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PRELIMINARY ECOLOGICAL APPRAISAL

At

Address Removed

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A handwritten signature in black ink, appearing to read 'Toby Hart', is positioned below the 'Approved by:' line.

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EXECUTIVE SUMMARY

United Environmental Services Ltd (UES) was commissioned to carry out a baseline ecological survey of the proposed phase 3 development at *Address Removed*. A desk study and preliminary ecological appraisal (PEA) were undertaken in March and July 2016, including an ecological record search using the Multi Agency Geographic Information Centre (MAGIC).

The PEA provides an assessment of the potential ecological impacts associated with the phase 3 development, which includes retail units, restaurants, a skate park, play barn, farmstead, car parking and associated roads and walkways.

The site is predominantly rough grassland and ephemeral / short perennial habitats, which have established as a result of ongoing disturbance works around the site. No statutorily / non-statutorily protected sites or priority habitats / species will be directly or indirectly affected by the proposed development.

The results of the ecological walkover survey combined with the results of the desk study have highlighted the requirement for further work in relation to the following habitats and species:

- **Trees / hedgerows** – Site clearance and construction works should be mindful of the Root Protection Areas (RPAs) of the trees on and immediately adjacent to the development.
- **Amphibians** – Reasonable avoidance measures to be implemented during site clearance.
- **Reptiles** – Reasonable avoidance measures to be implemented during site clearance.
- **Bats** – If any mature trees are to be removed as part of the proposed development, they should first be subject to a preliminary ground level inspection (and aerial tree inspection if required) by a licensed bat ecologist. Guidance provided on external lighting and bat boxes.
- **Breeding birds** – Vegetation removal and site clearance should be undertaken outside of the breeding bird season (March to August inclusive). If this is not possible then a breeding bird nest check should be carried out or an ecological clerk of works appointed to oversee the works. Guidance provided on bird boxes.
- **Invasive species** – Japanese rose to be removed prior to start on site.

Mitigation measures, as detailed in section 4, should be adhered to, which may in some cases negate the need for further survey work.

Enhanced landscape features, such as the provision of native species-rich naturalistic hedgerow and shrub planting, will add to the nature conservation value of the site as a whole.

This report should be read with appendices 1 to 6 which include, results of the desk study, GIS phase 1 habitat mapping, photographs of site and relevant statutory guidance.

1. INTRODUCTION

1.1 Author, surveyors, qualifications and scope of study area

This report is written by Kathryn James BSc MRes ACIEEM, UES Senior Ecologist. Kathryn holds a level 4 Botanical Society for Britain and Ireland (BSBI) field identification skills certificate (FISC), which certifies her as competent to undertake phase 1 habitat and national vegetation classification (NVC) surveys. Kathryn is also licensed to disturb, take and handle Great crested newts and all species of bats in England under licences 2015-16299-CLS-CLS and 2015-10264-CLS-CLS respectively.

The zone of influence considered within the scope of the survey includes all land within the red line boundary. Where relevant, other ecological resources, receptors and important habitats which are spatially separate from the site are considered.

1.2 Survey objectives

UES was commissioned in March 2016 to conduct a PEA of the proposed phase 3 development at *Address Removed*. This was completed in order to:

- Establish baseline conditions and determine the importance of ecological features present or potentially present within the survey area
- Identify key ecological constraints to the project
- Identify the potential requirement for mitigation or compensation, including measures that may be required based on further surveys
- Assess requirements for further surveys as a result of nationally or internationally protected species present or potentially found on site

1.3 Proposed works

This report provides an assessment of the potential ecological impacts associated with the phase 3 development, which includes retail units, restaurants, a skate park, play barn, farmstead, car parking and associated roads and walkways.

1.4 Structure of the report

This report is a baseline appraisal that forms the basis for further ecological surveys and Environmental Impact Assessments (EIA) if required. In the majority of cases the preliminary ecological assessment will not provide all the ecological data required by the Local Planning Authority to determine an application, especially in the event that protected habitat or species issues are present or likely.

This report should be read with appendices 1 to 6, which include results of the desk study, GIS phase 1 habitat mapping, photographs of site, and relevant statutory guidance.

2. METHODOLOGY

This PEA comprises a desk study and a field survey. The desk study is conducted in order to collate ecological information on species and / or habitats of interest that may be present. The field survey is conducted in order to assess the habitats and their importance, both on site and in the context of their wider surroundings.

2.1 Desk study

The following resources were used to inform the desk study:

- National – Using the UK government’s MAGIC website, statutorily protected sites were scoped to a distance of 10km from the application site.
- Local – Worcestershire Biological Records Centre were approached in May 2015 for records of protected, notable or non-native invasive species, local wildlife sites, statutory designated sites and priority habitat information within 2km of site.

2.2 Field survey

An ecological walkover survey was carried out on 29th March 2016 and 4th July 2016 by Kathryn James. The purpose of the survey was to identify, record and map dominant habitats types within the development area and highlight any further species surveys that may be required based on the quality of those habitats. When conducting the surveys particular focus was concentrated on the following species and habitat features:

- | | |
|------------------|-------------------------|
| • Amphibians | • Hedgerows |
| • Reptiles | • Plant communities |
| • Badger | • Invasive species |
| • Hazel dormouse | • Otter |
| • Bats | • Water vole |
| • Birds | • White-clawed crayfish |
| • Trees | |

The habitats were assessed by using the phase 1 habitat survey technique, which is a system for environmental audit widely used within the environmental consultancy field. The survey was undertaken in accordance with the methodology in the ‘Handbook for phase 1 habitat survey - A technique for environmental audit’ (JNCC, 2010) as recommended by Natural England, and in the “Guidelines for Preliminary Ecological Appraisal” (CIEEM, 2013).

The survey area encompasses all of the land within the development footprint and the land to a distance of 30m outside it where accessible. In line with recognized guidelines, ponds were also scoped to a distance of 500m (250m radius from the survey area).

The phase 1 habitat survey methodology was extended to record any signs of habitats suitable to support protected / invasive species and any incidental observations of other noteworthy species.

2.3 Survey limitations

There were no limitations during this survey.

3. RESULTS

3.1 Desk study

3.1.1 Statutorily protected sites

There are no statutorily protected sites within 2km of the site. There are 10 statutorily protected sites between 2km and 10km of the site (see Appendix 1 – Desk study for mapped locations):

- Baynhall Meadow SSSI
- Bredon Hill SSSI SAC
- Broom Railway Cutting SSSI
- Cleeve Prior Bank LNR
- Crophorn New Inn Section SSSI
- Highclere SSSI
- Long Meadow, Thorn SSSI
- Portway Farm Meadows SSSI
- Tunnel Hill Meadow SSSI
- Windmill Hill SSSI
- Yellow House Meadow SSSI

SSSI: *Site of Special Scientific Interest*

SAC: *Special Area of Conservation*

LNR: *Local Nature Reserve*

3.1.2 Non-statutorily protected sites

There are 3 local wildlife sites (LWS) within 2km of site, the closest being the River Avon LWS (see Appendix 1 – Desk study for mapped locations):

- Littleton, Broadway and Badsey Brooks and Tributaries
- River Avon
- Wood Norton Complex

3.1.3 Protected species

The following relevant protected or notable species were highlighted by the biological record search:

- Amphibians: Common frog *Rana temporaria*, Common toad *Bufo bufo*, and Smooth newt *Lissotriton vulgaris*
- Bats: Common pipistrelle *Pipistrellus pipistrellus*, Serotine *Eptesicus serotinus* and Brown long-eared *Plecotus auritus*.
- Other mammals: European otter *Lutra lutra*, European badger *Meles meles*, and Polecat *Mustela putorius*.
- Birds: various species, including the following Section 41 species Skylark *Alauda arvensis*, Yellowhammer *Emberiza citrinella*, Lapwing *Vanellus vanellus* and Turtle dove *Streptopelia turtur*.
- Reptiles: Slow-worm *Anguis fragilis*

3.2 Baseline conditions – Habitats

The results of the PEA are also shown on the accompanying map at Appendix 2 – Phase 1 habitat plan. Habitats are colour-coded in accordance with the phase 1 standard. The following principle habitat types were characterised locally:

- | | | | |
|----------|----------------------------------|----------|----------------------------|
| • A1.1.2 | Broad-leaved plantation woodland | • J1.4 | Introduced shrub |
| • A2.2 | Scattered scrub | • J2.1.2 | Intact species poor hedge |
| • A3.1 | Broad-leaved scattered trees | • J2.2.2 | Defunct species poor hedge |
| • B2.2 | Semi-improved neutral grassland | • J2.4 | Fence |
| • G1 | Standing water | • J3.6 | Buildings |
| • J1.2 | Amenity grassland | • J4 | Bare ground |
| • J1.3 | Ephemeral / short perennial | • J5 | Hardstanding |

3.2.1 A1.1.2 Broad-leaved plantation woodland

A stand of approximately 40 semi-mature Oaks *Quercus sp* are present to the east of site, adjacent to the railway. Sweet chestnut *Castanea sativa* and Dog rose *Rosa canina* are also present. The ground flora comprises rough grassland.

3.2.2 A2.2 Scattered scrub

Blocks of Bramble *Rubus sp* scrub border the tracks to the south of site. The length of scrub within the railway loop also contains Rowan *Sorbus aucuparia* and Oak trees, and Hedge woundwort *Stachys sylvatica*, Teasel *Dipsacus fullonum* and Creeping thistle *Cirsium arvense*.

3.2.3 A3.1 Broad-leaved scattered trees

There are a number of scattered trees throughout site:

- Apple *Malus sp* trees line the entrance to site
- A single semi-mature Cherry *Prunus sp* tree is present to the northeast of site, along the railway line
- Mature Italian alder *Alnus cordata* and Norway maple *Acer platanoides* trees are present to the north of the adventure playground
- Mature Italian alder, Norway maple, Oak and Lime *Tilia x europaea* trees are present alongside the footpath within and to the northwest of the railway loop. Scattered saplings are present within the railway loop

3.2.4 A3.2 Semi-improved neutral grassland

The phase 1 habitat survey and tree survey from December 2009 map the majority of the development site as unmanaged former commercial orchards. Since this time the site has undergone significant development. Land within the phase 3 boundary has been cleared and approximately half of the site has developed into rough grassland.

The sward is dominated by Yorkshire fog *Holcus lanatus*, Bent grass *Agrostis sp* and False oat grass *Arrhenatherum elatius*. Other species present include, Sweet vernal grass *Anthoxanthum odoratum*, Perennial ryegrass *Lolium perenne*, Cock's foot *Dactylis glomerata*, Timothy *Phleum pratense*, Ox-eye daisy *Leucanthemum vulgare*, Ribwort plantain *Plantago lanceolata*, Greater plantain *Plantago major*, Hogweed *Heracleum sphondylium*, Cow parsley *Anthriscus sylvestris*, Carrot *Daucus carota*, Field bindweed *Convolvulus arvensis*, Hedge bindweed *Calystegia sepium*, Common ragwort *Jacobaea vulgaris*, Common dandelion *Taraxacum officinale* agg, Creeping cinquefoil *Potentilla reptans*, Creeping buttercup *Ranunculus repens*, Cat's ear *Hypochaeris radicata*, Smooth hawkbeard *Crepis capillaris*, Broad-leaved dock *Rumex obtusifolius*, Common sorrel *Rumex acetosa*, Rose *Rosa sp*, White clover *Trifolium repens*, Red clover *Trifolium pratense*, Hop trefoil *Trifolium campestre*, Cut-leaved crane's-bill *Geranium dissectum*, Hedgerow crane's-bill *Geranium pyrenaicum*, Vetch *Vicia sp*, Selfheal *Prunella vulgaris*, White dead nettle *Lamium album*, Stinging nettle *Urtica dioica*, Cleavers *Galium aparine*, Spear thistle *Cirsium vulgare*, Lesser celandine *Ficaria verna*, Bristly ox-tongue *Helminthotheca echioides* and Garden asparagus *Asparagus officinalis*.

The bunds to the west of site, adjacent to the road, are best classified as rough grassland. Earlier in the year the area could have been classified as ephemeral / short perennial, but the sward has since developed. Additional species present here include Canadian fleabane *Conyza canadensis*, Soft brome *Bromus hordeaceus*, Reed sweet-grass *Glyceria maxima* and Common couch *Elymus repens*. A brash pile is present between the bunds.

Additional species present within the rough grassland to the south of the railway include, Teasel, Hedge woundwort, Perforate St-John's-wort *Hypericum perforatum*, Common mallow *Malva sylvestris* and Great willowherb *Epilobium hirsutum*.

3.2.5 Standing water

Three temporary soakaways are present to the south of site. No aquatic vegetation is present and marginal vegetation is limited to the surrounding tall ruderal / ephemeral communities.

A number of ephemeral scrapes were also present to the west of site during the March survey.

3.2.6 J1.2 Amenity grassland

Areas of mown amenity grassland are present to the northeast, southeast and west of site.

3.2.7 J1.3 Ephemeral / short perennial

Land immediately surrounding the shopping centre has been used to facilitate development within the rest of the site. This is apparent from the ephemeral habitats which are present on areas of stock piled earth.

The sward is dominated by Perennial ryegrass and White clover. Other species present include Selfheal, Prickly lettuce *Lactuca serriola*, Shining crane's-bill *Geranium lucidum*, Hop trefoil, Germander speedwell *Veronica chamaedrys*, Common field speedwell *Veronica persica*, Colt's foot *Tussilago farfara*, False oat grass, Rough meadow grass *Poa trivialis*, Black medick *Medicago lupulina*, Bristly ox-tongue, Smooth tare *Vicia tetrasperma*, Timothy, Melilot *Melilotus sp*, Cock's foot, Smooth sow thistle *Sonchus oleraceus*, Common mouse-ear

Cerastium fontanum, Ox-eye daisy, Creeping thistle, Spear thistle *Cirsium vulgare*, Hogweed, Vetch sp, Greater plantain, Pineapple mayweed *Matricaria discoidea*, Scentless mayweed *Tripleurospermum inodorum*, Field bindweed, Mustard sp, Common bent *Agrostis capillaris*, Creeping bent *Agrostis stolonifera*, Common daisy *Bellis perennis*, Hairy bittercress *Cardamine hirsute*, Petty spurge *Euphorbia peplus*, Spotted medick *Medicago arabica*, Charlock *Sinapis arvensis*, Red dead nettle *Lamium purpureum*, Stinging nettle and Shepherd's purse *Capsella bursa-pastoris*.

A slightly denser sward is present to the northeast of site, where the sward is dominated by Perennial ryegrass, Broad-leaved dock and Mustard sp.

The ephemeral habitat to the south of the railway includes Bristly ox-tongue, Ribwort plantain, Field bindweed, Creeping cinquefoil, Selfheal, White clover and Hop trefoil.

3.2.8 J1.4 Introduced shrub

Planted amenity shrubs are present at the entrance to the shopping centre, to the east of the car park.

3.2.9 J2.1.2 Intact species poor hedge

Approximately 8m of Hawthorn *Crataegus monogyna* hedgerow is present along the railway, to the south of the woodland. Other species include Apple, Wych elm *Ulmus glabra* and Field maple *Acer campestre*.

A Hawthorn hedgerow borders the railway to the south of site. Ash *Fraxinus excelsior* and Blackthorn *Prunus spinosa* are also present.

3.2.10 J2.2.2 Defunct species poor hedge

Short blocks of Hawthorn *Crataegus monogyna* hedgerow run along the railway, to the south of the pedestrian crossing. Japanese rose *Rosa rugosa* is also present. A 5m rough grassland buffer borders the hedgerow.

3.2.11 J2.4 Fence

Wooden, post and wire and Heras fencing demarcate areas of the site.

3.2.12 J3.6 Buildings

An information and marketing office is present to the south of site, which is a flat roof building clad with wooden panelling.

3.2.13 J4 Bare ground

The track to the south of the site is primarily bare ground.

3.2.14 J5 Hardstanding

Hardstanding on site includes, car parking and shops to the north, the railway to the south and east, and a gravel walkway through the grassland to the east.

3.3 Baseline conditions – Protected species or resources

3.3.1 General methods

As part of the PEA, specific observations of wildlife were also recorded. Wildlife observations focus on protected species, invasive species or species of conservation concern. Habitats with potential to support protected species were noted with a view to follow up surveys if required.

3.3.2 Amphibians

Common frog, Common toad and Smooth newt were recorded within 2km of site as part of the record search. No Great crested newts *Triturus cristatus* have been recorded within 2km of site.

The rough grassland, scrub, hedgerows and woodland on site have potential to be used by common species of amphibians. The temporary soakaways to the south are unlikely to support amphibians in their current condition.

There are a further 2 mapped waterbodies within 250m of site. The lake to the east of site has virtually no aquatic vegetation and the lake margins shelf steeply into deep water, providing little sheltered shallow warm water habitat in spring for spawning by amphibians. The 2nd pond is fragmented from site by a busy main road.

3.3.3 Reptiles

Slow-worm were recorded within 2km of site as part of the record search, and other reptile species are known to be present locally.

The rough grassland and scrub on site are potentially suitable for use by reptiles, in particular the areas where brash and other materials have been placed and areas of bare ground on south facing banks (to the west of site).

3.3.4 Badgers

Badgers were recorded within 2km of site as part of the record search. However, no badger setts or field signs of badgers were recorded on site.

3.3.5 Hazel dormouse

The habitats on site are of low suitability due to the absence of key species used by Dormice *Muscardinus avellanarius*. No impacts envisaged.

3.3.6 Bats

Bat surveys of the site were undertaken in 2010 by Baker Shepherd Gillespie. 7 species were recorded on site: Noctule *Nyctalus noctula*, Leisler's *Nyctalus leisleri*, Barbastelle *Barbastella barbastellus*, Common pipistrelle, Soprano pipistrelle *Pipistrellus. pygmaeus*, Daubenton's *Myotis daubentonii* and *Myotis sp.*

The site has potential to support low numbers of foraging and commuting bats along the tree / scrub lines and hedgerows. The woodland and rough grassland will support an array of invertebrates, which in turn will support foraging bats.

There are no buildings on site which have potential to support roosting bats. The majority of the trees on site are early mature, which lack any potential roosting features (PRFs) for bats. The mature trees within the railway loop and to the southeast of site have PRFs.

3.3.7 Birds (including Schedule 1)

All areas of vegetation on site have potential to support breeding birds.

3.3.8 Trees

There are no tree species on site which are statutorily protected. The majority of the trees have been planted as the site has been developed, and therefore are unlikely to be protected under a Tree Preservation Order (TPO).

3.3.9 Hedgerows

The hedgerows on site are species poor, fragmented sections which are unlikely to be protected under the Hedgerow Regulations.

3.3.10 Plant communities

No plant communities or species were found during the survey which are afforded statutory protection in their own right.

3.3.11 Invasive species

Japanese rose is present to the northeast of site. Japanese rose is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and therefore it is illegal to cause this species to grow or spread in the wild.

3.3.12 Otter, water vole and white-clawed crayfish

No waterbodies suitable for Otters *Lutra lutra*, Water vole *Arvicola amphibius* or White-clawed crayfish *Austropotamobius pallipes*, will be directly or indirectly affected by the proposed development.

4. EVALUATION AND RECOMMENDATIONS

This section provides a brief assessment of the likely impacts associated with the proposed development on the receptors identified during the walkover survey and desk study. It also includes any mitigation and compensation measures which may be required for the proposed development to proceed.

4.1 Habitats

4.1.1 Statutorily protected sites

The sites identified during the desktop study were cross referenced with the survey area relevant to this report. The closest statutorily protected sites are Tunnel Hill Meadow SSSI and Windmill Hill SSSI.

Given the reasons for their designation (unimproved calcareous grassland) and distance from the proposed development site, it is considered unlikely that the proposed development will have a direct or indirect impact on these or any other statutorily protected sites locally.

4.1.2 Non-statutorily protected sites

The closest non-statutorily protected site is the River Avon LWS. Potential impacts on the LWS as result of the wider development of the site are discussed in the ecology chapter submitted in 2010. However, it is considered unlikely that any non-statutorily protected sites will be directly or indirectly impacted as a result of the proposed phase 3 development.

4.1.3 Trees / hedgerows

Construction impacts

Site clearance and construction activities too close to the root protection areas of the trees and hedgerows could cause permanent damage.

Mitigation

A tree survey and arboricultural constraints report was produced in November 2009 (WR114TP/EAG/TCR02) by Jerry Ross Arboricultural Consultancy, which details the specific protection measures necessary for each tree. This includes establishing a Construction Exclusion Zone (CEZ) around all trees which are to be retained based on their Root Protection Area. These zones should be adequately protected by appropriately designed protective barriers and ground protection throughout the entire development process. The CEZ may need updating to account for the growth of the trees since the report was produced.

Compensation

The majority of the trees within the phase 3 development boundary are to be retained, and those that are being removed are being replaced by extensive areas of tree, hedge and shrub planting. Of particular ecological benefit is the:

- Native shrub planting to the west of site, including Dogwood *Cornus sanguinea*, Hazel, Crab apple *Malus sylvestris*, Spindle *Euonymus europaea*, Wild privet *Ligustrum*

vulgare, Blackthorn, Goat willow *Salix caprea*, Osier *Salix viminalis*, Wayfaring tree *Viburnum lantana*, Guelder rose *Viburnum opulus*, Hawthorn, Elder *Sambucus nigra* and Damson *Prunus institia*.

- Native hedgerow planting to the east of site, including Field maple, Hornbeam *Carpinus betulus*, Hazel, Hawthorn, Dogwood, Wild privet, Blackthorn, Elder, Goat willow, Wayfaring tree and Guelder rose.
- Scattered trees throughout site, including Field maple, Alder *Alnus glutinosa*, *Malus spp*, Hornbeam, Hawthorn, Wild cherry *Prunus avium*, Pear *Pyrus calleryana* 'Chanticleer', Pedunculate oak and Small-leaved lime *Tilia cordata*.

See Bridges Design Associates landscaping proposals (675-32B) for further details.

Operational impacts

None envisaged.

4.2 Species

4.2.1 Amphibians

Great crested newts are unlikely to be present on site, however the rough grassland, hedgerows, scrub and ephemeral scrapes have potential to support common amphibian species.

Construction impacts

Mitigation

Prior to the start on site the work area should be prepared in order to minimise the risk of amphibian presence:

- Any areas of dense vegetation within the development area should have their sward length reduced gradually in order to give any amphibians present time to move off site of their own accord. The mown / cleared area will then be maintained with a short sward until the works on site have been completed.
- Any potential hibernacula will be removed from the working area and placed in a suitable area close to site. Hibernacula could include, piles of rubble, bricks, loose soil, debris etc.

Compensation

The landscaping proposals, as detailed in section 4.1.3, will ensure that suitable habitat is retained on site for amphibians.

Operational impacts

None envisaged.

4.2.2 Reptiles

The recommended mitigation and compensation measures for amphibians (see section 4.2.1) will ensure no reptiles are adversely affected by the proposed phase 3 development (if present on site).

4.2.3 Bats

The area presents reasonable bat habitat and has features which have potential to be used by foraging, commuting and roosting bats.

Construction impacts

Mitigation

There are a low number of mature trees on site, which may have features suitable to support roosting bats. If any mature trees are to be removed as part of the proposed development, they should first be subject to a preliminary ground level inspection (and aerial tree inspection if required) by a licensed bat ecologist. If there are features present which are suitable for use by roosting bats then further emergence / return roost surveys may be required during the survey season (May to September inclusive).

Compensation

The landscaping proposals, as detailed in section 4.1.3, will ensure that suitable habitat is retained on site for bats.

The hanging of bat boxes, such as Schwegler 2F's, on mature trees on site will provide improved roosting opportunities for the Pipistrelle species recorded within this area of site in 2010.

Bat boxes are best positioned at a height of between 3 – 6m and should ideally be sited in open sunny positions (southerly orientation). Please note that once bats have inhabited a roost site they may only be disturbed by licensed bat workers.

Operational impacts

Mitigation

The change of use of the site from disturbed ruderal / ephemeral habitats to car parking and retail units is unlikely to significantly increase the level of disturbance locally as the site is already a busy shopping centre.

Consideration will need to be given to external lighting to avoid light spill on tree lines, hedgerows and bat boxes (if installed). See Appendix 5 – External lighting for further guidance.

4.2.4 Breeding birds

The woodland, scattered trees and hedgerows have potential to support breeding birds. The rough grassland and ephemeral habitats also have potential to support ground nesting birds.

Construction impacts

Mitigation

Any vegetation or site clearance works within the red line boundary should be undertaken outside of the recognised breeding bird season (March to August inclusive). If this is not possible then a breeding bird nest check should be carried out or an ecological clerk of works appointed to oversee the works.

Compensation

The landscaping proposals, as detailed in section 4.1.3, will ensure that a variety of habitats will be retained on site for foraging, roosting and nesting birds. Landscaping features include:

- planting of berry and nut bearing shrub species to encourage winter birds
- planting and management of shrubs which develop a mosaic of structures to support breeding birds
- use of nectar bearing flowers to encourage invertebrates (bees, beetles, butterflies)
- use of climbers to increase the amount green space e.g Honeysuckle
- planting of specimen trees
- retention of mature trees
- creation of areas of short grassland suitable for foraging garden bird species

The inclusion of bird boxes, such as Schwegler 1B's, hung on trees locally could provide improved nesting opportunities for birds whilst the landscaping becomes established. Schwegler 1B nest boxes are a good general purpose nest box which are suitable for a range of species, including species recorded on site.

Bird boxes should be positioned at least 2m high. Unless there are trees or buildings which shade the box during the day, face the box between north and east, thus avoiding strong sunlight and the wettest winds.

Operational impacts

Potential operational impacts are limited to those associated with landscape management.

Mitigation

It is important to implement good horticultural practice in any landscaping scheme, including the use of peat-free composts, mulches and soil conditioners. The use of pesticides (herbicides, insecticides, fungicides and slug pellets) should be discouraged to prevent fatal effects on the food chain particularly invertebrates, birds and/or mammals. Any pesticides used should be non-residual.

Excessive removal or pruning of shrubs / trees / hedgerows should be avoided to maximise growth and plant matter available to wildlife. Pruning should be left until late winter to leave seeds and berries for wintering wildlife and ensure no impact on breeding / nesting birds.

4.2.5 Invasive species

Construction impacts

Site clearance and setting out, prior to treatment, could result in the disturbance and dispersal of invasive species throughout and off site.

Mitigation

The most efficient method for removing Japanese rose is to dig it up. There is a need to ensure that all rhizomes and roots have been removed. Furthermore, the procedure needs to be repeated until it is certain that all rhizome pieces have been found and removed.

Operational impacts

None envisaged.

5. CONCLUSION

The site is predominantly rough grassland and ephemeral / short perennial habitats, which have established as a result of ongoing disturbance works around the site. No statutorily / non-statutorily protected sites or priority habitats / species will be directly or indirectly affected by the proposed development.

The results of the ecological walkover survey combined with the results of the desk study have highlighted the requirement for further work in relation to the following habitats and species: trees, hedgerows, amphibians, reptiles, bats, breeding birds and invasive species.

Mitigation measures, as detailed in section 4, should be adhered to, which may in some cases negate the need for further survey work.

Enhanced landscape features, such as the provision of native species-rich naturalistic hedgerow and shrub planting, will add to the nature conservation value of the site as a whole.

6. REFERENCES

CIEEM (2013). *Guidelines for Preliminary Ecological Appraisal*.

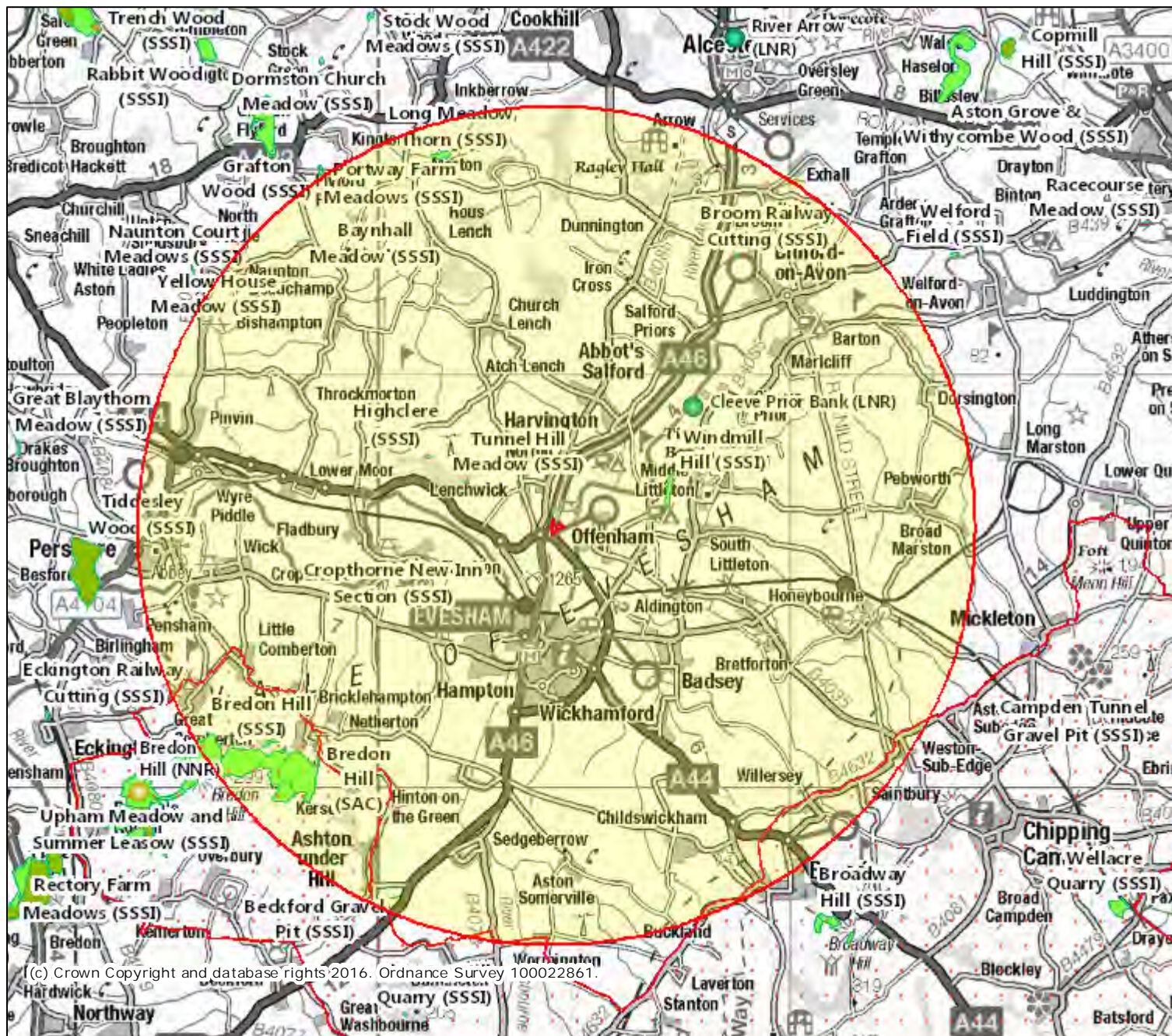
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APPENDICES

Appendix 1 – Desk study



Legend

- | | |
|---|---|
| Areas of Outstanding Natural Beauty (England) | Unfavourable Declining |
| Limestone Pavement Orders (England) | Part Destroyed |
| Local Nature Reserves (England) - points | Destroyed |
| Moorland Line (England) | Not Assessed |
| National Nature Reserves (England) - points | Sites of Special Scientific Interest (England) |
| National Nature Reserves (Scotland) - points | Sites of Special Scientific Interest (Scotland) |
| National Nature Reserves (Wales) - points | Sites of Special Scientific Interest (Wales) |
| National Parks (England) | Special Areas of Conservation (England) |
| National Parks: Lake District and Yorkshire Dales Variation Orders 2012 - subject to confirmation (England) | Special Areas of Conservation (Scotland) |
| Ramsar Sites (England) | Special Areas of Conservation (Wales) |
| Ramsar Sites (Scotland) | Special Protection Areas (England) |
| Ramsar Sites (Wales) | Special Protection Areas (Scotland) |
| Sites of Special Scientific Interest Units (England) | Special Protection Areas (Wales) |
| Favourable Condition | Biosphere Reserves (England) |
| Unfavourable Recovering | Biosphere Reserves (Scotland) |
| Unfavourable no change | Biosphere Reserves (Wales) |

Projection = OSGB36

xmin = 379800

ymin = 234300

xmax = 430600

ymax = 258500

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SP03

SP 04/09

04

Key

SSSI

Local Wildlife Site

WWT reserve

LNR

Grassland Inventory site

Ancient semi-natural woodland

Ancient replanted woodland

Traditional orchard



Ancient/veteran tree

49

48

46

45

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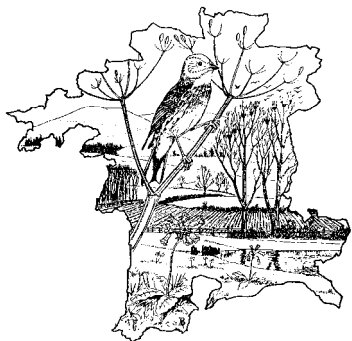


Worcestershire Biological Records Centre

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Website: www.wbrc.org.uk



Worcestershire Biological Records Centre

Protected/notable species and designated sites information

Protected/notable species and designated sites information held by WBRC as at 01/05/15 for 2km radius around Central Grid Ref SP043466 Evesham Country Park.

Protected/notable species records, which are wholly or partially within 2km of site.

No	Scientific Name	Common Name	Grid Ref	Location Name	Date	Comments	Status
179	<i>Bufo bufo</i>	Common Toad	SP033472	Durnford House	02/04/2000	1 Adult	WCA NERC s.41 UKBAP
179	<i>Rana temporaria</i>	Common Frog	SP033472	Durnford House	02/04/2000	15 egg/ovum	WCA
179	<i>Triturus vulgaris</i>	Smooth Newt	SP033472	Durnford House	02/04/2000	3 Adults	WCA
175	<i>Triturus vulgaris</i>	Smooth Newt	SP032472	Durnford House	02/04/2000	3 Juvenile; 6 Adult	WCA
179	<i>Triturus vulgaris</i>	Smooth Newt	SP033472	Durnford House	02/04/2000	5 egg/ovum	WCA
215	<i>Alauda arvensis</i>	Skylark	SP045465	Evesham Country Park	22/06/2006	Rough grassland, Flying, Song. 6+ in different fields.	NERC s.41 Bird:Red
187	<i>Alauda arvensis</i>	Skylark	SP036462	Lenchwick	05/07/2006	1 singing in arable	NERC s.41 Bird:Red
197	<i>Carduelis cannabina</i>	Linnet	SP039458	Evesham Country Park	22/06/2006	2 perched/flying	Bird:Red
215	<i>Emberiza citrinella</i>	Yellowhammer	SP045465	Evesham Country Park	02/05/2006	Hedgerow, rough grassland. Song, perching.	NERC s.41 UKBAP Bird:Red
197	<i>Streptopelia turtur</i>	Turtle Dove	SP039458	Evesham Country Park	22/06/2006	1 flying overhead/perched in ancient track/hedgerow.	NERC s.41 UKBAP Bird:Red
197	<i>Vanellus vanellus</i>	Lapwing	SP039458	Evesham Country Park	22/06/2006	Several dozen feeding in rough grassland	NERC s.41 UKBAP Bird:Red
221	<i>Anagallis arvensis subsp. caerulea</i>	Blue Pimpernel	SP047459		24/06/1990	Uncultivated edge of beanfield. 5; confirmed cell count of petal hairs	Locally Nb Nationally Scarce
178	<i>Carpinus betulus</i>	Hornbeam	SP033452	Abbey Manor area	03/09/2000	Secondary woodland - several	Locally Nb
160	<i>Carpinus betulus</i>	Hornbeam	SP029468		10/06/2001	Roadside hedge - planted	Locally Nb
154	<i>Ceratophyllum submersum</i>	Soft Hornwort	SP028457	River Avon	03/09/2000	River - occasional	Locally Nb
224	<i>Lithospermum officinale</i>	Common Gromwell	SP048468		18/10/1992	Disused railway - small group	Locally Nb
223	<i>Nepeta cataria</i>	Cat-Mint	SP048458	Oxstalls Farm	30/08/1992	Disused railway line - 8 plants	Locally Nb

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No	Scientific Name	Common Name	Grid Ref	Location Name	Date	Comments	Status
210	<i>Onobrychis viciifolia</i>	Sainfoin	SP043470	A46T	14/06/2001	Quite common, roadside bank where presumed introduced with seed when seeded after construction	Locally Nb
206	<i>Onobrychis viciifolia</i>	Sainfoin	SP042468	A46T	14/06/2001	Quite common, roadside bank where presumed introduced with seed when seeded after construction	Locally Nb
204	<i>Puccinellia distans</i>	Reflexed Saltmarsh-Grass	SP041462	Evesham bypass (A46T)	30/06/2001	Road verge - 1 plant	Locally Nb
214	<i>Puccinellia distans</i>	Reflexed Saltmarsh-Grass	SP044459	Evesham bypass (A46T)	30/06/2001	Road verge - quite widespread	Locally Nb
235	<i>Puccinellia distans</i>	Reflexed Saltmarsh-Grass	SP050451	Evesham bypass (A46T)	01/07/2001	Road verge	Locally Nb
220	<i>Puccinellia distans</i>	Reflexed Saltmarsh-Grass	SP047455	Evesham bypass (A46T)	01/07/2001	Road verge - rare	Locally Nb
270	<i>Saxifraga granulata</i>	Meadow Saxifrage	SP059473		22/04/1989	E. end of meadow - many	Locally Nb
267	<i>Saxifraga granulata</i>	Meadow Saxifrage	SP058472	Avon Meadow	14/05/1992	Good stands	Locally Nb
252	<i>Saxifraga tridactylites</i>	Rue-Leaved Saxifrage	SP054465		13/05/1989	Village stone walls - c.30	Locally Nb
256	<i>Saxifraga tridactylites</i>	Rue-Leaved Saxifrage	SP055465		18/06/1992	On stone wall	Locally Nb
251	<i>Saxifraga tridactylites</i>	Rue-Leaved Saxifrage	SP054463		18/06/1992	On stone wall	Locally Nb
203	<i>Spergularia marina</i>	Lesser Sea-Spurrey	SP041461	Evesham bypass (A46T)	30/06/2001	Road verge - 3 or 4 good patches	Locally Nb
240	<i>Spergularia marina</i>	Lesser Sea-Spurrey	SP051450	Evesham bypass (A46T)	01/07/2001	Road verge	Locally Nb
228	<i>Spergularia marina</i>	Lesser Sea-Spurrey	SP049453	Evesham bypass (A46T)	01/07/2001	Road verge - 1	Locally Nb
227	<i>Spergularia marina</i>	Lesser Sea-Spurrey	SP049452	Evesham bypass (A46T)	01/07/2001	Road verge - 1	Locally Nb
279	<i>Tilia platyphyllos</i>	Large-Leaved Lime	SP062461		02/02/1992	4 biggish coppice boles in hedge	Locally Nb Nationally Scarce
274	<i>Tilia platyphyllos</i>	Large-Leaved Lime	SP061461		02/02/1992	2 biggish coppice boles in hedge	Locally Nb Nationally Scarce
269	<i>Tilia platyphyllos</i>	Large-Leaved Lime	SP059463	Cocks Lane	18/06/1992	N. side	Locally Nb Nationally Scarce

No	Scientific Name	Common Name	Grid Ref	Location Name	Date	Comments	Status
213	<i>Equisetum x font-queri</i>	Horsetail	SP044447	Disused railway	25/07/1989	Common	Locally Nb
213	<i>Equisetum x font-queri</i>	Horsetail	SP044447	Disused Railway, Evesham	18/10/1992	Still present in quantity but already died down	Locally Nb
213	<i>Equisetum x font-queri</i>	Horsetail	SP044447	Disused Railway, Evesham	07/10/2003	1 or 2 small patches only on east bank	Locally Nb
250	<i>Hippodamia variegata</i>	Adonis' Ladybird	SP054461	Offenham	24/08/2003		Notable B
188	<i>Hippodamia variegata</i>	Adonis' Ladybird	SP036466	Twyford	17/09/2003		Notable B
151	<i>Gomphus vulgatissimus</i>	Common Club-tail	SP027459	Chadbury, River Avon	30/05/1993	1 larval case, emerged	WorcBAP
229	<i>Gomphus vulgatissimus</i>	Common Club-tail	SP049454	River Offenham, Avon	06/06/2004	River bank; 1	WorcBAP
13	<i>Melanchra persicariae</i>	Dot Moth	SP0545	Evesham	1995	1 present	NERC s.41 UKBAP
13	<i>Melanchra persicariae</i>	Dot Moth	SP0545	Evesham	1993	1 present	NERC s.41 UKBAP
13	<i>Tyria jacobaeae</i>	Cinnabar	SP0545	Evesham	1993	1 present	NERC s.41 UKBAP
180	<i>Cheilosia soror</i>	Cheilosia soror	SP033474	Lenchwick	21/07/2003	Male keyed. On parsnip	Notable
202	<i>Anguis fragilis</i>	Slow-worm	SP041447	Evesham	24/05/2005		WCA NERC s.41 UKBAP WorcBAP
138	<i>Anguis fragilis</i>	Slow-worm	SP024472	The Dukes Orchard, Wood Norton	06/06/2011	several places under sheets	WCA NERC s.41 UKBAP WorcBAP
241	<i>Eptesicus serotinus</i>	Serotine	SP0527345841	Offenham Boat Lane SPS	29/09/2011	1 commuting, heard not seen. 19:12pm	WCA ECH4 WorcBAP
137	<i>Lutra lutra</i>	Otter	SP024462	Old Mill, Chadbury	03/03/1996	WWT Survey. Very recent spraint on lock surrounds.	WCA NERC s.41 UKBAP ECH4 WorcBAP
236	<i>Lutra lutra</i>	Otter	SP050453	A46, Evesham	23/01/2001	WWT Survey. 2 recent spraints, on concrete retaining wall, left bank down stream of bridge	WCA NERC s.41 UKBAP ECH4 WorcBAP
222	<i>Lutra lutra</i>	Otter	SP04824541	A46	02/02/2013	Sub-adult male dead on road	WCA NERC s.41 UKBAP ECH4 WorcBAP
15	<i>Meles meles</i>	Badger	SP0548		2002		PBA
11	<i>Meles meles</i>	Badger	SP0445		2002		PBA
237	<i>Meles meles</i>	Badger	SP050473	Twyford, River Avon	18/03/2007		PBA
230	<i>Meles meles</i>	Badger	SP049470	Twyford, River Avon	18/03/2007		PBA
14	<i>Mustela putorius</i>	Polecat	SP0547	Offenham	06/02/1994	1 present	NERC s.41 UKBAP

No	Scientific Name	Common Name	Grid Ref	Location Name	Date	Comments	Status
241	<i>Pipistrellus pipistrellus</i>	Pipistrelle	SP0527345841	Offenham Boat Lane SPS	29/09/2011	Several foraging & commuting in various directions. 19:17pm	WCA WorcBAP
241	<i>Plecotus auritus</i>	Brown Long-Eared Bat	SP0527345841	Offenham Boat Lane SPS	29/09/2011	1 commuting north 19:22pm	WCA NERC s.41 UKBAP ECH4 WorcBAP

Special Areas of Conservation, which are wholly or partially within 2km of site.

No records found.

SSSI, which are wholly or partially within 2km of site.

No records found.

Local Wildlife Sites, which are wholly or partially within 2km of site.

Site Ref	Site Name	Grid Ref
SO 94/07	River Avon	SO953466
SP 04/05	Wood Norton Complex	SP015475
SP 04/11	Littleton, Broadway & Badsey Brooks and Tributaries	SP068432

Worcs Grassland Inventory, which are wholly or partially within 2km of site.

Site No	Site Name	Grid Ref	Area (ha)	NVC Type	Management
9 14	Lenchwick Orchard	SP033473	2	(MG5)	
34 55	Gibs Lane Meadow	SP058465	4	MG	hor

Local Nature Reserves, which are wholly or partially within 2km of site.

No records found.

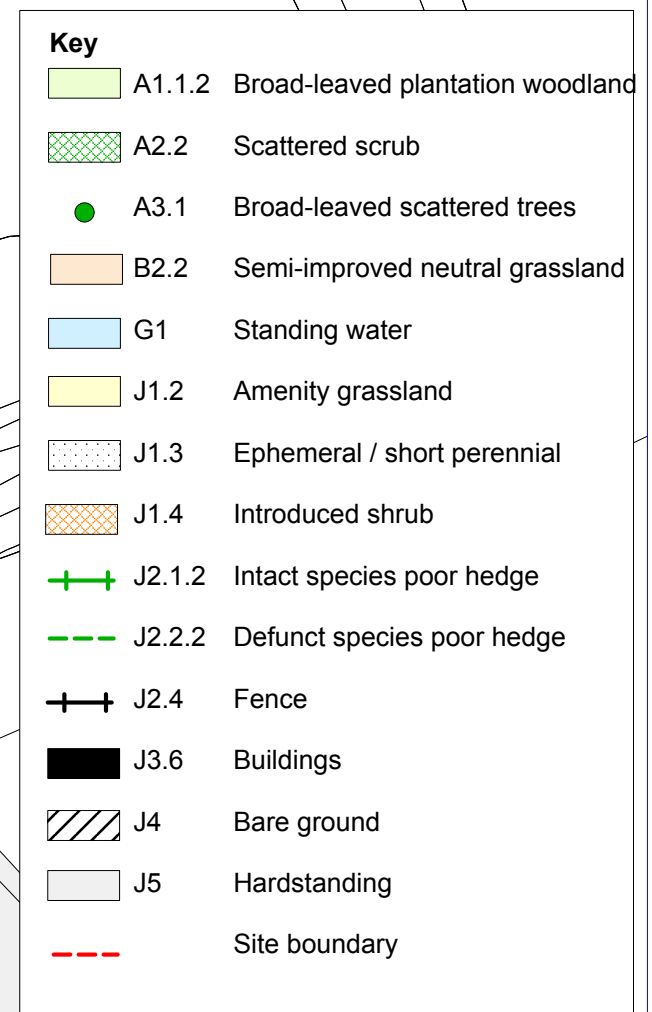
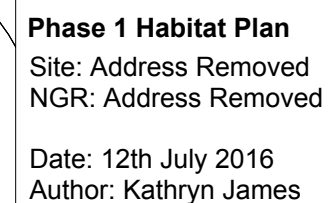
Worcestershire Wildlife Trust Reserves, which are wholly or partially within 2km of site.

No records found.

Ancient Trees, which are wholly or partially within 2km of site.

No records found.

Appendix 2 – Phase 1 habitat plan



Appendix 3 – Aerial photographs

Address Removed

Wide aerial photograph



Address Removed

Close aerial photograph
(outdated photography)

KEY

— Development boundary



Appendix 4 – Photographs



Photo 1 – Car park and amenity grassland to the west of the shops



Photo 2 – Ephemeral / short perennial habitat to the south of the shops



Photo 3 – Close up of the ephemeral / short perennial sward



Photo 4 – Gravel walkway through the rough grassland



Photo 5 – Looking south along the railway towards the woodland



Photo 6 – Woodland



Photo 7 – Mown walkway through the rough grassland



Photo 8 – Rough grassland within the railway loop



Photo 9 – Railway



Photo 10 – Temporary soakaway



Photo 11 – Temporary soakaway



Photo 12 – Rough grassland and ephemeral habitats to the south of the railway



Photo 13 – Ephemeral / short perennial to the west of the car park



Photo 14 – Rough grassland, amenity grassland and Apple trees to the west of the car park

Appendix 5 – External lighting

Lighting scheme in relation to bats

The two most important features of street and security lighting with respect to bats are:

1. The UV component. Low or zero UV installations are preferred to reduce attraction of insects to lighting and therefore to reduce the attraction of foraging bats to these areas.
2. Restriction of the area illuminated. Lighting must be shielded to maintain dark areas, particularly above lighting installations, and in many cases, land adjacent to the areas illuminated. The aim is to maintain dark commuting corridors for foraging and commuting bats. Bats avoid well lit areas, and these create barriers for flying bats between roosting and feeding areas.

UV characteristics:

Low

- Low pressure Sodium Lamps (SOX) emit a minimal UV component.
- High pressure Sodium Lamps (SON) emit a small UV component.
- White SON, though low in UV, emit more than regular SON.

High

- Metal Halide lamps emit more UV than SON lamps, but less than Mercury lamps
- Mercury lamps (MBF) emit a high UV component.
- Tungsten Halogen, if unfiltered, emit a high UV component
- Compact Fluorescent (CFL), if unfiltered, emit a high UV component.
- Variable
- Light Emitting Diodes (LEDs) have a range of UV outputs. Variants are available with low or minimal UV output.
- Glass glazing and UV filtering lenses are recommended to reduce UV output.

Street lighting

- Low-pressure sodium or high-pressure sodium must be used instead of mercury or metal halide lamps. LEDs must be specified as low UV. Tungsten halogen and CFL sources must have appropriate UV filtering to reduce UV to low levels.
- Lighting must be directed to where it is needed and light spillage avoided. Hoods must be used on each lamp to direct light and contain spillage. Light leakage into hedgerows and trees must be avoided.
- If possible, the times during which the lighting is on overnight must be limited to provide some dark periods. If the light is fitted with a timer this must be adjusted to reduce the amount of 'lit time' and provide dark periods.

Security and domestic external lighting

The above recommendations concerning UV output and direction apply. In addition:

- Lighting should illuminate only ground floor areas. Light should not leak upwards to illuminate first floor and higher levels.
- Lamps of greater than 2000 lumens (150 W) must not be used.
- Movement or similar sensors must be used. They must be carefully installed and aimed, to reduce the amount of time a light is on each night.
- Light must illuminate only the immediate area required, by using as sharp a downward angle as possible. Light must not be directed at or close to bat roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit.
- Wide angle illumination must be avoided as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.
- Lighting must not illuminate any bat bricks and boxes placed on buildings, trees or other nearby locations.

Appendix 6 – Statutory and planning context

Ecological assessments

Ecological assessments play an important part within the planning context; they include an initial assessment which highlights any specific interests of a site. From the initial site assessment, the surveyor assesses the suitability of habitats within the site to support protected species and makes recommendations for further survey works if required. The following paragraphs provide a brief interpretation of legislative protection in relation to the following species and habitats:

Amphibians

- Great crested newts
- Other amphibians

Reptiles

- Badgers

- Hazel dormouse

- Bats

- Birds

Trees

- Hedgerows

- Invasive plant species

- Otters

- Water voles

- White-clawed crayfish

- Planning policy

Amphibians

Great crested newts

Great crested newts (GCN) *Triturus cristatus* and their habitat (aquatic and terrestrial) are afforded full protection by the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. If both national and international legislation are taken together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture GCN
- Deliberately, intentionally or recklessly disturb GCN in such a way to be likely to significantly affect:
 - their ability to survive, breed, reproduce, rear or nurture their young
 - their ability to hibernate or migrate
 - their local distribution or abundance
- Deliberately, intentionally or recklessly take or destroy the eggs of GCN
- Damage or destroy breeding sites or resting places of GCN
- Intentionally or recklessly disturb sheltering GCN, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead GCN, any part of GCN or anything derived from GCN

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each offence committed.

GCN are also protected by the Protection of Animals Act 1911, which prohibits cruelty and mistreatment. Releasing a GCN in such a way as to cause undue suffering may be an offence under the Abandonment of Animals Act 1960.

In addition to the above, there are various statutory provisions relating to the transport of animals, designed to ensure their welfare. GCN are also listed under Section 41 of the NERC Act (see bats section for further details).

It is important to identify the presence of GCN individuals and also to identify suitable habitat on sites so that legal obligations regarding this species can be observed. If a survey identifies the presence of GCN on the site, an assessment of the population size class is required. This can then inform a mitigation scheme, which would need to be developed in liaison with the local Natural England team, and which minimises direct threats to newts and compensates for any loss of habitat. A licence issued by Natural England is required for the legal implementation of a mitigation scheme.

A Natural England mitigation licence application requires a Mitigation Method Statement and a Reasoned Statement of Application. The Mitigation Method Statement contains details of the proposed mitigation works. The Reasoned Statement needs to provide a rational and reasoned justification as to why the

proposed development meets the requirements of the Conservation (National Habitats & c.) regulations 1994, namely Regulations 44(2)(e), (f) or (g), and 44(3)(a).

Other amphibians

More common British amphibians, such as common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Triturus vulgaris* and palmate newt *Triturus helveticus* are protected only by Section 9(5) of the Wildlife and Countryside Act 1981 (as amended). This section prohibits sale, barter, exchange, transporting for sale and advertising to sell or to buy.

The above named species are also listed as UK Species of Conservation Concern. Due to general declines in most British amphibian species in recent years, many local authorities require amphibian surveys as a planning condition, or as part of environmental information submitted as part of a planning application, even where the presence of GCN is ruled out.

Natterjack toad *Bufo calamita* and pool frog *Pelophylax lessonae* are also offered the same level of protection as GCN, through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010.

Natterjack toad, common toad and pool frog are also listed under Section 41 of the NERC Act (see bats section for further details).

Water bodies that support all five (more common) species of British amphibians in high numbers, may be afforded protection in local plans, as Sites of Importance for Nature Conservation (SINC), or a similar equivalent, for sites of local importance. A site may require statutory protection as a Site of Special Scientific Interest (SSSI).

Reptiles

Common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix natrix* and adder *Vipera berus* are protected under the Wildlife and Countryside Act 1981 (as amended). They are listed as a Schedule 5 species therefore part of Section 9(1) and section 9(5) apply. The Countryside and Rights of Way Act 2000 also strengthens their protection. It is offence to:

- Intentionally or recklessly kill or injure any of the species listed above
- Sell, offer, advertise or transport for sale a live or dead animal of the species listed above

If a proposed development is likely to have an impact on these reptiles the local statutory nature conservation organisation must be consulted.

Sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca* receive full protection under the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2010. Read together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture any sand lizards or smooth snakes
- Deliberately, intentionally or recklessly disturb sand lizards or smooth snakes in such a way to be likely to significantly affect:
 - their ability to survive, breed, reproduce, rear or nurture their young
 - their ability to hibernate or migrate
 - their local distribution or abundance
- Deliberately, intentionally or recklessly take or destroy the eggs of such an animal
- Damage or destroy breeding sites or resting places of such animals
- Intentionally or recklessly disturb sheltering sand lizards or smooth snakes, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead sand lizards or smooth snakes, any part of such an animal or anything derived from such an animal

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each offence committed.

All reptile species are also listed under Section 41 of the NERC Act (see bats section for further details).

Badgers

European badgers *Meles meles* and their habitat are protected under The Protection of Badgers Act 1992 and are also included on Schedule 6 of the Wildlife and Countryside Act 1981, and Appendix III of the Bern Convention. The legislation affords badgers protection against deliberate harm or injury making it an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat a badger (or attempt to do so)
- To interfere with a sett by damaging or destroying it
- To obstruct access to, or entrance of, a badger sett
- To disturb a badger whilst it is occupying a sett

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each offence committed.

Works that disturb badgers whilst they are occupying a sett are illegal without a licence. Disturbance can occur even without direct interference or damage to the sett in question. In general, the following activities are likely to require a licence:

- Use of heavy machinery or significant earth moving within 30m of a sett
- Use of lighter machinery (usually any wheeled vehicles) within 20m of a sett
- Any digging, chain saw use or scrub clearance within 10m of a sett

Hazel dormouse

Hazel dormice *Muscardinus avellanarius* are offered full protection through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. If both national and international legislation are taken together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture dormice
- Deliberately, intentionally or recklessly disturb dormice in such a way to be likely to significantly affect:
 - their ability to survive, breed, reproduce, rear or nurture their young
 - their ability to hibernate or migrate
 - their local distribution or abundance
- Damage or destroy breeding sites or resting places of dormice
- Intentionally or recklessly disturb sheltering dormice, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead dormouse, any part of a dormouse or anything derived from a dormouse

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each offence committed.

Dormice are also listed under Section 41 of the NERC Act (see bats section for further details).

Bats

In the United Kingdom, all species of bat and their roosts are afforded full protection under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 (known as the "Habitats Regulations"). The Wildlife and Countryside Act is the domestic implementation of the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) and was amended by the Countryside and Rights of Way Act 2000. This makes it an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture a bat

- Deliberately, intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection
- Deliberately, intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection (even if the bat is not present at the time)
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead bat, any part of a bat or anything derived from a bat

Under UK law, a bat roost is *any structure or place which any wild [bat] ... uses for shelter or protection*. As bats often reuse the same roosts, legal opinion is that a roost is protected whether or not the bats are present at the time of the activity taking place.

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each offence committed.

If an activity is likely to result in any of the above offences, a licence can be applied for to derogate from the protection afforded. These licences must provide appropriate mitigation and are issued by Natural England.

A Natural England mitigation licence application requires a Mitigation Method Statement and, in many cases, a Reasoned Statement of Application. The Mitigation Method Statement contains details of the proposed mitigation works. The Reasoned Statement needs to provide a rational and reasoned justification as to why the proposed development meets the requirements of the Conservation (National Habitats & c.) regulations 1994, namely Regulations 44(2)(e), (f) or (g), and 44(3)(a).

The Natural Environment and Rural Communities (NERC) Act 2006 lists the following bat species as species of principle importance under Section 41:

- Barbastelle *Barbastella barbastellus*
- Bechstein's bat *Myotis bechsteinii*
- Noctule *Nyctalus noctula*
- Soprano Pipistrelle *Pipistrellus pygmaeus*
- Brown Long-eared bat *Plecotus auritus*
- Greater Horseshoe *Rhinolophus ferrumequinum*
- Lesser Horseshoe *Rhinolophus hipposideros*

Section 40 requires every public body in the exercising of its functions 'have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity' (all biodiversity and not just section 41 species and habitats); therefore making these bats a material consideration in the planning process and requiring a detailed ecological bat survey before planning permission can be granted.

Birds

All wild birds, their nests and young are protected throughout England and Wales by the Wildlife & Countryside Act 1981 (as amended). It is illegal to kill, injure or take any wild bird, or damage or destroy the nest or eggs of breeding birds. The legislation applies to all bird species, common and rare.

In addition to the protection afforded to all wild birds, more vulnerable species listed on Schedule 1 of the Act receive enhanced protection when breeding. Schedule 1 species, including their dependent young, are protected from intentional or reckless disturbance whilst at or near the nest, in addition to the protection afforded the more common species.

The NERC Act offers further protection to the nests of some species that regularly re-use their nests, even when the nests are not in use.

The leading governmental and non-governmental conservation organisations in the UK have reviewed the population status' of 244 UK bird species. "Birds of Conservation Concern 4: the Red List for Birds" is the most recent publication summarising their findings. Three lists, Red, Amber and Green, have been produced based on the most up-to-date evidence available and criteria include conservation status at global and European levels and, within the UK: historical decline, trends in population and range, rarity,

localised distribution and international importance. These lists are a valuable resource when considering conservation priorities.

Trees

Trees may be protected on an individual or group level through a Tree Preservation Order (TPO). In order to carry out works to trees with a TPO, prior written consent must be obtained from the Local Planning Authority. Trees may also be protected through a condition of planning consent or designated conservation areas.

Hedgerows

The Hedgerow Regulations are made under Section 97 of the Environment Act 1995 and came into operation on 1st of June 1997. They aim to protect important hedgerows in the countryside by controlling their removal through a system of notification to the Local Planning Authority.

A hedgerow can only be considered for classification as “important” if it, or the hedgerow of which the section belongs to is over 20m in length (or which meets a hedgerow at either end) and has existed for 30 years or more.

Invasive plant species

A number of invasive, non-native plant species are listed under Schedule 9 (Part II) of the Wildlife and Countryside Act 1981 (as amended). The most commonly encountered listed species in ecological surveys are Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera*. Section 14(2) of this Act makes it an offence to *plant or otherwise cause to grow in the wild* any plant listed on Schedule 9 (Part II). These provisions are necessary to prevent the establishment of non-native species which may be detrimental to our native wildlife.

Soil or plant material contaminated with non-native and invasive plants can cause ecological damage and may be classified as controlled waste. It is an offence to keep, treat or dispose of waste that could harm the environment or human health. If there is any doubt, contact the local authority or Environment Agency.

Otters

European otter *Lutra lutra* are offered full protection through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. If both national and international legislation are taken together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture otters
- Deliberately, intentionally or recklessly disturb otters in such a way to be likely to significantly affect:
 - their ability to survive, breed, reproduce, rear or nurture their young
 - their ability to migrate
 - their local distribution or abundance
- Damage or destroy breeding sites or resting places of otters
- Intentionally or recklessly disturb sheltering otters, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead otter, any part of an otter or anything derived from otter

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each offence committed.

Otters are also listed under Section 41 of the NERC Act (see bats section for further details).

Water voles

Water voles *Arvicola amphibius* are protected by the provisions of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- Intentionally kill, injure or take water vole
- Possess or control live or dead water vole or any part of a water vole
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place which a water vole uses for shelter or protection, or disturb water vole using such a place
- Sell, offer, advertise or transport live or dead water voles for sale

Licences are available from Natural England to allow activities that would otherwise be an offence, including:

- Scientific or educational purposes
- For the purposes of ringing or marking
- Conserving wild animals or introducing them into particular areas
- Preserving public health or public safety
- Preventing the spread of disease
- Preventing serious damage to any form of property or to fisheries

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each offence committed.

Water voles are also listed under Section 41 of the NERC Act (see bats section for further details).

White-clawed crayfish

White-clawed crayfish *Austropotamobius pallipes* are protected under the Wildlife and Countryside Act 1981 (as amended). They are listed as a Schedule 5 species therefore part of Section 9(1) and section 9(5) apply. The Countryside and Rights of Way Act 2000 also strengthens their protection. It is an offence to:

- Intentionally or recklessly kill or injure white-clawed crayfish
- Sell, offer, advertise or transport for sale a live or dead white-clawed crayfish

If a proposed development is likely to have an impact on white-clawed crayfish then the local statutory nature conservation organisation must be consulted.

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each offence committed.

Their inclusion on the EC Habitats Directive allows areas to be designated as Special Areas of Conservation (SAC) for the presence of white-clawed crayfish. Such a designation brings legal protection under the Conservation of Habitats Regulations 2010, this includes how the site is managed and what development can occur on and in proximity to these sites.

White-clawed crayfish are also listed under Section 41 of the NERC Act (see bats section for further details).

Planning policy

National Planning Guidance is issued in the form of the National Planning Policy Framework 2012 (NPPF). The most relevant section is *11. Conserving and enhancing the natural environment*.

Key relevant principles stated in *11. Conserving and enhancing the natural environment* are;

- 109 The planning system should contribute to and enhance the natural and local environment by:
- Protecting and enhancing valued landscapes, geological conservation interests and soils

- Recognising the wider benefits of ecosystem services
- Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitments to halt the overall decline in biodiversity, including establishing coherent ecological networks that are more resilient to current and future pressures

117 To minimise impacts on biodiversity and geodiversity, planning policies should:

- Plan for biodiversity at a landscape-scale across local authority boundaries
- Identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation
- Promote the preservation, restoration and re-creating of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets

118 When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted
- Opportunities to incorporate biodiversity in and around developments should be encouraged