Russell and Strathmore Schools

Preliminary Ecological Appraisal

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Produced for
Richmond Council

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1 Introduction

1.1 Background

Richmond Council plans to redevelop and expand the capacity of the Russell School by redeveloping it and the adjacent Strathmore School on their shared site in Richmond, Greater London. Several existing single-storey school buildings will be replaced by a combination of modern single and two-storey buildings to increase the number of pupils that can be taught at the school. Mouchel was commissioned to provide an ecological appraisal to support the development.

1.2 Site location

The Russell School and Strathmore School are located on the north western border of Richmond Park, Richmond, West London (TQ 17867 72970). The surrounding area is characterised by a mixture of residential, educational, recreational and commercial land uses with expansive managed parkland and golf courses.

1.3 Study rationale and objectives

The aim of this study was to appraise the ecological value of the study area, identify habitats and their potential to support protected species.

- Interpret desk study data to reveal if there are any statutory or non statutory designated sites, priority species and habitats or other ecological receptors of note within the vicinity of the site.
- To map all general habitat types within the study area and provide a baseline assessment of the ecological value of the habitat based on IEEM (2006) “Guidelines for ecological impact assessment in the United Kingdom”.
- To identify habitats which could support protected species and review existing information regarding the presence of such species.
- Determine whether ecological features could constrain work and provide an outline of further work that could be required to progress the scheme, including further surveys, mitigation/compensation plans or ecological enhancements.

2 Methods

2.1 Overview

This ecological assessment comprised of a desk-based assessment, an assessment of habitat structures that may support roosting bats and nesting birds, a Habitat Suitability Index of a water body in terms of its likelihood to support great crested newt and a Phase 1 habitat survey to inform the likelihood of the site supporting protected species. English names of floral species described in this report follow those used by Stace, 2010 *New Flora of the British* Isles. Latin names for the plant species listed are provided following the first mention of that species in the text.

2.2 Desk-based studies

Information about the locations of any statutory protected nature conservation sites (e.g. Natura 2000 sites and Sites of Special Scientific Interest - SSSI) and non-statutory nature conservation sites (e.g. county wildlife sites including Sites of Nature Conservation Importance - SINCs) within the study area were sought from the following sources

- Multi Agency Geographic Information Centre website (www.magic.gov.uk);
- Environment Agency's environmental maps database 'What's in your backyard?' (www.environment-agency.gov.uk);
- Natural England's habitat website (www.natureonthemap.org.uk); and
- Ordnance Survey Maps.

2.3 Field survey

A Phase 1 habitat survey of the area was undertaken during May 2013. Habitats were identified using standard Phase 1 Habitat Survey methodology (Joint Nature Conservation Committee, 2003) with target notes made to describe features of interest. The survey area and Phase 1 Habitat maps are illustrated in Appendix 1.

2.4 Assessment Methodology

2.4.1 Determining Baseline Value

The method of evaluation used follows that published by the Institute of Ecology and Environmental Management (IEEM). Consequently, IEEM (2006) "Guidelines for Ecological Impact Assessment in the United Kingdom" formed the basis for the system used to evaluate the importance of ecological receptors. Ecological receptors have been evaluated based on specific criteria, which include;

- Habitat size, shape, diversity (e.g. mosaics, mono-cultures) and connectivity;
- Physical conditions (e.g. natural, semi-natural, buildings/hard standing);
- Biodiversity, including species richness, range and populations of plant and animals communities;

- Rarity and typicalness of plant and animal communities;
- Stage/stability of ecological succession and habitat development trajectory;
- Typicalness of the physical environment;
- Position in an ecological or geographical unit; and
- Potential and intrinsic value, ease of re-creation.

In reasonable accordance with IEEM (2006) each site should be assessed as valuable, or potentially valuable, based on the following geographic frame of reference:

- International e.g. a site or population warranting designation as a Special Area of Conservation (SAC) and/or of significant conservation status for Europe;
- National (i.e. UK) e.g. a site or population warranting designation as a Site of Special Scientific Interest (SSSI) and/or of significant conservation status for England;
- Regional e.g. a site or population valuable at a regional level and/or of significant conservation status for the North West;
- County e.g. a population warranting designation as a County Wildlife Site and/or of significant conservation status for Cheshire;
- District e.g. a population of significant conservation status for the local district i.e. Stockport Borough Council and Cheshire East District Council;
- Local e.g. a population of significant conservation status within a local context (i.e. within approximately 5 km of the proposed scheme);
- Within the immediate survey area only i.e. a population of significance for the immediate survey site only.

The characteristics listed above help define a feature's conservation status, which can then be used to help determine its biodiversity value. IEEM (2006) provides further information on how the relative value and importance of a receptor can be determined and states that its biodiversity value should be measured against published selection criteria where available. It is also useful to distinguish between the biodiversity value of a receptor and its legal status. Features of high biodiversity value may not necessarily attract legal protection and vice versa. For example, a viable area of ancient woodland is likely to be considered of high biodiversity value even if it does not receive any formal statutory designations.

In the evaluation of biodiversity value, reference is also made to S41 species and habitat, inclusion on national or county Red Data Books, and to conservation status (such as nationally notable/scarce species, etc). However, the inclusion within a priority species or habitat reflects the fact that the population of the habitat concerned is in a sub-optimal state (and hence that conservation action is required) and does not necessarily imply any specific level of value. Despite this, priority species/habitats may represent a material planning consideration.

2.5 Recommendations and further work

Where ecological resources are present, or likely to be present, and could be affected by works, recommendations have been made for, further survey work, mitigation or other measures to minimise adverse effects. In addition, recommendations for ecological enhancements that can be beneficially included within the completed proposals have been considered.

2.6 Limitations

The survey undertaken for this assessment does not comprise a full listing of all plants and animals that may be present within the survey area at any time because it is limited by seasonal factors that affect the identification of species. However, the time of year during which this survey was carried out has allowed an appreciation of the likely ecological value of the site to be determined.

3 Legislative and policy context

3.1 Summary of relevant legislation and policy

This section summarises the legislation and policy which is relevant, in ecological terms, to this assessment, i.e. legislation relevant to species present or potentially present within the field survey area is included here along with legislation relevant to protected sites in the vicinity. The following legislation and policy is relevant to the environmental aspects of the site and has guided the scope of work undertaken in order to reasonably identify potential constraints.

3.2 Protected/controlled species

European Protected Species (EPS)

All EPS in England are fully protected through inclusion within Schedule II of the Conservation of Habitats and Species Regulations 2010. This legislation makes it an offence to deliberately capture, kill, injure or disturb an EPS. It is also an offence to damage or destroy a breeding site or resting place of these species. For the purposes of this legislation disturbance has been defined as that likely:

- To impair their ability:

    (i) To survive, breed or reproduce, or to rear or nurture their young; or,

    (ii) To hibernate or migrate.

- To affect significantly the local distribution or abundance of that species to which they belong.

It may be possible to apply for a licence from Natural England to allow activities that would otherwise be an offence under these Regulations.

Wildlife and Countryside Act 1981 (as amended)

The main piece of national legislation which protects animals, plants, and in some cases their habitats in England is the Wildlife and Countryside Act 1981 (as amended).

All wild birds receive protection from being intentionally killed, injured or taken damage. It is also an offence to destroy a wild bird nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest, or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

Great crested newts, water vole, otter, dormice, badgers, all UK reptile species and all UK bat species are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended). This legal protection makes it an offence to intentionally kill, injure or take (capture) any of these species and also to intentionally or recklessly damage,

destroy or obstruct access to any structure or place which these species use for shelter or protection, including disturbance of these species while they are using such a place.

3.3 The Natural Environment and Rural Communities Act 2006 (NERC)

Section 41s of the NERC Act (2006) (referred to as S41) requires the Secretary of State to publish a list of priority habitats and species that are of principal importance to biodiversity conservation in England.

Priority habitats and species were identified as requiring action in the UK Biodiversity Action Plan (UK BAP), which has now been succeeded, by the UK Post-2010 Biodiversity Framework (JNCC and Defra, 2012).

4 Baseline conditions and evaluation

4.1 Desk study results

4.1.1 Statutory protected Sites, Features and Species

There are two local nature reserves within 2.5 km of the site; Ham Common and Ham Lands.

- Ham Common (TQ184 718) was designated in 2001 and is characterised by oak and birch woodland with wet hollows and acid grassland. Notable species include remote sedge *Carex remota,* cow-wheat *Melampyrum pratense* and purple hairstreak butterfly *Favonius quercus*, birds and owls.

- Ham Lands (TQ 165 720) was designated in 1992 and is an extensive area of grassland and scrub with abundant wildlife. The site was once extensively excavated for gravel, then back-filled over time with a variety of soil types from all over London. This has created a unique mosaic of different vegetation types attracting many butterfly and bird species. In the spring, the site is full of hawthorn blossom and in the summer, the meadows support hundreds of wild flowers.

Richmond Park (TQ 200 730) also falls with the 2.5 km buffer surrounding Strathmore School. The park is designated as a National Nature Reserve (NNR), Site of Special Scientific Interest (SSSI) and European Special Area of Conservation (SAC). The park has been managed as a royal deer park since the seventeenth century, producing a range of habitats of value to wildlife. In particular, Richmond Park is of importance for its diverse deadwood beetle fauna associated with ancient trees found throughout the parkland. In addition the park supports the most extensive area of dry acid grassland in Greater London.

Strathmore School has a man made badger, *Meles Meles*, sett on site within their nature area and there is evidence to suggest that it is in current use. In addition the nearby Richmond Park has recorded a multitude of protected species including 9 species of bats with common, soprano and Nathusius Pipistrelle, Daubenton's, brown long-eared, noctual and serotine bats numbered among them. There are also numerous studies on protected and rare invertebrate species recorded within the Park.

4.1.2 Non-statutory Designated Sites and Priority Species and Habitats

There are no non statutory designated sites within a 2.5 km buffer around the proposed site. However there are several priority S41 (formally UK BAP) habitats within the buffer zone. As stated above Richmond Park has extensive lowland dry acidic grassland, there is also an area of undetermined grassland to the south west of the site which (from aerial photography) appears to be a golf course.

There are six designated traditional orchards within the 2.5 km buffer, including one within the grounds of Strathmore School. This may point to a single pare tree on the southern boundary of the site.

Within the mosaic of habitats included within the 2.5 km buffer there are 81 areas of deciduous woodland, including and area adjacent to the western boundary of the site

known as The Copes. 28 of these areas are also on the National Inventory of Woodland and Trees, with a further 8 areas registered as Woodpasture and Parkland habitat.

4.2 Field survey

4.2.1 Protected species

As stated above there is a man-made badger sett on site which (from photographic evidence) houses at least one badger. There is a bird box placed on the pear tree towards the southern boundary of the site. However as neither the area around the badger sett or the bird box will be affected by works there should be only limited ecological constrains to works going ahead.

4.2.2 Phase 1 Habitat survey

The study area comprised of amenity grassland, hard standing/buildings, semi-improved grassland with a species-rich hedgerow along the northern boundary of the site. The study area also houses two ponds, a man made badger sett and a pear tree with a bird box (see Appendix 1)

Table 1: Habitat types found within the study area identified in Appendix 1

Habitat type	Description
semi-improved grassland	This area of semi improved grassland is managed as a wild area by the school. With relaxed management the species mix will be much higher than that found in the other grassland habitats on site. This habitat is common throughout the UK, and considering this site is very close to Richmond Park this habitat can only be classed as locally important.
Amenity Grassland	This comprises intensively managed and regularly mown grassland, typical of lawns and playing fields. These habitats are common throughout the UK and therefore this habitat has significance within the site only.
Hard-Standing/Buildings	Although no vegetation is associated with this habitat, some buildings can house protected species such as bats and birds. A careful inspection of the builds showed that there were no such constraints associated with the buildings on this site; therefore, this habitat has significance within the site only.
Mixed Species Hedge with standard trees	The northern boundary of the site has a mixed species hedge with mature trees. The species richness was not high, however there is the possibility that there could be nesting birds within both the hedge and the trees; therefore this habitat has local significance only
Standing water (ponds)	There are two small ponds on site that look to regularly dry up despite being polyurethane lined. The water is stagnant and they are clogged with macrophytes. One has had a common frog population in the past, but overall they are of low quality.

4.3 Summary

No habitats of high significance were found within the boundary of this site. There is some scope to believe birds could be using the mixed species hedge and trees and the scattered trees around the site for nesting during the spring and early summer months. The client wishes to apply for BREEAM status and therefore there are significant changes that can be made to the existing habitats that will enhance the ecological value of the site as a whole. Therefore this section will include recommendations to enhance biodiversity and ecological value in order to complete the BREEAM requirements.

The existence of a man-made badger sett, occupied by badgers, on site is an indication that the clients are dedicated to enhancing the ecological value of their school. This sett will not be affected by works and is not a constraint to development.

Bats are not considered a constraint to development as none of the trees or buildings on site provide suitable habitat for these animals to roost.

4.4 Recommendations for further work

4.4.1 Birds

If sections of the mixed species hedge or trees are to be removed due to the progressing of this scheme, removal should be undertaken outside the bird breeding season (breeding bird season: March-July) if possible. However if such work should be undertaken during the breeding season then an ecologist should be present to check the habitat for active nests prior to removal. If breeding birds are found, work in the vicinity of a nest should be avoided until young birds have fledged (period dependent on bird species).

4.4.2 Other ecological constraints

Removal of the pear tree on the southern boundary should be avoided if at all possible.

4.5 Recommendations to further ecological value of the site

There are several ways in which the ecological value of the site can be improved. Here are some suggestions discussed previously with the client.

- Enhance the ponds - Currently the ponds are of poor quality. Improving the quality of these ponds will increase the attractiveness of them to amphibians and aquatic invertebrates.

- Relax management of amenity grassland - Leaving a rough grassland boarder around the outside of the playing fields and other managed grassland would help to improve the biodiversity of plants and invertebrates within the site. Care should be taken to reduce the nutrient level in the soil before reducing the management levels as this will stop weed species such as nettle and bramble from taking hold in these areas.

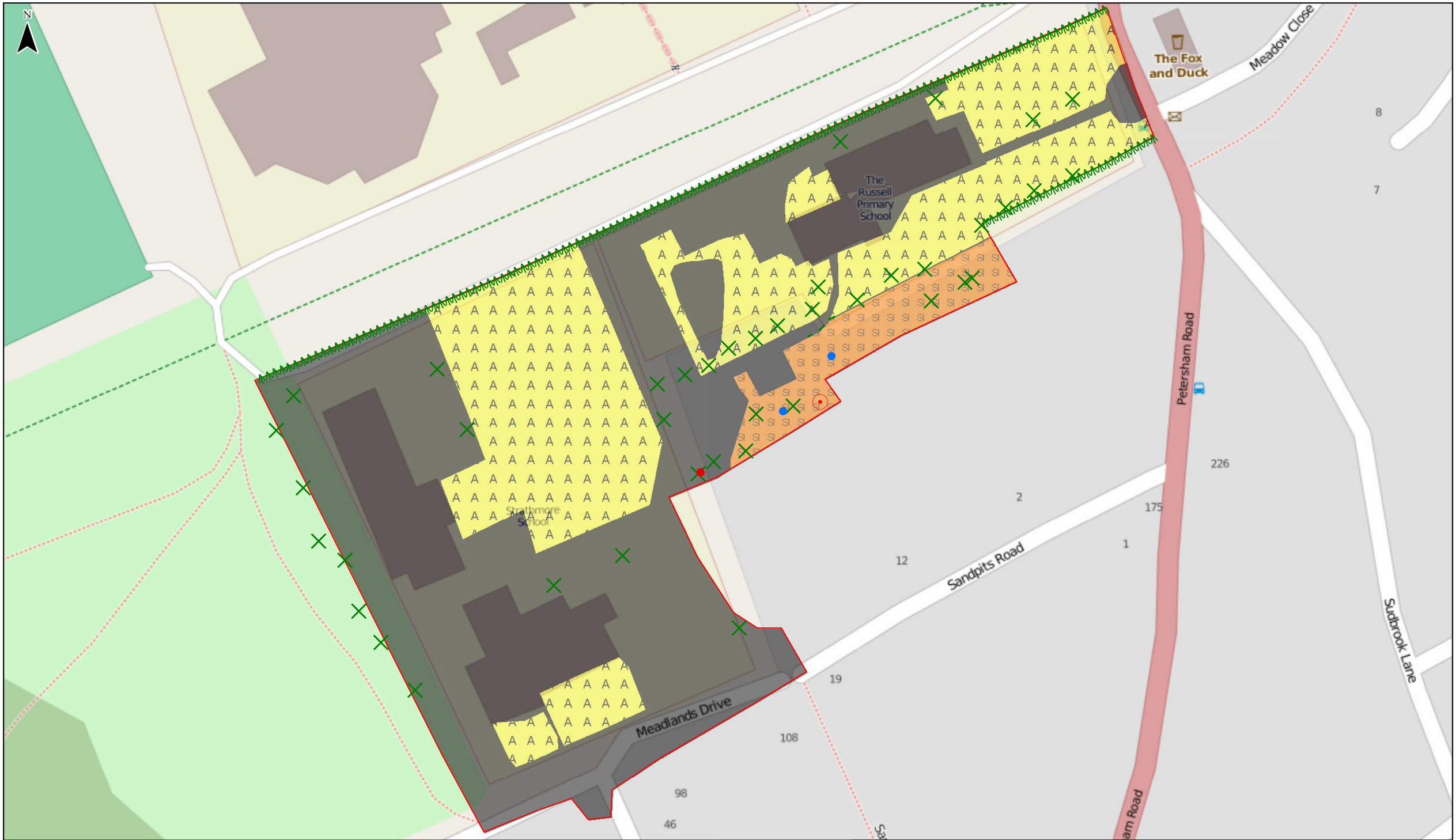
- Expanding the wildlife area – Increasing the size of the wildlife area will hep to improve the biodiversity of plants and invertebrates on site.

- Reduce the nutrient level of the wildlife area – the current wildlife area has high levels of weed species such as nettle. By reducing the nutrient level in the soil these species will gradually reduced in cover and other native wild flowers and grasses will start to take hold.

- Camera trapping the badger sett – The presence of a badger sett on site could be a valuable educational tool. Badgers are mainly nocturnal so the use of a camera trap placed near to the entrance of the sett should be able to detect the movement and habitats of the resident population.

We have used our reasonable endeavours to provide information that is correct and accurate and have discussed above the reasonable conclusions that can be reached on the basis of the information available. We would recommend that in order to obtain more secure results, the additional work outlined above should be commissioned.

Appendix 1: Phase 1 Survey Map



Legend

- Badger Sett
- Pear Tree with Bird Box
- Pond
- Standard Trees
- native species rich hedge with trees
- Native species poor hedge
- Amenity Grassland
- Hard Stamding/Buildings
- Semi-Improved grassland
- Site Boundary

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