum* (Plate 13).

Area D

3.3.12 Semi-natural broadleaved woodland encloses the central watercourse (Stream A) which flows into the site from a culvert beneath Hilton Lane. The woodland canopy is a mix of mature pedunculate oak, ash *Fraxinus excelsior* and alder. Along each side the woodland edge is a band 2m to 4m wide of dense bramble and hawthorn scrub (Plate 14).

3.3.13 Where accessible the ground flora was heavily shaded comprising bluebells, common nettle, bramble, wood false-brome, and dog's mercury.

Area E

3.3.14 Woodland is established along part of the east-west stream corridor of Latherford Brook (Stream B). The main canopy tree species present are abundant mature alder and frequent oak and sycamore. The understorey contains frequent goat willow, hawthorn and hazel along with occasional holly, elder and bramble. Ground flora within this woodland was characterised by locally abundant bluebells, ramsons and dog's mercury.

Area F

3.3.15 There are two small areas of semi-natural broadleaved woodland adjoining Hilton Lane on the southern boundary of Yells Farm. The canopy of these woodland blocks was characterised by a mix of alder and sycamore with occasional mature pedunculate oak, and goat willow. Small understorey trees and scrub were hawthorn and elm, with a ground flora characterised by ivy, common nettle, dog's mercury and bramble.

Mixed Woodland

Area G

3.3.16 Adjacent to Area C is a stand of younger mixed woodland. The canopy comprises immature and maturing white poplar *Populus alba* and sycamore, with a stand of Norway spruce *Picea abies.* The patchy understorey comprises ash and elder, with bare ground beneath and a sparse ground flora of nettle, bramble and cleavers *Gallium aparine* and bracken (Plate 15).

Area H

3.3.17 A narrow strip of mixed woodland along Yells Farm track consisted of a mix of spruce and maturing sycamore with silver birch and occasional mature pedunculate oak. The ground flora was characterised by common nettle, bramble, ivy and dog's mercury with patchy bare ground.

Area I

3.3.18 This area of woodland is characterised by pine and spruce with the broadleaved trees a mix of silver birch and sycamore. Ground flora was a sparse mix of nettle and bramble.

Hedgerows

3.3.19 Several of the site field boundaries are defined by hedgerows and tree lines which vary in character. Full hedgerow descriptions are given in Table A1 in Appendix E with the positions of H1 to H18 (Hedgerows) and T1 to T8 (Tree Lines) shown on the Habitat Map.

3.3.20 The southern and eastern site boundary hedgerows mainly comprise managed species-poor hedgerows dominated by hawthorn.

3.3.21 Some species-poor hedgerows have become defunct with a taller spreading canopy of hawthorn and few other species. In some places, short sections of hedgerow have become very defunct / gappy with scattered shrubs between occasional semi-mature trees.

3.3.22 A small number of hedgerows have grown out effectively becoming lines of mature trees interspersed with immature shrubs.

3.3.23 There are several non-native ornamental hedgerows including a Leyland cypress *Cypresses x Leylandii* hedge along the curtilage of Yells Farm.

3.3.24 Typically, the hedgerows had species-poor ground flora consisting of rank neutral grassland.

Watercourses

Central Stream (Stream A)

3.3.25 The central stream enters the site from a culvert beneath Hilton Lane on the southern boundary. The stream flows north through a narrow corridor of semi-natural broadleaved woodland. The channel within the woodland was mostly inaccessible. Where it could be seen the channel was narrow (less then 1m) and shallow with slow to moderate water flow at the time of the survey. Parts of the channel were almost dry. There was no aquatic vegetation in the channel where it was visible (Plate 16).

3.3.26 There is a short, braided section of channel flowing through marshy grassland where the stream turns to flow westwards. The braided channels were very shallow and narrow being partly obscured by the abundant vegetation in the grassland (Plate 10).

3.3.27 The stream continues west passing south of ponds between woodland and neutral grassland field margins. The stream passes the edge of the small industrial estate at Brookfield Farm to enter a culvert beneath the Brookfield Farm access road (Plates 17 and 18).

Latherford Brook (Stream B)

3.3.28 Latherford Brook enters the site to the east from a culvert beneath the M6 motorway. The stream flows northwest tracking the northern edge of the Brookfield Farm SBI and leaves the site on the north-western boundary through a culvert beneath the A460 on the north-western boundary.

3.3.29 The eastern sections of this watercourse (i.e. those that are not within semi-natural woodland) are established with luxuriant vegetation including reed canary-grass, common nettle, cleavers and great willowherb.

Ponds

3.3.30 There are 17 waterbodies within the site including small field ponds and several larger fishing ponds. The waterbodies are described in Appendix D Table A2. The pond locations are shown on the Habitats Map (P1, P2, etc). Photographs of the ponds are given in Plates 19 to 32, Appendix C. P3, adjoining P4 lies entirely within the footprint of the link road but a description of the waterbody is included for completeness.

Buildings and Hardstanding

Brookfields Farm

3.3.31 Brookfields Farm is located in the west of the site and is accessed via a short access road of Cannock Rd (A460).

3.3.32 The farm comprises the farmhouse, a large two storey residence of brick construction with a pitched clay tile roof. There are also two brick-built garages with pitched slate tile roofs, and a small red brick shed with a pitched clay tile roof.

Brookfields Leisure Centre and Commercial Estate

3.3.33 This is a small collection of businesses adjacent to Brookfields Farm. The estate comprises several commercial buildings arranged around a central hardstanding area. There is also a residential property adjacent to the estate. The following buildings are present:

- a large agricultural building / stables, a mix of cement block, brick and corrugated metal sheet construction with a pitched roof of corrugated cement board;
- a large shed of corrugated metal sheet construction;
- a smaller shed of corrugated metal sheet construction;
- a commercial building of red brick construction with a shallow pitched corrugated metal roof;
- a small industrial building subdivided into units and constructed of brick and cement block with a multi-pitched roof of corrugated metal;
- a small wooden hut with a pitched roof of corrugated cement board; and,
- a very small red-brick plant room in a locked enclosure beside a mobile phone mast.

3.3.34 All of the buildings were occupied and in current use as commercial premises at the time of the survey.

3.3.35 Adjacent to the estate was a large residential property of red brick construction with a pitched clay tile roof;

Yells Farm

3.3.36 Yells Farm comprises the following buildings:

- a large, brick built stable / shed with a pitched roof of corrugated cement board;

- a smaller, wooden building with a pitched roof of corrugated cement board adjoining the larger building;
- a large open sided agricultural shed constructed of corrugated metal sheeting with a cement board roof;
- a small brick-built garage with a flat cement board roof; and,
- the farmhouse, a two-storey building of red brick with a pitched clay tile roof.

3.3.37 There was also a second residential property behind the stable complex, but access was not available to this during the survey.

Species

Badgers

3.3.38 Evidence of badger activity including setts were found during the walkover survey. These are described under Confidential Badger Field Signs (Appendix F).

Birds

3.3.39 Skylark *Alauda arvensis* were noted calling over arable fields throughout the site. Skylark will move towards surveyors as they traverse a site therefore accurate indication of the number of skylark present was not possible to accurately assess.

3.3.40 Woodland and farmland birds either observed or heard within the site that are likely to be breeding include yellowhammer, whitethroat *Sylvia communis*, song thrush, chiffchaff *Phylloscopus collybita*, wren *Troglodytes troglodytes*, blackcap *Sylvia atricapilla*, great tit *Parus major*, blackbird *Turdus merula*, dunnock, woodpigeon *Columba palumbus* and chaffinch *Fringilla coelebs*.

3.3.41 A family of Canada geese with goslings was seen in Pond 4. A family of mallard was seen in a shallow pool of seasonal standing water in improved grassland west of Brookfields Farm. Canada geese and greylag geese were also seen grazing in this field.

Plants

3.3.42 Bluebells were present throughout most of the broadleaved semi-natural woodland.

4 EVALUATION AND POTENTIAL IMPACTS

4.1 Designated sites

Internationally Designated Sites

4.1.1 There were no international or national designated sites within 2km of the proposed development site.

4.1.2 The Cannock Extension Canal SAC, located 5.9km from the site, is designated for the population of water plantain. If the site is allocated for development, then any planning application would need to consider the potential for impacts on the SAC that might result from changes in air quality for example from emissions (depending on the proposed development) or increased local traffic.

UK Statutory Designated Sites

4.1.3 Two non-statutory sites lie wholly or partly within the site: Brookfield Farm SBI and The Hag RBAS.

4.1.4 All the parts of the Brookfield Farm SBI which lie within the site will be retained. The SBI extends outside the site and adjoins the northern boundary. The site is of County Importance and there will be Local Plan policies recognising the value of SBIs for Staffordshire with a presumption towards their protection and conservation.

4.1.5 The link road will result in the loss of part of the ancient woodland with compensation planting proposed to the north of the SBI.

4.1.6 There will be no additional loss as result of the development. A significant stand off is incorporated between the development footprint and the SBI as shown on the Illustrative Masterplan which will minimise the potential for any adverse indirect effects.

4.1.7 The Hag RBAS lies within the Site and has the potential for the habitat to be improved to SBI standards through appropriate management. The SBI and RBAS are of Local Value for Nature Conservation. The development areas and raised platforms are set back from The Hag to maintain a stand off. The opportunities for habitat creation in this buffer zone around the designated site could further enhance its potential future value.

4.1.8 Lower Pool SBI is separated from the site by Hilton Lane and any effect on the designated site from development activities is unlikely in the context of works following best environmental practice.

4.1.9 All the other SBI and RBAS lies over 0.6km from the site and there are no direct impact pathways through which the designated sites could be impacted by the development.

4.2 Habitats

Woodlands

4.2.1 The Woodland Areas A to F all support a mix of mature native trees with scrub understorey and woodland ground flora and are all considered to be a priority habitat (Lowland Mixed Deciduous Woodland).

4.2.2 Woodland Area A, wet woodland within Brookfield Farm SBI, contained at least four ancient woodland indicator species and is considered to be ‘Wet Woodland’ priority habitat.

4.2.3 Being major constituent parts of Brookfield Farm SBI, Woodland Area A, is of County Value. The Hag RBAS (Woodland Area B) and the woodland alongside the central stream (Woodland Areas D and E) are considered to be of Local Value.

4.2.4 Several of the woodland blocks will be retained within the development site (Woodland Areas B, D and the edges of Areas A and E). Additional native tree and shrub planting is included in the site layout to create stepping stone links between them.

4.2.5 The loss of the broadleaved and mixed woodland areas in the south-eastern section of the site will be mitigated through the inclusion of new tree and shrub planting areas within the development including stands on the embankments of the development platforms. Additional native tree and shrub planting (to create scrub and in the longer term woodland) would also form part of an off-site habitat creation scheme if required to achieve a biodiversity net gain.

Hedgerows

4.2.6 The hedgerows throughout the site are species-poor but have contiguous habitat connectivity along the southern, eastern and northern boundaries linking with semi-natural woodland along Stream A and semi-natural woodland within Brookfield Farm SBI to the north of the site. The well-managed dense hedgerow on southern boundary alongside Hilton Lane lies adjacent to Lower Pools SBI on the opposite side of the lane.

4.2.7 The hedgerows in the eastern section of the site are taller and continuous with dense ground flora and they create links between woodland blocks within the site.

4.2.8 However, all hedgerows consisting of at least one woody native species are priority habitats. The hedgerow resource within and surrounding the site is of Local Value.

4.2.9 The development of site will result in the loss of field structure and the internal boundaries. Hedgerows on the site boundary will be retained and new habitat created to establish wider corridors with higher diversity to facilitate the movement of wildlife around the development area. New linear hedgerow habitat will be incorporated within the boundary green space where appropriate. Additional native tree planting would form part of the off-site habitat creation proposals.

Ponds

4.2.10 There are 17 ponds within the site and a further two ponds adjacent to the site. None of the ponds are examples of high-quality pond habitat.

4.2.11 The woodland ponds lack any aquatic or marginal vegetation, while the fishing ponds are clearly artificial and also lack some features of higher value ponds such as gradations in depth and marginal / aquatic vegetation.

4.2.12 Together the pond habitats within the site are considered to be of Local Value but ponds supporting populations of legally protected species such as great crested newt or water vole classify as priority habitats.

4.2.13 The Illustrative Masterplan incorporates the existing ponds into the site layout where practical. Two woodland ponds (P10 and P11) and three ponds alongside the central stream (P4, P5 and P6) will be retained. The retained ponds are currently actively managed for fishing and would be subject to enhancement for biodiversity and the establishment of wider pond edge habitat. The retained woodland ponds would be subject to enhancement through decreasing the level of shade to encourage the spread of marginal vegetation including species used by great created newts (GCN) for egg laying.

4.2.14 The development proposal will result in the loss of four fishing lakes/ponds, two field ponds and six woodland ponds. New wildlife ponds would be created in the GCN Mitigation Area which will be located on the eastern and north-eastern side of the development connecting with The Hag, Woodland Block A, marshy grassland and new woodland and ponds being created as part of the M56/M6 Link Road scheme. If required, new ponds and surrounding terrestrial habitat would form part of an off-site habitat compensation scheme.

Streams

4.2.15 The central watercourse (Stream A) contained a very low flow at the time of survey and had a very shallow narrow channel.

4.2.16 Latherford Brook (Stream B) is a larger more established feature than Stream A. This stream can be followed both upstream (to the east of the M6) and to the north west where it joins with the Worcester Canal. Two sections of Latherford Brook adjoin the northern boundary of the site,

separated from proposed development areas by marshy grassland to the north-east and by dense scrub to the north west.

4.2.17 The western section of the central stream is currently partly culverted within the Brookfield Farm landholding and an additional culvert will be constructed beneath the new motorway link road.

4.2.18 Both streams are priority habitats of Local Value. The development will realign the western end of the central watercourse and increase the length of the open channel as part of the final development, connecting to the existing culvert below the A460 to the west of the site.

4.2.19 Good environmental practices will need to be followed to avoid potential impacts on the retained watercourses where they are located adjacent to earth movements and construction activities These protection works will be fully specified in a Construction Environment Management Plan.

Marshy grassland

4.2.20 The areas of marshy grassland within the Brookfield Farm SBI contributes to a feature of County Value. While these habitats are not species-rich, they are quite distinct within the site and support some species that will be restricted to this habitat type.

4.2.21 The localised areas of marshy grassland, located within the site boundary, will be retained and protected.

4.2.22 New marshy grassland is to be established within the development as part of the Sustainable Drainage Scheme (SuDS) with the regularly inundated basins receiving surface water creating the conditions that will promote the establishment and spread of marshy grassland species.

4.2.23 If required, areas of marshy grassland would be created alongside new ponds as part of an off-site habitat compensation scheme.

Scrub

4.2.24 Within the site the areas of dense scrub are small and species-poor comprising species that are widespread and common. The scrub habitats are of value in the context of the site.

4.2.25 Scrub will be retained alongside the central stream but some stands on field boundaries are likely to be lost. Loss of habitat will be mitigated through the planting of blocks of scrub within the wildlife corridors within and bounding the development to and through off-site compensation. There will be extensive planting of blocks of native shrubs at the base of the embankment/ batters around the development platforms.

Arable and Improved Grassland

4.2.26 The arable fields are intensively managed as a maize crop and as a consequence are of negligible value.

4.2.27 The improved grassland is species-poor with a very limited assemblage of forbs and lacked species indicative of higher value grassland. This habitat is of value within the context of the site.

4.2.28 If required, areas of neutral meadow grassland (and wet grassland) with a range of wildflower species will be established in the final development on land that is currently low value arable and improved grassland. Further neutral grassland would be included in the off-site compensation to offset habitat loss within the development area.

4.3 Species

Bat Roosts

Buildings

4.3.1 Two common pipistrelle day roosts and a soprano pipistrelle day roost have been recorded in buildings in Brookfield Farm during roost emergence surveys carried out for the link road. The complex of buildings Yells Farm also have a number of features that could support bat roosts.

4.3.2 Under the development proposals the two building complexes will be subject to demolition resulting in loss of at least three low value bat roosts used by small numbers of commonly occurring species.

4.3.3 The loss of roosts would need to be covered by a European Protected Species Licence for bats demonstrating how the retention of the roost is unavoidable under the development proposals. The provision of alternative roosts and species protection measures would be implemented as part of the detailed site design to incorporate new roost sites along flight lines within the completed development. This would help protect the status of the bat species currently associated with the site.

Trees

4.3.4 Mature trees individually and within the woodlands are likely to have some features that would be suitable for use by roosting bats such as rot holes, cracks, splits, lifted bark and other cavities.

4.3.5 Many of the trees, particularly the larger oak trees are of a size and age that often possess such features. Given the numbers of larger trees present on-site at least a small proportion would be expected to be used by roosting bats, at least as occasional summer day roosts.

4.3.6 Where possible mature trees should be retained and protected within the development proposals to incorporate features of ecological value over 100 years old. Where the loss of mature trees cannot be avoided, tree planting will be required to provide long term compensation for the loss of features.

Bat Foraging

4.3.7 The existing site will be used by foraging and commuting bats. They will follow the habitats formed along the edges of the hedgerows, woodland and scrub within the site. They will also forage within woodland, over areas of features associated with a high biomass of invertebrates including marshy grassland and ponds.

4.3.8 The semi-natural woodlands of Brookfield Farm SBI and The Hag RBAS with associated mature trees to the north of the site are considered to provide the best bat foraging habitat within the site. Intact hedgerows surrounding the site will also form commuting routes that enable bats to commute across and throughout the site.

4.3.9 During bat activity surveys for the link road, moderate levels of bat activity were associated with the woodland (Areas E and A) and Latherford Brook, the Brookfield Farm Fishing Lakes (P12 – 15) and around the central fishing lakes (P3 and P4). In comparison only low levels of bat activity were recorded along the southern section of the central watercourse and along the hedgerows in Brookfield Farm.

4.3.10 The development will alter flight lines and result in the loss of waterbodies used as a feeding for bat species.

4.3.11 Mitigation would need to be delivered in the detailed design through enhancement of boundary features, the retention and creation of flight lines within the developed site, and sensitive lighting design to eliminate light spill away from the development areas. Dark corridors would be maintained along the northern boundary, the central watercourse and southern boundary with new habitats increasing the strength of flight lines in the developed site.

Badgers

4.3.12 Two badger setts were found during the May 2020 walkover and there is the potential for further setts to be present in dense woodland or scrub that could not be comprehensively surveyed.

4.3.13 One of the setts is located in woodland adjoining the site and outside the development area. The second badger sett is located in a woodland area that would be lost to enable development. If the sett cannot be retained with unobstructed access and protected from disturbance then it would be closed under a Natural England sett closure licence.

4.3.14 The woodland and extensive arable and improved grassland provide good foraging habitat for badgers.

4.3.15 Badgers are a common and widespread species of low conservation value. The closure of a sett would be very unlikely to affect the local status of the badger population. The provision of an alternative sett within the territory of the social group and the species protection measures would be detailed in the licence and implemented in advance of development.

Water voles

Central Watercourse

4.3.16 The central stream habitats are currently sub-optimal for water voles. The southern section is enclosed by woodland and dense scrub and has a narrow channel with no marginal or aquatic vegetation. Where the channel flows westwards south of the fishing ponds (P4 – P6), the stream has higher suitability being bounded by improved grassland with small areas of marshy grassland and neutral grassland but no signs of water vole activity were recorded in the banks of ponds during surveys undertaken for the link road in 2018.

4.3.17 The more open sections of the central stream (outside of the wooded areas) would be subject to enhancement for water vole. Ponds currently used for angling located close to the channel of the watercourse would be subject to enhancement for biodiversity including the removal of fish populations to reduce water turbidity and establishment of marginal vegetation.

4.3.18 No signs of water vole activity were recorded in the banks of ponds during surveys undertaken for the link road.

Latherford Brook

4.3.19 The sections of Latherford Brook adjoining the northern boundary of the site varied in habitat suitability.

4.3.20 The western section although scrubby and shaded on the southern bank adjoins grassland on the northern bank and had moderate value for water vole with a water depth 20-30cm and limited aquatic and marginal vegetation.

4.3.21 The eastern section is bounded by marshy grassland with scattered scrub overshading on the banks with a water depth of 30-50cm. The value of the habitat for water voles is good but declining due to the establishment of scrub. Water vole surveys carried out for the link road recorded water vole activity in several locations along Latherford Brook confirming the presence of colonies in the two sections of the brook on the boundary of the site.

4.3.22 The fishing ponds have low banks with vertical faces which provide good locations for water voles to establish burrows but the grassland on the pond banks is mown short which will limit food availability for water vole.

4.3.23 The water vole colonies in Latherford Brook will be protected from potential impacts with the inclusion of stand offs and buffer zones. Where possible, watercourse habitats will be subject to enhancement through additional planting and the control of scrub to increase food availability and maintain the population.

Otter

4.3.24 Suitable habitat for otter is present in Brookfield Farm SBI and The Hag RBAS (i.e. ponds, woodland, marshy grassland and stream).

4.3.25 Otter surveys carried out for the link road confirmed the presence of signs of otter activity alongside Latherford Brook (Stream B). The brook flows through a culvert below the M6 into the site under the M6 and flows into the Worcestershire Canal 2.3km to the north east of the site where otter activity has also been recorded.

4.3.26 The culverts beneath the M6 and A460 (single carriage road) do not constitute a barrier to otter movement along the brook.

4.3.27 The Latherford Brook and potentially the central stream are corridors along which otters could move through the landscape, but the shallow watercourses are unlikely to be important foraging habitats due to the lack of prey species. The fishing ponds will be stocked and are potentially a frequently used foraging area for the local otter population.

4.3.28 The woodland and scrub provide dense cover adjacent to the watercourse. Undisturbed locations in dense scrub away from fishing ponds have the potential to be used by otters for shelter or resting up during the day, but no holts or laying up locations were found in the woodland alongside Latherford Brook during the detailed species conducted for the link road.

4.3.29 The loss of the fishing pond adjacent to the brook (P12) will have the potential to locally reduce food availability.

4.3.30 The development will be designed to maintain watercourse connectivity, by avoiding the creation of barriers and fragmentation of corridors used by otters to move through the landscape.

Birds

4.3.31 The arable fields and improved grassland provide good potential habitat for skylark, and several birds were noted calling over these fields during the site walkover. Several woodland and farmland bird species were observed or heard within the site during the site walkover. The range of habits across the site including woodland, scrub, waterbodies, grassland and arable means the site is likely to support a good assemble of breeding bird species. The ponds are used by several birds including Canada geese and mallard and are likely to be regularly used as breeding sites by these species. The ponds also have the potential to be used by other waterfowl.

4.3.32 Only a few species were recorded within the proposed development site during link road surveys; skylark, house sparrow, song thrush and mallard.

4.3.33 Wintering bird surveys for the link road recorded mallard, meadow pipit, song thrush, stock dove, dunnock, starling, skylark and black headed gull in the Brookfield farm area with only starling present in any numbers (flock of c270). Skylark was also recorded in the fields to the east of the road.

4.3.34 The development proposals include native shrub and tree planting within the development site to partly offset the loss of hedgerows and woodland. New grassland to be created on areas that are currently improved pasture or arable would in part be managed to create a structure suitable for nesting skylark.

Polecat

4.3.35 Suitable habitat for polecat is present within woodland, stream, ponds, marshy grassland and hedgerow habitats. It is likely this species will be able to readily move through the landscape to the north, east and west. However the M6 is likely to provide a significant barrier to the movement of this species into the site.

Great crested newt (GCN)

4.3.36 The surveys of all suitable waterbodies undertaken for the link road recorded GCN DNA in only one of the ponds; P8, located alongside Holly Bush Lane. The immediately adjacent pond (P7)

was dry at the time of the link road survey and classified as unsuitable with GCN DNA recorded as absent from the other adjacent pond (P9).

4.3.37 A number of the waterbodies that will be lost (Ponds 12, 13, 14 and 15) contain large populations of (predatory) coarse fish that are stocked as part of the Brookfield Farm angling club. The man-made rectangular ponds (P4, P5, P6) alongside the central stream are also angling ponds stocked with fish. These waterbodies were scoped out of the environment DNA (eDNA) surveys undertaken for the link road in 2018.

4.3.38 The two field Ponds P1 and P2 held very shallow water and are largely unsuitable for GCN. The slightly deeper pond P2 had a negative eDNA result when surveyed for the link road.

4.3.39 Four further ponds within the site had negative eDNA survey results in 2018 (P15 at Brookfield Farm, P10 and P11 in the Hag and P9 adjacent to Holly Bush Lane).

4.3.40 The link road surveys confirmed that only one of the 17 ponds had evidence of use by GCN. Off-site, to the south of Hilton Lane, a further positive eDNA survey result was obtained for a pond 225m from the site boundary but negative eDNA results were obtained for other ponds closer to the site.

4.3.41 Based on the 2018 link road survey, the development will impact on one GCN breeding population, with the loss of the pond and much of the surrounding terrestrial habitats.

4.3.42 The conservation status of the species in the local area will need to be maintained as part of the development proposals. A permanent GCN Mitigation Area is to be created on the eastern and north-eastern side of the development comprising new ponds, extensive grassland, scrub and hedgerows. A species relocation would be undertaken under licence following the establishment of habitats in the mitigation area.

4.3.43 The new habitats with the mitigation area would be specifically connected to woodland and ponds in The Hag, long established woodland and marshy grassland to the north and new native woodland planting and wildlife ponds to be created alongside the link road.

4.3.44 The GCN Mitigation Area will adjoin the SBI and new woodland and wetland wildlife habitats to be created as part of the M54/M6 Link Road which once established will have value for GCN.

4.3.45 The habitat creation proposals for the link road, illustrated on the Environmental Masterplan, includes a group of new wildlife ponds between the link road and the proposed permanent GCN Mitigation Area with the development site. These off-site ponds will have direct connection to the on-site habitats and, ecologically, they would form an extension to the on-site mitigation, with the potential for them to become GCN breeding ponds for the population being relocated within the site.

Reptiles

4.3.46 The majority of habitats within the site have low value for the reptiles. The large arable fields and improved pastures have negligible value and the narrow field margins significantly limit the extent of habitats which could be used by commonly occurring reptiles. The waterbodies, wooded margins and localised areas of grassland could support grass snakes with amphibians being a common prey species. The grassy edges of woodland and scrub have the potential to support slow worm.

4.3.47 Surveys of key potential reptile habitat were undertaken for the link road development in 2018. The survey covered P12 at Brookfield Farm, the central fishing ponds (P4-P6), Woodland Areas A and E, and the adjoining marshy grassland. No reptiles were recorded and are likely to be absent for the development site.

5 CONCLUSIONS

5.1 Designated sites

5.1.1 There is one statutory and seven non-statutory designated sites for nature conservation value within 2 km of the site.

5.1.2 Brookfield Farm (north-east of), Shareshill SBI partially overlaps the northern boundary of the site and the adjoining designated site The Hag RBAS lies within the site. Both designations are to be retained within the green infrastructure as part of the development proposals. Lower Pool SBI lies beyond Hilton Lane, immediately to the south of the site. Environmental protection measures will be required during construction to avoid the potential for indirect impacts on designated sites during construction or post development.

5.1.3 The arable fields and improved pasture have very low conservation importance.

5.1.4 The blocks of semi-natural broadleaved woodland, watercourse, native hedgerows and Pond 8 are priority habitats under the UK BAP and classified as Habitats of Principal Importance.

5.1.5 There are 17 ponds within the site including seven fishing lakes. The pond resource has local nature conservation importance. The development would result in the loss of four fishing lakes, two shallow field ponds and six woodland ponds.

5.1.6 The linear woodland blocks in the south-eastern part of the site would be lost due to development. The larger woodland area (locally designated site) and woodland along the central stream will be retained and protected. Tree and shrub planting would be created on the margins of the site and around the development platforms to create a network of new developing scrub/woodland within the final development connected to the wildlife corridors in the wider landscape (Latherford Brook and Lower Pool SBI).

5.1.7 The building complexes at Brookfield Farm and Yells Farm will be subject to demolition. Common pipistrelle day roosts (non-breeding) were recorded in Brookfield Farm in 2018 and some of the buildings at Yells Farm also have the potential to support roosting bats. Alternative roosts will be provided as part of the design and the loss of roosts would be covered by a European Protected Species (EPS) bat mitigation licence. The species protection measures, alternative habitat provision and their implementation will underpin the licence.

5.1.8 GCN DNA was recorded in Pond 8 in spring 2018 during the surveys for the link road but was absent from all other suitable ponds within 500m of the site boundary. The loss of a single breeding pond and part of the surrounding terrestrial habitat would be mitigated and compensated through the creation of a permanent GCN Mitigation Area within the development site. The European Protected Species (EPS) GCN mitigation licence would cover the package of habitat creation, and species relocation measures.

5.1.9 Water vole colonies are present in Latherford Brook which partly adjoins the northern boundary. Otters are also known to use the brook as corridor to move through the landscape. Potential impacts on both species would be avoided by protecting the watercourse and a stand off to safeguard water voles and maintain the wildlife corridor for otters.

5.1.10 The site is used by badgers. A low status sett is located in an area of woodland to be felled. The loss of the sett would be mitigated through species protection measures and the permanent closure of the sett would be carried out under licence from Natural England.

5.1.11 The breeding bird assemblage is primarily associated with hedgerows, woodlands and larger waterbodies. Some breeding species are also associated with buildings. The managed fields have low value for most breeding birds but they have the potential to support a small number of skylark pairs. The design of green spaces in the development proposal will help to address the potential impacts on the local breeding bird assemblage supported by additional habitat creation for farmland bird species in any off-site compensation, if required.

5.2 Recommendations

5.2.1 Prior to the detailed planning submission, which is programmed to come forward in the next 2 to 3 years, a series of updated species surveys would be undertaken to supplement the survey information collected for the site in 2018 as part of the baseline survey for the link road.

5.2.2 This would include:

- GCN presence/absence and population surveys
- Bat roost potential – trees subject to felling
- Bat roost potential - buildings subject to demolition
- Breeding bird survey and wintering bird surveys
- Update Phase 1 habitat survey to record changes in extent, structure or status

5.2.3 All the mature trees that would be subject to felling would be subject to checks for use by protected species. A full assessment of trees within the development footprint will be required to assess their potential to support roosting bats.

5.2.4 The Brookfield Farm and Yells farm buildings would be subject to daytime surveys to assess the potential value of each building. The presence and status of all individual bat roosts should be classified in advance of the planning application and survey data would be used to inform the EPS mitigation licence.

5.2.5 All the ponds should be subject to resurvey a year in advance of the planning application. Environmental DNA surveys would be required on all ponds capable of supporting GCN and where presence is confirmed a population size class survey would be undertaken.

5.2.6 The detailed lighting plan for the development proposals should maintain dark corridors that are unlit along the central watercourse, around retained ponds, and across the GCN Mitigation Area as well as along the northern boundary where the site adjoins and overlaps designated wildlife sites.

5.3 Enhancement opportunities

5.3.1 The retention of the central watercourse and associated woodland creates several opportunities for enhancement for biodiversity.

5.3.2 The Hag RBAS will be subject to targeted enhancement to increase its nature conservation value through management of the woodland to promote the abundance of target species and its semi-natural character. The ponds within The Hag would also be subject to management to reduce the levels of shading and improve the conditions for aquatic flora and fauna. The objective over time would be to improve its nature conservation value and meet the criteria for designation as a SBI.

5.3.3 Broader habitat enhancement across the site should seek to maximise the value of the mosaic of scrub, maturing woodland, woodland edge, waterbodies and wildflower grassland. Neutral / wet grassland is to be created on either side of the stream to create a wider green corridor running broadly north–south through the final development increasing the green space connectivity.

5.3.4 The habitats should be brought into active management for wildlife. The three ponds that are currently managed for angling (P4, P5 and P6) would be modified to promote higher value for biodiversity. This would include the removal of fish populations, development of marginal plant communities and locally reducing the steepness of banks to create shallow margins.

5.3.5 Mitigation for bats would be built into the detailed development design and will form part of the mitigation licence application. Additional bat boxes, of varying designs to promote roosting and hibernation should be installed on larger trees provided as further enhancement.

5.3.6 Bird boxes that are designed for use by species that have suffered significant declines should be installed on buildings and trees in appropriate locations within the development site. This could include house sparrow, swift, starling, house martin and swallow.

5.4 Summary

5.4.1 In summary, the vast majority of the habitats that will be lost as a result of development have low ecological value. The loss of localised areas of higher value habitat, that cannot be retained and protected within the development layout, will be mitigated or compensated within the site wherever possible.

5.4.2 A large GCN Mitigation Area would comprise purpose-built ponds on lowest lying ground with associated wet grassland, neutral grassland and scrub. Native shrub and tree planting will bound and subdivide the area creating linear areas of cover for GCN and other wildlife.

5.4.3 Conditions in many of the new wet grassland areas would be maintained as an integral part of the SuDS scheme for the development with interceptors and hydrobrakes maintaining the water quality and gradual flow rates.

5.4.4 Additional scrub and grassland habitat would be created on all the embanked sides of the development platforms. A combination of native tree and shrub planting along with creation of areas of neutral grassland will further enhance the network of green space within the site.

5.4.5 Additional SuDS basins/swales and tree planting will be established on the top of platforms alongside development connected to the habitats on the embanked margins.

5.4.6 Realignment of the central watercourse to the west of link road would increase the length of open watercourse through the removal of sections of the existing culverts.

5.4.7 Overall the site layout, mitigation and incorporation of biodiversity in the development proposals will provide a number of biodiversity gains within the final development. If required to offset losses that cannot be fully mitigated on-site, off-site habitat compensation could be brought forward. Any off-site compensation land would be selected on the basis of low ecological value with ground conditions suitable for the creation of wildlife ponds, blocks of scrub/woodland planting and neutral grassland along with new native hedgerows.

5.4.8 Appropriate licences would be obtained where legally protected species could be affected to ensure that their conservation status is maintained.

5.4.9 The Illustrative Masterplan sets to a framework through which long term biodiversity value can be integrated into the site through appropriate habitat creation and long-term habitat management for wildlife. The detailed design will be consistent with all biodiversity planning policy requirements and comply with all relevant wildlife legislation through the delivery of new managed green infrastructure, connected to habitats being created as part of the M6/M54 link road and the wildlife corridors in the wider landscape.

REFERENCES

British Standards Institute – BSI (2013). BS42020:2013 Biodiversity Code of Practice for Planning and Development.

CIEEM (2016). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2017). Guidelines for Preliminary Ecological Assessment. Chartered Institute of Ecology and Environmental Management, Winchester.

JNCC (2010). Handbook for Phase 1 Habitat survey: a technique for environmental audit (revised reprint). Joint Nature Conservation Committee, Peterborough.

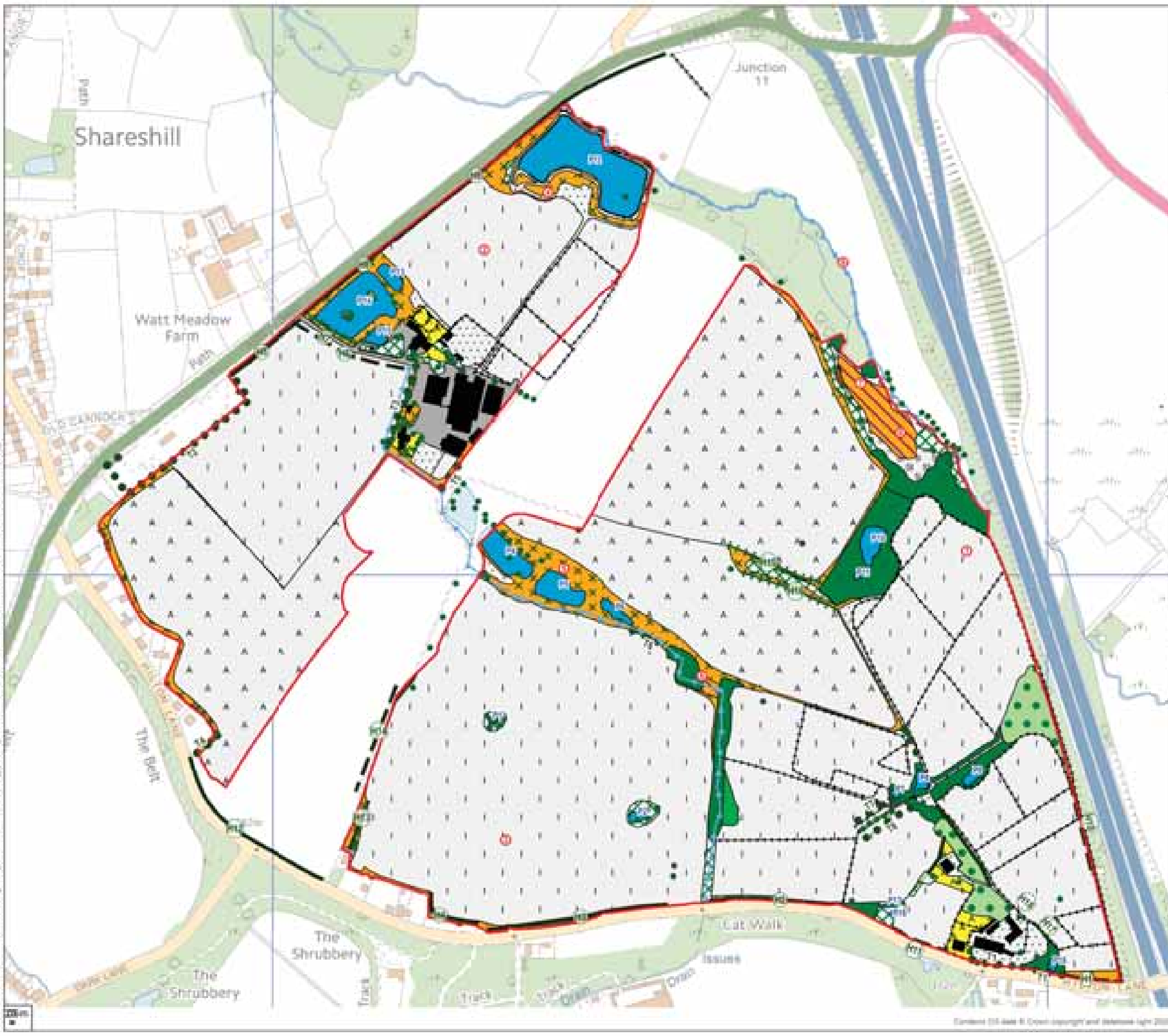
Stace, C. (2010). New Flora of the British Isles. 3rd Edition. Cambridge University Press.

RPS (2014). Ecological Appraisal. Hilton Park. Almondsbury, Bristol.

DRAWINGS

Drawing 1 Phase 1 Habitat Map

Drawing 2 Woodland Areas and Pond Map



Notes

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Legend

- Red line boundary
- A1.1.1 - Broadleaved woodland - semi-natural
- A1.2.2 - Coniferous woodland - plantation
- A1.3.1 - Mixed woodland - semi-natural
- A2.1 - Scrub - dense/continuous
- B4 - Improved grassland
- B5 - Marsh/marshy grassland
- B6 - Poor semi-improved grassland
- C1.1 - Bracken - continuous
- J1.1 - Cultivated/disturbed land - arable
- J1.2 - Amenity grassland
- J3.6 - Buildings
- J4 - Bare ground
- HS - Hardstanding
- NGSS - Neutral grassland with scattered scrub
- G1 - Waterbodies (open water)
- A1.1.22 - Immature secondary woodland
- Defunct species-poor hedge
- Intact species-poor hedge
- Watercourse
- Fence
- Species-poor hedge with trees
- Broadleaved tree line
- Defunct species-poor hedge with trees
- Individual trees
- Scattered scrub
- Target notes

Rev	Description	By	CB	Date
1	–	–	–	–

MAKING COMPLEX EASY

Client: RPS Birmingham

Project: Hilton Park

Title: Figure 2: Habitat Plan

Status	Drawn By	PM/Checked By
FINAL	LW	TO

Project Number	Scale @ A3	Date Created
ECO01118	1:4,762	Jul 2020

Drawing Number	Rev
ECO01118-ECO-002	1

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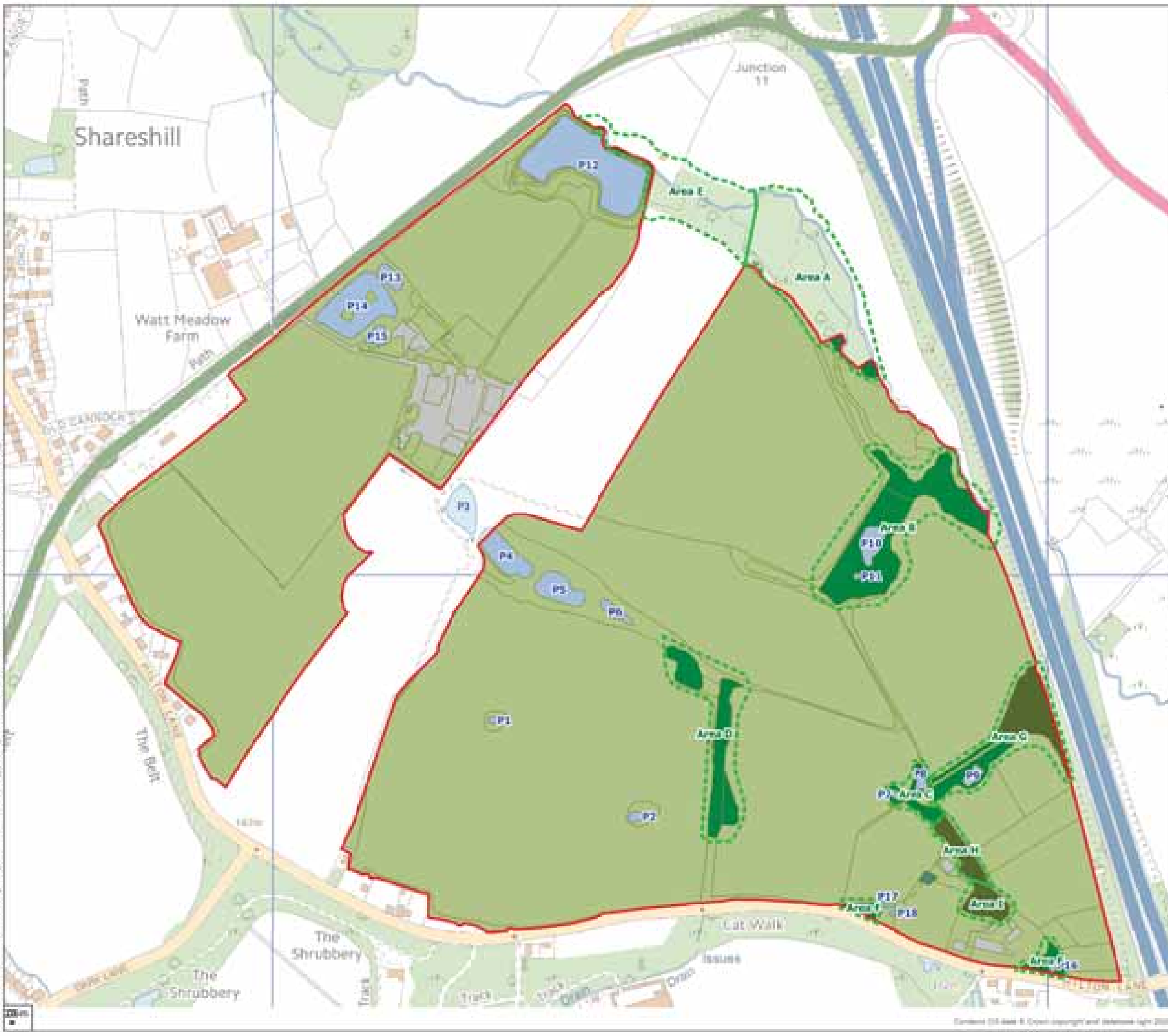

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Legend

- Red line boundary (excluding road scheme)
- Broadleaved woodland
- Conifer plantation woodland
- Mixed woodland
- Green areas (grassland, bare ground, scrub etc)
- Buildings and hardstanding
- Waterbodies (open water P1 - P18)
- Areas of woodland (A - I)

Rev	Description	By	CB	Date
1	–	–	–	–

MAKING COMPLEX EASY

Client: RPS Birmingham

Project: Hilton Park

Title: Figure 3. Woodland Areas Plan

Status	Drawn By	PM/Checked By
FINAL	LW	TO

Project Number	Scale @ A3	Date Created
ECO01118	1:4,762	Jul 2020

Drawing Number: ECO01118-ECO-003 — Rev: 1

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APPENDICES

Appendix A

Relevant Legislation

GREAT CRESTED NEWTS

Great created newts *Triturus cristatus* are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (and as amended), which affords the species protection under Section 9. The species is also listed on Schedule 2 of the Conservation of Habitats and Species Regulations 2017. In combination, this makes it an offence to:

- intentionally kill, injure or take (capture etc.) a Great Crested Newt;
- possess a Great Crested Newt;
- intentionally or recklessly damage, destroy, obstruct access to any structure or place used by Great Crested Newt for shelter or protection, or disturb any animal occupying such a structure or place; and sell, offer for sale, possess or transport for the purpose of sale (live or dead animal, part or derivative) or advertise for buying or selling such things.

Great crested newts are also listed on the UKBAP as a Priority Species and are listed as a species of principal importance for biodiversity in England & Wales under Section 41 of the Natural Environment & Rural Communities Act (2006).

REPTILES

All common UK reptile species (Adder *Vipera berus*, Grass Snake *Natrix Helvetica*, Common Lizard *Zootoca vivipara* and Slow Worm *Anguis fragilis*) are protected through part of Section 9(1 and 5) of the Wildlife & Countryside Act 1981 (as amended). This prohibits:

- Intentional or reckless injuring or killing;
- Selling, offering or exposing for sale, or having in possession or transporting for the purpose of sale, any live or dead wild animal or any part of, or anything derived from, such an animal; or
- Publishing or causing to be published any advertisement likely to be understood as conveying buying or selling, or intending to buy or sell, any of those things.

BIRDS

All birds, their nests and eggs are afforded protection under the Wildlife and Countryside Act 1981, as updated by the Countryside and Rights of Way Act 2000. It is an offence to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; and
- intentionally take or destroy the egg of any wild bird.

Schedule 1 birds cannot be intentionally or recklessly disturbed when nesting and there are increased penalties for doing so. Licences can be issued to visit the nests of such birds for conservation, scientific or photographic purposes but not to allow disturbance during a development even in circumstances where that development is fully authorised by consents such as a valid planning permission.

BATS

All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981, as updated by the Countryside and Rights of Way Act 2000. All British bats are also included on Schedule 2 of The Conservation of Habitats and Species Regulations 2017 as European Protected Species. It is an offence to:

- intentionally or recklessly kill, injure or capture bats;
- deliberately or recklessly disturb bats (whether in a roost or not); and
- damage, destroy or obstruct access to bat roosts

A roost is defined as 'any structure or place which [a bat] uses for shelter or protection'. As bats tend to reuse the same roosts, legal opinion is that a roost is protected whether or not bats are present at the time of survey.

A licence will therefore be required by those who carry out any operation that would otherwise result in offences being committed.

The following bat species are listed as being of principal importance for the conservation of biodiversity in England, (commonly referred to as UKBAP Priority species): Barbastelle, Bechstein's, Noctule, Soprano Pipistrelle, Brown Long-eared, Greater Horseshoe, and Lesser Horseshoe.

BADGER

Badgers are protected under the Protection of Badgers Act 1992. This act is based on the need to protect badgers from baiting and deliberate harm or injury. The act makes it an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat a badger, or attempt to do so;
- Intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access routes.

A sett is defined as "any structure or place that displays signs indicating current use by a badger".

DORMOUSE

Hazel Dormouse *Muscardinus avellanarius* is fully protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2017. The Regulations prohibit:

- Intentionally, recklessly or deliberately kill, injure or take a Dormouse;
- The deliberate disturbance of this species in such a way as to be significantly likely to affect:
  - Their ability of to survive, hibernate, migrate, breed, or rear or nurture their young; or;
  - The local distribution or abundance of Dormice.
- Damage or destruction of a breeding site or resting place (nest);
- The possession or transport of Dormice or any other part of.

Dormice are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion in Schedule 5. Under the Act, they are protected from:

- Intentional or reckless disturbance (at any level);
- Obstruction of access to any place of shelter, breeding or rest;
- Selling, bartering or exchange of these species, or parts of.

Offences can be deliberate, intentional or reckless and penalties for any of the above include fines of up to £5k and imprisonment of up to 6 months, per animal affected.

Dormice are also listed on Section 41 of the NERC Act 2006 as a Species of Principal Importance; national objectives & targets include the maintenance of the geographical range and viability of existing Dormice populations to ensure that it remains in favourable conservation status.

Water Vole and Otter

Water vole and Otter and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to:

- Capture, kill or injure a Water Vole or Otter;
- Damage, destroy or obstruct access to a breeding site or resting place (i.e. burrow);
- Disturb a Water Vole or Otter whilst in a place of shelter;

- Possess or control a Water Vole or Otter (live or dead), any part of a Water Vole or Otter or anything derived from a Water Vole or Otter;
- Sell, barter or exchange a Water Vole or Otter (live or dead), any part of a Water Vole or Otter or anything derived from a Water Vole or Otter; and / or
- Advertise or offer for sale, barter or exchange a Water Vole or Otter (live or dead), any part of a water vole or Otter or anything derived from a Water Vole or Otter.

Offences can result from intentional or reckless actions. Penalties include fines of up to £5000 and / or imprisonment for up to six months, per offence. Under certain circumstances a licence can be granted by Natural England to permit activities that would otherwise constitute an offence.

Otters have additional protection, being listed as a European Protected Species (EPS) under Conservation of Habitats and Species Regulations 2017. This makes it an offence to deliberately or recklessly:

- Capture, injure or kill an Otter;
- Harass an Otter or group of Otters;
- Disturb an Otter in a holt or any other structure or place it uses for shelter or protection;
- Disturb an Otter while it is rearing or otherwise caring for its young;
- Obstruct access to a holt or other structure or place Otters use for shelter or protection or to otherwise deny the animal use of that place;
- Disturb an Otter in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species;
- Disturb an Otter in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young.
- It is also an offence to:
- Damage or destroy a breeding site or resting place of such an animal (note that this does not need to be deliberate or reckless to constitute an offence);
- Keep, transport, sell or exchange or offer for sale or exchange any wild Otter or any part or derivative of one (if obtained after 10 June 1994).

Both species are listed as Species of Principal Importance within S41 of the NERC Act 2006.

Appendix B

Target Notes

TN1. Improved grassland characterised by abundant Yorkshire fog *Holcus lanatus*, with frequent perennial ryegrass *Lolium perenne*, white clover *Trifolium repens*, meadow foxtail *Alopecurus pratensis*, and occasional sweet vernal grass *Anthoxanthenum odoratum*, soft brome, ribwort plantain *Plantago lanceolata* and broad-leaved dock *Rumex obtusifolius*. Species occurring rarely were dandelion *Taraxacum* agg., cat's-ear *Hypochaeris radicata*, creeping buttercup *Ranunculus repens* and ragwort *Senecio vulgaris*.

TN2. Improved grassland characterised by dominant perennial ryegrass, with frequent ribwort plantain, Yorkshire fog, creeping cinquefoil *Potentilla reptans* and creeping thistle *Cirsium arvense*. Species occurring occasionally or rarely were common vetch *Vicia sativa*, common mouse ear *Cerastium fontanum*, red fescue *Festuca rubra* and black knapweed *Centaurea nigra*.

TN3. Improved grassland characterised by abundant perennial ryegrass, meadow foxtail and Yorkshire fog with occasional sweet vernal grass and white clover. Species occurring rarely were common vetch, common mouse-ear and broad-leaved dock.

TN4. Neutral grassland regenerated on disturbed ground and characterised by abundant Yorkshire fog with frequent, common bent *Agrostis capillaris*. Species present less frequently were creeping thistle, broadleaved dock, white clover, creeping cinquefoil, silverweed *Potentilla anserina*, and colt's-foot *Tussilago farfara*.

TN5. Neutral grassland characterised by Yorkshire fog, perennial ryegrass, common bent, with frequent broadleaved dock. Species occurring infrequently included cock's-foot Dactylis glomerate, red campion *Silene dioica,* bluebell *Hyacinthoides non-scripta*, and lesser celandine *Ficaria verna*.

TN6.Marshy grassland dominated by lesser pond sedge *Carex acutiformis* with locally frequent marsh marigold *Caltha palustris*, jointed rush *Juncas articulatus* and rosebay willowherb *Chamerion angustifolia*. Species occurring rarely are marsh thistle *Cirsium palustre* and meadowsweet *Filipendula ulmaria.*

TN7. Marshy grassland dominated by meadowsweet with occasional marsh marigold. Species occurring rarely were rosebay willowherb and jointed rush.

TN8. Marshy grassland characterised by abundant brooklime *Veronica beccabunga* with occasional soft rush *Juncus effuses,* marsh thistle, creeping bent*,* common nettle *Urtica dioica*, red campion, broadleaved dock, rosebay willowherb, spear thistle *Cirsium vulgare* and hogweed *Heracleum sphondylium*.

Appendix C

Site Photos

Appendix D

Pond Descriptions

Pond	Description
P1	A field pond in a large field of improved grassland and surrounded by mature trees. The pond is roughly circular measuring approximately 10m across (approx. 75m^2). The water was turbid with extensive blanket weed but no other aquatic vegetation. The water level had dropped recently with approximately 2m of exposed bed above water's edge. Maximum water depth was estimated at 30cm but could not be accurately determined due to the turbidity of the water (Appendix C, Plate 19).
P2	A field pond in a large field of improved grassland and surrounded by mature oak, sycamore and horse chestnut trees. The pond is roughly oval measuring approximately 20m x 12m (approx. 250m^2). The water was turbid with extensive blanket weed but no other aquatic vegetation. The water level had dropped recently with approximately 0.7m of exposed bed above the water's edge. Maximum water depth was estimated at 40cm but could not be accurately determined (Appendix C, Plate 20).
P3	A large roughly rectangular fishing pond adjacent to the development (within the permanent footprint of the link road)
P4	A large fishing pond, roughly rectangular measuring approximately 80m x 30m (approx.2400m2). The pond is bounded by regenerating grassland, ruderals and scattered birch/alder. Mature alder trees line the northern bank. Small stands of bulrush were present around the edges. Maximum water depth was estimated at over 1m but could not be accurately determined due to the turbidity of the water.
P5	A large roughly rectangular fishing pond, approximately 55m x 25 to 40m (approx.1650m^2). Small stands of bulrush were present around the edges with alder stumps with several years of regenerative growth. Maximum water depth was estimated at over 1m but could not be accurately determined (Appendix C, Plate 21).
P6	A large pond adjacent to the fishing ponds but with no fishing pegs. The pond is a narrow oval in shape, measuring approximately 500m^2. The pond is largely surrounded by tall maturing alder with an open section along the northern bank of rank neutral grassland. The clearer dark water suggests the pond is not stocked with fish. No aquatic vegetation was present (Appendix C, Plate 22).
P7	A small field pond surrounded by mature oaks on the edge of horse grazed improved grassland fields. The pond is oval measuring approximately 100m^2. No aquatic vegetation was present. The water was slightly turbid and the maximum water depth was estimated to be at least 40cm (Appendix C, Plate 23).
P8	A field pond similar to Pond 7 and surrounded by mature oaks. The pond is roughly circular measuring approximately 150m^2. No aquatic vegetation was present. The water was slightly turbid, with an estimated maximum water depth of at least 75cm (Appendix C, Plate 24).
P9	A field pond similar to Ponds 7 and 8. The pond is surrounded by mature oaks and is situated on the edge of horse grazed improved grassland. The pond is horse poached at one end and appears quite shallow with an estimated maximum depth of 30cm. A few emergent stems of bittersweet were present on one edge but otherwise there was no aquatic vegetation. The pond is roughly oval measuring approximately 250m^2 with an estimated maximum depth of over 1m (Appendix C, Plate 25).
P10	This is a large pond, within The Hag RBAS site of mature broadleaf woodland and the pond is surrounded by mature oak, ash and sycamore trees with immature sycamore and elm. Very little aquatic vegetation was present but a few patches of duckweed and algae were noted. The pond is roughly oval with a small backwater and measures approximately 1000m^2 (Appendix C, Plate 26).
P11	This small woodland pond is surrounded by sycamore and willow. The pond surface had a partial cover of duckweed and algae were noted. No other aquatic plants were noted. The pond is roughly circular measuring approximately 200m^2 with an estimated maximum depth of at least 30cm (Appendix C, Plate 27).
P12	This is a large fishing pond with many fishing pegs with a shallow 'U' shape measuring approximately 9,500m^2. The pond is surrounded by a gravel track. Narrow banks support grassland with scattered immature alder and silver birch. Maximum water depth is estimated to be at least 1m (Appendix C, Plate 31).
P13,14 and 15	Three fishing ponds with fishing pegs in a small complex in the grounds of Brookfield's Farm, and which are likely regularly stocked with fish. The largest pond P14 is roughly rectangular measuring approximately 5,000m^2. The banks are flat and low with vertical sides and support sown and reaerating grassland with scattered birch and alder scrub. Several stands of bulrush were present on the pond margins but otherwise no aquatic vegetation was noted. Several Canada geese and mallards were present during the survey. Maximum water depth is estimated to be at least 1m (Appendix C, Plate 29). Pond 13 is rectangular measuring approximately 600m^2. Maximum water depth is estimated to be at least 1m (Appendix C, Plate 29). Pond 15 is oval / circular measuring approximately 500m^2. Maximum water depth is estimated to be at least 1m (Appendix C, Plate 30).
P16	This pond is located in a very small woodland block comprising mature oak, sycamore, ash and willow. The pond is situated in the grounds of Yells Farm next to a stables, horse paddocks and Holton Lane. The pond is roughly oval measuring approximately 175m^2. The water was turbid, containing some fallen trees and litter and with an estimated maximum depth was at least 30cm. No aquatic vegetation was present (Appendix C, Plate 28).

P17	This small pond is surrounded by dense bramble thicket (with restricted accessibility). The pond contained a large stand of bulrush and soft rush with only a very small area of open water visible which was completely covered in duckweed. The pond is small measuring less than 60m^2 (Appendix C, Plate 32).
P18	This small pond is surrounded by dense bramble thicket (with restricted accessibility). The pond is very similar to Pond 16 and contained a stand of bulrush but could not be seen more closely to determine if other aquatic vegetation or standing water were present. The pond was very small measuring less then 50m^2

Appendix E

Hedgerows and Tree Lines

Appendix F Hedgerows and Tree Lines

Hedge (H) / Tree Line (T)	Length	Width at base	Height	Structure	Woody Species (T = Tree)	Ground Flora	Species Rich (Y/N)	Adjacent habitats / Land Use
H1	75m	1.5m	5m+	Defunct. 'Leggy' with spreading canopy	Hawthorn	Species-poor rank grassland (road verge) and improved grassland (field).	N	Road verge of rank grassland, bramble and immature trees; and improved grassland paddock.
H2	170m	1 – 2.5m	2-5m	Defunct and leggy. Closely spaced immature trees and shrubs with some mature trees, gappy at east end.	Elm, pedunculate oak (T), hawthorn	Species-poor rank grassland (road verge) and improved grassland (field).	N	Road verge of rank grassland, nettle and bramble; and improved grassland paddock.
H3	250m	1.5m	1.5m	Intact, tight, uniform square structure.	Hawthorn	Species-poor rank grassland (road verge); bramble, nettle and improved grassland (field).	N	Road verge of rank grassland, nettle and bramble; and improved grassland paddock.
H4	100m	2.0m	1.8m	Intact, tight, uniform square structure.	Hawthorn, sycamore	Species-poor rank grassland (road verge); bramble, nettle and improved grassland (field).	N	Road verge of rank grassland, nettle and bramble; and improved grassland paddock.
H5	105m	1.5m	1.5m	Intact, tight, uniform square structure.	Hawthorn, sycamore	Species-poor rank grassland; and improved grassland (field).	N	Road verge of tall ruderal and rank grassland; and arable field.
H6	160m	1.5m	1.5m	Defunct with tight, uniform square structured sections	Hawthorn, ash, dogwood, alder	Species-poor rank grassland; and improved grassland (field).	N	Asphalt access track and improved grassland field.
H7	100m	1.5m	2-5m	Dense structure with uneven height along the access roadside.	Hawthorn, ash, dogwood, alder	Species-poor rank grassland; and neutral grassland	N	Asphalt access track and fishing lakes.
H8	105m	3-4m	4-5m	Dense uneven scrubby structure with uneven height and some canopy spread.	Hawthorn	Species-poor rank grassland (road verge); and neutral grassland.	N	Species-poor rank grassland road verge); and fishing lakes.

Hedge (H) / Tree Line (T)	Length	Width at base	Height	Structure	Woody Species (T = Tree)	Ground Flora	Species Rich (Y/N)	Adjacent habitats / Land Use
H9	310m	3m	2m	Dense even scrubby structure	Hawthorn, alder, elm	Species-poor rank grassland	N	Species-poor rank grassland (road verge) and neutral grassland.
H10	90m	1.5m	4-5	Leggy mature hawthorn with wide spreading canopy	Hawthorn	Improved species-poor grassland.	N	Rank species-poor grassland and scrub (road verge); and improved grassland.
H11	60m	1.5m	4m	Defunct, with immature trees and occasional shrubs.	Elm with occasional hawthorn	Rank species-poor grassland on road verge; and improved grassland.	N	Rank species-poor grassland (road verge); and improved grassland.
H12	360m	1.5m	1.5m	Intact with tight, uniform square structured sections.	Hawthorn, elm	Rank species-poor grassland on road verge; and improved grassland.	N	Rank species-poor grassland (road verge); and arable
H13	60m	4m	5m	Intact, outgrown, densely scrubby	Hawthorn, elm	Rank species-poor grassland field margin	N	Dirt farm track and Improved grassland
H14	150m	4m	5m	Defunct, outgrown densely scrubby.	Hawthorn, elm, alder, pedunculate oak (T)	Rank species-poor grassland field margin	N	Dirt farm track and arable
H15	95m	3m	4-5m	Intact, outgrown, densely scrubby	Hawthorn, elm, elder	Rank species-poor grassland field margin	N	Arable
H16	125m	3m	4-5m	Intact, outgrown, densely scrubby	Hawthorn, elm, alder	Rank species-poor grassland field margin	N	Arable
H17	35m	4m	4-5m	Intact, dense scrubby with spreading canopy	Hawthorn	Improved grassland and bare ground.	N	Improved grassland and bare ground.
H18	55m	2m	4-5m	Defunct, with immature trees	Hawthorn with immature elm, ash and alder	Rank grassland	N	Bare ground access track to either side.
TREE LINES								
T1	50m	N/A	N/A	Well-spaced mature trees with occasional immature trees / shrubs.	Mature pedunculate oak, Scots pine, sycamore Immature aspen, sycamore, pedunculate oak, silver birch, Scots pine	Rank species-poor grassland on road verge and bare ground with ivy.	N/A	Narrow rank grassland (road verge); and amenity grassland and shaded bare ground with ivy.
T2	290m	N/A	N/A	Closely spaced mature / semi-mature trees	Pedunculate oak, ash, willow	Rank species-poor grassland field edge.	N/A	Arable field and improved grassland.

Hedge (H) / Tree Line (T)	Length	Width at base	Height	Structure	Woody Species (T = Tree)	Ground Flora	Species Rich (Y/N)	Adjacent habitats / Land Use
T3	115m	N/A	N/A	Closely spaced mature / semi-mature trees	Alder, hazel, willow, pedunculate oak, hawthorn, Leyland cypress.	Hard standing, neutral grassland and improved grassland.	N/A	Hard standing, neutral grassland residential garden and improved grassland field with immature secondary woodland.
T4	40m	N/A	N/A	Mature willow.	Willow sp.	Bare ground with nettle and coarse-leaved grasses.	N/A	Improved grassland; and small commercial premises.
T5	37m	N/A	N/A	Mature willow.	Willow sp.	Rank species-poor grassland on field margin	N/A	Equestrian centre and fishing pond
T6		N/A	N/A	Closely spaced mature alder	Alder	Rank species-poor grassland	N/A	Arable and improved grassland
T7		N/A	N/A	Closely spaced mature pedunculate oak	Pedunculate oak	Rank species-poor grassland on field margin	N/A	Improved grassland
T8		N/A	N/A	Closely spaced mature pedunculate oak	Pedunculate oak	Rank species-poor grassland on field margin	N/A	Improved grassland

Appendix G CONFIDENTIAL

Badger Field Signs

A badger sett was located on the southern edge of the woodland in the Brookfield Farm SBI on the northern boundary of the site. Five active entrances were noted with one entrance separated by 10m from the main group.

A badger sett was present in the woodland north of Yells Farm. At least three active entrances were present in the bank on the edge of the woodland. Several dung pits were found in the woodland, one containing fresh dung.