

**PURBROOK PARK SCHOOL, PARK AVENUE, WATERLOOVILLE,
HAMPSHIRE**

EXTENDED PHASE 1 ECOLOGICAL ASSESSMENT

Final Document

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Invertebrate, Bird, Mammal, Reptile, Amphibian and Botanical Surveys
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ECOSA Ltd, Ten Hogs House, Manor Farm Offices, Flexford Road, North Baddesley, SO52 9DF
Tel: 02380 261065 Email: info@ecosa.co.uk Web: www.ecosa.co.uk

Registered Office: 3-4 Eastwood Court, SO51 8JJ Registered in England No: 6129868



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Appendix 1 Protected Species Legislation

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EXECUTIVE SUMMARY

- An extended Phase 1 ecological assessment was undertaken on 2nd December 2013 at Purbrook Park School, Park Avenue, Waterlooville, Hampshire PO7 5DS. The proposals entail the redevelopment of the school.
- The ecological assessment, comprising an extended Phase 1 ecological survey, was undertaken to ascertain the potential for protected habitats and species to be present within the site.
- The Purbrook Park School site is located within an urban residential area at the southern extent of Purbrook, Hampshire. The survey area comprised areas of hard-standing and buildings with associated amenity grassland, introduced shrubs, scattered trees and boundary treelines.
- The site overall offers minimal potential for supporting protected species; it is considered to offer negligible potential for supporting dormouse, reptiles and great crested newt.
- No evidence of badger was recorded on site, however, the amenity grassland offers suitable foraging habitat for the species.
- Buildings affected by the works on site are either of low/negligible or negligible potential for roosting bats. Two mature cedars in the west of the site contained cavities suitable for roosting bats. These trees, and all other on site are to be retained within the proposals.
- The scattered trees, boundary treelines and introduced shrub provide limited potential for supporting small numbers of nesting birds. The Amber listed dunnock was recorded on-site.
- It is recommended that any new vegetation planting within the developed site should seek, wherever possible, to utilise native species, ideally of local provenance to increase the overall biodiversity of the site.
- It is recommended that, if possible any required vegetation removal is undertaken outside of the bird breeding season (March-August, inclusive). If this is not possible, removal of vegetation should be supervised by a suitably qualified ecologist. A recommendation has also been made for the provision of nest boxes on site to provide additional nesting habitat.

- If works have not commenced at the site by December 2015, or the proposals are significantly altered, an updating Phase 1 ecological assessment is recommended, as the ecological situation may have changed.

1.0 INTRODUCTION

1.1 Background

Ecological Survey & Assessment Limited (ECOSA) have been contracted by MH Architects to undertake an extended Phase 1 ecological assessment at Purbrook Park School, Park Avenue, Waterlooville, Hampshire PO7 5DS. The site is centred on National Grid Reference SU 6763 0715.

This report presents the findings of the Phase 1 ecological assessment carried out by ECOSA on the 2nd December 2013.

1.2 Aims and Scope of Report

This report is based on a Phase 1 field survey which is aimed at assessing the suitability of the site and its immediate surrounds to support notable habitats and protected species. This information allows an initial assessment of the biodiversity value of the site to be made.

1.3 Site Setting and Description

The Purbrook Park School site is situated in the South Coast Plain & Hampshire Lowlands Natural Area, described by Natural England as follows¹:

"The landscape of the South Coast Plain and Hampshire Lowlands is split between the generally open, often featureless landscape of the coastal plain and the more varied landscape in the west. The Natural Area contains a number of nature conservation features. Although relatively small in extent, the south-facing slopes of Portsdown Hill support some high quality chalk grassland, and the chalk rivers of the Itchen and Test flow through the Natural Area, supporting fine examples of threatened habitat and several key species. The floodplains of the Rivers Test and Itchen contain some botanically rich neutral grassland and elsewhere in the Natural Area fen and fen-meadows occur, especially where chalk springs arise at the foot of the downs."

Purbrook Park School is situated at the southern extent of Purbrook town, Hampshire. The site lies within an urbanised area between the M3 motorway and the A3. To the north-east, the urbanised area of Purbrook extends into Cowplain and Waterlooville. South of the site, beyond the Portsdown Hill Road are the urban areas of Farlington and Drayton.

¹ Natural Areas are defined by Her Majesty's Stationery Office as 'biogeographic zones which reflect the geological foundation, the natural systems and processes and the wildlife in different parts of England, and provide a framework for setting objectives for nature conservation' (Biodiversity: The UK Steering Group Report, HMSO, 1995).

The site itself is situated in a residential area south of Privett Road. Large detached residential properties and their associated gardens surround the site to the north, east and west. The school playing field lies to the south. Purbrook Fort and its associated green space occupy the space to the south-east of the site.

The site surveyed encompasses the northern section of the school grounds subject to works. Proposed works will not affect the southern half of the school site including the playing fields and secondary woodland.

1.4 Site Proposals

Proposals for the site entail the redevelopment of the Purbrook Park School buildings and their immediate surrounds. The redevelopment includes refurbishment of existing structures and construction of newly built areas. Works will affect areas in the north of the school site.

2.0 METHODS

2.1 Introduction

This section details the methods used during the Phase 1 ecological assessment undertaken at Purbrook Park School site, Park Avenue, Waterlooville, Hampshire.

2.2 Desk-Based Assessment Methods

The Multi-Agency Geographic Information for the Countryside (MAGIC) website was accessed on 17th December 2013 for information pertaining to statutory designated nature conservation sites located within a 1km radius of the site. This search included Special Protection Area (SPAs); Special Areas of Conservation (SACs); Ramsars; Sites of Special Scientific Interest (SSSIs); Local Nature Reserves (LNRs) and National Nature Reserves (NNRs).

2.3 Phase 1 Field Assessment

The Phase 1 ecological field survey was carried out on the 2nd December 2013. The survey involved a walkover of the site to identify the habitat types present and to record evidence of protected species, with particular reference to badger *Meles meles*, bats, dormouse *Muscardinus avellanarius*, breeding birds, reptiles, great crested newt *Triturus cristatus* and terrestrial invertebrates. Details of the species-specific survey methods are given below.

2.3.1 Vegetation

An assessment was made of all areas of vegetation within the site using the standardised Phase 1 survey methodology². This involved a walkover survey to identify broad vegetation types, which were then classified against Phase 1 habitat types. A list of characteristic plant species for each vegetation type was also compiled.

2.3.2 Badger

The survey involved a detailed investigation of the site to identify evidence of badger residence, foraging or territorial activity. Particular emphasis was placed on locating badger setts, paths, and signs of territorial activity such as latrine sites both on site and within 30m of the site where access was possible.

2.3.3 Bats

An assessment was made of the suitability of buildings, and trees on the site and immediately on the site boundary, to support roosting bats based on the presence of features such as holes, cracks, splits, loose bark and ivy cladding. An assessment was made of the suitability of the site and the surrounding landscape to support

² Handbook for Phase 1 habitat survey: A technique for environmental audit – Field manual (2003), *Joint Nature Conservation Committee (JNCC)*

foraging and/or commuting bat species. The survey conformed to current Bat Conservation Trust guidelines³.

2.3.4 Dormouse

The assessment for the potential of the site to support dormouse was based on an assessment of habitat features that may indicate that dormice are present on the study area. This includes the presence of food sources such as common hazel *Corylus avellana* and honeysuckle *Lonicera periclymenum*. Additionally, the species requires a continuum of food supply so that habitat structure, diversity and connectivity to adjacent areas of woodland/scrub are important features for determining the potential presence of dormice.

2.3.5 Breeding Birds

The assessment of breeding birds on the site was based on the suitability of habitat present, evidence of nesting such as old or currently active nests and the presence of bird species that may potentially nest within the available habitat.

2.3.6 Reptiles

The reptile survey was based on an assessment of the suitability of habitat present within the site to support a population of common reptiles. Reptiles particularly favour scrub and grassland interfaces and the presence of these is a good indication that reptiles may be present on site. In addition, reptiles may utilise features such as bare ground for basking, tussocky grassland for shelter and compost heaps and rubble piles for breeding and/or hibernating.

2.3.7 Great Crested Newt

The assessment of the site to support great crested newts included establishing the presence of suitable aquatic habitats such as ponds within or adjacent to the site and the presence of suitable terrestrial habitat. Ponds that are densely shaded, highly eutrophic or that contain fish are likely to be less suitable for this species.

In addition, online mapping resources were used to identify the presence of ponds or other waterbodies within a 500 metres (m) radius of the site. The 500m is a standardised search radius to assist in the assessment of the potential of a site and its surrounding habitat to support this species, based on current Natural England guidance⁴.

2.3.8 Terrestrial Invertebrates

An assessment was made of the site for its potential value to support diverse communities of invertebrates or any Biodiversity Action Plan (BAP) or scarce species.

³ Bat Conservation Trust (2012) Bat Surveys Good Practice Guidelines 2nd Edition

⁴ Great Crested Newt Mitigation Guidelines, Natural England, August 2001.

The assessment was made based on the presence of habitat features which may support important invertebrate communities. These features include, for example, an abundance of dead wood, the presence of diverse plant communities, the presence of varied woodland structure and sunny woodland edges with a diverse flora, presence of ponds and water courses and the presence of free draining soil exposures. During the Phase 1 survey there was no attempt made to identify species present and where a site supports features that may be of importance to invertebrates then further Phase 2 surveys may be required to assess the importance of the site.

2.4 Initial Protected Species Assessment

Details of the assessment criteria used to determine the ecological value of on-site attributes during the Phase 1 survey is outlined below. During a Phase 1 survey the assessment criteria is based on the potential for the site to support the species considered, this is usually based on the on-site habitat features and their suitability for the species considered. However, in many cases Phase 2 surveys will be required to assess the status of species and hence the importance of a population at the site, therefore the assessment of value should be considered a provisional assessment.

2.4.1 Bats - Building Assessments

An assessment was made of the Purbrook Park School buildings which have been graded for their potential to support bats based upon the following criteria⁵:

- **Bats Present** - Evidence of bat presence confirmed during survey. Evidence may include presence of bats themselves (live or dead), presence of droppings, feeding remains, urine stains etc. Where possible, a provisional assessment of roost status is made although this will require further Phase 2 surveys to confirm status.
- **High Potential** - High potential buildings are those that have features highly suitable for use by roosting bats, including gaps around soffits, hanging tiles, extensive roof spaces etc. High potential buildings are often, but not always, buildings of more historic construction. Further Phase 2 surveys will be required to confirm the presence/absence of bats.
- **Medium Potential** - Medium potential buildings have a moderate number of features that may be utilised by bats for roosting, these may include loose fascia, roof spaces etc. Further Phase 2 surveys are likely to be required to confirm the presence/absence of bats.

⁵ The criteria are an attempt to qualify the potential for a given building or tree to support roosting bats and are to a degree subjective. Bats may make use of a single feature on an otherwise unsuitable building or tree and therefore an assessment of bat potential cannot solely be based on the quantity of potential roost features present.

- **Low Potential** - Low potential buildings are those that provide limited bat roosting potential although some features that may be utilised by bats may be present. Further Phase 2 surveys are likely to be required to confirm the presence/absence of bats.
- **Negligible Potential** - Negligible potential buildings are extremely unlikely to support roosting bats due to the absence of suitable features. Further Phase 2 surveys are unlikely to be required for buildings with negligible potential.

2.4.2 Bats – Tree Assessments

An assessment was made of the trees on site and immediately adjacent to the site which have been graded for their potential to support bats based upon the following criteria⁶:

- **Bats Present** - In some instances, bat presence can be confirmed from trees e.g. where droppings or staining is visible or where roosting bats have been observed entering/emerging from a tree or where roosting bats can be heard. Such trees will require further Phase 2 surveys to assess roost status.
- **High Potential** - High potential trees have features such as loose bark, splits and deep/extensive holes suitable for roosting bats. High potential trees are generally large and/or mature specimens. Further Phase 2 surveys will be required to assess the presence/absence of bats.
- **Medium Potential** - Medium potential trees have some interest for roosting bats such as broken snags, some flaking bark, a covering of ivy or shallow holes. Further Phase 2 surveys will be required to assess the presence/absence of bats.
- **Low Potential** - Low potential trees have some, although generally limited potential to support roosting bats. Further Phase 2 surveys may be required to assess the presence/absence of bats.
- **Negligible Potential** - Negligible potential trees are those that provide few or no features with bat roosting potential. Generally these trees are immature specimens. Further Phase 2 surveys are unlikely to be required to assess the presence/absence of bats.

⁶ The criteria are an attempt to qualify the potential for a given building or tree to support roosting bats and are to a degree subjective. Bats may make use of a single feature on an otherwise unsuitable building or tree and therefore an assessment of bat potential cannot solely be based on the quantity of potential roost features present.

2.4.3 Badger, Dormouse, Breeding Birds, Reptiles, Great Crested Newt and Terrestrial Invertebrates

The potential for the sites to support protected species is based on the results of the field survey assessment. The potential for on-site habitat to support badger, dormouse, breeding birds, reptiles, great crested newt, terrestrial invertebrates and breeding birds is based upon the following criteria:

- **Species Present** - In some instances, the presence of a protected species can be confirmed by the presence of recorded evidence, for example badger hairs or latrines and hazel nut gnawed in the characteristic style by dormice. In these instances further Phase 2 surveys will be required in order to establish the statuses of the respective species.
- **High Potential** - Species confirmed as present during the field survey. The on-site habitat is of high quality for a given species/species group. The site is located within or adjacent to a national or regional stronghold. Good quality surrounding habitat and good connectivity. Further Phase 2 surveys will be required to assess the presence/absence of the species.
- **Medium Potential** - The on-site habitat is of moderate quality, providing most or all of the known key requirements of a given species/species group. Factors limiting the potential of occurrence may include small habitat area, habitat severance and disturbance. Further Phase 2 surveys will be required to assess the presence/absence of the species.
- **Low Potential** - On-site habitat is of poor to moderate quality for a given species/species group. Although presence cannot be discounted on the basis of national distribution, nature of surrounding habitats, habitat fragmentation, recent on-site disturbance etc. Further Phase 2 surveys may be required to assess the presence/absence of the species.
- **Negligible Potential** - Although presence cannot be absolutely discounted, the site includes very limited or poor quality habitat for a particular species/species group. The surrounding habitat is considered unlikely to support wider populations of a species/species group. The site may also be outside or peripheral to known the national range for a species. Further Phase 2 surveys are unlikely to be required to assess the presence/absence of the species.

2.5 Phase 1 Survey Timing and Weather Conditions

The extended Phase 1 ecological survey was carried out by Simon Boswell of ECOSA on the 2nd December 2013. The weather conditions were overcast with

approximately 100% cloud cover, an ambient temperature of 10°C and a 5 mph north-east wind.

2.6 Phase 1 Survey Equipment

During the Phase 1 survey the surveyor was equipped with 10x40 binoculars, a high powered torch and a digital camera.

2.7 Phase 1 Survey Limitations

Not all potential bat roosting features are accessible to the surveyor, e.g. gaps beneath roof materials or holes or cracks in trees, and therefore assessments are based upon the potential for these features to provide suitable roosting opportunities.

It is not always possible to provide definitive assessments of a species' presence/likely absence at a site and so in the absence of direct evidence, assessments and recommendations are based on the presence of suitable habitat within/adjacent to a site.

The survey was undertaken outside of the peak summer survey season. During this time it is more difficult to identify plant species in some habitats, In addition, species of migratory bird have left the country and other species become less conspicuous. On the other hand, the winter period provides a more suitable time of year for locating evidence of badgers because of reduced foliage on trees and shrubs. As this site mainly contains habitats that are of low value the timing of the survey was not though to compromise the results obtained.

3.0 RESULTS

3.1 Introduction

This section details the results of the extended Phase 1 ecological assessment undertaken at Purbrook Park School, Park Avenue, Waterlooville, Hampshire during December 2013.

3.2 Desktop Study

3.2.1 Statutory and Non-statutory Designated Sites

The MAGIC website search revealed that there are no statutory designated sites of nature conservation situated within a 1km radius of the site.

3.3 Vegetation Survey Results

The vegetation within the site is described here in general terms using Phase 1 habitat survey terminology and referring to dominant, characteristic and other noteworthy species in each vegetation type within the survey area. The habitat types on site consist of:

- Buildings and Hardstanding
- Amenity Grassland
- Introduced Shrubs
- Scattered Trees
- Treeline

3.3.1 Buildings and Hardstanding

The majority of the site is composed of buildings and hardstanding. School buildings of a variety of designs and ages dominate the site. Hardstanding areas in the form of car parks and concrete pathways are scattered across the site (**Figure 1** and **Figure 2**). On-site buildings are described further in Paragraph 3.5.1 below.



Figure 1 Facing north-east showing hardstanding car park close to eastern edge of site



Figure 2 Facing south-east showing hardstanding pathway close to western boundary of site with introduced shrub

3.3.2 Amenity Grassland

The courtyard in the centre of the site contains a substantial patch of amenity grassland (**Figure 3**). A further area of amenity grassland is present in an open area to the east of the main courtyard (**Figure 4**). Smaller patches are also located along the southern edge of the surveyed area in association with the playing fields. All areas have low species diversity with abundant perennial rye-grass *Lolium perenne*. Other species recorded at lower abundances included dove-foot cranes-bill *Geranium molle*, daisy *Bellis perennis*, red clover *Trifolium pratense*, dandelion *Taraxacum* aggregate (agg.) and common bent *Agrostis capillaris*.



Figure 3 Facing north-west showing amenity grassland courtyard and surrounding buildings



Figure 4 Facing north showing amenity grassland to the east of the main courtyard and surrounding buildings

3.3.3 Introduced Shrubs

A row of introduced shrubs is located immediately adjacent to the science lab along the western boundary of the site (**Figure 2**). A further smaller section of introduced shrubbery is present on the northern perimeter of the main courtyard.

3.3.4 Scattered Trees

There are a number of scattered trees on site, most of which are concentrated around the main entrance. Species recorded included two substantial cedars *Cedrus* species (sp.), holm oak *Quercus ilex*, common lime *Tilia x europaea*, Norway maple *Acer platanoides* and yew *Taxus baccata*. Within the centre area of the site there are three semi-mature trees, a pedunculate oak *Quercus robur* and two common lime trees.

3.3.5 Treeline

The northern and western boundaries of the site are composed of broken treelines containing a variety of native and non-native species (**Figure 5**). Most of the specimens were immature or semi-mature. Species recorded included sycamore *Acer pseudoplatanus*, conifer sp. *Pinopsida* sp. and pedunculate oak.

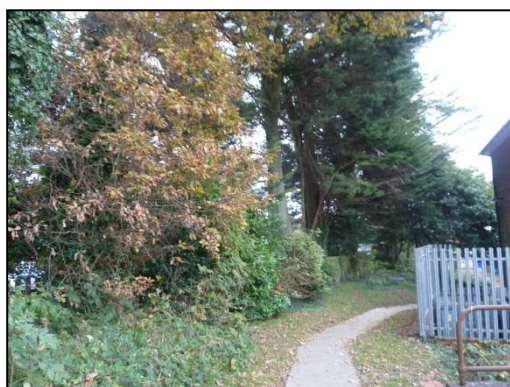


Figure 5 Facing east showing treeline along northern site boundary



Figure 6 Facing east showing treeline along eastern boundary

3.4 Badger Survey Results

No evidence of badger activity was recorded at the site and a thorough search of not reveal any badger setts. The on-site grassland provides suitable feeding opportunities for this species. The site is in regular use and the amount of disturbance within the school would deter badgers from becoming resident.

The woodland within the wider school grounds to the south provides suitable habitat for sett construction although none were recorded during a brief visit to this area.

Overall, the site is considered to offer **negligible potential** for resident badger and **medium potential** for foraging badger.

3.5 Bat Survey Results

3.5.1 Bats - Building Assessment

The results of the bat building assessment are provided in **Table 1**. Only buildings to be affected by the proposed works are included within the assessment.

3.5.2 Bats – Tree Assessment

There are currently no plans to remove any trees from the site as part of the proposed works. However, it was noted that the two cedar specimens in the west of the site contained features that would provide suitable roosting locations for bats. The northern tree contained a woodpecker hole around three metres from the ground on the eastern elevation (**Figure 7**). The southern tree also contained a natural cavity also on the eastern elevation (**Figure 8**).



Figure 7 Eastern elevation of cedar in west of the site showing woodpecker hole suitable for roosting bats

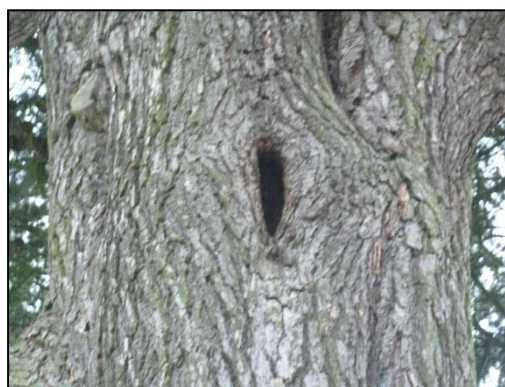


Figure 8 Eastern elevation of second cedar showing natural cavity suitable for roosting bats

3.5.3 Foraging and Commuting Habitat

The site is situated in an urban setting characterised by housing, residential gardens and amenity grassland although in the wider area there are small pockets of woodland. As such, the landscape within which the site is located offers suitable bat foraging and commuting habitat, although the site itself does not provide exceptional bat habitat within this context. It is considered highly likely that foraging and commuting bats will occur throughout the local area. Given the suitability of the surrounding habitat, the site is considered to offer **low potential** for supporting foraging and commuting bats.

Table 1: Building assessment – summary of features with bat roost potential and evidence of bat roost activity

Surveyed Feature	Figure	Building Description	Description of Potential Bat Roost Features	Evidence of Bat Roost Activity and Location	Assessment of Bat Roost Potential
Building A	 Figure 9 Eastern elevation of Building A	Building A is a brick built single pitch, single storey structure (Figure 9). It has a hipped slate tiled roof with angled hip and ridge tiles. Soffits and fascias are wooden. Internally there is a roof void. This was not accessible due to the presence of asbestos. Figure 9 shows the section of Building A to be remodelled / refurbished.	The building was well sealed and contained no features suitable for roosting bats externally.	No direct evidence of roosting bats was recorded.	Negligible
Building B	 Figure 10 Southern and western elevation of Building B	Building B is a flat roofed roughly rectangular shaped two-storey building with bitumen felt roof (Figure 10). The lower half of the building is brick built and the upper half is clad with white plastic slats. A flat roofed single storey section is attached to the eastern elevation. Figure 10 shows the section of Building B to be remodelled / refurbished. The eastern single storey section is to be rebuilt.	A small crevice is present around the exterior of the building where the bitumen felting ties into the plastic cladding. This feature provides limited space for roosting bats and was well covered by spider webs in all those areas that were easily viewable.	No direct evidence of roosting bats was recorded.	Low/Negligible

Table 1: Building assessment – summary of features with bat roost potential and evidence of bat roost activity

Surveyed Feature	Figure	Building Description	Description of Potential Bat Roost Features	Evidence of Bat Roost Activity and Location	Assessment of Bat Roost Potential
Building C	 Figure 11 Western elevation of Building C	Building C is a one and two-storey flat roofed structure (Figure 11). The roof is lined with bitumen felting and the walls are composed of a mixture of brick pillars, windows and prefabricated boarding. No roof void is present internally. Building C attaches to Building D at its northern end. This building is to be part refurbished and partly demolished. The northern end of the building will form part of the new Block B in the east of the site.	As with Building B, where the bitumen felting ties into the plastic cladding a small crevice is present around the exterior of the building. This feature provides limited space for roosting bats and was well covered by spider webs in all those areas that were easily viewable.	No direct evidence of roosting bats was located.	Low/Negligible
Building D	 Figure 12 Southern elevation of Building D	Building D is a large structure that is used as the main school hall. It is a flat roofed brick built and metal framed building with a concrete asbestos roof (Figure 12). No roof void is present internally. This section of the school is to be refurbished / remodelled as part of plans for the site.	The building is in good condition and well-sealed in those accessible areas.	No direct evidence of roosting bats was located.	Negligible

Table 1: Building assessment – summary of features with bat roost potential and evidence of bat roost activity

Surveyed Feature	Figure	Building Description	Description of Potential Bat Roost Features	Evidence of Bat Roost Activity and Location	Assessment of Bat Roost Potential
Building E	 Figure 13 Southern elevation of Building E	Building E is a large two-part structure that consists of the sports hall and gym (Figure 13). The building is brick built with a metal clad roof. No roof void is present. The building is to remain intact as part of the proposed works. However, the new Block B and Block C will tie into the southern and eastern elevation respectively.	No features were recorded that would provide suitable bat roosting features. The building is in extremely good condition. Furthermore, the roof structure will not be affected by the proposed works.	No direct evidence of roosting bats was located.	Negligible
Building F	 Figure 14 Western and northern elevation of Building F	Building F is a brick built gable-ended structure with a large internal space (Figure 14). The roof is a clad with slate tiling. The building is surrounded on its western, southern and eastern elevation by single storey sections of Building G. A roof void is present but was not accessible due to the height of the loft hatch (over 3m). This building is to be remodelled / refurbished as part of the proposed works.	The Phase 1 investigation revealed that the building was in a good state of repair. No potential bat roosting features were recorded. It should be noted that it was not possible to view the whole exterior of the property because of the surrounding buildings.	No direct evidence of roosting bats was located.	Negligible

Table 1: Building assessment – summary of features with bat roost potential and evidence of bat roost activity

Surveyed Feature	Figure	Building Description	Description of Potential Bat Roost Features	Evidence of Bat Roost Activity and Location	Assessment of Bat Roost Potential
Building G	 Figure 15 Western section of Building G	Building G is an area of single storey brick built buildings currently used as a kitchen (Figure 15). The building is flat roofed with wooden barge boarding. No roof void is present.	A wide gap under the barge boarding was wide and limited in extent. It was considered that this area would not be suitable for crevice roosting species.	No direct evidence of bats was recorded during the Phase 1 survey.	Negligible
Building H	 Figure 16 Northern and eastern elevation of Building H	Building H is a detached two-storey building with a single pitch gable ended roof. The roof is clad with thick concrete tiles and a single brick chimney is present on the northern pitch. The fascias and soffits are plastic. There are hexagonal hanging clay tiles around windows on the northern, eastern and western elevations. The roof void was not accessed during survey. This building is to be demolished as part of the proposals for the site.	Three of the hanging tiles have broken on the northern elevation but this has not created any crevices suitable for roosting bats. The roof, fascias and soffits boarding are well sealed.	No direct evidence of bats was recorded during the Phase 1 survey.	

3.6 Dormouse Survey Results

The site does not contain any habitat considered to offer suitable conditions for supporting dormice. Areas of dense scrub favoured by this species are not present and it is isolated and severed from other suitable habitats. The area immediately surrounding the site comprises hard-standing, school buildings, amenity grassland, residential gardens and residential properties, therefore it is unlikely that the species would occur in the surrounding habitat. The site itself is considered to offer **negligible potential** for supporting dormouse.

3.7 Breeding Bird Survey Results

The site offers some limited opportunities for a range of common and widespread garden bird species to nest within the trees and boundary vegetation on site. During the survey magpie *Pica pica*, chaffinch *Fringilla coelebs*, blue tit *Cyanistes caeruleus*, robin *Erithacus rubecula* and wren *Troglodytes troglodytes* were recorded on site. In addition, the Amber listed (see **Appendix 1**) dunnock *Prunella modularis* was recorded. All of these species could be breeding on site.

3.8 Reptile Survey Results

The site does not provide the structured habitat that would be suitable for supporting common species of reptiles. The site is composed of short grassland, school buildings and hardstanding and these areas provide limited potential for reptiles. Overall, the site is considered to offer **negligible potential** for supporting reptile populations.

3.9 Great Crested Newt Survey Results

The site does not contain any waterbodies. Ordnance Survey mapping and Aerial Photography did not reveal any waterbodies within 500m of the site. Investigation when on site revealed a dry pond located within the school grounds approximately 130m south-east of the site (**Figure 17**). Information from the caretaker indicated that this had been dry for well over a year. The interior of the pond was beginning to be dominated by coarse grasses such as cock's-foot *Dactylis glomerata*. Therefore, great crested newts are not breeding on site and it is unlikely that the species would visit the site during its terrestrial phase. The site is considered to offer **negligible potential** for supporting great crested newts in either their aquatic or terrestrial phases.



Figure 17 Former pond off site to the south-east

3.10 Terrestrial Invertebrates

The majority of the habitat on site consists of short grassland, buildings, hardstanding and treelines. These habitats are likely to support a low diversity of invertebrate species with those present being widespread and common. Given the limited extent of habitats on site and the generally widespread and common nature of these, it is unlikely that the site would support particularly diverse invertebrate communities or any scarce species. Therefore, the site is considered to be of **low value** for invertebrates.

3.11 Overall Site Assessment

Overall, the site is considered to be of **negligible/low ecological value** and contains no vegetation communities of ecological value. The only potential for protected species is for limited numbers of breeding birds. Populations of any protected species that do occur on the site are likely to be small and not significant within the local area.

4.0 EVALUATION, IMPACTS AND RECOMMENDATIONS

4.1 Introduction

This section presents the conclusions of extended Phase 1 ecological assessment. It provides an initial assessment of the likely ecological constraints to the proposed development and recommendations for any further survey work considered necessary. An outline of protected species legislation relevant to the findings of this report is provided in **Appendix 1**.

4.2 Vegetation

4.1.1 Summary

The site contains no vegetation communities of particular ecological value. The on-site vegetation comprises amenity grassland, scattered trees, treelines, and introduced shrubs. The treelines provide the habitat with the highest ecological value.

4.1.2 Potential Impacts of Proposed Development

The development of new and refurbished school buildings will include the remodelling of the main courtyard which is currently amenity grassland. New car parking facilities in the south-east of the site will be constructed on amenity grassland. The potential impacts of these changes are considered to be minor bearing in mind the expanse of grassland present in the wider school grounds.

4.1.3 Recommendations

It is recommended that any new vegetation planting within the site should seek wherever possible to utilise native species, ideally of local provenance. The use of native trees/shrubs and the use of wildflower-rich lawn seed mixtures can contribute significantly to the overall biodiversity of a site and this is to be encouraged.

4.2 Badger

4.2.1 Summary

The site contains no evidence of badger presence or activity. Potential habitat for the species is present to the south of the site in the wider school grounds and it is possible that the species foraging within the site on occasion.

4.2.2 Potential Impacts of Proposed Development

There will be no impact on any badger setts as badgers are not currently residing within the site. Post-construction, there may be an overall reduction in habitat available to foraging/commuting badger given the likely decrease in grassland resulting from the proposals. However, areas are available locally which offer suitable alternative habitat for this species.

4.2.3 Recommendations

It is recommended that should a badger become trapped in excavations during construction then a ramp should be inserted and the animal be allowed to escape into the surrounding habitat.

The recommendations within Paragraph 4.2.3 have the potential to benefit badger by providing suitable foraging habitat.

4.3 Bats

4.3.1 Summary

Buildings on site subject to proposed works were investigated in detail. All structures were of either negligible or low/negligible potential for roosting bats.

Most of the trees on site are either semi-mature or immature and provided limited bat roosting opportunities. However, two mature cedars in the west of the site contained cavities that would provide suitable roosting location for bats.

The site is situated in an urban landscape containing housing estates, residential gardens and amenity grassland. However, the wider landscape supports small woodland blocks which offer suitable foraging/commuting opportunities. The site itself is considered to offer low potential to support foraging or commuting bats in the context of the wider landscape.

4.3.2 Potential Impacts of Proposed Development

Due to the lack of suitable access/egress locations and the negligible/low potential of the buildings surveyed to support roosting bats it is considered that the proposed works will have negligible impact on this species group.

4.3.3 Recommendations

It is recommended that the lighting strategy for the proposals is carefully considered. External lighting is recommended to consist of low level or directional luminaries so to provide minimal impact on locally foraging bats.

Those recommendations made with Paragraph 4.2.3 regarding utilising native species within landscaping proposals have the potential to benefit foraging bats.

4.4 Dormouse

4.4.1 Summary

The hedgerows on site are all defunct will limited species diversity and do not contain those species preferred by dormouse such as hazel and honeysuckle. These features lack connectivity to other suitable habitats. Bearing in mind these factors it is considered that the site is highly unlikely to support dormouse.

4.4.2 Potential Impacts of Proposed Development

Given that dormice are not considered to be present, the proposed works will have no impact upon dormice or their habitat.

4.4.3 Recommendations

No specific recommendations are considered necessary in respect to this species.

4.5 Breeding Birds

4.5.1 Summary

The treelines, scattered trees and introduced shrubs have the structure and cover required to support low number of common species of breeding bird. The Amber listed dunnock was recorded on-site along with a small range of common bird species.

4.5.2 Potential Impacts of Proposed Development

If carried out during the breeding bird season, the proposed removal of hedgerows could potentially result in the disturbance and destruction of active nests. Under the Wildlife and Countryside Act 1981 all birds, their nests and eggs are protected by law. Refer to **Appendix 1** for further details.

4.5.3 Recommendations

To avoid any potential delays to the construction programme, It is recommended that any necessary management or removal of on-site and boundary vegetation is undertaken outside of the main bird nesting season which extends from March to August, inclusive. Should such works be necessary within this time period, suitable nesting habitat will need to be inspected by a suitably qualified ecologist immediately prior to works commencing.

It is also suggested that a range of Schwegler nest boxes are erected within trees on the wider school site to provide additional nesting opportunities. A total of two open fronted (2H) and two hole nest boxes (1B) would be appropriate.

Those recommendations made within Paragraph 4.2.3 regarding planting of native species should be beneficial as feeding habitat for birds breeding on the site.

4.6 Reptiles

4.6.1 Summary

The site was found to have no structured vegetation that would be suitable for supporting common species of reptiles. It is considered unlikely that the site would contain reptiles because of the poor quality of the habitat and severance of the site from other suitable habitat by large expanses of amenity grassland and built-up areas.

4.6.2 Potential Impacts of Proposed Development

The habitat on site is unsuitable for reptiles and therefore impacts on this species group are not envisaged.

4.6.3 Recommendations

As reptiles are not thought to be present no further recommendations are necessary.

4.7 Great Crested Newt

4.7.1 Summary

The site contains no waterbodies and therefore there is no potential for the site to support breeding great crested newts. In addition, it is considered unlikely that the species would be found to be present in the local area due to the lack of suitable breeding ponds within a 500m radius of the site.

4.7.2 Potential Impacts of Proposed Development

Due to the absence of suitable waterbodies within the site and surrounding landscape there will be no impacts to great crested newts associated with the proposed development works.

4.7.3 Recommendations

No specific recommendations are considered necessary in respect to this species.

4.8 Terrestrial Invertebrates

4.8.1 Summary

The site is likely to support a range of common and widespread invertebrate species with the highest species diversity likely to be associated with the young woodland and

scrub. It is unlikely that any particularly diverse communities or scarce species would be found to be present.

4.8.2 *Potential Impacts of Proposed Development*

It is unlikely that the proposed site development works would have any significant impacts on invertebrates.

4.8.3 *Recommendations*

The recommendations for native species planting as part of landscaping works in Paragraph 4.2.3 should have a positive impact on invertebrates at the site.

4.9 *Updating Survey*

If works have not commenced by December 2015, or the proposals for the site change significantly, it is recommended that the extended Phase 1 ecological assessment is updated. This is because many of the species considered during the current survey are highly mobile and the ecology of the site is likely to change over this period.

APPENDIX 1 Protected Species Legislation

Wild Birds⁷

The Wildlife & Countryside Act 1981 (as amended) is domestic legislation for Great Britain that repeals existing wildlife legislation such as:

- Protection of Birds Acts 1954 to 1967; and
- Conservation of Wild Creatures and Wild Plants Act 1975.

The Act covers the provisions made in these previous acts and provides additional provision for species and countryside protection. The Act is the primary legislation in Great Britain for the protection of flora, fauna and the countryside. The Act includes the UK's domestic implementation of the species protection of the European Directive on the Conservation of Wild Birds (79/409).

Under the Wildlife and Countryside Act 1981 all birds, their nests and eggs are protected by law and it is thus an offence, with certain exceptions to intentionally:

- Kill, injure or take any wild bird.
- Take, damage or destroy the nest of any wild bird while it is in use or being built.
- 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 to the Act. This includes items taken or killed before the passing of the Act.
- Have in one's possession or control any live bird of prey of any species in the world (with the exception of vultures and condors) unless it is registered and ringed in accordance with the Secretary of State's regulations.
- Have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered (and in some cases ringed) in accordance with the Secretary of State's regulations.
- 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.

Status of Wild Birds

The leading governmental and non-governmental conservation organisations in the UK have reviewed the population status of the birds that are regularly found in the UK. A total of 247

⁷ www.naturenet.net

regularly breeding or wintering species were assessed and each placed onto one of three lists - Red, Amber or Green. Forty species are Red-listed, 121 are Amber-listed and 86 are Green-listed. Seven quantitative criteria were used to assess the population status of each species and place it onto the Red, Amber or Green List. These criteria are listed below. The review excluded species that are not native to the UK and those that occur irregularly as vagrants or scarce migrants.

Global Conservation Status - Species assessed as Globally Threatened using IUCN11 criteria were placed on the Red List.

Recent Decline - Species whose breeding or non-breeding population declined, or range contracted, rapidly (by more than 50%) or moderately (by between 25 and 49%) over the last 25 years were placed on the Red and Amber Lists respectively.

Historical Decline - Species whose populations declined severely between 1800 and 1995 were placed on the Red List, except for those that have recovered substantially (more than doubled) in the last 25 years, which were Amber Listed. In earlier assessments, all species showing a serious historical decline were Red Listed, but in this assessment the success of recent conservation action has been recognised by moving recovering species to the Amber List.

European Conservation Status - Species whose population status is unfavourable in Europe (but which are not Globally Threatened) were placed on the Amber List.

Rare Breeders - Species with a mean population size of 1-300 pairs breeding annually over the last five years were placed on the Amber List. If a full census was carried out in a single year, the result of this was used instead of a five-year mean.

Localised Species - Species for which 50% or more of the breeding or non-breeding population occurs at 10 or few sites were placed on the Amber List. This criterion was used because a species whose population is confined to a few sites faces a greater threat from chance events than one whose population is widespread. The sites considered were either Important Bird Areas (identified by BirdLife International) or Special Protection Areas (designated under the European Union's Directive on the Conservation of Wild Birds).

International Importance - Species with 20% or more of their European population breeding in the UK were placed on the Amber List, as were non-breeding wildfowl with 20% or more of their northwest European population occurring in the UK and non-breeding waders with 20% or more of their East Atlantic Flyway population occurring in the UK. This criterion is different from the others as it is a measure of the UK's responsibility for each species rather than the extent to which species are threatened.

- Red List species are those that are Globally Threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery.
- Amber List species are those with an unfavourable conservation status in Europe, those whose population or range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.
- Species that fulfil none of the criteria are Green-listed.