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Land at Durrant's Lane,
Berkhamsted

Ecological Appraisal

Prepared by
CSa Environmental Planning

On behalf of
Taylor Wimpey UK Ltd,
Hertfordshire County Council
& Egerton Rothesay School



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1.0 Introduction

- 1.1 The following report sets out the findings of an Ecological Appraisal of land at Durrants Lane, Berkhamsted. CSa Environmental Planning has carried out the survey on behalf of Taylor Wimpey UK Ltd, Hertfordshire County Council and Egerton-Rothesay School to explore the potential for ecological issues arising from the development proposals for this site.
- 1.2 The proposed development site encompasses approximately 14 hectares and consists of a school and associated grounds with arable fields and woodland to the south and further woodland and rough grassland to the north. Surrounding land includes arable, mixed woodland, rough grassland, scattered trees and scrub. It is understood that under the proposed scheme the school will be redeveloped to include new leisure space and approximately 100 new dwellings.
- 1.3 This ecological appraisal aims to:
- Undertake a desktop search for relevant biological records and assess their significance;
 - Review the site in relation to its wider ecological context;
 - Describe and map the habitats present at the site;
 - Identify any potential protected or notable species issues;
 - Evaluate habitats and species in line with standard methodologies;
 - Specify any detailed survey work that may be required,
 - Begin the process of assessing potential impacts; and
 - Recommend potential mitigation or wildlife enhancement measures, where possible.
- 1.4 This report presents the ecological appraisal information in a standard format accepted by ecological consultees across the country, adopting various best-practice procedures and methodologies.

2.0 Methodology

Desktop Biological Records Search

- 2.1 Information on statutory site designations is available online. The Multi-Agency Geographic Information for the Countryside (MAGIC) database was searched, looking for all relevant statutory sites within 5km of this development site (search area map provided within Appendix A).
- 2.2 A biological records search was also conducted for the area of land encompassing the proposed site and adjacent land within an approximate 1km radius. The groups listed below were contacted for biological records:
- Hertfordshire Biological Records Centre (HBRC)
 - Hertfordshire Bird Club County Recorder
- 2.3 Relevant information provided by these organisations/groups is included within the main text, whilst full responses are included in the Appendices.

Site Survey

- 2.4 The site was visited on 22 January 2008 by Hayley Jack AIEEM, Alys Black and Ian Butler in order to undertake the initial field survey. The survey technique applied is commonly referred to as an 'extended Phase 1' survey. This is at a level intermediate between the Phase 1¹ survey (where standardised habitat mapping is undertaken together with making notes on dominant and notable species) and the more detailed (Phase 2) survey techniques that may be used to specifically record or survey particular habitats or species.
- 2.5 In this survey, the more obvious plant species observed within each habitat type are recorded and habitats are classified and mapped. Note is also taken of conspicuous fauna present during the survey, with particular attention paid to any evidence of, or potential for, the presence of protected or notable species.

Evaluation and Assessment

- 2.6 Ecological features are evaluated using the Guidelines for Ecological Impact Assessment 2006, produced by the Institute of Ecology and Environmental Management². These guidelines promote a more scientifically rigorous and transparent approach to the ecological assessment process. This methodology provides a standardised approach, formulated from the views of a wide spectrum of ecological professionals.

¹ Nature Conservancy Council (1990) Handbook for Phase 1 habitat survey – a technique for environmental audit. JNCC, Peterborough.

- 2.7 The process of valuing ecological features and resources is complex and subjective. The factors set out below need to be taken into account when applying professional judgement to value ecological features. Legal protection needs to be considered separately from value. Features that are important for social/community or economic reasons should be identified as part of the assessment and the impacts on these features should be assessed by the ecologist however the significance of the impacts will then be determined by the socio-economic/community specialist.

Geographic Frame of Reference

- 2.8 In assigning value to an ecological feature/resource the following geographic frame of reference should be used.

- International;
- UK;
- National (i.e. England/Northern Ireland/Scotland/Wales);
- Regional;
- County (or Metropolitan – e.g. in London);
- District (or Unitary Authority, City, or Borough);
- Local or Parish; and
- Within zone of influence only (which might be the project site or a larger area).

- 2.9 The size, conservation status and the quality of features or species are all relevant in determining value. Furthermore the value of a species and/or habitat may vary depending on its geographical location.

Designated Sites and Features

- 2.10 Some sites have already been assigned a level of nature conservation value through designation. For example:

- *Internationally important sites:*
These include Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. Sites for which the process of designation has commenced (e.g. potential SPAs, Ramsar sites and candidate SACs) should be given the same consideration as designated sites.
- *Nationally important sites:*
These are designated as Sites of Special Scientific Interest (SSSI) in England, Scotland and Wales and as ASSI in Northern Ireland.
- *Sites of lower level importance e.g. Regional, county, district, parish:*
Local Authority and County Wildlife Trust Sites and other organisations have non-statutory designated sites that are of importance at other levels. Such as County Wildlife Sites, Sites of Importance to Nature Conservation, Special Wildlife Sites, etc.

² IEEM (Institute of Ecology and Environmental Management). (2006). Guidelines for Ecological Impact Assessment (EclA) – June 2006.

Tree Preservation Orders (TPOs)

- 2.11 TPOs are designated by the Local Planning Authority and are based on amenity related criteria. While this designation does not have any implications to their ecological value they should be considered due to the legal protection they offer.

Hedgerows Regulations

- 2.12 The Hedgerows Regulations 1997³ provide for the protection of important hedgerows in England and Wales. To be 'important' a hedgerow must satisfy a number of specific criteria.

Biodiversity value

- 2.13 There are various characteristics that can be used to identify ecological resources or features likely to be important in terms of biodiversity. These include;

- Animal or plant species, subspecies or varieties that are rare or uncommon, either internationally, nationally or more locally;
- Ecosystems and their component parts, which provide the habitats required by the above species populations and/or assemblages;
- Endemic species or locally distinct sub-populations of a species;
- Habitat diversity, connectivity, and/or synergistic associations (e.g. networks of hedges and areas of species-poor pasture that might provide important feeding habitat for rare species such as greater horseshoe bat);
- Notably large populations of animals or concentrations of animals considered uncommon or threatened in a wider context;
- Plant communities (and their associated animals) that are considered to be typical of valued natural/semi-natural vegetation types – these will include examples of naturally species-poor communities;
- Species on the edge of their distribution, particularly where that distribution is changing as a result of global trends and climate change;
- Species-rich assemblages of plants or animals; and
- Typical faunal assemblages that are characteristic of homogenous habitats.

- 2.14 Several published approaches to the assessment of importance and value are available and have informed this approach. These include the Countryside Agency Quality (2001)⁴, Treweek (1999)⁵ and Collis and Tyldesley (1993)⁶.

Valuing habitats

- 2.15 The value of areas of habitat and plant communities should be measured against published selection criteria where available. For example, the Habitats Directive 1992 lists habitats and plant communities of European importance whose conservation requires the designation of SACs; Local Authorities and Wildlife Trusts have generally prepared criteria for the selection of SINCs, and so forth. Where areas of a habitat or plant communities do not meet the necessary criteria for designation at a specific

³ HMSO (1997) *The Hedgerow Regulations 1997* – Statutory Instrument 1997 No. 1160.

⁴ Countryside Agency et al. (2001) Overview report – Quality of Life Capital. CAG and LUC, London

⁵ Treweek J (1999) *Ecological Impact Assessment*. Blackwell Science, Oxford

⁶ Collis and Tyldesley (1993) *Natural Assets: Non-statutory Sites of Importance for Nature Conservation*, The Local Government Nature Conservation Initiative

level, the local context may be considered if appropriate, and this should take into account potential value.

- 2.16 Habitat Action Plans (HAPs) should be considered, as their purpose is to guide conservation action for the habitats concerned.
- 2.17 Ancient woodlands may be designated at different levels and may be considered important even if not designated. Very mature habitats such as this cannot be readily restored or created.

Valuing species

- 2.18 The valuation of populations should make use of any relevant published evaluation criteria. For example, there are established criteria for defining nationally and internationally important populations of waterfowl.
- 2.19 Some species need to be assessed because they are of biodiversity value and/or because a proposal may lead to the contravention of the law. In assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records.
- 2.20 Rarity is an important consideration because of its relationship with threat and vulnerability. Some species are inherently rare, so it is necessary to look at rarity in the context of status. A species that is rare and declining should be assigned a higher level of importance than one that is rare but known to be stable. There are many species in decline throughout the UK, many of those for which the decline is more serious are the subjects of Species Action Plans (SAPs).
- 2.21 Other rarity-related evaluation criteria include the need to protect populations where the UK holds a large or significant proportion of an international species, e.g. a European population. Guidance is available for a number of species groups, which explain how to identify populations of a sufficient size for them to be of national or international importance e.g. dragonflies in the Guidelines for the selection of SSSIs. The need to protect populations where the UK holds a large or significant proportion of an international species is highly important and the evaluation of such populations should reflect this.
- 2.22 Species Action Plans (SAPs) should be considered as they are developed to guide conservation action for the species concerned.
- 2.23 Species and Habitats listed in UK BAPs have statutory protection through Section 74 of the Countryside and Rights of Way (CROW) Act 2000 in England and Wales. The Section 74 list of habitats and species are those the Secretary of State, following consultation with English Nature, considers are of principal importance for the

conservation of biological diversity in England⁷, in accordance with the 1992 UN Convention on Biological Diversity⁸.

- 2.24 Some species must be controlled, mainly for public health and commercial reasons, and are legally identified as notifiable weeds under the Weeds Act 1959, or are controlled by the Wildlife and Countryside Act 1981. The Weeds Act 1959 and The Ragwort Control Act 2003 includes five weed species which may be injurious. Although the presence of such weeds may have various dis-benefits they may also have some ecological value. The legal consequences of their presence need to be considered and the ecological impacts assessed in this context.

Potential value

- 2.25 The Habitats Directive 1992 requires Member States to restore European designated sites where they are not of favourable conservation status. The value of such an area must be assessed in relation to the ecological feasibility of restoring it to favourable conservation status, or of enabling another area to be restored. This means that, even a habitat in poor condition may be considered to be of considerable importance, if there is a reasonable chance that it can be restored to a higher value in the future. It should also be noted that potential value is also addressed in some BAPs.

Secondary or supporting value

- 2.26 Some features have no obvious value in themselves but perform an important ecological function e.g. acting as a buffer to important habitats. Therefore the importance of a feature may depend on its role within a wider system, as well as the extent to which this role may be assumed by another feature.

Social/community value

- 2.27 People derive benefits from biodiversity in various ways including recreational enjoyment and environmental education. Therefore the social value of the site/species should be considered.

Economic value

- 2.28 Impacts to certain ecological features and resources may have economic implications. Examples of such features/resources include populations of shellfish, fishing lakes and sites for rare breeding birds where tourism/recreation is important. Where such features/resources are to be affected, the likely ecological changes should be described and expert advice sought from an economist on the economic value.

Legal issues

- 2.29 It is important to identify ecological resources/features that are subject to specific legislation e.g. Statutory Wildlife Sites, protected species. In all cases legal and other guidance should be followed to determine whether a proposal will cause any contravention of legal status or protection, or have a significant effect on the integrity of a system, resource or feature.

⁷ Section 74 List of habitats and species important to biodiversity in England. www.defra.gov.uk/wildlife-countryside/cl/habitats/minstatement.htm

⁸ Convention on Biological Diversity. www.biodiv.org/convention/articles.asp

- 2.30 The legal protection of some features/resources does not necessarily reflect their biodiversity value. For example, badgers under the Protection of Badgers Act 1992, trees protected under TPOs and species legally identified as notifiable weeds. Legal provisions/consequences need to be considered but the biodiversity value should be assessed as described previously.

Multi-functional features

- 2.31 Some features may have ecological, social and/or economic value and therefore the impact on all aspects should be assessed separately before an integrated appraisal is carried out.

Summary

- 2.32 The IEEM (2006) guidelines have been developed to promote a more scientifically thorough and clear approach to ecological evaluation and EcIA. The process of valuing ecological features and resources is complex and subjective and the approach set out above requires careful consideration of a range of factors and the use of professional judgement. Whilst values may still be summarised for convenience in terms of a geographical framework, e.g. county value, parish value etc, it is important that the rationale behind this final evaluation is carefully considered.

3.0 Ecological Context of Site

Designated Sites

Statutory Sites

3.1 The MAGIC database search (see Appendix A) has revealed that there are no statutory sites covering any part of the proposed development. However, three Sites of Special Scientific Interest (SSSIs), one of which forms part of a Special Area of Conservation (SAC), and one Local Nature Reserve (LNR) occur within the 5km search radius.

- *Ashridge Commons and Woods SSSI* is located approximately 1.4km north of the survey area. It covers an area of approximately 640ha and lies within the Chilterns Area of Outstanding Natural Beauty (AONB). It forms an extensive area of mainly semi-natural vegetation comprising a mosaic of habitats ranging from ancient semi-natural and secondary woodland, plantation, scrub, and an open bracken and grassland component. Having such a wide variety of habitats, this SSSI supports an exceptionally rich breeding bird community, including both county and national rarities. Small ponds scattered throughout the site hold amphibians and various invertebrate species.
- *Chilterns Beechwood SAC* covers a considerable quantity of the same range as Ashridge Commons and Woods, and is also located approximately 1.4km north of the survey area at the closest point. It comprises approximately 1276ha of predominately broad-leaved deciduous woodland with areas of scrub, heath and dry grassland. Stag beetle *Lucanus cervus* records also originate from the SAC.
- *Alpine Meadow SSSI* is located approximately 2.4km northeast of the survey area and comprises 0.4ha of calcareous grassland. This habitat type is one of a few remaining examples of a nationally declining habitat within Hertfordshire. This site has a rich floristic diversity of unimproved chalk grassland species and notable invertebrate species.
- *Little Heath Pit SSSI* is located approximately 3.9km east of the survey area and comprises 0.3ha, of geological importance.
- *Captain's Wood LNR* is located approximately 4.4km southwest of the survey area and comprises a mosaic of wood pasture and heathland which supports a range of wildlife including the nationally rare barbastelle *Barbastella barbastellus* bat species.

Non-Statutory Sites

3.2 No non-statutory sites cover any part of the proposed development site however Hertfordshire Biological Records Centre (HBRC) has provided information on a number of County Wildlife Sites (CWSs) within the search area, five of which occur

within 1km from the site. The sites are summarised below and full details are included in Appendix B.

- *Meadow Southwest of Shootersway Road CWS* is located 16m southwest of the site boundary on the opposite side of Shootersway Road from the site. The CWS comprises unimproved neutral grassland including eight indicator species. The site is also of entomological interest, supporting important butterfly and moth species including meadow brown *Maniola jurtina* and large skipper *Ochlodes venata*. It does not appear to offer any formal public access.
- *Cock Grove CWS* is located approximately 605m west of the survey area comprising ancient semi-natural woodland including 17 woodland indicator species. A series of tracks run through this wood.
- *Grassland East of Swags Spring CWS* is located approximately 695m northwest of the survey area comprising grassland which is becoming rank. It does not appear to offer any formal public access.
- *New Road Abandoned Allotments CWS* is located approximately 940m north of the survey area comprising allotment habitats, half of which has been converted to a conservation area. It is adjacent to the railway line and is of importance to common reptile species, small mammals and butterfly species. It does not appear to offer any formal public access.
- *Paddocks by New Road CWS* is located approximately 1km north of the survey area comprising rough grassland including 9 neutral and 13 mixed grassland indicators. Reptiles have been translocated from the site in the past. There is public access only along the boundaries of this site.

Hertfordshire Biodiversity Action Plan

- 3.3 The Hertfordshire Biodiversity Action Plan provides a strategy for the protection and enhancement of wildlife in the county and sets out local priorities and objectives for nature conservation through 26 Habitat Action Plans (HAPs) and 17 Species Action Plans (SAPs). Of possible relevance to the survey area may be the HAPs for Arable land, broadleaved, woodland, neutral grassland and boundary and linear features. Relevant SAPs may include those for birds such as the song thrush *Turdus philomelos* and the tree sparrow *Passer montanus* in addition to great crested newt *Triturus cristatus* and Natterer's bats *Myotis nattereri*.

Natural Areas

- 3.4 Natural Areas have been identified to cover all of England. They group together areas of similar biogeographic character, often with a distinct geology, landscape or land-use. Hertfordshire contains parts of five Natural Areas, reflecting the high diversity of

landscapes and wildlife habitats within the county. The survey area falls within the Chilterns Natural Area, which features a chalk escarpment that rises steeply from the Vale of Aylesbury to 275 metres above mean sea level. The scarp face is largely wooded in character, interspersed with areas of unimproved chalk downland and scrub on thin rendzina soils, but the northern end of the scarp is more open. The habitats of the Chilterns that are of importance for nature conservation comprise chalk downland and scrub, ancient semi-natural and secondary woodlands, and species-rich hedgerows with small areas of acid grassland on the Chiltern Commons. The Chilterns contain the most extensive area of native beech woodland in England, which cover the full range of native beech woodland types. Chalk grassland is the other key habitat in the Natural Area. Associated with some areas of chalk grassland is a nationally important bryophyte and lichen community. The Chilterns is also a valuable area for a large number of rare and scarce plants.

Planning Policy Statement 9 (PPS9)

3.5 Planning Policy Statement 9 (PPS9) sets out the Governments national planning policies on protection of biodiversity and geological conservation through the planning system. It includes the broad aim, that planning, construction and regeneration should have minimal impacts on biodiversity and should enhance it, wherever possible. It requires a strategic approach to conservation based upon up-to-date environmental information and the incorporation of beneficial biodiversity features within development plans. Key principles of this policy statement include:

- “Development plan policies and planning decisions should be based on up-to-date information about the environmental characteristics of their areas. These characteristics should include the relevant biodiversity and geological resources of the area”;
- “Plan policies and planning decisions should aim to maintain, and enhance, restore or add to biodiversity...”, and
- “Where a planning decision would result in significant harm to biodiversity ... which cannot be prevented or adequately mitigated against, appropriate compensation measures should be sought. If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused.”

4.0 Site Description and Evaluation

General Site Description

- 4.1 The following site description should be read in conjunction with the Habitats Plan (CSa/1074/100) provided in Appendix D. Distinct habitats/land parcels present at the site have been labelled to assist with descriptions.
- 4.2 The survey area includes several distinct land parcels which include a school and associated grounds with arable land to the south and wooded/rough grassland areas to the north. The Egerton-Rothesay School and associated Hertfordshire County Council land (Area's A, B and D) includes amenity grassland habitat with scattered trees, hard standing and ornamental planting surrounding the school buildings. The arable land to the south (Area's E and F) consists of two linked arable fields, with a belt of mixed woodland separating the two fields along much of their adjoining boundary. Habitats to the north (Area C) include mixed woodland, tall ruderals and a rough grassland field surrounded by scrub and scattered trees. Additional habitats at the site include species poor hedgerows. Durrants Lane runs along the length of the western boundary and Shootersway Road along the southern boundary. Residential housing with associated gardens lies to the east and north.

Habitats

Woodland, Scrub, Scattered Trees and Tall Ruderals

- 4.3 Trees are present throughout the site and distinct woodland areas include Area C and the belt between the arable fields (Area E and Area F).
- 4.4 Area C is situated to the north of the school grounds. The land slopes down steeply from Area B and then gently slopes down towards the north with a further steep slope into an open central area which is dominated by tall ruderals. Trees are largely confined to the edges of this area and include semi-mature sycamore *Acer pseudoplatanus*, larch *Larix* sp., field maple *Acer campestre*, beech *Fagus sylvatica*, wild cherry *Prunus avium*, ash *Fraxinus excelsior* and birch *Betula* sp. Understorey species include hazel *Corylus avellana*, holly *Ilex aquifolium*, dogwood *Cornus sanguinea* and elder *Sambucus nigra*.
- 4.5 Apart from dense bramble *Rubus fruticosus* agg., which occurs throughout this area at the woodland edges, the ground flora was sparse at the time of survey and much of the ground was covered in leaf litter with occasional patches of moss and ivy *Hedera helix*. Additional species include occasional dog's mercury *Mercurialis perennis*, dog-rose *Rosa canina*, snowdrop *Galanthus* sp., sedge *Carex* sp., and bluebell *Hyacinthoides* sp. The open tall ruderal area at the centre of the mixed woodland is dominated by nettle *Urtica dioica* and willowherb *Epilobium* sp. with bramble.

- 4.6 The mixed woodland belt between Area E and Area F occurs to the south of the site. An approximate five metre gap in the belt provides a link between the two arable fields and divides the woodland into two distinct sections of which the northern section is considerably larger. This larger northern section is mostly flat with two deep basins in the centre, which are dominated by bramble and dead wood. Tree species include beech, English oak *Quercus robur*, sycamore, ash, field maple, birch sp. and wild cherry. Understorey species include holly, hawthorn *Crataegus monogyna*, hazel, elder, dogwood and cherry laurel *Prunus lauroceasus*, which dominates the northern half of this section. Ground flora includes bluebell species, ground-ivy *Glechoma hederacea*, dog's mercury, lords-and-ladies *Arum maculatum*, hedge woundwort *Stachys sylvatica*, umbellifer species and dog rose.
- 4.7 The southern section of the wooded belt consists of a mixture of native and ornamental species. It is essentially comprised of a hedge of Lawson's cypress *Chamaecyparis lawsoniana* trees to the east and a line of scattered semi-mature trees to the west with scrub in the centre. Scattered tree species to the west include English oak, ash, pine *Pinus* sp., spruce *Picea* sp. laburnum *Laburnum anagyroides* and goat willow *Salix caprea*. Scrub species in the centre are dominated by hazel with hawthorn, bramble and snowberry *Symphoricarpos* sp. also present. Ground flora in this area is sparse and similar to the woodland to the north with the addition of willowherb sp., iris sp. and white dead-nettle *Lamium album*.
- 4.8 Scattered semi-mature and immature trees occur throughout the site which include both native and ornamental species. Tree species include Douglas fir *Pseudotsuga menziesii*, Scot's pine *Pinus sylvestris*, lime *Tilia* sp., sycamore, English oak, ash, larch, beech, cherry *Prunus* sp., and silver birch *Betula pendula*.
- 4.9 In addition to the scrub that is associated with woodland areas, further scrub habitat occurs at the interface of Area B and Area C which is dominated by dense blackthorn *Prunus spinosa* and bramble scrub. The rough grassland at the northern end of Area C is also surrounded by continuous bramble scrub at the eastern boundary with scattered bramble throughout the trees.

Grassland

- 4.10 Rough grassland occurs in the extreme north of the site in a roughly triangular shaped field which is surrounded by dense scrub and scattered trees. The grass is species poor and appears to have been cut fairly recently as the sward height is c.5-10cm however taller ranker grass occurs at the edges of the field. Species include cock's-foot *Dactylis glomerata*, Yorkshire fog *Holcus lanatus*, self-heal *Prunella vulgaris*, creeping buttercup *Ranunculus repens*, common mouse-ear *Cerastium fontanum* and dock *Rumex* species.
- 4.11 Amenity grassland including school playing fields and smaller areas around the car park occur to the north, east and west of the school buildings in Area A and Area B. The fields comprise close mown (sward <5cm), species-poor grassland with a limited range of botanical species observed which include perennial rye-grass *Lolium*

perenne, ribwort plantain *Plantago lanceolata*, creeping buttercup *Ranunculus repens*, thistle *Cirsium* sp., daisy *Bellis perennis* and dandelion *Taraxacum officinale* agg.

Buildings and Hard Standing

- 4.12 Area D in the centre of the site comprises the school buildings and surrounding hard standing habitat. The school buildings include a central large flat felt roofed structure with cladding material covering the walls as shown in Photo 1. Additional buildings include pitched and flat corrugated iron roof sheds and garages (Photo 2). There are also a number of temporary flat felt roofed buildings associated with the main school building. Hard standing with planted ornamental low hedges and trees surrounds the buildings.



Photo 1: Main school building



Photo 2: School buildings

Arable

- 4.13 Two large arable fields dominate the southern section of the survey area and are currently used for crops. The edges of the arable fields are mostly sparse in vegetation with occasional patches of elder and bramble scrub and rough grassland containing a mixture of native and ornamental garden species such as sterile brome *Bromus sterilis*, greater stichwort *Stellaria holostea*, cleavers *Galium aparine* and pansy *Viola* sp.

Hedges and Boundary Features

- 4.14 The majority of the site is bounded by close boarded wooden fences and species poor beech hedges. The southern boundary at Area E and Area F consists of a wider strip of vegetation comprising trees and scrub which provides a buffer between the road and the arable fields. Species here include a line of Lawson's cypress trees at the arable field boundary of Area F. Between this and the road is an area of bramble scrub with scattered semi-mature and immature trees including English oak, sycamore, goat willow, ash, beech, pine and larch. Ground flora around the bramble includes wood spurge *Euphorbia amygdaloides*, garlic mustard *Alliaria petiolata*, wood avens *Geum urbanum* and herb Robert *Geranium robertianum*. There are also a number of boundary trees around the arable fields which include several mature English oak trees at the southern boundary of Area E.

Fauna

Badgers

- 4.15 Hertfordshire Biological Records Centre (HBRC) has provided several badger *Meles meles* records within the 1km search area however these records are given at a 1km grid-square resolution and more detailed information is not available. The records originate from the north, west and south of the site and the closest records of setts appear to originate from within the same grid square as the survey area.
- 4.16 While no setts and no badger field signs such as latrines, hairs, footprints and pathways were observed on the site during the site survey, a badger skull was identified within Area C. Both Area C and the wooded area to the south of the site offer suitable opportunities for the construction of badger setts and it is possible that a well hidden badger hole(s) may be present within dense vegetation. Given the nature of the site and that badgers are known to be active in the general area badgers are likely to use parts of the site for foraging/dispersal and greater signs of activity may be visible at other times of year.

Bats

- 4.17 HBRC has provided several bat records from within the search area however specific locations are not available. The survey area falls into two 1km grid squares and records of brown long-eared bat *Plecotus auritus* originate from the same grid square as the northern tip of the survey area. Several more records of this species originate from the grid square to the west, where Marlin Chapel Farm CWS is situated. Several records of pipistrelle *Pipistrellus* sp. bat have been provided which originate from the adjacent grid squares to the east and west of the survey area. Although there are no records within the 1km search area, barbastelle bats are known to occur approximately 4.4km southwest of the survey area within the Captains Wood LNR. The barbastelle bat is a woodland bat species which often uses hollow and storm damaged trees for roosting.
- 4.18 There are a number of trees on the site which offer foraging and flight line opportunities for bats that may be present in the surrounding area. In addition, several mature trees exist on the southern boundary of the site, which are identified as holding varying degrees of potential for roosting bats.

Birds

- 4.19 The mosaic of habitats on the site including trees, scrub, rough grassland and arable land offer opportunities for nesting birds. The Hertfordshire Bird Recorder has provided records for a variety of birds from within the Berkhamsted area which are provided in full in Appendix C. Although there are several protected species recorded, some species have been omitted as there is no suitable habitat for them in and around the site. The most prominent on the list that have been given protection on Schedule 1 of the WCA 1981 are barn owl *Tyto alba* and hobby *Falco subbuteo*. Although red kite *Milvus milvus* and brambling *Fringilla montifringilla* are Schedule 1 species, the former would be passage birds that would possibly use the site for feeding and the latter would only occur on and around the site during the winter

period. Both BAP and Red listed, bullfinch *Pyrrhula pyrrhula* and song thrush *Turdus philomelos* may use the site for breeding and feeding. Other red listed species that would find this habitat suitable are skylark *Alauda arvensis*, linnet *Carduelis cannabina*, yellowhammer *Emberiza citronella* and spotted flycatcher *Musciapa striata*. Amber listed species on the records are cuckoo *Cuculus canorus*, green woodpecker *Picus viridis*, goldcrest *Regulus regulus*, house sparrow *Passer domesticus*, kestrel *Falco tinnuculus*, lapwing *Vanellus vanellus*, mistle thrush *Turdus viscivorus*, stock dove *Columba oenas*, swallow *Hirundo rustica*, treecreeper *Certhia familiaris*, willow warbler *Phylloscopus trochilus*, and woodcock *Scolopax rusticola*. The site is considered to offer potential breeding or foraging resources for all of these species.

- 4.20 During the walkover survey, a number of singing species were starting to hold territory including several robins *Erithacus rubecula* in the northern most field and around area A in the east and a few goldcrest *Regulus regulus* in the deciduous trees around area B. Jay *Garrulus glandarius* and Great Spotted Woodpeckers *Dendrocopus major* were also holding territories in the woodland strip in the south of the site between area E and F. The site is adjacent to residential areas on three sides, so the make up of bird species observed was generally of garden birds. Blackbird *Turdus merula*, house sparrow *Passer domesticus*, dunnock *Prunella modularis*, wren *Troglodytes troglodytes*, siskin *Carduelis spinus*, long tailed tit *Aegithalos caudatus*, blue tit *Parus caeruleus*, great tit *Parus major*, coal tit *Parus ater*, pied wagtail *Motacilla alba*, greenfinch *Carduelis chloris*, goldfinch *Carduelis carduelis*, crow *Corvus corone*, magpie *Pica pica* and woodpigeon were all recorded around the site, particularly in the hedges and around Area C.

Reptiles

- 4.21 HBRC has provided several records of common lizard *Lacerta vivipara* from within the search area, the closest of which originates from approximately 370m east in a residential area. Several more records originate further north, with the majority concentrated to the south of the railway line some 560 north of the survey area. One grass snake *Natrix natrix* record has also been provided which originates from over 1km north.
- 4.22 The rough grassland and scrub in the north of the site (Area C) is considered to offer suitable opportunities for common reptile species, offering foraging and basking opportunities. To a lesser extent, some of the rougher margins of the arable fields may also offer some suitable habitat for reptile species.

Amphibians

- 4.23 HBRC has not provided any records of amphibian species from within the search area. There are no ponds or water-bodies within the site boundaries. However, with reference to OS maps one pond occurs within 500m of the survey site. It is located approximately 95m from the western boundary, beyond Durrants Lane. While the majority of the site does not offer suitable terrestrial habitat for great crested newt and other amphibian species the wooded areas, rougher grassland and field margins are all considered to be suitable.

Other fauna

- 4.24 Due to the presence of the River Bulbourne and the Grand Union Canal in the vicinity records of water vole *Arvicola terrestris* have been provided by HBRC however no suitable habitat is considered to exist within the site for this species.
- 4.25 The woodland and grassland habitats are considered to offer potential opportunities for invertebrate species including certain butterflies and stag beetles, which have been recorded within 1km of the site.

Evaluation of Ecological Features

- 4.26 With reference to the evaluation criteria set out in the methodology, a range of factors has to be considered when evaluating a site's features. The table below provides a checklist of potentially relevant factors set out in the IEEM evaluation guidelines and the features of this site are considered against each of these factors.

Factors	Present, Absent or N/A	Notes
Designated Sites and Features <ul style="list-style-type: none"> • Internationally important sites 	Absent	No internationally important sites cover the proposed development site although the site is located approximately 1.4km south of Chilterns Beechwood Special Area of Conservation.
<ul style="list-style-type: none"> • Nationally important sites 	Absent within close proximity	No statutory sites cover or are adjacent to the proposed development site, although Ashridge Commons and Woods SSSI occurs within 2km
<ul style="list-style-type: none"> • Sites of lower level importance 	Absent	No sites of lower level importance cover the proposed development area although Meadow Southwest of Shootersway Road County Wildlife Site occurs 16m to the southwest.
Tree Preservation Orders	Unknown	TPO Information not provided/obtained.
Hedgerow Regulations	Absent	No species rich hedgerows seen. The majority of hedges are beech dominated.
Biodiversity Value <ul style="list-style-type: none"> • Habitat designations 	Absent	
<ul style="list-style-type: none"> • Non designated habitats of value or potential value 	Absent	Habitats generally of very limited biodiversity value. Low localised wildlife benefits only
<ul style="list-style-type: none"> • HAPs 	Absent	HAPs cover arable land, boundary and linear features and mixed woodland which may have some potential relevance at this site.
<ul style="list-style-type: none"> • Ancient Woodland 	Absent	
<ul style="list-style-type: none"> • Protected species 	Absent	The mosaic of different habitats at this site offers potential for bats, badgers, reptiles, great crested newts and nesting birds although the presence of these has not been confirmed.
<ul style="list-style-type: none"> • Rare species 	Absent	No rare species were seen during the survey.
<ul style="list-style-type: none"> • Species records 	Absent	No records provided within the boundaries of the survey area although several records provided to within 1km are within the same 1km square as the survey area.

• SAPs	Absent	No local BAP species have been identified within the site although it is considered to offer opportunities for great crested newts, bats and birds including song thrush.
Large populations/important assemblages of species	Absent	None identified during the survey
Injurious and legally controlled weeds	Absent	None seen although survey carried out in January
Potential Value	N/A	
Secondary or supporting value	N/A	-
Social/community value	Absent	Except for existing school grounds.
Economic value	N/A	-
Legal issues	Unconfirmed	Potential protected species present
Multi-functional features	N/A	-

Table 1. Evaluation Checklist

4.27 The site is comprised of a number of different habitats including rough grassland, mixed woodland, scattered trees, arable land, amenity grassland and scrub. The habitats within the survey area are not considered to hold any significant botanical value, although mature trees at the southern boundary offer potential roosting opportunities for bats and the mixed woodland and scrub offer opportunities for a number of species including bats and badgers and nesting birds. The rough grassland and scrub in the far north of the site is considered to offer some potential for reptiles and terrestrial habitat opportunities for great crested newts.

5.0 Discussion and Recommendations

Designated Sites

- 5.1 No statutory or non-statutory wildlife site designations cover any part of the proposed development site. Three SSSIs, one SAC and one LNR occur within 5km of the survey area, the closest of which is over 1 km from the survey area.
- 5.2 Overall no direct impacts to these sites are predicted as a result of the proposed development. Ashridge Commons and Woods SSSI (located 1.4km north) is known for its exceptional breeding bird community and certain bird species known to occur on the SSSI including goldcrest and woodpecker species, also occur at the proposed development site. It is understood that the woodland to the north of the site (Area C) will be retained however the potential indirect impacts of any loss of any on-site woodland on the bird species associated with the SSSI have been considered. Due to the relatively small size of the on-site woodland (<1ha), the distance (>1km) from the SSSI and the presence of other larger wooded areas closer to the SSSI, the proposed development is not considered to significantly impact upon the integrity of the SSSI.
- 5.3 Five non-statutory wildlife sites have been identified from within the 1km search area, the closest of which, Meadow Southwest of Shootersway Road CWS, is located 16m away to the southwest of the site on the other side of Shootersway Road. Due to its proximity to the proposed development site the direct and indirect impacts of the development on this site have been considered. Master plans were not available at the time of writing however it is understood that Area E, which is the closest part of the development site to Meadow Southwest of Shootersway Road CWS, will be used as a formal public open space area. No direct impacts are therefore predicted due to the buffer effect of this proposed public open space area in addition to Shootersway Road and the dense tree lines on either side of the road which will separate the wildlife site from any construction works relating to development. The CWS site does not appear to have any formal access however there will be a population increase resulting from the development which may increase the risk of its use by dog walkers, etc. It is hoped however that using Area E as an area of formal open space for the school and the general public will discourage trespassers from entering this site.

Habitats

- 5.4 Overall the rough grassland, scrub, mixed woodland and scattered trees are not considered to be particularly species-rich, although collectively the habitats provide shelter and foraging opportunities for wildlife. Detailed development plans were not available prior to the writing of this appraisal, however it has been indicated that certain more interesting areas of habitat such as the mixed woodland, rough grassland and scrub to the north of the site (Area C) will be retained. It is recommended that other areas of scrub and woodland at the site boundaries and the mixed woodland strip between arable fields (Area E and Area F) are also retained.

Badgers

- 5.5 No setts were identified within the site boundaries, however a full badger survey was not conducted and it remains possible that the dense scrub present in some areas of the site may conceal evidence of badger activity. Records from the north, west and south of the site indicate badgers are active in the general area and a badger skull was found within the north of the site in Area C. It is therefore recommended that a full badger survey be conducted in due course to assess badger activity within the site and the immediate vicinity, ideally at a time of year when vegetation has died back.

Bats

Buildings

- 5.6 The potential for bats to be roosting within the buildings on the site has been considered and is thought to be negligible due to the absence of roof spaces and of other structural features such as crevices in walls that might offer bat roosting opportunities. No constraints have therefore been identified with regard to bats and buildings at this site.

Trees

- 5.7 There are a number of trees on the site which are considered to offer roosting, foraging and flight line opportunities for bats. Potential roosting trees include mature trees to the south of the site and at the site boundaries.

- 5.8 All species of bats are protected under Section 9 of the Wildlife and Countryside Act 1981 (Schedule 5), as amended by the Environmental Protection Act 1990, the Conservation (Natural Habitats, &c.) Regulations 1994 and the Countryside and Rights of Way Act 2000. This legislation makes it illegal to kill, injure, capture or disturb bats, or to obstruct access to, damage or destroy bat roosts. If any trees need to be removed or require tree surgery for health and safety purposes, it will be necessary to undertake individual assessments of the relevant trees to look for evidence of bat roosts. These assessments will involve an initial ground tree assessment which may include aerial rope climbing to access features of importance for bats.

Activity surveys

- 5.9 There are a number of bat records which have been provided within 1km of the survey area and barbastelle bats are known to occur within 5km of the site. Some of the trees at the site are considered to offer bat roosting opportunities and the trees and hedges offer bat flight line and foraging opportunities for bats. It is therefore recommended that bat activity survey work is carried out to ascertain the level of bat activity at this site. Bat activity surveys should be carried out between April and September (ideally May – August) and would include a number of transect surveys of the site to gauge bat activity levels, look for key bat flight lines and to locate important foraging areas at this site.

Birds

- 5.10 A large number of bird records have been provided by the Hertfordshire Bird recorder within the 1km search area around the development site. The closest SSSI to the site (Ashridge Commons and Woods SSSI) is also a SAC and is noted for breeding birds.

The various habitats present at the site offer opportunities for nesting birds and a number of birds were observed during the survey, the majority of which were garden birds although woodland birds were also observed. The potential for several BAP species to occur at this site has been identified and it is recommended that a breeding bird survey be carried out to assess the level of breeding bird activity at this site. A bird survey would encompass three visits to the site between April and June in suitable weather conditions to assess the location and activity of all birds present so that a picture can be developed of the range and distribution of species breeding at this site.

- 5.11 All nesting birds are protected under the Wildlife and Countryside Act 1981 and it is recommended that where possible trees and scrub are retained as part of the design scheme. If any vegetation removal is required it should be completed outside of the main nesting season (taken as March to August inclusive). In the event that any removal of scrub or trees would need to be done during the main nesting season, a survey will be required to ensure no nesting birds are disturbed.

Reptiles

- 5.12 HBRC have provided several records of reptiles within the surrounding area of the site. In addition the small area of rough grassland to the north (Area C), the longer grassland strip to the north of Area A and some of the arable field margins offer potential basking and foraging opportunities for a range of reptile species. Common reptiles are protected from killing and injury under the Wildlife and Countryside Act 1981 and all are now included as priority species within the UK Biodiversity Action Plan (BAP). It is therefore recommended that a reptile survey be undertaken within these areas to assess the presence/absence of these species. Reptile surveys should be undertaken between April and September and involve the laying out of artificial refuges to attract reptiles, followed by several checks. If reptiles are present a mitigation strategy should be discussed and agreed with the Local Authority / Natural England.

Amphibians

- 5.13 The potential for amphibians such as great crested newts to occur at this site has been considered. No records have been provided and no opportunity for breeding occurs within the site. However, some potential terrestrial habitat exists and a pond is located approximately 95m from the site boundary. It is therefore recommended that this pond be checked and, assuming it provides suitable conditions, a presence/absence survey for great crested newts should be completed (season: mid-March – mid-June). At the outset it is recommended that a pond assessment be carried out and that further investigations be made to ensure that this is the only pond that needs to be included in detailed surveys.

Potential Ecological Enhancements

- 5.14 The site essentially consists of large parcels of un-notable habitat (e.g the large arable fields and hard standing and short amenity grassland around the school) with the

more interesting habitats (woodland, rough grassland, hedges and scrub) concentrated between distinct land parcels and at the site boundaries. It is therefore considered that there is good potential for any new development to offer new opportunities and to deliver some modest wildlife benefits/gains if ecological considerations are incorporated in the master plan. It is recommended that wherever possible boundary features such as scattered trees and scrub are retained.

- 5.15 Any landscape scheme should look closely at ways to incorporate native planting, possibly to include the strengthening of flight line and wildlife corridor features, e.g. tree lines, hedgerow etc. Furthermore, new buildings could be designed to incorporate wildlife features, such as bird and bat boxes.
- 5.16 Advice on any enhancement measures can be provided upon request. All such measures would potentially provide biodiversity benefits and would be in line with guidance within PPS9.

6.0 Summary and Conclusion

- 6.1 The site off Durrant's Lane, Berkhamsted is comprised of 6 distinct land parcels which include arable land, buildings, hard standing, amenity grassland, rough grassland, woodland and scrub. Additional habitats at the site include species poor hedgerows. Durrants Lane runs along the western boundary and Shootersway along the southern boundary. Residential housing with associated gardens lies to the east and north. No habitats of significant botanical value have been identified within the survey area although the mosaic of habitats undoubtedly offers opportunities for local wildlife.
- 6.2 With regards to bats, the buildings within the site are considered to offer negligible roosting opportunities and therefore no such constraints are identified. However certain mature trees are considered to offer varying degrees of bat roosting potential and the wooded areas, trees, hedgerows and other areas of on-site vegetation are considered to offer foraging opportunities and/or be used as bat flight lines. Bat activity surveys have been recommended to ascertain the level of bat activity within and along the margins of this site. In addition the retention of mature trees has been recommended and advice has been provided regarding steps that should be taken if any tree surgery/removal is required.
- 6.3 Further surveys for reptiles have been recommended. If present there will be a requirement for mitigation, the details of which would need to be agreed with the Local Authority/Natural England. This potential issue may involve timing and other constraints although it is unlikely to represent an overriding constraint to development.
- 6.4 There are no records of amphibians within the 1km search area around the site and there are no ponds on the site. However there is one pond located within 100m of the site boundary and there is considered to be some potential terrestrial habitat within the site. It has therefore been recommended that a great crested newt survey be undertaken encompassing this off-site pond.
- 6.5 There are several bird records from within the 1km search area around the site and the mosaic of habitats comprising the site is considered to offer opportunities for a number of these species. A breeding bird survey has therefore been recommended to determine the level of breeding bird activity at this site. It has been recommended that wherever possible trees and scrub are retained and advice has been given should any removal of vegetation on site be conducted outside of the main bird nesting season (March – August).
- 6.6 In addition to any mitigation that may be needed, opportunities exist to provide biodiversity gains via simple enhancement measures alongside development, brief suggestions for which have been provided.

Appendix A

MAGIC Database Search

Appendix B

Hertfordshire Biological Records Centre Data Search Response

Appendix C

Hertfordshire Bird Club Data Search Response

Appendix D

Habitats Plan
(CSa 1074/100)