

LAND EAST OF LEAFIELD ROAD FAIRFORD

PRELIMINARY ECOLOGICAL APPRAISAL



Ecology
Archaeology
Arboriculture
Landscape Architecture



Written By:	LD
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Date:	March 2017
Document File Ref:	GLEE21132PEA
Revision:	Draft

Contents

1.0	EXECUTIVE SUMMARY.....	1
2.0	INTRODUCTION, CONTEXT AND PURPOSE.....	2
3.0	METHODOLOGY.....	3
4.0	RESULTS AND EVALUATION.....	9
5.0	LEGISLATION AND PLANNING POLICY.....	20
6.0	DISCUSSION AND RECOMMENDATIONS.....	27
7.0	CONCLUSIONS.....	31

APPENDIX 1 POND LOCATION PLAN

APPENDIX 2 ECOLOGICAL FEATURE PLAN

1.0 Executive Summary

- 1.1 In March, 2017, ACD Environmental Ltd carried out an extended Phase 1 Habitat Survey of a parcel of land at Leafield Road, Fairford hereinafter referred to as the 'site'.
- 1.2 The site comprises an arable field bounded by woodland, species poor hedgerows with trees and ditches as well as strips of marginal grassland. The site will be subject to a planning application for up to 80 dwellings, with new links to the local utilities infrastructure, a car parking/school bus drop off area and landscaping.
- 1.3 Hedgerows and woodland should be retained and protected within buffer zones where possible. The hedgerow along the western boundary contained a number of woody species and it is recommended that a survey is carried out during the summer to determine whether it is classed as an important hedgerow. If this hedgerow cannot be retained as part of the development then a replacement species rich hedgerow may be required.
- 1.4 The following Phase II surveys may be required in order to fully assess impacts;
 - If it is not possible to provide buffers along the boundaries to reduce the impact of the lighting on the potential bat foraging routes to below 1lux, and no bat activity surveys have been submitted to demonstrate that the corridor is not used by a bat species known to be intolerant of light levels, the Local Authority is likely to recommend refusal.
 - If trees with bat roosting features are due to be removed then tree climbing/endoscopy surveys will be required
 - Farmland/wintering bird surveys and dormouse surveys may need to be carried out; these requirements should be discussed with the LPA. Nest searching for dormice may be adequate as an alternative to full phase II surveys.
 - Reptile surveys should be carried to determine presence/absence.

- 1.5 Enhancements have been recommended including native planting to enhance the existing boundary hedgerows, retaining and managing grassland buffers around the periphery of the field and creating a diversity of additional habitats within the development itself including new hedgerow corridors and bat friendly shrub planting.

- 1.6 Implementing all of the above recommendations will ensure that there are no significant impacts upon protected species and that the proposals will be in conformity with relevant legislation and policy.

2.0 Introduction, Context and Purpose

Introduction

- 2.1 In March 2017 ACD Environmental Ltd was commissioned by Gleeson Strategic Land to carry out a Preliminary Ecological Appraisal (PEA) of a parcel of land at Leaffield Road, Fairford (SP1574501813), hereinafter referred to as the 'Application Site'.
- 2.2 The site comprises an arable field with semi improved grassland margins and bounded by hedgerows and woodland.



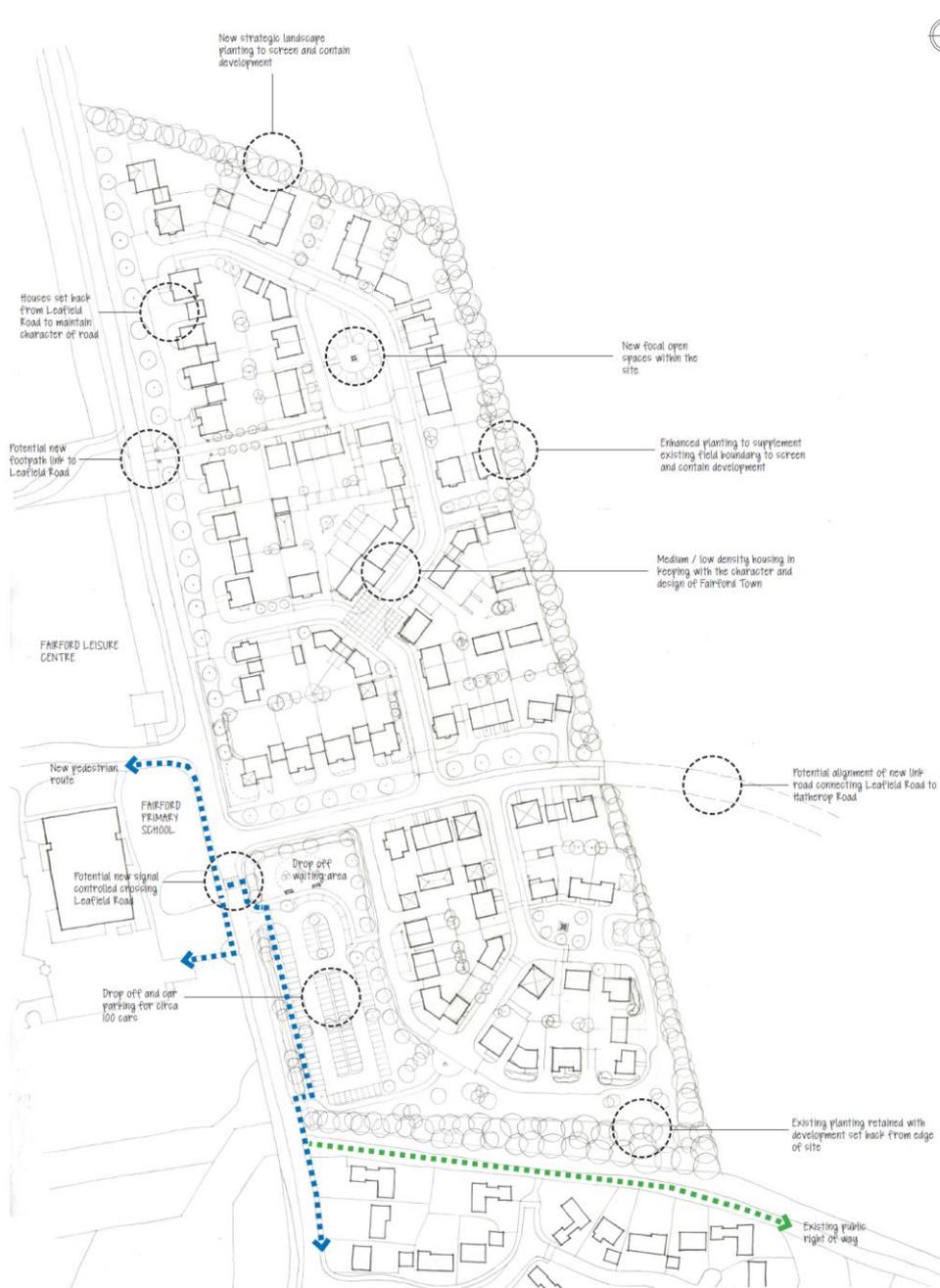
Image 1: Application Site location and approximate Application site boundary shown in

red¹

Context

- 2.3 Plans are being drawn up to re-develop the site with up to 80 dwellings, new links to the local utilities infrastructure, a car parking/school bus drop off area and landscaping. A layout plan has been produced (Image 2).

¹ Imagery 2017 Bluesky, DigitalGlobe, Getmapping plc, Infoterra Ltd and Bluesky, Map Data 2017 Google.



Land east of Leafield Road, Fairford

Sketch site layout plan (DRAFT)

24.08.16 SCALE 1:1000@A2

Image 2: Sketch site layout plan

Purpose

2.4 The purpose of this assessment is to:

- Ascertain the general ecological value of the application site by:

- Identifying and assessing the main habitats and plant communities;
- Assessing the potential for protected species to use the application site;
- Feeding into refinements of the masterplan; and
- To assess any ecological impacts of the proposed scheme and recommend appropriate mitigation and enhancements.

3.0 Methodology

Names and qualifications of surveyors

- 3.1 The survey was carried out by Lisa Durrant of ACD Environmental. Lisa is an Ecologist for ACD Environmental. She has been involved in a wide range of ecological projects including extended Phase 1 surveys, Phase 2 surveys for protected species, and EPS licence applications. She is an Associate Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).
- 3.2 This report was checked by Daniel Wood (MCIEEM) of ACD Environmental. Daniel is a Principal Ecologist for ACD Environmental and oversees all work carried out by the ACD Environmental team. Daniel has 10 years' experience working for commercial consultancies and specialises in European Protected Species legislation and mitigation. Daniel holds Natural England Class Licences for bats, great crested newts, hazel dormice and barn owls. Daniel has extensive development project experience, on sites of varying sizes from individual dwellings to strategic land allocations involving a wide range of issues. He has experience of projects from pre-acquisition, planning applications, Preliminary Ecological Appraisal (PEA), Ecological Impact Assessment (EclA), Environmental Statements (ES) for EIA, and Appropriate Assessment (AA).

Background Data Search

- 3.3 Whilst field survey is invaluable and provides a "snap-shot" of the species and habitats present on a site, it is also important to research existing ecological knowledge of the site, such as biological records, and any relevant ecological information from the surrounding area.
- 3.4 The data search has been undertaken for a 2km radius around the Site for non-statutorily protected sites and protected species records and a 5km radius for statutorily protected sites.
- 3.5 The following organisations and individuals have been contacted and, where relevant, the information provided has been incorporated with acknowledgement within this report:

- Gloucestershire Centre for Environmental Records.

3.6 The Multi-Agency Geographic Information for the Countryside website² was accessed for information on the location of statutory designated nature conservation sites within a 5km radius of the Site.

Habitat Survey

3.7 The Application Site was surveyed in March 2017 using a technique based upon Phase I survey methodology³. This 'extended' Phase I technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail. The vegetation present was clearly visible and allowed an accurate assessment to be made.

3.8 Although the survey falls outside the recommended seasonal period for botanical work and could, therefore, have some limitations, ACD Environmental believe that the evaluation and habitat descriptions, and hence the impacts and their significance are fully accurate for the following reasons:

- Given the type of vegetation and habitats present, the valuation of the intrinsic interest is very unlikely to change;
- Given the very mild winter, vegetation was clearly visible; and
- Previous surveys undertaken by others are both recent in origin and found little in terms of interest.

3.9 Using the above method, the site was classified into areas of similar botanical community types with a representative sample of those species present at the time of the survey being described.

Fauna

3.10 Incidental records of fauna were also made during the survey and the habitats identified were evaluated for their potential to support legally protected species

² <http://www.natureonthemap.naturalengland.org.uk/MagicMap.aspx>

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

and other species of conservation concern, including UK Biodiversity Action Plan Priority species.

3.11 In addition to the extended Phase I survey, the following species surveys were undertaken:

- Bats – Preliminary Roost Assessment.

Preliminary Roost Assessment

3.12 A Preliminary Roost Assessment (PRA) was undertaken⁴ on the trees within the Application Site, the purpose of which was to assess the likelihood of bats being present and the need for further survey and/or mitigation. The following features and signs of bats were searched for on the trees:

- Cracks and splits;
- Cavities and hollows;
- Dense epicormic growth;
- Loose bark;
- Rot holes;
- Woodpecker holes;
- Scratches around entry points;
- Smoothing of surfaces around entry points;
- Dark staining from droppings and urine;
- Bat droppings in and around entrance;
- Audible squeaking during warm weather;
- Flies around entrance; and

⁴ Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London.

- Smell of bats.

Habitats and Species Evaluation and Impact Assessment

- 3.13 The habitats and species evaluations are made with reference to the Chartered Institute of Ecology and Environmental Management's (CIEEM) guidelines for Ecological Report Writing and Guidelines for Preliminary Ecological Appraisal (PEA). The Preliminary Ecological Appraisal (PEA) provides the results of the Extended Phase 1 Habitat Survey. The report is used to identify further ecological surveys necessary to inform an Ecological Impact Assessment (EclA), to identify ecological constraints to a project, make recommendations for design changes, and to highlight opportunities for ecological enhancement. It can be used as a scoping report, but unless it can be determined that the project would have no significant ecological effects, no mitigation is required and no further surveys are necessary; should be superseded by an EclA report.
- 3.14 Where possible, the habitats and species evaluations are made with reference to the Chartered Institute of Ecology and Environmental Management's (CIEEM) guidelines for Ecological Impact Assessment.
- 3.15 These guidelines aim to give a degree of consistency in approach to evaluating the importance of the ecological features within the site and any effects or impacts a scheme will have upon them.
- 3.16 Firstly, the species or habitats must be valued and a commonly used framework involves assigning a level of geographical importance to ecological receptors. This framework incorporates a wide range of legislation and governmental guidance in assessing each feature's value.
- 3.17 Next, the impacts of the proposed scheme have to be predicted, taking into account different stages and activities within the development process. These impacts then have to be assessed for their significance, based upon the value of the species or habitat in question. The assessment of impact significance is done before and after any proposed mitigation to give an overall indication of significance.
- 3.18 The value of specific ecological receptors (sites, habitats or species) is assigned

according to their level of importance using the following terms:

- International value;
- UK value;
- National value (i.e. England/Northern Ireland/Scotland/Wales);
- Regional value;
- County value;
- District value (or Unitary Authority, City, or Borough);
- Local or Parish value; and
- Of value within the zone of influence or a larger defined area.

4.0 Results and Evaluation

4.1 Set out below are the results of the background data searches and field surveys.

Context

4.2 The Application Site is at Leaffield Road, Fairford in a quiet, rural location bordered by arable fields. There is a primary school to the west and housing to the south.

Data Search Results

Designated Sites

4.3 The nearest statutory designated nature conservation sites within 5km of the Application Site are as follows:

- Cotswold Water Park Site of Scientific Interest (SSSI) is a series of over a hundred lakes the closest of which lies 1.4km to the south east. These lakes support a variety of marginal plant species and are important for wintering and breeding birds.
- Whelford Meadow SSSI which lies approximately 1.8km to the south east is a meadow habitat containing several uncommon and nationally rare plant species. The scrub margins provide habitat for breeding and wintering bird species.

4.4 SSSIs are of **National value**.

4.5 There are 4 Key Wildlife Sites (KWS) within 2km of the Application Site and these are:

- Lea Wood KWS which lies 760m north of the Application Site and is ancient semi-natural broad-leaved woodland.
- Broadwater Lake KWS which lies 635m west of the Application Site and is an area of lakes and reservoirs.
- Cotswold Water Park KWS which lies 1.5km south east of the Application

Site and is an area of lakes and reservoirs with bird and invertebrate interest.

- The Grove – South which lies 810m north west of the Application Site and is an area of ancient semi natural broadleaved woodland.

4.6 KWSs are of **Local value**.

Protected Species Records

4.7 The relevant protected species records are incorporated into the Fauna section, below, with due acknowledgement.

Survey Results

Habitats

4.8 The site supports the following habitats:

- Arable Land (J1.1);
- Dry/wet Ditch (L.9/L.10);
- Hedgerows with Mature Trees (2.3);
- Mixed Woodland (A1.3.1)
- Semi Improved Grassland Margins (B2.2);

4.9 For ease of reference, habitat types have been described alphabetically, below. All the features described are shown on the Ecological Features Plan at Appendix 2.

Arable Land (J1.1)

4.10 The majority of the Application Site consists of an arable field which has been planted with giant fescue (photograph 1). The land has been well worked and is flat.



Photograph 1: Arable Land; View facing east.

4.11 The **arable land** is of **negligible ecological value**.

Dry/Wet Ditch (L.9/L.10)

4.12 There are narrow ditches along all of the field boundaries (photograph 2). The ditches are mainly dry at the time of the survey but were shallow and wet in the south eastern corner. The wet ditches contained goose grass *Galium aparine*, lesser celandine *Ficaria verna* and water plantain *Ranunculus aquatilis*. Some of the dry ditches were full of brambles *Rubus fruticosus*.

4.13 The **ditches** are of **negligible ecological value**.



Photograph 2: Wet ditch; southern boundary.

Semi Improved Grassland Margins (B2.2)

4.14 There are 1-2m wide tussocky grassland margins around all of the site boundaries (photograph 3). Species identified were all common and widespread. Perennial rye grass *Lolium perenne* dominates; other species include burdock *Arctium lappa*, common nettle *Urtica dioica*, goose grass, herb Robert, lords and ladies, selfheal *Prunella vulgaris*, wild parsnip *Pastinaca sativa*, wood spurge *Euphorbia amygdaloides*, Yorkshire fog *Holcus lanatus*. Given the species recorded and surrounding land use, the grassland is assessed as being semi-improved.



Photograph 3: Semi Improved Grassland Margins

4.15 Semi-improved grassland is likely to be common and widespread within the local landscape; but buffer strips tend to increase the overall diversity on site and therefore this habitat is assessed as being **of value within the zone of influence**.

Hedgerows and Mature Trees (J2.3)

4.16 Hedgerows or tree lines are present along the northern, eastern and western boundaries of the Application Site. The hedgerows are all good quality but mainly species-poor, the western boundary has more species and may be species-rich.

4.17 Along the eastern boundary there is a well maintained 2m tall hedgerow

dominated by blackthorn *Prunus spinosa* and hawthorn *Crataegus monogyna* with some mature sycamore *Acer pseudoplatanus* and dog rose *Rosa canina* (photograph 4). Ground flora includes goose grass, lords and ladies *Arum maculatum* and ivy *Hedera helix*. The hedgerow is gappy in places and there is a ditch running alongside the hedgerow.



Photograph 4: Hedgerow north eastern boundary

4.18 Along the northern boundary there is a hawthorn-dominant hedgerow with some sycamore, oak *Quercus robur*, spindle *Euonymus europeaus* and ivy (photograph 5). There is a crack willow *Salix fragilis* tree in the north eastern corner and a mature ivy clad oak tree within the hedgerow.



Photograph 5: Hedgerow on northern boundary of site

4.19 The western boundary (Photograph 6) consists of a 1.7m tall mixed hedgerow containing blackthorn, hawthorn, sycamore, beech *Fagus sylvatica*, ash *Fraxinus excelsior*, dogwood *Cornus sanguinea* and elder *Sambucus nigra*. There are also three mature ivy clad oak trees within this boundary. The ditch is on the eastern side of this hedgerow running alongside the road.

4.20 This hedgerow may be species rich and could be classified as 'important' under the Hedgerow Regulations 1997.



Photograph 6: Tree line western boundary

4.21 The hedgerows with trees are at least of **value within the zone of influence**.

Woodland (A1.3.1)

4.22 There is an area of mixed woodland along the southern site boundary which has public access and is being used as a cycling track (photograph 7). Tree species include mature and semi-mature beech, oak, hawthorn, hazel *Corylus avellana*, sycamore and pine *Pinus* sp. Ground flora is scrubby in places and includes brambles, daffodil *Narcissus pseudonarcissus*, dog's mercury *Mercurialis perennis*, common nettle, goose grass, ground ivy *Glechoma hederacea*, herb Robert *Geranium robertianum*, lords and ladies. There is a dry ditch running alongside the woodland ride.



Photograph 7: Area of woodland along southern boundary

Fauna

4.23 For ease of reference, descriptions of the fauna have been described alphabetically, below.

Amphibians

4.24 The data search returned records of common toad *Bufo bufo* but no great crested newt *Triturus cristatus* records. There are no ponds within 500m of the site.

4.25 The ditches on site were mainly dry and unsuitable waterbodies for GCN; there is a possibility that they could use the field margins and boundary vegetation or woodland, although lack of suitable breeding ponds and local records makes this highly unlikely. Therefore the GCN interest is of negligible value and no further survey work is recommended.

Badgers

4.26 The data search returned three local records of badger *Meles meles* within 2km.

4.27 No evidence of badgers (setts, latrines, hairs, prints) was observed within the Application Site boundary. The field margins and to a lesser extent the arable land

are suitable habitats for foraging badgers.

4.28 Given the surrounding landscape and badgers in the area, it is expected that the badgers may occasionally commute through the Application Site.

4.29 The badger interest is of **value within the zone of influence**.

Bats

4.30 The data search returned records of soprano *Pipistrellus pygmaeus* and common pipistrelle *Pipistrellus pipistrellus* bat species from as recent as 2015. Based on local knowledge of the area, lesser horseshoe bats *Rhinolophus hipposideros* are likely to be present in the local area along with several other species.

Potential roosting habitat

4.31 The trees within the Application Site were assessed for their potential to support bat roosts. Several trees with potential roost features were identified within the hedgerow along the western boundary and within the woodland along the southern boundary. The crack willow in the north eastern corner also had several potential roosting features including splits, holes and raised bark.

Potential migration, foraging and commuting routes

4.32 The boundary vegetation comprises intact but low, managed hedgerows on three sides of the site. The southern boundary comprises a band of woodland which terminates at Leafield Road but connects with an offsite belt of woodland extending west towards the River Coln (offsite). Consequently, the southern boundary might therefore be exploited as a migration route, commuting route and foraging route. The other hedgerow boundaries offer no readily identifiable advantages to migrating bats, but have connectivity with the wider network of hedges and lanes in the wider locale, and may therefore be exploited as foraging and commuting routes.

4.33 The bat roosting and commuting/foraging interest is of **Local value**.

Birds

4.34 The data search returned 624 records of 119 species of bird within 2km. The

records include: linnet *Linaria cannabin*, starling *Sturnus vulgaris*, song thrush *Turdus philomelos*, skylark *Alauda arvensis*, house sparrow *Passer domesticus*, lapwing *Vanellus vanellus* yellowhammer *Emberiza citrinella*, hobby *Falco subbuteo*, kestrel *Falco tinnunculus* and barn owl *Tyto alba*.

4.35 In close proximity to the site are records for skylark, lesser redpoll *Acanthis cabaret*, tawny owl *Strix aluco* and quail *Coturnix coturnix*. Red kite *Milvus milvus* and pheasant *Phasianus colchicus* were observed during the site visit.

4.36 There are several farmland bird species in the local records and woodland, trees and hedgerows will be used by birds to nest. The arable land is unlikely to be used by ground nesting birds if it is regularly cultivated but depending on recent management it could have been used at other times of the year for foraging and by wintering species such as lapwing whose winter habitats are arable stubble fields, close-grazed pasture, fallows and winter cereal fields. Yellowhammer *Emberiza citrinella* is a red listed bird species which also forage on arable land and nest close to the ground in thick hedgerows with ditches and/or margins. They are likely to be present on site on occasions.

4.37 The grassland margins could provide some limited foraging habitat for birds of prey such as barn owls.

4.38 The nesting and foraging bird interest is of **value within the zone of influence**.

Dormouse

4.39 The data search returned no records of dormouse *Muscardinus avellana* were returned by the data search within 2km of the development site.

4.40 Some of the boundary hedgerows and the woodland are of good species composition for dormice and have connectivity to some more extensive areas of woodland in the local area such as Lea Woods to the north which are needed to support breeding populations of dormice.

4.41 Although there are no local records it is considered possible that dormice are present in the boundary vegetation on site and therefore the site is assessed as having **value within the zone of influence**.

Reptiles

4.42 The data search returned records of grass snakes *Natrix natrix* within 2km of the site.

4.43 The Application Site is mainly arable and is largely unsuitable for reptiles. There are no significant areas of reptile habitat present on or adjacent to the Application Site although there is also a possibility that reptiles could use the grassland margins and ditches as well as the woodland and hedgerows.

4.44 The reptile interest is of **value within the zone of influence**.

Other Wildlife

4.45 There were two mammal holes in the north eastern corner of the site which were characteristic of a fox *Vulpes vulpes* den. Other mammals such as brown hare *Lepus europaeus*, hedgehog *Erinaceus europaeus* and harvest mouse *Micromys minutus* also use farmland habitats and could be using the site for foraging particularly the field margins, ditches and boundary vegetation. These are biodiversity action plan (BAP) species which are threatened and require conservation action.

4.46 There is potential **value within the zone of influence** for other wildlife.

5.0 Legislation and Planning Policy

5.1 This section summarises the legislation and national, regional and local planning policies, as well as other reference documents, relevant to the baseline ecology results.

Legislation

5.2 Specific habitats and species receive legal protection in the UK under various pieces of legislation, including:

- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2010;
- The Countryside and Rights of Way Act 2000;
- The Hedgerows Regulations 1997;
- The Protection of Badgers Act 1992; and
- The Natural Environment and Rural Communities Act 2006.

5.3 Where relevant, the assessment takes account of the legislative protection afforded to specific habitats and species.

Wildlife Legislation

Non-European Protected Species

5.4 Widespread amphibians (including smooth newts, palmate newts, common toad and common frogs) are all protected under the Wildlife and Countryside (WCA) Act 1981 (as amended). It is therefore an offence to trade or sell specimens.

5.5 Badgers and their setts are protected under the Protection of the Badgers Act 1992⁵. Activities that can harm badgers include destroying a sett, causing noise, additional lighting or vibration and pile driving, quarry blasting, lighting fires or using chemicals. It is an offence to:

⁵ http://www.legislation.gov.uk/ukpga/1992/51/pdfs/ukpga_19920051_en.pdf

- Wilfully capture, kill or injure badgers;
- Damage, destroy or block access to setts (even accidentally);
- Disturb badgers in their setts;
- Cruelly ill-treat a badger;
- Deliberately introduce a dog into a sett;
- Bait badgers;
- Dig for badgers;
- Possess, sell to offer for sale a live badger;
- Possess or control a dead badger or parts of the a badger (if unlawfully obtained); or
- Mark or attach a device to a badger.

5.6 All wild birds⁶ and their nests are protected under the WCA as amended. It is an offence to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- intentionally take or destroy the egg of any wild bird;
- have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954;
- have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954;

⁶ <https://www.gov.uk/wild-birds-protection-surveys-and-licences>

- use traps or similar items to kill, injure or take wild birds;
- have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations (see *Schedules*); or
- intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

5.7 Barn Owls⁷ are a Schedule 1 bird under the Wildlife and Countryside Act, 1981 (as amended) and it is therefore an offence to intentionally:

- Kill, injure or take any wild bird;
- Take damage or destroy the nest of any wild bird whilst that nest is in use or being built;
- Take or destroy and egg of any wild bird; or
- to intentionally or recklessly disturb barn owls at an active nest site with eggs or young or before eggs are laid, or to disturb the dependant young.

5.8 Water voles⁸ are protected under schedule 5 of the WCA, as amended and it is therefore an offence to:

- intentionally capture, kill or injure water voles;
- damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care);
- disturb them in a place of shelter or protection (on purpose or by not taking enough care); or
- possess, sell, control or transport live or dead water voles or parts of

⁷ <http://www.barnowltrust.org.uk/infopage.html?id=301>

⁸ <https://www.gov.uk/water-voles-protection-surveys-and-licences>

them (not water voles bred in captivity).

5.9 Widespread reptiles⁹ (including; adder, common lizards, grass snakes and slow worms) are protected under the WCA as amended and it is therefore an offence to deliberately kill, injure, sell or trade widespread reptiles.

European Protected Species

5.10 European Protected Species are protected The Conservation (Natural Habitats, &c.) Regulations 1994, under regulation 3910, as well as the WCA. These species include great crested newts, all bat species, dormice and otter.

5.11 This level of protection for these species (at all stages of their life cycle) makes it an offence to do the following:

- deliberately to capture or kill a wild animal of a European protected species;
- deliberately to disturb any such animal;
- deliberately to take or destroy the eggs of such an animal;
- to damage or destroy a breeding site or resting place of such an animal; or
- to keep, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a European protected species, or any part of, or anything derived from, such an animal.

Planning Policy

National Planning Policy Framework

5.12 The National Planning Policy Framework¹¹ sets out planning policies on protection of biodiversity and geological conservation through the planning system for local authorities in England. The NPPF outlines the role of the decision maker in

⁹ <http://naturenet.net/law/herps.html>

¹⁰ <http://www.legislation.gov.uk/uksi/1994/2716/regulation/39/made>

¹¹ Department for Communities & Local Government (2012). *National Planning Policy Framework*. [Online]. Available at <<http://www.communities.gov.uk/publications/planningandbuilding/nppf>> [Accessed 19th June 2012].

considering the requirements of wildlife legislation to protect wildlife.

5.13 The Framework states that the planning system should contribute to and enhance the natural and local environment, by measures including the following:

- Minimising impacts on biodiversity and providing net gains in biodiversity where possible;
- Contributing to the Government's commitment to halt the overall decline in biodiversity;
- Establishing coherent ecological networks that are more resilient to current and future pressures; and
- Recognising the wider benefits of ecosystem services.

5.14 The Framework states that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying principles including the following:

- If significant harm from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated for, or, as a last resort, compensated for, then planning permission should be refused.
- Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on that designated site (either individually or in combination with other developments) should not normally be permitted. Where adverse effects on the site's notified special interest features is likely, an exception should only be made where the benefits of the development clearly outweigh both the impacts that it is likely to have on the features of the site that make of special scientific interest and any broader impacts on the national networks of Sites of Special Scientific Interest.
- Opportunities to incorporate biodiversity in and around developments should be encouraged.

5.15 The Government Circular 06/2005¹² accompanies the National Planning Policy Framework and sets out the application of the law in relation to planning and nature conservation in England.

¹² Office of the Deputy Prime Minister (2005). *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. [Online]. Available at: < <http://www.communities.gov.uk/documents/planningandbuilding/pdf/147570.pdf> >
Accessed: 19th June 2012.

6.0 Discussion and Recommendations

Designated Sites

6.1 The site falls within 5km of Cotswold Water Park and Whelford Meadow SSSIs. It also falls within Natural England's Sites of Special Scientific Interest Impact Risk Zones (SSSI IRZ) for these sites. The criteria for potential risk concerning residential developments should be considered for :

- Any residential development of 100 houses or more.

6.2 As this development does not exceed more than 80 houses then it does not meet these criteria and therefore impacts from this development are unlikely to occur.

6.3 Lea Wood and Broadwater Key Wildlife Sites are the closest to the site and have direct connectivity to the development site area; therefore there is a possibility that there could be recreational impacts resulting from the new development. A discussion is required with the local authority to determine possible impacts and whether mitigation is likely to be required.

Habitats

Hedgerows with Mature Trees

6.4 The boundary hedgerows are mainly species poor and are all common and widespread species. The hedgerow along the western boundary contained several woody species and it is recommended that a survey is carried out in the summer to determine whether this could be classified as 'important' under the Hedgerow Regulations 1997. This hedgerow should be ideally retained and protected within a buffer zone, if this is not possible then a replacement species rich hedgerow should be created to mitigate for the loss.

6.5 In general the hedgerows provide good connectivity to the wider landscape and also provide foraging corridors for many types of wildlife.

6.6 The draft layout indicates that most of the boundary hedgerows will be retained and enhanced but that the western boundary hedgerow will be removed. Hedgerows should be retained and protected within a buffer zone wherever

possible and vegetation corridors should be strengthened and enhanced with native planting.

Woodland

- 6.7 The southern woodland belt contains mature and native broadleaved tree species which provides habitat for many species. Broadleaved woodland is a Gloucestershire Biodiversity Action Plan Habitat and should be retained and protected within a buffer zone which is indicated within the draft layout.
- 6.8 These areas should be fenced off during construction to prevent wildlife moving onto the site and good practice methods should be used such as covering trenches at night and keeping chemical's sealed.
- 6.9 Woodland should be managed sensitively and deadwood should always be retained in situ.

Fauna

Badgers

- 6.10 The draft layout indicates that the development will not include provisions for any significant buffer zone along the western, northern or eastern boundaries and therefore it is likely to cut off foraging routes used by badgers within this area. Badgers will still be able to use alternative foraging routes on the other side of the hedgerows to the east and north of the development site; however, potential creation of a new link road which is indicated on the plan would sever the foraging route to the east of the site.
- 6.11 The local authority are likely to require the implementation of a wildlife corridor or buffer zone along the hedgerows, if this is not possible then mitigation will need to be put in place to ensure that the alternative foraging corridors on the other side of the eastern and northern site boundaries are not cut off by the new link road.
- 6.12 Good practice methods should be used during construction e.g. to make sure wildlife does not get trapped in trenches or holes onsite and chemicals should be sealed at night.

Bats

- 6.13 Bats use linear features to forage and navigate and the tree lines and hedgerows on the site provide suitable foraging habitat, particularly the southern woodland boundary.
- 6.14 The draft layout indicates that the hedgerow along the western boundary will be removed.
- 6.15 Lesser horseshoe bats are known to be present within the local landscape. Lesser horseshoe bats exploit deciduous woodland as foraging resources, within networks of hedges. They can commute along hedgerows. There is no extensive woodland in the site, with the exception of a woodland belt on the southern boundary. Given this, lesser horseshoes are unlikely to use the site as a main foraging resource, but could use the hedgerows and woodland belt to commute and migrate.
- 6.16 The impact of the severance effect upon commuting bats as a result of the loss of the western boundary hedge is not predicted to be significant for any species, however lighting impacts on the northern, southern and eastern hedges in combination, could negatively impact the commuting behaviour of bats.
- 6.17 As a minimum we advocate a buffer along the southern boundary. If it is not possible to provide a buffer along any boundaries to reduce the impact of the lighting on the potential bat foraging routes to below 1lux, and no bat activity surveys have been submitted to demonstrate that the corridor is not used by a bat species known to be intolerant of light levels, the Local Authority is likely to recommend refusal.
- 6.18 If the applicant can produce an isolux plan showing that light spillage on the potential bat foraging route is lower than 1lux at 2m above ground (and set within 5m buffers) the Local Authority are unlikely to recommend refusal.
- 6.19 If surveys are required, as habitat suitability is reasonably low we would recommend that in line with the current survey guidance from the Bat Conservation Trust one transect survey visit per season along with automated surveys. This should be discussed with the local authority to confirm survey effort

required.

- 6.20 Depending on the results of the survey, dark buffer zones along the hedgerows may be required. Lighting will need to be carefully designed to prevent increasing light levels around the trees. If it is not possible to provide buffers along the boundaries to reduce the impact of the lighting on the potential bat foraging routes to below 1lux, and no bat activity surveys have been submitted to demonstrate that the corridor is not used by a bat species known to be intolerant of light levels, the Local Authority is likely to recommend refusal.
- 6.21 Night-scented plant species could also be incorporated into the landscape, which will encourage insects and enhance the habitat for foraging bats.
- 6.22 There were mature trees within the northern and western boundaries and within the woodland areas with bat roosting potential features including splits in branches, holes, raised bark and ivy cladding (Appendix 3). If the removal of any mature trees with roosting potential is required then tree climbing/endoscopy surveys will need to be carried out in order to determine whether the tree is being used as a roosting site.

Birds

- 6.23 It is possible that farmland and wintering bird species are present on site due to local records and suitable habitat, declining farmland birds such as yellowhammer, linnet, skylark are all found in the local area.
- 6.24 Although there are similar fields in the local area, the draft layout indicates that an area of habitat for farmland birds will be removed or directly impacted on by the development, therefore it is recommended that farmland/wintering bird surveys may be required. The requirement for this should be discussed with the local authority.
- 6.25 Depending on the results of these surveys, recommendations may include retention and management of boundary grassland, ditches and hedgerows to benefit arable bird species and/or management of surrounding arable land. Hedgerows should also be enhanced with native planting to make them thicker and more suitable for nesting. Wild bird strips could be created along some of the

boundaries for seed eating birds such as yellowhammer and linnet. These could be seeded with WBS 2 (Oliver seeds) and managed for wildlife.

Dormouse

6.26 Although there were no local records of dormice on the data search their presence within the hedgerows and woodland on site cannot be ruled out, although risk is low due to suboptimal connectivity and distance to large areas of extensive woodland.

6.27 The draft layout indicates that a significant area of hedgerow will be removed to accommodate the development and properties/gardens along northern and eastern boundaries will be very close to the hedge line and therefore there could be impacts from lighting, mechanical damage and pets.

6.28 Therefore it is recommended that phase II dormouse surveys are carried out. A discussion with the local authority should take place as to whether full phase II surveys are required in this instance or whether nest searches would be sufficient to determine presence/absence due to low risk and suboptimal habitat.

6.29 If dormice are found then a European Protected Species licence is likely to be required in order to remove any significant areas of hedgerow and dark buffer zones along the retained hedgerows for protection are likely to be required. Fencing or strategic planting may be required to discourage access to dormice habitat from pets and residents.

Reptiles

6.30 There are records of grass snakes close to the site and it is possible that small numbers of reptiles could be using the boundary vegetation and grassland margins/ditches as well as the woodland refugia.

6.31 The draft layout indicates that the grass margins, ditches and some hedgerows are due to be removed and therefore it is recommended that reptile surveys are carried out. This will involve laying out artificial refugia in areas on site in suitable habitat areas and seven subsequent visits to check underneath. These surveys can be carried out between March and September (inclusive) under suitable

weather conditions.

6.32 If reptiles are found then a mitigation strategy will be required detailing suitable mitigation measures to ensure that reptiles are not harmed during the development, these could include manipulation of habitat to discourage reptiles offsite into other habitat areas, retention of suitable habitat within boundary buffer zones or translocation of reptiles to an alternative suitable location either on or off site.

Other Wildlife

6.33 Mammal holes were found in the north eastern corner of the site, probably a fox den. All mammals receive some protection under the Wild Mammals (Protection) Act 1996 (England, Scotland and Wales), the Welfare of Animals Act (Northern Ireland) 2011 and the Animal Health and Welfare Act 2013 (Ireland). This includes offences of crushing and asphyxiation of any wild mammal with intent to inflict unnecessary suffering, therefore this area should be avoided during construction or exclusion should take place to avoid offences under this legislation.

6.34 Provision should be made for other BAP species including brown hare *Lepus europaeus*, hedgehog *Erinaceus europaeus* and harvest mouse *Micromys minutus* who also use farmland habitats and are likely to be present on site.

Enhancements

6.35 The National Planning Policy Framework encourages development to provide net gains in biodiversity where possible.

6.36 It is recommended that the following enhancements are provided within the site:

- Retention and enhancement of all boundary hedgerows where possible. Enhancement could include native planting (species such as hawthorn, beech, oak, field maple, hazel, dogwood, willow and holly); creation of new hedgerows within the site could create additional habitat corridors.
- Retention and enhancement of ditches and marginal grassland by management and over seeding with wildflower grassland (using farmland seed mix such as RE09) wild bird strips could be created using WBS 2

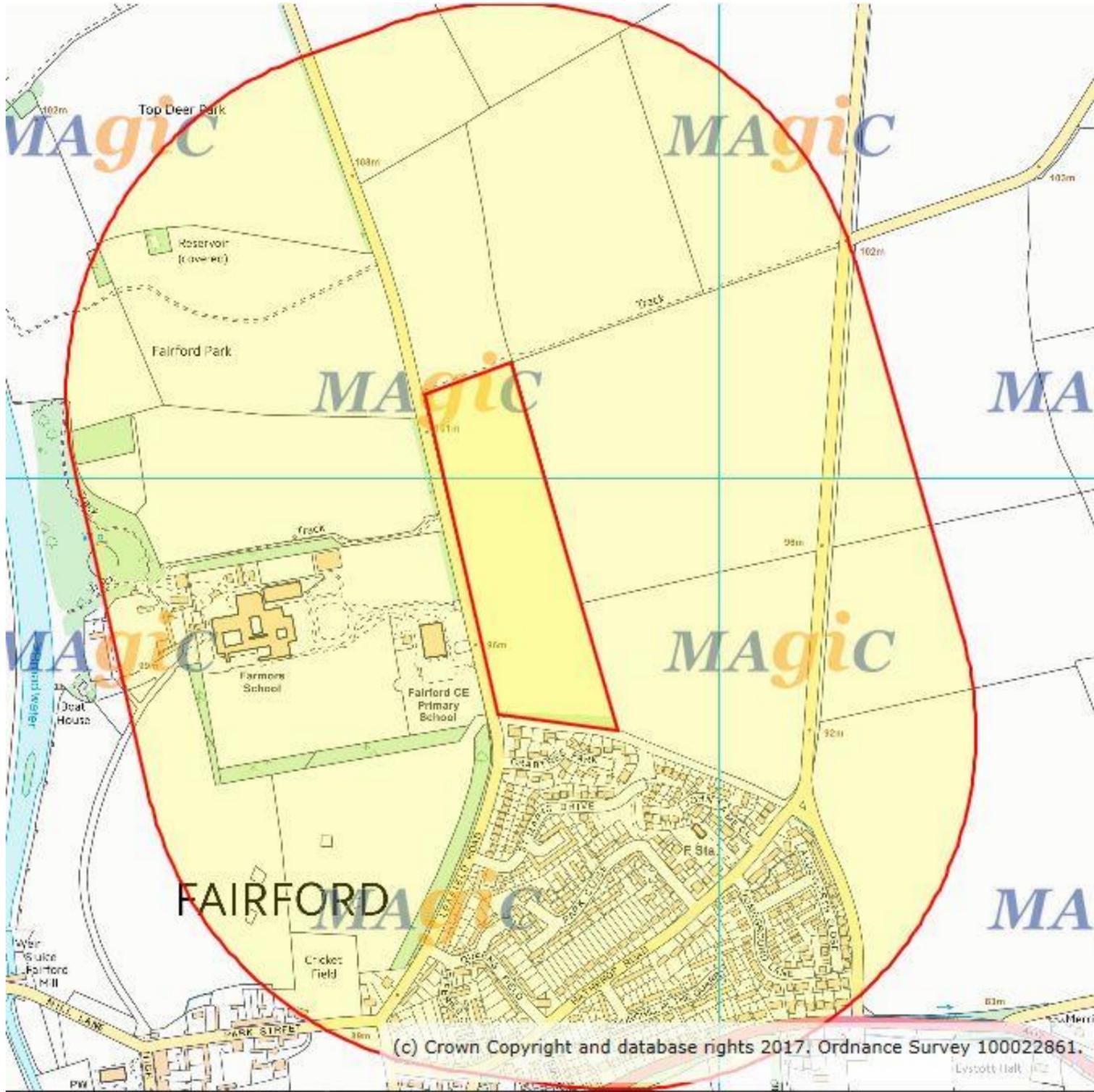
(Oliver seeds).

- Bird and bat boxes could be erected on properties in quiet locations close to boundary vegetation. Integrated bat boxes such as Schwegler 1FR or Ibstock Enclosed Bat Box 'C' could be built into southerly facing facades. Bird boxes could 1SP Schwegler Sparrow Terraces, Woodstone swift boxes, 9A Schwegler house martin nests and starling nest boxes. These should be attached in quiet locations away from predation and avoid southerly facing locations. Sparrow, swift and house martin boxes should be attached tucked under the eaves.
- Planting of bat friendly species such as night scented plants which can include; Night-scented stock *Matthiola bicornis*, Tobacco plant *Nicotiana glauca*, Cherry pie *Heliotropium arborescens*, Evening primrose *Oenothera biennis*, Nottingham catchfly *Silene nutans*, Night-scented catchfly *Silene noctiflora*, White jasmine *Jasminum officinale*, Honeysuckle *Lonicera periclymenum*, Sweet rocket *Hesperis matronalis* and Soapwort *Spanoria officinalis*.

7.0 Conclusion

- 1.1 Hedgerows and woodland should be retained and protected within buffer zones where possible. If the western boundary hedgerow is classified as an Important Hedgerow then this may need to be retained or replacement species rich hedgerow planting may be required.
- 1.2 Phase II surveys may be required for a number of species in order to fully assess the impacts including bat activity/roosting, farmland/wintering birds, dormice and reptiles. A discussion with the LPA as to the specific requirements of these surveys would be very useful.
- 1.3 Depending on the results of these surveys mitigation strategies and/or EPS licenses may be required and a sensitive lighting plan is likely to be required to ensure that trees and hedgerows are not subject to increased light levels. Recommendations for mitigation as well as enhancement of the site's ecological value have been set out.
- 1.4 Implementing the recommendations will ensure that there are no significant impacts upon protected species and that the proposals will be in conformity with relevant legislation and policy.

APPENDIX 1 – Pond Location Plan



APPENDIX 2 – Ecological Features Plan



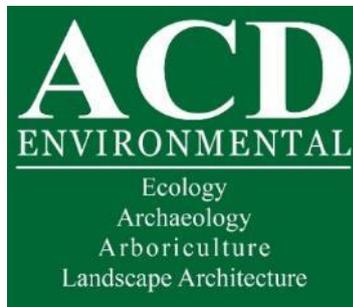
KEY:

-  Ditch L.9/L.10
-  Boundary Trees and Hedgerows L.7
-  Semi improved grassland margins B2.2
-  Arable J1.1
-  Mature tree

scheme: Land East of Leafield,
 Fairford
 client: Gleeson
 drawing: Ecological Features Plan
 date: March 2017
 scale: NTS @A3
 drawing no.: GLEE21132 60
 drawn: LD
 checked: DW



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