Ecological Impact Assessment

40 Christchurch Road, Reading, Berkshire RG2 7AT

October 2023

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Report conditions

The methods and recommendations set out in this report are based on the following guidance:

- CIEEM Guidelines for Ecological Report Writing 2017 (CIEEM, 2017)
- CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018)
- Surveys have been carried out following the guidance sources set out in CIEEM's Good Practice Guidance for Habitats and Species (CIEEM, 2021), which include:
    - JNCC Handbook for Phase 1 Habitat Survey: A technique for environmental audit (Joint Nature Conservation Committee (JNCC), 2010)
    - CIEEM Guidelines for Preliminary Ecological Appraisal, Second Edition (CIEEM, 2017)
    - Bat Conservation Trust (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins *et al*, 2016)
    - Great Crested Newt Mitigation Guidelines (English Nature (now Natural England), 2001)
    - Advice Note 5: Great Crested Newt Habitat Suitability Index Amphibian and Reptile Group (ARG) UK (May 2010)

Site	40 Christchurch Road, Reading, Berkshire RG2 7AT
Client	Acorn Education & Care Ltd
Report	Ecological Impact Assessment
Checked by	Stephen Brown
Survey dates	Preliminary Ecological Appraisal: 11th July 2023 Bat emergence surveys: 2nd August and 5th September 2023
Draft issued	27th September 2023
Final issued	3rd October 2023
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Executive summary

Ecology Works Limited was commissioned by Acorn Education & Care Ltd to undertake a desk study, Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at the former Phoenix School, 40 Christchurch Road, Reading, Berkshire RG2 7AT and, subsequently, to complete bat emergence surveys at the site. Together, these form an Ecological Impact Assessment, required to support a planning application with Reading Borough Council to renovate, part-demolish and extend the building as a new school. This report details the findings of the desk study, PEA, PRA and bat emergence surveys conducted at the site by Ecology Works Limited from July to September 2023.

The site comprises a detached, disused school building with a complex roof and two single-storey wings to the rear. The development proposal entails demolition of the eastern rear wing and major renovation of the building to provide a new school. This will include repairs to the exterior, such as broken tiles and tile hanging on the old part of the building, reconfiguration of the internal layout and new landscaping.

Taken together, the desk study, PEA, PRA and bat surveys made the following findings:

- There are no statutory designated nature conservation sites and two non-statutory sites within a 1km radius.
- 12 bat licences and no dormouse or great crested newt licences have been granted within the search radius.
- The site supports small patches of tall ruderal vegetation, improved grassland, introduced shrub, ephemeral/short perennial vegetation, bare ground, a hedgerow and scattered trees. It is assessed as having:
    - low suitability for foraging and commuting bats, with five species recorded
    - three confirmed day roosts of up to five common pipistrelle bats
    - suitability for foraging and commuting (not resident) badger, breeding birds and hedgehog
    - negligible suitability for significant numbers of notable invertebrates/important assemblages
    - likely absence of otter, hazel dormouse, water vole, reptiles and great crested newt
    - invasive non-native plant species were not recorded during the site survey

In the absence of mitigation, renovation works to the main school building would cause disturbance to bats, damage to roosts and/or harm to individual bats. A bat mitigation licence from Natural England will therefore be required before the work proceeds. This report sets out a detailed mitigation and compensation strategy designed to ensure bats can be maintained at the site at a Favourable Conservation Status.

There are no other ecological constraints to the proposals. Enhancement measures are proposed in this report which, as long as they are delivered, will provide net gains for biodiversity, in line with the NPPF. Taking all of these factors into account, Reading Borough Council can be assured that this proposal should be compliant with Policy EN12 of the Reading Borough Local Plan.

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1 Introduction

1.1 Background

Ecology Works Limited was commissioned by Acorn Education & Care Ltd in July 2023 to undertake a desk study and Preliminary Ecological Appraisal (PEA) at the former Phoenix School, 40 Christchurch Road, Reading, Berkshire RG2 7AT. This survey included a Phase 1 habitat survey and a Preliminary Roost Assessment (PRA), which identified suitability for roosting bats at the property. Bat emergence surveys were subsequently commissioned. The ecological survey work is required in support of a planning application with Reading Borough Council to renovate, part-demolish and extend the building as a new school.

This report details the findings of the desk study, PEA and bat emergence surveys conducted at the property by Ecology Works Limited in July, August and September 2023. It provides details on the status of bats and other protected or notable species at the site, as well as an overall assessment of the potential ecological constraints to the proposed development. It includes recommendations for measures to avoid, mitigate or compensate for impacts to protected or notable species, in line with the mitigation hierarchy. It also details specific enhancement measures required to deliver biodiversity net gain, in line with policy.

1.2 Site description

40 Christchurch Road, referred to hereafter as 'the site', is located at National Grid Reference SU 7249 7210, in Reading, Berkshire. The site is the former Phoenix School, which comprises a detached, three-storey Victorian school building with a complex hipped and gabled roof, and two single-storey wings to the south. Enclosed rear grounds lie south of the property, and a driveway and parking area are situated to the north, with the building set back from Christchurch Road. The rear grounds comprise an overgrown courtyard and play area/outdoor gym with small, overgrown lawn areas, which have mature trees and shrubs on the eastern, western and southern boundaries.

The site is located in Reading city centre, 770m west of Reading University campus and 2km south of the River Thames. The site's surrounds are heavily urbanised. The playing fields of the university abut the site's southern boundary. The site location plan is provided in Appendix 1.

1.3 Site proposals

The development proposal entails demolition of the eastern rear wing and major renovation of the building to provide a new school. This will include repairs to the exterior, such as broken tiles and tile hanging on the old part of the building, reconfiguration of the internal layout and new landscaping.

The existing and proposed site plans are provided in Appendix 2.

2 Policy and legislation

2.1 Planning policy

2.1.1 National planning policy

Requirements of planning decisions in respect of biodiversity in England are laid out in the National Planning Policy Framework, (NPPF) 2021[1], which states that the presence of a protected species is a material consideration when a planning authority is considering a development proposal. Other relevant excerpts are listed below:

- Paragraph 11 states that "*Plans and decisions should apply a presumption in favour of sustainable development*". However, Paragraph 177 explains that "*The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site*"
- Paragraph 170 states that the planning system should both contribute to and enhance the natural environment by "*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*"
- Paragraph 175 details biodiversity principles, including:
    - Where harm cannot be adequately avoided then it should be mitigated for, or as a last resort, compensated for.
    - Where impacts occur on nationally designated sites, the benefits must clearly outweigh any adverse impact and incorporating biodiversity in and around developments should be encouraged. Reference is made to the protection of irreplaceable habitats, such as ancient woodland.
    - Where irreplaceable habitats are to be lost, planning permission would normally be refused unless there are exceptional reasons and adequate compensation in place.
    - It is also stated that "*Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity*".
    - Under the NPPF, protection of sites proposed as Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites or acting as compensation for SPAs, SACs and Ramsar sites, should receive the same protection as habitat sites.

Circular 06/05[2] offers guidance on interpretation of planning and nature conservation law in England. Paragraph 98 states "*the presence of a protected species is a material consideration when a planning authority is considering a development*

[1] HM Government (2021) *National Planning Policy Framework*. Department for Communities and Local Government. HMSO
[2] HM Government (2005) ODPM Circular 06/05 Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System. HMSO.

proposal that, if carried out, would be likely to result in harm to the species or its habitat". Paragraph 99 states "*it is essential that the presence or otherwise of a protected species, and the extent that they may be affected by the Proposed Project Development, is established before planning permission is granted*".

2.1.2 Local planning policy

Local planning policy within Reading is provided by Policy EN12 of Reading Borough Local Plan, adopted November 2019, relating to the natural environment:

EN12: Biodiversity and the Green Network

a) The identified Green Network, the key elements of which are shown on the Proposals Map, shall be maintained, protected, consolidated, extended and enhanced. Permission will not be granted for development that negatively affects the sites with identified interest or fragments the overall network. The Green Network comprises:

- *Sites with identified biodiversity interest - Local Wildlife Sites, Local Nature*
- *Reserves, Biodiversity Opportunity Areas, protected and priority species and their habitats, Priority and Biodiversity Action Plan habitats, and the River Thames and all its tributaries (including the River Kennet and the Kennet & Avon Canal); and*
- *Areas with potential for biodiversity value and which stitch the Green Network together – designated Local Green Space and open green spaces, and existing and potential Green Links.*

New development shall demonstrate how the location and type of green space, landscaping and water features provided within a scheme have been arranged such that they maintain or link into the existing Green Network and contribute to its consolidation. Such features should be designed to maximise the opportunities for enhancing this network. All new development should maximise opportunities to create new assets and links into areas where opportunities are as yet unidentified on the Proposals Map.

b) On all sites, development should not result in a net loss of biodiversity and geodiversity, and should provide a net gain for biodiversity wherever possible. Development should:

- *Protect and wherever possible enhance features of biodiversity interest on and adjacent to the application site, incorporating and integrating them into development proposals wherever practicable; and*
- *Provide new tree planting, wildlife friendly landscaping and ecological enhancements (such as wildlife ponds, bird and bat boxes) wherever practicable.*

In exceptional circumstances where the need for development clearly outweighs the need to protect the value of the site, and it is demonstrated that the impacts cannot be: 1) avoided; 2) mitigated or; 3) compensated for on-site; then new development will provide off-site compensation to ensure that there is "no net loss" of biodiversity. Provision of off-site compensation shall be calculated in accordance with nationally or locally recognised guidance and metrics. It should not replace existing alternative habitats, and should be provided prior to development.

2.2 Legislation

2.2.1 European Protected Species (EPS)

British bats, hazel dormouse *Muscardinus avellanarius* and great crested newt *Triturus cristatus* are afforded full protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). In addition, all bat species are protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2017. Schedule 2 defines European Protected Species (EPS). Bats and their habitats receive additional protection via the Countryside and Rights of Way (CRoW) Act, 2000, and under the Bonn Convention (Agreement of Bats in Europe), of which the UK is part. Taken together, these make it an offence to:

- kill, injure or take such an animal
- possess any part of a bat, hazel dormouse or great crested newt (alive or dead)
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by these species for shelter, rest, protection or breeding
- intentionally or recklessly disturb these species whilst using any place of shelter or protection
- deliberately disturb these species in such a way as to be likely to impair their ability to:
    - survive, to breed or reproduce, or to rear or nurture their young
    - in the case of animals of a hibernating or migratory species, to hibernate or migrate
    - to significantly affect the local distribution or abundance of the species in question (this is therefore interpreted to protect bat foraging and commuting habitat and great crested newt terrestrial habitat)
- keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead animal of these species, or any part of, or anything derived from them

In addition to this direct legislation, the Natural Environment and Rural Communities Act (NERC Act) 2006, requires due consideration be given to biodiversity and its potential enhancement when considering proposed developments, i.e. as part of the planning process. The Act defines a number of bat species, and great crested newts as species of principal importance for consideration during planning.

2.2.2 Badger

Unlike other UK protected species, badger *Meles meles* are legally protected because of historic and persistent persecution, rather than conservation. They are afforded full protection, as are their setts, in England and Wales, under the Protection of Badgers Act 1992. Their foraging and commuting habitat is not protected by this legislation. The Act makes it a criminal offence to:

- willfully kill, injure or take a badger (or attempt to do so)
- cruelly ill-treat a badger

- dig for a badger
- intentionally or recklessly damage, destroy or obstruct access to a badger sett
- cause a dog to enter a badger sett
- disturb a badger when it is occupying a sett

2.2.3 Birds

In the UK, all wild birds are afforded protection under Section 1 of the Wildlife and Countryside Act 1981 (as amended), making it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy a nest (while in use or during its construction) or eggs. Some species receive further protection via inclusion in Schedule 1 of the Act, which makes it an offence to intentionally or recklessly disturb these birds whilst building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young. Schedule 1 species include, for example, barn owl *Tyto alba*.

2.2.4 Reptiles

British reptile species are included in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are therefore protected from intentional killing or injury. This includes the widespread species: adder *Vipera berus*, grass snake *Natrix Helvetica*, slow-worm *Anguis fragilis* and common lizard *Zootoca vivipara*.

Smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis* are classed as rare reptiles and are afforded full protection under the Act. This makes it an offence to intentionally or recklessly kill, injure, disturb, take, possess or sell these species (of any life stage). It is also illegal to damage, destroy or obstruct access to places they use for breeding, resting, shelter and protection.

All species of reptile are listed as Species of Principal Importance under Section 41 of the NERC Act 2006, and must therefore be taken into consideration as part of planning for any development.

2.2.5 Other species

Although not strictly legally protected, hedgehog *Erinaceus europaeus* and many other species are listed as Species of Principal Importance under Section 41 of the NERC Act 2006, and must therefore be taken into consideration as part of planning for any development.

All wild mammals, including fox and rabbit, receive protection from harm with intent to inflict unnecessary suffering, including crushing and asphyxiation, under the Wild Mammals (Protection) Act 1996. This is relevant where burrows need to be removed as a normal part of construction activity (notwithstanding the legal protection of badgers detailed above).

3 Methods

3.1 Desk study

3.1.1 Zone of influence

The desk study was carried out within the zone of influence, which is an area around the site set by the assessor that may be affected by the proposals because of factors such as alterations to habitats, lighting, noise, the water table or human presence. For the purpose of the Ecological Impact Assessment, the zone of influence has been set at a 1km radius around the site. This is increased to 2km for bats, which are highly mobile, and is increased further where the site falls within any impact zones of European sites, which have radiuses of several kilometres or more.

3.1.2 Thames Valley Environmental Records Centre

Thames Valley Environmental Records Centre (TVERC) was consulted for records of bats within 2km, and other protected species, designated sites and priority habitats within 1km of the site. Data was received from TVERC on 23rd July 2023.

3.1.3 MAGIC data search

The Multi-Agency Geographic Information for the Countryside[3] (MAGIC) online resource was accessed on 12th September 2023 to search for the following features:

- Internationally and nationally designated sites: SPAs, potential SPAs, SACs, possible SACs, Wetlands of International Importance (Ramsar sites), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs) within 1km of the site
- European Protected Species (EPS) bat licences granted within 2km
- Habitats of Principal Importance (identified under Section 41 of the NERC Act 2006) within 1km
- EPS hazel dormouse and great crested newt licences granted within 1km
- Natural England great crested newt class licence returns submitted within 1km

Online mapping was used to identify ponds within 500m of the site based on standard best practice for great crested newts. This is the maximum distance this species will generally migrate between breeding ponds and terrestrial habitats such as woodlands.

3.2 Preliminary Ecological Appraisal

A daytime walkover survey of the site was undertaken on 11th July 2023, comprising a Phase 1 habitat survey and a Preliminary Roost Assessment (PRA) of the building and on-site trees for bats. The field survey was carried out by licensed bat/dormouse/rare reptile ecologist and Natural England Registered Bat Consultant Frances King-Smith BSc

[3] MAGIC Map Application. https://magic.defra.gov.uk/MagicMap.aspx.

(Hons) CEcol MCIEEM (Natural England Level 2 Bat Class Licence ref. 2020-48552-CLS-CLS, Registered Consultant no. RC152). Frances was assisted by Stephen Brown during the survey.

The survey was conducted using a 1,000 lumen LED Lenser torch, 8x42 binoculars and a ladder. Weather conditions during the PRA were warm and dry, with a light breeze, 50-100% cloud cover and an ambient temperature of 19°C.

The Phase 1 habitat survey was undertaken following the Handbook for Phase 1 Habitat Survey (Joint Nature Conservation Committee (JNCC), 2010) and entailed a detailed survey of on-site vegetation to identify key plant species present and to categorise and define the habitats. Guidelines for Preliminary Ecological Appraisal were also followed[4]. Where relevant, dominance was noted based on the DAFOR scale[5]. Target notes were made to identify particular features/species within the site. The site visit also included an assessment of the suitability of habitats present to support protected or notable species. These methods are detailed in Table 1.

Table 1. Methods used for establishing site suitability for protected and notable species

Species/ species group	Details
Bats	Roosting opportunities for bats are referred to as Potential Roosting Features (PRFs) and can take the form of a wide range of features within a building or structure. Examples of such features are within roof voids (particularly along the ridge beams), eaves spaces, within mortice joints, and within gaps on the exterior of a building, such as under roof tiles, ridge tiles or hanging tiles (or slates), soffit or fascia gaps, gaps beneath lead flashing, cladding, weatherboarding and barge boards, and many other features. Trees also provide suitable features such as loose or peeling bark, splits, cracks, woodpecker holes, callous rolls, snags and hazard beams. The presence of dense ivy on trees can both conceal and create suitable roosting features. The PRA entailed a detailed visual inspection of the exterior and interior of the building/s on-site to look for PRFs, wherever access was possible and safe. It included a search for bats and their evidence, such as droppings, urine stains, rub marks, feeding remains and bat corpses. All PRFs and bats/bat evidence was recorded (including taking photographs and droppings samples where necessary). The building/s were assigned a level of roosting suitability from: negligible, low, moderate or high, in line with the criteria set out in the Bat Conservation Trust (BCT) Bat Surveys for Professional Ecologists Good Practice Guidelines. These guidelines were also used to assess the suitability of the surrounding habitats and landscape for foraging and commuting bats. The survey was conducted using a 1,000 lumen LED Lenser torch, 8x42 binoculars and a ladder.
Badger	The site was searched for signs of badger activity including setts, tracks, caught guard hairs on fencing and brambles over mammal paths, snuffle holes and dung pits or latrines.
Otter	The site was assessed for its suitability for otter *Lutra lutra*, predominantly based on the presence of ditches, streams, rivers or other waterbodies. Where present, areas in and around waterbodies were searched for holts, couches, lie-ups, feeding remains and spraints (otter droppings).
Water vole	Any waterbodies present were also searched for evidence of water vole *Arvicola amphibius*, such as burrows, latrines, tracks and feeding lawns.
Hazel dormouse	The habitat on and adjacent to the site was assessed for its suitability to support hazel dormouse, indicated by the presence of woodland, scrub or hedgerows with food plants such as hazel *Corylus avellana*, bramble *Rubus fruticosus* aggregate (agg.) and honeysuckle *Lonicera periclymenum*, which would provide a food contingent throughout the active season.

[4] CIEEM Guidelines for Preliminary Ecological Appraisal, Second Edition (CIEEM, 2017)
[5] The DAFOR scale was used to note levels of dominance within habitats present for each plant species, from Dominant, Abundant, Frequent, Occasional or Rare.

Species/ species group	Details
Birds	Vegetation, buildings and other structures on the site were broadly assessed for their suitability for breeding birds. Any nests observed were noted.
Reptiles	Grassland, scrub, woodland edges and garden habitats within the site, if present, were appraised for their suitability for providing opportunities for basking, breeding, foraging and hibernating by widespread reptile species, such as grass snake and slow-worm. Materials resting on the ground, referred to as refuges, are routinely lifted to check for reptiles.
Great crested newt	Supported by the desk study for this species, waterbodies and terrestrial habitats on the site were assessed for their suitability for supporting great crested newt. Refuges, including logs, are routinely lifted to check for sheltering newts.
Invertebrates	The habitats on and adjacent to the site were broadly assessed for their suitability to support rare or notable invertebrates or important assemblages.
Invasive plant species	Where observed, the presence of invasive plants listed on Schedule 9 of the Wildlife and Countryside Act 1981, such as Japanese knotweed *Fallopia japonica*, was noted during the survey. Please note, this does not represent an exhaustive search of the site.
Other species	As well as the species above, the PEA included an assessment of the site's suitability to support Species of Principal Importance defined under the NERC Act 2006, such as hedgehog and brown hare *Lepus europaeus*.

3.3 Bat emergence surveys

Two dusk emergence surveys were undertaken by five surveyors, following the methodology set out in the BCT guidelines for a structure with moderate suitability for roosting bats. The surveys were led by Frances King-Smith, and assisted by suitably trained and experienced bat surveyors Stephen Brown, Megan Knowles, Freya Fagbayi, Emma Conroy, Clare Riches, Elizabeth Johnson and Mark Collings.

Surveyors were located at vantage points on the northern, eastern and southern elevations of the building, allowing full visual coverage of the suitable features on the property. The surveyors recorded any bat activity on or around the potential roosting entry/exit features identified during the PRA, using handheld bat detectors including Pettersson D240X time expansion bat detector with an Edirol R-05 solid state digital recorder and Wildlife Acoustics Echo Meter Touch Pro 2s coupled with Amazon Fire HD 8 tablets to record bats and identify species through call frequencies. Two-way radios were used by surveyors to cross-reference bat flight directions and emergences. Bat calls were logged and recorded as sonograms for later confirmation of species where necessary using Kaleidoscope™. The dates, times, weather conditions are presented in Table 2. Surveyor locations are provided in Appendix 3.

Table 2. Survey details

Date	Survey start /end time	Weather conditions
2nd August 2023	Start time: 20:35 Sunset: 20:50 Finish time: 22:20	Start/end temperature: 17.0°C/16.0°C Cloud cover: 45-25% Weather: Dry and warm with a Beaufort Force 1-2 south-westerly breeze
5th September 2023	Start time: 19:26 Sunset: 19:42 Finish time: 21:12	Start/end temperature: 25.0°C/23.0°C Cloud cover: 0% Weather: Still, warm and dry

3.4 Other species

As well as the bat assessment, the PEA included an assessment of the site's suitability to support any other protected or notable species which would be found within the on-site woodland or immediately adjacent to buildings and gardens, in line with the scope of the development proposals. The survey therefore included an assessment of the site's suitability to support badger, hedgehog, breeding birds, common species of reptile, great crested newt and notable invertebrates.

3.5 Limitations

3.5.1 Preliminary Ecological Appraisal

The visibility of plant species varies throughout the year, however the Phase 1 habitat survey was undertaken in July, when many plant species are in flower and all are in leaf. Therefore this is unlikely to have limited the overall number of plant species recorded on the site. Plant species encountered were readily identifiable and habitats could easily be characterised and assessed.

The PEA was undertaken by an experienced and suitably qualified ecologist and assistant, who were able to access all areas of the site using suitable equipment. Therefore there are no significant limitations to the PEA.

3.5.2 Preliminary Roost Assessment

It is not always possible to access every PRF, e.g. soffits, gaps between roof tiles and roof felt etc., therefore the PRA is based on the suitability of such features to support roosting bats. This is a standard, unavoidable constraint of PRAs and is not considered a significant limitation. All roof voids could be accessed for inspection without hindrance using suitable equipment. The survey was completed in optimal conditions, with no significant limitations.

3.5.3 Bat emergence survey

In accordance with good practice guidelines, both bat emergence survey visits were undertaken during the peak period of bat activity and during suitable weather conditions. The results presented here are therefore considered to be an accurate representation of the general use of the property by roosting bats. The surveys record the emergence of bats at the time of the survey visits and therefore only provide a snapshot of bat roosting activity at the site at that time. Bats may be present at other times, and in different roost locations. Overall, there are not considered to be any significant constraints to the bat emergence survey.

4 Ecological baseline

4.1 Designated sites

4.1.1 MAGIC

There are no statutory designated nature conservation site located within a 1km radius of the site. The site does not fall within any known designated site buffer zones.

4.1.2 TVERC

The TVERC data search identified two non-statutory designated sites within 1km of the site. The nearest is Whitely Park Farm/St Patrick's Hall Pond Local Wildlife Site (LWS), located approximately 310m south-west of the site and comprising broadleaved semi-natural woodland and a range of associated habitats, including ponds. The second is Whiteknights Park LWS, located 1km east of the site, formed of a mosaic of trees, mown grassland, a eutrophic lake, mixed secondary woodland, introduced shrubs, trees and areas managed as meadow grassland.

4.2 Habitats

4.2.1 Desk study

MAGIC identified nine small parcels of deciduous woodland within 1km of the site, which is a Habitat of Principal Importance identified under Section 41 of the NERC Act 2006. The nearest is a small parcel of woodland within Reading University campus, 225m south of the site. There are no priority habitats within the site.

4.2.2 Habitat survey

Habitats within the site are described below using JNCC Phase 1 habitat terminology. A Phase 1 habitat map is provided in Appendix 4.

<u>Improved grassland</u>

The rear grounds located south of the school comprise patches of overgrown lawn of species-poor improved grassland, broken into small sections by pathways and the play area surfacing (Photograph 1). Species present include dominant Yorkshire fog *Holcus lanatus*, perennial rye-grass *Lolium perenne* and yarrow *Achillea millefolium*, with locally-dominant common nettle *Urtica dioica*. Creeping cinquefoil *Potentilla reptans* is locally abundant, field bindweed *Convolvulus arvensis* is frequent. All other species occur occasionally and comprise common bent *Agrostis capillaris*, timothy *Phleum pratense*, borage *Borago officinalis*, white dead-nettle *Lamium alba*, brassica *Brassica* species (sp.), meadow barley *Hordeum secalinum*, common ragwort *Senecio jacobaea* and ribwort plantain *Plantago lanceolata*.

A small patch of agriculturally improved grassland is present at the western edge of the driveway in the north of the site, which is evidently an agricultural remnant (Photograph 2). This habitat is dominated by meadow barley and ribwort plantain, with locally-dominant red fescue *Festuca rubra* aggregate (agg.), brassica sp. and ivy *Hedera helix*. Selfheal *Prunella vulgaris* is locally-abundant and yarrow, horsetail *Equisetum arvense*, rosebay willowherb *Chamaenerion angustifolium*, wood avens *Geum urbanum*, great mullein *Verbascum thapsus*, borage and creeping thistle *Cirsium arvense*

occur frequently, with occasional prickly sow-thistle *Sonchus asper*, pineappleweed *Matricaria discoidea*, dandelion *Taraxacum officinale* (agg.), wood spurge *Euphorbia amygdaloides*, herb robert *Geranium robertianum*, rose campion *Lychnis coronaria* and nipplewort *Lapsana communis*.

Photograph 1. Looking north across play area/gym

Photograph 2. Improved grassland in driveway area

Tall ruderal vegetation

Tall ruderal vegetation is present in the narrow strip of land west of the wester rear wing, comprising common nettle (Photograph *3*). This habitat type has also succeeded the former cultivated beds lining parts of the rear courtyard (Photograph 4). This area includes dominant common nettle, with locally dominant goat's-rue *Galega officinalis*, common mallow *Malva sylvestris* and hop trefoil *Trifolium campestre*. Horsetail and nipplewort are abundant in these areas; oxeye daisy *Leucanthemum vulgare* and mint *Mentha* sp. are locally abundant. Herb robert, great mullein, brassica and horsetail are abundant in the overgrown beds, along with self-seeded sycamore *Acer pseudoplatanus*.

Photograph 3. Nettle strip west of western rear wing

Photograph 4. Tall ruderal vegetation in courtyard

Introduced shrub

A small patch of introduced shrub is present in the northern driveway, comprising conifer sp., bay laurel *Laurus nobilis*, willow *Salix* sp., pendulous sedge *Carex pendula* and butterfly bush *Buddleja davidii* (Photograph *5*).

Ephemeral/short perennial vegetation

A small, shaded area, partially made up of hardstanding, and located east of the original building, has been colonised by ephemeral/short perennial vegetation (Photograph 6). This habitat is sparsely vegetated with meadow barley and moss sp., with occasional horsetail.

Photograph 5. Introduced shrub, northern boundary

Photograph 6. Ephemeral/short perennial, west of site

Scattered trees and hedgerow

Two mature scattered trees are present in the east of the site, comprising beech *Fagus sylvatica* and pedunculate oak *Quercus robur* (Photograph 7). Two large tree stumps are also present in this area. Holly *Ilex aquifolium* is present in the patch of improved grassland in the north-west of the site. The southern boundary is formed of a hedgerow of immature yew *Taxus baccata*.

Bare ground

The side access running along the eastern elevation of the building is heavily shaded by the pedunculate oak and beech in this area, with the ground being mostly devoid of living vegetation, comprising a layer of leaf litter (Photograph 8).

Photograph 7. Scattered trees on eastern boundary

Photograph 8. Bare ground/leaf litter, western boundary

Buildlings and hardstanding

40 Christchurch Road is a large, three-storey building with two long, single-storey wings to the rear (Photograph 9). The building is described in detail in Paragraph 4.3.1.2. Assorted hardstanding surfacing forms the driveway and parking area in the north of the site where it meets Christchurch Road (Photograph 10). Further areas of hardstanding and sealed surface are located to the rear of the building, where there is a paved courtyard and sealed play-surfacing within the outdoor play area/gym. There are also hardstanding footpaths leading through the overgrown lawn areas.

Photograph 9. Former Phoenix School from north

Photograph 10. West of driveway and parking area

4.3 Protected and notable species

4.3.1 Bats

4.3.1.1 Desk study

The MAGIC online resource showed that 12 EPS bat licences have been granted within 2km, as detailed in Table 3.

Table 3. EPS bat licences granted within 2km

Ref.	Bat species	Breeding place		Resting place	
		Damage	Destruction	Damage	Destruction
EPSM2013-6155	Common pipistrelle *Pipistrellus pipistrellus*	No	No	No	Yes
2016-22301-EPS-MIT	Common pipistrelle	No	No	Yes	Yes
EPSM2012-4478	Common pipistrelle Soprano pipistrelle	No	No	No	Yes
EPSM2010-2126	Common pipistrelle	No	No	No	Yes
2019-44194-EPS-MIT	Common pipistrelle Soprano pipistrelle	No	No	No	Yes
EPSM2010-2266	Common pipistrelle Brown long-eared bat	No	Yes	No	Yes
2017-28045-EPS-MIT	Daubenton's bat *Myotis daubentonii*	No impact specified. Likely disturbance-only licence.			
2017-32379-EPS-MIT	Common pipistrelle	No	No	Yes	Yes
2014-500-EPS-MIT	Common pipistrelle Soprano pipistrelle	No impact specified. Likely disturbance-only licence			
2014-3941-EPS-MIT	Common pipistrelle Soprano pipistrelle	No	No	Yes	Yes
2014-3941-EPS-MIT-1 and 2014-3941-EPS-MIT-2	Common pipistrelle Soprano pipistrelle	No	No	Yes	Yes

The TVERC data search showed that bats are well-recorded within a 2km radius, with 822 bat records returned, comprising at least 11 species: brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, Daubenton's bat *Myotis daubentonii*, Leisler's bat *Nyctalus leisleri*, long-eared bat[6] *Plecotus* sp., myotis bat[7] *Myotis* sp., Nathusius' pipistrelle *Pipistrellus nathusii*, Natterer's bat *Myotis nattereri*, noctule *Nyctalus noctula*, pipistrelle bat[8] *Pipistrellus* sp., serotine *Eptesicus serotinus*, soprano pipistrelle *Pipistrellus pygmaeus* and western barbastelle *Barbastella barbastellus*.

4.3.1.2 Preliminary Roost Assessment

The former Phoenix School building at 40 Christchurch Road is set to the south of the school grounds and to the south of a large hardstanding driveway and parking area (see Photographs 11 to 18). The building is dated 1897 and comprises a large, three-storey, Victorian school building, with more recent rear extensions to create two southern, flat-roofed wings. The main, old building is brick-built with cavity walls and sections of tile-hanging to the northern, western and southern elevations. The complex hipped and gabled roof of the main building is clad in slate with angled ridge tiles and four chimneys.

Photograph 11. Northern elevation, showing complex hipped and gabled roof

Photograph 12. Southern elevation with modern rear extensions to left (west) and right (east) of photograph

The soffits are of timber and are generally well-sealed, with gaps in places, such as a section in the north-east of the building, for example (Photograph 13). The main roof is in a good state of repair. The tile hanging is broken in several places, and has natural gaps even where it is not damaged. The building has evidently been the victim of lead-theft to the rear, causing damage to the building's exterior. Tile-hanging on the western elevation is shown in Photograph 14.

[6] There are two species of long-eared bat in the UK: the relatively common and widespread brown long-eared *Plecotus auritus* and the much rarer grey long-eared *Plecotus austriacus*, which is only recorded at a handful of sites on and near the south coast of England. Distinguishing between the calls of the two species is not an accurate method of identification, therefore it is not always possible to identify long-eared bats to species level.

[7] There are seven species of Myotis bat in the UK: Alcathoe bat *Myotis alcathoe*, Bechstein's bat *Myotis bechsteinii*, Brandt's bat *Myotis brandtii*, Daubenton's bat *Myotis daubentonii*, Natterer's bat *Myotis nattereri*, whiskered bat *Myotis mystacinus* and greater mouse-eared bat *Myotis myotis*. All except greater mouse-eared are known to breed here. Some of these can readily be identified to species level from their calls and when in the hand, however this is not always possible. In these instances bats are identified to genus level, i.e. 'Myotis bat *Myotis* species'.

[8] There are three species of pipistrelle bats in the UK: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus* (both of which are common and widespread) and Nathusius' pipistrelle *Pipistrellus nathusii*, which is less common but widespread in the south of England. These can usually be identified to species level from their calls and when in the hand, however this is not always possible. In these instances bats are identified to genus level, i.e. 'pipistrelle *Pipistrellus* species'.

Photograph 13. Eastern elevation with gapped soffit

Photograph 14. Tile hanging on western elevation

Photograph 15. Broken tile-hanging on rear gable

Photograph 16. Broken soffit on north-western garage

An attached, flat-roofed garage adjoins the north-western corner of the old part of the building (Photograph 10 and Photograph 16).

The attached rear wings extend south from the original building and run parallel with, and adjacent to, the eastern and western boundaries (Photograph 17 and Photograph 18). The western rear extension appears to be a modular/prefabricated unit with a shallow-pitched roof. The walls are clad in concrete panels and the roof has moulded concrete tiles. This extension is in a good state of repair and has no PRFs on its western elevation. The eastern rear extension appears older and is of cruder construction. It has a flat roof and brick walls, which are wooden-panelled externally.

Photograph 17. Western rear extension

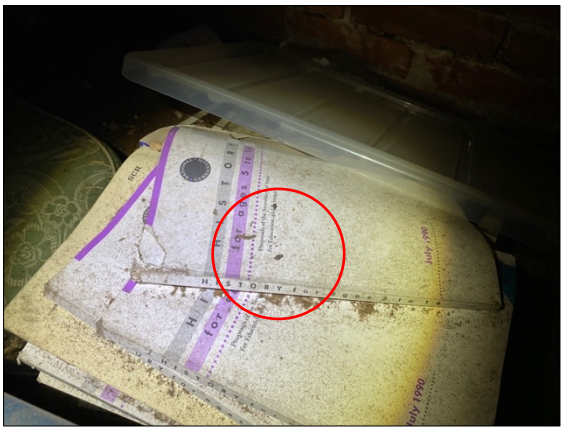
Photograph 18. Eastern rear extension

No evidence of bats was recorded externally. However, a range of features is present on the exterior of the building which could provide bat access, as follows:

- Holes in the soffits of the old building, the garage, and both rear extensions
- Broken and gappy tile-hanging on the northern, western and southern elevations of the old building
- Gaps under lead flashing on the northern elevation and ripped and puckered leadwork below rear windows
- Lifted ridge-tile on the north-eastern gable
- Gaps in timber cladding on the eastern rear extension
- Two raised tiles on the western rear extension
- Missing mortar on the northern elevation brickwork

Internally, all roof voids could be fully accessed. The complex roof layout entails its compartmentalisation into seven separate voids. These were assorted in shape and size, some with floorboards or windows and some without (Photograph 19). No bats were observed in any of the roof voids. A small number of scattered pipistrelle type bat droppings were recorded in a roof void in the south-western part of the old building (Photograph 20).

Photograph 19. Example of one of seven roof voids



Photograph 20. Bat dropping in south-western void

The trees within the site were assessed from ground level for their suitability for roosting bats. These trees were found to have negligible suitability, based on an absence of PRFs. It is understood that these trees will be retained.

40 Christchurch Road is in Reading City Centre, with limited green corridors connecting on-site habitats with those in the wider landscape beyond the urban settlement. The edges of the university playing field immediately south of the site have limited suitability for foraging bats and connect with a small woodland area to the south, which is likely to be an important resource for bats in the city centre. The site itself falls under the category of low suitability for foraging and commuting bats, as its linear green connections with the wider countryside are tenuous.

4.3.1.3 Bat emergence surveys

Due to the presence of a range of suitable roosting features, the building was assessed as having moderate suitability for supporting roosting bats, under BCT guidelines. Accordingly, it was recommended that two bat emergence surveys were completed for the building at 40 Christchurch Road. The results of these surveys are summarised below and detailed in Table 4.

4.3.1 2nd August 2023

The survey recorded a single common pipistrelle bat emerging from a hanging tile on the south-eastern gable of the old building at 21:08.

Foraging activity was heavily dominated by common pipistrelle, with occasional calls of soprano pipistrelle, noctule, Leisler's bat, *Myotis* sp. bats and long-eared sp. bat. Much of this activity entailed bats foraging in circuits around the old building, particularly over the roof of the eastern rear elevation, adjacent to the scattered trees. Bats were recorded throughout the survey period and surveyors observed low to moderate bat activity levels.

4.3.2 5th September 2023

The survey recorded four common pipistrelle emerging from the old part of the building. These comprised an emergence at 19:48 from a gap above a central first-floor window, another at 19:55 from a section of broken tile-hanging on a rear gable, and another at 19:58 from a gap below the aforementioned central first-floor window. The final bat emerged from tile-hanging on the western elevation at 20:02.

This second survey was busier than the first, with bat activity levels high and common pipistrelle activity continuous for long periods of the survey. Activity was again dominated by common pipistrelle, with soprano pipistrelle, noctule, Leisler's bat, *Myotis* sp. bats and long-eared sp. bat foraging and commuting on and near the site.

Table 4. Bats recorded roosting, foraging and commuting by all five surveyors during the dusk emergence surveys

Survey date	Species	No. bats emerging from roosts	Foraging and commuting		
			First recording	Last recording	Total passes
2nd August 2023	Common pipistrelle	1	21:03	22:20	49
	Leisler's bat	-	21:12	-	1
	Long-eared bat sp.	-	21:29	22:18	4
	Myotis bat sp.	-	21:16	22:11	3
	Noctule	-	21:12	22:16	4
	Soprano pipistrelle	-	21:00	21:33	21
5th September 2023	Common pipistrelle	4	19:48	21:12	>250
	Leisler's bat	-	19:35	-	3
	Long-eared bat sp.	-	20:48	21:02	4
	Myotis bat sp.	-	20:05	20:51	4
	Noctule	-	19:34	21:10	15
	Soprano pipistrelle	-	19:37	21:11	19

4.3.2 Badger

TVERC returned 17 records of badger within 1km of the site. The site supports suitable badger foraging and commuting habitat but is unsuitable for sett-building, due to its flat topography and lack of suitable vegetative cover or badger food plants. No mammal burrows or other evidence was recorded on-site. In summary, foraging and commuting badger may pass through the site on an occasional basis.

4.3.3 Otter

There are no TVERC otter records within 1km. The site and its surrounds support no aquatic habitats or features that could be used by otter, therefore this species is likely absent from the site and requires no further consideration.

4.3.4 Water vole

The TVERC data search returned no records of water vole within 1km. Due to a lack of aquatic habitat on or near the site, this species is likely absent and is not considered further.

4.3.5 Hazel dormouse

The TVERC data search returned no records of hazel dormouse. No Natural England hazel dormouse licences have been issued within 1km of the site. Furthermore, there is no habitat within the site with suitable species or structural diversity to support this species. The habitats present are completely isolated from suitable dormouse habitat in the wider landscape by the site's urban surrounds. Dormice are likely absent from the site and are not considered further.

4.3.6 Birds

The TVERC search returned a very high number of bird species and records within the search area; these are not listed here. The species include a range of gulls, birds of prey, farmland birds, songbirds and owls.

A number of bird species were seen or heard from the site during the survey, including swift *Apus apus*, woodpigeon *Columba palumbus*, blue tit *Cyanistes caeruleus*, goldfinch *Carduelis carduelis*, jackdaw *Corvus monedula*, magpie *Pica pica*, herring gull *Larus argentatus* and red kite *Milvus milvus*.

The site offers habitat for breeding birds in the form of the introduced shrub and scattered trees, which are likely to be used by a range of bird species in the breeding season. No evidence of bird nests was recorded within the building, however there are limited suitable features, such as broken tile hanging, which could be used by smaller species such as blue tit. The site is therefore suitable for breeding birds.

4.3.7 Reptiles

The TVERC data search returned no records of widespread reptile species within the 1km search radius. There are no rare reptile licences granted by Natural England within 1km of the site, and no suitable habitat for these species in the site's vicinity.

Due to a lack of management, the overgrown lawn habitat within the site does provide limited areas with varied structural diversity to provide reptiles with opportunities for basking, foraging and breeding, However, as there is no suitable connecting habitat, it is unlikely that reptiles would have colonised the site in the time the habitats present have been unmanaged. Reptiles are therefore likely absent from the site.

4.3.8 Great crested newt

The TVERC data search returned no great crested newt records. The MAGIC online resource confirmed that no EPS licences have been granted for great crested newt and no survey licence returns have been submitted within 1km. Two ponds are located within a 500m radius of the site, comprising a duck pond located 221m south, which is unlikely to be suitable for this species, and a woodland pond 417m to the south. Both are within Reading University Campus in a mainly urbanised setting.

The site itself generally lacks the habitat provision required to support great crested newt. Habitats present comprise an overgrown lawn and shrub borders. There are no waterbodies on-site or nearby, and the only suitable pond within 500m is surrounded by woodland, making it likely that great crested newt would stay close to the pond during its terrestrial phase, if present. This pond is isolated from the site by a closely-mown sports pitch which great crested newt are unlikely to traverse. It is therefore very unlikely that great crested newt would use the site, either in its terrestrial or breeding phases. This species is considered likely absent and is not given further consideration.

4.3.9 Invertebrates

The TVERC data search returned a range of records of notable invertebrates from within a 1km radius of the site, including solitary bee, moth and beetle species such as stag beetle *Lucanus cervus*. The species recorded are generally associated with specialist habitats not present within the site, such as woodland and saproxylic (deadwood) habitat.

The site itself supports common and widespread habitats which will undoubtedly support a range of widespread invertebrate species. The site is therefore suitable for invertebrates overall, however they are unlikely to support notable invertebrates or assemblages, or be an important resource for the local invertebrate community. The site has negligible suitability for supporting significant numbers of notable invertebrates or important species assemblages.

4.3.10 Other species

The data search returned 16 records of hedgehog within 1km of the site. The grassland, hedgerow and introduced shrub habitats within the site are suitable for supporting hedgehog, as they provide suitable areas for breeding, foraging and hibernating, although nesting habitat is severely limited in quality and extent. Hedgehog is a Species of Principal Importance.

Three records of common toad *Bufo bufo* were also returned. This species is likely absent from the site due to a lack of suitable ponds in the local vicinity.

4.3.11 Invasive plant species

The TVERC data search identified a range of invasive species in the 1km search radius, including Japanese knotweed *Fallopia japonica* and Himalayan balsam *Impatiens glandulifera*, which are Invasive Non-native Priority Species. No invasive non-native plant species were recorded during the site survey.

5 Ecological impact assessment

5.1 Summary of results

Taken together, the desk study, PEA, PRA and bat emergence surveys made the following findings:

- There are no statutory designated nature conservation sites and two non-statutory sites located within 1km.
- 12 EPS bat licences and no dormouse or great crested newt licences have been granted in the search area.
- The site supports small patches of tall ruderal vegetation, improved grassland, introduced shrub, ephemeral/short perennial vegetation, hedgerow, bare earth and scattered trees. It is assessed as having:
    - low suitability for foraging and commuting bats, with five species recorded
    - three confirmed day roosts of up to five common pipistrelle bats in total
    - suitability for foraging and commuting (not resident) badger, breeding birds and hedgehog
    - negligible suitability for significant numbers of notable invertebrates/important assemblages
    - likely absence of otter, hazel dormouse, water vole, reptiles and great crested newt
    - invasive non-native plant species were not recorded during the site survey

The species the site is unlikely to support are not considered further in this report, as there will be no effects on these resulting from the proposal.

5.2 Ecological effects of proposal

5.2.1 Designated sites

There are no statutory designated sites within 1km of the site. No impacts are anticipated for the two non-statutory designated sites located within the search area. This is due to their significant distance from the site and the minor nature of the proposals.

5.2.2 Habitats

There will be no significant loss of habitat under the current proposal. The scattered trees are to be retained. There is no impact on Habitats of Principal Importance, which are absent from the site. Part of the lawn will be brought back under management, and a new school allotment will be created in the south of the site. Landscaping entails the installation of a Multi-Use Games Area (MUGA) and new landscaped areas through the central courtyard space, which include tree and shrub planting.

5.2.3 Bats

The site supports three day roosts of up to five common pipistrelle bats in total and has low suitability for supporting foraging and commuting bats. Some of the day roosts will be destroyed when the existing building is renovated and repaired, and there could be harm to individual bats. Re-introducing management of grassed areas is likely to see a negligible to minor loss of foraging and commuting habitat for bats, given that the site has low suitability and loss of

vegetation is minimal. There will be no impact of habitat severance for foraging and commuting bats. New external lighting may be required, and this could cause disturbance impacts to foraging and commuting bats and their prey.

All UK bat species are fully protected under the Wildlife and Countryside Act 1981 (as amended). See Section 2.2 for details.

5.2.4 Badger

The site may be used occasionally for foraging and commuting by this species, but is unsuitable for resident badger. There should be no impacts to badger setts or individual badgers. There will be a negligible impact on badger foraging habitat at the site when grassland habitats are brought back under regular management. Badger are protected under the Protection of Badgers Act 1992. See Section 2.2 for details.

5.2.5 Breeding birds

The trees and introduced shrub within the site are suitable for breeding birds. In the absence of mitigation, woody vegetation removal could cause harm or disturbance to breeding birds. Breeding birds, eggs, nests and young are protected under the Wildlife and Countryside Act 1981 (as amended). See Section 2.2 for further details.

5.2.6 Other species

Suitable hedgehog habitat is present on the site, although nesting habitat is limited in quality and extent. Hedgehog are unlikely to undergo any significant impacts as a result of the proposals. Hedgehog is defined as a Species of Principal Importance under the NERC Act 2006. See Section 2.2 for details.

6 Recommendations

6.1 Further survey

A full suite of surveys comprising a desk study, PEA, PRA and bat surveys have been undertaken at the site, in line with relevant survey guidance. Results of the surveys undertaken are suitable for supporting a Natural England licence application. No further surveys are required.

6.2 Licensing, mitigation and compensation

6.2.1 Habitats

Habitat protection, creation and enhancement measures will be implemented as follows:

- Appropriate root protection measures will be installed in line with BS5837:2012 *Trees in relation to design, demolition and construction – Recommendations* around retained trees during the construction period to ensure they are not damaged by heavy plant or stored materials.
- There will be planting of at least 10 trees in the central area of the site, and at least two in the northern parking and driveway area. Use of saplings (rather than more mature trees) for habitat creation is encouraged, as this can increase long-term tree survival and reduce risks of root problems. At least five tree species will be selected using the following or equivalent native species to suit local soil conditions: pedunculate oak, silver birch *Betula pendula*, cherry *Prunus avium*, beech, field maple *Acer campestre*, small-leaved lime *Tilia cordata*, rowan *Sorbus aucuparia*, holly or hazel.
- Landscaping will use diverse planting mixes throughout, with native species selected as far as possible.

Taken together, the measures will ensure the minor habitat loss is mitigated and a gain for biodiversity is delivered.

6.2.2 Bats

To prevent an offence from being committed under the Wildlife and Countryside Act 1981 (as amended), a Natural England bat licence will be required once planning permission is in place, before the work proceeds. The site is eligible for the Bat Mitigation Class Licence (BMCL, also known as the low impact licence). Mitigation and compensation will be necessary under the BMCL to ensure that bats are maintained at a favourable conservation status at the site.

6.2.2.1 The three tests

Under the Habitats Regulations, the competent authority (Reading Borough Council), must apply the three 'tests of derogation'. The following information is provided to support the Council with this process:

1. *The development is in the interest of public health and safety or is required for other imperative reasons of overriding public interest.*

The site is a disused school which does not currently provide the layout and modern facilities required to enable its use as a school. The building is in need of updating so that it can be occupied as a school once more.

2. *There is no satisfactory alternative to the development.*

If an alternative site, or the option of 'doing nothing' were chosen, this large, valuable site in the academic district of Reading city centre, would remain disused and vulnerable to further vandalism and future water ingress. Ultimately it would fall into a further state of dilapidation and become less suitable for supporting roosting bats, threatening the Favourable Conservation Status (FCS) of the bat population on-site.

3. *The development will not be detrimental to the maintenance of the Favourable Conservation Status (FCS) of the bat population concerned within their natural range.*

A detailed bat mitigation strategy is provided in the following section to ensure the site's bat population remains viable and that the development does not jeopardise the FCS of the on-site bat population.

6.2.2.2 Bat mitigation strategy

The mitigation and compensation strategy for bats is as follows:

- Once planning permission is in place, a BMCL application will be submitted to Natural England. Once they have acknowledged the application, Natural England take up to 10 working days to register the site under the BMCL so that works can commence. A scaffold would then need to be erected at the site prior to works starting.

- On the morning work is due to start, two Schwegler 2F or equivalent bat boxes will be installed by the ecologist in the mature trees on the eastern boundary at a height of 3-4 metres and will face between south-east and south-west. The boxes will receive any bats recovered from parts of the building during localised soft strip works where roof and tile-hanging repairs are required. As a precaution, roof voids will be checked for new signs of bats, such as droppings, and any visible bats in the roof void prior to starting this work.

- A toolbox talk will then be delivered by the licensed ecologist to site contractors prior to the start of works, setting out the status of bats and the licence at the site and proposed methods of working.

- The ecologist will then supervise and assist the contractor in removing key PRFs required to facilitate repair work on the tile-hanging and roof. This element of work is called the destructive search. Tiles will be removed by hand, with the underside and space left by the tile being checked for bats. If any bats are found, work will pause while the ecologist moves them in a cloth bag to the bat box. In the unlikely event that any ill or injured bats are found, the BCT will be contacted immediately for details of a local registered bat carer, to whom the ecologist will take the bat. When the ecologist is satisfied that no further roosting areas will be affected, the works can proceed without further attendance of the ecologist.

- The destructive search would take place in the period between March and the end of October, to avoid the hibernation season. As no maternity roosts are present, avoiding the breeding period (May-August inclusive) is not necessary.

- The renovated building will provide new roosting opportunities for bats in the form of three wall-mounted bat boxes in the eastern elevation, such as the Beaumaris Woodstone Bat Box Maxi, or equivalent. This elevation currently lacks good quality roosting features but is well-situated adjacent to mature trees, making it highly suitable for these features.

- In order to avoid impacts to foraging and commuting bats, external lighting on the redeveloped site will be minimal, and no lighting will be angled directly towards boundary vegetation, such that a dark corridor can be maintained along the eastern boundary. Any necessary lighting will be limited to motion-activated and task-related lighting. The bulbs used will be at the warmer end of the spectrum, avoiding white LED lighting, which causes greater disturbance to bats and their prey. BCT guidance[9] will be followed when choosing suitable lighting for the scheme. The minor loss of foraging and commuting habitat via grassland management will be mitigated with the compensation planting detailed in Section 6.2.1.

These measures will ensure that the local population of bats, which roost, forage and commute across the site, will be maintained at a favourable conservation status.

6.2.3 Birds

No significant removal of woody vegetation is proposed, however a limited amount of vegetation removal may be required for the purpose of bringing the site back under regular management and improving site aesthetics. Minor loss of nesting habitat via shrub loss will be mitigated with the planting detailed in Section 6.2.1. This will ensure there is an overall gain in nesting habitat for breeding birds. Shrub removal, if required, will take place outside the main breeding season, which runs from March to August, inclusive. If this is not possible, an ecologist will perform a nesting bird check of vegetation to be removed immediately prior to the start of works. Any active nests identified will need to be left with a 5m undisturbed buffer until the nesting cycle has concluded naturally (i.e. the young have fledged and the nest is no longer in use). As nests are likely to be encountered, however, this option will only be chosen as a last resort. These measures will ensure that potential impacts to breeding birds are avoided.

6.2.4 Invertebrates

Loss of habitat for widespread invertebrate species is minimal. The habitat creation measures detailed in Section 6.2.1 will provide species-rich habitats suitable for nectaring and other purposes by a range of invertebrates, including pollinators. This will ensure the site remains suitable for supporting an invertebrate community, and will see a net gain in invertebrate habitat overall.

6.2.5 Other species

Hand tools should be used during vegetation clearance to mitigate against potential impacts on hedgehog. Any necessary management works involving woody vegetation at the site's edges should avoid the hedgehog breeding

[9] Bat Conservation Trust (2018) Guidance Note 08/18: Bats and Artificial Lighting in the UK. Bat Conservation Trust, London

season of April to September, to minimise disturbance to this species when most vulnerable. Should hedgehog be encountered during the works, work should cease and the animal/s should be allowed to disperse of their own accord.

6.3 Enhancement

The proposal offers an opportunity to provide Biodiversity Net Gains in line with the NPPF, and this is being delivered via the habitat measures set out in Section 6.2.1.

The site will also be enhanced for breeding birds with the installation of four swift nest boxes (such as the Vivara® Pro Woodstone, Burgos® or Schwegler® 17, or equivalent). This species is recorded within 1km of the site. The boxes will be installed by contractors at the eaves of the old part of the building, and will provide net gain in accordance with policy and will support the declining local swift population by providing valuable nesting and roosting habitat.

In addition, an NHBS Hedgehog Nest Box (or equivalent) will be installed in the southern boundary hedgerow in a discrete location, to enhance the available nesting habitat.

7 Conclusion

No further surveys are necessary. A Natural England bat licence is required in order for the external repair and renovation works to proceed. The proposed development incorporates mitigation measures in respect of habitats, bats, breeding birds, hedgehog and invertebrates, which will ensure there are no adverse impacts on protected species or retained habitats. Habitat measures include tree planting and use of native species, along with provision of bat, bird and hedgehog nest boxes. Together, these measures will provide net gains for biodiversity, in line with the NPPF. As no designated sites or protected species should be significantly impacted once mitigation is in place, the local planning authority can be assured that the proposal should be compliant with Policy EN12 of Reading Borough Local Plan.

8 References

The following resources have been used to inform this assessment:

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- English Nature (now Natural England), (2001) *Great Crested Newt Mitigation Guidelines*. Natural England, Peterborough.
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- JNCC (2010) *Handbook for Phase 1 habitat survey – a technique for environmental audit*. JNCC, Peterborough
- MHCLG, (2021). *National Planning Policy Framework*. Ministry of Housing, Communities and Local Government, London.
- Stace, C. (2010) *New Flora of the British Isles.* 3rd edition. Cambridge University Press, Cambridge.

Appendix 1 Site location plan

Notes

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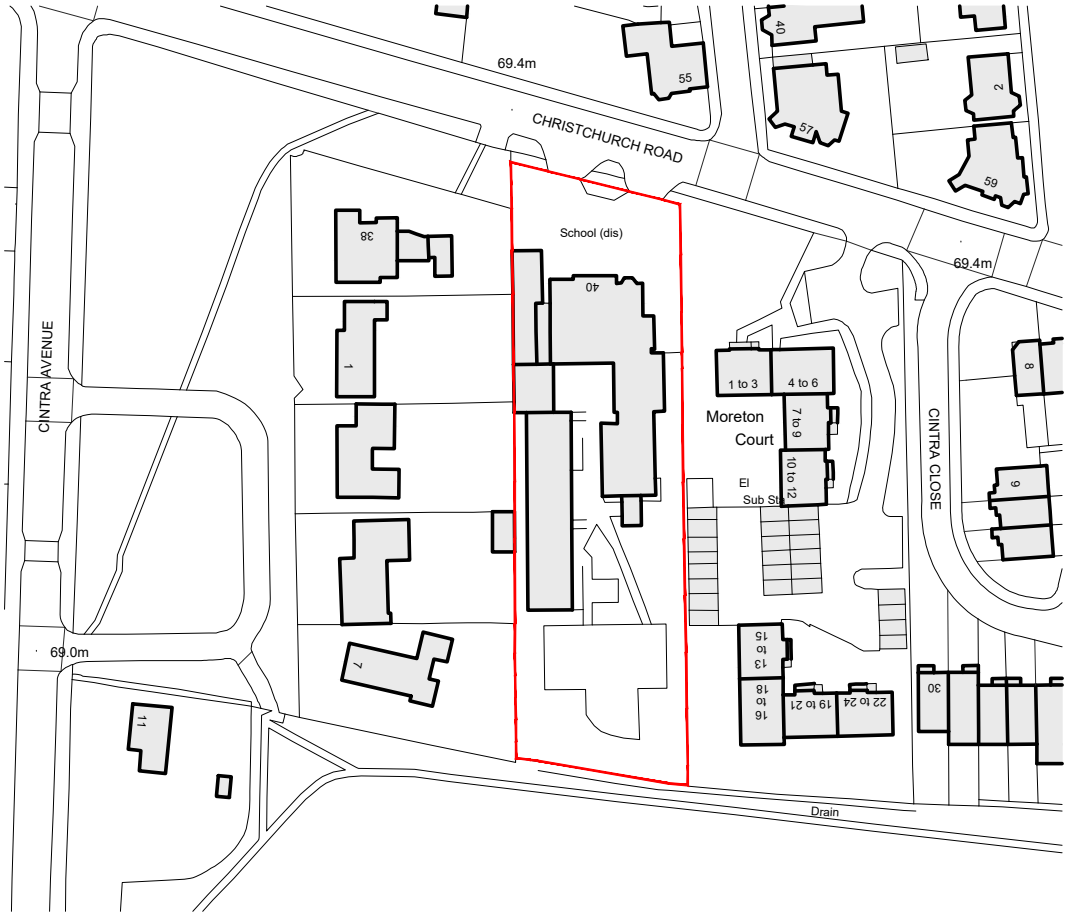
Client Approval					
	A - Approved				
	B - Approved with comments				
	C - Do not use				
Rev.	Revision Note/Purpose of Issue	Drw By	Date	Chk By	Date



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N

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Location Plan 1:1250 @ A4

10 0 10 20 30 40 50 100m

1:1250

THE PHOENIX SCHOOL

40 CHRISTCHURCH ROAD
READING, RG2 7AY
ACORN EDUCATION AND CARE LTD

Drawing title

SITE LOCATION PLAN

Drawn	Date	Checked	Date	Scale at A4
AH	10/07/23	HJG	10/07/23	1:1250

Job No.	Pro.	Org.	Zone	Level	Type	Role	No.	Rev.
23-062	PHX	MHA	ZZ	ZZ	DR	A	0001	P02

Purpose of Issue

PLANNING

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Appendix 2 Exisiting and proposed site plans

Notes

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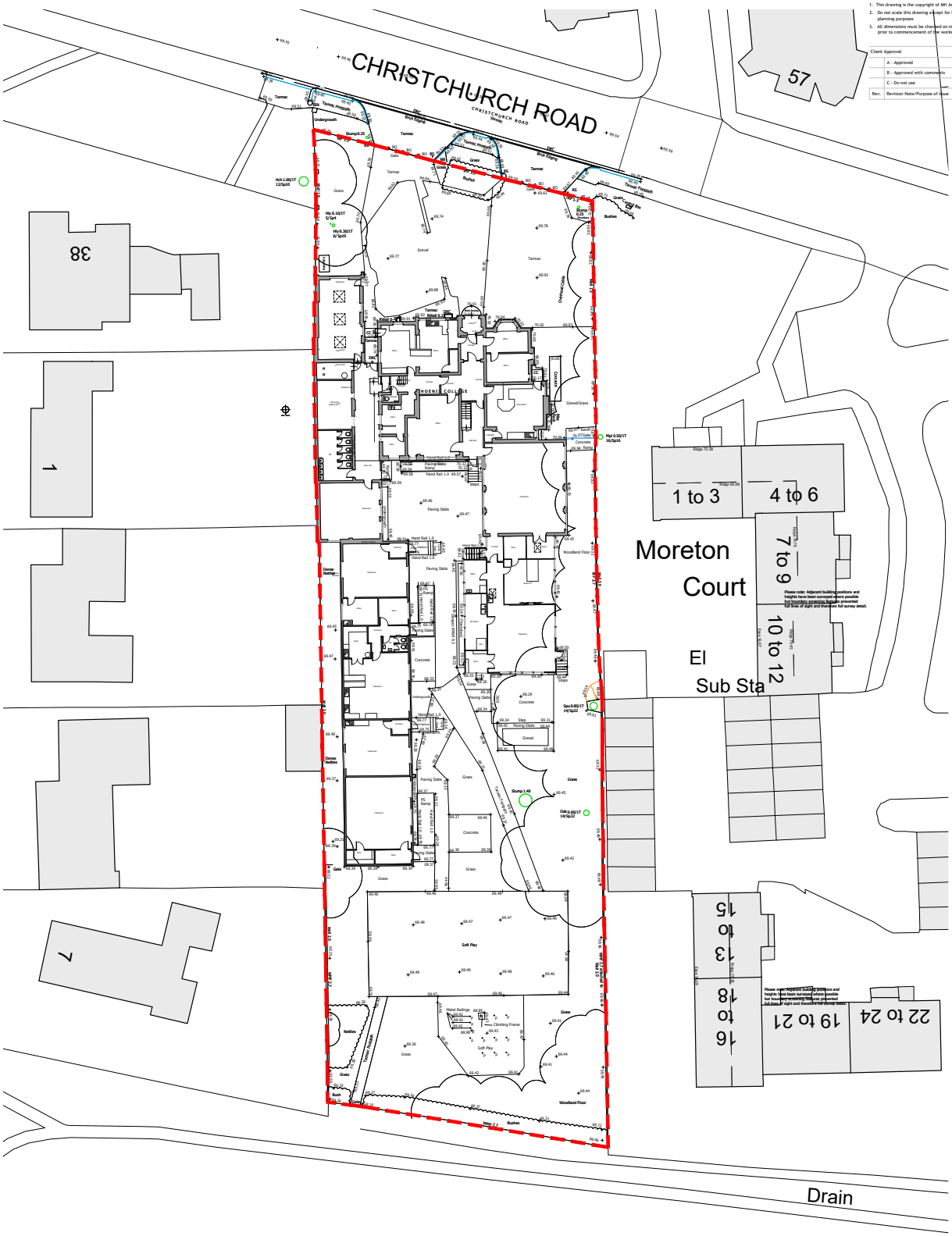
Rev.	Revision Note/Purpose of Issue	Drw By	Date	Chk By	Date



Site Plan 1:200 @ A1

1:200

THE PHOENIX SCHOOL

40 CHRISTCHURCH ROAD
READING, RG2 7AY
ACORN EDUCATION AND CARE LTD

Drawing title

EXISTING SITE PLAN

Drawn	Date	Checked	Date	Scale at A1
AH	07/07/23	RJG	07/07/23	1:200

Job No.	Pro.	Org.	Zone	Level	Type	Role	No.	Rev.
23-062	PHX	MHA	ZZ	ZZ	DR	A	0002	P01

Purpose of Issue

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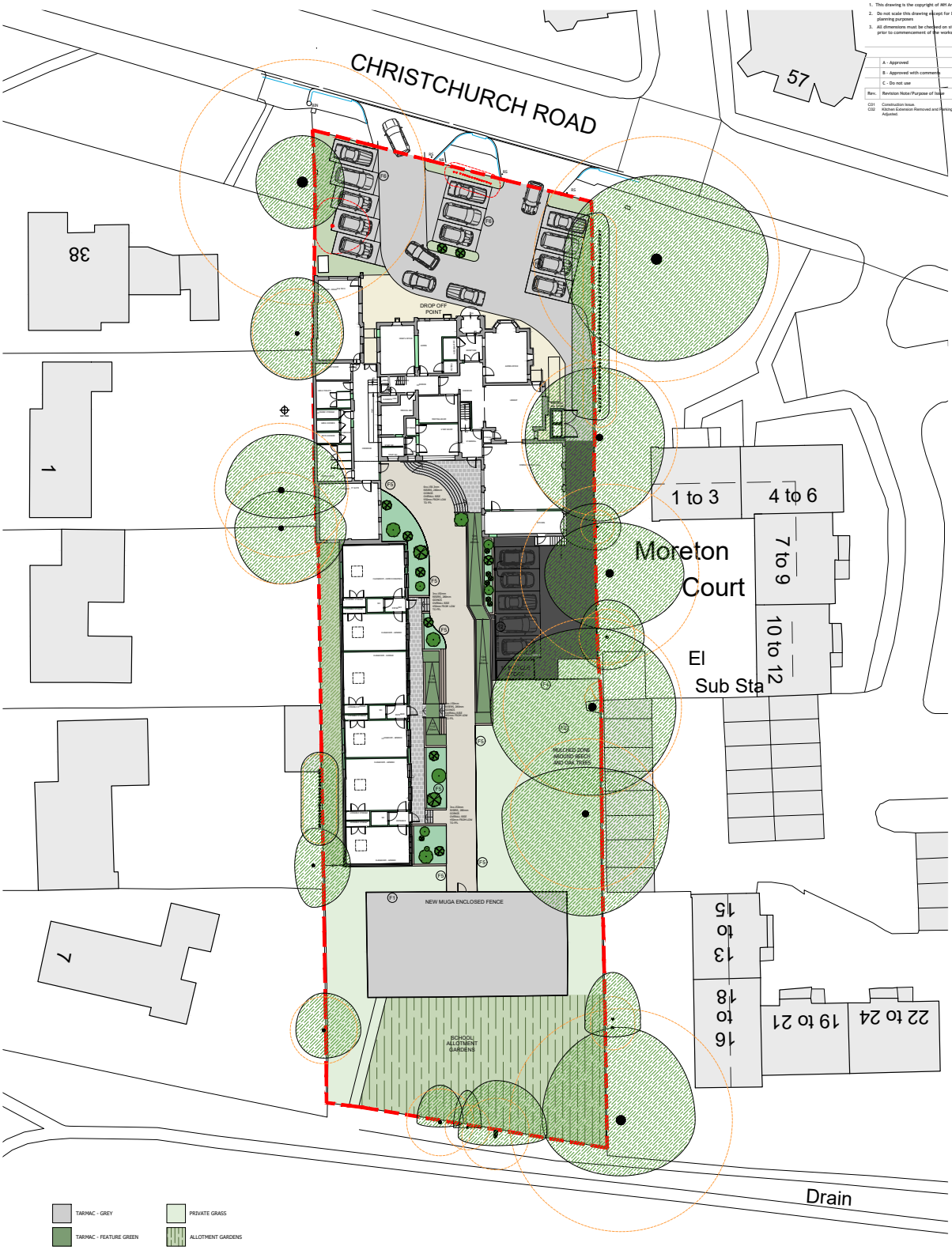
Rev.	Revision Note/Purpose of Issue	Drw By	Date	Chk By	Date
C01	Construction Issue	AH	26/09/23	HJG	26/09/23
C02	Kitchen Extension Removed and Parking Layouts Adjusted.	AH	03/10/23	HJG	03/10/23



TARMAC - GREY
TARMAC - FEATURE GREEN
TARMAC - FEATURE CREAM
NO DIG - GRAVEL SURFACE
PAVING SLABS
STEPS FORMED OF BRICK ON EDGE & PAVING
EXISTING SURFACE
TIMBER SLEEPERS
PUBLIC PLANTING
PRIVATE PLANTING
PRIVATE GRASS
ALLOTMENT GARDENS
UNMAINTAINED SCRUB
EXISTING TREES
ROOT PROTECTION ZONE
TREES REMOVED
PROPOSED TREES

F1 NEW 3m HIGH MUGA FENCE
F2 NEW MIN. 2m HIGH HORIZONTAL TIMBER BATTEN (38x25mm) FENCE WITH TIMBER POSTS. HEIGHT TO FOLLOW LINE OF RAMP. BATTENS INSTALLED WITH SHADOW GAPS
F3 NEW 1.8m TIMBER GATE & FENCE POSTS
F4 NEW 2m TIMBER GATE
F5 NEW TIMBER PATH EDGING STRIPS
F6 NEW PAINTED ROAD MARKINGS

Site Plan 1:200 @ A1

N

2 0 2 4 6 8 10 12 14 16 18m
1:200

Client
ACORN EDUCATION & CARE LTD

Job title
THE PHOENIX SCHOOL
40 CHRISTCHURCH ROAD
READING, RG2 7AY

Drawing title
PROPOSED SITE PLAN

Drawn	Date	Checked	Date	Scale at A1
AH	25/07/23	HJG	25/07/23	1:200

Job No.	Pro.	Org.	Zone	Level	Type	Role	No.	Rev.
23-062	PHX	MHA	ZZ	ZZ	DR	A	0100	C02

Purpose of Issue
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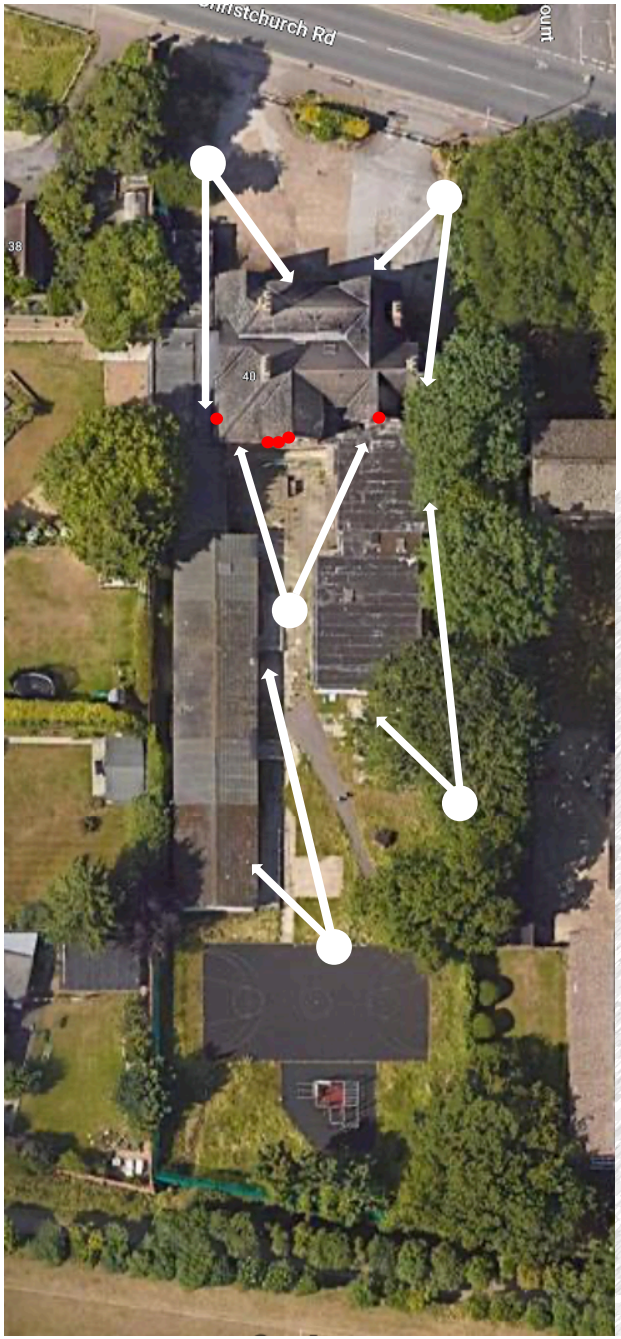
Appendix 3 Bat survey locations and roost locations



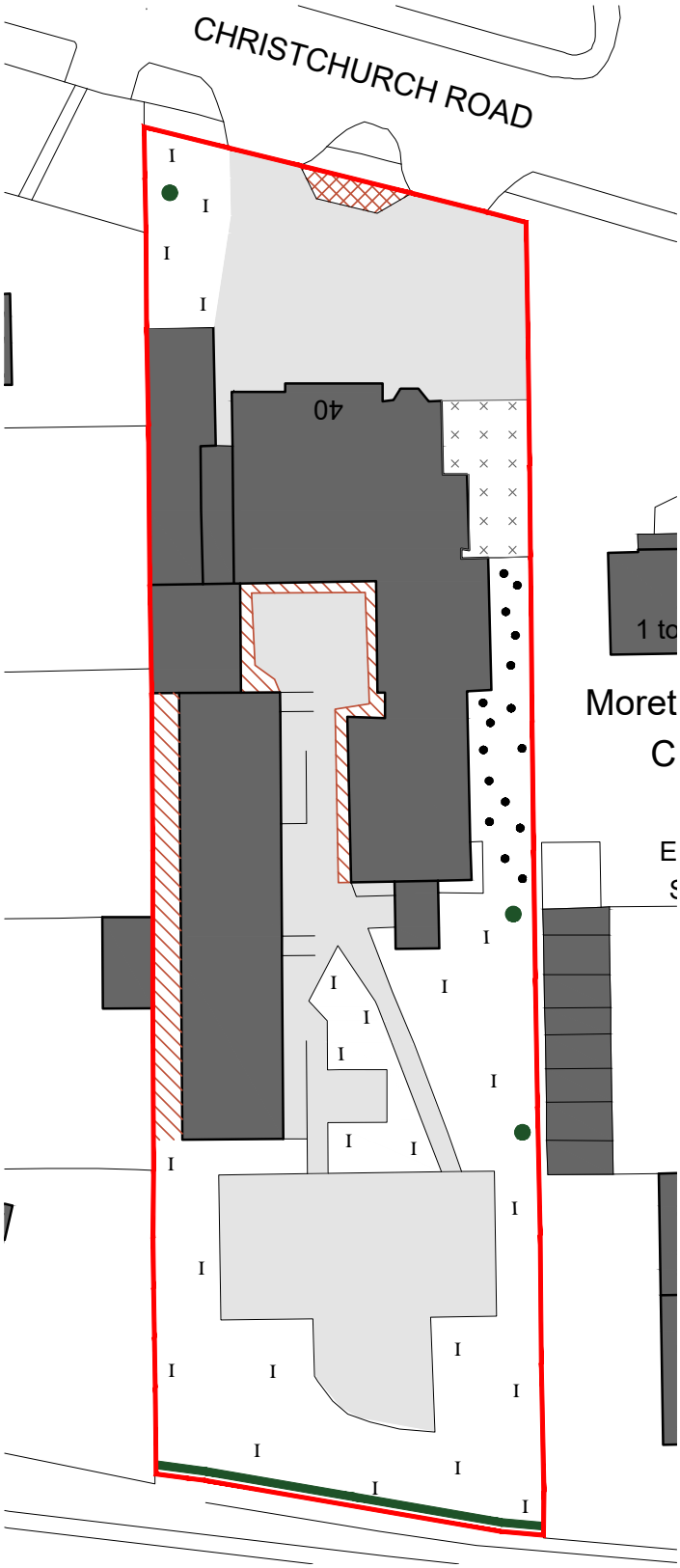
Bat survey locations and roost locations at 40 Christchurch Road, Reading

Locations of common pipistrelle day roost access points highlighted in red.

Left: Bat surveyor locations and vantage points in white.

Below: Southern elevation.

Appendix 4 Phase 1 habitat map



KEY:

- Site boundary
- B4 Improved grassland
- C3.1 Tall ruderal vegetation
- J1.3 Ephemeral/short perennial
- J1.4 Introduced shrub
- J2.1.2 Species-poor hedge
- J3.6 Buildings
- J4 Bare ground
- Scattered trees
- Hardstanding

40 Christchurch Road, Reading
Ecological Impact Assessment
Phase 1 Habitat Map